



MOPEC USER MANUAL

MINI SECTION DRYER - BK700



MINI SECTION DRYER

BK700

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INTRODUCTION

Mopec's Mini Section Dryer is designed to efficiently and rapidly blow temperature-controlled air through the base of the instrument to dry specimens without the risk of overheating. Through this process, drying times are dramatically reduced by 75% compared to conventional drying ovens.

Featuring a large chamber, the system can house up to 30 slides within each of its six slide racks. The transparent lid can be positioned at any angle, allowing users to use both hands to place or remove items from the dryer. Additional options include a timer unit, rack holder, and Dako Omnis rack holder.

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:

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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 following European Directives EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC as indicated in the EC Declaration of Conformity included in the document. This instrument has been designed and constructed in

a manner which minimizes the risk of electrical shock to the operator, offers maximum protection from overheating and provides clear and adequate labeling of instrument controls.

The instrument requires no regular servicing, but Mopec does 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. Use for drying slides mounted using a flammable mounting medium.
2. Stack cardboard slide trays in the chamber.
3. Use for purposes which are not specified by the manufacturer without first consulting the supplier.

POWER LEAD & 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.

SPECIFICATION

The Mopec Mini Section Dryer is a small footprint instrument which can be placed at the microtome for improved laboratory workflow. The section dryer operates by circulating digitally controlled warm air from the base of the instrument, which rises through the slide staining racks. This efficient air flow across the surface of the slides enables sections to be rapidly dried, with sections dried in approximately 10-20 minutes at 65°C. The instrument can be fitted with an optional LEAN Timer which enables a user to track the drying process for up to four racks. The LEAN Timer utilizes both visual and audible indicators, to alert a user that a rack has been dried for a correct amount of time, and is ready for staining. The Mini Section Dryer features digital control, over temperature cut out and miniature circuit breakers for safety.

Dimensions: Width 265mm x Depth 385mm (including handle) x Height 228mm

Chamber: Width 220mm x Depth 191mm x Height 140mm

Capacity: 5-6 Racks (Dependent upon slide rack width) or 4 Racks (with optional four slide rack holder/identifier)

Weight: 6.45 Kgs (14.2 lbs)

Temperature Range: Ambient to 75°C (+/-1°C) at 20°C

Display: Digital Display with 0.5° accuracy

Safety: Class 1 cut out

Heater power: 400 watts

Power Supply: 110-120V 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 Mini Section Dryer on a smooth and level surface.
2. Connect the mains plug to the electrical supply and switch on the socket (Ensure the power supply is properly earthed).
Note: As the socket is switched on, the fans at the rear of the section dryer will begin to operate. This is entirely normal and ensures that a flow of air is always passing through the heating elements utilized in the section dryer. This enables the section dryer to reach a set temperature more rapidly, and also ensures the heating elements cool more quickly once the section dryer is turned off.
3. Turn on the Mini Section Dryer.
4. Select the desired temperature (Recommended Temperature 60°C)
 - a. Press the DOWN arrow then release it (do not hold down the DOWN arrow continuously for 5 seconds)
 - b. The display will show SP1 alternating with the current set temperature.
 - c. To change the set temperature press the UP key to increase the value or the DOWN key 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/decreases rapidly and after two seconds pressed, the speed increases even more to allow the desired values 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.
 - e. The heater indicator will illuminate to show heater activity.
 - f. The instrument will then warm up to the desired temperature, you will observe the temperature rise on the display.
 - g. The instrument is designed to warm up quickly (roughly 3 to 5 minutes to reach 60°C at 220V).

Example: For an instrument operating in a 220v region and set to maintain

a temperature of 60°C. The instrument will initially warm, and slightly overshoot the set target temperature (by between 1-2°C). The heater will then stop and allow the instrument to cool and drop below the desired working temperature by about 2-3°C. The instrument will then heat again and once again overshoot the set temperature by 1-2°C. The instrument will then once again cool and drop below the set temperature by 2-3°C. The instrument will then heat and maintain the working temperature at $\pm 1^\circ\text{C}$, by alternating heating and cooling. The iterative process of overshooting the set temperature and then cooling is a “fuzzy logic” programme utilised by the temperature controller to learn the ambient conditions, in order to maintain accurate temperature control.

5. It is recommended that when the Mini Section Dryer is first turned on, once it has reached the set temperature the instrument should be left for 20 minutes before use, to allow the dryer chamber to fully equilibrate to the set temperature.
6. The lid of the Mini Section Dryer has to be closed in order for the heaters on the section dryer to operate. If the door of the section dryer is open, power to the heaters is disengaged.
7. As slide racks are placed or removed from the chamber, the door will be open and consequently the heater dis-engage. This will result in the temperature of the chamber dropping from the set value. Once the door is closed the heaters will re-engage and the temperature of the chamber will quickly return to the set temperature.

LEAN TIMER UNIT AND SLIDE RACK HOLDER/IDENTIFIER

Function Keys:

1. **Rack 1 Key** - Press to select Rack 1 Countdown Timer
2. **Rack 2 Key** - Press to select Rack 2 Countdown Timer
3. **Start/Stop Key** - Rack 1 and 2: Press to start and stop countdown, Press to stop an alarm and reset countdown timer.
4. **M (Memory) Key** - For Rack 1 and Rack 2: Press and hold to set a memory time.
5. **HR (Hour) Key** - For Rack 1 and Rack 2: Press to adjust the hour value. To increase the speed at which the digits change, hold down the key.
6. **RESET** - For Rack 1 and Rack 2: Press the HR and MIN key at the same time to reset the selected timer.
7. **MIN (Minute) Key** - For Rack 1 and Rack 2: Press to adjust the minute value. To increase the speed at which the digits change, hold down the key.
8. **SEC (Second) Key** - For Rack 1 and Rack 2: Press to adjust the second value. To increase the speed at which the digits change, hold down the key.
9. **Rack 3 Key** - Press to select Rack 3 Countdown Timer
10. **Rack 4 Key** - Press to select Rack 4 Countdown Timer
11. **Start/Stop Key** - Rack 3 and 4: Press to start and stop countdown, Press to stop an alarm and reset countdown timer.
12. **M (Memory) Key** - For Rack 3 and Rack 4: Press and hold to set a memory time.

