



CAMPDEN INSTRUMENTS LIMITED

INSTRUCTION MANUAL

FOR

764 PELTIER COOLING UNIT

for use with

752 and 752/M Vibroslice Tissue Cutters

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Introduction

PACKAGING

Please retain original packaging for future use.

Instruments will not be accepted for service or repair unless the unit is returned adequately and properly packaged.

SAFETY

Spillage - If the cutting lubricant/preserving liquid , e.g. physiological saline, is spilt over the instrument it is important for electrical safety reasons to ensure that the instrument remains safe to use. To avoid the possibility of electrical shock if a spillage occurs, the unit should be switched off at the mains electrical outlet and disconnected before touching the instrument. The instrument should be inspected and tested if necessary by a suitably qualified technician before it is put into further use.

This instrument must not be operated unless it is adequately earthed (grounded).

All electrical instruments and equipment should be periodically tested to ensure they remain safe to use. In some countries this may be a statutory requirement. Your local Health and Safety Executive (or equivalent) will be able to advise on this matter.

The 764 Peltier Cooling Unit is intended for use with the Campden Instruments tissue cutters models 752 and 752/M. Research has shown that unfixed brain slices sectioned at 4°C give better tissue preservation and are viable for longer in-vitro recordings. Additionally, some enzyme histochemical techniques give better staining results when sectioned at low temperatures.

The 764 Peltier Cooling Unit comprises a mains operated power supply and control unit (part number 764/2) and a tissue bath assembly (part number 764/1). The power and control unit houses a power supply, dual cooler controls and an analogue meter. The bath assembly has a tissue bath with a stainless steel bottom plate, thermoelectric elements and a cold water fed heat exchanger.

The bath assembly will fit onto a Campden Instruments Vibroslice without modification and the bath chamber has the same volume as the standard Campden Instruments tissue bath (752/2B). The tissue holder is the standard Campden Instruments tissue holder (752/2A).

Current from the power supply flows through one side of the thermoelectronic elements which act as heat transfer units. Heat is drawn off, cooling the solution in the tissue bath. The heat generated by this process is removed by the water supply fed through the heat exchanger.

It is essential that the bath assembly be connected to an adequate cold water supply whenever the unit is in operation. Typically the unit may be connected to a cold water tap and fed to waste. The flow of water through the heat exchanger should not be less than 400ml/minute. A temperature feed-back sensor is built into the bath assembly and monitors the temperature of the heat exchanger. The power supply to the thermoelectronic elements is shut down if the water supply is either inadequate or not present, when the supply is resumed the power supply is automatically re-connected.

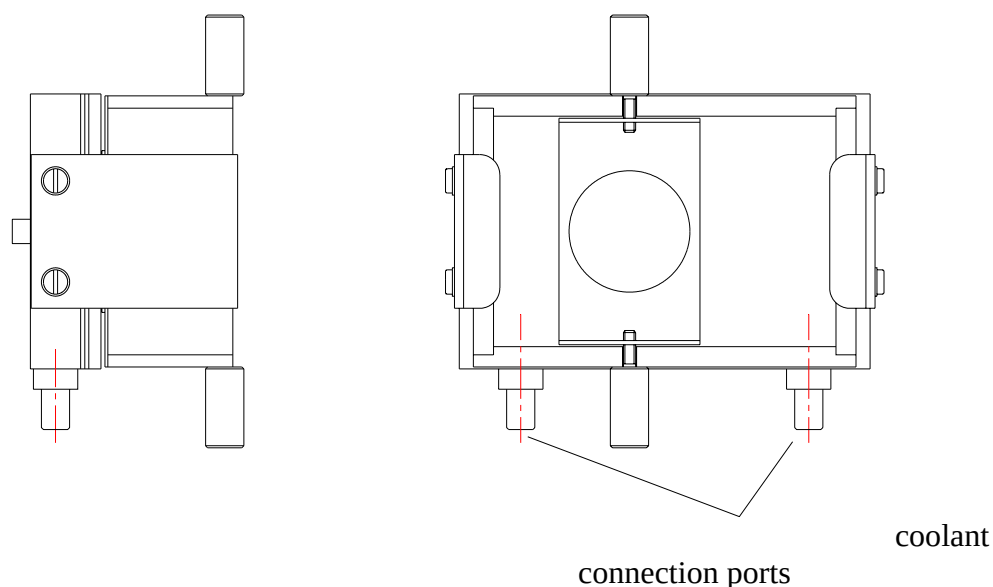


Fig. 1 Tissue bath assembly

Care should be taken to ensure that the cooling water is maintained prior to initial start up and during operation otherwise cooling of the tissue bath solution will be inhibited.

