



# Thermo Scientific High-Capacity Wax Dispenser

## User Guide

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### Anatomical Pathology

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## Company information

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These instruments conform to the essential requirements of:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU

## Symbols

The following symbols and conventions may be used throughout this document and on the instrument:



This symbol is used on the equipment, or in a document, to indicate that instructions must be followed for safe and correct operation. If this symbol appears on the instrument always refer to the operator guide.



This symbol indicates that a surface is hot. If this symbol appears on the instrument or in the documentation always refer to the operator guide. Take suitable precautions



Manufacturer

A warning is given in the documentation if there is a danger of personal injury or damage to equipment or samples.

Note: Notes give additional information about a job or instruction, but do not form part of the instruction.



## Thermo Scientific™ PrintMate™ Cassettes

Color	Tube (Cassettes Only)	Tube (Cassettes & Lids)	Case (Cassettes Only)	Combi Case (Cassettes & Lids)
<b>Thermo Scientific Embedding Cassettes</b>				
	Aqua A84210010	A84210100	A84210040	A84210070
	Blue A84210011	A84210101	A84210041	A84210071
	Green A84210012	A84210102	A84210042	A84210072
	Grey A84210013	A84210103	A84210043	A84210073
	Lilac A84210014	A84210104	A84210044	A84210074
	Orange A84210015	A84210105	A84210045	A84210075
	Pink A84210016	A84210106	A84210046	A84210076
	Tan A84210017	A84210107	A84210047	A84210077
	White A84210018	A84210108	A84210048	A84210078
	Yellow A84210019	A84210109	A84210049	A84210079
<b>Thermo Scientific Embedding Cassettes</b>				
	Aqua A84210020	A84210110	A84210050	A84210080
	Blue A84210021	A84210111	A84210051	A84210081
	Green A84210022	A84210112	A84210052	A84210082
	Grey A84210023	A84210113	A84210053	A84210083
	Lilac A84210024	A84210114	A84210054	A84210084
	Orange A84210025	A84210115	A84210055	A84210085
	Pink A84210026	A84210116	A84210056	A84210086
	Tan A84210027	A84210117	A84210057	A84210087
	White A84210028	A84210118	A84210058	A84210088
	Yellow A84210029	A84210119	A84210059	A84210089
<b>Thermo Scientific Embedding Cassettes</b>				
	Aqua A84210030	A84210120	A84210060	A84210090
	Blue A84210031	A84210121	A84210061	A84210091
	Green A84210032	A84210122	A84210062	A84210092
	Grey A84210033	A84210123	A84210063	A84210093
	Lilac A84210034	A84210124	A84210064	A84210094
	Orange A84210035	A84210125	A84210065	A84210095
	Pink A84210036	A84210126	A84210066	A84210096
	Tan A84210037	A84210127	A84210067	A84210097
	White A84210038	A84210128	A84210068	A84210098
	Yellow A84210039	A84210129	A84210069	A84210099

## Recommended consumables

From cassettes and paraffins to slides and stains, we offer a full line of Thermo Scientific consumables designed to fit the needs of today's most-demanding labs. Availability varies by region. For complete details, please contact your local Thermo Fisher Scientific representative or visit [www.thermofisher.com/pathology](http://www.thermofisher.com/pathology).



### Thermo Scientific Paraffin

	Volume	Quantity	Order No.
<b>Thermo Scientific Signature Series Paraffin</b>			
Type H, high polymer	0.9 kg	10/cs	8338
Type L, low polymer	0.9 kg	10/cs	8339
<b>Thermo Scientific Histoplast PE, IM, LP</b>			
Histoplast PE	1 kg	8/cs	8330
Histoplast IM	1 kg	8/cs	8331
Histoplast LP	1 kg	8/cs	8332
<b>Paraffin Type 1, 3, 6, 9</b>			
Type 1	0.9 kg	10/cs	8334
Type 3	0.9 kg	10/cs	8335
Type 6	0.9 kg	10/cs	8336
Type 9	0.9 kg	10/cs	8337



## General notes

This product is designed for laboratory use only. Always follow good laboratory practice.

If this product is not used in accordance with these instructions then basic safety protection may be affected.

The mains supply cord fitted to this product is heat resistant and should be replaced with an equivalent type.

Before using any cleaning or decontamination method please refer to the Maintenance and Cleaning section to ensure the proposed method will not damage the unit.

Connect only to a power supply with the corresponding voltage to that specified on the rating label positioned on the rear of the unit.

Ensure that the power supply has an earth (ground) terminal.

