


pfmmedical

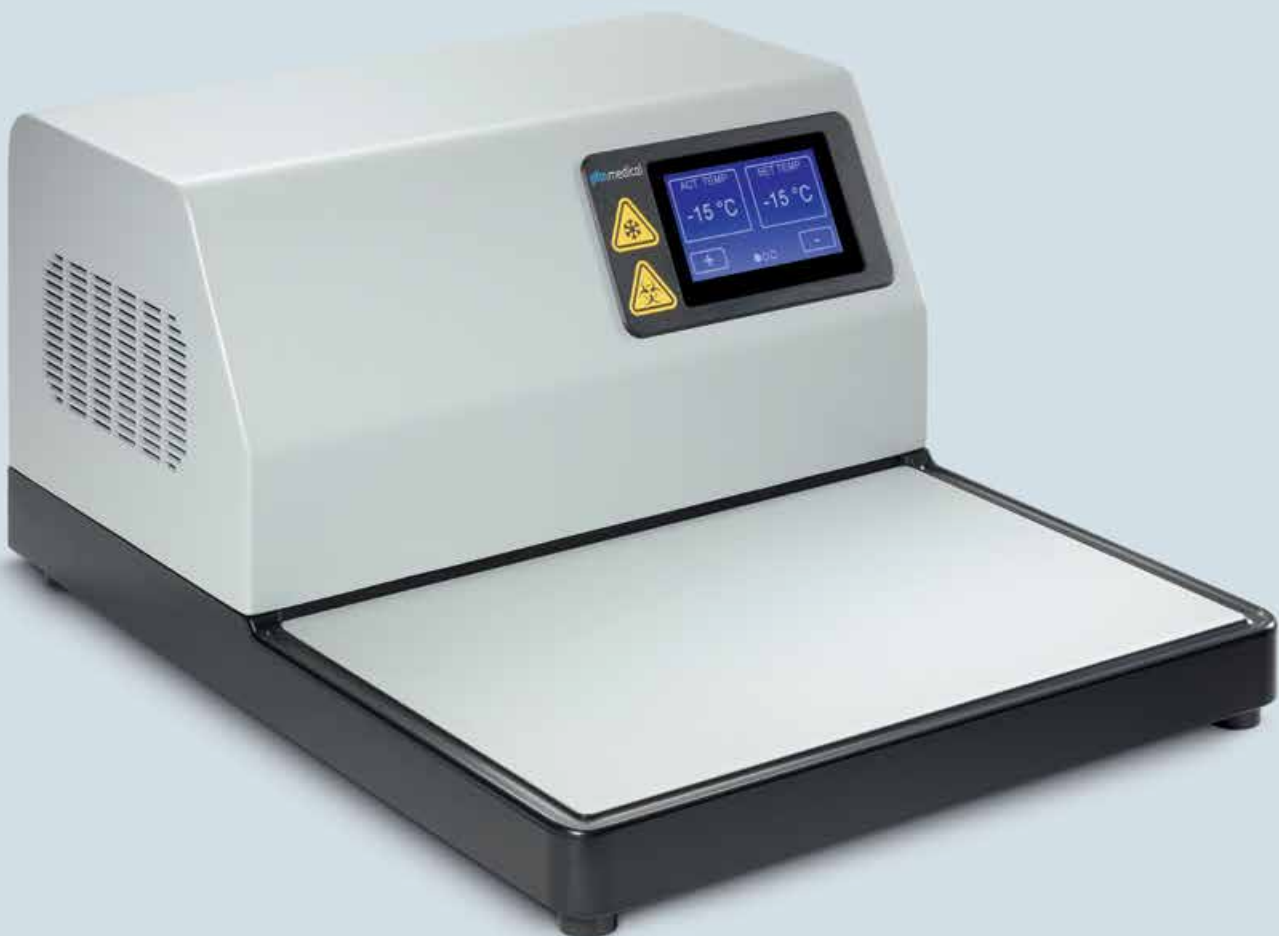
Quality and Experience · since 1971

 Made in Germany

Operating Manual Cooling Plate Samui®

Please read this operating manual carefully before using the instrument for the first time and make certain that you are familiar with the method of operation as well as the instrument's operating elements to ensure that it is used in the correct way.

www.pfmmedical.com



Note

Dear customer,

Please read this operating manual carefully before using the instrument for the first time and make certain that you are familiar with the method of operation as well as the instrument's controls to ensure that it is used correctly.

