

# High Capacity Wax Dispenser User Manual

JAU-0200-00A



**CellTec**  
Laboratory Equipment



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Dear Customer,

Thank you for purchasing this piece of CellTec laboratory equipment. To get the best performance from your equipment and for your own safety please read these instructions carefully before use.

## General Notes

1. This product is designed for laboratory use only. Always follow good laboratory practice.
2. If this product is not used in accordance with these instructions then basic safety protection may be affected.
3. The mains supply cord fitted to this product is heat resistant and should be replaced with an equivalent type.
4. 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.
5. Connect only to a power supply with the corresponding voltage to that specified on the rating label positioned on the rear of the unit.
6. 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.

### Amendments

Issue 3: September 2018

### Symbols



This symbol appears in documents and on equipment to warn the user that there are hot surfaces on the equipment.



This symbol appears in documents and on equipment to warn the user that instructions must be followed to ensure correct or safe operation.

## 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 CellPath 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!!**

### **DO NOT:**

1. Allow molten wax to accumulate on the surface of the high capacity wax dispenser.
2. Use without pelletized wax placed in the internal tank.
3. Operate the taps while the wax is cold as this may dislodge the piston from the seal recess.
4. Use metal instruments or scouring agents to clean the surface of the wax dispenser or the internal tank.
5. Immerse in water.
6. Touch the inside of the tank, it can be hot!
7. Use without appropriate training.

### **DO:**

1. Maintain the instrument in a reasonably clean condition.
2. Switch off before removing the plug.
3. Ensure that replacement fuses are of the correct specification.
4. Use in a safe and stable location, where the taps cannot be knocked by accident.
5. Position taps in locked position when not in use to avoid accidental dispensing of molten wax.
6. Position the unit so it can be disconnected from the power supply with ease.
7. 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 AND ELECTRICIAN. THE PRODUCT MUST BE EARTHED!**

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

Before first use, check voltage selected is compatible with local supply!

## Specification

The High Capacity 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 two large 7.5L capacity tanks, for melting up to 6kg of pelletized wax per tank at a time. The High Capacity 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 due to 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.

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

**Tap Height (from bench):** 156mm

**Weight:** 10.0Kg

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

**Display:** Digital Display with 1.0° accuracy.

**Safety:** Class I cut out

**Heater power:** 900 watts

**Power Supply:** 110V/230V a.c 50-60Hz

## 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. Place the high capacity wax dispenser on a smooth, level and sturdy work surface.
2. Ensure that the power cable is pushed fully into the power supply socket of the wax dispenser.
3. Connect the mains plug to the electrical supply and switch on (ensure the power supply is properly earthed). Each tank can be operated individually.
4. Pour the desired quantity of wax into the internal tank. Each tank has a maximum capacity of 7.5L which is large enough to melt 6.0Kg of pelletized histology wax.
5. Turn on the high capacity wax dispenser using the mains switch on the front of each tank.
6. 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).
  - B. The display will show **SP** alternating with the current set temperature.
  - C. To change the set temperature press the **UP** key to increase the value or **DOWN** 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 the **P** key or automatically if no key is pressed for 15 seconds. After that time the display returns to the normal function mode.
7. The heater indicator will illuminate to show heater activity.
  8. The instrument will then warm up to the desired temperature, you will observe the temperature rise on the display.
  9. 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 5Kg of pelletized wax, with significant quantities of molten wax available for use after as little as 30 minutes.
  10. Wax is delivered by pulling the tap lever. This tap has two positions:
    - a. On demand push dispense
    - b. Continuous flow - tap locked open.

## Warning



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

## 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 tanks can be emptied by locking the delivery tap into the continuous flow position. Any residual wax at the bottom of the tanks can be removed using absorbent tissues and wiped clean.
3. The filter (0.5mm mesh) situated at the bottom of the tanks 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).

## Warning



SCOURING PADS OR DE-SCALING AGENTS MUST NOT BE USED 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 situation continues, please contact your Service Engineer or CellPath Ltd.