### Specimen safety

It is the users responsibility, to ensure that the temperature set on the instrument, is at a level where no damage is caused to diagnostic specimens used with the equipment. In the event of this instrument malfunctioning, all specimens within the device should be checked to ensure no harm or damage to the specimen has been caused.

### User safety

The equipment you have purchased complies with the European EMC Directives and Low Voltage Directive as indicated in the EC Declaration of Conformity included in the document.

This instrument has been designed and constructed in a manner which minimises the risk of electrical shock to the operator, offers maximum protection from overheating and provides clear and adequate labelling of instrument controls.

The instrument requires no regular servicing, but Nickel-Electro Ltd do recommend an annual inspection, as detailed in the manual which will prolong the life of the instrument to ensure continued safety.



Do not touch any electrical contacts or open any closure plates.  
**RISK OF ELECTRIC SHOCK!!**

## Specification

Dimensions: Width 358 mm x Depth 420.50 mm x Height 454.50 mm

Tap Height (from bench): 156 mm

Weight: 10 Kg

Temperature range: ambient to 70 °C (+/-1 °C) at 20 °C ambient

Display: Digital display with 1.0 °C accuracy

Safety: Class 1 cutout

Heater power: 900 watts

Power supply: 220-240 V 50/60 Hz - A84600010

110-120 V 50/60 Hz - A84600011

220-240V 50/60 Hz (China) - A84600012

## Environment

This instrument is required to comply with the European Union's Waste Electrical and Electronic Instrument (WEEE) Directive 2002/96/EC. It is marked with the following symbol:



Thermo Fisher Scientific has contracts with one or more recycling / disposal companies in each EU Member State, and this product and packaging should be disposed of or recycled through them. For further information contact your Thermo Fisher Scientific service representative.





## EC Declaration of Conformity

We herewith confirm the following products:

- High Capacity Wax Dispenser 230 V A84600010
- High Capacity Wax Dispenser 110 V A84600011
- High Capacity Wax Dispenser 230 V (China Mains Lead) A84600012

Conforms with requirements outlined by the following European Directives:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU

We confirm the declaration:

Nickel Electro Ltd  
Oldmixon Crescent  
Weston Super Mare  
North Somerset  
BS24 9BL  
United Kingdom

Conforms with the requirements of the following standards:

- BS EN 61010:1: 2010
- BS EN 61010:2.010: 2014
- Safety requirements for electrical equipment for measurement, control and laboratory use.
- BS EN 61326-1: 2013
- Electrical equipment for measurement control and laboratory use - EMC requirements.

## Do's and Dont's

**DO NOT** allow molten wax to accumulate on the surface of the wax dispenser.

**DO NOT** use without pelletized wax placed in the internal tank.

**DO NOT** operate the tap while the wax is cold as this may dislodge the piston from the seal recess.

**DO NOT** use metal instruments or scouring agents to clean the surface of the wax dispenser or the internal tank.

**DO NOT** immerse in water.

**DO NOT** touch the inside of the tank, it can be hot!

**DO position the unit so it can be disconnected from the power supply with ease.**

**DO** maintain the instrument in a reasonably clean condition.

**DO** switch off before removing the plug.

**DO** use in a safe and stable location, where the tap cannot be knocked by accident.

**DO** position tap in locked position when not in use to avoid accidental dispensing of molten wax.

**Do** ensure when melting pelletized wax that the quantity of wax is above the MIN FILL (minimum fill) and below the MAX FILL (maximum fill) levels marked in the tank.

**Do** retain the original packaging over the warranty period.

## Power lead and connection to electrical supply



Check the electrical supply is compatible with the rating label.

**IF IN DOUBT CONSULT AN ELECTRICIAN. THE PRODUCT MUST BE EARTHED!**

Where the mains supply or plug connection differs, refer to local regulations or consult an electrician.

## Location

The product must be placed on a smooth, level and sturdy work surface. Suitable for use in ambient temperatures 5 °C to 40 °C with a maximum humidity 80% (temperature 31 °C) decreasing to 50% (temperature 40 °C).

