# User's manual

# NL-17

Thermopatch

## Copyrights

# Preface

Dear user,

Welcome to the growing group of Thermopatch users. The product you have purchased has been carefully designed and manufactured to ensure that you, the user, will gain the maximum benefit.

All Thermopatch products are specifically designed to ensure ease of use with particular attention to safety requirements.

Should you discover any fault or damage upon receipt of this product, you should immediately contact your local Thermopatch establishment.

**EC - STATEMENT OF CONFORMITY**

As manufacturer the company

**Thermopatch bv**
**Draaibrugweg 14-16**
**1332 AD ALMERE - NETHERLANDS**

confirms that the heat seal machine

**NL-17**

meets the requirements as stated in the EC directives for machine safety- and health rules and is in accordance with the following requirements:

BS EN 292-1:1991
BS EN 292-2:1991
BS EN 60204-1:1991
BS EN 60529:1992
BS EN 418:1992
BS EN 1050:1997
E 55011:1998
EN 50081-1:1992
EN 50082-2:1995
BS 5304:1998

THERMOPATCH B.V.

# Contents

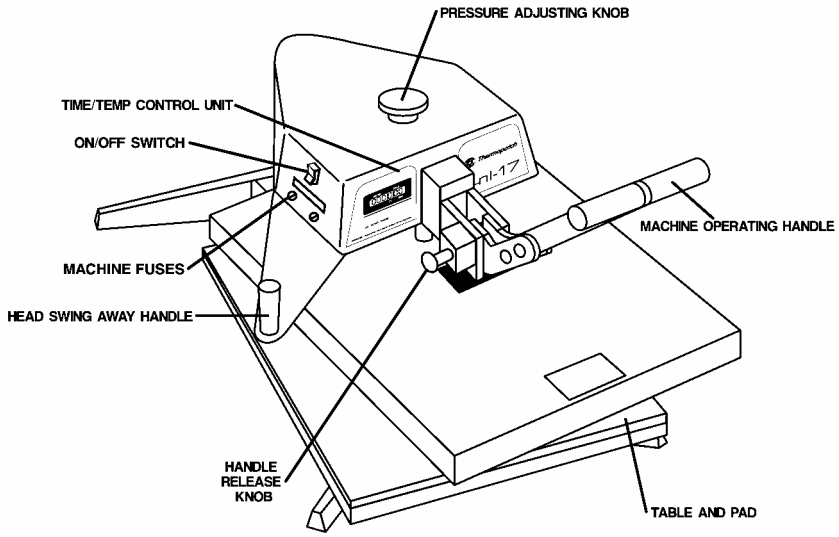
# 1. Introduction NL-17

## 1.1 What did you receive?

The Thermoseal NL-17 has been packed in a cardboard box. The following articles should have been delivered:

- Thermoseal NL-17 heat seal machine
- User's Guide
- Power cord

## 1.2 Illustration of the NL-17




## 1.3 Specifications of the Thermoseal NL-17

The Thermopatch NL-17 is a manually operated heat seal press suitable for transfer printing and material fusing. It is ideal for medium volume production.

### Specifications

| **Specification European machine** | |
|---|---|
| Power consumption | 2500 Watts |
| Power supply | 240 Volts AC |
| Working temperature | 70-235oC |
| Machine height open | 65 cms |
| Machine height closed | 35 cms |
| Machine width | 51 cms |
| Machine width, loading | 94 cms |
| Machine depth | 89 cms |
| Machine depth, loading | 110 cms |
| Net weight | 45 kg |
| Press pad dimensions | 38 x 51 cms |
| Fuses | 12.5A |

| **Specification US machine** | |
|---|---|
| Power consumption | 1600 Watts |
| Power supply | 110 Volts AC |
| Working temperature | 160-455oF |
| Machine height open | 25.5 ins |
| Machine height closed | 14 ins |
| Machine width | 20 ins |
| Machine width, loading | 37 ins |
| Machine depth | 35 ins |
| Machine depth, loading | 41 ins |
| Net weight | 99 lbs |
| Press pad dimensions | 15 x 20 ins |
| Fuses | 16A |

## 1.4 Safety

The Thermoseal NL-17 has been equipped with various safety features to ensure safe operation.

