User manual

MELAtherm® 10

Washer-Disinfector

from software version 1.313

EN

Dear customer,

We thank you for your confidence demonstrated by the purchase of this MELAG product. As an owner-run and operated family concern founded in 1951, we have a long history of successful specialization in hygiene products for practice-based use. Our focus on innovation, quality and the highest standards of operational reliability has established MELAG as the world's leading manufacturer in the instrument reprocessing and hygiene field.

You, our customer are justified in your demand for the best products, quality and reliability. Providing **"competence in hygiene"** and **"Quality – made in Germany"**, we guarantee that these demands will be met. Our certified quality management system is subject to close monitoring: one instrument to this end is our annual multi-day audit conducted in accordance with EN ISO 13485. This guarantees that all MELAG products are manufactured and tested in accordance with strict quality criteria.

The MELAG management and team.

CE 0197

Contents

1 General guidelines

Please read this user manual carefully before commissioning the device. The manual includes important safety instructions. Make sure that you always have access to digital or printed version of the user manual.

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	Description
	Indicates a dangerous situation, which if not avoided, could entail slight to life-threatening injuries.
	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	Description
`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.

Disposal

MELAG devices are synonymous with high quality and a long life-span. When you eventually need to decommission your MELAG device, the required disposal of the device can take place with MELAG in Berlin. Simply contact your stockist.

Dispose of accessories and consumption media which you no longer require in the appropriate manner. Comply with all relevant disposal specification in terms of possibly contaminated waste.

The packaging protects the device against transport damage. The packaging materials have been selected for their environmentally-friendly disposability and can be recycled. Returning the packaging to the material flow reduces the amount of waste and saves raw materials.

Dispose of waste from process agents in accordance with the specifications in the safety data sheet. Information regarding this topic is provided in the safety data sheets or can be obtained directly from the manufacturer of the process agents.

MELAG draws the operator’s attention to the fact that they are responsible for deleting personal data on the device to be disposed of.

MELAG draws the operator’s attention to the fact that they may be legally obliged (e.g. in Germany according to ElektroG) to remove used batteries and accumulators non-destructively before handing over the device, provided they are not enclosed in the device.

2 Safety

When operating the device, comply with the following safety instructions as well as those contained in subsequent chapters. Use the device only for the purpose specified in these instructions. Failure to comply with the safety instructions can result in injury and/or damage to the device.

Qualified personnel

- The instrument reprocessing using this washer-disinfector may only be carried out by competent personnel.
- The operator must ensure that the users are regularly trained in the operation and safe handling of the device.

Power cable and power plug

- Comply with all legal requirements and locally-specified connection conditions.
- Never operate the device if the plug or power cable are damaged.
- The power cable or plug should only be replaced by authorised technicians.
- Never damage or alter the power plug or cable.
- Never bend or twist the power cable.
- Never unplug by pulling on the power cable. Always take a grip on the plug.
- Never place any heavy objects on the power cable.
- Ensure that the power cable does not become jammed in.
- Never lead the cable along a source of heat.
- Never fix the power cable with sharp objects.

Opening the housing

- Never open the device housing. Incorrect opening and repair can compromise electrical safety and pose a danger to the user. The device may only be opened by an authorised technician who must be a qualified electrician.

Notification requirement in the event of serious accidents in the European Economic Area

- Please note that all serious accidents which occur in connection with the medical device (e.g. death or serious deterioration in the state of health of a patient) which were presumably caused by the device, must be reported to the manufacturer (MELAG) and the relevant authority of the member state, in which the user and/or patient resides.

3 Performance specifications

Intended use

The MELAtherm 10 DTA / MELAtherm 10 DTB are intended for use in a medical context such as a clinic or medical and dental practices. ▸EN ISO 15883-1 and -2 defines them as washer-disinfectors intended for the cleaning and disinfection of medical instruments prior to their re-use or a further reprocessing step such as sterilization in a steam sterilizer. You can subject thermostable medical instruments (i. e. instruments which are heat resistant to a temperature of 95 °C) and invasive thermostable instruments to automatic reprocessing as long as they are suitable for this purpose and have been approved for such treatment by their manufacturer. The cleaning is performed using water in combination with a ▸process agent. Subsequent disinfection is thermal disinfection.

The washer-disinfectors are not intended for use on patients or in patient care areas. Typical user groups are doctors, trained personnel and service technicians.

This device is NOT suitable for the reprocessing of:

- Thermo-unstable instruments e.g. flexible endoscopes
- Laboratory waste requiring disposal
- Crockery
- Bedpans

User benefits

Universal use

The device both cleans and disinfects. The disinfection phase is conceived so as to reach an ▸A0 value of at least 3000. This kills vegetative bacteria, fungi and their spores and viruses (incl. HBV, HCV). This means that the ▸effectiveness range AB is reached in accordance with the specifications of the Robert Koch Institute.

Active drying

The device is equipped with active drying. An integrated drying fan dries the instruments from outside and in after cleaning and disinfection. The HEPA filter guarantees drying with contamination and particle-free air. This protects the instruments against corrosion. Manual subsequent drying is usually not necessary. The geometry of some hollow-body instruments mean that they require additional drying.

Automatic sieve recognition

The device recognises automatically before a program start whether the fine sieve has been inserted in the base of the washing chamber. The fine sieve avoids a situation in which instrument components enter the opening of the drain pump or the circulating pump during cleaning, thereby compromising the function of the pumps, rinse arms and the injector rail.

Internal water softening

The device is equipped with an internal water softening unit. The water hardness of the local drinking water is set on the device. The internal water softening unit then automatically adjusts itself to the most suitable performance. This ensures best reprocessing results.

Monitoring the rotation speed of the rinse arms

The rotation speed of the rinse arms is subject to permanent monitoring during a program run. This ensures that the cleaning process proceeds without hindrance and the rinse arms do not become blocked e. g. by protruding instruments in the washing chamber.

Monitoring the rinsing pressure

The rinse pressure is monitored by a pressure sensor during a program run. This ensures an effective cleaning performance. The device aborts a current program if too much foam is generated.

Metering monitoring

The required amounts of cleaning agent and neutraliser are metered using a metering pump. A measuring turbine performs flow monitoring. The rinse aid is metered using a metering pump subject to monitoring for rotation speed.

Drawer for process agents

The drawer for the ▸process agents is located in the lower area of the device in which the cleaning agent, neutraliser and rinse aid containers are stored.

Automatic conductivity measurement

If the device is supplied with ▸DI water in the final rinse, the DI water fed in is subject to automatic internal conductivity measurement.

Program sequence

The following program steps are indicated on the display during the program run. The program runs will be significantly defined through the process-relevant parameters (VRP) specified in the technical manual.

Pre-cleaning

The water-soluble soiling will be rinsed roughly with cold water and removed from the device. This prevents protein fixing from too high a water temperature; the soiling load of the rinse liquor in the following program steps will be reduced considerably. In **`Intensive-Program`**, this step is performed twice.

Cleaning

Water is fed into the washing chamber and heated. When the metering temperature has been reached, a mildly-alkaline or alkaline ▸cleaning agent will be metered. Once the cleaning temperature has been reached, the holding time begins, which ensures a reproducible cleaning effectiveness.

Neutralisation

The cleaned instruments will be freed from alkali residue during neutralisation. At the same time, this prevents the development of acid-soluble deposits such as limescale and foreign corrosion. To this end, water will be fed into the washing chamber, a citric acid or phosphoric acid-based ▸neutraliser will be metered and short circulation will be performed.

Intermediate rinsing

Water is fed into the washing chamber and circulated cold. This rinses off the neutraliser residue. In **`Ophthalmo-Program`**, this step is performed twice.

Disinfection

The disinfection is the same as the final rinse. The cleaned and rinsed instruments are subject to thermal disinfection. Water, preferably ▸DI water is fed into the washing chamber and heated. When the metering temperature is reached, a ▸rinse aid is metered in the **`Quick-Program`**, **`Universal-Program`** and **`Intensive-Program`**. Once the disinfection temperature has been reached, the holding time begins, which ensures a reproducible disinfectant effect.

Drying

Active drying is effected by drawing ambient air through a class H13 ▸HEPA filter and heating it. The instruments are dried inside and out with hot, filtered air.

Displaying the batch counter

The display shows the batch number of the last program run and the total batch counter after every program end or the end of a program abort.

Process agents

Comply with the following for safe handling:

- Handle all ▸process agents with care. The cleaning agent, neutraliser and rinse aid contain irritants or even caustic substances.
- Comply with the safety instructions in the documentation of the process agents and wear the prescribed protective equipment.
- In the case of damage, every type of liquids (e.g. in the drawer, in the device floor trough or liquid issued from the device) could potentially contain aggressive process agents.
- Only MEtherm process agents are approved by MELAG. Other process agents have not been tested or checked by MELAG and, in the worst case, can lead to damage to the washer-disinfector and the instruments. In such a case, MELAG does not accept any liability.
- MEtherm process agents are optimally adapted for the ▸reprocessing with MELAtherm. The suitability has been proven in comprehensive cleaning effectiveness and material-compatibility tests.
- Please address all queries relating to the compatibility of process agents with the instruments to the instrument manufacturer.
- Every change of a process agent in a validated device necessitates revalidation. Comply with all national regulations.

Pre-set metering concentration

The metering concentrations have been harmonised to MEtherm and are factory-set as follows.

Program	▸Cleaning agent	▸Neutraliser	▸Rinse aid
Universal-Program	6 ml/l	1.5 ml/l	0.3 ml/l
Quick-Program	6 ml/l	1.5 ml/l	0.3 ml/l
Intensive-Program	10 ml/l	1.5 ml/l	0.3 ml/l
Ophthalmo-Program	6 ml/l	1.5 ml/l	--

NOTICE

Only trained and ▸authorised technicians are permitted to change the metering concentration in due consideration of the recommended user concentration.

4 Description of the device

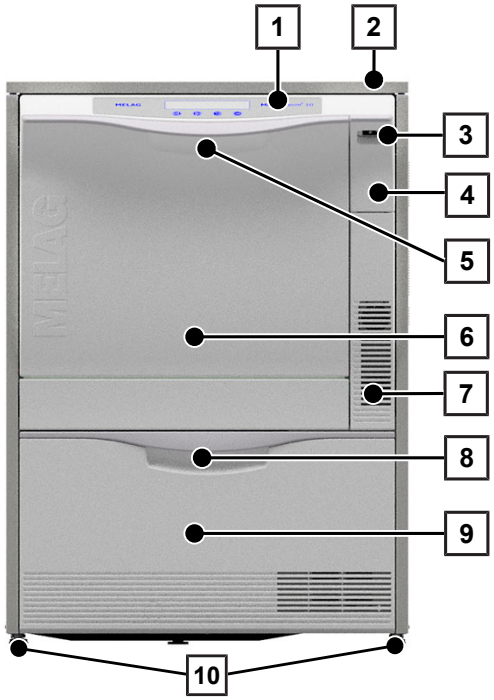
Scope of delivery

Please check the scope of delivery before setting up and connecting the device.

- MELAtherm 10
- User manual
- Technical manual
- Record of installation and setup
- Manufacturer's inspection report and declaration of conformity
- Warranty certificate
- User manual Accessories for MELAtherm
- CF card for documentation
- Filling funnel for the regenerating salt
- Starter package of regenerating salt
- Hose bend for outflow
- Ø 16-27/9 clamp for outlet hose
- Process agent labels
- Magnet pocket for device log book

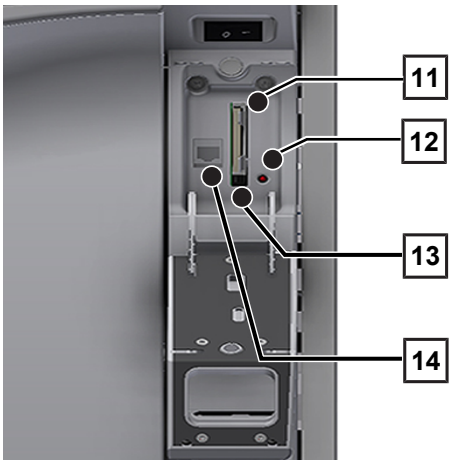
Views of the device

View from front



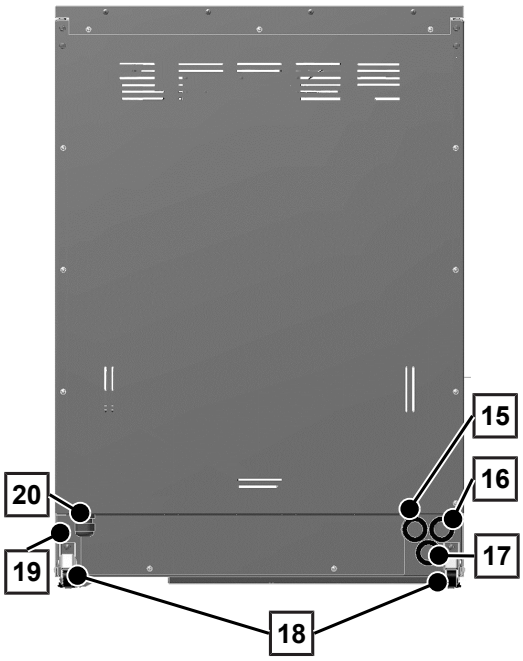
1 Operating and display panel
2 Cover plate (optional)
3 Power switch
4 Cover for card slot and Ethernet data interface (for service technician)
5 Door handle
6 Hinged door, opens forwards
7 Ventilation slots for air outlet
8 Drawer handle
9 Drawer for ▸process agents
10 Device foot

Cover card slot open



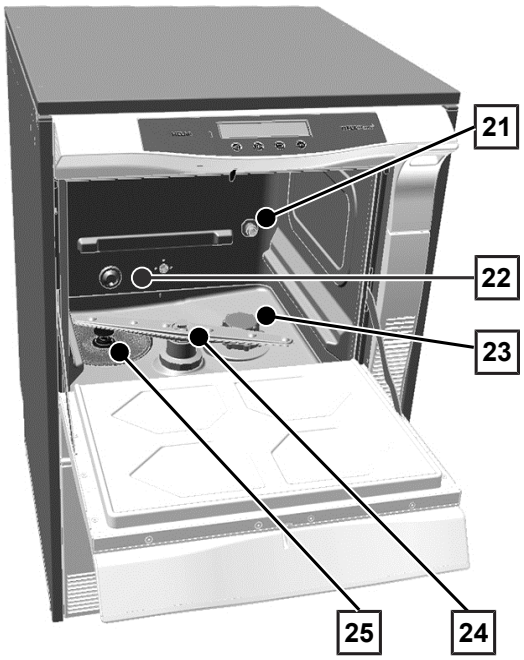
11 Card slot
12 LED
13 Ejection button
14 Ethernet data connection

View from rear



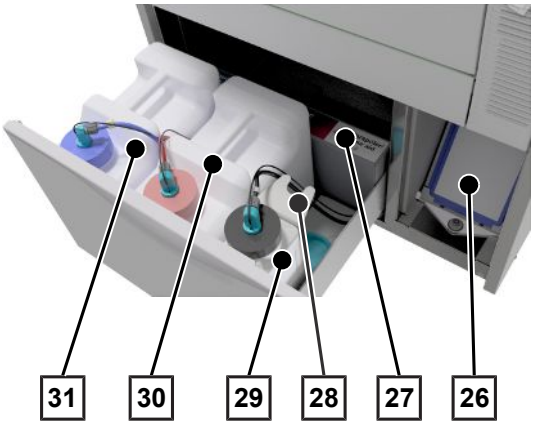
15 Connection for de-ionised water (▸DI water)
16 Connection for cold water
17 Effluent connection
18 Transport rollers
19 Ethernet data connection for permanent network connection
20 Mains cable

View from inside



21 Connection tube for injector rails
22 Cold water (CW) inflow and deionised water (DI)
23 Salt container
24 Lower rinse arm
25 Coarse and fine sieve

Process agent drawer, open



26 Drying fan pre-filter
27 Assignment of the process agents
28 Suction lance bracket
29 Container for rinse aid with suction lance
30 Container for neutraliser with suction lance
31 Container for cleaning agent with suction lance

Symbols on the device

Type plate


Manufacturer of the product


Date of manufacture of the product

Label as medical device

Article number of the product

Serial number of the product


Observe user manual or electronic user manual


Do not dispose of product in household waste


CE marking

In affixing this CE mark, the manufacturer declares that this medical device fulfils the basic requirements of the Medical Device Directive. The four-digit number confirms that this is monitored by an approved certification agency.