13. **HR (Hour) Key** - For Rack 3 and Rack 4: Press to adjust the hour value. To increase the speed at which the digits change, hold down the key.
14. **RESET** - For Rack 3 and Rack 4 Press the HR and MIN key at the same time to reset the selected timer.
15. **MIN (Minute) Key** - For Rack 3 and Rack 4: Press to adjust the minute value. To increase the speed at which the digits change, hold down the key.
16. **SEC (Second) Key** - For Rack 3 and Rack 4: Press to adjust the second value. To increase the speed which the digits change hold down the key.

LEAN TIMER UNIT OPERATION

1. Install the Slide Rack Holder/Identifier, making sure the holder locates directly onto the four holes in the drip tray.
2. Place a slide rack containing sections to be dried into position 1, 2, 3 or 4 in the Slide Rack Holder.
3. Select the corresponding timer on the Lean Timer Head by pressing the corresponding blue button, Rack 1, Rack 2 etc.
4. Press "HR"/"MIN"/"SEC" key to set the desired time for the sections to dry. To increase the speed in which the digits change, hold down the key.
5. Press the "Start/Stop" key to start/stop the countdown function.
6. During the count down the indicator around the blue button will flash green.
7. When the countdown reaches 0:00, an alarm will sound and the indicator will turn red, to indicate that the sections in the slide rack have dried for the correct amount of time.
8. The alarm sound will last for 1 minute and the timer will keep on counting up, until the user cancels the alarm and timer.
9. The user may cancel the alarm/light and reset the timer by pressing the "Start/Stop" key.
10. When several alarms are sounding, press the rack selector button to select the correct rack and then press the "Start/Stop" key to cancel the alarm and reset the timer.

NOTE: When the LCD screens start to become dim, please replace the AAA batteries used in the LEAN Timer Head. Access to the battery compartment can be found at the rear of the LEAN Timer Head.

CLEANING INSTRUCTIONS

1. The case work and door of the Mini Section Dryer, including the control panel, may be wiped using small quantities of mild detergent or polishes applied with a soft cloth.
2. The Mini Section Dryer chamber will require cleaning at regular intervals, using a minimal quantity of mild domestic detergent applied with a soft synthetic sponge.



SCOURING PADS OR DESCALING AGENTS MUST NOT BE USED TO CLEAN THIS INSTRUMENT.

MINIATURE CIRCUIT BREAKERS

Located at 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 Mopec.

LATCHING SAFETY CUT OUT

The latching safety cutout operates if the section dryer goes into a fault condition. This may be due to either overheating or underheating. In either situation the heaters will cease and the display will be blank. The amber neon indicator will also go out. The safety cut out must only be reset by a qualified engineer. If the fault persists please contact your Service Engineer or Mopec.

PORTABLE APPLIANCE TESTING

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



THIS EQUIPMENT MUST NOT BE FLASH TESTED!

ROUTINE INSPECTION RECOMMENDATIONS

Mopec recommends that a simple annual inspection be made for all Mopec 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 lifespan.

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. Functioning of the Airflow Fans: Both fans at the rear of the section dryer should operate. Both fans should begin to operate as soon as the instrument is plugged into a power socket. Both fans should spin freely with no indication of rubbing/friction.
4. Door Switch Operation: Power to the heating elements should dis-engage as the door of the section dryer is opened and re-engage when the door is closed.

WARRANTY TERMS AND CONDITIONS

1. Mopec 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, Mopec undertakes to remedy any original defects arising from faulty materials or workmanship, in any goods manufactured/supplied by Mopec, 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. Mopec 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 Mopec or which are recommended by Mopec, the defect has been caused by alterations or repairs being undertaken by a person(s) other than an authorized representative of Mopec.
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 Mopec) at the works of Mopec. The product to be repaired shall be delivered to Mopec by the customer at the Customer's risk and expense. Any such goods or parts will be delivered by Mopec to the Customer free within the United States but if required to be borne by the Customer. All faulty parts removed from the equipment will become Mopec's property. Any other repairs or work by Mopec 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 costs involved, including a charge for inspection, handling and the return carriage must be paid by the sender.
9. Please retain the original packaging over the warranty period.
10. Mopec offers an Extended Warranty Option for instruments in the Mopec equipment range. This includes all parts and labor (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.

It is the customers responsibility to ensure that the loan equipment is packed in the packaging provided by Mopec, in order that Mopec 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.

Mopec
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EC DECLARATION OF CONFORMITY

We herewith confirm the following products:

Mini Section Dryer - BK700

Conforms with requirements outlined by the following European Directives:

Low Voltage Directive 2006/95/EEC

EMC Directive 2004/108/EEC

We confirm the declaration:

Mopec

800 Tech Row

Madison Heights, MI 48071

Conforms with the requirements of the following standards:

BS EN 61010:1

BS EN 61010:2.010

Safety requirements for electrical equipment for measurement, control and laboratory use.

BS EN 61326

Electrical equipment for measurement control and laboratory use - EMC requirements.