

Macaroni Thaw

Quick Start Guide

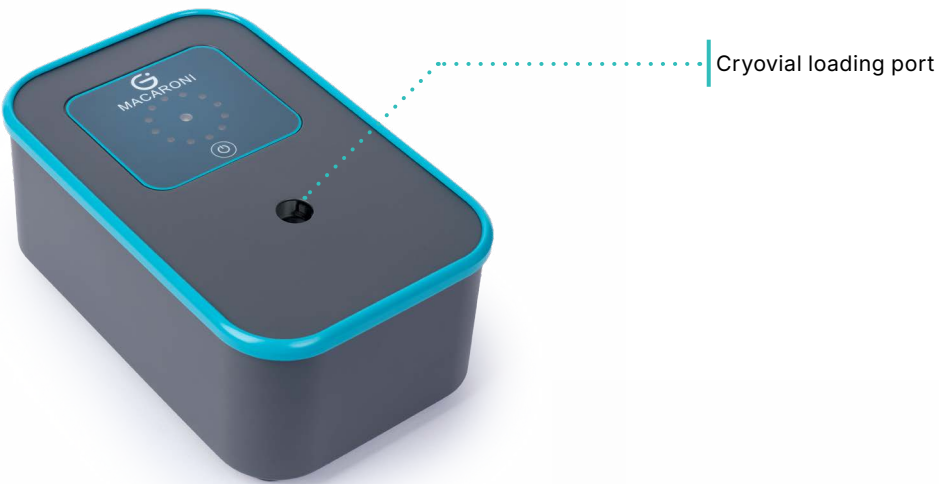


1 Box contents

- Macaroni Thaw device
- External power supply unit
- Mains cable
- Installation plug
- This Quick Start guide
- Warranty card

Unpack the contents, check everything is present and retain the outer packaging for future use.

2 Macaroni connections and indicators



3 Essential safety information

3.1 MEANING OF SAFETY SYMBOLS ON EQUIPMENT



Read these instructions before installation or use of the equipment



Warning, hazard: read these instructions before proceeding to ensure you understand the nature of the hazard.

3.2 SAFETY WARNINGS



Use only as specified by the operating instructions: if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



This equipment is only for indoor use by a professional user.



If the unit is used with accessories not provided or recommended by the manufacturer or in a manner not specified by the manufacturer, the protection provided by the unit may be impaired.



Only connect the unit to the mains supply using the power supply unit and cable provided.



Ensure suitable protective equipment is used when handling cold samples.



It is the user organisation's responsibility to carry out a risk assessment when operating this product within their own operating environment.



The equipment should only be used with sealed sample containers that are free from contamination on their exterior.



It is the user organisation's responsibility to carry out appropriate decontamination if hazardous material is spilt on or inside the equipment.



Before moving, disconnect from the mains power supply.



Do not use the equipment in an area where there are aggressive or explosive chemical mixtures or atmospheres.

4 Installing your Macaroni Thaw

4.1 INTENDED USE

The Macaroni Thaw is an indoor laboratory device for professional users. It is designed to thaw standard 1.8 mL to 2.0 mL cryogenic vials using a clean, water-free and automated process.

4.2 BEFORE YOU START

- Use the equipment indoors only and place it on a level surface.
- Do not block the ventilation slots underneath the unit.
- Ensure the mains switch and power plug are easy to access during use.
- Do not use the equipment in corrosive atmospheres or unsuitable fume cupboards.
- Check that the power supply voltage and plug type are suitable for the mains outlet.
- Do not insert anything other than compatible cryovials into the equipment.

4.3 SETUP

- Unpack the equipment and check that all items are present.
- Retain the outer packaging for future storage or transport.
- Connect the mains cable to the IEC socket on the external power supply.
- Connect the external power supply to the power socket on the rear of the device.
- Switch on the mains supply

4.4 VIAL REQUIREMENTS

- Vial size: 1.8 mL to 2.0 mL cryogenic vial.
- Recommended fill volume: 1.0 mL.
- Typical effective fill range: 0.8 mL to 1.5 mL.
- Storage temperature before thawing: $\leq -70\text{ }^{\circ}\text{C}$.
- Use only clean, intact and securely capped vials.

