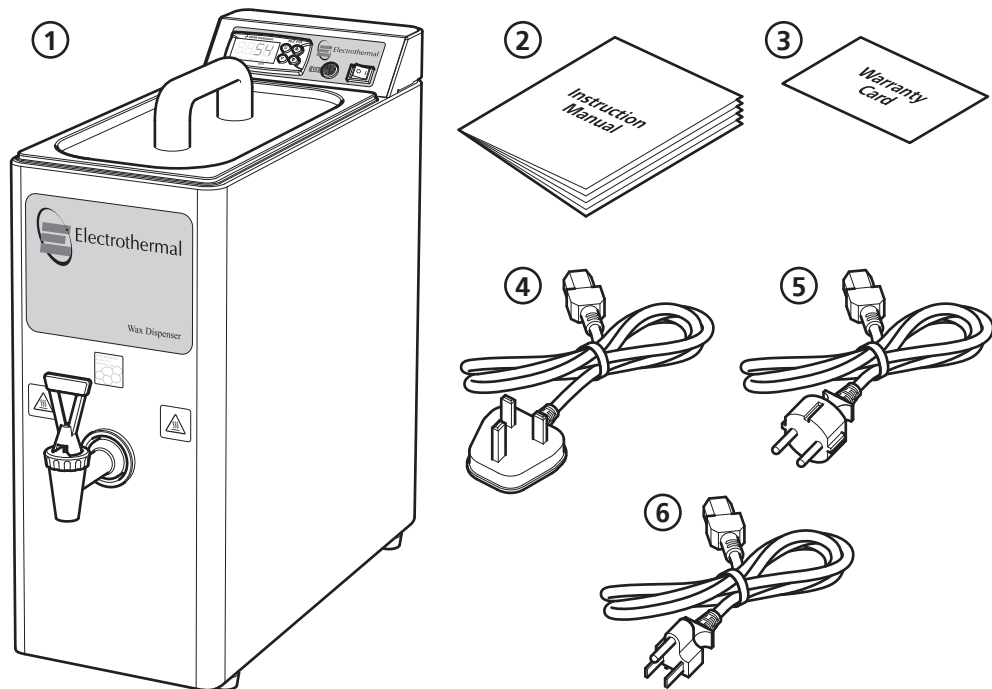


Instruction Manual  
ET0003 / Version 1.0

## Introduction

Thank you for purchasing this Electrothermal product. To get the best performance from the equipment, and for your own safety, please read these instructions carefully before use.

Before discarding the packaging check that all parts are present and correct.



① Wax dispenser

② Instruction manual

③ Warranty card

④ UK power lead  
(MH8524 only)

⑤ EU power lead  
(MH8524 only)

⑥ US power lead  
(MH8524X1 only)

This equipment is designed to operate under the following conditions:

- ❖ For indoor use only
- ❖ Use in a well ventilated area
- ❖ Ambient temperature range 5°C to 40°C (41°F to 104°F)
- ❖ Altitude to 2000 m (6500 ft)
- ❖ Relative humidity not exceeding 80% (temperature 31°C) decreasing to 50% (temperature 40°C)
- ❖ Mains supply fluctuations not exceeding 10% of nominal
- ❖ Overvoltage category II IEC60364-4-443
- ❖ Pollution degree 2 IEC664
- ❖ Use with a minimum distance all round of 300 mm (12 in.) from walls or other items

If the equipment is not used in the manner described in this manual and with accessories other than those recommended by the manufacturer, the protection provided may be impaired.

## General Description

The Wax Dispenser is designed for on-demand delivery of molten wax. The novel design of the instrument ensures that it takes up a minimum bench space in the laboratory, whilst still maintaining a large 7.5L capacity tank, for melting up to 6kg of pelletized wax at a time. The Wax Dispenser has digital temperature control which provides accurate temperature control of the molten wax, and is coupled with an ultra fast heating system for rapid melting of pelletized wax. Delivery of molten wax is via a non-drip lever tap, which is heated via a dedicated heating system, which prevents blockages resulting from solidified wax and ensures an even flow of wax. The inner tank has a filter screen (0.5mm mesh) fitted to prevent coarse particles from blocking the delivery tap. The tank is also fully insulated to prevent heat loss from the tank and to ensure that the outer surfaces of the tank are safe to touch.