All the information in this operating manual applies to the cooling plate Samui®.

Serial number: _____

Please enter the serial number of your instrument here. It can be found on the nameplate.

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Part 1 – Safety Instructions

Please read this operating manual carefully before working with the cooling plate Samui®. Make certain that you are familiar with the instrument's controls and method of operation. Always observe the following precautions during any operation on the device. Failure to observe these precautions is contrary to the recognized technical regulations and the intended use of the instrument.

In case of infringement, pfm medical gmbh does not accept any form of liability.

1.1 Key to Symbols



Caution! This symbol indicates a possible danger to life and health. Failing to observe these instructions can result in severe health impacts, including life-threatening injuries.

NOTE

Indicates useful information

WARNING

Indicates a dangerous situation



Manufacturer



Date of manufacture



Consult operating manual

NOTE The up-to-date electronic operating manual can be found on our website:
<http://www.pfmmedical.com/downloads>



In vitro diagnostic (IVD) medical device



Catalogue number



Serial number



CE marking



Biohazard warning



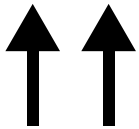
Warning of low temperature, frost conditions, risk of freezing



The device must not be disposed of with normal household waste.
It must be collected separately.



Warning of flammable materials



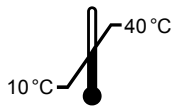
Package orientation - This way up



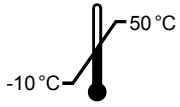
Keep dry



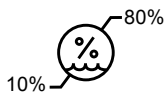
Fragile, handle with care



Permissible temperature range at the place of use
+10 °C - +40 °C



Permissible temperature range for storage and transportation
-10 °C - +50 °C



Permissible humidity range for storage and transportation, and at the place of use
10% - 80% (non-condensing)

1.2 Intended Purpose

The cooling plate Samui® allows cooling of human and animal tissue specimens to below room temperature for a set period during sectioning at the microtome and can be used in the histological laboratory in the field of medicine, research and industry. It can be applied as a diagnostic aid related to an in-vitro examination within the

histopathological process and may only be operated by appropriately trained personnel. The product facilitates the preparation of tissue samples which, after further processing, are diagnosed by a pathologist and provide information on the physiological or pathological condition.

1.3 User Group / User Profile

- ▶ The cooling plate Samui® may be operated by appropriately trained staff who are familiar with the operation of the device only.
- ▶ The user must read this operating manual carefully before initial use to familiarize him or herself with the operation and technical features of the device to ensure proper handling.

NOTE

The operating manual should be accessible to everyone.

