Martin Lishman

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Operating Instructions for Martin Lishman Potato Hot Box

Installation

1. Remove any packaging from the Hot Box on arrival. Place the Hot Box on a flat solid surface. Ensure that the Hot Box is not subject to extremes of temperature during use.
2. Ensure the electrical plug is correctly fitted and connected. It MUST be fitted with a 5 amp fuse. It is important to comply with all relevant electrical safety regulations.
3. The Hot Box requires a 230 volt power supply.
4. This unit is of class 1 specification and its supply must be earthed.

Setting up the Hot Box

1. Switch on the Isolator switch located on the front of the lower electrical cover. Upon powering up the controller will display the current software version then display OFF awaiting a command.

2. Setting the Temperature
Press **LEFT** arrow to enter the parameter menu:
Press the **UP** or **DOWN** arrows until the display reads **t E**
Press the **RIGHT** arrow to enter the setting
Use the UP and DOWN arrow keys to change the setting
Press the LEFT arrow to exit the menu

3. Setting the Humidity
Press **LEFT** arrow to enter the parameter menu:
Press the **UP** or **DOWN** arrows until the display reads **r H**
Press the **RIGHT** arrow to enter the setting
Use the UP and DOWN arrow keys to change the setting
Press the LEFT arrow to exit the menu

4. Setting the Run Timer
Press **LEFT** arrow to enter the parameter menu:
Press the **UP** or **DOWN** arrows until the display reads **r n.t**
Press the **RIGHT** arrow to enter the setting
Use the UP and DOWN arrow keys to change the setting
Press the LEFT arrow to exit the menu

Using the Hot Box

1. Place a washed sample of potatoes in each wire tray with approximately 25 potatoes in each one. Make careful note of where in the processing or grading line each sample was taken from, its variety and the tray number.
2. Switch on the Isolator switch located on the front of the lower electrical cover.
   Upon powering up the controller will display the current software version then display OFF awaiting a command.
3. Set the thermostat control at 30°C and the humidity to 93%. Set the timer control at 12 hours.
4. Fill the water tray with clean water up to 5-10mm bellow brim. Insert the humidifier unit (fig.1) in to the water near to fan (fig.2).
5. Make sure the Hot Box door is closed.
6. To run the Hotbox program press the **RIGHT** arrow once and you will be asked if you wish to proceed. The display will read RUN? To continue and run the program press the **RIGHT** arrow once more, or press the **LEFT** arrow to cancel.

   If the Controller has a program start delay set up in the parameter menu under **s.dly**, the controller will count down in hours and minutes. Once the timer has expired the program will begin to run. The program will run for the length of time set up under the run time **r n.t** parameter, keeping the temperature and humidity inside the box to programmed levels setup in the **t E** and **r h** parameters.

   The temperature, humidity and run time remaining can be viewed by using the up and down arrows.

7. The Hot Box will hold the internal temperature at 30°C and the humidity at the set point. It will switch off automatically after 12 hours. After the 12 hours has elapsed, switch off the Hot Box at the socket.
8. The fan has a 20 minute run on timer to prevent overheating of the heating element.
9. Once the program has ended leave the door open to allow the RH sensor and inside to dry out.

Hot Box Care and Maintenance

- The Hot Box is warm and damp by design and will harbour potentially dangerous microbes if not kept clean. It is recommended the inside is cleaned regularly with an antibacterial cleaner and that the water tray is refreshed at least once a week.
- At the time of cleaning, check the seals inside the base are OK. If any breaks have occurred, re-seal them with a mould resistant silicone seal.
- It is advisable to leave the front door(s) open when not in use or especially just after use for best results to allow the unit to air out.
- The Electricity at Work Regulations 1989 require that any electrical equipment that has the potential to cause injury is maintained in a safe condition.

Humidifying Ultrasonic Atomising Transducer

Fig. 1

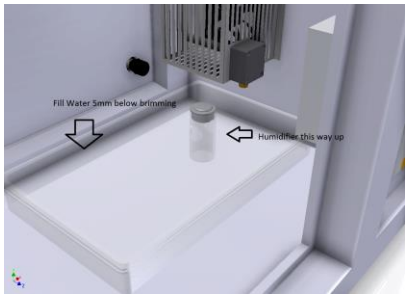

Fig. 2

- The transducer humidifier may require cleaning to remove mineral deposits dependant on hard water areas to maintain performance. The recommended method is to soak the unit in vinegar for 30 minutes and clean with a small brush.
- The humidifier has a water level sensor to avoid running dry. This sensor is also susceptible to interference from mineral deposits and may require cleaning.
- The humidifier ceramic membrane will eventually wear out (also dependant on the hardness of the water). The membrane disc can be replaced with a kit available from Martin Lishman Ltd.
- The humidifier works best in water depths of 45mm to 70mm.
- The 9 litre water tray requires to be filled to approx. 5-10mm from the brim.