## Important Safety Advice

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

Users should be aware of the following safety advice:

- ❖ **DO NOT** use without appropriate training.
- ❖ **SHOCK HAZARDS OR UNSAFE PRACTICES ARE DANGEROUS** as they can cause severe personal injury, fire or death.
- ❖ **DO NOT** use combustible substances near hot objects.
- ❖ **DO NOT** use the equipment in hazardous atmospheres.
- ❖ **DO NOT** immerse the equipment in water.
- ❖ **DO NOT** operate or handle any part of the product with wet hands or use on surfaces that may become flooded.
- ❖ **NEVER** move the product while still connected to the power supply.
- ❖ **HIGH TEMPERATURES ARE DANGEROUS** as they can cause serious burns to operators and ignite combustible material.
- ❖ **USE CARE AND WEAR PROTECTIVE GLOVES TO PROTECT HANDS.**
- ❖ **NEVER** lift or carry the instrument during operation.
- ❖ **NEVER** use the tap to lift or carry the instrument.
- ❖ **DO NOT** position the unit so that it is difficult to disconnect from the mains supply using the mains plug.
- ❖ The mains outlet socket used should be located close to the equipment and readily identifiable and accessible to users.
- ❖ **DO NOT** leave equipment switched on and it is not recommended to leave any heating apparatus unattended during operation.
- ❖ The unit should be carried using both hands.
- ❖ **DO NOT** allow molten wax to accumulate on the surface of the equipment.
- ❖ **DO NOT** use if the equipment is empty
- ❖ **DO NOT** operate the tap while the wax is cold as this may damage the tap.

### Symbols Defined



## Electrical Requirements



**THIS INSTRUMENT MUST BE GROUNDED**

**Before connection please ensure that the line supply corresponds to the power requirements below:**

Power: 480W      Supply requirements: 110 - 120 V or 220 - 240 V ~ 50/60Hz

The unit is provided with three power cables consisting of a UK 3-pin and a "Schuko" 2-pin plug for 230 V installations and a NEMA 5-15 plug for 120 V installations.

Choose the power cable appropriate for your electrical installation and discard the other. Should neither power cable be suitable for connecting to the power supply, replace the plug with a suitable alternative.

**THIS OPERATION SHOULD ONLY BE UNDERTAKEN BY A QUALIFIED ELECTRICIAN.**

**NOTE:** Refer to the equipment rating plate to ensure that the plug and fusing are suitable for the voltage and wattage stated. The wires in the mains cable are as follows:

**230V**

BROWN - HOT/LIVE

BLUE - NEUTRAL

GREEN/YELLOW – EARTH

**120V**

BLACK - HOT/LIVE

WHITE - NEUTRAL

GREEN - EARTH

The appropriate power cable and power adaptor combination should be connected to the instrument BEFORE connection to the mains supply. Should the mains lead require replacement, a heat resistant cable of 1.25mm<sup>2</sup> (AWG16) of harmonised code H05VV-F connected to an IEC320 plug should be used.



**IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN**



**THIS EQUIPMENT MUST NOT BE FLASH TESTED**

## Safety Cut-outs

The equipment is protected by a miniature circuit breaker and a temperature cut out.

The miniature circuit breakers are located on the rear of the equipment. In the event of a fault, push back to reset. If the fault continues, please contact your local service representative or the service department of Cole-Parmer.

If the temperature cut-out is operated allow the equipment to cool completely. Identify and rectify the cause of cut-out operation before operating. If the temperature cut-out continues to operate, please contact your local service representative or the service department of Cole-Parmer.