Permissible temperature range of water supply


Permissible pressure of water supply


Electrical connection of the product: Alternating current (AC)

Rear of the device

The WaterMark certificate is a seal of quality for plumbing and drainage products in Australia and New Zealand.

It confirms that a product meets the requirements of the ABCB (Australian Building Codes Board) and is approved for application.

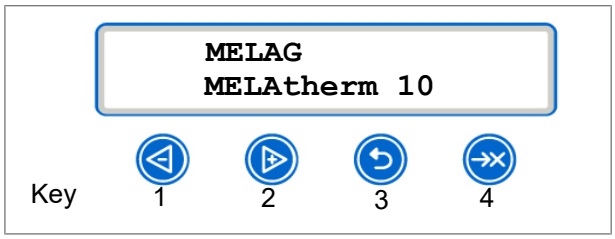
Symbols on the power switch

Switching on device


Switching off device

Operating panel and acoustic signals

The operating panel consists of a two-row LED display and four membrane keys.



Key function

Key		Function / Explanation
1...2	or	Navigation: BACKWARDS, FORWARDS to adjust a value: SMALLER, LARGER
3		Unlock door, BACK, ABORT Leave menu
4		Confirming messages (ENTER, OK, YES, SELECTION). QUIT following warning or malfunction message
2+3	and	The system status is displayed with information relating to the device e. g. serial number, version of the device software, daily and total batches etc.
1+3	and	QUIT + DOOR, i.e. to acknowledge the program abort and unlock the door
3...4	or	Delete all logs located in the internal log memory

Acoustic signals

The device issues acoustic signals for information purposes.

Signal/tone	Meaning
1x	Confirmation, warning or notification
3x	Refill with salt soon; program abort; abort/end reached after drying abort
5x	Program completed successfully
10x	Malfunction

Menu structure

MAIN MENU
- P01 Universal-Program
- P02 Quick-Program
- P03 Intensive-Program
- P04 Ophthalmo-Program
- Z01 Rinsing
- Z02 Emptying
- Z03 Conductivity DI
- Z04 Air removal
- Z05 Regeneration
- Z06 Time metering 60s
- **M01→DOCU MENU (output of saved logs via the following output media)**
  Select output medium: automatic, CF card, MELAprint, PC
  - 01 Log list
  - 02 Last log
  - 03 Logs of day
  - 04 Logs of week
  - 05 Logs of month
  - 06 All logs
  - 07 Last malf. log
  - 08 Malf. logs of day
  - 09 Malf. logs of week
  - 10 Malf. logs of month
  - 11 All malfunction logs
  - 12 Caption log
  - 13 Status log
  - 14 System log
  - 15 Format CF card
- **M02→ SETUP MENU**
  - 01 DI water
  - 02 Autom. logging
  - L ✚
  - 03 Date
  - 04 Time
  - 05 Display contrast
  - 06 Language
  - 07 Water °dH
  - 08 → **DIAGNOSIS+SERVICE**
    - ACOUT AC outputs
    - DCOUT DC outputs
    - AIN Analog. inputs
    - DINZ count. inputs
    - DIN Digital inputs
    - SERVICE MENU
    - L ✚
    - Maint. Counter Date
    - DEMO Mode

Water softening unit

The tap water is processed in the internal water softening unit to produce an optimal cleaning outcome.

- Use coarse-grain regeneration salt (NaCl) to regenerate the water softening unit.

Water hardness conversion table

°dH	mmol/l	°f	°e		°dH	mmol/l	°f	°e		°dH	mmol/l	°f	°e
1	0.2	2	2		15	2.7	27	19		28	5.0	50	36
2	0.4	4	3		16	2.9	29	20		29	5.2	52	37
3	0.5	5	4		17	3.1	31	22		30	5.4	54	38
4	0.7	7	5		18	3.2	32	23		31	5.6	56	39
5	0.9	9	7		19	3.4	34	24		32	5.8	58	41
6	1.1	11	8		20	3.6	36	25		33	5.9	59	42
7	1.3	13	9		21	3.8	38	27		34	6.1	61	43
8	1.4	14	10		22	4.0	40	28		35	6.3	63	44
9	1.6	16	12		23	4.1	41	29		36	6.5	65	46
10	1.8	18	13		24	4.3	43	31		37	6.7	67	47
11	2.0	20	14		25	4.5	45	32		38	6.8	68	48
12	2.2	22	15		26	4.7	47	33		39	7.0	70	49
13	2.3	23	17		27	4.9	49	34		40	7.2	72	51
14	2.5	25	18										

5 First steps

Setup and installation

PLEASE NOTE

For setup and installation, observe the information in the technical manual. This contains all building-side requirements.

Comply with the following for safe handling:

- Check the device after unpacking for any damage suffered during transport.
- The device should only be setup, installed and commissioned by MELAG authorised persons.
- The connections for electrical provision and water supply and discharge must be setup by trained personnel.
- The disconnection device must be freely accessible after installation so that the device can be taken from the electricity supply at any time.
- DTA device versions are disconnected from the mains via the on-site main switch. DTB device versions disconnect from the mains by pulling the mains plug from the socket.
- Using the optional electronic leak detector (water stop) minimises the risk of water damage.
- The device is not suitable for operation in explosive atmospheres.
- Install and operate the device in a frost-free environment.
- The device 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.
- The documentation media (computer, CF card reader etc.) must be placed in such a way that they cannot come into contact with liquids.

Record of installation and setup

The record of installation is to be completed by the responsible stockist and a copy sent to MELAG as proof of the correct setup, installation and initial commissioning. This is a constituent part of any guarantee claim.

Water supply

The ▸reprocessing of medical devices requires the use of potable water in accordance with the Drinking Water Ordinance.

The potable water supply is effected on the input side via the house supply.

The quality of the water used for reprocessing influences the value-retention of the ▸load. Silicate or chloride cannot be removed by the internal water softening unit and will result in the development of stains and corrosion. Working in consultation with specialist associations (e.g. in Germany ▸AKI, ▸DGSV, ▸DGKH) MELAG recommends performing a final rinse with demineralised water (DI water).

PLEASE NOTE

The final rinse and the partial cycle Disinfecting are the same in MELAtherm.

During installation, it is determined whether DI water is to be used in the final rinse (partial cycle Disinfecting). In addition, depending on customer-specific requirements, the service technician can parametrise the partial cycles pre-cleaning, cleaning, neutralising and intermediate rinsing to DI water. The DI water supply is effected via a water treatment unit (e.g. MELAdem 53/53 C).

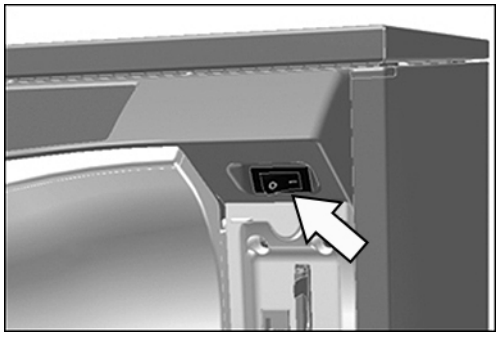
Increased requirements can be placed on the quality of the ▸DI water (e.g. a low endotoxin content) for the ▸reprocessing of certain medical devices such as ophthalmic instruments.

Comply with the following:

- In such cases, an additional filter system is required for the reprocessing of DI water. Comply with the specifications of the user documentation of your water treatment unit.
- It is possible that the drinking water has been contaminated by the water installation. This includes both the domestic installation and the entire upstream peripherals.
- Arrange for a check of the drinking water quality at the removal point or request a report (e.g. from the building management) before setting up and installing the device.
- Further information is available from the corresponding trade associations and their publications. If in doubt, contact your stockist or the pertinent professional association.

Switching the device on and off

▶ Switch the device on or off at the power switch.



Opening and closing the door

The door is automatically closed via a motor. For this reason, it is important that the device is connected to the power supply and is switched on. The door unlocks automatically after a successful program run. The door cannot be opened following a power outage. In such a case, activate the Manual door emergency-opening [▸ Page 19].

PLEASE NOTE

The door can only be opened during a program run using a program abort.

The door will be unlocked after the program abort has been acknowledged and sufficient cooling has been performed.

Opening the door

1. Switch on the device at the power switch.
2. Press the key.
   ➥ The door is unlocked.
3. Open the door forwards.

Closing the door

▶ Close the door and press it until the motorised lock sets in.

Manual door emergency-opening

The door can be opened manually via the emergency opening following a power failure or malfunction.

Comply with the following for safe handling:

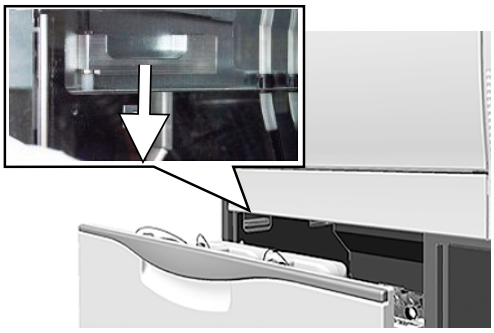
- Escaping steam brings the danger of scalding.
- Never operate the door emergency-opening mechanism during an active program.
- If a program is aborted by the emergency door opening, this is classed as not having been completed successfully. The instruments must be reprocessed again.
- Wear suitable personal protective equipment (e. g. gloves and goggles).

Operating the door emergency-opening

1. If the device is still switched on, switch it off at the power switch.
2. Pull out the process agent drawer.

   ↪ An emergency-opening grip for the door is located in the front left-hand side of the device.

3. Pull down on the grip until you hear a clicking sound.

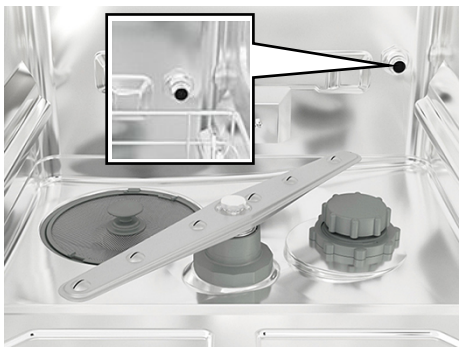


4. Pull the door forwards strongly using the grip.

Inserting the basis basket

A fitting for connecting the injector rail or the blind cap is located on the right-hand rear side of the washing chamber of the washer-disinfector.

▶ Slide the basis basket with the injector rail opening or the blind cap leading into the washing chamber until it connects to the fitting.



Filling the regenerating salt

NOTICE

Malfunctions of the water softening unit from unsuitable regenerating salt.

Fine grain regenerating salt can cause device malfunctions. MELAG does not recommend the use of pellets, as the salt dissolves too slowly.

- Use only special, coarse grain regenerating salt (additive-free NaCl), e.g. regenerating salt for MELAtherm.
- Never use cooking salt, table salt, de-icing salt, cattle salt or road salt. These salts usually contain insoluble components.

Filling the regenerating salt for the first time

The first filling of the regenerating salt is to be performed by the ▸authorised technician whilst commissioning the device.

Refilling with regenerating salt

Insufficient regenerating salt or its absence will result in the display of the corresponding display message.

- If the display shows the message **`Please refill salt soon`**, fill the regenerating salt immediately, or upon the display of the next message at the latest.
- If the display shows the message **`Salt storage empty. Please refill salt!`**, you must fill the regenerating salt immediately. Otherwise you will be unable to start a further program.

You can refill the regenerating salt at any time without the display message previously having been shown.

Proceed as follows to refill the regenerating salt:

1. Acknowledge the display message with the  key.
2. Open the door.
3. Remove the basis basket.
4. Unscrew the screw cap of the salt container anti-clockwise.

5. Place the filling funnel for the regenerating salt on the opening and fill the salt container.

6. Remove the filling funnel and any excess salt residue from the washing chamber.

NOTICE

The salt has a corrosive effect on stainless steel. Salt residue must be removed from the washing chamber and the screw cap of the salt container be closed tightly to protect the instruments and the device.

- Salt residue on the sealing ring leads to leaks. Ensure that the sealing ring is clean before screwing on the screw cap.

7. Screw the screw cap of the salt container tight.
8. Insert the basis basket.
9. Start the `Rinsing` program without (instrument) load.

Regenerating the water softening unit

The internal water softening unit regenerates automatically in certain intervals. The program run time is extended by a number of minutes. You can regenerate the water softening unit manually after e.g. having filled it with salt without a warning having previously been issued.

▶ Start the `Regeneration` program.

Metering process agents

The concentration of the process agents is set once during the initial device setup performed by the service technician, see the technical manual. During a program run, the preset concentration of the relevant process agents is metered automatically.

Holding process agents ready

CAUTION

Danger of acid burns from irritant substances!

Inappropriate handling of the process agents can lead to chemical burns and injury to health.

- Comply with the information from the manufacturer of the process agents.
- In the case of damage, every type of liquids (e. g. in the drawer, in the device floor trough or liquid issued from the device) could potentially contain aggressive process agents.
- Protect your eyes, hands, clothing and all surfaces from contact with the process agents.

Note the following:

- Comply with the usage instructions, see Process agents [▸ Page 9].
- Before commissioning or after a container exchange, you must bleed the metering system, see Removing air from the metering system [▸ Page 23].
- The ▸process agents may not be allowed to mix when changing the product. Place the suction lances in a container with water and start the `Air removal` program.

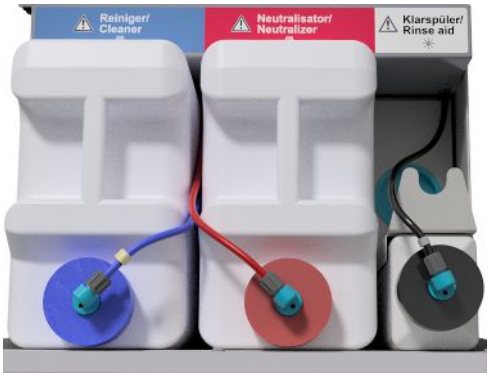
The absence or insufficient filling level of a process agent will trigger the display of the corresponding message. In this case you must replace or refill the process agents container.

Containers for process agents

Every process agent has its own container and a suction lance with screw-on lid:

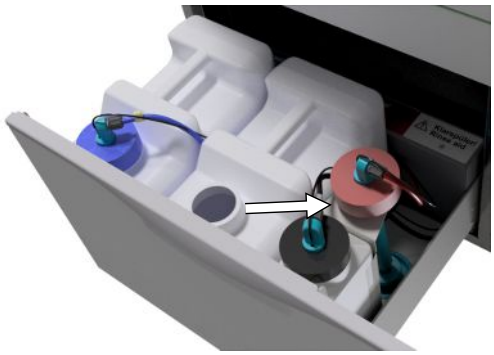
- ▸Cleaning agent: 5 l container with a blue suction lance screw-on lid
- ▸Neutraliser: 5 l container with a red suction lance screw-on lid
- ▸Rinse aid: 1 l container with a black suction lance screw-on lid

1. Place the container in the drawer in accordance with the process agent assignment.
2. Close the container with the correct screw-on lid of the suction lance.

