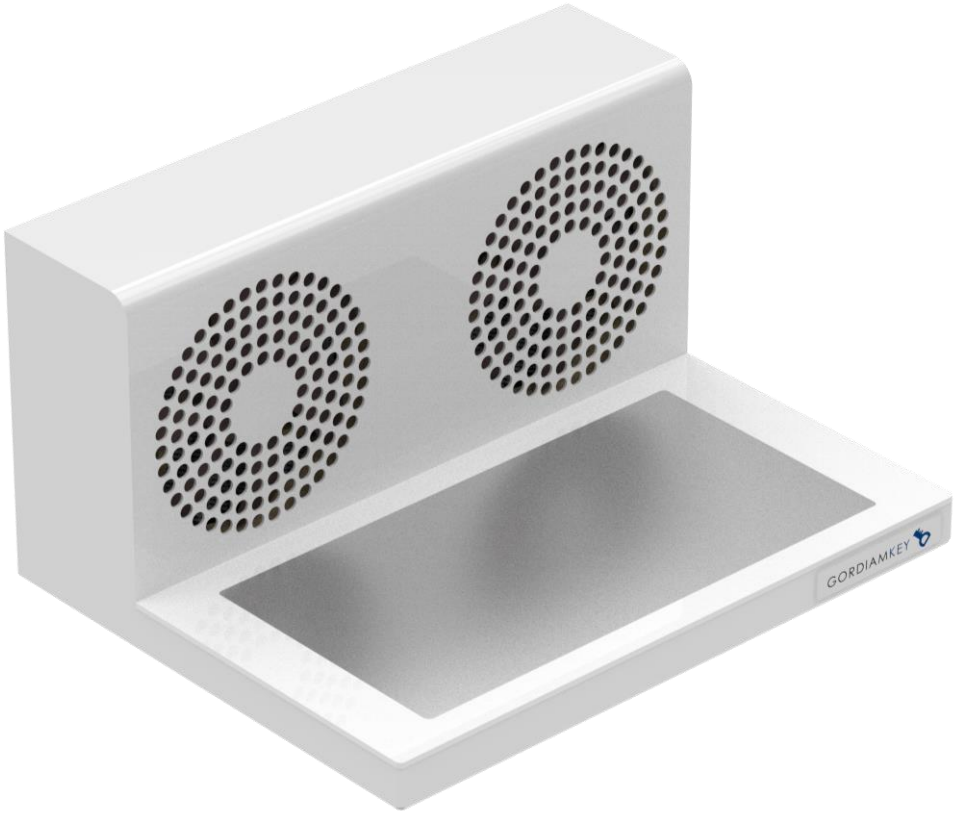
USER MANUAL

GORDIAMKEY




# CRYOPLATE 4S

## Cold Plate

Cryoplate 4S. **Order No**: CP4S

Read carefully before working with the instrument

The information contained in this manual is the product of a number of internal tests, customer comments and the current state of scientific and technological knowledge.

GordiamKey has no obligation to periodically update the information contained in this manual.

GordiamKey does not accept any liability for any erroneous statement, illustration or picture contained in this manual. Furthermore, GordiamKey does not accept any liability, in terms of financial loss or damage to persons or things, caused by or related to the information contained in this manual.

All the information contained in this manual should be intended as a guide for correct operation and to prevent risk for users. However, the users themselves should use their common sense and own judgement to avoid risk to persons or things.

GordiamKey reserves the right to change technical specifications as well as manufacturing processes without notice.



**Contact details of the manufacturer**

In case of assistance, contact an authorised distributor.