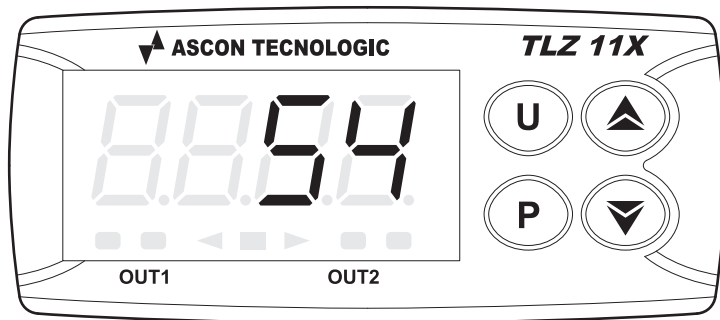
## Operation

### Before Use

Place the unit on a firm, level surface, ensuring that all four feet on the base of the unit are positioned on the surface firmly. Avoid installation on a slippery surface or on a surface prone to vibration.

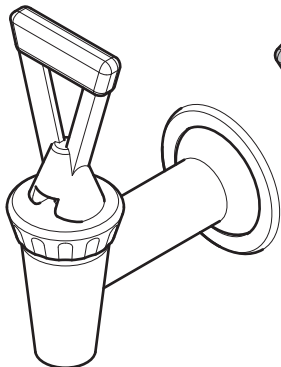
**Note:** Button **U** is not required in this application.

1. Ensure that the power cable is pushed fully into the power supply socket of the wax dispenser.
2. Connect the mains plug to the electrical supply.
3. Pour the desired quantity of wax into the internal tank. The tank has a maximum capacity of 7.5L which is large enough to melt 6.0kg of pelletized histology wax.
4. Turn ON the wax dispenser.
5. Set the desired temperature. Users are recommended to set the temperature 3-4°C above the melting point being used.

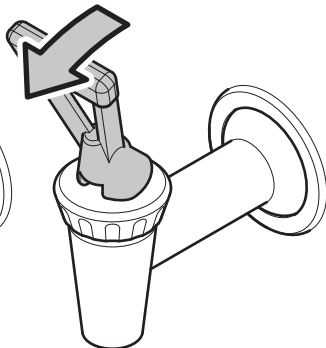


- a. Press **P** then release it (do not hold down **P** for more than 5 seconds).
- b. The display will show **5P** alternating with the current set temperature.
- c. To change the set temperature press **▲** to increase the value or **▼** to decrease it. These keys increase or decrease the value one digit at a time, but if the button is pressed for more than one second the value increases or decreases rapidly, and after two seconds pressed, the speed increases even more to allow the desired value to be reached rapidly.
- d. Exiting the Set mode is achieved by pressing **P** or automatically if no key is pressed for 15 seconds. After that time the display returns to the normal function mode.

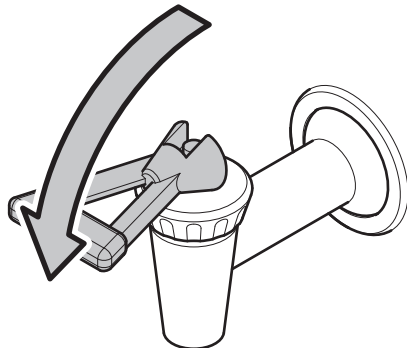
6. The heater indicator will illuminate to show heater activity.
7. The equipment will warm up to the desired temperature and temperature rise will be shown on the display.
8. The wax dispenser is designed to melt bulk quantities of pelletized wax in as quick a time as possible. When set at 65°C the instrument will take roughly 90 minutes to fully melt 5kg of pelletized wax, with significant quantities of molten wax available for use after as little as 30 minutes.
9. Wax is delivered by pulling the tap lever forward. The tap has three positions:



i Off



ii On demand pull dispense



iii Continuous flow - tap locked open



**CAUTION:** Do not operate the tap while the wax is cold as this may damage the tap.

## Maintenance, Servicing and Cleaning



**WARNING:** Before attempting any maintenance, servicing or cleaning, ensure that the unit is cool.



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



**WARNING:** Ensure the unit is disconnected from the power supply before attempting any maintenance, servicing or cleaning.

