

Operating & Maintenance Instructions LD Range of Hot Wire Strip Heaters

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1. Introduction

The LD Range of Hot Wire Strip Heaters provides an easily adjustable and adaptable solution for the local heating of thermoplastic sheets of up to (typically) 10mm (3/8") in thickness. The machine offers double sided heating using multiple hot wires, giving maximum flexibility for different material types and thicknesses. The modular construction of the machine allows extra heater beams to be easily added (up to a maximum of four double-sided beams). Heater beam and workstop positions are fully adjustable and can be referenced against calibrated strips fitted at either end of the machine.

The process time is controlled by a digital timer, which also operates the pneumatic upper frame. An internal pressure regulator ensures that clamping pressures do not exceed safe levels.

The machine is supplied complete with a stand mounted on swivel castors for ease of positioning.

2. Health & Safety Information

The heater beams of the LD Range of Strip Heaters get hot in operation. Therefore, protective gloves and long sleeves should be worn to prevent local burns.

Always switch the machine off at the Mains Switch before carrying out any adjustments.

The pneumatic pressure is reduced to a safe level by an internal pressure regulator. This can be adjusted on the rear panel of the control enclosure but can never exceed 2 bar (30psi). Always ensure that all personnel are clear of the upper frame before starting the machine cycle.

When adjusting the upper beam positions, always remove the compressed air supply from the machine.

Should there be any specific queries regarding Health and Safety or any other aspects of your machine please contact the manufacturer or their appointed local distributor.

3. Unpacking & Location

Your new machine will reach you complete and ready to use. Upon receipt proceed as follows:

Unpack from wooden crate if necessary.

Check for any signs of transit damage. All damages must be reported within 3 days of receipt.

Position the machine as required. Should there be a need to lift the machine, use extended forks on a fork lift truck, ensuring that these lift on both the lower shelf and the rear tie bar. Ensure that the fork lift truck is capable of lifting the weight of the machine.

Lock the castors using the locking catches located on top of each wheel.

4. Electrical Supply & Connection

The electrical specification of your new machine is as follows:-

	LD40	LD60	LD80
Voltage	220-240V	220-240V	220-240V
Current (2 Beam)	8 amps	12 amps	16 amps
Current (4 Beam)	16 amps	24 amps	28 amps
Watts (max-2 Beam)	1800	2900	3300
Watts (max-4 Beam)	3600	5800	6600

Note : Depending upon the configuration of your machine, it will be supplied with the appropriate one of the following two mains cable options:

- An IEC socket inlet and plug-in mains cable. This is rated up to 16 amps and is protected by a 16A circuit breaker mounted on the rear of the control enclosure.
- A hard-wired 32 amp mains cable and 32A circuit breaker.

The wiring inside the machine is the same for both versions. Therefore, should the machine be expanded at any time, a new sub-plate holding a higher powered mains cable and circuit breaker can be fitted. This sub-plate is available from the manufacturer or local distributor (Part No LDI).

Electrical supply to the machine must be in accordance with the details shown on the rating label. As the colours of the wires in this mains lead may not correspond with the coloured markings identified in your plug appliance, should the plug need to be changed proceed as follows: -

Standard Specification

The wire that is coloured green and yellow must be connected to the terminal that is marked with the letter E or by the earth symbol or coloured green and yellow or green. The wire that is coloured blue must be connected to the terminal that is marked with the letter N or coloured blue or black.

The wire that is coloured brown must be connected to the terminal that is marked with the letter L or coloured brown or red.

North American Specification

The wire that is coloured green must be connected to the terminal that is marked with the letter E or by the earth symbol or coloured green and yellow or green.

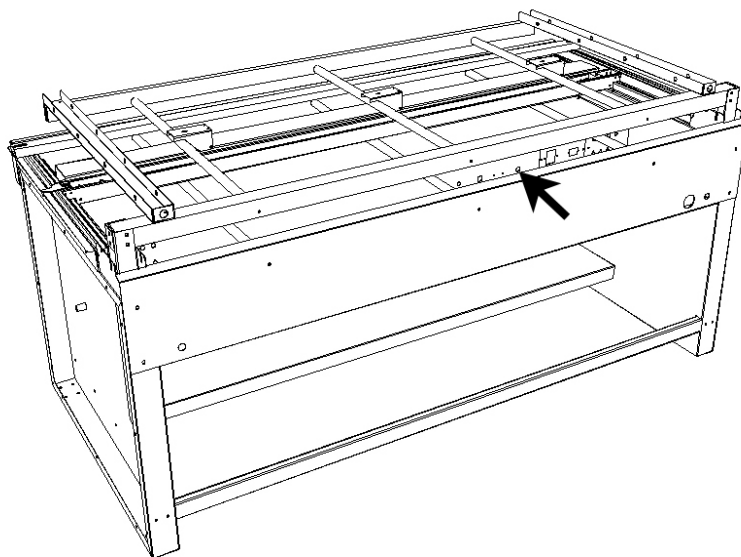
The wires that are coloured black and white must be connected to the silver coloured terminals. Polarity is unimportant.