GordiamKey, Medeon Science Park, 205 12 Malmö, Sweden

info@gordiamkey.com

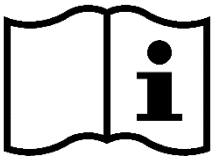
## Table of contents

# 1. Important information

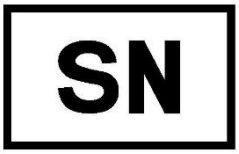
## 1.1 Meaning of symbols

**Warning**
Warnings appear in a highlighted box and are marked by the warning symbol.

**Important information**
Important information appears in a highlighted box and is marked by the information symbol.



**Instruction**
Instructions for use should be observed.




**Serial number**
Serial number of the instrument.


**Batch number**
Batch number of the consumables.


**Reference code**
Reference ordering code.

**CE mark**
The instrument fulfils the requirements of the CE directives.

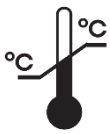

**RoHS**
The instrument fulfils the requirements of the RoHS directive

**WEEE**
The instrument must be disposed of in accordance with the WEEE directive.

**Fragile**
The instrument's package contents should be treated as fragile items when shipped, handled or stored.

**Keep dry**
The instrument's package contents should be kept in a dry environment when shipped, handled or stored.

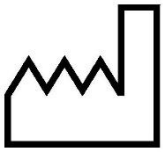
**Keep upright**
The instrument's package contents should be kept in an upright position when shipped, handled or stored.




**Temperature range**
The instrument must be stored or transported at a temperature between 5 °C and 40 °C.


**Humidity range**
The instrument must be stored or transported at relative humidity between 10 % and 85 %, non-condensing.

**Manufacturer**
Manufacturer of the instrument.



**Manufacturing date**
Manufacturing date of the instrument.

**UKCA**
The UKCA (UK Conformity Assessed) marking is a UK product marking used for goods being placed on the market in Great Britain (England, Wales and Scotland).

## 1.2 Instrument labels

All information provided in this user manual applies only to the instrument type indicated on the cover page.
An identification label is affixed to the back of the instrument and another label is affixed to the top of the power adapter.
The labels shown in figure 1 are provided as examples.


**Fig. 1a. Instrument label**


**Fig. 1b. Power adapter label**

Always check the label on the power adapter before attempting to connect it to the instrument. The power connector on the back of the instrument is compatible with different sorts of power adapters, however only the Cryoplate 4S original power adapter must be used.
The use of a wrong power adapter may result in serious damage to persons, things and to the instrument itself.

## 1.3 Intended use of the instrument

The Cryoplate 4S is a cold plate intended to be used to chill histological paraffin blocks.
Any other use of the instrument is prohibited.

## 1.4 Personnel qualified to use the instrument

- The Cryoplate 4S must be operated by trained laboratory staff only.
- All laboratory personnel who want to use the Cryoplate 4S must read this user manual carefully before attempting to operate it.

## 2. Safety

### 2.1 Safety instructions

The safety and caution notes in this chapter must be observed at all times.
You must read these notes even if you are already familiar with the operation and use of other GordiamKey products.

These instructions for use include important instructions and information related to the safe operation and maintenance of the instrument.
These instructions for use are an important part of the product. They must be read carefully prior to start-up and use and must always be kept near the instrument.
This instrument has been built and tested in accordance with the safety requirements for electrical equipment for measurement, control and laboratory use.
To maintain this condition and ensure safe operation, the user must observe all notes and warnings contained in these instructions for use.

GordiamKey encourages users to write down their own standard operating procedures (SOP) to ensure that safety instructions are followed at all times. SOP sheets concerning safety instructions for this instrument should always be kept within easy reach of the person operating the instrument.

