

Technical Manual

Careclave® 618

Combination steam sterilizer

from software version 21.0.3



EN

Read this manual carefully and in the correct order before setting up and commissioning the device. The instructions include important safety information. You also receive a user manual with the device. Please store this manual and the user manual carefully and in close proximity to the device. They represent a component of the product.

CE 0197

Contents





1 General guidelines	4
Symbols used.....	4
Formatting rules	4
2 Installation requirements.....	5
Installation location.....	5
Space requirements	6
Mains supply	7
Water connection	8
Compressed air connection	9
System and network safety	9
3 Setup and installation	12
Removing from the packaging	12
Cover caps or Carebox holders	12
Connecting the power cable and removing accessories.....	14
Connecting the feed water supply (installation examples).....	15
Connection to wastewater system	23
Connection to the compressed air supply	24
Aligning the device.....	24
Setting up the Carebox	24
Test runs	24
Instructing the users.....	24
4 Settings and adjustment.....	25
Service connection.....	25
Settings on the device.....	25
5 Technical tables	26
Feed water quality.....	26
Precision and drift behaviour.....	26
Nominal value tolerances.....	27
Empty chamber test	29
Pressure-time chart.....	29
Type plate steam generator	32

1 General guidelines




Read this manual carefully and in the correct order before setting up and commissioning the device. The instructions include important safety information. You also receive a user manual with the device. Please store this manual and the user manual carefully and in close proximity to the device. They represent a component of the product.

Should the manual no longer be legible, is damaged or has been lost, you can download a new copy from MELAG download centre at www.melag.com.

Symbols used

Symbol	Explanation
	Indicates a dangerous situation, which if not avoided, could entail slight to life-threatening injuries.
	Indicates a dangerous situation, which if not avoided, could lead to burns.
	Draws your attention to a situation, which if not avoided, could result in damage to the instruments, the practice fittings or the device.
	Draws your attention to important information.

Formatting rules

Example	Explanation
Universal- Program	Words or phrases appearing on the display of the device are marked as display text.
	Prerequisites for the following handling instruction.
	Refer to the glossary or another text section.
	Information for safe handling.

2 Installation requirements

Installation location



WARNING

Failure to comply with the set-up conditions can result in injuries and/or damage to the steam sterilizer.

- The steam sterilizer should only be setup, installed and commissioned by persons authorized by MELAG.
- The steam sterilizer is not suitable for operation in explosive atmospheres.
- The steam sterilizer is conceived for use outside the patient area. The device should be located a minimum of 1.5 m radius away from the treatment area.

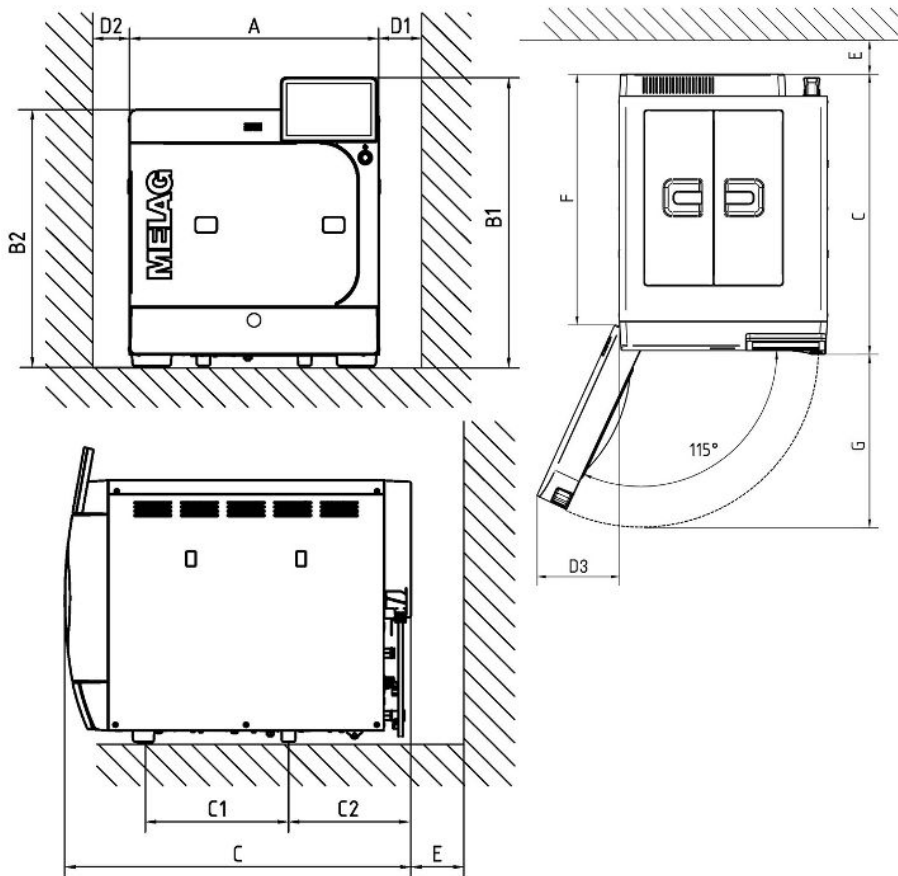
Property	
Installation surface	level and horizontal
Place of installation	interior of a building
Max. altitude	2000 m
Overvoltage category	transient overvoltage up to the values of overvoltage category II
Degree of contamination (in accordance with EN 61010)	2
Operating weight	82.5 kg
Floor loading (normal operation)	2.6 kN/m ²
Floor load (hydraulic pressure test)	2.91 kN/m ²
Waste heat (with maximum load)	1.7 KW
Ambient temperature	5-40 °C (ideal range 16-26 °C)
Relative humidity	max. 80 % at temperatures of up to 30 °C, max. 50% at 40 °C (decreasing in linear fashion in-between)

Steam egress can occur during operation. Do not set up the device in the immediate proximity of a smoke detector. Maintain clearance from materials which could suffer damage from steam.

Electromagnetic environments

When assessing the Electromagnetic Compatibility (EMC) of this device, the emitted interference threshold values for Class B devices and the stability for operation in an electromagnetic environment as described in IEC 61326-1 were taken as the basis. The device is thus suitable for operation in all institutions and domestic settings connected to a public mains power supply. The floor should be made of wood or concrete or be tiled with ceramic tiling. If the floor is fitted with synthetic material, the relative humidity must amount to a minimum of 30 %.

Space requirements



Dimensions		
Width	A	48 cm
Height	B1	56.2 cm
Height without colour touch display	B2	49.7 cm
Depth	C	65.3 cm
Clearance between the device feet	C1	27.05 cm
Clearance from rear device foot up to the cover	C2	23.1 cm
Min. clearance to the side	D1	7 cm
Min. clearance to the side of the door hinge	D2	3 cm
Min. clearance to the side	D3	19 cm
Min. clearance to the rear	E	1 cm
Clearance when door fully open	F	58 cm
Max. clearance with open door	G	38.5 cm
Min. clearance to the top	B1 + 4 cm	

Above, the device should be freely accessible to ensure access to the storage tank and the accessories compartment and to ensure good ventilation. The device operates with a cooler at the back of the device. The function and life-span can be compromised if heat dissipation via the cooler is restricted in any way. Installation of the device is therefore strongly discouraged and only possible if sufficient air circulation is ensured, e.g. with an exhaust shaft in the upper rear area of the cupboard unit. To ensure good access, it must be possible to pull the device out of the cupboard unit.

Additional space requirement for the feed water supply

Additional space is required for a storage container or a water treatment unit. It is also necessary to guarantee free access to the hoses and cables leading from from the device to the water treatment unit.

Space requirements	MELAdem 47		Storage container
	Osmosis module	Storage tank	
Width	42 cm	Ø 24 cm	21 cm
Height	47 cm	51 cm	38 cm
Depth	15 cm	--	23 cm

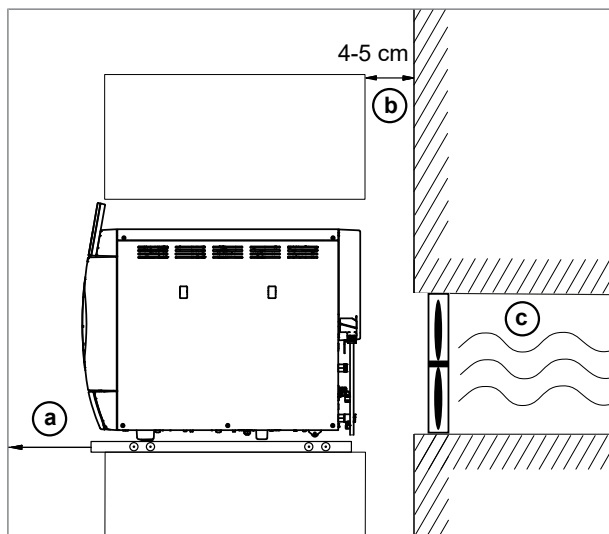
Space is required above the MELAdem 53 / MELAdem 53 C for clear access to the hose connections.

Dimensions	MELAdem 53	MELAdem 53 C
Diameter	24 cm	24 cm
Height of the unit incl. connecting parts	57 cm	45 cm

Requirements for the installation of a device

If the installation of the device is mandatory, one of the following measures must be implemented:

1. It must be possible to pull out the device for operation (pos. a).
2. There must be an exhaust air shaft in the rear area of the installation space that discharges the warm air upwards (pos. b).
3. There must be an exhaust air shaft in the rear area of the installation space that discharges the warm air to the rear (pos. c).