1.4 Operating the Instrument

- ▶ Use suitable connecting cables recommended/supplied by pfmmmedical only
- ▶ Mains voltage fluctuations must not exceed $\pm 10\%$ of the nominal voltage
- ▶ The external fuse protection of the power supply must not fall below the value specified on the type plate
- ▶ If the instrument fuse is replaced, the factory-specified parameters must be observed
- ▶ Observe all warnings
- ▶ Warnings on the instrument must not be removed or obscured
- ▶ The cooling surface must not be damaged or scratched with pointed, sharp or hard objects
- ▶ The compressor requires a start-up current of 13.4 A and 16.1 A for 220/240 V and 115/127 V devices, respectively
- ▶ During operation, the cooling surface may be frozen
- ▶ Do not start up the instrument if it is damaged
- ▶ Do not start up the instrument if the mains power cable is damaged
- ▶ Keep a gap of at least 15 cm behind, on the left and right sides of the instrument to ensure proper air circulation. The instrument may have serious damage if the distance is failed.
- ▶ The cooling circuit is a closed system. There cannot be any systematic refrigerant leakage.
- ▶ The cooling circuit is equipped with an overpressure switch. If the gas pressure in the coolant circuit rises to over 26 bar, the switch is triggered and the power supply to the compressor is interrupted. The cooling plate can no longer be put back into operation and must be opened and checked by a pfmmmedical trained and authorized service technician.
- ▶ Do not place objects that the device is not intended for on the cooling surface
- ▶ Gloves can negatively affect the functionality of the touchscreen
- ▶ Water should be wiped away directly, otherwise there is a risk of slipping
- ▶ No corrosive, acidic or alkaline solutions should be used in the vicinity of the instrument, as they could cause corrosion and damage the device and accessories.
- ▶ The instrument must be opened and repaired by service technicians trained and authorized by pfmmmedical only
- ▶ Before servicing or repairing, the instrument must be switched off and disconnected from the power supply

WARNING

Caution! No mechanical tools or other auxiliary means may be used, only the auxiliary means recommended by the manufacturer to accelerate defrosting.

Caution! Do not damage the cooling circuit.

Caution! The cooling circuit contains propane gas.

 1.5 General Precautions

Please take special note of the following warnings:

Beware of Explosive Gases

The instrument must not be used if dangerous gas concentrations could occur in the surrounding area.

Risk of Infection

When working with infectious materials, appropriate safety measures must be implemented. The specimens used may potentially be infectious. The general laboratory rules regarding protection against infections must therefore be observed.

Material-Related Risks

Refrigerants and oil:

The physical data, heat resistance, chemical resistance, reactivity data and chronic and acute toxicity data are documented in the manufacturer's safety data sheets. It is recommended that the customer request this documentation. All hazard information should be communicated to users who may be exposed to potential hazards caused by the material in concern and made available to them.

Risk of Radioactivity

When working with radioactive materials, the radiation protection regulations must be followed. Protective clothing must be worn in accordance with the rules and regulations that apply in your laboratory for handling radioactively contaminated materials. For the disposal of radioactive waste, the applicable regulations will apply in each instance.

Avoiding Malfunctions

To avoid malfunctions, the instrument must not be used close to radio transmitters, e.g. mobile phones. If the instrument malfunctions, please switch it off and contact your dealer.

WARNING

Caution! Switch off the instrument and disconnect it from the power supply before opening or removing any part of the housing.

Caution! Warns of a freezing surface. During operation, the surface of the instrument may be very cold.

Caution! Warns of dangerous electrical voltage.

Caution

Before switching on the instrument for the first time, please check that the supply voltage and frequency at the place of use match the specifications on the nameplate.

Protective Earthing of the Instrument

To avoid the risk of electrocution, the instrument must be properly connected to an earth conductor. The instrument is equipped with a mains power plug with earth conductor (protection class I). It is very important to check that the mains power outlet used is equipped with an earth conductor, and that it complies with the regulations of the International Electrotechnical Commission (IEC).