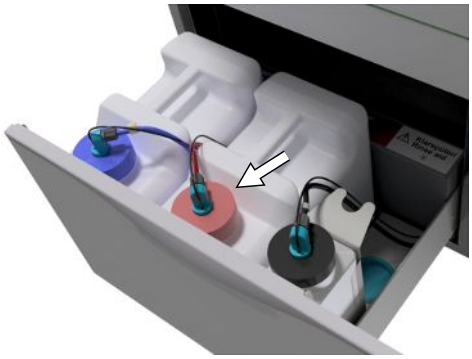


Replacing the container for the cleaning agent and neutraliser

1. Unscrew the suction lance from the container and place it in the suction lance bracket.



2. Place the new container in the process agents drawer and screw on the suction lance.



   ➥ The screw-on lid of the suction lance points forwards.

3. Remove the air from the metering system, see Removing air from the metering system [▸ Page 23].

Refilling rinse aid

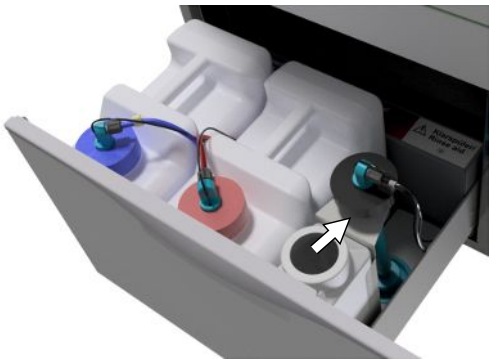
WARNING

When ▸reprocessing ophthalmologic instruments ▸rinse aid may not be used, see Reprocessing ophthalmological instruments [▸ Page 27].

PLEASE NOTE

A streaky instrument surface could be caused by too much rinse aid.

1. Unscrew the suction lance from the container and mount it in the bracket behind it.



2. Transfer the rinse aid from the original packaging into the MELAG container.

   ➥ Fill the container with rinse aid ¾ full, otherwise the rinse aid will overflow during insertion of the suction lance.

3. Screw the suction lance onto the container.

4. Remove the air from the metering system, see Removing air from the metering system [▸ Page 23].

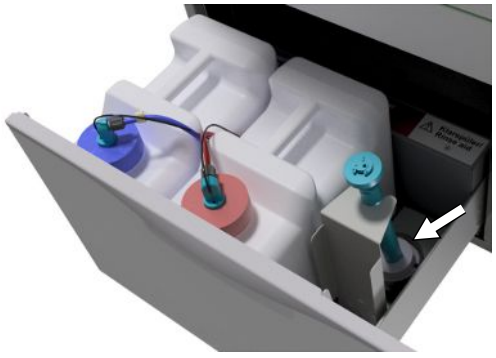
Removing air from the metering system

Air must be removed from the metering system during commissioning or after removal of the suction lances. Air removal completely removes air bubbles from the hoses and ensures proper metering.

The rinse aid suction lance not used for ophthalmic instruments must be inserted head-first in the suction lance bracket during the **`Air removal`** program run.

The **`Air removal`** program must be started twice after removing the suction lances or before the first reprocessing program.

1. If necessary, place the suction lance of the unused rinse aid head-first in the suction lance bracket.



2. Press the  key repeatedly to navigate to **`Air removal`** in the main menu.

3. Start the **`Air removal`** program by pressing the  key.

6 Cleaning and disinfection

Comply with the following for safe handling:

- Only reprocess instruments designed by their manufacturer for automatic ▸reprocessing in a washer-disinfector. Comply with the instructions issued by the instrument manufacturer in accordance with ▸EN ISO 17664. It is especially important to comply with the specifications from the instrument manufacturer regarding cleaning instruments for the first time after purchasing new instruments.
- Use only original MELAG accessories or those from other suppliers authorised for use by MELAG.
- When using non-MELAG accessories for the mounting of instruments (especially hollow-body instruments) comply with the information from the manufacturer of the accessories.
- Comply with the specifications of the national standards and directives pertaining to the reprocessing of instruments, the instrument manufacturer's reprocessing instructions and those from the ▸AKI.
- Do not cover the front ventilation slots.
- Never operate the device unattended (e. g. overnight). Unsupervised operation of the device can result in damage to the device or your facility and is performed at your own risk. In such a case, MELAG does not accept any liability.

Type of load

When loading the device, observe the user manual Accessories for MELAtherm. Only use the loading pattern specified and approved within the scope of the validation.

This device can clean and disinfect max. 10 kg of the following type of ▸load:

- Massive instruments
- Hollow-body instrument e. g. aspirator tips, which are fixed to injector nozzles or
- transmission instruments e. g. handpieces and contra angles by using the adapter

Further accessories may be required when **reprocessing ophthalmological instruments** (not available from MELAG). The operator is responsible for validating the procedure in combination with special load accessories. It is especially important that feed lines to hollow-body instruments are maintained without kinking and as short as possible.

Wet/dry storage

Note the following:

- Store used instruments in a dry place. Ensure that they are stored protected from light and heat. Keep the storage duration as short as possible, according to AKI maximum 6 hours.
- Instruments which present organic residue (e. g. blood) after patient treatment could benefit from pre-soaking in a suitable treatment solution. Check that the process agent chosen for prior soaking is compatible with the washer-disinfector ▸process agents. Otherwise, choose dry storage.
- If you perform pre-soaking, rinse the instruments thoroughly with running water before ▸reprocessing in the washer-disinfector to prevent the solution from entering the device.
- Instruments may not be soaked overnight in water. Soaking in demineralised/distilled water is also associated with damage connected with treatment residue (blood etc.).

Preparation and pre-cleaning

Note the following:

- ▸KRINKO/▸BfArM (2012) recommend that instruments of the risk class "Semi-critical B" and "Critical B" are subjected to precleaning directly after use.
- Remove water-insoluble treatment substances (e.g. dental cement, root canal disinfectants, alginates or silicones) directly after use by manual cleaning. Consult the product data sheets of the treatment substances.
- Other substances can also necessitate manual precleaning. These include ultrasound gels and other auxiliary substances.

- If instruments are to be subject to manual preparation for cleaning, ensure that no media or tools/resources are deployed which could damage their surface. Never use any aggressive cleaning agents, wire or brass wire brushes or metal scourers. Information regarding correct instrument reprocessing is available from your instrument manufacturer.
- Check hollow bodies (transmission instruments, cannulas, etc.) for free passage. Observe the department-specific instructions in this manual.
- Disassemble dismountable instruments for reprocessing according to the manufacturer's instructions.
- Remove corroded or defective instruments. Crusted instruments must be subject to a basic cleaning or repair.
- The complete cleaning and disinfection of surgical aspirators requires manual pre-cleaning of the interior lumen. Subsequent suction (e.g. using the dental unit) of a minimum of 200 ml water through the surgical aspirator immediately or 10 min (at the latest) after treatment will achieve sufficient pre-cleaning. A comparable or more intensive pre-cleaning is permissible.

Arranging the load

NOTICE

Some brands are only authorised for thermal disinfection after a specific year of manufacture.

- Only reprocess instruments designed by their manufacturer for automatic reprocessing in a washer-disinfector.
- Comply with the information from the relevant instrument manufacturer.

In order to arrange the ▸load, the basis basket including insert racks, instrument baskets, wash trays and/or sieve cassettes must be used. The basis basket with an injector rail is available for ▸reprocessing hollow-body instruments.

Further accessories and their user instructions such as insert racks for wash trays, sieve cassettes and instrument baskets etc. are listed in the user manual Accessories for MELAtherm.

Note the following:

- Empty all residual liquids from containers before arranging them in the device. Rinse away any liquids (e.g. disinfectant solutions) thoroughly.
- Never place any individual instruments directly in the basis basket. Use baskets or trays to this end.
- Ensure that instruments do not protrude from the sides of the instrument basket or the basis basket. Protruding instruments can damage the seal and the surface of the door or the side walls of the washing chamber. The instruments can break.
- Place hollow-body instruments in the device in such a way as to ensure safe rinsing. If necessary, use the accessories developed especially for reprocessing hollow-body instruments such as injector nozzles, Luer connections, adapters etc. See user manual Accessories for MELAtherm.
- Avoid blockages of the rinse arm from instruments protruding upwards or downwards. The rinse arms must be able to rotate freely.
- Avoid unwashed areas. A good cleaning outcome depends on the correct arrangement of the instruments.
- Arrange all containers such as kidney dishes etc. with their opening pointing downwards.
- Place components with openings or compressions at an angle, so that the water can run off them.
- Only use thermostable instruments approved by their manufacturer for reprocessing.

Reprocessing hollow-body instruments

WARNING

Danger of contamination from insufficient disinfection

Residue on the hollow-body instruments can hinder water pass through and thus impair their disinfection.

- Check the hollow-body instrument for free passage before reprocessing.

WARNING

Danger of contamination from insufficient disinfection

All openings must be occupied when using multi-way distributors or the injector rail. Only then can a correct function be guaranteed.

- Seal non-used openings.

WARNING

Danger of contamination from insufficient disinfection

Use a filter insert for hollow-body instruments with an inside diameter ≤ 0.8 mm.

- Do not use the metal filter disc or the Cleanfinity filter in the ophthalmic area.
- Instead, use the ceramic filter disc or the plastic central filter.

Note the following:

- Comply with the specifications from the instrument manufacturer.
- Rinse all hollow-body instruments after use with patients or before automatic reprocessing.
- Reprocess only those hollow-body instruments which guarantee sufficient and reproducible rinsing. Remove instruments with a recognisably reduced throughflow.
- Use only MELAG adapters to ▸reprocess hollow-body instruments on the injector rail. The suitability of a hollow-body instrument for the respective adapters and the sufficient rinsing can only be proven by validation.
- Check the connection between the adapter and the hollow-body instrument for stability both before and after reprocessing. Should the connection work loose after reprocessing, the instruments must be reprocessed again.
- Comply with the cleaning and replacement intervals when using filter inserts. The cleaning and replacement intervals can be found in the user manual Accessories for MELAtherm.
- When reprocessing dental and ophthalmologic transmission instrument, observe and comply with the special reprocessing instructions in Reprocessing dental transmission instruments [▸ Page 26] and Reprocessing ophthalmological instruments [▸ Page 27].

Rule for use of filters or filter discs:

Diameter of the inner lumen	Application of a filter
≤ 0.8 mm	Filter required, e. g. triple distributor incl. ceramic filter disc (art. no. ME73903)
> 0.8 mm	No filter required, direct connection of the adapter to the injector rail possible

Reprocessing dental transmission instruments

Note the following:

- Comply with the specifications from the instrument manufacturer.
- The exterior surfaces of the handpieces and contra angles should be free of all water-insoluble residue e. g. dental cement.
- The air and spray channels must be entirely clear.
- Prevent soiling from drying, especially on and in the handpieces and contra angles.
- Use a citric acid based ▸neutraliser for the ▸reprocessing of dental transmission instruments.
- Dry the hollow-body instruments after reprocessing using medical compressed air.

Care of the instruments and adapters

Immediately after successful cleaning and disinfection, re-dry the spray, air and water channels using medical compressed air. Carry out maintenance with suitable care products and oils. MELAG recommends the Care Oil Spray.

Check the adapters for transmission instruments at regular intervals for possible soiling. If necessary, rinse the individual parts of the adapters under running water. Rub the silicone inserts of the universal adapters with a damp, non-fuzzing cloth.

Reprocessing ophthalmological instruments

Comply with national recommendations for the cleaning of medical devices under the aspect of decontamination of infectious prion proteins (CJD).

WARNING

Danger of contamination from biological interactions.

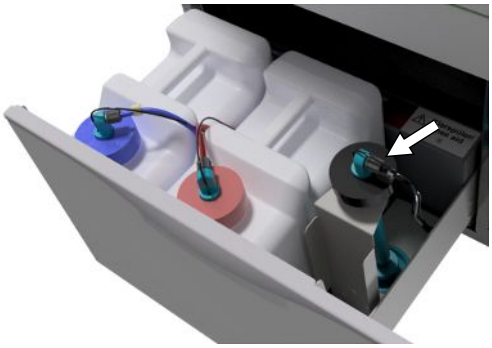
Devices used to reprocess ophthalmologic instruments may only be used exclusively for this purpose.

- Do not reprocess any instruments used in retinal surgery (coming into contact with retinal tissue, subretinal fluid and the optical nerve).
- Fit these devices with a suitable filter system e.g the ceramic filter disc or the plastic central filter.
- Do not use the metal filter disc or the Cleanfinity filter for the reprocessing of ophthalmological instruments.

WARNING

Do not use ▸rinse aid for reprocessing ophthalmic instruments!

1. If present, remove the rinse aid container from the process agents drawer and hang the black suction lance in the suction lance bracket so that the screw-on lid is positioned at the top.



2. The process agent hoses only need to be placed head-first in the suction lance bracket if the metering hoses are to be bled, see Removing air from the metering system [▸ Page 23].

PLEASE NOTE

Use demineralised water to reprocess ophthalmological instruments.

- To this end, e.g. connect a mixed-bed resin cartridge.

Suitable program

Reprocess ophthalmological instruments in the Ophthalmo-Program. Only this program enables monitoring of the water ▸conductivity during the disinfection phase; this ensures a residual conductivity which is uncritical for applications on both the eye.

Note the following:

- Comply with the specifications from the instrument manufacturer.
- Cleaning should be performed with a mildly-alkaline ▸cleaning agent. Neutralisation should be performed with a citric acid based ▸neutraliser.
- Rinse all hollow-body instruments with ▸DI water after use with patients or before automatic reprocessing.

- Reprocess only those hollow-body instruments which guarantee sufficient and reproducible rinsing. Remove instruments with a recognisably reduced throughflow.
- Connect all hollow bodies properly with the adapters provided.
- Ensure that plugs and/or cables from Phaco handpieces are not able to slip through the basis basket, otherwise the rinse arm can become blocked.
- Try to prevent soiling from drying or encrusting on and in the instruments.
- Dry the ophthalmological instruments after reprocessing using medical compressed air.
- When using rinsing systems, seal individual outlets which are not connected with suitable accessories.

Instrument care

Comply with the manufacturer's instructions regarding the care and maintenance of the instruments / the load accessories.

Routine check

Perform a routine check of the ▸pH value after reprocessing of the hollow-body instruments.

1. Blow through the hollow-body instrument with medical compressed air onto indicator paper (e.g. from Macherey-Nagel: PEHANON pH 4.0-9.0). The measurement accuracy must amount to or exceed 0.5.
2. Compare the value displayed on the indicator paper with the pH value of the final rinse water from the previous performance qualification.
3. Should you discover any deviations, contact the customer services.

Overview of programs

- Select the program according to the level of soiling of the load. Comply with the specifications from the validation.
- Use **`Universal-Program`** predominantly in everyday general cleaning and disinfection. The **`Quick-Program`** is designed for lightly soiled instruments.

The following table lists the correct program for each load.