Mains supply

Implement the following safety measures when dealing with the cable and power plug:

- Never damage or alter the power plug or cable.
- Never bend or twist the power cable.
- Never remove the plug by pulling on the power cable. Always take a grip on the plug.
- Never place any heavy objects on the power cable.
- Never run the power cable over areas in which it could become trapped (e.g. doors or windows).
- Never lead the cable along a source of heat.
- Never use any nails, paper fasteners or similar objects to fix the cable.
- Should the power plug or cable suffer damage, switch off the device. The power cable or plug should only be replaced by authorised technicians.

- The mains socket must be freely accessible after installation so that the steam sterilizer can be disconnected from the electricity supply at any time.
- The power cable may not be replaced by a cable determined to be insufficient.
- The mains socket must be freely accessible after installation so that the device can be disconnected from the electrical mains at any time if necessary by pulling the power plug.

Property	Building-side requirements
Power supply	220-240 V 50 Hz Fluctuations of the mains supply voltage up to +/- 10% of the nominal voltage
Max. power consumption in operation	3000 W
Building fuse protection	Separate circuit with min. 13 A, residual current device (RCD) with rated residual current = 30 mA (to ensure continued operation of the device in practice in case of malfunctions)
Other	additional socket 220-240 V, 50 Hz for label printer MELAprint 60
Length of the power cable	2 m
Separator	Power plug

Water connection

	Feed water	Wastewater
Connection in the practice	to a water treatment unit, e.g. MELAdem	Wall outlet, nominal width DN 40 or to a siphon (flush outflow)
Installation height	--	min. 30 cm below the device
Max. water consumption	5 l/h	--
Average water consumption	2.5 l/h	--
Min. flow pressure	0.5 bar at 1.0 l/min	--
Max. throughflow volume	--	2 l/min
Min. water pressure (static)	1 bar	--
Max. water pressure (static)	10 bar	--
Min. water temperature	1 °C	--
Max. water temperature	35 °C (ideal 15-20 °C)	90 °C for 30 s, max. 98 °C for 1 s
Water quality	distilled or demineralized water in accordance with EN 13060, Appendix C	--
Measures for protecting the drinking water	<p>The steam sterilizer is equipped with all required components in accordance with EN 1717 to protect the drinking water.</p> <p>To secure the water treatment units MELAdem 47, MELAdem 53 and MELAdem 53 C it is recommended to install a safety device in accordance with EN 1717.</p> <p>Further country specific measures may be required for protecting the drinking water.</p>	

Leakage water detector The installation of a leakage water detector with cut-off valve (e.g. the water stop from MELAG) is required.

When the device is put into operation for the first time, the double jacket is filled with 4 l of demineralised water according to EN 13060, Appendix C. Please ensure that a sufficient quantity of demineralised water is available.

Compressed air connection



PLEASE NOTE

The device must not be connected to the supply network for medical gases, e.g. for ventilation and anaesthesia equipment, in accordance with EN ISO 7396-1.

- Only use compressed air for treatment units (according to EN ISO 7494-2).

According to EN 13060, the device must not be operated without the sterile filter integrated in the compressed air hose.

The externally provided compressed air must meet the following conditions:

Property	Requirements
Quality	dried, condensate-free, bacteria-free, oil-free and filtered with a filter fineness $\leq 2 \mu\text{m}$
Pressure range	4 to 8 bar (58 to 116 psi)
Min. compressed air supply	55 l/min
Average compressed air consumption	50 l per cycle

System and network safety

The device is fitted with multiple external interfaces. Comply with the following information pertaining to the use of these interfaces to ensure safe operation of the device, especially to ensure incorporation in the local network (LAN).

Interfaces and connections



NOTICE

Only connect the hardware to the device which is listed in the following table. Only use the software which has been intended for the purpose and approved by the manufacturer.

Interface	Type	Hardware	Software/purpose
USB	Type-B	USB type-A socket (via USB type-B to type-A cable)	MELAview Service Saving log data, querying device data using diagnostics mode
USB	Type-A	MELAG USB flash drive with FAT32 file system	Saving log data
		MELAG USB flash drive with FAT32 file system and software-update container	Device software update
		MELAprint 60	Label printing
Ethernet	Ethernet IEEE 802.3	Switch port (Practical network)	MELAview saving log data, querying device data
			MELAttrace saving log data
			FTP server saving log data
			Label printing via MELAprint 60



NOTICE

When performing a device software update, use only the update data authorized by MELAG for the corresponding device type.

Operating the device with memory media

To prevent data loss, only use memory media to save the log data with the following characteristics:

- Functional capability (without malware etc.)
- Writeable
- Formatted with a correct file system

Perform regular data backup. Restrict access to the device and systems with access authorization to the necessary circle of persons.

Only use MELAG USB flash drives.

Operating the device in the local network (LAN)



NOTICE

Do not connect the device to a public network (e.g. the internet).

An Ethernet/IP-based network connection (LAN) is required to operate the device in a local network. In its delivery state, the device is configured to obtain the IP address automatically from a DHCP server operated in a LAN.



NOTICE

Check the IP address carefully during the conversion for a manual configuration before connecting the device to the LAN.

An incorrectly-entered IP address can cause IP conflicts in the network and thus disturb another device in your network.

In the LAN with a firewall, only permit connections to and from the device which correspond to the intended use of the device. All ports not used are blocked on the device side.

The device is able to make the following connections as standard:

Log	Source port	Destination port	Direction	Aims
TCP	63000 - 64000	21	Outgoing	FTP control
TCP	any	63000 - 64000	Listening / incoming	FTP (passive) data transfer (device set to FTP logging)
UDP	68	67	Outgoing	Communication to DHCP server - requests to the DHCP server
UDP	67	68	Listening / incoming	Answers from DHCP server(s)
TCP	any	3333	Listening / incoming	Data transfer log data (device set to TCP logging)
UDP	62000	3000	Outgoing	Broadcast search label printer
UDP	3000	62000	Listening / incoming	Search results label printer
TCP	≥ 1025	9100	Outgoing	Data transfer to the label printer

Network bandwidth / Quality of Service (QoS)

The device does not place any requirements on the LAN bandwidth for data transfer, that exceed the standard time-out times of the respective logs.

Process	Volume max.	Volume normal
Program log	1 MB	200 kB
Malfunction log	64 kB	10 kB
Status log	64 kB	20 kB
System log	40 MB	-

3 Setup and installation



WARNING

Improper installation may lead to a short-circuit, fire, water damage or electrical shock.

This could result in serious injury.

- Only have the device set up, installed and commissioned by people authorized by MELAG.

Removing from the packaging



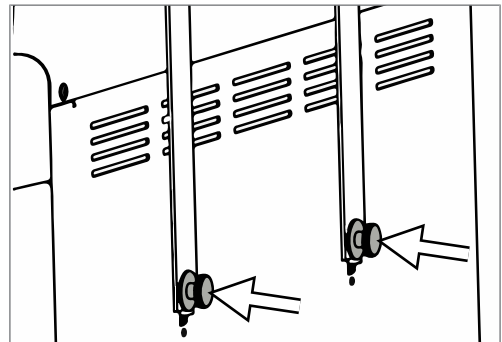
CAUTION

Danger of injury from incorrect carrying.

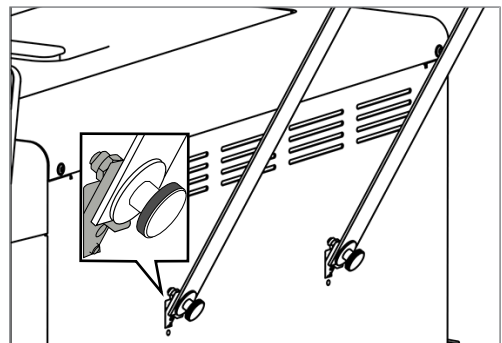
Lifting and carrying too heavy a load can result in spinal injury. Failure to comply with these provisions can result in crushing.

- The device should always be carried by two people.
- Use the correct carrying straps to carry the device.

1. Remove the device from the box using the carrying straps.
2. To remove the straps, loosen the four knurled screws.



3. Pull the fastening system out of the device openings.



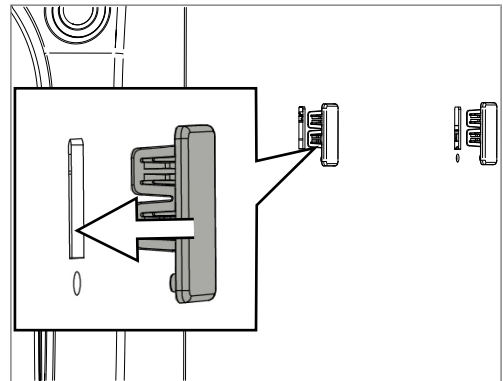
4. Store the carrying straps carefully.

Cover caps or Carebox holders

There are rectangular recesses on both side panels of the device for attaching the Carebox holders. Alternatively, these can be closed with the cover caps included in the delivery.

Attaching the cover caps

- ▶ Press the cover caps into the free recess as shown.



