

Martin Lishman

Hot Box

Instruction Manual



Hot Box 125 - 250 - 750

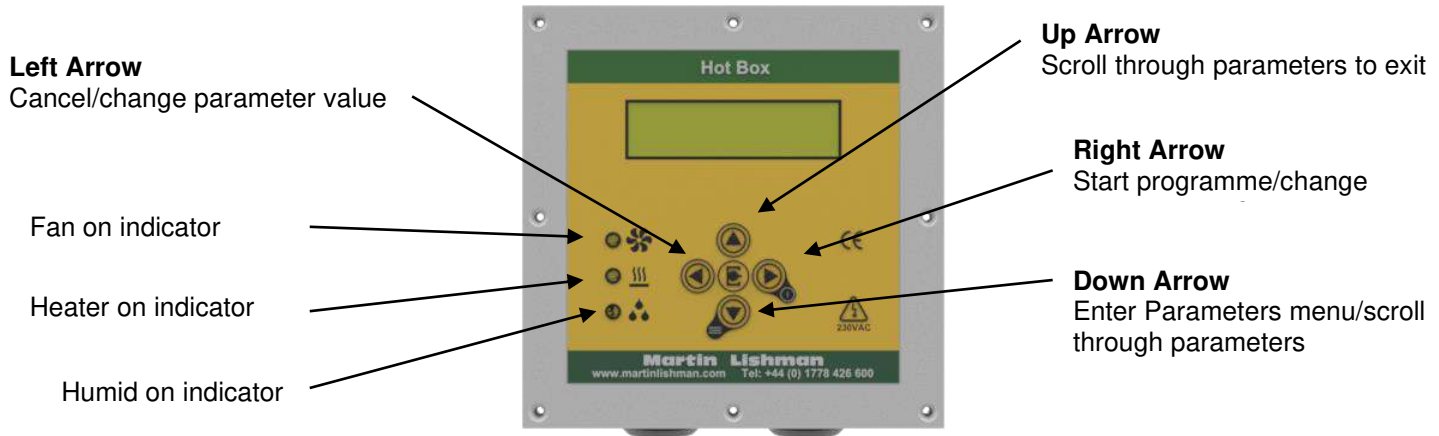
Important - Read these instructions before use

Installation

1. Place the Hot Box on a flat, even surface.
2. Plug the hotbox into a suitable electrical supply outlet.
3. This unit is of class 1 specification and its supply must be earthed.

Setting up the Hot Box

The unit is pre-programmed and should not require adjustment. However, should you need to change anything you can do so through the parameter menu.



Parameters

Set Start Delay: Delay before the run cycle commences. Set Temperature: Temperature that the hotbox will try to maintain.

Set Humidity: Humidity that the hotbox will try to maintain.

Units: Celsius or Fahrenheit.

Offset Temp: Calibration setting for temperature sensor.

Offset Humidity: Calibration setting for humidity.

Check water warning: Pause on cycle if the water is detected as being empty based on parameters.

Check water time: Time in which it needs to see a rise in the humidity.

Check water rise: % humidity that needs to be seen in the above time.

Using the Hot Box

1. Place a washed sample of approximately 25 potatoes in each wire tray. 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 **COLD, clean tap water** up to 5-10mm below brim. (Using soft or boiled water (once cooled down) will help prolong the life of the fan) Insert the humidifier unit (fig.1) into 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, 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 parameter, keeping the temperature and humidity inside the box to programmed levels set.

7. The Hot Box will hold the internal temperature and the humidity at the set points. It will switch off automatically after the run time expires.
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 that 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. 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 at least just after use, 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

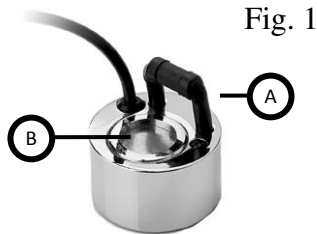


Fig. 1

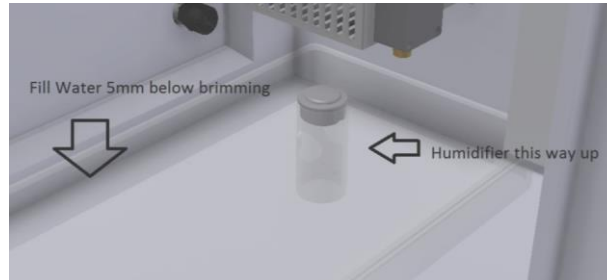


Fig. 2

- Using cold tap water in the tray will help to ensure the correct functioning of the transducer humidifier. In hard water areas, mineral deposits can build up and may affect performance. If required, 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 (A). This sensor is also susceptible to interference from mineral deposits and may require cleaning.
- The humidifier ceramic membrane will eventually wear out (B). This will be indicated if it stops producing mist or the Hot Box does not reach the set humidity level. The membrane disc can be replaced with a kit available from Martin Lishman Ltd.
- The humidifier works best in water depths of 45-70mm. Fill the tray to approx. 5-10mm from the brim.
- The HotBox can operate for long periods (up to 999 hours). For longer usage periods, check the water level every 12 hours to make sure the humidifier is still submerged. Top up the water if necessary.

Fault Finding

WARNING – Risk of Electrocutation

Electrical fault finding 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 is only to be undertaken by qualified persons.

The fan, heater and humidifier are fused separately inside the controller enclosure.

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 5x 25mm | UK Mains plug |
| HUMIDIFIER FUSE (F2) | Cartridge 2A 5x20mm | Controller Enclosure |
| HEATER FUSE (F3) | Cartridge 2A 5x20mm | Controller Enclosure |
| FAN FUSE (F4) | Cartridge 150mA 5x20mm | Controller Enclosure |

The Hot Box will not switch on

- Check the plug is fully inserted into 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 the heater is warm 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 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 several factors including operating time, 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 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

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.

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