Reprocessing program	Nature of the instruments / degree of soiling	Operating time*) without drying time	
		DTA	DTB
Universal-Program 90 °C, 5 min[1)]	▪ For normal to heavily soiled instruments	40 min	59 min
Quick-Program 90 °C, 5 min[1)]	▪ For unsoiled or only lightly-soiled instruments	36 min	53 min
Intensive-Program 90 °C, 5 min[1)]	▪ For especially heavily soiled instruments ▪ As with **`Universal-Program`**, but with more intensive pre-cleaning and a higher amount of cleaning agent metered	51 min	64 min
Ophthalmo-Program 90 °C, 5 min[1)]	▪ For ophthalmological instruments ▪ As with **`Universal-Program`**, but with double intermediate rinsing and without rinse aid during disinfection/the final rinse	42 min	59 min
*) The specified operating times are average values and apply to the recommended running water pressure at a cold water temperature of 15 °C.			

Additional program	Application	Operating time*)
Rinsing, 3 min no disinfection, without process agents	▪ For rinsing heavily-soiled instruments (e. g. blood) A reprocessing program must then be started very soon afterwards. ▪ To rinse out the washing chamber after filling salt; without process agents, no disinfection	3 min

[1)] In accordance with the A0 concept from EN ISO 15883-1, thermal disinfection is performed with 90 °C (+ 5 °C, 0 °C) and a disinfection time of 5 min (min. A0-3000).

Additional program	Application	Operating time*)
Emptying	▪ Pumping out residual water from the washing chamber	1 min
Conductivity DI	▪ For measuring the conductivity of the DI water	2 min
Air removal	▪ After filling / changing the process agents, i. e. product change etc. ▪ With decommissioning and commissioning	5 min
Regeneration	▪ Regenerating the internal water softening unit	8 min
Time metering 60s	▪ Only for service technicians	--
*) The specified operating times are average values and apply to the recommended running water pressure at a cold water temperature of 15 °C.		

Selecting, starting and monitoring the program

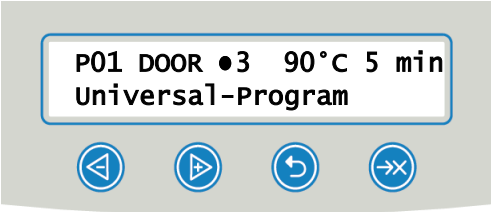
Ensure compliance with the following prerequisites in order to secure the optimal rinsing performance before every program start:

- The process agents containers are sufficiently full.
- The injector rail nozzles / adapters are clean.
- The rinse arms can be turned freely.
- The load is arranged correctly.
- Baskets and inserts are inserted correctly.

Selecting and starting a program

1. Select a program in accordance with the Overview of programs [▸ Page 28].

2. Navigate to the desired program using  . The display shows the program names, the temperature and the holding time.



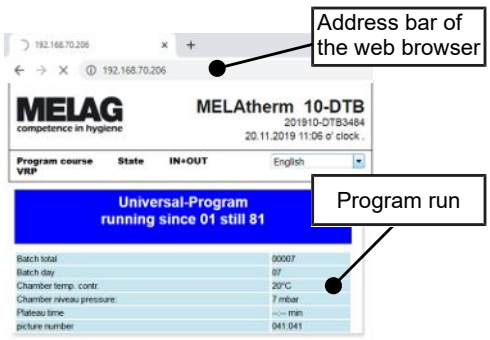
3. Start the selected program with  .

Monitoring the program run on the computer

You can follow the current progress of a program run on every computer in the (practice) network. To do so, an IP address must be issued for the device and it must be incorporated in the (practice) network.

1. Open a web browser window in the practice PC (using Mozilla Firefox or Internet Explorer / Microsoft Edge is recommended).

2. Enter the device IP address in the address bar of the web browser, e. g. 192.168.70.206 and confirm with Enter.



➥ The program run and the device information such as e. g. serial number and device software version will be displayed.

Manual program abort

NOTICE

Aborting a current program by deactivation at the power switch may cause damage at the device.

- Never abort a program by switching off at the power switch.

Aborting the program during drying

WARNING

Nucleation because of poor drying.

If a program is aborted during drying, residual dampness can remain on the instruments.

- Only abort a current program in exceptional reasons.
- Dry the instruments manually.

CAUTION

Danger of burns from hot instruments and surfaces.

The instruments and chamber can remain hot even after the device has been switched off.

- Allow the device to cool before removing the instruments.
- Wear suitable protective gloves.

If a program is aborted during drying, the program is classed as having been ended successfully. Proceed as follows to abort the program during drying:

1. Wait until the display shows the message `CANCEL DRYING` ●4.
2. Press the  key to abort the program and confirm the abort with `YES`.
3. To open the door, press  and  .

Aborting the program before the start of drying

WARNING

Danger of contamination through program abort.

Aborting a program before the drying phase begins means that the load is classed as not having been disinfected.

CAUTION

Danger of burns from hot instruments and surfaces.

The instruments and chamber can remain hot even after the device has been switched off.

- Allow the device to cool before removing the instruments.
- Wear suitable protective gloves.

In order to abort the program during drying, press the  key and follow the instructions on the display.

Removing the load after program end

CAUTION

Danger of burns from hot instruments and surfaces.

The instruments and chamber can remain hot even after the device has been switched off.

- Allow the device to cool before removing the instruments.
- Wear suitable protective gloves.

PLEASE NOTE

Open the door immediately after the end of the program to prevent the accretion of condensation.

Do not leave any instruments in the washing chamber overnight.

The display message indicates whether and when a program has been completed successfully. The display shows the last batch number run and the total batch counter after every program end or the end of a program abort.

1. Press the key and open the door.
2. Remove the load whilst complying with all the hygiene and working safety regulations.
3. Check whether the load has been cleaned successfully.
4. Check the hollow-body instruments for potential blockages, at the latest prior to the next use.

Batch assessment and approval

The batch approval is used to assess and log the outcome of the ▸reprocessing (batch approved/not approved). The ▸batch is assessed by the user on the basis of various criteria (e. g. degree of cleaning and drying, position of the load, etc.).

Assessment criteria for batch approval

- The load is properly cleaned.
- The hollow-body instruments are fixed.
- The hollow-body instruments are accessible.
- The injector rail still sits snugly on the connection tube.
- All adapters on the injector rail are screwed on tight.
- The filtering (e. g. with central filter) of the adapters has been checked.

7 Logging

Batch documentation

The batch documentation serves as proof of the successful conclusion of the program and represents an obligatory part of quality assurance. The device internal log memory saves such data as the program type, batch and process parameters of all the programs completed.

To obtain the batch documentation, you can output the internal log memory and transfer its data to various output media. This can be performed immediately at the end of every program or at a later point, such as at the end of the day.

As delivered, the CF card is set as the output medium. Setting a different output medium or activating the internal log memory is outlined under Settings [▸ Page 38].

Capacity of the internal log memory

The device is equipped with an internal log memory. This saves all the data regarding the program automatically. The capacity of the internal log memory is sufficient for 15-20 logs. If the internal log memory is full, the display will show the warning **`Internal program log-memory full, not all logs issued.`** If this warning is issued, provide the specified output medium (see Settings [▸ Page 38]) and output the affected log (see Setting automatic logging [▸ Page 38]). If the program is continued, the logs are deleted automatically; the last ten saved logs remain in the log memory.

MELAG recommends outputting logs immediately.

Output media

You can output the logs of the finished programs via the following output media:

- CF card
- Computer via the (practice) network (LAN)
- MELAprint 42/44 log printer with network adapter

The output media can be combined in any fashion. Thus it is possible both to save logs on the CF card (included in the scope of delivery) and also to print them on the log printer.

PLEASE NOTE

Further information about the log printer (e.g. the duration of the readability of the log printouts) is specified in the appendant user manual.

Using the CF card as an output medium

Inserting the CF card

The card slot for the CF card is located behind the cover cap on the right, adjacent to the door below the power switch. When inserting the CF card in the slot, ensure that it is aligned correctly.

1. Open the CF card cover cap.

2. Insert the CF card in the slot with the contacts at the front. The MELAG logo on the CF card points towards the LED.

3. Slide the CF card in the card slot until it snaps in. Do not use force. When the CF card has been placed correctly, the red LED will illuminate shortly.
4. Close the cover cap.

Removing the CF card

NOTICE

Premature removal of the CF card from the card slot or its inappropriate handling can result in data loss, damage to the CF card or the device.

- Never remove the CF card from the slot whilst it is being written or read.

1. Open the CF card cover cap.
2. Press the ejection button and remove the CF card.
3. Close the cover cap.

Using the computer as an output medium

You can either connect a computer directly to the device or via a network if the following conditions are fulfilled:

- The computer is fitted with a network card with a RJ45 bushing (LAN).
- An FTP server or an FTP service is installed on the computer (when the log is issued via FTP).
- A suitable program, e. g. MELAtrace is installed (when the log is issued via TCP).

Outputting logs immediately and automatically

As delivered, the CF card is set as an output medium in the **SETUP MENU** and thus the automatic log output at the end of a program (**Immed. issue** = **YES**) is thus activated. Log output on multiply activated media is performed successively. You can select or add an alternative output medium for automatic log output.

Note the following:

- The text log is issued on the selected output medium after the end of the program run. At the same time, this text log is saved in the internal log memory and marked as output.
- If multiple output media have been activated, all activated output media must be connected to the device. Otherwise, the text logs are saved in the internal memory and are classed as not output.
- If the internal log memory is full, the device will register all the text logs which are classed as not output. The warning message 386 appears after the program start. You can acknowledge this message with the key in order to continue the program run.
- With warning message 372, you must manually output logs that have not yet been output. Only then is a program start possible. The log memory is deleted automatically after manual issue; the last ten logs remain in the log memory. The manual outputting of logs is outlines under Subsequent log output [▸ Page 34].

Text logs

The following requirements must be fulfilled in order to output text logs immediately after the end of a program.

- In **SETUP MENU** > **Autom. logging**, **Immed. issue** is set to **YES**.
- In **SETUP MENU** > **Autom. logging**, at least one output medium is selected and **Autom. logging** is set to **ACTIVE**.
- The activated output medium is available (e.g. the MELAprint 42/44 log printer or ▸CF card).

Graphic logs (optional)

The following requirements must be fulfilled in order to record graphic logs:

- In **SETUP MENU** > **Autom. logging** > **Graphic logs**, at least one output medium is set to **YES**.
- At least one of the output media selected for graphic logs corresponds to an output medium for the text logs. This means that at least the computer or the CF card must be activated as an output medium for both log types.
- The selected output medium has been connected.

PLEASE NOTE

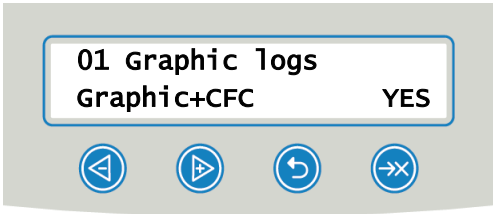
Graphic logs cannot be saved in the internal log memory and cannot be outputted via the log printer MELAprint 42/44.

- Save the graphic log on the CF card or the computer.

The following settings can be made to record graphic logs:

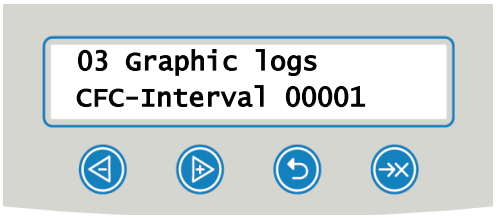
Graphics & CF card (CFC)

One of the selected output media must conform with the selected output medium for text logs.



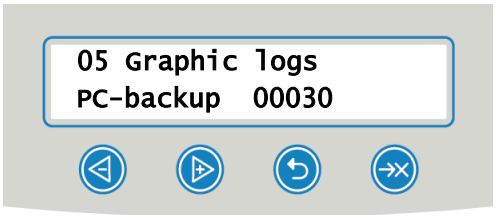
CFC interval

The CF card interval or PC interval indicates the time intervals at which the program curve is recorded on the CF card or computer. The smaller the time interval, the more exact the curve. In the example, the time interval is set at one second.



PC backup

PC backup indicates the time interval in which the graphic logs are to be saved on the computer by the device. In the example, the backup interval is set to 30 seconds.



Subsequent log output

The **DOCU MENU** provides the option of issuing logs subsequently and independently of the point of the program end or to delete the logs. Proceed as follows:

1. Press or to navigate to **DOCU MENU**.
2. Press to open **DOCU MENU**.
3. Press repeatedly to select an output medium. Should you wish to accept the settings from **Autom. logging** menu, select the option **automatic**.

4. Press  to navigate to the **Log list** option.
5. Press  to choose between the log types, e.g. **Last log**, **Logs of day** etc.
6. Press  to start log output.

Deleting the saved logs

Save the logs on an output medium before deleting them.

1. Press  or  to navigate to **DOCU MENU**.
2. Press  to open **DOCU MENU**.
3. Press  again.
4. Press  to navigate to option **All logs**.
5. Press  and  shortly. A confirmation prompt is displayed: **All logs - Delete permanently?**
6. Hold  and  depressed to delete all logs.

Determining the format for the program logs

The log format enables you to determine which of the data saved in the log memory is to be outputted. You can choose between format (0001) and format (0002). The log format (0002) is the standard format. Working in **SETUP MENU** you can select the log format for the program logs, see Logging [▸ Page 32].

Log types

In addition to logs for successfully completed programs, there are other types of log. These can also be outputted via the selection list in the **DOCU MENU**. You can identify the log type by the ending of its file name.

Ending	Stands for	Explanation
.PRO	Program log	Log of a successfully completed program
.GPD	Graphic log	A log in which the processes are recorded graphically
.STR	Malfunction log	Log of an aborted program
.STB	Malfunction in standby	Log with malfunctions without a program having run
.LOG	System log	List of all the malfunctions and changes to the system in order of time (log book)
.STA	Status log	Summary of all the important settings and system states (counter, measured values etc.) + a list of all process-relevant parameters (VRP)
.LEG	Legend log	Contains all step abbreviations used in the program log
.DEM	Demo log	Log of a program simulated as completed in DEMO mode (only for presentation purposes)
.DES	Demo malfunction	Log of a program simulated as interrupted (presentation)

Example of a program log for a successfully completed program

```
----------------------------------------
10 MELAG MELAtherm 10-DTA
----------------------------------------
15 Program  : Universal-Program
20 TARGET        °C          min.
21 Pre-clean :     22.0        03:30
23 Cleaning  :     55.0        10:00
28 Disinfect. :    90.0        05:00
30 Date      :  03.01.2018
35 Batch     : Day: 02  Total: 00222
=====
40 Program successfully ended
======
50 ACTUAL        °C     +/- K        min.
51 Pre-clean:      27.4  +0.3/-0.3   03:30
53 Cleaning:       57.9  +1.6/-0.4   10:00
58 Disinfect.:     92.5  +0.2/-0.2   05:00  4293
------
60 Conduct. :  7.1 (---) µS/cm
65 Start     : 15:12:21
70 End time : 16:29:03 (76:42 min.)
======
80 SN: 201410-DTA1352
======
81 Firmware  : V1.311 20.09.2017
82 Parameter: V1.321 20.10.2017
83 BO        : V1.310 18.09.2017
----------------------------------------
Step   Start   End  Time  °C   ml mbar
--> Process start
...
--> Pre-cleaning
...
--> Regeneration
...
--> Pre-cleaning
...
--> Cleaning
...
--> Neutralization
...
--> Intermediate rinsing
...
--> Disinfection
...
--> Drying
...
--> Process end
...
----------------------------------------
>> Never change the code in the following row <<
180000ED008A00927949020E050004E300000000
>> Proof of authenticity batch log <<
----------------------------------------
Voltage max/min: 226/215
CW:31.1   DI: 5.0
0.0   0.0   -0.00   0.0
--et1---et2----eps----etu----------END-
```

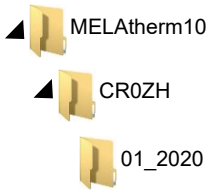
```
----------------------------------------
10 Log header: Device name
----------------------------------------
15 Program name
20 Column heading for 21-28
21 Nominal value temperature and holding time
23 Nominal value temperature and holding time
28 Nominal value temperature and holding time
30 Date
35 Batch number of the day and total batch counter
=====
40 Control message
42 Program abort (appears if program unsuccessful)
======
50 Column heading for 51-58
51 Actual value for temperature (range) in °C
53 Holding time of the partial cycles
58 Actual value for temp. conditions of disinfection,
A0 value
------
60 DI water conductivity for final rinse in supply line
(---) Final conductivity in the pump sump (only in the
Ophthlamo-Program)
65 Time at program start
70 Time at program end
======
80 Device serial number
======
81 Installed firmware version
82 Installed parameter version
83 Installed graphical user interface
----------------------------------------
Step = Partial cycle
Start = Time at start of partial cycle
End = Time at end of partial cycle
Time = Time required by a partial cycle
°C = Temperature of the rinse liquor in the washing
chamber in °C
ml = Quantity of cold water (CW)/DI water and
respective process agent consumed
during a partial cycle
mbar = Rinse pressure
92 = Up to five warnings
95 = Event number upon program abort

----------------------------------------
Proof of authenticity:
should never be changed; permits inference that the
data was created on a MELAG device and  has not
been changed.
----------------------------------------
Sensor measurement values are displayed following
a malfunction. The values are helpful for the service
technician.
```

Finding the logs

PLEASE NOTE

Do not rename the directories, otherwise logs will be stored in both the renamed directory as well as the device directory which the device generates automatically.