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 outer case work of the 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 (0.5mm 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).

**NOTE: DO NOT** use scouring pads, de-scaling agents or solvents to clean any parts of this equipment.

Preventative maintenance should include keeping the product clean by protecting it from spillage, contamination or corrosive environments. In doubt, please confirm that any intended method of decontamination will not damage the equipment by contacting Cole-Parmer.

Cole-Parmer recommend that a simple annual inspection be made in order that any malfunction can be identified and rectified as early as possible. 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 (0.5mm 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.

**NOTE:** It is normal for a small quantity of molten wax to remain in the tap after it is closed. This residual wax will drip out, however it will be short lived and will be in very small quantities.

## In Case of Contamination



**WARNING: THE FOLLOWING PROCEDURE IS INTENDED AS A GUIDE. SHOULD SPILLAGE OF A TOXIC OR HAZARDOUS FLUID OCCUR, THEN ADDITIONAL SPECIAL PRECAUTIONS MAY BE NECESSARY.**

If the equipment has been exposed to contamination, the Responsible Body is responsible for carrying out appropriate decontamination. If hazardous material has been spilt on or inside the equipment, decontamination should only be undertaken under the control of the Responsible Body with due recognition of possible hazards. Before using any cleaning or decontamination method, the Responsible Body should check with the manufacturer that the proposed method will not damage the equipment. Prior to further use, the Responsible Body shall check the electrical safety of the unit. Only if all safety requirements are met can the unit be used again.

**NOTE:** In the event of this equipment or any part of the unit becoming damaged or requiring service, the item(s) should be returned to the manufacturer for repair accompanied by a decontamination certificate. Copies of the Certificate are available from the Distributor/Manufacturer.

At the end of its service life, the product must be accompanied by a Decontamination Certificate.

## Repairs and Support

Any repairs or replacement of parts **MUST** be undertaken by suitably qualified personnel. Only spare parts supplied or specified by Cole-Parmer or its agents should be used. Fitting of non-approved parts may affect the performance and safety features designed into the instrument. For a comprehensive list of parts required by service engineers conducting internal repairs please contact the service department quoting the model and serial number:

Email: [cpSERVICE@coleparmer.com](mailto:cpSERVICE@coleparmer.com)

Tel: +44 (0)1785 810475

For any other technical enquiries please contact the Technical Support Department at:

Email: [cpTECHSUPPORT@coleparmer.com](mailto:cpTECHSUPPORT@coleparmer.com)

Tel: +44 (0)1785 810433

## Warranty

Cole-Parmer Ltd. warrants this instrument to be free from defects in material and workmanship, when used under normal laboratory conditions, for a period of 1 year. In the event of a justified claim Cole-Parmer will replace any defective component or replace the unit free of charge. This warranty does **NOT** apply if damage is caused by fire, accident, misuse, neglect, incorrect adjustment or repair, damage caused by incorrect installation, adaptation, modification, fitting of non-approved parts or repair by unauthorised personnel.

Cole-Parmer Ltd,

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United Kingdom

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Tel: +44 (0)1785 810475

Web: [www.electrothermal.com](http://www.electrothermal.com)



## Spares and Accessories

Please contact your local sales specialist or email [cspares@coleparmer](mailto:cspares@coleparmer) to enquire about available spares.

Please visit [www.electrothermal.com](http://www.electrothermal.com) for a full list of available accessories.