Risk of Electricity

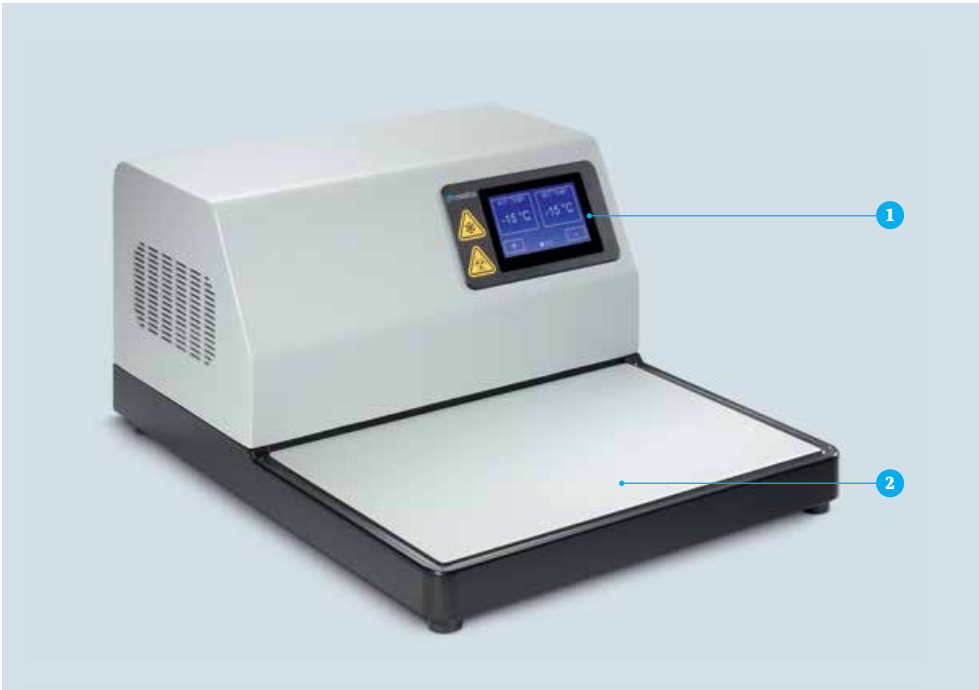
Never remove any part of the housing. The replacement of components and any adjustment or calibration must be carried out by trained service technicians. To safely disconnect the appliance from the power supply in the event of a malfunction, disconnect the mains power plug from the power supply. Ensure that the mains plug on the back of the appliance is easily accessible.

Electromagnetic Interference

The electromagnetic environment should be assessed before the cooling plate Samui® is operated. Do not use this instrument near strong sources of electromagnetic radiation (for example, unshielded, intentionally operated high frequency sources) because these can interfere with the proper operation of the instrument. The cooling plate Samui® fulfils the requirements of the IEC 61326-2-6 standard on electromagnetic immunity and emissions.

Part 2 - Introduction

2.1 Views of the Cooling Plate Samui®



- 1 Display
- 2 Cooling surface with surrounding draining channel



- 1 Power switch
- 2 Mains power connection

2.2 Technical Data

- ▶ **Dimensions overall (W/D/H):** 400/515/237 mm
- ▶ **Dimensions of cooling surface (W/D):** 370/250 mm
- ▶ **Cooling surface capacity:** 78 standard paraffin blocks (28/41 mm)
- ▶ **Weight:** 22.9 kg (115 V), 21.4 kg (230 V)
- ▶ **Setting temperature:** -15 °C - +10 °C
- ▶ **Cooling system:**
 - ▶ Coolant and filling weight: R290 (propane gas) 0.043 kg (115V), 0.038 kg (230V)
 - ▶ Cooling capacity: 166 W (115 V), 210 W (230 V)
 - ▶ Safety factor: 3
 - ▶ Compressor oil: POE 22/200 ml (115 V), ALQUILB/160 ml (230 V)
- ▶ **Rated supply voltage:** 115/127 V (115 V), 220/240 V (230 V)
- ▶ **Rated mains frequency:** 60 Hz (115 V), 50/60 Hz (230 V)
- ▶ **Max. rated power:** 290 VA (115 V), 465 VA (230 V)
- ▶ **Fluctuations in mains voltage:** ±10% of the nominal supply voltage
- ▶ **Instrument fuse, primary circuit:** 10 A (115V), 6.3 A (230 V)
- ▶ **Maximum start-up current:** 16.1 A (115 V), 13.4 A (230 V)
- ▶ **Operating environment:** +10 °C - +40 °C
- ▶ **Humidity:** 10% to 80% (non-condensing)
- ▶ **Altitude:** up to 2000 m
- ▶ **Storage condition:** -10 °C - +50 °C
- ▶ **Transport condition:** -10 °C - +50 °C (on a pallet)
- ▶ **Overvoltage category (according to IEC 61010-1):** II
- ▶ **Pollution degree (according to IEC 61010-1):** II
- ▶ **Means of protection:** Class I (PE connected)
- ▶ **Ingress protection (IP) class (according to IEC 60529):** IP 20