All memory media (CF card or computer) contain a directory with the encoded serial number of the device concerned following log output. The directory name consists of five characters identical with the first five characters of every log, e.g. CR0ZH. This directory contains sub-directories with the month of log generation e.g. 01_2020 for January 2020. This contains all logs generated by the device in this month. The device directory is entered in the main directory on the CF card.



The device checks the memory medium after every type of log output (immediate output after a completed cycle or the transfer of multiple logs simultaneously). Should a directory not exist, it automatically creates a directory for the device and the month. If logs are outputted on the same memory medium more than once, a duplicate directory will be created under the device directory in which these logs will be saved only once.

Given direct log transfer to a computer, set the memory location in the program (FCP, FTP) used on your computer.

8 Settings

SETUP MENU

The **SETUP MENU** contains the settings for the date, time and display contrast.

Navigate in the **SETUP MENU** as follows:

1. Press  to navigate to the **SETUP MENU** in the main menu.
2. Press  to open the **SETUP MENU**.
3. Press  to leave the **SETUP MENU**.
4. Press  to save changes or hold  depressed to discard changes.

Setting the water supply

If the device is connected to a DI water supply e.g. MELAdem 53/MELAdem 53 C or another water treatment unit, this must be set on the device. In its delivery state, the water supply has been set to **DI water YES**.

To alter this setting proceed as follows:

1. Press  to open the **SETUP MENU**.
   ➥ The option **DI water YES** is displayed.
2. Press  in order to change the option.
   ➥ The value **YES** flashes.
3. Press  or  to switch between **YES** and **NO**.
4. Press  to accept **YES** or **NO**.
   ➥ The value no longer flashes.
5. Press  to leave the **SETUP MENU**.

➥ The selected value is automatically saved upon leaving the **SETUP MENU**.

Setting automatic logging

You can perform log output settings in the **Autom. logging** menu. The settings made here are saved for the respective output medium. The display image shows whether the option for log output is **ACTIVE**. Detailed information regarding logging is provided in chapter Logging [▸ Page 32].

Determining the output medium

You are able to output the logs of the completed programs on various media. Comply with the specifications of the manufacturer's operating manual of the respective device.

The example shows how to use the CF card as an output medium. Proceed in a similar manner to set a different output medium.

Working in the SETUP MENU [▸ Page 38] set the output medium as follows:

1. Press  to navigate to **Autom. logging**.
2. Press  to open the **Autom. logging** menu.
   ➥ The selectable output media are displayed consecutively.
3. Press  to navigate to **CF card YES** in the **SETUP MENU**.
   ➥ The value **YES** indicates that the log will be saved on the CF card.
4. Press  if this value is to be changed.
   ➥ The value **YES** flashes.
5. Press  or  to change between **YES** and **NO**.
6. Press  to save the new value.
   ➥ The value no longer flashes.
7. Press  to leave **SETUP MENU** > **Autom. logging**.
   ➥ The value selected will be saved automatically upon leaving the **SETUP MENU**.

Determining log format

Detailed information regarding the log formats (0001) and (0002) is provided in Determining the format for the program logs [▸ Page 35].

Setting date and time

Correct batch documentation requires the correct date and time setting on the device.

PLEASE NOTE

The time is not set automatically.

- The time setting to summer or winter time must be performed manually.

Setting the date

Working in the SETUP MENU [▸ Page 38] set the date as follows:

1. Press  to navigate to **Date**.
2. Press  to change the date.
   ➥ The display switches to **Change date**.
3. Press  to navigate between day, month and year.
4. Press  to activate the selected parameter (day, year).
   ➥ The current value flashes.
5. Press  or  to reduce or increase the value.
6. Press  to accept the new value.
   ➥ The value no longer flashes.

7. Press  to change the month. Proceed in a similar fashion here.
8. Press  to leave the **SETUP MENU**.

➥ The value selected will be saved automatically upon leaving the **SETUP MENU**.

Setting the time

Working in the SETUP MENU [▶ Page 38] set the time as follows:

1. Press  repeatedly to navigate to **Time**.
2. Press  to change the date.
   ➥ The display switches to **Change time**.
3. Press  to activate the selected parameter.
   ➥ The current value flashes.
4. Press  or  to reduce or increase the value.
5. Press  to accept the new value.
   ➥ The value no longer flashes.
6. Press  to leave the **SETUP MENU**.

➥ The value selected will be saved automatically upon leaving the **SETUP MENU**.

Setting the display contrast

Working in the SETUP MENU [▶ Page 38] set the display contrast as follows:

1. Press  repeatedly in order to navigate to **Display contrast**.
2. Press  to activate the selected parameter.
   ➥ The current value flashes.
3. Press  or  to reduce or increase the value.
4. Press  to save the new value.
   ➥ The value no longer flashes.
5. Press  to leave the **SETUP MENU**.

➥ The selected value is automatically saved upon leaving the **SETUP MENU**.

Selecting the language

You can choose between two languages. Language 0001 is usually the local language.

Working in the SETUP MENU [▶ Page 38] set the language as follows:

1. Press  repeatedly to navigate to **Language**.
2. Press  to activate the selected parameter.
   ➥ The current value flashes.
3. Press  to navigate to **Language 0002**.

4. Press  to accept the new value.
   ➥ The value no longer flashes.
5. Press  to leave the **SETUP MENU**.

➥ The value selected will be saved automatically upon leaving the **SETUP MENU**.

Other languages can also be installed. To this end, the corresponding language update file must be downloaded on the device from the CF card. Please consult your MELAG customer services or stockist for this.

Setting the water hardness

Working in the SETUP MENU [▸ Page 38] set the water hardness as follows:

1. Press  repeatedly to navigate to **Water °dH**.
2. Press  to activate the selected parameter.
   ➥ The current value flashes.
3. Press  or  to reduce or increase the value.
4. Press  to accept the new value.
   ➥ The value no longer flashes.
5. Press  to leave the **SETUP MENU**.

➥ The value selected will be saved automatically upon leaving the **SETUP MENU**.

The conversion table for water hardness is provided in Water softening unit [▸ Page 16].

9 Function checks

Automatic and manual function check

Automatic

The device components are monitored and checked automatically for their functionality and interplay. Should the parameter thresholds be exceeded, the device will issue warning messages or malfunction messages. If necessary, it will abort a program with the relevant notification. The device will also display messages when a program has been completed.

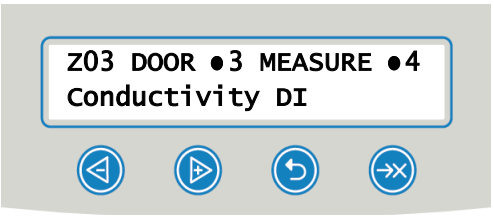
Manual

You can follow the program run on the display and use the log recorded to check the success of a program. Further information is provided in chapter Logging [▸ Page 32].

Measuring conductivity

You can access the water quality of the ▸DI water on the device display at any time providing, that it is switched on.

▶ Press  to start the `Conductivity DI` program.



10 Maintenance

WARNING

All maintenance work, especially that performed in the washing chamber may only be performed after a successfully completed reprocessing program.

- Wear suitable personal protective equipment (e.g. gloves).

Maintenance intervals

Interval	Measure	Device component
Daily	Check for soiling, deposits or damage	Coarse and fine sieves, rinse arms, door seal
Monthly	Check for passage/blockage	Injector rail nozzles and adapters
	Check for soiling, deposits or damage	Accessories, plastic components
As required	Cleaning	Operating panel, plastic front, washing chamber, pump pit and non-return valve
After 24 months or 1000 cycles	Maintenance by authorised technician	Process agent hoses according to maintenance instructions

Regular checks and cleaning

NOTICE

Incorrect cleaning can damage the surfaces and sealing faces. Scratched or damaged surfaces and leaking sealing faces favour soiling deposits and corrosion in the washing chamber.

- Comply with all information regarding cleaning of the parts affected.

NOTICE

When the coarse and fine sieves are missing, residue may enter the rinsing circuit and impair the device function.

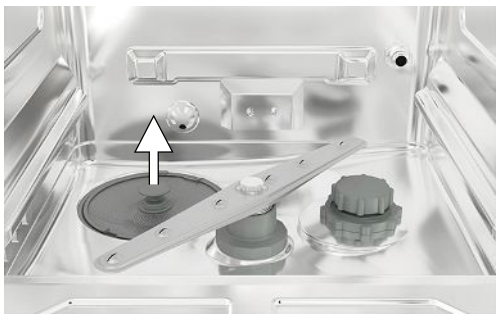
- Ensure that the coarse and fine sieves are always in place before program start.

Checking the sieves in the washing chamber

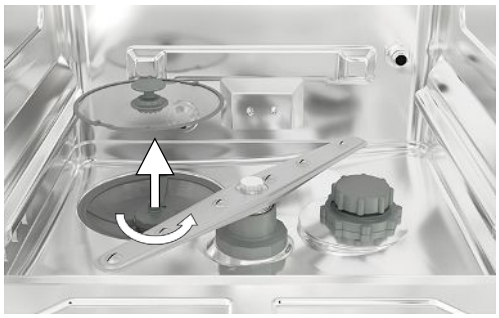
A coarse and a fine sieves are fitted in the washing chamber. The sieves are designed to hold back dirt particles or residue e.g. from the instruments. They can become blocked over time.

1. Inspect the coarse and the fine sieves for small components and soiling which have fallen from the load.

2. Turn the grip of the coarse sieve anti-clockwise to its fullest extent and remove it upwards.



3. Turn the knurled nut on the fine sieve anti-clockwise and remove the fine sieve upwards.

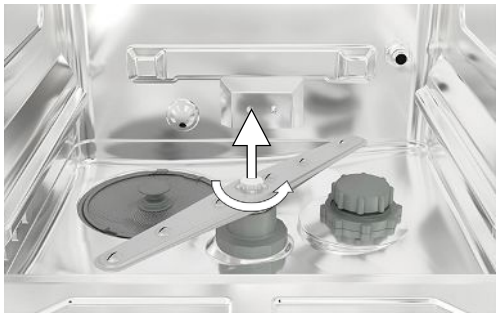


4. Inspect the coarse and the fine sieves for soiling.
5. Rinse the soiled sieves under running water. Do not use any dish-washing detergent. Remove any deposits with a soft brush.

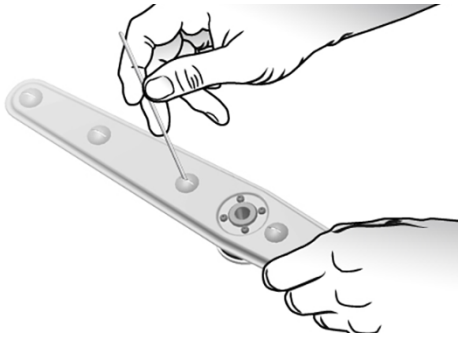
Checking the rinse arms

Dirt particles can block the nozzles of the rinse arms. Check both rinse arms regularly and rinse the nozzles under running water if necessary.

1. Check that the coarse and the fine sieves are installed.
2. Turn the knurled nut on the rinse arm anti-clockwise and remove the rinse arm.



3. Clean blocked nozzles with a thin pointed object.



4. Return the rinse arms and check their easy and free movement.

Checking the door seal

Check the door seal for impurities, deposits or damage on a daily basis. If necessary, clean the door seal with a moist, non-fuzzing cloth and conventionally-available neutral liquid cleaning agent.

Checking the injector rail nozzles and adapters for free passage

MELAG recommends checking the injector rail nozzles and adapters for free passage on a monthly basis.

To test whether the injector rail nozzles and adapters are blocked, hold them upright under running water. If the water flows freely through the nozzles or adapters, they are not blocked.

Checking the accessories

Check the accessories used (especially their plastic components e.g. inserts) for damage, deposits and soiling on a monthly basis, unless the user manual Accessories for MELAtherm indicates otherwise.

Cleaning on demand

Operating unit and plastic front

Note the following:

- Use a soft, non-fuzzing cloth.
- Use a chlorine- and vinegar-free cleaning fluid or a plastics cleaning agent.
- Check the material compatibility before application.
- Never use solvents or benzene.
- Use surface disinfectants which are suitable for plastics. Observe the manufacturer's information on the respective surface disinfectant.

Washing chamber

Note the following:

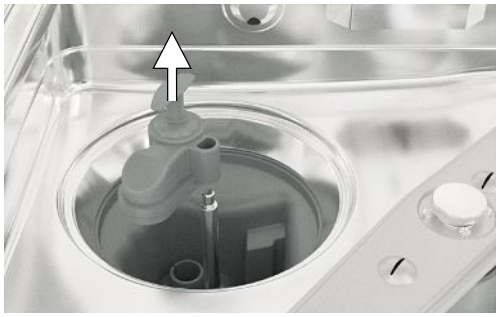
- The washing chamber is made of high-alloy stainless steel but its surface is easily scratched.
- Clean it with a commercially-available non-abrasive stainless steel cleaning agent (no scouring scream).
- Remove any streaks remaining on the surface after cleaning with a commercially-available stainless steel polishing spray.
- Use a soft, non-fuzzing cloth without abrasive elements (no scouring pad).

Pump sump and non-return valve

If the rinsing water has not been removed entirely after a program, the non-return valve must be cleaned.

1. Remove the coarse and fine sieves and remove the residue and deposits from the pump sump.

2. Remove the non-return valve upwards by pulling on its grip and pull it out of the pump sump.



3. Clean the non-return valve under running water. Do not use any dish-washing detergent.
4. Replace the non-return valve and the fine and coarse sieves in the pump sump.
5. Start the **`Rinsing`** program.

Avoiding staining

Stains on the instruments or the device can develop from poor water quality. In particular, heavy metals or chloride can result in the development of stains and/or corrosion. To avoid the development of stains and/or corrosion on the instruments or the washing chamber, MELAG recommends a final rinse with demineralised water (DI water). All water-bearing parts of the device consist of non-rusting material. This rules out the development of stains or rust caused by the device. Often, a single instrument which drops rust can suffice to cause the development of rust on other instruments or in the device. Further information is provided in the up-to-date Red Brochure “Instrument Reprocessing - Reprocessing of Instruments to Retain Value” published by the AKI. See chapter “Surface Changes: Deposits, Discoloration, Corrosion, Aging, Swelling and Stress Cracks”.

