



# Thermo-Sealer

Manual Heat Sealer



**User Manual**

# Thermo-Sealer

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**CAUTION: Avoid contact with the heater plate, which can cause serious injury.**

## **INTRODUCTION**

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The Thermo-Sealer offers a convenient method for heat sealing tubes or plates made from various types of plastic.

Used in conjunction with a heat sealing film, the thermal sealer provides a 100% seal, preventing sample loss during exposure to high temperatures or for long-term storage.

## **SAFETY**

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The Thermo-Sealer must only be used in accordance with proper safety standards and procedures, together with the instructions contained in this manual.

The unit has been designed and manufactured to conform to international safety specifications. Under normal conditions, once the aluminium block is up to temperature, the amber heater lamp will flicker on and off to top up the heat to the unit. In the unlikely event of an over-temperature problem with the Thermo-Sealer, the unit is fitted with a thermal cut out which removes power to the heater should the block temperature exceed 220°C. If this is triggered the amber heater lamp will go out and will not come back on. The block will gradually cool to room temperature. The thermal cut out cannot be reset (for safety reasons) and the unit should be returned to ABgene® for repair.

If there is any doubt relating to the proper use of this equipment the staff at ABgene® will be pleased to assist you. Only properly trained personnel should service this equipment.

## DECLARATION OF CONFORMITY

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The ABgene® Manual Thermo-Sealer Model Numbers AB-0384/240 & AB-0384/110 have been designed in accordance with, and satisfies the requirements of, article 11 of the Low Voltage Directive 73/23/EEC as realigned by 93/68/EEC on the harmonisation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits, to the essential requirements of BS EN 61010-1: 1993 & BS EN 61010-2-010 :1995

The ABgene® Manual Thermo-Sealer Model Numbers AB-0384/240 & AB-0384/110 have been type tested by EMC Projects NAMAS approved test house, and issued a certificate of testing No 3418/98 to the following E.M.C. Standards:

EN 50081-1:	1992
EN 55022(B):	1994
EN 50082-1:	1997
EN 61000-4-3:	1997
EN 61000-4-2:	1995
EN 61000-4-4:	1995
EN 61000-4-5:	1995
EN 61000-4-6:	1996
EN61000-4-11:	1994

Covering: Conducted Emissions, Radiated Emissions, Electrostatic Discharge, Radiated Immunity, Surge, Fast Transient Bursts and Voltage Dips satisfying the EMC Directive(s) 89/336/EEC and 92/31/EEC as realigned by 93/68/EEC.

Signed: 

Date 08/01/99

Peter Collins  
Sales & Marketing Director  
ABgene®  
United Kingdom

## CAUTION AND SAFETY SIGNS IN ACCORDANCE WITH IEC 417

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Caution



Refer to manual

Caution



Risk of electrical shock

Warning



Hot surface (this instrument is fitted with an internal heater with a maximum temperature of 220°C when switched on)

Only refit correct type of fuse

Must be IEC 127 approved for use in EU countries.

Must be CSA or UL Listed or recognised for use in USA & Canada.

Mains Switch Symbols

I = ON

0 = OFF

## UNPACKING

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After unpacking make sure all packing and fixtures are retained as the unit must always be transported in the original packing to avoid damage. ABgene® accepts no responsibility for damage incurred unless the unit is correctly packed and transported in this way. This equipment must be lifted in accordance with the EC lifting directive.

Check that the package contains the following items:

- The Thermo-Sealer
- User's Manual
- Power lead

## TECHNICAL SPECIFICATIONS

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Input Voltage	230 (nominal) Volts 110 (nominal) Volts
Input Frequency	47Hz – 63Hz
Power Consumption	110V Version 500 Watts 240V Version 400 Watts
Fuse Rating	5 Amp(T) 110 Volts 3.15 Amp(T) 240 Volts
Internal Heater	350 Watts (Ambient to 220°C max)
Instrument Housing	Sheet Metal
Dimensions	140 x 330 x 150mm
Instrument Weight	3.4kg

