INSTRUCTION MANUAL

Laboratory Equipment Pty Ltd
email: sales@labec.com.au
Ph: 02 9560 2811 • Fax: 02 9560 6131
www.labec.com.au

2014

Introduction
Congratulations on the choice of an Australian made quality product. Labec products are manufactured, tested and calibrated to meet published standard specifications under our strict quality assurance guidelines.

This Instruction Manual is for the guidance of operators of Labec Vacuum Ovens and should be read before the oven is connected to the electricity supply.

It is hoped that this manual will supply all the information that the customer should require for satisfactory operation of the oven. If, however, there are any questions that remain unanswered then the customer should contact our service department.

Unpacking
Remove all packing and protective wrapping from both interior and exterior of the oven. Check the oven for the possible transit damage. Ensure all ordered accessories are present. If any physical damage or shortage is evident, do not discard the packaging material until the oven is inspected by the distributor, agent or manufacturer.
NOTE: All claims for shortage or damage must be made within fourteen days (14) from delivery.
Subject to our standard published conditions of sale, we have reasonable grounds to believe that we have ensured, so far as is reasonably practical, that the products listed in our catalogue and brochures have been designed and constructed so as to be safe and without risk to health when properly installed and used in their environment by appropriate and trained personnel, and where applicable, in accordance with our published instructions.

Installation
Electrical
This equipment must be tagged and tested according to AS/NZS3760:2003 prior to use and thereafter on a regular basis dependent upon the environment.
It is preferable to locate the oven close to a power point and recommended that double adaptors are not used. Check the total wattage if connecting to multipoint outlets. Check the rating plate for power requirements. Installation is to be carried out by a qualified electrician in accordance with the power requirements of the product specifications.

Location
Select a location fee from draught and away from direct sunlight or other heat source.

Temperature Control
Labec Vacuum ovens are fitted with solid state proportional action digital temperature controllers which operate from a sensitive thermocouple or Rtd inserted in the working space of the chamber. The controller has been calibrated at 100°C and before any adjustments to temperature settings are made allow the oven temperature to stabilise for at least one hour.

Description of Controls
See Appendix A

Operation
1. Connect the chamber to an alternating current supply of voltage specified on the rating plate mounted on the side or rear of the chamber.

DANGER; THIS OVEN MUST NOT BE CONNECTED TO DIRECT CURRENT SUPPLY!

1. Turn the mains power on, set the temperature controller to the required temperature and check to see that the illuminating lamp is illuminated
2. Final adjustment of the temperature controller may be required after the chamber has reached operating temperature and this should be checked with a suitable thermometer located in the

chamber (A thermometer is not supplied with the chamber)

Caution:
Please observe the following safety measures before using your LABEC equipment.

1. These ovens are **NOT FLAME PROOF** and under no circumstances should inflammable, combustible or explosive material be placed in the oven.
2. Low ignition temperature materials and those materials which give off inflammable or explosive vapors should not be placed in the oven.
3. Avoid heating substances which give off corrosive vapor.
4. Users are advised of the dangers of heating combustible materials. The manufacturer can recommend special types of elements which will prohibit the ovens temperature reaching known ignition points.
5. Observe those rules pertaining to wiring and installation of electrical appliances as recommended by the local supply authority.

WARNING

It is detrimental for any of the substances listed below to be inside this equipment. The interior of the oven may be damaged if exposed to any of them. Corrosion of the stainless steel and other surfaces will be directly attributable to the presence of one or more of these substances and will not be a defect or failure for which the manufacturer will accept responsibility.

ORGANIC SUBSTANCES	SALT	ACIDS	MISCELLANEOUS
ALKAFORM	AMMONIUM BROMIDE	ACETIC	BROMIDE
ANAESTHESIA	AMMONIUM CHLORIDE	BORIC	CHLORINE
CARBON	CALCIUM CHLORIDE	CARBOLIC (PHENOL)	FLUORINE
TETRACHLORIDE	CALCIUM HYPOCHLORITE	CHROMIC	IODINE
FORMALDEHYDE	FERRIC CHLORIDE	HYDROCYAIC	SULPHUR DIOXIDE
LYSOL(CRESOLS ETC)	HYDROGEN PEROXIDE	NITRIC	
TRICHLORETHYLENE	MAGNESIUM CHLORIDE	OXALIC	
	MERCURIC CHLORIDE	HYDROCHLORIC	
	POTASSIUM CHLORIDE	PHOSPORIC	
	POTASSIUM HYPOCHLORITE	SULPHURIC	

	POTASSIUM HYPOCHLORITE	SULPHUROUS	
	SODIUM CHLORIDE	TARTARIC	
	SODIUM HYPOCHLORITE		

Safety Information
Isolate the oven from the electrical supply before changing elements or thermocouples or undertaking other routine maintenance. Ensure that the oven is cold.