Should there be any queries regarding the electrical requirements of your machine please refer back to the manufacturer or their nominated distributor.

5. Pneumatic Supply & Connection

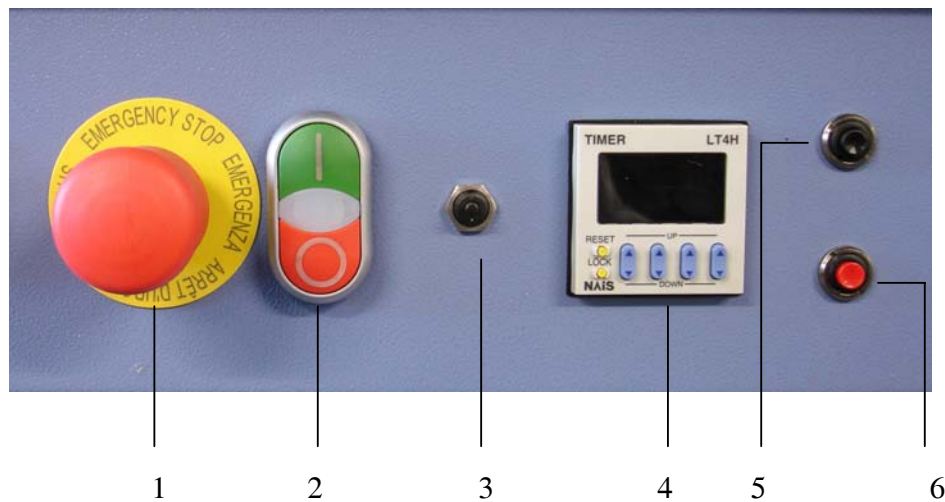
Compressed air at a pressure of between 5.0 and 8.0bar (80-120psi) is required. The connection point is an 8mm diameter fitting located at the rear of the machine, as indicated in the Diagram below. A push fit quick-connect coupling and hose clamp is supplied with the loose items and all that is required is a length of 6mm (1/4") inside diameter flexible air hose connected to a supply adjacent to the machine. The machine will consume approximately 0.025 litres of compressed air per cycle.

The machine can be isolated from the air supply by disconnecting at the quick-connect coupling.

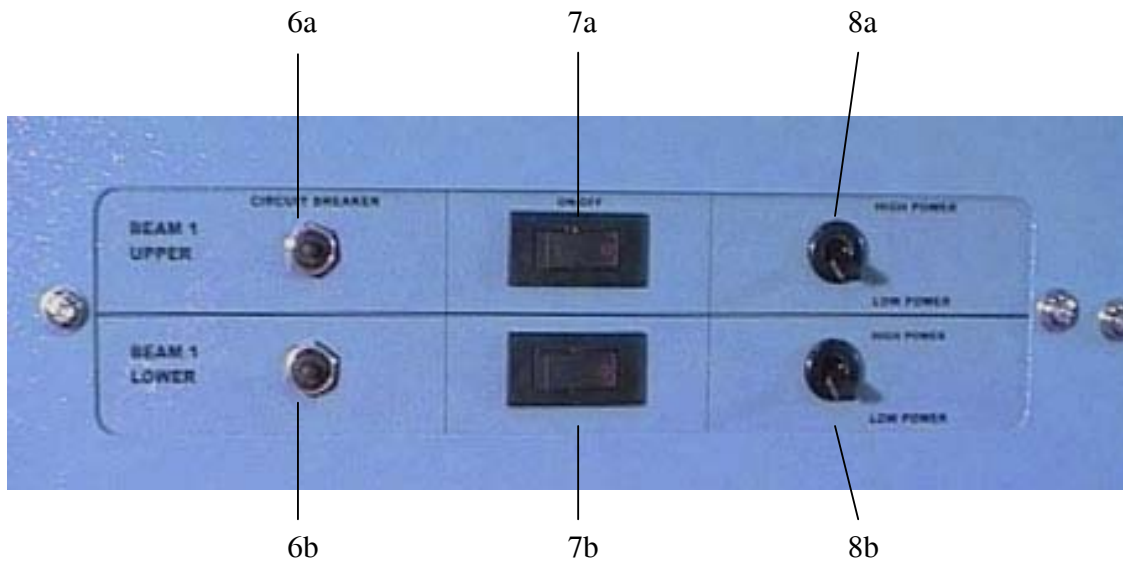


6. Machine Controls

All machine controls are located on the front control panel (see Diagrams below). Controls and their functions are as follows:



- | | | |
|----|-------------------------|---|
| 1. | Emergency Stop | Press to switch machine off. The Emergency Stop must be pulled to release before the machine can be switched on again. |
| 2. | I/O button. | Switches Machine On and Off |
| 3. | Control Circuit Breaker | Protects Timer electrical circuit |
| 4. | Digital Timer | Sets the cycle time. Use the Up/Down buttons to adjust the time. Press the Lock button to lock the time (LOCK) shows on the display. Press again to unlock the timer. |
| 5. | Start Button | Initiates the Heating Cycle |
| 6. | Cancel Button | Cancels the Heating Cycle |