# Operating instructions

1. Ensure that the power cable is pushed fully into the power supply socket of the wax dispenser and connect the mains plug to the electrical supply.
2. Pour pelletized wax to be melted onto tank, ensuring that the quantity of wax added is greater than the MIN FILL Level and below the MAX FILL level marked in the tank.
3. Switch on the high capacity wax dispenser.
4. Set the desired temperature. Users are recommended to set the temperature 3-4 °C above the melting point being used.
  - A. Press button P then release it (do not hold down button P for 5 seconds). If you hold the button for 5 seconds, do not press any other button for 20 seconds.
  - B. The display will show SP alternating with the current set temperature.
  - C. Use the UP and DOWN arrow keys to change the set temperature. Press the P key to save. Setting will save automatically after 15 seconds.
5. The display returns to the normal function mode and the heater indicator will illuminate to show heater activity.
6. The instrument will then warm up to the desired temperature as indicated on the display.
7. The high capacity wax dispenser is designed to melt bulk quantities of pelletized wax in as quick a time as possible. When set at 65 °C the instrument will take roughly 90 minutes to fully melt 5 Kg of pelletized wax, with significant quantities of molten wax available for use after as little as 30 minutes.
8. Dispense wax by pulling the tap lever: the tap has two positions:
  - a. On demand push dispense.
  - b. Continuous flow - tap locked open.



## Setting Controller Offset Parameters

1. Press and hold the P button until 0 is displayed.
2. Use the UP arrow button to increase the number to 146.
3. When 146 is displayed press the P button. SPL is now displayed.
4. Press the DOWN arrow button to cycle through the sub menu until OFS is displayed.
5. When OFS is displayed, press the P button.
6. Using the UP/DOWN arrow buttons enter the new offset and then press the P button.
7. Press the P button again the press and hold the UP arrow to return to the main menu.

## Warning



THE DISPENSING TAP LEVER SHOULD NOT BE OPERATED WHILE THE SLIMLINE WAX DISPENSER IS COLD AS THIS MAY DISLodge THE PISTON FROM THE SEAL RECESS.

## Calibration

Wax dispensers have a factory offset value programmed into the temperature controller, this aligns the set temperature with actual factory setting 70°C +/-1°C. To calibrate the instrument for your application:

1. Fill tank with pelletized histology wax to the MAX FILL level.
2. Turn on the Wax Dispenser.
3. Set the desired temperature following the Operating Instructions.
4. Allow the instrument to warm up and melt the wax pellets fully.
5. Remove one screw securing the handle on the lid. This allows the handle to be twisted aside revealing a hole in the lid. Refit the lid. This hole allows the insertion of the calibrated measuring probe into the molten wax.  
  
At least half your measuring probe length should be immersed in molten wax. We recommend the measuring probe is now left immersed during the following steps to gain uniform probe readings because wax responds slowly to temperature change.
6. Allow the instrument to settle at least 8 hours or overnight with lid on and probe in place to ensure the molten wax is uniformly heated throughout the tank.
7. Take a temperature reading from your probe just as the heater indicator illuminates ON at set temperature, this is the lowest reading and then wait to record a maximum reading. The "calibration temperature" is the value midpoint between these two readings.

There are two ways to adjust the set temperature of the molten wax being heated in the tank:

1. Adjust the set temperature to a new value by reducing or increasing this value until molten wax aligns with your desired temperature.
2. Entering the difference between current set temperature and calibration value to adjust the offset in the controller. For example, if actual measured reading 72°C and set temperature 70°C, the offset value should be increased by 2°C. To adjust the controller offset please follow these instructions.
3. Please refit the handle when complete.

## Cleaning instructions

Regular cleaning of the instrument according to the cleaning instructions enclosed in this user manual will ensure that the instrument continues to operate efficiently and safely in normal everyday use. Cleaning or decontamination methods, other than those recommended in this guide, should be checked with your instrument supplier to ensure that the proposed method will not damage the instrument.

1. The lower-case work of the High-Capacity Wax Dispenser, including the control panel, may be wiped using small quantities of mild detergent or polishes applied with a soft cloth.
2. The internal tank can be emptied by locking the delivery tap into the continuous flow position. Any residual wax at the bottom of the tank can be removed using absorbent tissues and wiped clean.
3. The filter (0.5 mm mesh) situated at the bottom of the tank can be cleaned in-situ using a toothbrush or similar brush, or lifted out once the bolts are removed for more thorough cleaning using solvents. (If removing the filter, it is recommended that protective gloves are worn).



SCOURING PADS OR DE-SCALING AGENTS MUST NOT BE USED TO CLEAN THIS INSTRUMENT.



DO NOT USE SOLVENTS TO CLEAN THIS INSTRUMENT!

### Miniature circuit breakers

Located on the rear of the instrument. In the event of a fault, push back in to reset. If fault condition continues, please contact your Service Engineer.

### Portable appliance testing

Portable appliance testing should be carried out by a qualified person.



THIS EQUIPMENT MUST NOT BE FLASH TESTED!

### Routine inspection recommendations

Nickel-Electro Ltd recommend that a simple annual inspection be made for all Thermo Scientific laboratory equipment. This is to ensure user safety and prolong instrument life span.