4.5 THAWING A CRYOVIAL

1. Wait until the device warms-up and displays **Ready to Use**. *Inserting the initialisation plug during start-up speeds up the warming process ~ 3 mins. Remove the plug when Ready to Use is displayed.*

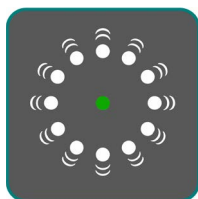


Figure 1: Ready to Use

2. Remove the frozen vial from cold storage using appropriate protective equipment.
3. Insert the vial vertically into the vial loading port on top of the unit.
4. Gently push the vial until it slides fully into position.
5. Wait for the device to detect the vial and start the thaw cycle automatically.
6. During thawing, the internal blower speed will increase and then slow as the cycle nears completion.
7. When thawing is complete, "Thaw Complete" is displayed and the sounder emits a beep. Grasp the vial cap and pull the vial vertically out of the device.

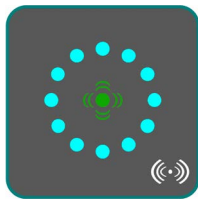


Figure 2: Thaw Complete

8. **Due to various factors (cryoprotectant concentration, ambient temperature, cell type, etc.) thaw detection can occasionally be triggered prematurely. While it is normal and often desirable for a small pellet of ice to remain, should an excessive amount of ice remain, simply re-insert the vial into the device for a short time to allow the temperature to equilibrate.** Alternatively, you can gently agitate the vial by hand from side to side. The ice should disappear as you transfer the vial to the next stage of your workflow.



4.6 PREPARING FOR THE NEXT VIAL

After removing the vial, press the Multifunction button to initialise the device for the next vial. The audible thaw signal will sound every 10 seconds as a reminder until the button is pressed. The device will reset and cool ~3 mins before it displays Ready to Use.

4.7 AUTO SLEEP MODE

If the device is not used for 60 minutes, it automatically enters low power sleep mode. To use the device again, press the Multifunction button below the LED display and allow the normal start-up sequence to complete.

4.8 ERROR MESSAGES

If the user inserts a frozen vial during the warm-up stage (before Ready to Use is displayed) the device will display an error message on the display.

The vial should be removed and the multifunction button pressed to reset the error and put the device back into stabilisation mode, make sure to wait until the device displays Ready to Use before inserting a frozen vial.

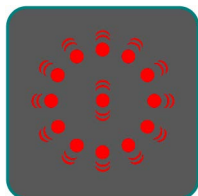


Figure 3: Vial insert error

4.9 THAW THRESHOLD CUSTOMISATION

The thaw profile can be customised to suit your vial type, cryoprotectant, and volume of frozen media being used. The device provides six levels of adjustment above and below the default value. Please refer to the operation manual for details.

5 Downloading the Operating Manual

Please follow the steps below:

1. Follow [this link](https://www.grantinstruments.com/products/macaroniwater-free-cryovial-thawing), copy the URL <https://www.grantinstruments.com/products/macaroniwater-free-cryovial-thawing> into your browser or scan the QR code
2. At the bottom of the webpage, in the **Download** section, download the Macaroni Thaw Operating Manual.



6 Technical Specification

The equipment is designed for operation in dry locations indoors in a standard laboratory environment with temperature and humidity control, with an ambient temperature between 18°C and 25°C at altitudes up to 2000m.

ELECTRICAL DETAILS

CONNECTION	DESCRIPTION
Mains Supply	100-240V, 50-60Hz 0.5A (max)
Permissible mains supply variation	±10 %
Unit Supply	24 V dc, 3.75A
Unit Power Consumption	90W (max)
Pollution degree	2

PHYSICAL PROPERTIES

Dimensions	19cm x 12cm x 7.5cm (7.5 in x 4.75 in x 3.0 in)
Weight	1.4 kg (3.1 lbs) including PSU
Operating (ambient) temperature limits	+18°C to +25°C
Storage (ambient) temperature limits	-20°C to +60°C
Sound pressure level	70 dB(A) at 1 meter distance
Altitude above sea level	Up to 2,000m (6,600ft)
Maximum relative humidity	Maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C

7 Contact Us

If you have any feedback on Grant's products or services, we would like to hear from you.

Manufacturer and UK contact
Grant Instruments (Cambridge) Ltd
Evolution House
Unit 2 Durham Way
Royston Gateway
Royston, SG8 5GX

Tel: +44(0)1763 260811

Email: salesdesk@grantinstruments.com
www.grantinstruments.com

Representative in the European Union
Grant Instruments Europe
SIA BioSan
Ratsupites iela K2
Riga
Latvi, LV-1067

Tel: +371 67 426 137

Email: grant@eu.grantinstruments.com



+44 (0) 1763 260 811 • salesdesk@grantinstruments.com

Grant Instruments (Cambridge) Ltd • Evolution House • Unit 2 Durham Way • Royston Gateway • Royston • SG8 5GX