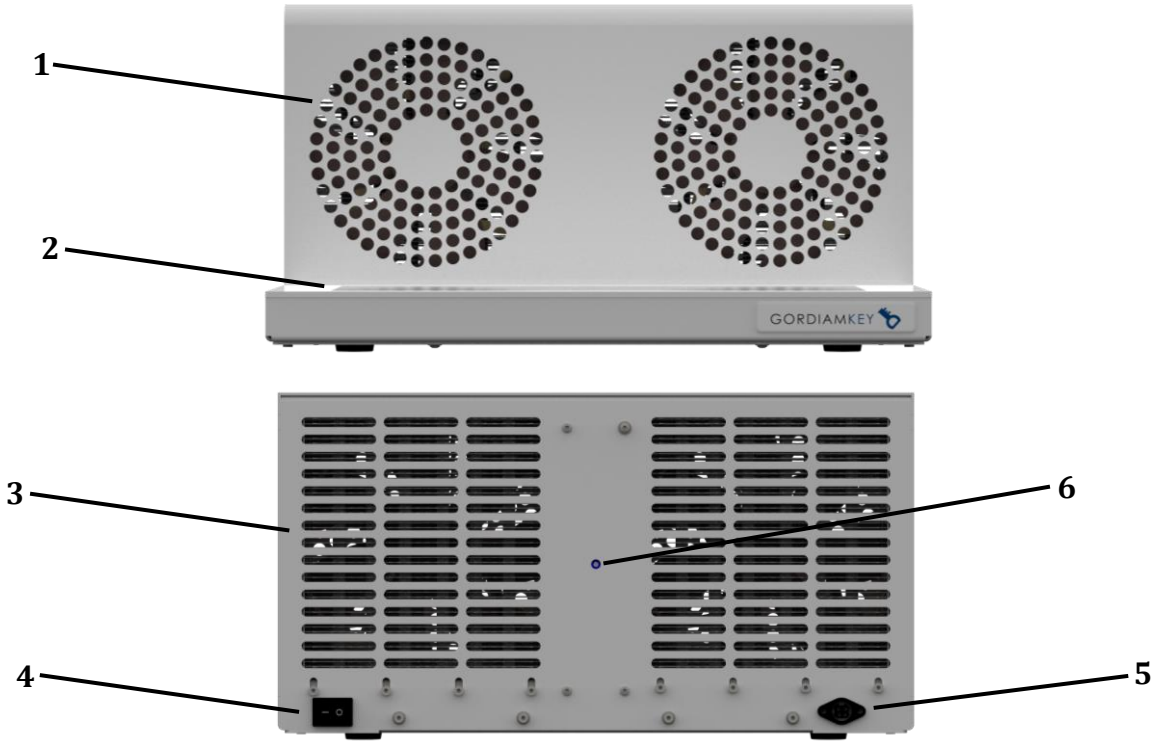
### 2.2 Safety warnings

The protective devices on the instrument and its accessories must not be removed or modified under any circumstances. Only service personnel qualified by GordiamKey are authorised to repair the instrument and access its internal components.

Always check the label on the power adapter before attempting to connect it to the instrument. The power connector on the back of the instrument is compatible with different sorts of power adapters, however only the Cryoplate 4S original power adapter must be used.
The use of a wrong power adapter may result in serious damage to persons, things and to the instrument itself.

## 3. Instrument specifications

### 3.1 Instrument overview




1. Front fan opening
2. Plastic frame
3. Rear fan opening
4. Power switch
5. Power socket
6. Cooling power trimpot

### 3.2 Main features

The Cryoplate 4S uses state-of-the-art technology for histological block cooling:

- Compact footprint, 33 x 26 cm
- Low profile height, 2.5 cm
- Optimal capacity, 27 tissue blocks
- Fast proprietary cooling technology
- Adjustable temperature, between -15 °C to -5 °C
- Virtually silent
- Zero vibrations

- Low power consumption, 138 W
- Lightweight, 7.6 kg

Additional features:

- Optimized airflow and moisturizing surface, to improve section quality at microtome
- Removable plate frame, for easy cleaning

### 3.3 Technical data

| | |
|---|---|
| **Equipment mobility** | Fixed equipment, installed in the absence of vibrations |
| **Size (H x W x D) [mm]** | 180 x 333 x 259 |
| **Mass [kg]** | 7.6 |
| **Electrical phase** | Single |
| **Current rating** | Power adapter: 8 – 4 A<br>Equipment: 11.5 A |
| **Voltage rating** | Power adapter: 100 – 240 V AC,<br>Equipment: 12 V DC |
| **Connection to mains supply** | Via external power adapter |
| **Operating conditions (IEC 61010)** | Normal environmental conditions[1] |
| **Environmental operating temperature range** | 10 °C to 25 °C |
| **Operating temperatures** | −5 °C to −15 °C |
| **Environmental relative humidity** | 20–80% non-condensing |
| **Environmental operating altitude** | Up to 2000 m |
| **Permissible temperature range during storage** | 5 °C to 50 °C |
| **Permissible temperature range during transport** | −10 °C to 50 °C |
| **Permissible humidity range during storage and transport** | 10–85% non-condensing |
| **Electromagnetic environment** | Basic electromagnetic environment |
| **IP protection class (IEC 60529)** | IP20 |