Attaching the holder for the Carebox

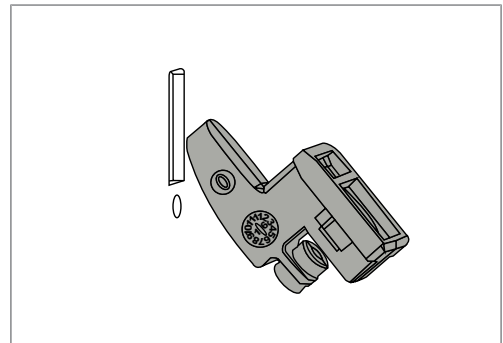


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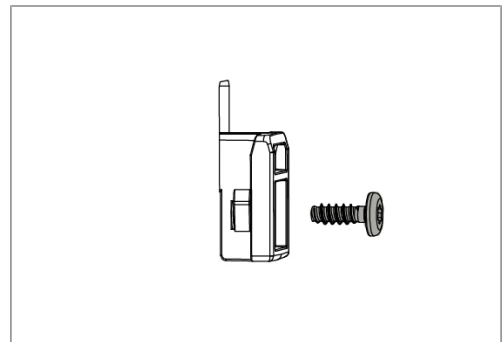
The spacers are intended for installation on the side wall of the device.

- For a room wall installation, the spacers are not used.

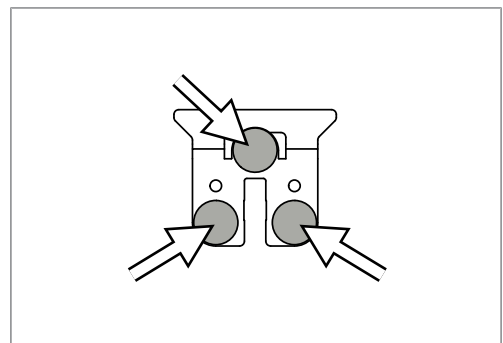
1. Insert the fastening hook into the recess at an angle and pointing upwards.



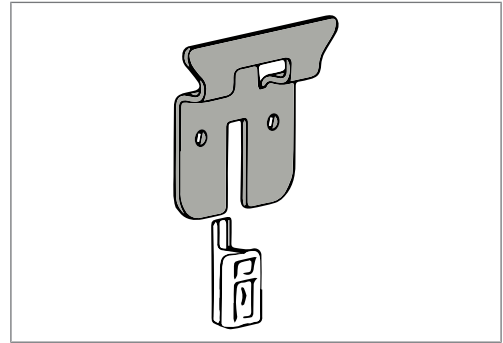
2. Secure the holder with the short screw provided.



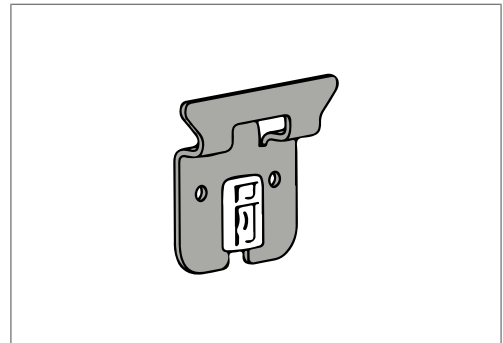
3. Glue the three spacers to the back side of the holder.



- Place the holder over the corresponding recess on the device (moisten the spacers for easier mounting).



- Pull the holder and the fastening hook vertically downwards until they click into place.



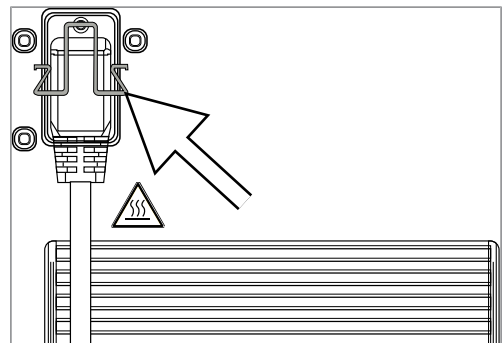
Connecting the power cable and removing accessories



NOTICE

Before switching on for the first time, the device must have acclimatised to the required ambient temperature (5 – 40 °C).

- Connect the power cable to the rear of the device and fold down the safety latch.



- Connect the device power plug to the mains socket.
- Switch on the device at the power switch. The start screen appears on the display.
 - The favourites menu is displayed after a short waiting time.



PLEASE NOTE

After starting, the device tries to deliver feed water into the tank and into the double jacket. If no feed water is available yet, a malfunction message is displayed.

- Use the door mode to avoid the malfunction message.

- Press the OPEN DOOR button to open the door.
- Remove all accessories from the sterilization chamber.

6. Close the door.
7. Press the power switch to shut down the device.
8. Remove the power plug to disconnect the device from the power supply.

Connecting the feed water supply (installation examples)

The following pages provide examples for the recommended installation types for the feed water supply. The connection of a different water treatment unit with the same water quality is possible after consultation with MELAG.



PLEASE NOTE

For detailed information on the cold water connection of the water treatment unit, see the user manual of the unit.

Installation material

The following additional material can be ordered as required:

Qty.	Article	Art. no.
1	2-way compressed air distributor	ME80220
1	Surface-mounted siphon	ME37410
1	3/4" water inflow tap with safety combination	ME37310
1	Additional water tap with unit combination (for connection to a pre-existing angle valve)	ME58130
1	Pressure increase pump for MELAdem 47	ME22500
1	Filling pump P10	ME65010
1	MELAJet spray pistol	ME27300

Example 1: Use of the water treatment unit MELAdem 53/53 C (HD)

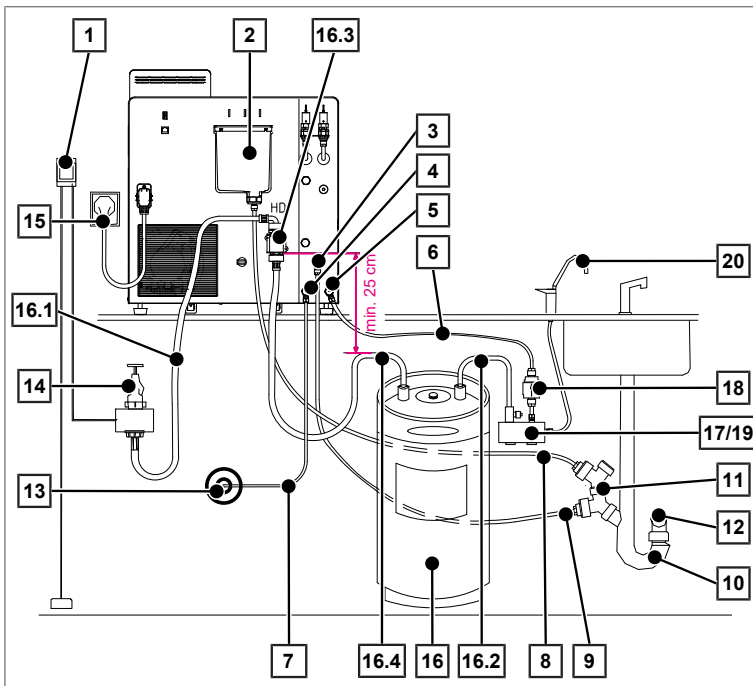
Cut the PUR 6/4 mm (5 m) hose for the compressed air supply (4) and the feed water connection (5) into two suitable pieces.

Connect the water treatment unit MELAdem 53/53 C to the feed water connection (5) of the device either via a water branch (17) or by means of a water distributor (19). Insert the filter for MELAdem (18) in between.

Fix the safety combination HD (16.3) to the house wall, observing the flow direction indicated on the safety combination. Keep the minimum distance of the drop section under the safety combination.

Cut the PTFE 8/6 mm (5 m) hose for the overflow funnel (2) and the wastewater connection (3) into two suitable pieces.

The direct connection of the water treatment unit to the domestic water system requires the installation of the water stop (1).



Position	Description	Art. no.	contained in
1	Water stop (leak water detector with cut-off valve and sensor)	ME01056	--
2	Overflow funnel	--	present on the device side
3	Wastewater connection	--	--
3.1	Threaded connection 1/8" on hose 8/6 mm	ME89120	present on the device side
4	Compressed air connection	--	--
4.1	2x Cu seal 13.5x18.5	ME36060	Installation set
4.2	Banjo bolt G 1/4"	--	Installation set
4.3	QSS-E Swivel	--	Installation set
5	Feed water connection, water treatment unit	--	--
5.1	2x Cu seal 13.5x18.5	ME36060	Installation set
5.2	Banjo bolt G 1/4"	--	Installation set
5.3	QSS-E Swivel	--	Installation set
6	PUR hose (black) 6/4 mm	see above	Installation set
7	PUR hose (black) 6/4 mm	see above	Installation set
8	PTFE hose (8/6 mm)	see above	Installation set
9	PTFE hose (8/6 mm)	see above	Installation set
10	Double-chamber siphon	ME26635	Installation set
11	2x double hose nozzle for siphon	ME37400	Installation set
11.1	2x Cu seal 13.5x20	ME32050	Installation set
11.2	2x QSS-E straight	ME38710	Installation set
11.3	2x wastewater adapter G1/4" internal thread	ME56930	Installation set
12	Wall outlet NW40	--	present on the building side
13	Compressed air supply	--	present on the building side
13.1	Coupling plug for compressed air on 6 mm hose	ME80230	Installation set
14	3/4" water inflow tap with safety combination	ME37310	--
15	Mains connection	--	present on the building side