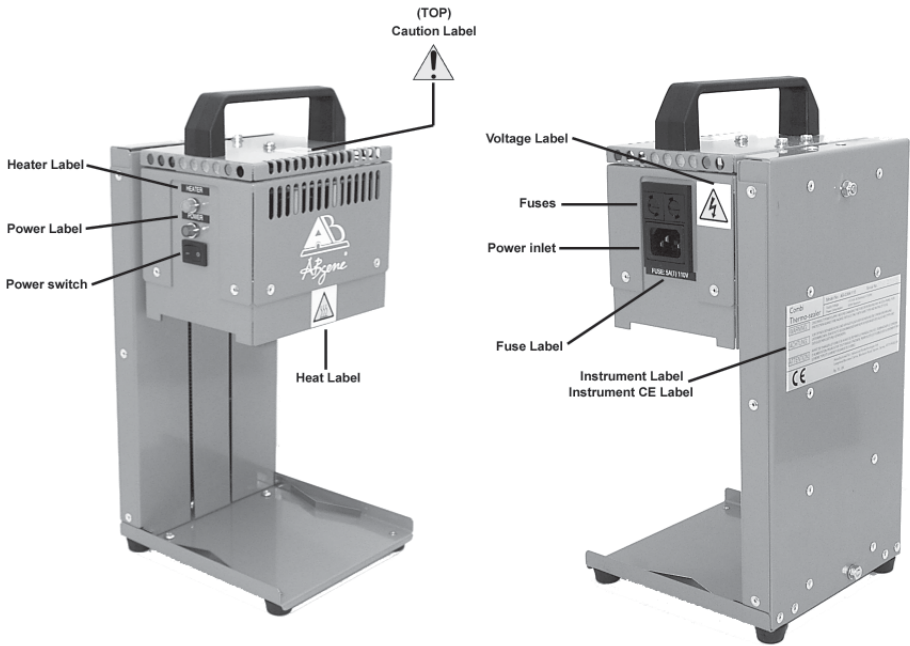
## ENVIRONMENTAL REQUIREMENTS

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- Temperature Range**
- Operating 10 to 35°C
  - Storage -20 to 40°C
- Relative Humidity**
- Operating 10% to 80% non-condensing
  - Storage 10% to 80% non-condensing

# INSTALLATION & SET-UP

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**WARNING** - Do not operate this instrument in an atmosphere containing explosive gases.

**WARNING** - Only approved supplied mains cord set must be used with this instrument.

**WARNING** - If it is required to use an extension lead, the lead must be earthed.

Before attempting to connect the unit to the electricity supply, or to operate the unit, please read the operating information and pay particular attention to the following:

1. Check the voltage marked on the unit's rating plate against that of the mains supply. The unit is supplied with a pre-wired plug and socket.

The fused plug supplied with the mains cable for use in the UK is fitted with the following value fuse to protect the cable.

Supply	Fuse Fitted in plug	Fuse fitted in Sealer
240/220V	5 Amp	3.15 Amp
120/110V	No Fuse	5 Amp

The fuses in the unit protect the unit and the operator. **Note:** The second fuseholder fitted to the rear of the sealer is a spare in the case of 110V units, but both fuseholders are operational in the 240V units. Note that units marked 240V on the rating plate work at 220V; units marked 120V on the rating plate work at 110V. In both these cases, however, the heating rate will degrade by approximately 16%.

2. Connect the unit to the mains electricity supply and switch on the power switch on the side of the unit. If electricity is being supplied to the unit, the green power light will illuminate. If the heater within the unit is receiving power then the amber light will also illuminate.
3. When switching on, it is necessary to leave the unit on for 20–25 minutes to settle down before carrying out the first sealing operation. On initial power-up, both green and amber lights will appear. After approximately 10–15 minutes the amber light will go out. **DO NOT USE** the Thermo-Sealer until 20–25 minutes have elapsed from power-up. By this time the amber light will flicker on and off constantly. This flickering on and off is the normal behaviour exhibited by the amber lamp indicating correct working temperature has been reached.
4. The heater plate is set to approximately 170°C. Take care to avoid skin contact with the heater plate and to prevent contact between the heater plate and any material which may be damaged or ignited.
5. In the event of spillage or other contamination of the unit, switch off and disconnect the unit from the mains power supply, and **do not attempt to clean the unit until it has thoroughly cooled.** If the equipment is used in a manner NOT specified by the manufacturer, the protection provided by the equipment may be impaired.



## OPERATION PROCEDURE

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### Sealing

After installation, follow the procedures set out below:

Check that the unit is connected to an appropriate power supply and leave for 20–25 minutes to settle down to correct operating temperature. The green power lamp should be illuminated and the amber heater lamp flicker on and off.