[1] Indoor use, altitude up to 2000 m, room temperature 5 °C to 40 °C, maximum relative humidity 80 % for temperature up to 31 °C decreasing linearly to 50 % humidity at 40 °C, mains supply voltage fluctuations up to ±10 % of the nominal voltage, transient overvoltage typically presents on the mains supply, rated pollution 1.

# 4. Installation

## 4.1 Choice of a good location

Carefully evaluate where to install the instrument:

- Stable, vibration-free laboratory table with a horizontal, flat table top.
- Away from direct sunlight, heat sources or strong temperature fluctuations.
- Room temperature consistently between 10 °C and 25 °C.
- Maximum relative air humidity of 80 %, non-condensing.
- No impairment of air circulation around the instrument – at least a 20 cm gap between the back of the instrument and the wall and other obstacles.
- Access to easy disconnection from the power supply.
- Power adapter in a cool location to avoid overheating.

If the room temperature exceeds 25°C, the cold plate may not reach a uniform working temperature of −10°C across its whole surface.

To ensure proper function and easy disconnection of the power cable from the instrument, there must be a gap of at least 20 cm behind the instrument. Failure to observe this distance may result in serious damage to the refrigeration unit of the device.

## 4.2 Package contents

While unpacking the Cryoplate 4S, inspect the carton to ensure that no damage has occurred during shipping. Make sure that all accessories are included with your unit. Check all items against the following table.

| Item | Order no |
|---|---|
| Cryoplate 4S | CP4S |
| Power adapter, 12V | CP-0009 |

Check the delivered components against the packing list and your order. If there is any discrepancy, contact the GordiamKey distributor handling your order.

### 4.3 Unpacking

1. Open the outer package, taking care not to damage the contents.
2. Locate and put aside the power adapter, the mains power cables, the removable top frame and the user manual.
3. Lift the inner package onto a table.
4. Open the inner package, taking care not to damage the contents.
5. Lift the instrument by holding it from the top and place it in the chosen location.

You must keep the packaging for the duration of the warranty period.

If you need to return the instrument, pack it up by following the above instructions in reverse order.

### 4.4 Installation

1. Ensure that the mains cable is disconnected from the mains socket. Carefully insert the mains cable plug into the power adapter socket.

2. Carefully insert the power adapter plug into the Cryoplate 4S power socket. Ensure that the flat side of the power adapter plug is facing upwards. Ensure that the Cryoplate 4S power switch is off.

3. Connect the mains cable into the mains socket. Ensure that the indicator light on the power adapter comes on.

Take special care when plugging and unplugging the power adapter plug into the Cryoplate 4S socket. Before proceeding, ensure that the mains cable is unplugged from the mains socket and that the switch on the back of the Cryoplate 4S is off.

# 5. Operation

## 5.1 Switch on the instrument

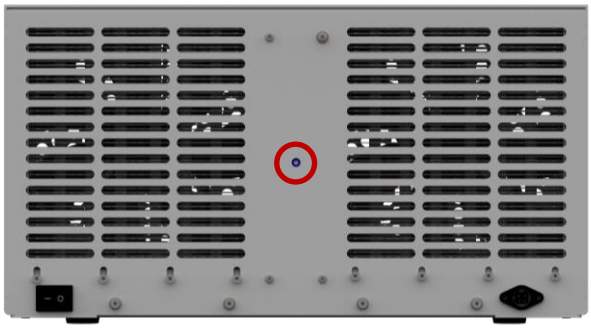
1. Turn on the Cryoplate 4S power switch, on the back of the instrument.
2. The fans will start to spin.
3. The plate will start to cool down.