When reconnecting the oven, ensure that the electrical connections are sound including earth supply continuity.

Wear appropriate safety clothing when operating the oven including a heat resistant face shield (tinted for eye protection), gloves and apron.

Load and unload "hot" work with oven tongs.

Do NOT use the oven in the presence of inflammable or combustible chemicals: fire or explosion may result.

To avoid fire, do not expose combustible materials to heat from the open oven door.

Safety Note Insulation
This oven contains refractory fibres in its thermal insulation. The materials used may be in the form of fibre blanket or felt, vacuum formed board or shapes, mineral wool slab or loose fill fibre. Normal use of the oven will not result in any significant level of airborne dust from these materials; but much higher levels may be encountered in maintenance or repair.

Whilst there is no evidence of any long-term health hazards, we strongly recommend that safety precautions are taken whenever the materials are handled.

Exposure to dust from fibre which has been used at high temperature may cause respiratory disease. When handling fibre always use an approved mask, eye protection, gloves and long sleeved clothing. After handling, rinse exposed skin with water and wash work clothing separately.

Before commencing any major repairs we recommend reference to:
- ECFIA Bulletin Number 11
- Guidance Note EH46 (U.K. Health and Safety Executive.)

We will be pleased to provide further information on request. Alternatively our Service department will quote any repairs to be carried out at your premises or at our works.

Safety Controller
The oven is fitted with an inbuilt over heat safety protection. It must be set to slightly above the desired setpoint temperature and will prevent overheating. It will maintain the Alarm Set Value.

Change the AL1 value to slightly above the setpoint temperature as set out in the instruction page. The Alarm will be activated if the oven exceeds the AL1 value or if the sensor is broken or damaged. Adjusting the Alarm Hysterisis value will cause the oven to cool down by that value before it begins heating again. For example if Alarm Hysterisis is set to 100 the oven must cool down by 100°c below AL1 before it will begin to reheat. If this oven is fitted with an independent overtemperature cut off with manual reset. Set the thermostat by turning to full and allowing the chamber to stabilise at the desired set temperature. Then slowly turn the dial anticlockwise until the power to the chamber turns off and note the temperature on the thermostat at this point. Then turn the dial clockwise again and press the centre reset “red” button to switch the power back on. Turn the dial anticlockwise again until it is slightly above the temperature at which point you noted the chamber switched off. This is now set around 5°c above the desired setpoint and will switch off all power to the oven should the oven reach this temperature.

Heating

Heating of the oven is by means of low-density inconel elements located inside the working chamber.

Vacuum

A vacuum gauge is fitted and is connected directly by capillary to the chamber. Valves are fitted for connection to Vacuum pump and bleeding to allow the chamber to establish atmospheric pressure and permit the door to be opened at the completion of use.

Vacuum Pump

A suitable pump may be supplied to give vacuum suction to –92 KPA. For higher vacuum a larger pump may be necessary. A pump is not supplied as standard.

Maintenance

The chamber is manufactured from stainless steel or aluminum and may be cleaned with a solvent. The shelves are manufactures from stainless steel or aluminum and a non-abrasive cleaner should be used. The silicone door gasket should be cleaned with detergent only ensuring it is dried completely after washing.

Trouble Shooting

SYMPTOM	**REMEDY**
No Power (Indicator Light is off)	1. Check oven is plugged in and power switched on. 2. Ensure mains power supply point is functioning by using a test appliance on power socket. 3. Remove the base of the oven and check the internal RCD has not tripped
Failure to heat or maintain temperature	1. Check the timer is set correctly.

(Indicator light is on)	2. Check the timer is reset (turn off/on) 3. Ensure the temperature controller set point is above ambient. 4. Check the safety controller fitted is above the main controller setting.

If the fault cannot be found call your distributor or the manufacturer quoting the serial number of the unit from the manufacturers label.

Declaration of Conformity

Each product is thoroughly inspected and tested to not only ensure that it meets the specifications provided, but to also meet Australian Electrical Standard AS3820 and EMC Standard AS/NZ1044:1995,and therefore being accredited with a C Tick label.