Replacing the filter in the drying fan

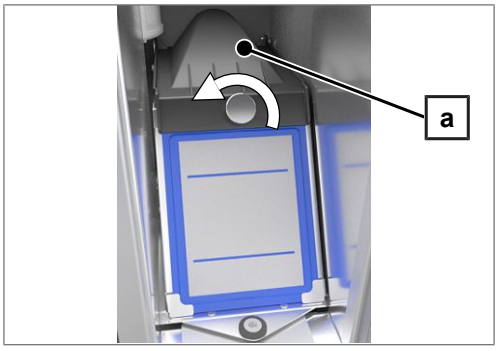
Exceeding the permissible level of blockage can result in a worsened drying outcome. For this reason, the device checks the degree of blockage automatically. Exceeding the tolerances results in the issue of the relevant display message.

PLEASE NOTE

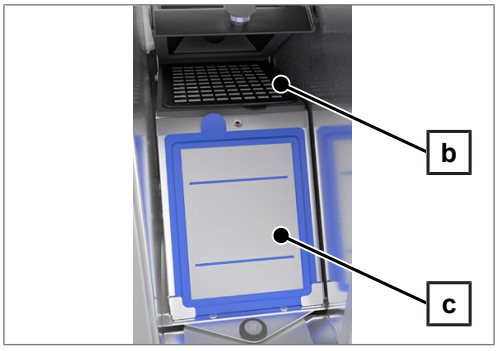
The pre-filter and the HEPA filter are replaced within the scope of the maintenance on hygienic grounds.

1. Pull the process agent drawer forwards.

2. Undo the screw on the cover cap (pos. a) of the drying fan by hand and lift up the cover cap.



3. Pull out the pre-filter (pos. c) upwards and replace it.
   Pull out the HEPA filter (pos. b) upwards and replace it.



4. Close the cover cap and turn the screw hand-tight.

Maintenance

Comply with the following for safe handling:

- Maintain the specified maintenance intervals. Continuing operation beyond the maintenance interval can result in malfunctions in the device.
- Have maintenance performed only by trained and authorised technicians using the original MELAG maintenance set.
- If components that are not included in the maintenance set have to be replaced during maintenance, only original spare parts from MELAG may be used for the replacement.

Regular maintenance is vital to ensure reliable operation and value retention of the device. All function and safety-relevant components and electrical units are checked during maintenance and replaced where necessary. A freely-accessible device has a maintenance time of approx. 3-4 h plus test run and any work exceeding the specifications of the regular maintenance plan.

Maintenance is to be performed after every 1000 cycles or 24 months at the latest.

(Process) Validation

A reproducible cleaning and disinfection outcome can only be ensured via correct operation (incl. use of suitable accessories). The practice operator is responsible for ensuring reproducibility through the use of batch checks, routine checks and/or periodic inspections (e.g. validation).
This requirement is made (in Germany) by e.g. the Medical Devices Operating Directive (§ 8 Sec. 2 MPBetreibV); ▸DGKH, ▸DGSV and ▸AKI directives and the recommendations from the ▸Robert Koch Institute. This requirement is also made in international regulations. This is based on ▸EN ISO 15883, which is also valid in Germany. Please observe all valid national regulations and specifications. In case of doubt, consult the relevant professional association.

- Only use the loading pattern specified and approved within the scope of the validation. Changing the loading pattern and/or accessories requires revalidation.
- The use of ▸process agents that are not recommended by MELAG (see Process agents [▸ Page 9]) may cause an increased effort for validation / performance requalification.
- MELAG cannot provide a guarantee for non-MELAG accessories, even if they are in possession of validation.
- The document “Recommendations for the validation of MELAtherm 10” (doc. ME_006-22) is available for download in the MELAG service portal for the person performing the validation and the technical service.

11 Pause times

Run the **Rinsing** program twice before reprocessing following pause times longer than two days (e. g. after a weekend).

Given an ophthalmic application, run the **Ophthalmo-Program** without load following pause times of more than two days in order to obtain the requisite water quality.

Long operating pauses (longer than two weeks)

Decommission the device if you plan to have an immobilisation time of over two weeks.

Decommissioning

Preparation for transport

Decommissioning in preparation for transport outside the practice should only be undertaken by MELAG-authorised persons.

Following longer operating pauses

When decommissioning the device for a long pause (e.g. due to holiday), proceed as described in the following.

The following must be fulfilled or present:

✓ The washing chamber is dry.

1. Switch off the device at the power switch.
2. Disconnect the power plug from the socket.
3. Turn off the water inflow.

Recommissioning

NOTICE

Air must be removed from the metering system twice during commissioning or after removal of the suction lances. Air removal completely removes air bubbles from the hoses and ensures proper metering.

- Before the first reprocessing program, run the **Air removal** program twice.
- Then start your usual reprocessing program without a load.

▶ Comply with the specifications in chapter First steps [▶ Page 17] when performing the recommissioning.

Storage and transport

CAUTION

Danger of injury from incorrect carrying!

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

- Comply with the safety regulations that apply to you.

Comply with the following for safe handling:

- Avoid frost or extreme heat during the transport and storage. If this cannot be ensured, unpack the device and store it at room temperature for at least two hours before installation and commissioning.
- Avoid strong shocks/vibrations.

Transport within the practice

1. Empty the device entirely.
2. Remove the inserts and the basis basket.
3. Seal the water inlet hoses.
4. Close the door before moving the device.

Recommissioning after relocation

When recommissioning after a move, proceed as with the first commissioning, see First steps [▸ Page 17].

12 Malfunctions

Comply with the following for safe handling:

- Should the device issue the same malfunction message repeatedly, turn off the device and if necessary, inform your stockist.
- The device may only be serviced by ▸authorised technicians.

Troubleshooting online

All messages with current descriptions can be found in the Troubleshooting portal on the MELAG website (https://www.melag.com/en/service/troubleshooting).

Not all notifications on the display are malfunction messages. Messages are issued on the display with an event number. This number is used for identification for assistance on the MELAG website and with the authorised technician.

Warning messages are marked in the display with a **W** and malfunction messages with an **F**. Ensure that you have complied with all instructions relating to a warning message or malfunction message issued by the display of the device.

Notification

A notification is provided for your information and to assist you in operating the device. Malfunction-free operation of the device is still possible.

Warning message

A warning message helps to ensure malfunction-free operation and recognition of undesirable situations. React to a warning message quickly to prevent the resulting malfunction.

Malfunction message

Malfunction messages are issued when it is not possible to ensure safe operation or cleaning and disinfection. These can appear on the display shortly after switching on the device or during a program run. If a malfunction occurs during a program run, the program will be aborted and considered unsuccessful.

Before contacting the technical service

Follow the instructions that appear on the device's display that relate to a warning or malfunction message. The following table contains a summary of the most important events. Should you be unable to find the relevant event, or your efforts do not redress the problem, you can contact your stockist or the MELAG customer service. Have the number of your device, the event number and a detailed description of the malfunction to hand so that we can help you.

Notifications

Event	Possible cause	Remedy
Banging or rattling noise in the washing chamber during a program run	The rinse arm bangs against instruments or containers. The load moves in the washing chamber.	1. Interrupt the program and re-arrange the load. 2. Start the program again.
White layer on the instruments	The internal water softening unit has not been adjusted correctly.	Check the water hardness of the tap water and re-adjust the internal water softening unit if necessary, see Description of the device [▸ Page 10].
	Water-insoluble, hardened treatment residue (e.g. dental cement or root canal disinfectants) remain on the instruments.	Remove the residue manually immediately after instrument application.
	Residues or precipitates of ultrasound gel may have remained on the instruments.	Avoid cleaning agents and disinfectants based on quaternary ammonium compounds in the manual pre-cleaning of lubricant gel residues. Gels containing thickening agents, especially polyacrylic acid, will precipitate after contact with quaternary ammonium compounds. If a change of gel is preferred, then devices with a cation-compatible thickening system are suitable. Contact the manufacturer of the gel or process agents for more information.
Poor cleaning outcome	The basis basket, insert baskets / insert racks are incorrectly loaded or are too full.	Ensure correct arrangement and avoid overloading.
	Load results in unwashed areas.	Ensure the correct arrangement of the instruments.
	The cleaning agent is unsuitable for this type of soiling.	Use a suitable cleaning agent for automatic cleaning.
	Encrusted soiling on the instruments.	Do not allow soiling to dry on. Rinse off soiling immediately.
	Rinse arm nozzles or injector rail nozzles blocked.	Remove blockages, see Maintenance [▸ Page 43].
	Sieves in the pump sump are soiled.	Clean the coarse and the fine sieve, see Maintenance [▸ Page 43].
Empty display	The device is not switched on.	Check that the device is connected to the power supply and is switched on.
	The fuse in domestic installation has tripped. This can be caused by operating a number of electrical devices at the same time.	Check the fuse in the domestic installation (for the minimum fuse protection, see the type plate).
Residual moisture on and/or in the instruments	The basis basket, insert baskets / insert racks are incorrectly loaded or are too full.	Ensure correct arrangement and avoid overloading.
	The interior structure of the instruments is too complex or the interior volume is insufficient.	Dry the instruments with clean (medical) compressed air.
Display message: `Salt storage empty. Please refill salt!`	The regenerating salt is exhausted.	Fill the salt container with regenerating salt. The signal (a tone) informs the operator that the salt in the salt container has been recognised and that operation can be continued.

Warning messages

Event	Possible cause	Remedy
214	The CF card was removed from the slot during a running program and re-inserted.	Once the program has been completed, select the **DOCU MENU** in the display and output the current log. Do not remove the CF card during active logging. Logging is active when the red LED illuminates.
215 216 217	The CF card is not functioning correctly. The system does not recognise a CF card or cannot read it.	1. Save the logs on an external data carrier. 2. Select **DOCU MENU** on the display and navigate to **Format CF card**. Format the CF card in the device, see the technical manual.
	The memory of the CF card is too large (max. 4 GB).	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends the use of original accessories only.
218	An already-existing log has been recognised on the CF card whilst outputting the log via the **DOCU MENU**.	Acknowledge the message with the key 4. The existing log will not be overwritten.
219 220	The CF card is not functioning correctly. The system does not recognise a CF card or cannot read it.	1. Save the logs on an external data carrier. 2. Select **DOCU MENU** on the display and navigate to **Format CF card**. Format the CF card in the device, see the technical manual.
	The memory of the CF card is too large (max. 4 GB).	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends the use of original accessories only.
221	The memory space of the CF card is full. No further logs can be saved.	1. Save the logs on an external data carrier. 2. Select **DOCU MENU** on the display and navigate to **Format CF card**. Format the CF card in the device, see the technical manual.
222 223 224 225 226 227	The CF card is not functioning correctly. The system does not recognise a CF card or cannot read it.	1. Save the logs on an external data carrier. 2. Select **DOCU MENU** on the display and navigate to **Format CF card**. Format the CF card in the device, see the technical manual.
	The memory of the CF card is too large (max. 4 GB).	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends the use of original accessories only.
228	The CF card is too slow. Either the CF card is no longer recognised following a reset or it was inserted in the slot under voltage.	1. Save the logs on an external data carrier. 2. Insert a new CF card (max. 4 GB) in the card slot. During insertion, the MELAG lettering must point to the right. MELAG recommends using original accessories only.
229	The CF card was removed from the slot during a writing action.	Once the program has been completed, select the **DOCU MENU** in the display and output the current log. Do not remove the CF card during active logging. Logging is active when the red LED illuminates.

Event	Possible cause	Remedy
230	The CF card is not functioning correctly. The system does not recognise a CF card or cannot read it.	1. Save the logs on an external data carrier. 2. Select **DOCU MENU** on the display and navigate to **Format CF card**. Format the CF card in the device, see the technical manual.
	The memory of the CF card is too large (max. 4 GB).	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends the use of original accessories only.
231	The CF card is not functioning correctly. There is no CF card in the slot.	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends using original accessories only.
	The system does not recognise a CF card or cannot read it.	Push the CF card in the card slot until the ejector key triggers.
232 233	The CF card is not functioning correctly. The CF card is currently being initialised or written.	Acknowledge the message with the key 4.
234 235 236 237	The CF card is not functioning correctly. The system does not recognise a CF card or cannot read it.	1. Save the logs on an external data carrier. 2. Select **DOCU MENU** on the display and navigate to **Format CF card**. Format the CF card in the device, see the technical manual.
	The memory of the CF card is too large (max. 4 GB).	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends the use of original accessories only.
238	The CF card is not functioning correctly and cannot be formatted.	Insert a new CF card (max. 4 GB) in the card slot. During insertion, the MELAG lettering must point to the right. MELAG recommends using original accessories only.
239 240	The CF card is not functioning correctly. The system does not recognise a CF card or cannot read it.	1. Save the logs on an external data carrier. 2. Select **DOCU MENU** on the display and navigate to **Format CF card**. Format the CF card in the device, see the technical manual.
	The memory of the CF card is too large (max. 4 GB).	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends the use of original accessories only.
372	The internal log memory of the device is full. Not all logs have been outputted.	1. Select the **DOCU MENU** in the display and output the logs of the internal memory. 2. Start the program again. 3. If this message is displayed repeatedly, delete the internal memory.

Event	Possible cause	Remedy
377	The system does not recognise an output medium. The system does not recognise a log printer, even though it is connected.	Check the settings in **SETUP MENU** > **Autom. logging**.
	Automatic logging is active in **SETUP MENU**. However, a log printer is not connected.	1. Working in the display, select **DOCU MENU** and save the logs on the CF card or the computer. 2. Working in the **SETUP MENU**, deactivate **Autom. logging**. The display changes from **ACTIVE** to **INACTIVE**.
386	The device's internal log memory contains logs which have yet to be outputted. The memory is almost full.	Acknowledge the message with the key 4. The program starts. As soon as the program has ended, working in the display, select the **DOCU MENU** and output all logs from the internal memory (CF card or external data carrier).
394	Not all logs from the device's internal log memory have been saved on the CF card.	Acknowledge the message with the key 4. The logs are written and saved on the CF card.
395	Not all logs have been outputted from the device's internal log memory via the EDM printer.	Acknowledge the message with the key 4. The logs are outputted and printed.
396	Not all logs have been loaded onto the FTP server from the internal log memory of the device.	Acknowledge the message with the key 4. The logs are outputted and saved.
397	The system is unable to locate a computer for log output. Even though the device is connected to a computer, it is unable to establish a connection for log output.	1. Check the network connection to the computer/server. 2. Switch on the computer/server. 3. Restart the documentation software.
	The device is not connected to a computer, but in **SETUP MENU** > **Autom. logging** the option computer is active.	Working in the display, select **SETUP MENU** > **Autom. logging** and deactivate the option computer. The display changes from **YES** to **NO**.
414	The rinse aid has been exhausted.	1. Replace the rinse aid container, working in accordance with the working safety regulations. Alternatively, refill. 2. Start the **Air removal** program. **NOTICE! Use only process agents which you have used before.**
424	The neutraliser has been exhausted.	1. Replace the neutraliser container, working in accordance with the working safety regulations. Alternatively, refill. 2. Start the **Air removal** program. **NOTICE! Use only process agents which you have used before.**
425	The cleaning agent has been exhausted.	1. Replace the cleaning agent container, working in accordance with the working safety regulations. Alternatively, refill. 2. Start the **Air removal** program. **NOTICE! Use only process agents which you have used before.**
428	There is almost no regenerating salt left.	Fill regenerating salt, see Filling the regenerating salt [▶ Page 20].
447	The rinse pressure in the washing chamber is too low. Large containers with the opening pointing upwards may have been sorted into the device. This diverts water from the rinsing process.	Sort the containers in the device with their openings facing downwards.
450	The water inflow is insufficient.	Check the water supply of the device. Open the water inflow tap completely.