The Cryoplate 4S will take three to ten minutes to reach a stable temperature, depending on environmental conditions.

## 5.2 Temperature regulation

The temperature of the Cryoplate 4S can be regulated by adjusting the cooling power trimpot.

1. Locate the cooling power trimpot, on the back of the instrument.
2. Choose a small, flat screwdriver.
3. Carefully insert the tip of the screwdriver into the trimpot.
4. Carefully rotate the screwdriver.



A clockwise rotation will increase the cooling power and thus decrease the temperature. An anticlockwise rotation will decrease the cooling power and thus increase the temperature.

When the cooling power is increased, the fans will spin faster, producing slightly more noise.

# 6. Maintenance

## 6.1 Cleaning

Before cleaning, always switch off the instrument and disconnect the mains plug. Do not allow any liquid inside the instrument. Never use metallic tools with sharp edges.

- Use a dry towel to remove dust from the instrument.
- Use a towel with hot water (max 60 °C) to remove paraffin wax.
- Use a mild detergent or soap for thorough cleaning.
  Avoid prolonged contact of organic solvents with the surface of the instrument.

## 6.2 Maintenance

Never open the casing of the instrument or its accessories. Only service personnel qualified by GordiamKey are authorised to repair the instrument or access its internal components.

**To ensure the instrument's reliable function over extended periods:**

- Clean the instrument with care after each use.
- Avoid dust build-up in the fan openings by regularly vacuuming the openings from the back of the instrument while spraying compressed air into the front.
- Enter into a service contract at the end of the warranty period. For more information, contact your GordiamKey distributor.

## 7. Troubleshooting

| Issue | Possible cause | Corrective action |
|---|---|---|
| The equipment does not start | 1. Electrical connection problems<br>2. Power adapter overheated<br>3. Power adapter faulty | 1. Ensure that the power adapter cables are correctly inserted into the power adapter, the mains socket and the instrument.<br>2. Switch off the instrument, wait 30 minutes and switch it back on.<br>3. Contact your GordiamKey distributor. |
| Plate not cold enough | 1. Ambient temperature too high<br>2. Cooling power setting too low<br>3. Dust build-up in fan openings | 1. Ensure that the instrument is not near a heat source and that the room temperature does not exceed 25 °C.<br>2. Adjust the cooling power settings as described in chapter 5.2.<br>3. Clean the fan openings as described in chapter 6.2. |
| Plate too cold (cracks in paraffin wax) | 1. Cooling power setting too high | 1. Adjust the cooling power settings as described in chapter 5.2. |

## 8. Warranty and service

### 8.1. Warranty

GordiamKey guarantees that this delivered product has been subjected to a full-scale quality control procedure based on the GordiamKey in-house testing standards and that the product is faultless and complies with all technical specifications and/or characteristics.

The warranty terms of your GordiamKey distributor shall apply exclusively.

### 8.2. Service information

If you require technical service or replacement parts, please contact your GordiamKey distributor.

Please provide the following information:

- Model name and serial number of the instrument.
- Location of the instrument and name of the person to contact.
- Reason for the service call.
- Date of delivery.

Any product that is meant to be returned to GordiamKey or serviced on site must be cleaned and decontaminated in the appropriate manner. Since it is not possible to decontaminate for prion diseases, such as CJD, BSE, CWD etc., equipment exposed to specimens containing prion diseases cannot be returned to GordiamKey for repair. On-site repair of prion-contaminated equipment will only be conducted after the field service engineer has been educated in the risks, instructed in the policies and procedures of the institution, and provided with personal protective equipment. Please download and print the instrument decontamination form from the GordiamKey website (www.gordiamkey.com), fill it out carefully and enclose a copy with the instrument. Attach the confirmation to the outside of the flight case or hand it directly to the service technician.

GORDIAMKEY

www.gordiamkey.com