2.6 Scope of Delivery

Samui®

REF: 700700 (220/240 VAC)

REF: 700710 (115/127 VAC)

Scope of Delivery

1 Samui®

1 Mains power cable

Power Cable Variants

- ▶ 220/240 VAC: IEC 60320 C13, CEE 7/7 (Typ E/F)
- ▶ 115/127 VAC: IEC 60320 C13, NEMA 5-15P (Typ B)

NOTE

The up-to-date electronic operating manual can be found on our website: <http://www.pfmmedical.com/downloads>

Part 3 – Operating Instructions

3.1 Transportation, Unpacking and Setting up the Instrument

- ▶ Before unpacking the instrument, please check that it is complete and undamaged
- ▶ Disassemble the packaging and remove the instrument
- ▶ The cooling plate Samui® shall be transported in the intended position and on a palette only
- ▶ Please read the operating manual carefully before initial use
- ▶ The instrument should be placed on a stable, vibration-free table or desk
- ▶ The instrument must be placed on a non-combustible, flat surface
- ▶ Do not store flammable or combustible substances in the immediate vicinity of the instrument
- ▶ The instrument must only be used indoors, and never in locations where there is a risk of explosion
- ▶ Position the instrument in such a way that the mains power plug is always accessible
- ▶ Avoid direct sunlight or other sources of heat
- ▶ Ambient temperature between +10 °C and + 40 °C
- ▶ Relative humidity at the place of use must not exceed 80% (non-condensing)
- ▶ Ambient temperature during transportation and storage between -10 C° and +50 °C
- ▶ Relative humidity during transportation and storage must not exceed 80% (non-condensing)
- ▶ It is the user's responsibility to check the instrument for proper and safe operation. The user shall assume responsibility for any use of special equipment and/or materials for operating the instrument.

WARNING

Caution! The packaged device may only be shipped on a pallet.

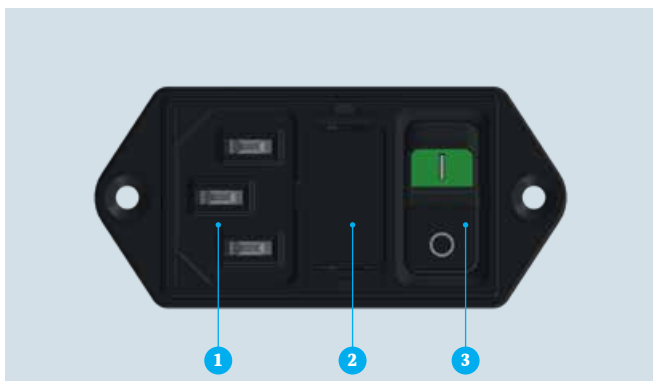
Caution! Before switching on the device from the last transport, retain the device for at least four hours.

Caution! Ensure that all ventilation outlets are not blocked.

NOTE

If possible, retain the original packaging throughout the lifetime of the instrument so that you can properly repackage the instrument if it needs to be returned for service.

3.2 Initial Operation



- 1 Mains power connection
- 2 Fuse
- 3 Power switch

- ▶ Before switching on the cooling plate Samui® for the first time, it is mandatory to confirm that the supply voltage and frequency specified on the nameplate match the mains voltage at the place of use. Otherwise, do not connect.
- ▶ Always connect the instrument to an earthed wall socket
- ▶ Plug the power cable into the socket on the back of the instrument
- ▶ The instrument socket also contains the fuse holder
- ▶ Turn on the power switch on the instrument (1=ON, 0=OFF). The green light is an indication that the power is on