Event	Possible cause	Remedy
475	The HEPA filter in the drying fan is soiled.	Replace the HEPA-filter in the drying fan, see Replacing the filter in the drying fan [▸ Page 46].
477	The requisite pressure for the drying has not been achieved. The pre-filter in the drying fan is soiled.	Replace the drying fan pre-filter, see Replacing the filter in the drying fan [▸ Page 46].
	The lid of the drying fan has not been locked correctly.	Lock the lid of the drying fan correctly.
478	The HEPA filter and the pre-filter in the drying fan are soiled.	Replace the HEPA-filter and the pre-filter, see Replacing the filter in the drying fan [▸ Page 46].
500	The display of date and time of the system clock are incorrect.	Working in the display, select the **SETUP MENU** and set the correct date and time, see Setting date and time [▸ Page 39].
501	The CF card is not functioning correctly. There is no CF card in the slot.	Insert a CF card with a memory of up to 4 GB. During insertion, the MELAG lettering must point to the right. MELAG recommends using original accessories only.
	The system does not recognise a CF card or cannot read it.	Push the CF card in the card slot until the ejector button triggers.
502	The system is unable to locate a computer for log output. The network connection has been interrupted.	Check the network connection to the computer/server.
	The computer/server is not switched on.	Switch on the computer/server.
	The documentation software has not been started.	Restart the documentation software.
	A computer is not connected, but the option computer is active in **SETUP MENU** > **Autom. logging**.	Working in the display, select **SETUP MENU** > **Autom. logging** and deactivate the option computer. The display changes from **YES** to **NO**.
533	The temperature in the washing chamber is very high. The door is blocked and cannot be unlocked immediately.	**CAUTION! The instruments are hot.** Press the keys indicated in the display to acknowledge the message. The door can be opened. **PLEASE NOTE:** Take appropriate safety measures, e.g. keep a safe distance and wear heat-resistant gloves, before opening the device.
534	The temperature in the washing chamber is very high. The door is blocked and cannot be unlocked immediately.	**CAUTION! Danger of scalding! The instruments are hot.** 1. Wait until the temperature of the washing chamber has cooled. 2. Press the keys indicated in the display.
549	The conductivity of the DI water is insufficient (greater than 15 µS/cm). The MELAdem 53/53 C cartridge is exhausted.	Replace the MELAdem 53/53 C cartridge.
	The DI water supply is of insufficient quality.	Check the DI water supply.
560	The maximum permissible mains voltage (270 V) has been exceeded.	Have the connection conditions checked by a qualified electrician.
561	The minimum permissible mains voltage (190 V) was undercut.	Have the connection conditions checked by a qualified electrician.
562	The maximum permissible mains frequency (63 Hz) was exceeded.	Have the connection conditions checked by a qualified electrician.
563	The minimum permissible mains frequency (45 Hz) was undercut.	Have the connection conditions checked by a qualified electrician.
575	The date and time are invalid.	Check the settings in the **SETUP MENU**.

Event	Possible cause	Remedy
622	The maximum permissible maintenance interval (24 months) or the maximum permissible number of cycles (1000 cycles) has been reached since commissioning or the last maintenance.	Arrange a maintenance appointment with an authorised technician. You can continue to start the device.
625	The temperature during pre-cleaning is too high. The temperature during the water inflow is higher than 45 °C.	Check the water supply to the device.
671	Insufficient conductivity (> 15 µS/cm and < 25 µS/cm) was measured in the washing chamber during disinfection in the **Ophthalmo-Program**. This could be caused by carry-over of process agents, regenerating salt or deposits. The program successfully completed despite the warning.	1. Close the screw cap of the salt container correctly. 2. Setup the containers in the device with their openings facing downwards. 3. Check the hollow bodies before reprocessing for their free passage and correct position. 4. Clean the filter screen in the instrument connection equipment. 5. Remove and clean the coarse and fine sieves, see Regular checks and cleaning [▸ Page 43]. 6. Insert the non-return valve in the pump sump correctly, see Cleaning on demand [▸ Page 45]. 7. Check for foreign bodies in the non-return valve.

Malfunction messages

WARNING

Danger of contamination through program abort.

Aborting a program before the drying phase begins means that the load is classed as not having been disinfected.

Event	Possible cause	Remedy
137	The cleaning agent metering pump is not functioning correctly. The metering system may be blocked.	1. Switch the device off and then on again. 2. Start the program again.
139	The fan of the display is not functioning correctly.	1. Switch the device off and then on again. 2. Start the program again.
140	The fan of the diffuser is not functioning correctly.	1. Switch the device off and then on again. 2. Start the program again.
141	The neutraliser metering pump is not functioning correctly. The metering system may be blocked.	1. Switch the device off and then on again. 2. Start the program again.
142	The rinse aid metering pump is not functioning correctly. The metering system may be blocked.	1. Switch the device off and then on again. 2. Start the program again.
143	The solenoid valve for the cold water does not switch.	1. Switch the device off and then on again. 2. Start the program again.
144	The solenoid valve for the regeneration does not switch.	1. Switch the device off and then on again. 2. Start the program again.
145	The solenoid valve for the steam condenser does not switch.	1. Switch the device off and then on again. 2. Start the program again.
146	The solenoid valve of the DI inlet hose does not switch.	1. Switch the device off and then on again. 2. Start the program again.
147	The solenoid valve of the cold water inlet hose does not switch.	1. Switch the device off and then on again. 2. Start the program again.

Event	Possible cause	Remedy
154 155	The temperature difference between the two temperature sensors (temperature control and temperature log) in the washing chamber is too high.	1. Switch off the device and wait approx. 30 min with the door open. 2. Switch on the device and restart the program.
156	The temperature sensor for monitoring the drying is not functioning correctly.	1. Switch off the device and wait approx. 30 min with the door open. 2. Switch on the device and restart the program.
159	The collection tank has not been emptied correctly.	1. Switch the device off and then on again. 2. Start the program again.
160	The coarse or fine sieves are soiled.	1. Switch off the device. 2. Clean the coarse and fine sieves, see Regular checks and cleaning [▸ Page 43]. 3. Switch on the device and restart the program.
161	The washing chamber pressure required for drying has not been reached.	1. Switch the device off and then on again. 2. Start the program again.
162	The requisite rinse pressure has not been reached.	1. Switch the device off and then on again. 2. Start the program again.
163	The cleaning agent metering pump is not functioning correctly. The metering system may be blocked.	1. Switch the device off and then on again. 2. Start the program again.
165	The fan of the display is not functioning correctly.	1. Switch the device off and then on again. 2. Start the program again.
166	The fan of the diffuser is not functioning correctly.	1. Switch the device off and then on again. 2. Start the program again.
167	The neutraliser metering pump is not functioning correctly. The metering system may be blocked.	1. Switch the device off and then on again. 2. Start the program again.
168	The rinse aid metering pump is not functioning correctly. The metering system may be blocked.	1. Switch the device off and then on again. 2. Start the program again.
169	The solenoid valve for the cold water does not switch.	1. Switch the device off and then on again. 2. Start the program again.
170	The solenoid valve for the regeneration does not switch.	1. Switch the device off and then on again. 2. Start the program again.
171	The solenoid valve for the steam condenser does not switch.	1. Switch the device off and then on again. 2. Start the program again.
172	The solenoid valve of the DI inlet hose does not switch.	1. Switch the device off and then on again. 2. Start the program again.
173	The solenoid valve of the cold water inlet hose does not switch.	1. Switch the device off and then on again. 2. Start the program again.
257	The connection to the conductivity sensor has been interrupted. No or an incorrect conductivity measurement is stated.	1. Switch the device off and then on again. 2. Start the program again.
410	The rinse aid has been exhausted.	1. Replace the rinse aid container, working in accordance with the working safety regulations. Alternatively, refill. **NOTICE! Use only process agents which you have used before.** 2. Start the **`Air removal`** program.

Event	Possible cause	Remedy
411	The neutraliser has been exhausted.	1. Replace the neutraliser container, working in accordance with the working safety regulations. Alternatively, refill. **NOTICE! Use only process agents which you have used before.** 2. Start the **Air removal** program.
412	The cleaning agent has been exhausted.	1. Replace the cleaning agent container, working in accordance with the working safety regulations. Alternatively, refill. **NOTICE! Use only process agents which you have used before.** 2. Start the **Air removal** program.
426	No cleaning agent is being pumped. The cleaning agent container has been exhausted, air may have been transported.	1. Replace the cleaning agent container, working in accordance with the working safety regulations. Alternatively, refill. **NOTICE! Use only previously used process agents!** 2. Start the **Air removal** program.
	The hose to the suction lance is kinked.	1. Eliminate any kinks or pinch points on the process agent hoses. 2. Start the **Air removal** program.
	Air bubbles have developed in the metering system after long standstill times.	Start the **Air removal** program.
427	No neutraliser is being pumped. The neutraliser container has been exhausted, air may have been transported.	1. Replace the neutraliser container, working in accordance with the working safety regulations. Alternatively, refill. **NOTICE! Use only previously used process agents!** 2. Start the **Air removal** program.
	The hose to the suction lance is kinked.	1. Eliminate any kinks or pinch points on the process agent hoses. 2. Start the **Air removal** program.
	Air bubbles have developed in the metering system after long standstill times.	Start the **Air removal** program.
431	No cleaning agent is being pumped. The cleaning agent container is empty or almost empty.	1. Replace the cleaning agent container, working in accordance with the working safety regulations. Alternatively, refill. **NOTICE! Use only previously used process agents!** 2. Start the **Air removal** program.
	The hose to the suction lance is kinked.	1. Eliminate any kinks or pinch points on the process agent hoses. 2. Start the **Air removal** program.
	Air bubbles have developed in the metering system after long standstill times.	Start the **Air removal** program.

Event	Possible cause	Remedy
432	No neutraliser is being pumped. The neutraliser container is empty or almost empty.	1. Replace the neutraliser container, working in accordance with the working safety regulations. Alternatively, refill. **NOTICE! Use only previously used process agents!** 2. Start the **`Air removal`** program.
	The hose to the suction lance is kinked.	1. Eliminate any kinks or pinch points on the process agent hoses. 2. Start the **`Air removal`** program.
	Air bubbles have developed in the metering system after long standstill times.	Start the **`Air removal`** program.
433	Water is in the pump sump after pumping out. The coarse or fine sieve is soiled.	Clean the coarse and fine sieves, see Regular checks and cleaning [▶ Page 43].
	The non-return valve in the pump sump is missing or fitted incorrectly.	Insert the non-return valve in the pump sump correctly, see Regular checks and cleaning [▶ Page 43].
	The non-return valve is blocked by a foreign body.	Check the non-return valve for foreign bodies and remove them if you find any.
434	Water is in the pump sump after pumping out. The coarse or fine sieve is soiled.	Clean the coarse and fine sieves, see Regular checks and cleaning [▶ Page 43].
	The non-return valve in the pump sump is missing or fitted incorrectly.	Insert the non-return valve in the pump sump correctly, see Regular checks and cleaning [▶ Page 43].
	The non-return valve is blocked by a foreign body.	Check the non-return valve for foreign bodies and remove them if you find any.
	The outlet hose is kinked.	Check the installation of the outlet hose.
	The siphon or outlet hose is blocked.	Check the siphon and the outlet hose for blockage.
440	The program in progress has ended prematurely. The load is considered not cleaned and disinfected.	**WARNING! Danger of contamination** 1. Acknowledge the message with key 4. 2. Press the display buttons.
449	The rinse pressure in the washing chamber is too low. Insufficient water inflow.	Check the water inflow of the device. Open the water inflow tap completely.
	The basis basket has been inserted incorrectly or not at all.	Insert the basis basket in the washing chamber correctly, see Inserting the basis basket [▶ Page 19].
	Too many non-filled apertures on the injector rail.	Seal non-filled apertures on the injector rail with a screw plug.
	The coarse or fine sieves are soiled.	Remove and clean the coarse and fine sieves, see Regular checks and cleaning [▶ Page 43].
	Large containers with the opening pointing upwards may have been sorted into the device. This diverts water from the rinsing process.	Sort the containers in the device with their openings facing downwards.
	Strong foam generation: The instruments have been pre-cleaned in or placed in a foam-generating solution and have then been subject to insufficient rinsing.	Rinse the instruments thoroughly before reprocessing.
	Strong foam generation: Strong soiling of the filter disc in the universal adapter for transmission instruments.	Remove and replace the soiled filter disc. Clean the reusable filter screen.
	Strong foam generation: Unsuitable process agents (rinse aid or cleaning agent) have been used.	Use only those process agents suitable for the device.
451	The temperature difference between the two temperature sensors in the washing chamber is too great. The temperature sensors were not covered with water sufficiently. The upper rinse arm revolves too slowly.	Clean the upper rinse arm and check its ease of movement.

Event	Possible cause	Remedy
462 464	The water inflow is insufficient. The water inflow tap has not been opened completely.	Check the water inflow of the device. Open the water inflow tap completely.
	The sieve in the cold water connection is blocked.	Remove and clean the sieve in the cold water connection.
	The cold water inlet hose is kinked.	Check the installation of the cold water inlet hose.
466	Insufficient DI water inflow. The DI water supply has been interrupted.	Check the DI water supply. Check the DI water system for its correct function.
	The sieve in the DI water connection is blocked.	Remove and clean the sieve in the DI water connection.
	The DI water inlet hose is kinked.	Check the installation of the DI water inlet hose.
467	The water inflow is insufficient. The water inflow tap has not been opened completely.	Check the water inflow of the device. Open the water inflow tap completely.
	The sieve in the cold water connection is blocked.	Remove and clean the sieve in the cold water connection.
	The cold water inlet hose is kinked.	Check the installation of the cold water inlet hose.
468	Insufficient DI water inflow. The DI water supply has been interrupted.	Check the DI water supply. Check the DI water system for its correct function.
	The sieve in the DI water connection is blocked.	Remove and clean the sieve in the DI water connection.
	The DI water inlet hose is kinked.	Check the installation of the DI water inlet hose.
471	The message is triggered by a poor operation sequence in the **DIAGNOSIS+SERVICE** menu.	Switch the device off and then on again.
474	The HEPA filter is not recognised. A HEPA filter has not been inserted.	Insert the HEPA filter.
	The HEPA filter for the drying fan has not been inserted correctly.	Check whether the HEPA filter for the drying fan has been inserted correctly.
	The cover cap of the drying fan has not been locked correctly.	Close the cover cap of the drying fan correctly.
476	The requisite pressure for the drying has not been reached. The HEPA filter for the drying fan has not been inserted correctly.	Check whether the HEPA filter has been inserted correctly in the drying fan.
	The cover cap on the drying fan has not been locked correctly.	Close the cover cap of the drying fan correctly.