Position	Description	Art. no.	contained in
16	MELAdem 53/53C	ME01038/ ME01036	--
16.1	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ ME01036
16.2	Pipe elbow with drain valve	ME70405	ME01038/ ME01036
16.3	Safety combination HD according to EN 1717 with wall bracket	ME70685	ME01038/ ME01036
16.4	Feed hose EN 1717, 0.8 m	ME24932	ME01038/ ME01036
17	Cold water adapter 3/4" to 1/4" (direct connection water hose)	ME09037	Installation set
18	Filter for MELAdem	ME48240	--
	The following additional material can be ordered:		
19	Water distributor MELAdem 53 for connecting several devices	ME69005	--
20	External tap for demineralised water	ME91900	--
	PUR hose (black) 6/4 mm (10 m)	ME28820	--
	Hose PTFE (8/6 mm, 5 m, wastewater hose)	ME39180	--

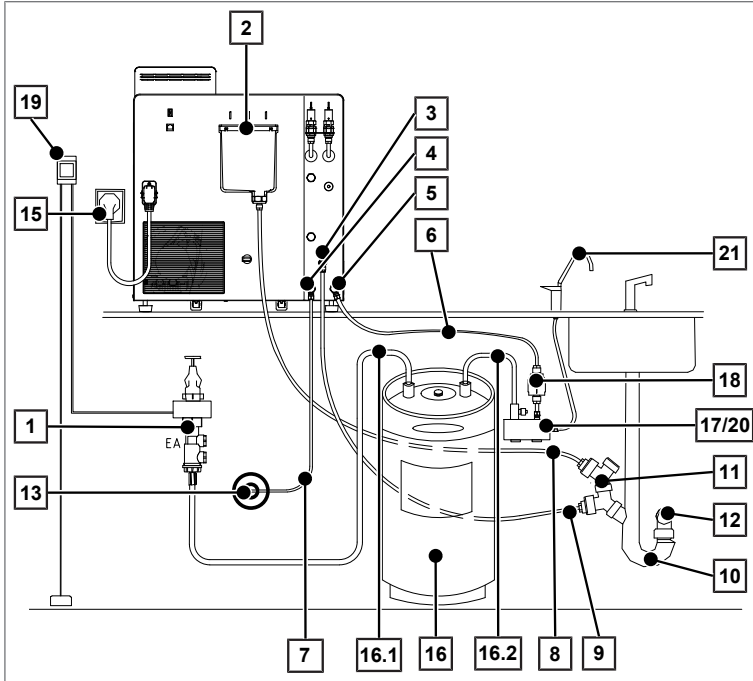
Example 2: Use of the water treatment unit MELAdem 53/53 C (EA)

Cut the PUR 6/4 mm (5 m) hose for the compressed air supply (4) and the feed water connection (5) into two suitable pieces.

Connect the water treatment unit MELAdem 53/53 C to the MELAdem feed water connection (5) of the device either via a water branch (17) or by means of a water distributor (20). Insert the filter for MELAdem (18) in between.

Cut the PTFE 8/6 mm (5 m) hose for the overflow funnel (2) and the wastewater connection (3) into two suitable pieces.

The direct connection of the water treatment unit to the domestic water system requires the installation of the water stop (19).



Position	Description	Art. no.	contained in
1	Return flow inhibitor type EA	ME75300	--
2	Overflow funnel	--	present on the device side
3	Wastewater connection	--	--
3.1	Threaded connection 1/8" on hose 8/6 mm	ME89120	present on the device side
4	Compressed air connection	--	--
4.1	2x Cu seal 13.5x18.5	ME36060	Installation set
4.2	Banjo bolt G 1/4"	--	Installation set
4.3	QSS-E Swivel	--	Installation set
5	Feed water connection, water treatment unit	--	--
5.1	2x Cu seal 13.5x18.5	ME36060	Installation set
5.2	Banjo bolt G 1/4"	--	Installation set
5.3	QSS-E Swivel	--	Installation set
6	PUR hose (black) 6/4 mm	see above	Installation set
7	PUR hose (black) 6/4 mm	see above	Installation set
8	PTFE hose (8/6 mm)	see above	Installation set
9	PTFE hose (8/6 mm)	see above	Installation set
10	Double-chamber siphon	ME26635	Installation set
11	2x double hose nozzle for siphon	ME37400	Installation set
11.1	2x Cu seal 13.5x20	ME32050	Installation set
11.2	2x QSS-E straight	ME38710	Installation set
11.3	2x wastewater adapter G1/4" internal thread	ME56930	Installation set

Position	Description	Art. no.	contained in
12	Wall outlet NW40	--	present on the building side
13	Compressed air supply	--	present on the building side
13.1	Coupling plug for compressed air on 6 mm hose	ME80230	Installation set
14	Water tap	--	present on the building side
15	Mains connection	--	present on the building side
16	MELAdem 53/53C	ME01038/ ME01036	--
16.1	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ ME01036
16.2	Pipe elbow with drain valve	ME70405	ME01038/ ME01036
16.3	Safety combination HD according to EN 1717 with wall bracket	ME70685	ME01038/ ME01036
17	Cold water adapter 3/4" to 1/4" (direct connection water hose)	ME09037	Installation set
18	Filter for MELAdem	ME48240	--
19	Water stop (leak water detector with cut-off valve and sensor)	ME01056	--
	The following additional material can be ordered:		
20	Water distributor MELAdem 53 for connecting several devices	ME69005	--
21	External tap for demineralised water	ME91900	--
	PUR hose (black) 6/4 mm (10 m)	ME28820	--
	Hose PTFE (8/6 mm, 5 m, wastewater hose)	ME39180	--

Example 3: Using the reverse osmosis unit MELAdem 47 (HD)

Hook the safety combination HD (16) into the fastening next to the overflow funnel (2) and fix it with the screw supplied. Observe the flow direction indicated on the safety combination.

Shorten the PUR 6/4 mm (5 m) hose for the compressed air supply (4) to the required length.

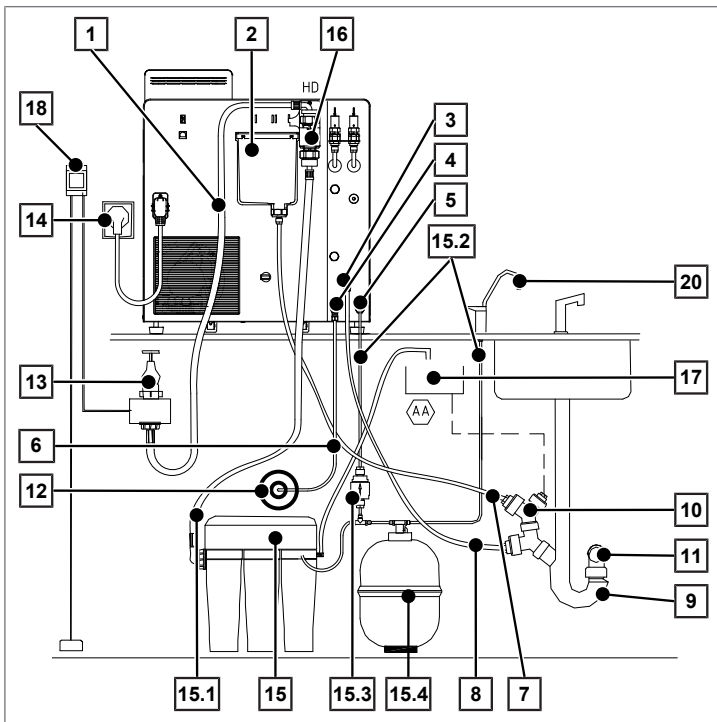
Cut the PTFE 8/6 mm (5 m) hose for the overflow funnel (2) and the wastewater connection (3) into two suitable pieces.

The direct connection of the water treatment unit to the domestic water system requires the installation of the water stop (18).



PLEASE NOTE

If the line pressure is less than 3 bar or if several devices are operated simultaneously, the pressure increase pump for MELAdem 47 must be used.



Position	Description	Art. no.	contained in
1	Tap water supply hose EN 1717, 2.5 m	ME24930	--
2	Overflow funnel	--	present on the device side
3	Wastewater connection	--	--
3.1	Threaded connection 1/8" on hose 8/6 mm	ME89120	present on the device side
4	Compressed air connection	--	--
4.1	2x Cu seal 13.5x18.5	ME36060	Installation set
4.2	Banjo bolt G 1/4"	--	Installation set
4.3	QSS-E Swivel	--	Installation set
5	Feed water connection, water treatment unit	--	--
5.1	2x Cu seal 13.5x18.5	ME36060	Installation set
5.2	Banjo bolt G 1/4"	--	Installation set
5.3	QSS-E Swivel	--	Installation set
6	PUR hose (black) 6/4 mm	see above	Installation set
7	PTFE hose (8/6 mm)	see above	Installation set
8	PTFE hose (8/6 mm)	see above	Installation set

Position	Description	Art. no.	contained in
9	Double-chamber siphon	ME26635	Installation set
10	2x double hose nozzle for siphon	ME37400	Installation set
10.1	2x Cu seal 13.5x20	ME32050	Installation set
10.2	2x QSS-E straight	ME38710	Installation set
10.3	2x wastewater adapter G1/4" internal thread	ME56930	Installation set
11	Wall outlet NW40	--	present on the building side
12	Compressed air supply	--	present on the building side
12.1	Coupling plug for compressed air on 6 mm hose	ME80230	Installation set
13	3/4" water inflow tap with safety combination	ME37310	--
14	Mains connection	--	present on the building side
15	MELAdem 47 reverse osmosis unit	ME01047	--
15.1	Water inflow hose	ME37220	ME01047
15.2	PUR hose (black) 6/4 mm (10 m)	ME28820	ME01047
15.3	Filter for MELAdem	ME48240	ME01047
15.4	Pressure tank MELAdem 47 (with shut-off valve and hose)	ME57065	ME01047
16	Safety combination HD	ME82384	--
17	Type AA safety device for separation from wastewater disposal in accordance with EN 1717	--	present on the building side
18	Water stop (leak water detector with cut-off valve and sensor)	ME01056	--
	The following additional material can be ordered:		
19	External tap for demineralised water	ME91900	--
	Hose PTFE (8/6 mm, 5 m, wastewater hose)	ME39180	--

Example 4: Using the reverse osmosis unit MELAdem 47 (EA)

Shorten the PUR 6/4 mm (5 m) hose for the compressed air supply (4) to the required length.