6a	Circuit Breaker	Protects the Transformer Primary-Upper Beam
6b	Circuit Breaker Transformer	Protects the Transformer Primary-Lower Beam
7a	On-Off Switch	Switches the heating wires on-Upper Beam
7b	On-Off Switch	Switches the heating wires on-Upper Beam
8a	Power Selection	Selects high or low power to the Heating Wires-Upper Beam
8b	Power Selection	Selects high or low power to the Heating Wires-Lower Beam

7. Setting Up & Producing a Fold

Ensure that the machine is connected as detailed in Sections 4-6.

When setting up the machine, it is often easier to remove the support slats. These simply unclip and lift off.



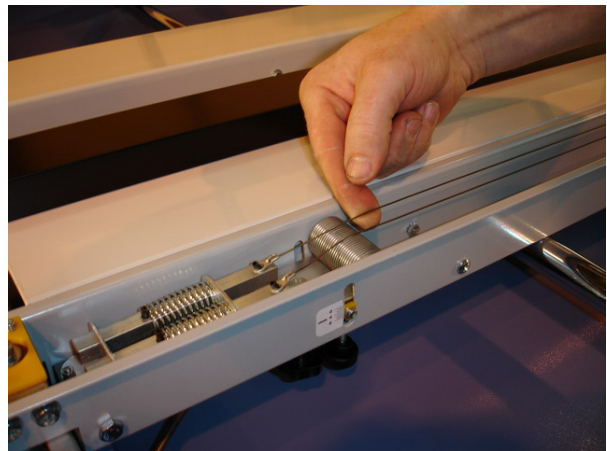
Set the required wire height at both ends of the Top Beam



Set the required wire height at both ends of the Bottom Beam



Set the wires into the appropriate grooves of the guides at each end of the upper and lower heater beams. Should only one wire be required, the other one can be removed by pressing in the spring tensioner at each end of the beam and unhooking.



Set the Bottom Beam(s) to their required positions using a 5mm Allen Key. The calibrated strips are useful to provide a reference to the centre of the heater beam.



Remove the compressed air supply and allow the upper frame to close. Slacken the clamps securing the Top Beam(s) and align over the Bottom Beams.



Replace the Support Slats in suitable positions.



Set the Workstop to the correct position. Again, the calibrated strips can be used as a guide.

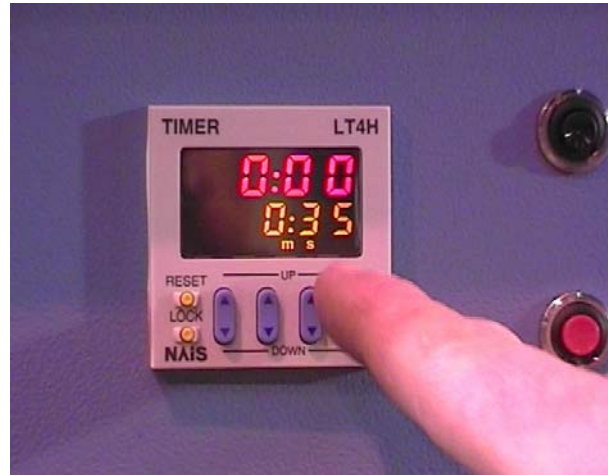


Note that the workstop can be use either in front of or behind the heater beams. To move the workstop from behind to in front of the beams, proceed as follows:

- Remove the Support Slats if required.
- Position the beams fairly centrally.
- Remove the two securing screws completely from the workstop, leaving the sliding nuts inside the groove that they run along.
- Slide the beams forwards or backwards as appropriate.
- Replace the workstop and refit screws.

This method avoids having to remove or re-find the captive nuts and is therefore recommended!

Set the Timer to the required setting.



Re-connect the machine to the compressed air supply and switch on.



Load your material and press the Start button. The upper frame will lower, clamping the material and heating it from both sides. At the end of the heating cycle the frame will rise, allowing you to remove the material and bend to the required shape.



8. Maintenance

Your LD Range Strip Heater requires very little in the way of routine maintenance. Periodically ensure that external electrical connections are in good order. Clean the wire guides with a soft wire brush. Heating wires should be changed should they break or become too stretched. They should be replaced only with 20SWG Super Ni-Chrome wire (C R Clarke Part Number WX06). The distance between loop centres of replacement wires is:

LD40	1167mm
LD60	1675mm
LD80	2183mm

The original heating wires are manufactured with crimped-on loops. Replacement wires can be made in the same way, or simply twisted into a loop.

Packs of 10 ready-made heating wires are also available, part numbers as follows:

LD40	LD40/99
LD60	LD60/99
LD80	LD80/99

Should you have any queries regarding the maintenance of your machine, please refer back to the manufacturer or local distributor.