Event	Possible cause	Remedy
484	The rinse pressure in the washing chamber is too low. The water inflow is insufficient.	Check the water inflow of the device. Open the water inflow tap completely.
	The basis basket has been inserted incorrectly or not at all.	Insert the basis basket in the washing chamber correctly. The injector rail should be located on the right-hand side and dock with the blind cap on the fitting of the rear wall, see Inserting the basis basket [▸ Page 19].
	Too many non-filled apertures on the injector rail.	Seal non-filled apertures on the injector rail with a screw plug.
	The coarse or fine sieves are soiled.	Remove and clean the coarse and fine sieves, see Regular checks and cleaning [▸ Page 43].
	Large containers with the opening pointing upwards may have been sorted into the device. This diverts water from the rinsing process.	Sort the containers in the device with their openings facing downwards.
	Strong foam generation: the instruments have been pre-cleaned with a foam-generating solution and have then been subject to insufficient rinsing.	Rinse the instruments thoroughly before reprocessing.
	Strong foam generation: strong soiling of the filter disc in the universal adapter for transmission instruments.	Remove and replace the soiled filter disc. Clean the reusable filter screen.
	Strong foam generation: unsuitable process agents (rinse aid or cleaning agent) have been used.	**NOTICE! Use only those process agents suitable for this device.**
505	The salt storage has been exhausted. No new regeneration can be performed.	Fill regenerating salt, see Filling the regenerating salt [▸ Page 20]. A program can be started if the salt has dissolved in the water. Do not start the program until the regenerating salt has been filled and the signal tone has sounded.
509	Liquid in the device floor trough.	**CAUTION! Avoid contact with liquids in the floor trough; they can contain process agents.** 1. Switch off the device. 2. Close the water inflow tap. 3. Please contact the authorised technician.
510	During a program run, the water level in the washing chamber was measured to be too high.	1. Press the keys indicated in the display. 2. Close the door and start the program again.
512	The running program was interrupted by a power failure.	**WARNING! Danger of contamination** 1. Acknowledge the message with key 4. 2. Start the program again.
524	The door of the device is blocked and cannot be closed correctly.	Check the door area for blockages.
531	The emergency-opening on the door was actuated during a program run.	**WARNING! Danger of contamination** 1. Acknowledge the message with key 4. 2. Close and lock the door correctly. 3. Start the program again.
535	The fine sieve has been fitted incorrectly.	Insert the fine sieve correctly. The arrow on the fine sieve must point towards the left-hand corner of the washing chamber.

Event	Possible cause	Remedy
536 537 538 539	The upper / lower rinse arm is mechanically blocked.	Check the freedom of motion of the upper / lower rinse arm.
	The impulse nozzle of the upper / lower rinse arm is blocked.	Remove and clean the upper / lower rinse arm.
	The basis basket has been inserted in the incorrect position or not at all.	Insert the basis basket correctly. The injector rail must dock on to the connection fitting.
	Fine deposits in the rinse arm bearing or on the sliding disc.	Remove and clean the upper / lower rinse arm. Clean the sliding disc with a cloth.
	The water inflow is not sufficient.	Check the water inflow to the device: 1. Remove and clean the sieve in the cold water connection. 2. Check the installation of the inlet hose. 3. Open the water inflow tap completely.
546	The cartridge of the MELAdem 53/53 C was not vented correctly. A sudden flow of water causes incorrect readings for a short time.	1. Remove the air from the cartridge of the MELAdem 53/53 C (see “Commissioning” in the user manual of the water treatment unit). 2. Start the program again.
548	The conductivity of the DI water is insufficient (greater than 60 µS/cm). The MELAdem 53/53 C cartridge is exhausted.	Replace the MELAdem 53/53 C cartridge.
	The DI water supply is of insufficient quality.	Check the DI water supply.
571	The program cannot be started as brine is still in the water softening unit or washing chamber. Only the **`Regeneration`** program may be started.	Start the **`Regeneration`** program.
583	The water inflow was interrupted during the active program.	1. Open the water inflow tap completely. 2. Start the program again. The water inflow must be ensured during the entire duration of the active program.
620	Strong foam generation in the washing chamber. The instruments are precleaned or placed in a foam-generating solution.	Load the instruments into the MELAtherm without precleaning or rinse them thoroughly after placing in a solution.
	Non-qualified process agents (rinse aid or cleaning agent) have been used.	**NOTICE! Use only process agents suitable for this device.**
	The metering concentration has been set incorrectly.	Check the settings of the metering concentration and if necessary, arrange for correction by an authorised technician.
	Strong soiling of the filters in the transmission instrument adapter.	Clean or renew the filters at regular intervals.
624	The collection tank is not pumped out.	1. Switch the device off and then on again. 2. Start the program again.
626	The temperature during pre-cleaning is too high.	Check the water supply to the device.
632	The coarse or fine sieves are soiled.	1. Remove and clean the coarse and fine sieves, see Regular checks and cleaning [▸ Page 43]. 2. Switch the device off and then on again. 3. Start the program again.
653	The water inflow was interrupted during the active program.	1. Open the water inflow tap completely. 2. Start the program again. The water inflow must be secured during the entire duration of the active program.

Event	Possible cause	Remedy
660 661	The power supply for the DTA device version is insufficient.	1. Check whether the power plug has been inserted correctly in the socket. 2. Check the fuses in the sub-distribution.
662	The upper rinse arm is soiled.	Remove the upper rinse arm and clean the nozzles, see Regular checks and cleaning [▸ Page 43].
669	The coarse or fine sieves are strongly soiled.	1. Remove and clean the coarse and fine sieves, see Regular checks and cleaning [▸ Page 43]. 2. Switch the device off and then on again. 3. Start the program again.
670	The water inflow was interrupted during the active program.	1. Open the water inflow tap completely. 2. Start the program again. The water inflow must be ensured during the entire duration of the active program.
672	Insufficient conductivity (≥ 25 µS/cm) was measured in the washing chamber during disinfection in the **Ophthalmo-Program**. This could be caused by carry-over of process agents, regenerating salt or deposits. The program successfully completed despite the warning.	1. Close the screw cap of the salt container correctly. 2. Setup the containers in the device with their openings facing downwards. 3. Check the hollow bodies before reprocessing for their free passage and correct position. 4. Clean the filter screen in the instrument connection equipment. 5. Remove and clean the coarse and fine sieves, see Regular checks and cleaning [▸ Page 43]. 6. Insert the non-return valve in the pump sump correctly, see Cleaning on demand [▸ Page 45]. 7. Check for foreign bodies in the non-return valve.
673	The **Ophthalmo-Program** does not start. A DI connection has not been set in the **SETUP MENU**.	1. Connect the DI water. 2. Working in the display, select **SETUP MENU** > **DI water** and set the parameter to **YES**.
675	Water is in the pump sump after pumping out. The coarse or fine sieves are soiled.	Remove and clean the coarse and fine sieves, see Regular checks and cleaning [▸ Page 43].
	The non-return valve in the pump sump is missing or has been fitted incorrectly.	Insert the non-return valve in the pump sump correctly.
	The non-return valve is blocked by foreign bodies.	Check whether foreign bodies are in the non-return valve, see Cleaning on demand [▸ Page 45].

13 Technical data

Device dimensions MELAtherm 10 DTA/DTB

Device type	Semi-integrated unit	Free standing	Top-frame device
Device dimensions (H x W x D)[2)]	81.8 x 59.8 x 67.8 cm	83.6 x 59.8 x 67.8 cm	124 x 59.8 x 67.8 cm
Empty weight	79 kg	85 kg	106 kg
Operating weight	113 kg	119 kg	182 kg

Device type	MELAtherm 10 DTA	MELAtherm 10 DTB
Washing chamber (H x W x D)	29 x 45.5 x 42.3 cm	
Volume of the washing chamber	84 l	
Electrical connection		
Power supply	3N AC 380-415 V, 50/60 Hz	AC 220-240 V, 50/60 Hz
Max. voltage range	360-440 V	207-253 V
Electrical power	9.3 kW	3.3 kW
Building fuses	3x 16 A, separate power circuit with 16 A fuses Type B, additional residual current device with 30 mA	1x 16 A, separate power circuit with 16 A fuses Type B, additional residual current device with 30 mA
Overvoltage category	Transient overvoltages up to the values of overvoltage category II	
Length of the power cable	2 m	
Degree of air pollution (in accordance with EN 61010-1)	Category 2	
Ambient conditions		
Installation location	Interior of a building	
Max. noise emission (Drying)	73 dB(A)	
Noise emission median value	68 dB(A)	
Heat emission (with max. solid load)	0.9 kWh (3.2 MJ)	
Ambient temperature	5-40 °C (recommended max. 25 °C)	
Air pressure	750-1060 mbar	
Relative humidity	max. 80 % at temperatures up to 31 °C, max. 50 % at 40 °C (decreasing in a linear fashion)	
Degree of protection (in accordance with IEC 60529)	IP20	
Max. altitude	1500 m (It may be necessary to reduce the disinfection temperature depending on the installation altitude, see the technical manual.)	
Cold water		
Connection cold water / DI water	3/4“ internal thread (for the connection to a standard 3/4“ connection with external thread)	
Water quality cold water	Drinking water according to Drinking Water Ordinance (TrinkwV) / observe local specifications	
Water quality DI water (max. permissible conductivity)	from 15 µS/cm warning, from 60 µS/cm malfunction, Ophthalmo-Program: from 25 µS/cm malfunction	
Min. flow pressure	1.5 bar at 8 l/min Netherlands: 2 bar at 8 l/min	
Recommended flow pressure	2.5 bar at 8 l/min Netherlands: 3 bar at 8 l/min	
Max. water pressure (static)	10 bar	
Cold water temperature	1-26 °C	

[2)] Appropriate for a 60 cm deep working surface

Device type	MELAtherm 10 DTA	MELAtherm 10 DTB
Wastewater		
Wastewater connection	DN21	
Max wastewater temperature	93 °C (< 1 min, approx. 5.5 l)	
Amount of wastewater per hour	approx. 29 l (in short intervals)	
Capacity of drain pump	max. 40 l/min (volume in wastewater hose)	
Length of the inlet and outlet hose	each 1.80 m (extension optionally available)	

14 Accessories and spare parts

You can obtain the specified articles together with an overview of further accessories from your stockist. Information regarding the instrument reprocessing accessories can be found in the current MELAG price list.

	Article	Art. no.
Optionally available	Base cabinet/floor unit (H x W x D) 40 x 59.8 x 59.8 cm	ME11021
	Stainless steel cover plate (H x W x D) 1.8 cm x 59.8 cm x 59.8 cm	ME65310
Water treatment	MELAdem 53 C with 2 containers (15 l each)	ME01036
	MELAdem 53 with 2 containers (20 l each)	ME01038
Documentation	CF card	ME01043
	Card reader for CF card	ME01048
	MELAprint 44 log printer	ME01144
	Network adapter for MELAprint	ME40295
Process agents	MEtherm 50 (mildly-alkaline enzymatic cleaning agent)	ME11620
	MEtherm 51 (mildly-alkaline enzymatic cleaning agent)	ME11630
	MEtherm 55 C (citric acid-based neutraliser)	ME11621
	MEtherm 61 (rinse aid)	ME11627
	Rinse aid storage container (1 l)	ME60910
Instrument care	MELAG Care Oil Spray	ME22935
Others	HEPA filter	ME51240
	Pre-filter drying fan	ME68130
	Funnel for salt container	ME68200
	Regenerating salt for MELAtherm	ME80000

Glossary

A0-value
The A0 value represents a standard for the elimination of microorganisms and the deactivation of viruses in the disinfection procedure with damp heat. The A0 value depends on temperature and time.

AKI
AKI is the abbreviation for “Arbeitskreis Instrumenten-aufbereitung” [Instrument Reprocessing Working Group].

Authorised technician
An authorised technician is a person intensively trained and authorised by MELAG who has sufficient specific device and technical knowledge. to perform maintenance and installation work on MELAG devices. Only they may carry out this work.

Batch
The batch is the composition of items which has been subject to the same reprocessing procedure.

BfArM
BfArM is the abbreviation for “Bundesinstitut für Arzneimittel und Medizinprodukte” [Federal Institute for Drugs and Medical Devices] in Germany.

CF card
The CF card is a memory medium for digital data; Compact Flash is an official standard, i.e. these memory cards can be used in every device fitted with the corresponding slot. The CF card can be read by every device that supports the standard and where necessary, written on.

Cleaning agent
A cleaning agent (e.g. MEtherm 50, MEtherm 51) is a substance or mixture of chemical substances that assist in the cleaning of medical devices.

Competent personnel
Trained personnel in accordance with national specifications for the respective area of application (dentistry, medicine, podiatry, veterinary medicine, cosmetics, piercing, tattoo) with the following contents: knowledge of instruments, hygiene and microbiology, risk assessment and classification of medical devices and instrument reprocessing.

Conductivity
Conductivity is the ability of a conductive chemical substance or mixture of substances to conduct or transfer energy or other substances or particles in space.

DGKH
DGKH is the abbreviation for “Deutsche Gesellschaft für Krankenhaushygiene e.V.” [German Society for Hospital Hygiene].

DGSV
DGSV is the abbreviation for “Deutsche Gesellschaft für Sterilgutversorgung” [German Society for Sterile Supply]. The training guidelines of the DGSV are listed in DIN 58946, Part 6 as requirements for personnel.

DI water
Demineralised water (DI water) is water (H2O) without the salts found in normal spring and tap water, which are dissolved as anions and cations.

Effectiveness range
The effectiveness of disinfection measures and agents against pathogens is divided by the Robert Koch Institute into microbiological effect ranges. The effective ranges are identified by the letters A, B, C and D, see RKI.

EN ISO 15883
Standard for “Washer-disinfectors”

EN ISO 17664
Standard for “Processing of health care products – Information to be provided by the medical device manufacturer for the processing of medical devices”

HEPA filter
The HEPA filter is a filter group H filter element (particulate material filter), in accordance with EN 1822-1. This group is sub-divided into two classes, H13 and H14. Filter elements are classified in accordance with their filter capacity. The HEPA filter is used in medical environments to purify the air microbiologically from suspended particles.

KRINKO
KRINKO is the abbreviation for “Kommission für Krankenhaushygiene und Infektionsprävention” [Commission for Hospital Hygiene and Infection Prevention] at the Robert Koch Institute in Germany.

Load
The load refers to all possible instruments such as basins, glassware and other objects which can be reprocessed in a washer-disinfector.

Neutraliser
The neutraliser is a citric acid-based (e.g. MEtherm 55) or phosphoric acid-based (e.g. MEtherm 56) acidic medium which can be added to the subsequent rinse water in automatic reprocessing after an alkaline cleaning in order to neutralise the alkalinity in order to assist in the removal of the cleaning agent.

pH Value
The pH value is a measure of the strength of the acid or alkali effect of a watery solution.

Process agent

A process agent is a composition of chemical compounds for designed for reprocessing purposes e.g. of medical instruments. Process agents used in a washer-disinfector consist of a cleaning agent, neutraliser and rinse aid.

Qualified electrician

The qualified electrician has the suitable technical training, knowledge, and experience to recognise and avoid hazards that can be caused by electricity, see IEC 60050 or for Germany VDE 0105-100.

Reprocessing

Reprocessing is a measure to prepare a new or used healthcare device for its intended purpose. Reprocessing includes cleaning, disinfection, sterilization and similar procedures.

Rinse aid

The rinse aid (e.g. MEtherm 61) is a mixture of chemical substances which can be added to the last subsequent rinse water used in an automatic reprocessing process to achieve better and quicker drying. The active agents contained in the subsequent rinse agent reduce the surface tension of the subsequent rinse water, thereby minimising the adherent residual moisture.

RKI

RKI is the abbreviation for “Robert Koch-Institut” [Robert Koch Institute]. The Robert Koch Institute is the central institution for the detection, prevention, and control of diseases, especially infectious diseases.

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Original instructions

Your stockist

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