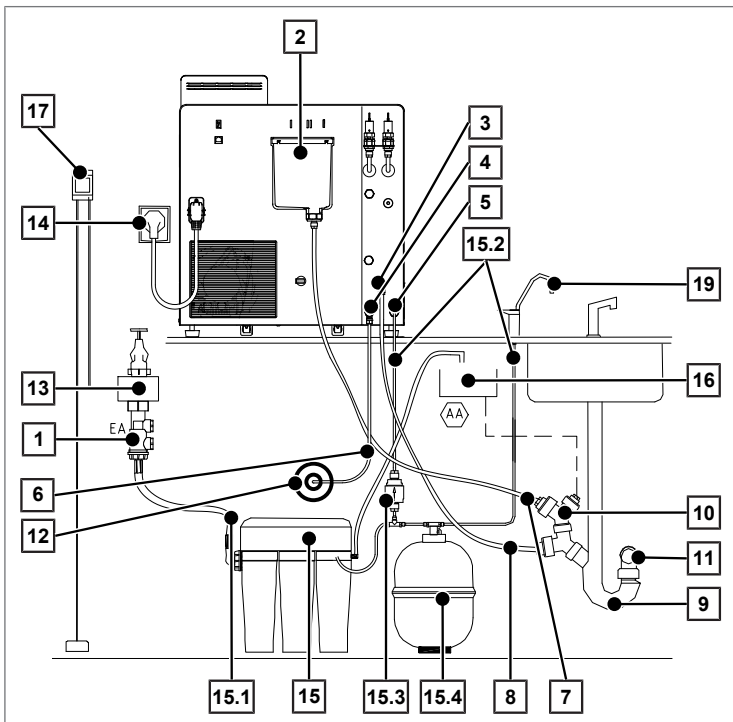
Cut the PTFE 8/6 mm (5 m) hose for the overflow funnel (2) and the wastewater connection (3) into two suitable pieces.

The direct connection of the water treatment unit to the domestic water system requires the installation of the water stop (17).



PLEASE NOTE

If the line pressure is less than 3 bar or if several devices are operated simultaneously, the pressure increase pump for MELAdem 47 must be used.



Position	Description	Art. no.	contained in
1	Return flow inhibitor type EA	ME75300	--
2	Overflow funnel	--	present on the device side
3	Wastewater connection	--	--
3.1	Threaded connection 1/8" on hose 8/6 mm	ME89120	present on the device side
4	Compressed air connection	--	--
4.1	2x Cu seal 13.5x18.5	ME36060	Installation set
4.2	Banjo bolt G 1/4"	--	Installation set
4.3	QSS-E Swivel	--	Installation set
5	Feed water connection, water treatment unit	--	--
5.1	2x Cu seal 13.5x18.5	ME36060	Installation set
5.2	Banjo bolt G 1/4"	--	Installation set
5.3	QSS-E Swivel	--	Installation set
6	PUR hose (black) 6/4 mm	see above	Installation set
7	PTFE hose (8/6 mm)	see above	Installation set
8	PTFE hose (8/6 mm)	see above	Installation set
9	Double-chamber siphon	ME26635	Installation set
10	2x double hose nozzle for siphon	ME37400	Installation set

Position	Description	Art. no.	contained in
10.1	2x Cu seal 13.5x20	ME32050	Installation set
10.2	2x QSS-E straight	ME38710	Installation set
10.3	2x wastewater adapter G1/4" internal thread	ME56930	Installation set
11	Wall outlet NW40	--	present on the building side
12	Compressed air supply	--	present on the building side
12.1	Coupling plug for compressed air on 6 mm hose	ME80230	Installation set
13	Water tap	--	present on the building side
14	Mains connection	--	present on the building side
15	MELAdem 47 reverse osmosis unit	ME01047	--
15.1	Water inflow hose	ME37220	ME01047
15.2	PUR hose (black) 6/4 mm	ME28820	ME01047
15.3	Filter for MELAdem	ME48240	ME01047
15.4	Pressure tank MELAdem 47 (with shut-off valve and hose)	ME57065	ME01047
16	Safety combination HD	ME82384	--
17	Type AA safety device for separation from wastewater disposal in accordance with EN 1717	--	present on the building side
18	Water stop (leak water detector with cut-off valve and sensor)	ME01056	--
	The following additional material can be ordered:		
19	External tap for demineralised water	ME91900	--
	PUR hose (black) 6/4 mm (10 m)	ME28820	--
	Hose PTFE (8/6 mm, 5 m, wastewater hose)	ME39180	--

Connection to wastewater system



NOTICE

The Careclave connection set must be used for connection to the wastewater system, as other waste water fittings may be made of materials that are not resistant to dental oil.

Since the backflow flap is not resistant to dental oil, the water drainage hose may only be connected to the lowest connection as shown in the following illustration. The backflow flap may only be installed at the points described.

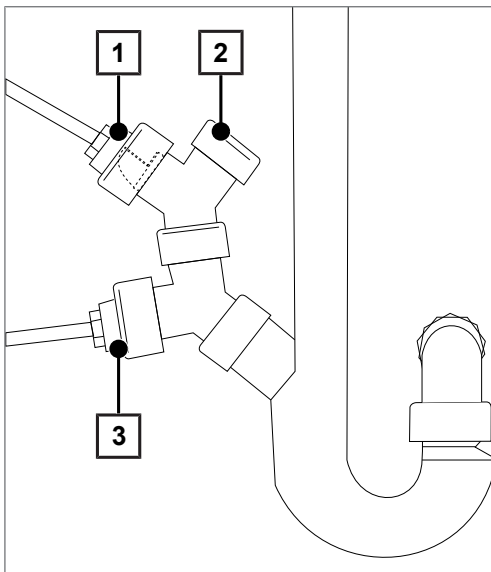


PLEASE NOTE

For safe operation of the device, two drain hoses must be installed between the device and the siphon.

- The siphon must not be more than 2.5 m away from the device.
- The hoses must be installed with a continuous slope.

1. Cut two suitable drain hoses from the supplied PTFE hose.
2. Remove the backflow flap from the double hose nozzle (pos. 3) for connecting the wastewater connection.
3. Connect the overflow funnel (pos. 1) and the wastewater connection (pos. 3) of the device with separate hoses via the double hose nozzle to a double chamber siphon.
4. Perform a drain test by pouring approx. 500 ml into the overflow funnel.
 - ↳ The drain funnel must be empty within 30 s.



- 1 Drain hose overflow funnel with backflow flap
- 2 Optional wastewater connection for another device or a water treatment unit
- 3 Drain hose without backflow flap

Connection to the compressed air supply

1. Assemble the compressed air connection, consisting of the banjo bolt (G 1/4"), SVS-E swivel and two copper seals (13.5x18.5).
2. Mount the assembled compressed air connection on the steam sterilizer.
3. Shorten the PUR 6/4 hose to the required length.
4. Connect the PUR hose to the steam sterilizer.
5. Connect the PUR hose with the coupling plug to the compressed air supply on the building side.

Aligning the device

To enable malfunction-free operation, the device must be set up in a horizontal position using a spirit level placed on the chamber flange. Then extend the front device feet by three revolutions to effect a slight rearwards slope of the device.

Setting up the Carebox

1. Remove the Carebox from its packaging.
2. Replace the pre-installed blind adapters with the required instrument adapters according to the user manual.
3. If necessary, replace the supplied Carebox identification plate with an individually labelled version.

Test runs

Carry out the test runs according to the record of installation and setup. Successful test runs are a prerequisite for commissioning the device.

Instructing the users

Hand over the manufacturer's inspection report. The declaration of conformity regarding the pressure equipment directive and the Medical Devices Directive is included in the manufacturer's inspection report.

Conduct a training program for the users and record the details in the training log.

4 Settings and adjustment

Service connection



PLEASE NOTE

While using the service connection with MELAviView, no other activities may be carried out on the device.

The service connection enables the diagnosis of the device and the control of valves via the MELAviView 4 Service software.

Settings on the device

Date and time

Check the date and time and set if necessary. Consult the user manual.