WARNING

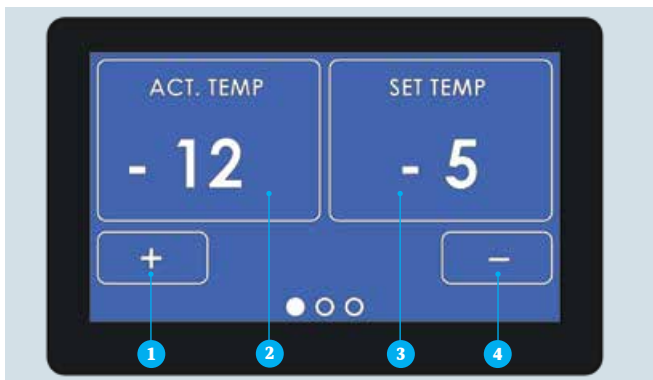
Caution! Use only the mains power cable supplied with the instrument.

Caution! Do not use an extension cable.

Caution! If the instrument is not operated with the mains power cable supplied, the user must carry out a safety test with the new mains power cable before initial use.

Caution! If the instrument does not cool down, stop operating immediately. If this occurs, contact a service technician.

3.3 Display



- 1 Temperature setting Plus
- 2 ACT TEMP
- 3 SET TEMP
- 4 Temperature setting Minus

WARNING

Caution! Do not operate the instrument if the display does not work, shows illogical or incorrect values, or is damaged.

3.4 Temperature Setting

- ▶ When the instrument is switched on, the display shows the set temperature (**SET TEMP**) and the actual temperature (**ACT TEMP**)
- ▶ The desired temperature is set by pressing the **+** or **-** button
- ▶ The set temperature will be maintained until the next adjustment is made
- ▶ Depending on the ambient temperature, the time for the actual temperature of the cooling surface to reach -15 °C is around 30 minutes
- ▶ Depending on whether the newly set temperature is higher or lower than the current temperature, the actual temperature will either increase or decrease accordingly

WARNING

If the ambient temperature is above 30 °C, the temperature of the cooling surface may not reach -15 °C at all points.

3.5 Menu Setting



The cooling plate Samui® is equipped with a modern touch screen.

A light touch of the fingertip on the screen toggles between three screens.

Language

Press **LANGUAGE** to switch between the different languages.

Sound

Press **SOUND** to turn the signal tone on or off.

Brightness

Press **BRIGHTNESS** to adjust the brightness of the display.

There are three levels in total.

Service Menu

Press **Wrench icon** to enter the service menu. Access is password-protected.

3.6 Factory Setting



By lightly swiping the screen with the fingertip, you can access the factory settings display. Here you will find

detailed information on the current status of the firmware (software) and hardware.




3.7 Troubleshooting

Error	Possible Cause	Remedy
No display shown after switching on the device	Mains cable not correctly connected	Check the mains cable connection
	Mains cable defective	Check the mains cable and replace if necessary
	Instrument fuse in the power socket defective	Check the instrument fuse and replace if necessary
	Display damaged	Check the display function and replace if necessary
The display freezes during use	Software error	Switch the device off and on again. If the problem persists, contact service technician.
The cooling surface cannot cool down to set temperature	Cooling system defective	Contact service technician
	Temperature sensor defective	Replace temperature sensor
	Insufficient air circulation	The device must keep a distance from the wall or other devices
	Dust in ventilation slits and on the fan	Remove dust
	Ventilation defective	Contact service technician
	The overpressure switch was triggered	Servicetechniker kontaktieren
	Kompressor defekt	Contact service technician
The device cools too much	Temperature sensor defective	Check the temperature sensor and replace if necessary

WARNING

Caution! Only service technicians trained and authorized by pfmedical may open and repair the device.

3.8 Error Messages

Error Code	Possible Cause	Remedy
Code 01 	Temperature sensor defective	Check the temperature sensor and replace if necessary
	Cable break	Check the sensor cable and replace if necessary
Code 02 	Ambient temperature too high	Check ambient temperature
	Cooling system defective	Contact service technician
	Insufficient air circulation	The device must keep a distance from the wall or other devices
	Ventilation defective	Contact service technician
Code 03 	Power supply defective	Switch device off and on again. Contact service technician if the error remains
	CPU defective	Contact service technician

WARNING

Caution! Water must not get inside the instrument.