## Portable Appliance Testing

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



**THIS EQUIPMENT MUST NOT BE FLASH TESTED!**

## Warranty Terms and Conditions

1. CellPath Ltd warrants to the Customer that the product purchased is free from defects in materials and workmanship.
2. Provided the terms of payment are duly complied with, CellPath Ltd undertakes to remedy any original defects arising from faulty materials or workmanship, in any goods manufactured/supplied by CellPath Ltd, which under proper and normal conditions of use, may develop within a period of twelve months from the date of delivery.
3. In the case of components which by their nature of application have an unpredictable life, this guarantee shall only be to the extent of the guarantee given by the manufacturers of these articles.
4. CellPath Ltd will accept no liability, where in the opinion of the company the defect has been caused by damage due to the Customers failure to follow operating instructions, correct installation, wear and tear, or damage due to the use of spare parts other than those spare parts of CellPath Ltd or which are recommended by CellPath Ltd, the defect has been caused by alterations or repairs being undertaken by a person(s) other than an authorised representative of CellPath Ltd.
5. Any damage claim must be in writing, and give the serial number and description of the goods, order number and date of delivery, and will not apply where any names or serial numbers or other information which may be attached to or inscribed upon the goods have been removed, covered up or defaced in any way.
6. Any goods or parts thereof, which may require repair or replacement, shall be repaired or replaced (at the election of CellPath Ltd) at the works of CellPath Ltd. The product to be repaired shall be delivered carriage paid back to CellPath Ltd by the customer at the Customer's risk and expense. Any such goods or parts will be delivered by CellPath Ltd to the Customer free within the United Kingdom but if

## Warranty Terms and Conditions Cont..

required to be borne by the Customer. All faulty parts removed from the equipment will become CellPath Ltd's property. Any other repairs or work by CellPath Ltd will be carried out under the terms and conditions for specialist engineers currently in force.

7. In the event of replacement with a new or reconditioned model, the replacement unit will continue the warranty period of the original equipment.

8. If any goods or parts thereof are returned unnecessarily all cost involved, including a charge for inspection, handling and the return carriage must be paid by the sender. In no circumstances shall any of the goods be returned to CellPath Ltd without its prior written consent.

9. Please retain the original packaging over the warranty period. Any equipment returned under warranty should be in the original packaging. Any damages in transit resulting from using any packaging other than that originally supplied will be the responsibility of the Customer.

10. CellPath offer an Extended Warranty Option for instruments in the CellTec equipment range. This includes all parts and labour (exceptions may apply dependent upon the type of equipment) and supply a swap out instrument whilst the customers equipment is repaired.

The extended warranty is only available at the date of purchase of the equipment. The warranty is immediately upgraded to a "swap out" service and is increased to 24 or 36 months depending on how long the warranty is extended for.

The "swap out" service covers a loan unit being sent to the customer whilst the faulty unit is returned for repair (or replacement if necessary). A response to a customer request will normally be within 24 hours.

If equipment is returned and the fault is found to be due to misuse or abuse, this falls outside the terms of the extended warranty and therefore a quotation for the inspection and repair of the equipment will be issued prior to any work being carried out. On return of the repaired equipment to the customer, it is the customer's responsibility to ensure that the loan equipment is returned in the same condition as

it was received and if required decontaminated with a signed decontamination sheet enclosed with the instrument.

## **Warranty Terms and Conditions Cont..**

It is the customers responsibility to ensure that the loan equipment is packed in the packaging provided by CellPath Ltd, in order that CellPath Ltd can arrange collection of the loan instrument. If the loan instrument is not packed and ready for collection within 48 hours of a repaired instrument being returned to the customer, costs for collection and equipment rental fee will be applied.

## **Non Warranty Information**

Spare parts shall be made available for a period of 5 years after a piece of equipment is discontinued.

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## **EC Declaration of Conformity**

We herewith confirm the following products:

High Capacity Wax Dispenser - JAU-0200-00A

Conforms with requirements outlined by the following European Directives:

Low Voltage Directive 2014/35/EU

EMC Directive 2014/30/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.

## Troubleshooting Guide

Symptom	Possible Cause	Action Required
<p>1. Unit does not operate/ No power to the instrument</p> <p><i>(Illuminated On/Off button not lit, temperature controller not lit.)</i></p>	<p>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.</p>	<p>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.</p>
<p>2. Power is supplied to the instrument, but the instrument does not heat (wax does not melt)</p> <p><i>(Temperature does not rise on the controller and the orange heater light does not operate)</i></p>	<p>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.</p>	<p>A: Competent person to 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.</p>
<p>3. Instrument does not reach working temperature as quickly as expected.</p>	<p>A: Instrument does not operate at the correct voltage for your region.</p>	<p>A: Check that the voltage selectors at the rear of the instrument are set to the correct voltage for your region.</p>
<p>4. Wax takes longer than expected to melt.</p>	<p>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.</p>	<p>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.  <i>Example</i>            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.  <i>Example:</i>            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.  <i>Example:</i>            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.</p>