Recommended checks to be made:

1. Condition of Power Lead: a visual inspection to ensure the insulation is not damaged and that the correct fuse is fitted.
2. Functioning of Heater On Lamp: heater lamp should be on when the instrument is warming up.
3. Condition of the wax dispenser tank and filter (0.5 mm mesh): both tank and filter should be in good condition with no evidence of corrosion and no damage visible to the filter screen.
4. Dispensing Tap Seal: the dispensing tap should seal correctly, with no occurrence of constantly dripping wax when the tap is not in use.

# Troubleshooting Guide

Symptom	Possible Cause	Action Required
1. Unit does not operate/ No power to the instrument  (Illuminated On/Off button not lit, temperature controller not lit.)	A. Unit is not switched on. B. Unit not plugged into power supply. C. Circuit breakers have been triggered and need to be re-set. D. Fuse in instrument lead plug has failed. E. Power supply failure.	A. Switch On B. Plug in, and switch on unit. C. Re-set circuit breakers. D. Replace fuse or use a new lead set. E. Check that other electrical instruments on the same circuit are working. Check distribution board for a triggered circuit breaker or blown fuse.
2. Power is supplied to the instrument, but the instrument does not heat (wax does not melt)  (Temperature does not rise on the controller and the orange heater light does not operate.)	A. Latching thermal cut out has triggered. B. Temperature of instrument is set too low. C. Heating element has failed. D. Failure of temperature controller.	A. Re-set the thermal cut-out. B. Check the set temperature of the instrument. C. Instrument should be checked by a competent person. D. Instrument should be checked by a competent person.
3. Instrument does not reach working temperature as quickly as expected.	A. Instrument does not operate at the correct voltage for your region.	A. Check that the voltage selectors at the rear of the instrument are set to the correct voltage for your region.
4. Wax takes longer than expected to melt.	A. Instrument does not operate at the correct voltage for your region. B. Temperature of tank is not set high enough. C. Large quantity of pelletized wax being melted D. Wax in tank is solid due to instrument being turned off.	A. Check that the voltage selectors at the rear of the instrument are set to the correct voltage for your region. B. Temperature of tank should be set at least 5 degrees above the melting point of the wax.  Example For a histology wax (m.p. 56-58°C) the recommended set temperature for the tank is 65°C. C. When melting large quantities of pelletized wax an extended amount of time will be required to melt the wax.  Example: 2.5kg of pelletized wax (m.p. 56-58°C) takes between 3 – 4 hours to fully melt when tank set to 65°C. D. When melting a solid tank of wax, it is recommended that the temperature of the tank be set to 70°C, to allow wax to be melted in a convenient timescale.  Example: A solid tank of wax m.p. 56-58°C) filled to the ridge of the tank wax (takes roughly 6 – 7 hours to fully melt, when tank set to 70°C.

Symptom	Possible Cause	Action Required
5. Temperature of the instrument shown on the controller, is different to the temperature of measured by a reference probe.	A. Not enough wax has been placed into the tank to be melted. B. External temperature probe being used is not suitable for wax temperature measurements or external probe is not calibrated. C. Position of the external temperature probe is not at the calibration point.	A. If a tank is empty, it is recommended that at least 2.0kg of pelletized wax is added to the tank for melting. B. Check correct probe is being used for measurement and that the probe is calibrated. C. Measure temperature at the position where the instrument is calibrated, using a calibrated probe.  Users should melt wax until the wax dispenser tank is filled to the ridge of the tank with molten wax. Once the tank is filled with molten wax the user should wait at least 3 hours before taking a measurement to allow the temperature of the wax in the tank to equilibrate.  If the temperature is reading is significantly different, the instrument may need to be re-calibrated. Follow the calibration instructions.
6. Temperature of the wax dispenser continues to rise when not expected.	A. Desired temperature is lower than the set temperature B. Temperature control circuit fault	A. Check the set temperature. B. Instrument should be checked by a competent person.
7. Molten wax is not dispensed from tap.	A. Instrument is not operating at the correct voltage for your region. B. Heated tap has not reached working temperature. C. Wax is not molten in tank. D. Tap heater failure. E. Blocked filter F. Tap failure.	A. Check that the voltage selectors at the rear of the instrument are set to the correct voltage for your region. B. Allow additional time for the tap to reach its working temperature. C. Allow additional time for wax in the tank to melt. D. Is the tap hot to touch? If the tap is cold after an hour of the instrument being turned on the heater will need to be replaced by a competent person. E. Clean filter in the bottom of the tank. F. Tap will need to be replaced by a competent person.