3.9 Change History

State of Revision	Change
Rev.01/2025-12-03	Initial document

Part 4 – Maintenance, Cleaning and Care

4.1 Maintenance

To ensure that the cooling plate Samui® functions reliably, routine maintenance should be carried out once a year by a trained service technician authorized by pfmmmedical. pfm medical gmbh provides maintenance to ensure that your

instrument always remains in perfect condition. Details can be obtained from your sales representative or directly from pfm medical gmbh. We also recommend an annual electrical safety inspection.

4.2 Cleaning and Care

For the instrument to function reliably, it must be kept clean by the user. Before cleaning, switch off the instrument and remove the mains power plug. Clean the condensed water on the cooling surface with a lint-free cloth. Mild

household detergents are suitable for cleaning. Do not use any aggressive cleaning agents or solvents. Do not allow liquids to penetrate the inside of the instrument.

WARNING

Caution! Before cleaning the cooling plate Samui®, switch it off and unplug the power cable.

Caution! Never clean the cooling plate Samui® under running water.

Caution! Always be aware of the dangers of water and electrical current.

Caution! When handling disinfectants and cleaning agents, always follow the manufacturer's instructions regarding safety, dilution, and exposure time.

4.3 Touchscreen/Display Cleaning and Care

The display and touchscreen are made of glass and must not come into contact with hard, sharp or pointed objects. Do not use any solvents or aggressive cleaning agents for cleaning the display or touchscreen. Do not use glass

cleaners or detergent, as they contain soap that may damage the surface. We recommend cleaning the touchscreen as dry as possible, preferably with a commercially available microfiber cloth.

WARNING

Caution! The display should not be sprayed with a cleaner or disinfectant because there is a danger that the liquid will damage the display.

4.4 Returning the Cooling Plate for Repair or Maintenance

Repairs and maintenance work are usually carried out on site. If this is not possible for any particular reason, the instrument can be sent to pfm medical gmbh. Before you send an instrument to pfmmedical for a service, it must be suitably cleaned and decontaminated. This also applies to instruments undergoing a service on site. Contaminated instruments pose a potential health hazard for anyone coming into contact with them due to infectious agents, pathogens or medicinal products. The legal requirements for the handling of contaminated instruments are specified in various regulations, including the Occupational Safety and Health Act (ArbSchG), the Biological Agents Ordinance (BioStoffV), the Occupational Safety Act (ASiG) and the Accident Prevention Regulations (UVV).

To confirm that the instrument has been decontaminated, please complete the decontamination certificate carefully. You can find the current certificate on our website: <http://www.pfmmedical.com/downloads>

Servicing can only be carried out if a certificate is fully completed in advance and enclosed with the instrument. If it is found that the instrument poses a potential hazard, we reserve the right to return the instrument to the sender immediately at the sender's expense.

WARNING

Caution! Always send the instrument in the original packaging together with the mains cable. Please contact pfmmedical if you no longer have the original packaging.

4.5 Decontamination

For regular disinfection of work surfaces and the exterior of the cooling plate Samui®, we recommend using single-use disinfectant wipes, for example those recommended by

the RKI (Robert Koch Institute) or the VAH (Association for Applied Hygiene) list: "Mikrozid AF" and "Bacillol AF".

4.6 Instrument Fuse



1 Fuse

- ▶ The instrument fuse is located on the rear of the instrument and is integrated into the power switch
- ▶ To replace the fuse, the instrument must be switched off at the power switch and the mains power plug must be unplugged

- ▶ Open the protective cover with a small flat screwdriver and remove the fuse holder
- ▶ The fuse can then be replaced with a new one

WARNING

Caution! Switch off the instrument and disconnect it from the power supply before replacing the fuse.