## Technical Specification

### General Specification

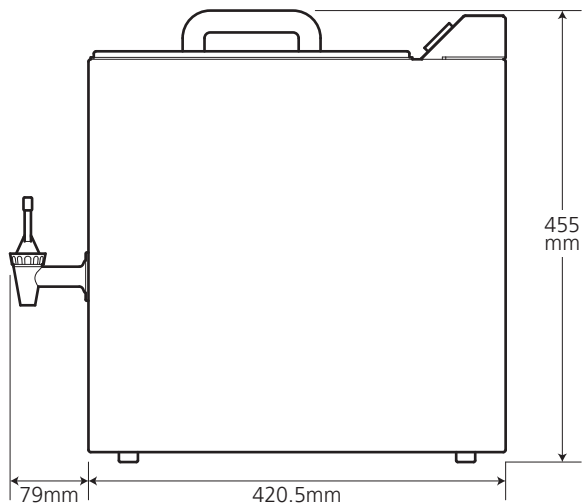
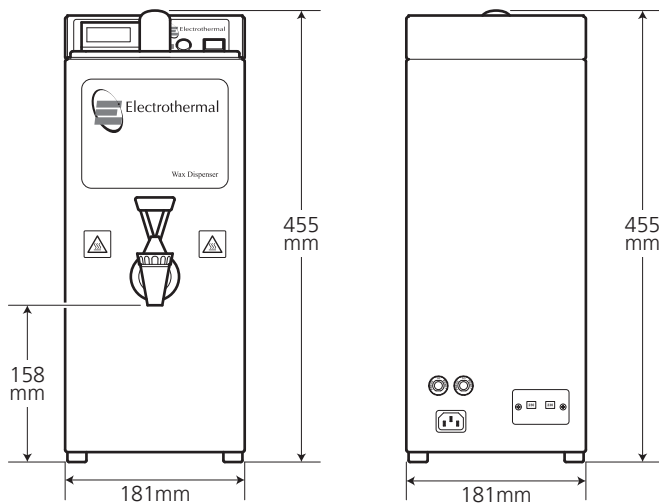
Safety functions	Class 1 cut out Thermal cut out 120°C
Tank cover	Stainless Steel
Tank material	Stainless Steel
Tank capacity	Approx. 7.5 litres
Maximum tank capacity	6kg
External dimensions	W181 x D499.5 (inc tap) x H455mm
Weight	7.0kg (without wax) 13.0kg (with Max. 6kg of wax)
Temperature display range	Ambient to 70°C (+/- 1°C at 20°C ambient)
Display resolution	1°C
Accuracy	± 1°C
Ceiling temperature setting	70°C
Display	Digital Display
Control Sensor	NTC Thermistor

### Electrical specification

Total power consumption	480W
Total power output	5A
Temperature control	On/Off
Oven operating temperature range	Ambient to 70°C (+/- 1°C at 20°C ambient)
Electricity supply	110 - 120 V ~ 50/60Hz 220 - 240 V ~ 50/60Hz

## Weights and Dimensions

Weight 7.0kg (without wax)  
13.0kg (with Max. 6kg wax)





This product meets the applicable harmonized standards for radio frequency interference and may be expected not to interfere with, or be affected by, other equipment with similar qualifications. We cannot be sure that other equipment used in its vicinity will meet these standards

and so we cannot guarantee that interference will not occur in practice. Where there is a possibility that injury, damage or loss might occur if equipment malfunctions due to radio frequency interference, or for general advice before use, contact the manufacturer.



## EU Declaration of Conformity

<b>Product</b>	Laboratory Equipment	<b>File Number</b>	P225
<b>Manufacturer</b>	Cole-Parmer Ltd Beacon Road Stone, Staffordshire ST15 0SA United Kingdom		

This declaration of conformity is issued under the sole responsibility of the manufacturer

**Object of Declaration** Wax Dispenser  
(reference the attached list of catalogue numbers)

The object of the declaration described above is in conformity with the relevant Union Harmonisation Legislation:

<b>Low Voltage Directive</b>	2014/35/EU
<b>EMC Directive</b>	2014/30/EU
<b>RoHS Directive</b>	2011/65/EC

References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:

IEC/EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements.
IEC/EN 61010-2-010:2014	Particular requirements for laboratory equipment for the heating of materials.
IEC/EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use. EMC requirements. Part 1: General requirements.

Signed for and on behalf of the above manufacturer


**Additional Information** Year of CE Marking: 2018

**Place of Issue** Stone, Staffordshire, UK

**Date of Issue** 03 January 2018

**Authorised Representative** Neil Pomeroy

**Title** Technical Director

**Signature** 



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