Fault Finding

WARNING – Risk of Electrocution

Electrical fault findings can sometimes require coming into contact with potentially exposed electrical conductors. This must be carried out by a competent electrician.

Make sure that the mains power is isolated before removing the front control cover.
Electrical maintenance only to be undertaken by qualified persons.

The fan and heater and humidifier are fused separately inside the isolator panel.
All fuses must be replaced with the same type of rating.
The controller contains safety thermal trips which reset automatically.

FUSES	FUSE SIZE AND TYPE	FUSE LOCATION
MAINS FUSE (F1)	Cartridge 5A 5 x 25mm	UK Mains plug
HUMIDIFIER FUSE (F2)	Cartridge 2A 5x20mm	Isolator Enclosure
HEATER FUSE (F3)	Cartridge 2A 5x20mm	Isolator Enclosure
FAN FUSE (F4)	Cartridge 400mA 5x20mm	Isolator Enclosure

The Hot Box will not switch on

- Check the plug is fully inserted in the socket and that it is switched on.
- Check the socket has power.
- Check the main 5A Fuse in the plug.

The Hot Box is not warming up

- Check if any heat is coming from the heater brass heat sink after a few minutes of running. **DO NOT TOUCH THE HEATER DIRECTLY IT COULD BE VERY HOT.**
- Isolate the Hot Box from the power supply and remove the controller enclosure front panel. Check the 2A heater fuse.

The humidifier is not working (no red LED light on the humidifier)

- Check the water level covers the top of the humidifier.
- Check the water level sensor underneath the black square is not clogged with mineral deposits. Clean with vinegar and a brush.
- Isolate the Hot Box from the power supply and remove the controller enclosure front panel. Check the 2A humidifier fuse.

The humidifier is not working (Red LED on but little or no mist)

Clean the humidifier with vinegar soak and a brush to remove mineral deposits.
Replace the humidifier ceramic membrane. A kit can be obtained from Martin Lishman Ltd.

Replacing the humidifier's ceramic membrane

Lifespan depends on a number of factors including operating time, water hardness, water purity etc.

- Disconnect the power pack from the power supply and remove the fogger from the water.
- Remove any residue on the fogger using water and vinegar, ideally by soaking the device for about 30 minutes.
- Make sure the fogger is completely dry before unscrewing the ring with the key.
- Using the membrane key, insert the key into the ring nut and turn counter-clockwise.
- Remove the brass washer and the membrane. The rubber washer is best left in place. Clean chemical or mineral deposits on the ring nut and the brass washer with a soft cloth and install the new membrane, the black ringside facing down, in the reverse order of the above.
- The inside area of the unit cavity must be completely dry before the parts are installed.
- **IMPORTANT!** There is a front and back of the membrane.

The fan is not working

- Check the fan fuse.
- Make sure the power is isolated and check that the fan blades rotate freely.

Technical Help

For additional help or information please contact Martin Lishman Ltd.
Tel: 01778 426600
Fax: 01778 426555
E-mail: sales@martinlishman.com

Warranty

The Martin Lishman Potato Hot Box is guaranteed for 12 months from the date of purchase against any defect or malfunction caused by faulty parts or workmanship. To claim under warranty, the complete item or faulty part (as appropriate) should be returned, at the claimant's expense, to Martin Lishman Ltd with a written explanation of the problem. Should there prove to be a defect or malfunction caused by faulty parts or workmanship, it will be repaired or replaced and returned to the claimant without charge. If a warranty claim is rejected, the cost of replacement or repair will be notified to the claimant before any work is carried out.

Any warranty claim will automatically be invalidated if the Hot Box has been modified or internally tampered with in any way. The manufacturers deem damage or faults occurring to the equipment which have been caused by inappropriate use of the equipment or by use not in accordance with the instruction manual will not be covered under warranty.

It is the responsibility of the user to ensure that all electrical equipment has been installed in accordance with the relevant installation regulations, that all appropriate safety checks have been carried out before use and that regular on-going maintenance and safety checks are undertaken.

Under no circumstances will Martin Lishman Ltd re-imburse any costs associated with a warranty claim if these costs have been incurred without agreement in advance.

Under the terms of warranty for the Hot Box under no circumstances will liability exceed the cost of replacement or repair. The manufacturers and Martin Lishman Ltd will not be liable for any consequential or indirect loss suffered by purchasers or users of the equipment, whether this loss arises from correct or incorrect use of the equipment, defect or malfunction caused by faulty parts or workmanship or in any other way. Non-exhaustive illustrations of consequential or indirect loss are loss of profits, loss of contracts and damage to property.