<p>5. Temperature of the instrument shown on the controller, is different to the temperature of measured by a reference probe.</p>	<p>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.</p>	<p>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.</p> <p>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 a minimum 3-4 hours before taking a measurement to allow the temperature of the wax in the tank to equilibrate.</p> <p>If the temperature is reading is significantly different, the instrument may need to be re-calibrated. Follow the calibration instructions.</p>
<p>6: Temperature of the wax dispenser continues to rise when not expected.</p>	<p>A: Desired temperature is lower than the set temperature  B: Temperature control circuit fault</p>	<p>A: Check the set temperature.  B: Instrument should be checked by a competent person.</p>
<p>7. Molten wax is not dispensed from tap.</p>	<p>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.</p>	<p>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.</p>

## **Routine Inspection Recommendations**

CellPath Ltd recommend that a simple annual inspection be made for all CellTec laboratory equipment 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 tanks and filters should be in good condition with no evidence of corrosion and no damage visible to the filter screen.

**4. Dispensing Tap Seal**

The dispensing taps 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.



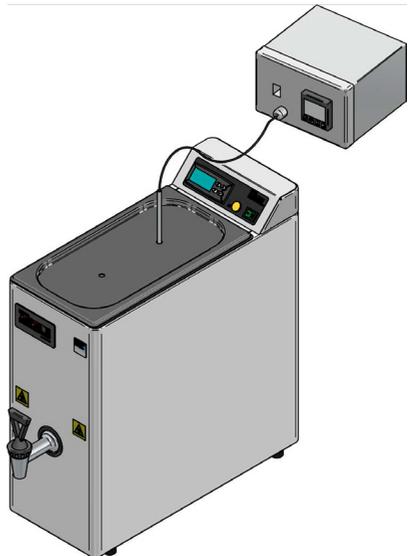
## Calibration and Offset Instructions

Wax dispensers have a factory offset value programmed into the temperature controller; this aligns the set temperature with actual factory setting  $70^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . To calibrate the instrument for your application:

1. Fill tank with 7Kg pelletized histology wax to the ridge in the tank.
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 mid-point 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  $72^{\circ}\text{C}$  and set temperature  $70^{\circ}\text{C}$ , the offset value should be increased by  $2^{\circ}\text{C}$ . To adjust the controller offset please follow these instructions.
3. Please refit the handle when complete.



# Calibration and Offset Instructions Continued

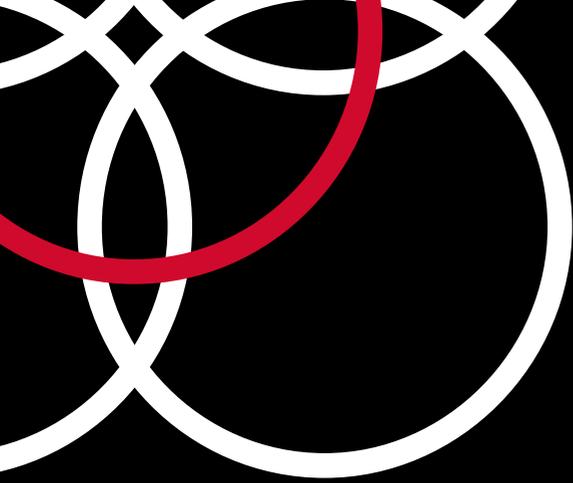
## Setting Controller Offset Parameters

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. SPLL is now displayed.
4. Press the DOWN arrow button to cycle through the sub menus 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.

## Spare Parts List

<b>Description</b>	<b>Part Number</b>	<b>Quantity Required Per Tank</b>
Temperature Controller	JBA-EX1175-00A	1 off
Neon Amber and Tags	JBA-EL0100-00A	1 off
Small Mains Switch	JBA-ES0272-00A	1 off
Power Entry Module	JBA-EX1151-00A	1 off
Voltage Selector	JBA-ES0968-63A	2 off
5 Amp Circuit Breaker	JBA-EX1212-63A	2 off
Temperature Sensor	JBA-ET1160-00A	1 off
European Plug and Lead 2M 1mm CSA	JBA-EK0547-00A	1 off
1mm CSA Plug and Lead Set 2M	JBA-EX0982-00A	1 off
400W Dual Voltage Mica	JBA-EE1198-00A	1 off
110V Cord Set	JBA-EK0917-00A	1 off
7A Plug Fuse	JBA-EF0436-00A	1 off
Thermal Cut Out 120°C	JBA-EH1243-01A	1 off





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