The tissue bath should be filled with physiological buffer solution at room temperature or less. At maximum cooling level the solution in the tissue bath should cool to freezing point from room temperature in approximately twenty minutes.

The Power supply and control unit has a display showing the cooling current level and has switches to activate either or both of the thermoelectronic elements (Peltier effect). The cooling level should be varied as required to adjust the temperature of the solution in the tissue bath. This will be dependent on the ambient temperature. An LED (power indicator - fig.2) is lit when power is connected to the thermoelectronic elements.

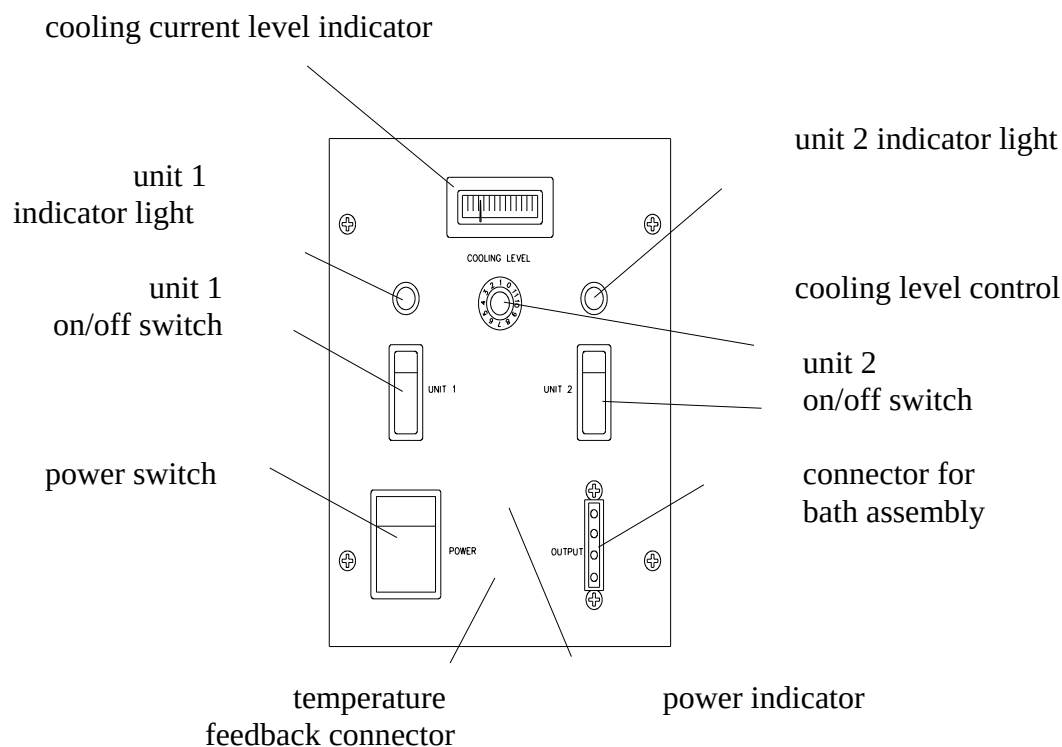


Fig. 2 Power supply & control unit

Maintenance

The 764/2 Power supply & control unit contains no user-serviceable parts and requires no maintenance.

The bath assembly requires only cleaning after use. It must not be sterilized by autoclaving methods nor must it be immersed in water.

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Order codes

Description	Order code
Peltier cooling unit (complete)	764
Tissue bath assembly	764/1
Power supply & control unit	764/2

Specification

Voltage requirements	220/240v 50Hz 110v 60Hz Factory set, do not adjust
Power requirement	250W

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