4.7 Warranty

The device has been carefully checked and tested by us. However, for a period of one year from the date of delivery, we undertake to remedy any significant defect found in a device or spare part supplied to the extent specified below, and without prejudice to any statutory or other contractual claims, even if the defect was not present on delivery to the customer, provided that no unauthorised work has been done on the device by third parties. This warranty does not cover normal wear and tear, nor does it constitute a guarantee of quality or durability of the device.

The remedying of defects under this warranty shall be carried out, at our discretion, by the replacement or repair of defective parts. Furthermore, spare parts can be supplied for 5 years after delivery of the device. Any warranty claims on the part of the customer beyond the above are hereby excluded, without prejudice to any statutory or other contractual claims. This applies in particular to any compensation claims for damage, consequential damage or costs relating to the defect. Transportation of the device to us and return transportation during this period shall be at the customer's risk.

To assert a claim under this warranty, the device concerned must be sent to us, at the customer's expense and risk, with a detailed description of the defect, and specifying the purchase order number, delivery note number and invoice number. Our address is:

Wankelstraße 60, 50996 Köln, Germany.

Claims under this warranty expire 6 months from assertion of the claim, but not before the end of the warranty period. This warranty and any claims, rights and obligations arising therefrom are subject solely to the material law of the Federal Republic of Germany, to the exclusion of Private International Law and the UN Convention on Contracts for the International Sale of Goods. Our standard terms and conditions of supply and payment apply in addition.

All serious incidents that occur in connection with the device must be reported to the manufacturer and the competent authority of the Member State where the user and/or patient are located.

4.8 Declaration of Conformity

The current Declaration of Conformity form can be found on our website: <http://www.pfmmedical.com/downloads>

Part 5 – Disposal of the Cooling Plate Samui® when Put out of Use

Return and Disposal of Waste Electrical Equipment

The WEEE directive 2002/96/EC (WEEE = Waste Electrical and Electronic Equipment) was issued in Europe with the aim of reducing the growing quantity of electronic scrap from discarded electrical and electronic devices and disposing of it in an environmentally friendly manner. In Germany, the directive was integrated in the 2005 Electrical and Electronic Equipment Act (ElektroG), which implemented both the WEEE directive and the RoHS (Restriction of Hazardous Substances in Electrical and Electronic Equipment).

NOTE

When the instrument is put out of use, dispose of it in accordance with the applicable laboratory guidelines and legal provisions. Prior to disposal, the instrument should be decontaminated.

Histotechnology-Devices

As a registered manufacturer (WEEE Reg. No. DE85819911), we take back old histological electrical devices, manufactured by pfm medical gmbh, after they have been decommissioned and ensure that they are disposed of properly. For disposal, we work together with the certified specialist disposal company enretec GmbH, whose disposal facility is also registered with the ear (Elektro-Altgeräte Register) foundation.

Arrange the Return

To arrange for the return of your electrical device, please proceed as follows:
Contact us to arrange the return

- ▶ by phone: +49 2236 9641-0
- ▶ by e-mail: [service\[at\]pfmmedical.com](mailto:service[at]pfmmedical.com)
- ▶ by mail: pfm medical gmbh, Abteilung Histotechnology, Wankelstraße 60, 50996 Köln, Germany

Prepare the Device for Transport

Please use only the original packaging and instruct a carrier of your choice to return the device to the following address:

pfm medical gmbh
Abteilung Histotechnology
Wankelstraße 60
50996 Köln
Germany

Costs

The costs of disposal are borne by us as the manufacturer. Unless otherwise agreed, the transport and packaging costs are to be covered by the owner/user of the device.

WARNING


Caution! If the device has come into contact with infectious material and cannot be disinfected or decontaminated, we cannot accept it for disposal.

Picture Credit: Frank Stöckel (product photos), pfm medical tec gmbh (CAD detail views p. 9, 12, 13, 14, 17)

Contact

Should you have any questions our Customer Solutions Team will be glad to advise you.


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Certified according to
EN ISO 13485

Manufacturer

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