Slide the plate to be sealed on to the platform of the sealer, making sure that it is flat between the two centralising springs.

If the plate to be sealed does not have its own support skirt to keep it perfectly flat, place it in an appropriate base plate (see accessories list on page 13).

Place the sealing film over the plate, ensuring that the sealing surface is face down.

Place one hand above the other on the handle on the top of the unit and push the heater head down on to the seal and plate. Once the heater head touches, continue to push down to compress the springs that are behind the heated plate. Once these are fully compressed (a distance of 5mm) the force applied to the plate is 10kg. Each plate should be sealed in both orientations to achieve uniform sealing across the plate. Hold the heater head down for half the required time, rotate the plate in the unit and seal again. The required sealing time, between 2 and 8 seconds, will depend on both the seal and plate type. An initial time/seal study is strongly recommended for each new type of plate.

Allow the heater head to return to the top of the track.

Remove the plate.

**NOTE:** Foil backed film may remain hot for a number of seconds after sealing. Care should be taken in handling these plates.

### Removing seal

Depending on the seal type, samples can be accessed by either piercing the seal or peeling it off.

#### Pierceable Seals

If a single sample is needed, the foil can be pierced with any sturdy pipette tip. If using a multi-channel pipette, it is recommended to pre-pierce the entire plate with the ABgene® piercing plate (AB-0579).

For long-term storage a pierced foil seal can be re-sealed with an adhesive seal (AB-0580, AB-0558 or AB-0626) or heat sealed with Easy Pierce (AB-0757).

#### Peelable Seals

Entire removal of the foil can be achieved either with an ABgene® Foil Stripper (AB-0592) or by hand.

Peelable seals can be re-sealed with another sheet of the same material.

## CLEANING YOUR THERMO-SEALER

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Before using any cleaning or decontamination method other than that recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment.



In case of radioactive spillages, ABgene® recommends that a proprietary cleaning agent is used and the manufacturer's instructions are followed.



**Do not** use acetone or abrasive cleaners.

The Thermo-Sealer cover can be cleaned with a cloth dipped in water or ethanol (methanol or formaldehyde can also be used). The unit should **not** be immersed in solvents.

## GUARANTEE

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This instrument is guaranteed against any defect in material or workmanship for a period as specified on the enclosed guarantee. This period is from the date of purchase, and within this period all defective parts will be replaced free of charge provided that the defect is not the result of misuse, accident or negligence. Servicing under this guarantee should be obtained from the supplier.

ABgene® hereby reserves the right to make such changes as it shall see fit to the units or to any component of the units. This User's Manual has been prepared solely for the convenience of ABgene® customers and nothing in this User's Manual shall be taken as a warranty, condition or representation concerning the description, the merchantability, fitness for purpose or otherwise of the units or their components.

## **CONTACT INFORMATION**

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For technical, sales or servicing information, contact ABgene®:

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UK

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Email: [info@abgene.com](mailto:info@abgene.com)