Display settings

If necessary, adjust the brightness of the display in the **Settings > Brightness** menu.

Volume

If necessary, adjust the volume in the **Settings > Volume** menu.

Contact data of the service partner

Enter the name and address of the responsible service partner in the **Settings > Service** menu.

Resetting the maintenance counter

Reset the maintenance counter according to separate instructions ("Reset maintenance counter", doc: AS_001-21).

User administration and logging

Instruct the user in the user administration and possible logging: see user manual. The Admin PIN can be found in the user manual.

IP addresses

The IP address is automatically obtained by the device via DHCP. If necessary, a static IP can be assigned to the device.

Drying and other program modifications

The programs of the steam sterilizer correspond in their sequences of fractionating, heating, sterilizing, pressure release, drying and aeration and its parameters pressure, temperature and time to the usual, practice-relevant requirements. For some programs, some options are available by default in the respective program options to influence the program sequence.

Changes to the program sequence can be made to the parameters of the , Care and the Carebox detection functions.

Further alterations to the program run are possible in each individual case and will still ensure the effectiveness of the sterilization, but may only be performed by authorized persons. Please consult your stockist or MELAG.

System and status log

Output a system and status log and document this on the record of installation and setup.

Counter status and measured values

You have the option of calling up counter status and other current technical data of the steam sterilizer via the **Device status > Counters and measurements** button.

5 Technical tables

Feed water quality

Minimum requirements placed on the feed water quality based on EN 13060, Appendix C

Substance / property	Feed water
Evaporation residue	≤ 10 mg/l
Silicon oxide, SiO ₂	≤ 1 mg/l
Iron	≤ 0.2 mg/l
Cadmium	≤ 0.005 mg/l
Lead	≤ 0.05 mg/l
Heavy metal traces apart from iron, cadmium, lead	≤ 0.1 mg/l
Chloride	≤ 2 mg/l
Phosphate	≤ 0.5 mg/l
pH Value	5 to 7.5
Appearance	≤ colourless, clear, without sediments
Hardness	≤ 0.02 mmol/l

Precision and drift behaviour

Sensors

Temperature sensors

Sensor type	PT 1000 Class A according to DIN EN 60751
Precision (at 135 °C)	± 0.42 K
Drift per year	± 0.05 K
Drift in 5 years	± 0.25 K

Pressure sensor

Sensor type	Piezoresistant absolute pressure sensor 0 to 4000 mbar
Precision	± 0.3 % corresponds to ± 12 mbar corresponds to approx. ± 0.13 K steam
Drift per year	± 0.2 % corresponds to ± 8 mbar corresponds to approx. ± 0.09 K steam
Drift in 5 years	± 1.0 % corresponds to ± 40 mbar corresponds to approx. ± 0.44 K steam

Drift behaviour of the circulation pressure sensor and the circulation temperature sensor

Measuring chains

Measuring chain for the temperature measurement on the electronics (without sensor)

Precision (at 135 °C)	± 0.2 K
Drift per year	± 0.005 K
Drift in 5 years	± 0.025 K

Measuring chain for the pressure measurement on the electronics (without sensor)

Precision	± 0.2 % corresponds to ± 8.0 mbar corresponds to approx. ± 0.09 K steam
-----------	---

Drift per year	$\pm 0.004\%$ corresponds to ± 0.16 mbar corresponds to approx. ± 0.017 K steam
Drift in 5 years	$\pm 0.02\%$ corresponds to ± 0.8 mbar corresponds to approx. ± 0.09 K steam

After 1 year

Entire measuring chain of the temperature measurement

Precision (at 135 °C)	at pure addition of individual errors approx. ± 0.70 K
Precision (at 135 °C)	according to Gauss' law of propagation approx. ± 0.47 K

Entire measuring chain of the pressure measurement

Precision	at pure addition of indiv. errors	$\pm 0.70\%$ corresponds to ± 28.0 mbar corresponds to approx. ± 0.30 K steam temperature
Precision	per Gauss' law of propagation	$\pm 0.41\%$ corresponds to ± 16.5 mbar corresponds to approx. ± 0.18 K steam temperature

After 5 year

Entire measuring chain of the temperature measurement

Precision (at 135 °C)	at pure addition of individual errors approx. ± 0.70 K
Precision (at 135 °C)	according to Gauss' law of propagation approx. ± 0.47 K

Entire measuring chain of the pressure measurement

Precision	at pure addition of individual errors	$\pm 0.70\%$ corresponds to ± 28.0 mbar corresponds to approx. ± 0.30 K steam temperature
Precision	per Gauss' law of propagation	$\pm 0.41\%$ corresponds to ± 16.5 mbar corresponds to approx. ± 0.18 K steam temperature

Nominal value tolerances

Step	P [mbar _a]	T [°C]	Care-S and Care-B	Care-Therm	Univer-sal-B	Gentle-B	Quick-S	Program phase
			Tolerance P / T					
SP-S	---	---	---	---	---	---	---	Program start
CP1	---	---	---	---	---	---	---	Carebox detection
KU1	w 3000	---	+2000/ -200	◀	x	x	x	Exterior cleaning
ZU1	w 3000	---	+2000/ -200	◀	x	x	x	Exterior cleaning
WU1	w 3000	w 55	P: +2000/ -200 and T \geq 55 °C	◀	x	x	x	Exterior cleaning - warm
DH1	---	A0 3000	x	min. A0 3000	x	x	x	Disinfection heating *)
P1	---	---	---	---	x	x	x	Nursing process
P2	---	---	---	---	x	x	x	Nursing process
SV1	c 500	---	+30/-30	x	x	x	x	Pre-evacuation
SK11	c 525	---	+100/-20	x	x	x	x	Steam entry drive channels
SK12	c 550	---	+100/-20	x	x	x	x	Steam inlet spray channels

Step	P [mbar _a]	T [°C]	Care-S and. Care-B	Care- Therm	Univer- sal-B	Gentle-B	Quick-S	Program phase		
									Tolerance P / T	
SK13	c 1500	---	+100/-20	x	x	x	x	Steam intake sterilization chamber		
SH1	c 1500	---	+100/ -100	x	x	x	x	Holding conditioning		
SF2	c 500	---	+30/-30	x	x	x	x	Fractionation evacuation		
SK21	c 525	---	+100/-20	x	x	x	x	Steam entry drive channels		
SK22	c 550	---	+100/-20	x	x	x	x	Steam inlet spray channels		
SK11	c 1900	---	x	x	+100/-20	c 1800 ●	c 1800 ●	Conditioning steam intake		
SK12	c 1900	---	x	x	+100/ -500	c 1800 ●	●	Holding conditioning		
SK13	c 1300	---	x	x	+20/-50	●	●	Conditioning pressure release		
SF12	c 300	---	x	x	+30/-30	●	c 225 ●	Fractionation evacuation		
SF13	c 2100	---	x	x	+100/-20	c 1800 ●	●	Fractionation steam intake		
SF21	c 1300	---	x	x	+20/-50	●	●	Fractionation pressure release		
SF22	c 200	---	x	x	+30/-30	●	c 150 ●	Fractionation evacuation	**)	
SF23	c 2100	---	x	x	+100/-20	c 1800 ●	x	Fractionation steam intake		
SF31	c 1300	---	x	x	+20/-50	●	x	Fractionation pressure release		
SF32	c 500	---	x	x	+30/-30	●	x	Fractionation evacuation		
SF33	c 2000	---	x	x	+100/-20	c 1500 ◀	◀	Fractionation steam intake		
SH1	c 2950	---	+60/-60	x	◀	c 1850 ◀	◀	Holding steam intake		
SH2	c 2950	---	+60/-60	x	◀	c 1950 ◀	◀	Holding control		
SS1	c 3031	c 134	+60/-60	x	◀	c 2080 ◀	◀	Sterilization entry		
SS2	c 3170	c 135.3	+60/-60	x	◀	c 2150 ◀	◀	Sterilization		
SA1	c 3000	---	+20/-50	x	x	x	x	Pressure release Carebox		
SA2	c 1943	---	+20/-50	x	1300	◀	◀	Pressure release		
TVA	c 190	---	---	◀	◀	x	x	Drying evacuation		
TDL	c 741	---	---	◀	◀	x	x	Compressed air drying		
ST12	c 80	---	x	x	---	---	---	Holding drying		
ST13	c 180	---	x	x	---	---	---	Drying ventilation		
ST21	c 80	---	x	x	---	---	---	Drying evacuation		
ST22	c 80	---	x	x	---	---	---	Holding drying	**)	
ST23	c 180	---	x	x	---	---	---	Drying ventilation		
ST31	c 80	---	x	x	---	---	---	Drying evacuation		
ST32	c 80	---	x	x	---	---	---	Holding drying		
SB12	c ***)	---	---	---	---	---	---	Ventilation		
SP-E	---	---	Value	◀	◀	◀	◀	Program end		

Key:

*) only Care-Therm

**) only Universal-B

● as in the Universal-B

--- not specified

***) Ambient pressure

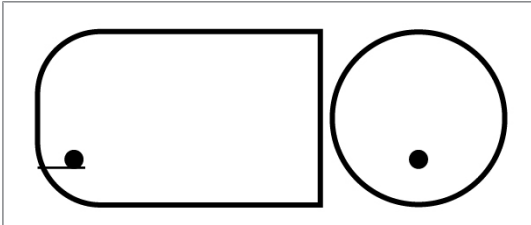
◀ as in Care-S

x not applicable

Empty chamber test

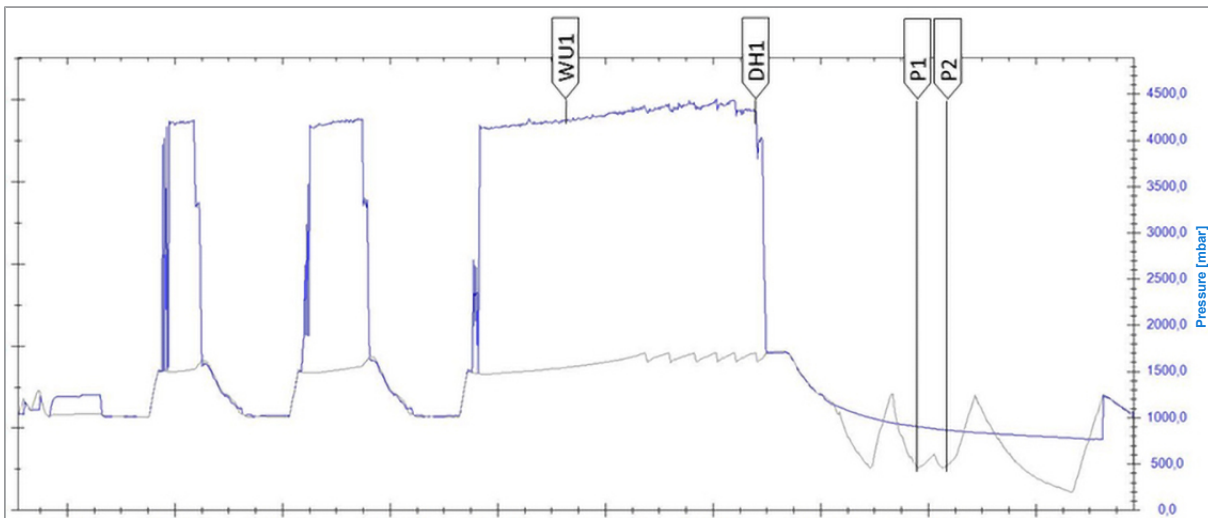
The coldest point in the sterilization chamber during the empty chamber test lies directly on the temperature sensor (see circular marking in the following figure). The temperature in the rest of the sterilization chamber is almost the same all over (0.6 K range).

Schematic side and fore view of the sterilization chamber

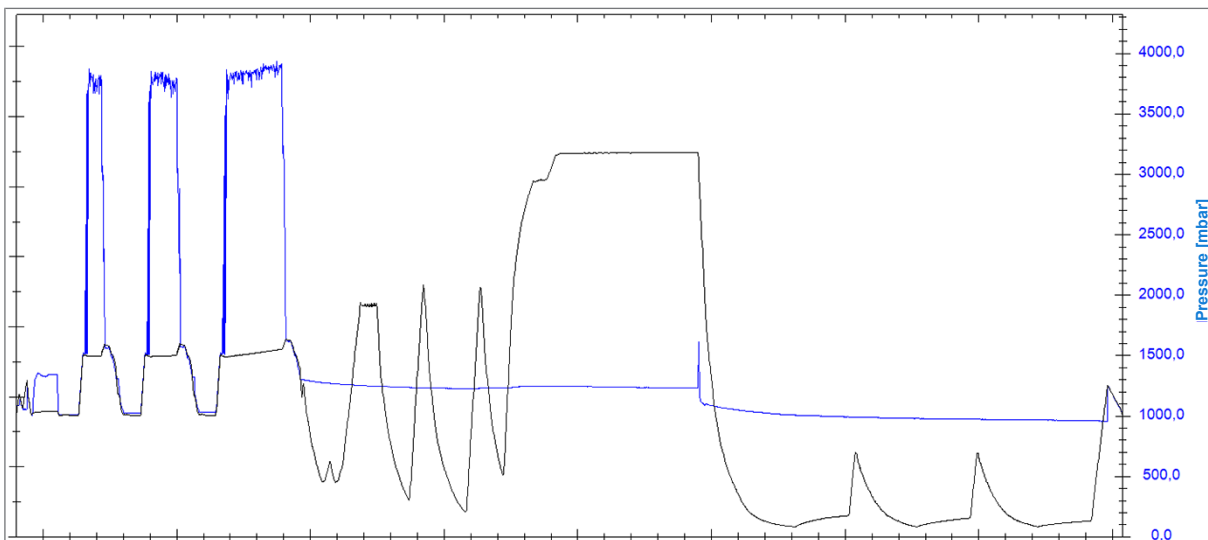


Pressure-time chart

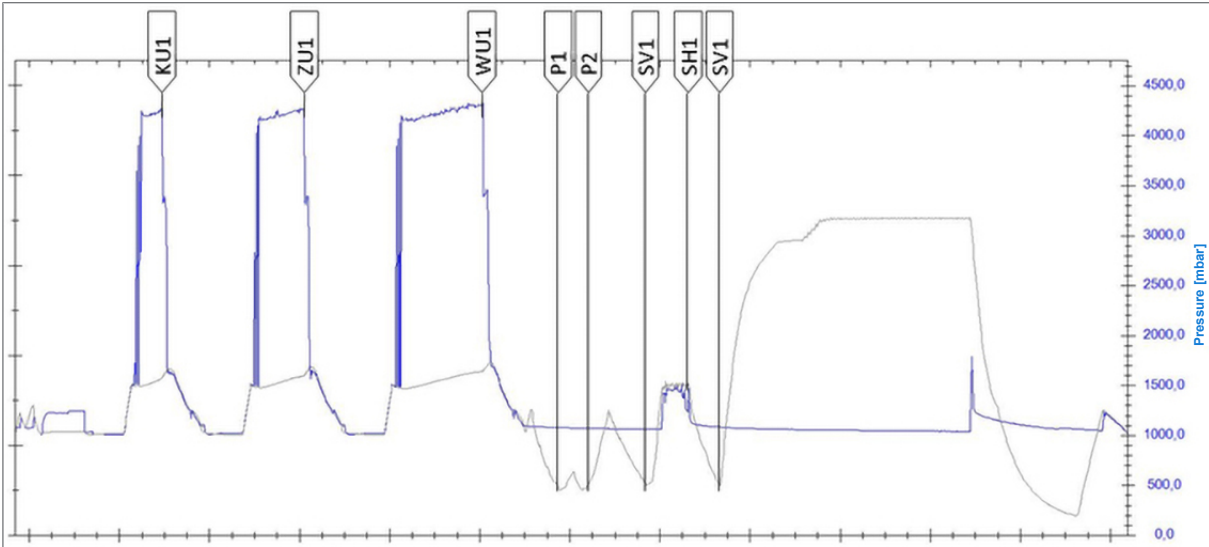
Pressure-time diagram for Care-Therm, A0 > 3000