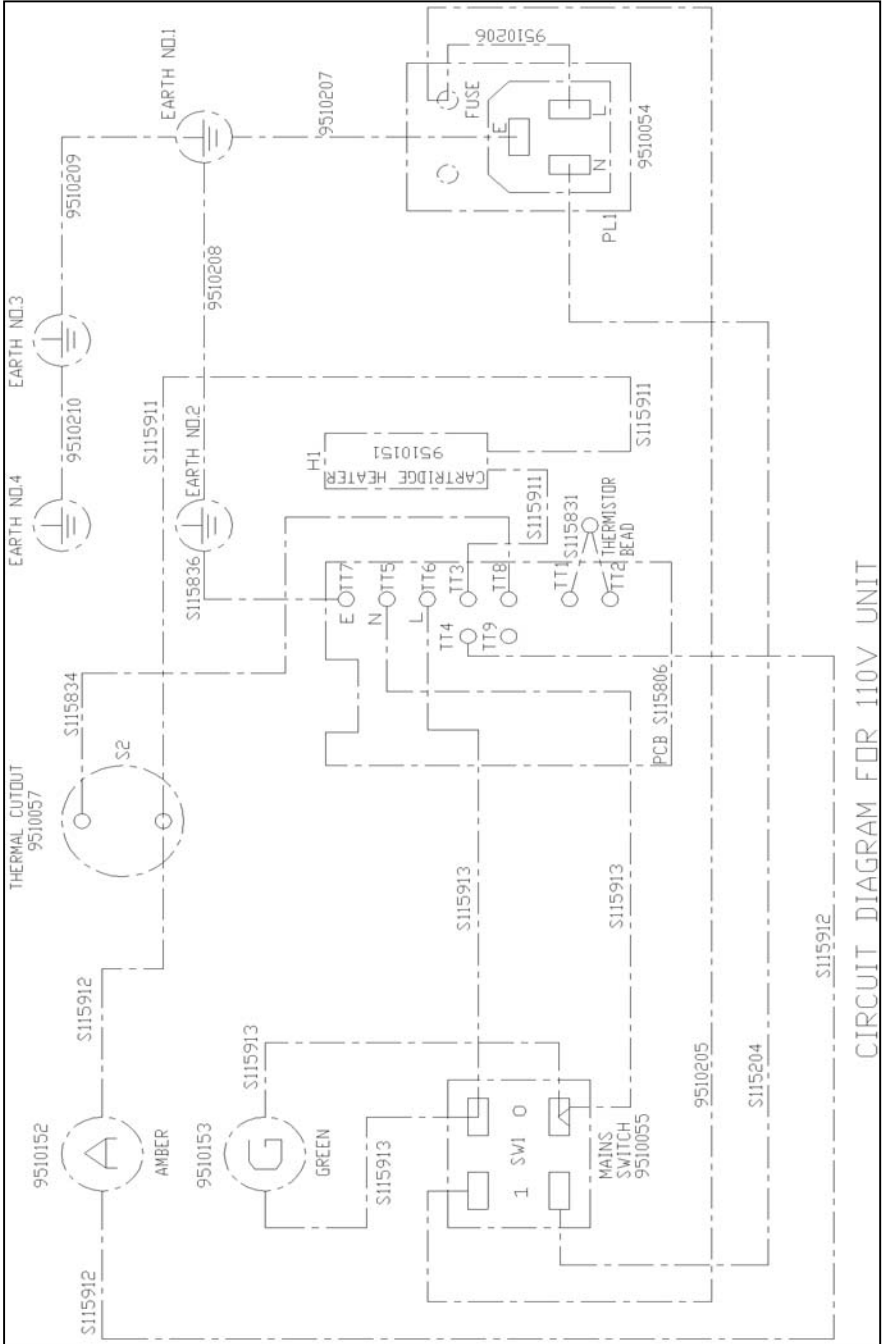
Website: [www.abgene.com](http://www.abgene.com)

### **IMPORTANT NOTE:**

THIS EQUIPMENT SHOULD ONLY BE DISMANTLED BY PROPERLY TRAINED PERSONNEL. REMOVING THE TOP CASE EXPOSES POTENTIALLY LETHAL MAINS VOLTAGES.

THERE ARE NO USER MAINTENANCE PARTS WITHIN THE EQUIPMENT.

# CIRCUIT DIAGRAM FOR 110v UNIT



CIRCUIT DIAGRAM FOR 110V UNIT



## FAULT FINDING

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### General

In the unlikely event that you experience any problems with your Thermo-Sealer which cannot be easily remedied, you should contact your supplier and return the unit in its original packing.

## ACCESSORIES

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The following accessories can be obtained from ABgene®:

### Seals

<b>Cat. No.</b>	<b>Description</b>	<b>Quantity</b>
AB-0559	Thermo-Seal (seals PP)	100 sheets
AB-0685	Clear Seal Strong (seals PP)	100 sheets
AB-0745	Easy Peel (seals PP, PE)	100 sheets
AB-0757	Easy Pierce (seals PP, PS, PE)	100 sheets
AB-0812	Clear Seal (seals PP, PS, PE, Diamond Plates)	100 sheets
AB-0813	Easy Pierce Strong (seals PP)	100 sheets
AB-1117	Diamond Foil Seal (seals PS, PE, Diamond Plates)	100 sheets

### Plate Carriers

<b>Cat. No.</b>	<b>Description</b>	<b>Quantity</b>
AB-0827	Standard Microplate Carrier	1 unit
AB-0563	Plate Carrier for 96-well PCR plates	1 unit
AB-0724	Plate Carrier for 384-well PCR plates	1 unit

### Seal stripping & piercing

<b>Cat. No.</b>	<b>Description</b>	<b>Quantity</b>
AB-0579	Piercing Plate	1 unit
AB-0592	Foil Stripper	1 unit