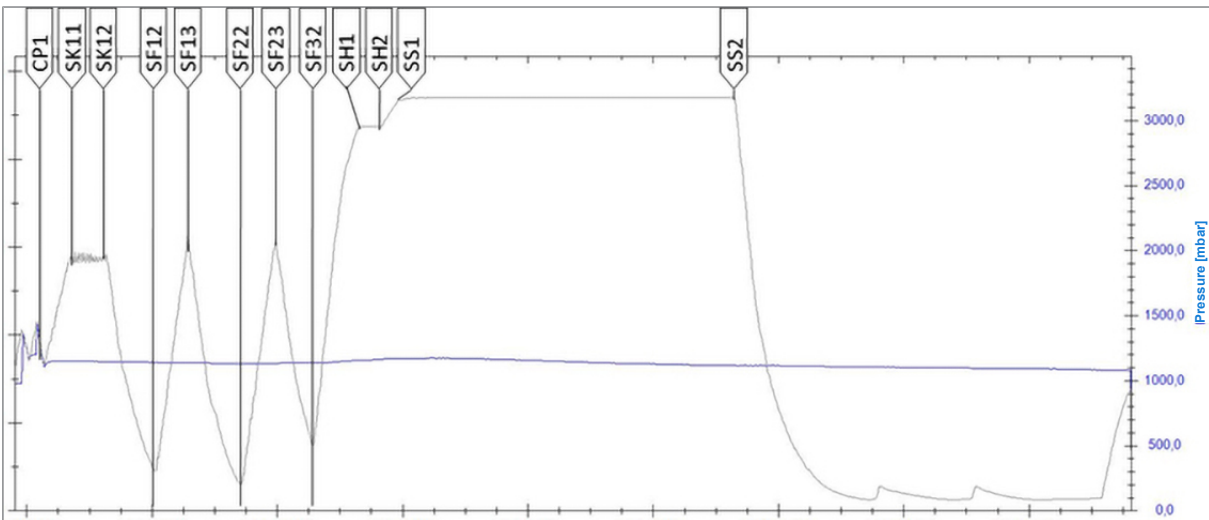
Pressure-time diagram for Care-B



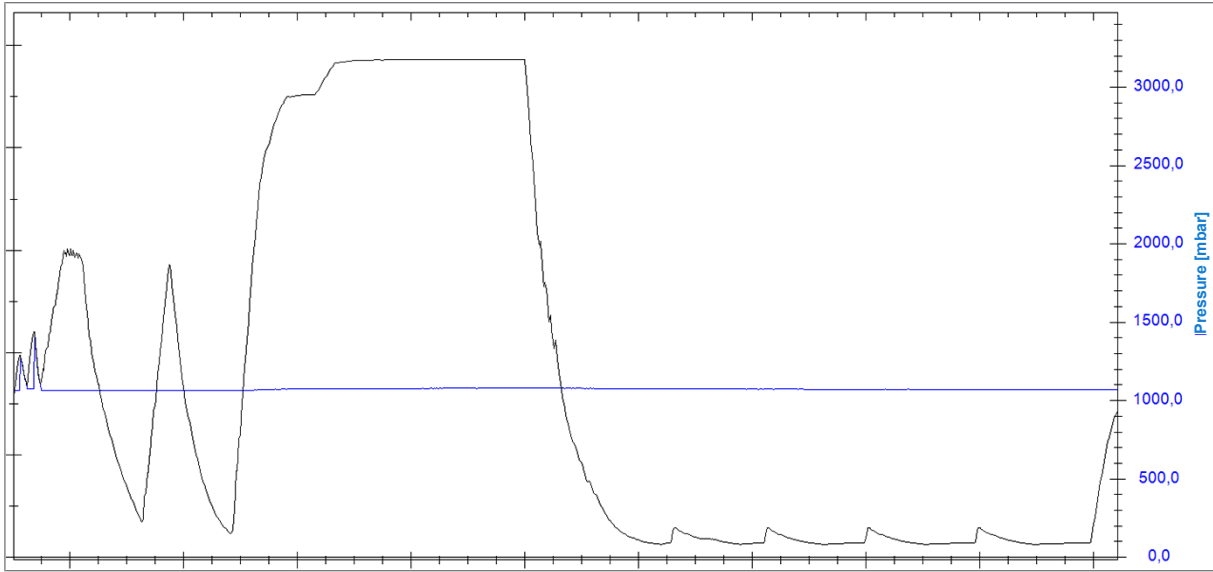
Pressure-time diagram for Care-S, 134°C and 2.1 bar



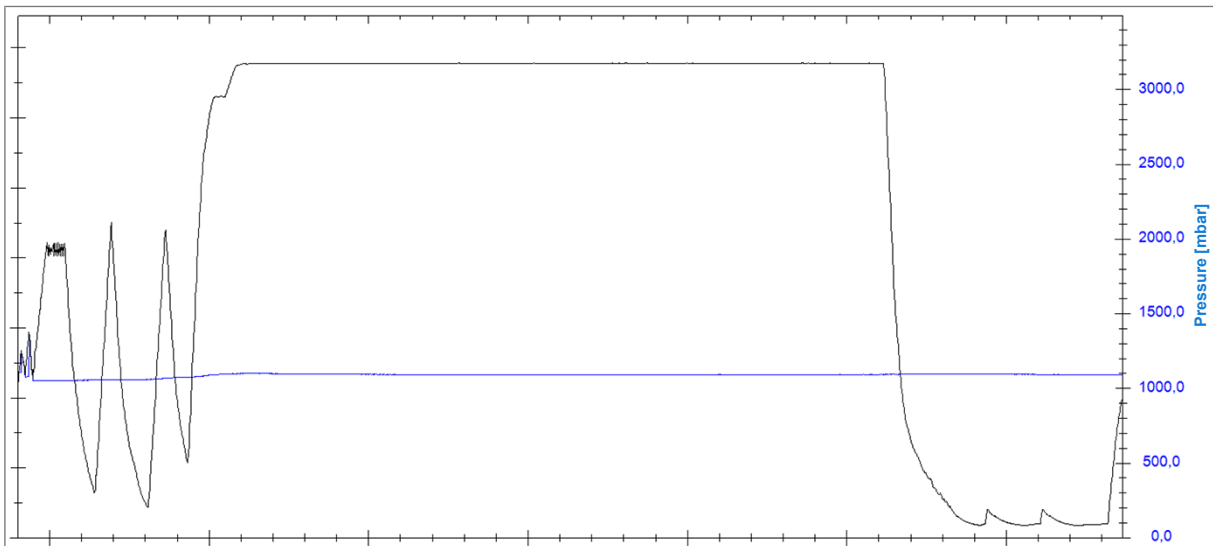
Pressure-time diagram for Universal-B, 134°C and 2.1 bar

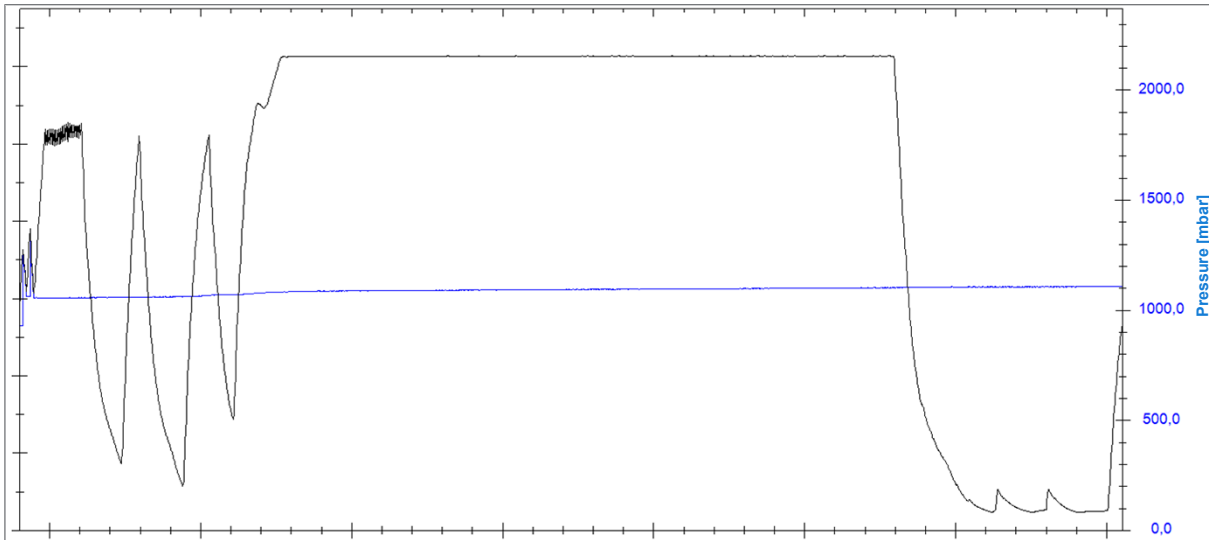


Pressure-time diagram for Quick-S



Pressure-time diagram for Prion-B



Pressure-time diagram for Gentle-B**Type plate steam generator**

CE 0035 PED 2014/68/EU		
DIN EN 13445:2014 Fluid group: 2		
MELAG Medizintechnik GmbH & Co. KG, Geneststr.6-10, D-10829 Berlin		
	Jacket:	Chamber:
Ps=Pd:	-1...3 bar	-1...3 bar
Ts,max=Td:	145°C	145°C
Ts,min:	5°C	5°C
Volume:	4,4 l	17,8 l
PT:	6,3 bar	4,7 bar
Test date:MM/JJJJ	Power:3kW	
S/N:ABJJXXXX-vv	MELAG:82420	

Certificate of Suitability

According to the recommendations of the Commission for Hospital Hygiene and Infection Prevention at the Robert Koch Institute

Manufacturer: MELAG Medizintechnik GmbH & Co. KG
Address: Geneststraße 6-10
10829 Berlin
Country: Germany
Product: Careclave® 618
Type of device: Combination steam sterilizers
(steam sterilizer with washer-disinfector functionality)
Classification: Class IIb
Device type acc. to EN 13060: Type B

We herewith declare that the above designated product is suited for sterilization of

- **Solid instruments (wrapped and unwrapped)**
- **Porous goods (wrapped and unwrapped)**
- **Products with narrow lumen (wrapped and unwrapped)**
- **Simple hollow items (wrapped and unwrapped)**

Instructions on load quantities and loading variants are specified in the user manual and must be observed.

Be sure to observe the manufacturer's instructions for medical devices intended for sterilization according to EN ISO 17664.

We herewith declare that the following test system is suited for testing the above cited steam sterilizer.

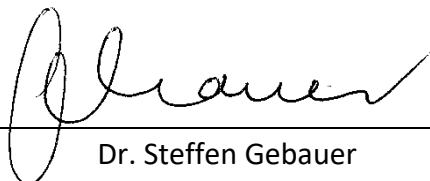
- **Helix-Test body according to EN 867-5:
MELAcontrol® Helix and MELAcontrol® Pro**

In addition, the Careclave is intended for the reprocessing of dental transfer instruments and hollow bodies classified as semi-critical, which are connected in the Carebox:

- **Handpieces**
- **Contra-angles**
- **Turbines**
- **Ultrasonic and air scaler tips**

The internal and external cleaning as well as the subsequent thermal disinfection comply with the specifications of **EN ISO 15883-1 and -2**. Optionally, automatic lubrication with care oil can also be carried out.

Berlin, 01.10.2021



Dr. Steffen Gebauer
(Management)



MELAG Medizintechnik GmbH & Co. KG

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Germany

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Web: www.melag.com

Original instructions

Responsible for content: MELAG Medizintechnik GmbH & Co. KG
We reserve the right to technical alterations

Your stockist