**a Thermal cut-out**

A thermal cut-out on the heating element shuts off the power to the element if the temperature exceeds 235 °C ± 15°C (455 ± 27°F).

**b Time/temperature controller**

A time/temperature controller has a built in facilty giving error messages in the event of faults with the element heating and control system.

**c Safety locking system**

A safety locking system is fitted so that a button needs to be operated before the actuating handle can be moved to lower or raise the heat plate.

## 1.5 Safety tips

Our customer service has its own service engineers and, if required, maintenance is available. This contract ensures prompt service in the event of machine failure together with additional periodic inspections.

The Thermopatch NL-17 meets the European Legislation standard. Under normal conditions accidents are rare. However listed below are some practical points to ensure your safety.

1. Always switch off the current (pull plug out of the socket) when undertaking maintenance work or when cleaning the machine.
2. Ensure that there is sufficient space around the machine. Cables and connections must not get jammed. Although the heat radiation of the press is low, there should be enough space for cooling down.
3. Avoid contact with the press element.
4. Do not remove the top cover unless qualified to do so - touching internal parts is dangerous and may cause shock hazard.
5. Protect the mains cable - damage to the mains cable may cause fire or shock hazard. When unplugging, hold by the plug only and remove carefully. Take care to ensure that the mains cable does not come into contact with the heat plate (or moving parts of the mechanism) during operation of the machine.
6. Operating ambient temperature range - the operating ambient temperature range is 32oF - 104oF, (0 - 35oC) and humidity of 20 - 80%. This heat press is fitted with a thermal cut out to ensure that it cannot operate above 235o ± 15oC (455 ± 27oF).
7. **CAUTION** - This machine gets hot whilst operating. Take care not to touch any surfaces that are labelled “Caution this plate is HOT”.
8. Machine operation: only persons trained to do so should operate this machine.t (pull the plug out of the socket) when undertaking maintenance work or when cleaning the machine.
9. **WARNING** - this apparatus must be earthed

- MACHINE FUSES - type: ultra rapid (FF) fuses 1¼" 250 Vac max. 12.5 amps. (110 Vac max. 16 amps)
- Operating ambient temperature range - the operating ambient temperature range is 32oF - 104oF, (0 - 35oC) and humidity of 20 - 80%. This heat press is fitted with a thermal cut out to ensure that it cannot operate above 235o ± 15oC (455 ± 27oF).

## 1.6 Conditions for guarantee and product liability

Thermopatch guarantees correct working of the machine and its components for twelve months, excluding the cover on the upper plate, the resilient pad of the lower Platen and the thermostat. The guarantee period of the temperature sensor and heating element is only six months.

# 2. Installation

## 2.1 Transport instructions

The machine come to you in a box. If you have to transport the machine at any time it is recommended that you use a similar boc and packing methods. Please let the machine cool down, lower the handle to the locked position and remove the swing head handle.

## 2.2 Installing the machine

Take the Thermoseal NL-17 out of the box and put the machine on a sturdy worktable near an earthed socket. There must be sufficient space for the machine's head to swing to the right until it hits the built in stop. Ensure that no items vulnerable to heat radiation are too close to the machine.

## 2.3 Electrical Requirements

The Thermoseal NL-17 should be connected to the mains supply (240V AC or 110V AC) by the mains cable provided and a suitable plug. A qualified person should carry out this work.

## 2.4 Adjusting the pressure

This press is fitted with a pressure adjusting unit, which enables the heat plate assembly to be raised or lowered by use of a pressure adjustment knob located on the top of the machine:

1. To increase pressure or to use thinner materials turn knob clockwise.
2. To decrease pressure or to raise the heat plate assembly to enable thicker materials to be used, turn the adjustment knob anticlockwise.

**NOTE:**

DO NOT adjust the pressure when the machine is clamped shut

**CAUTION:**

Never increase the pressure to the extent of requiring undue force to lower the toggle/heat plate assembly into the lock position, as this will place excessive stress on the press frame, resulting in permanent damage to the press.

Please refer to Appendix B showing the operation of the control unit.

# 3. How to operate the NL-17

## 3.1 Starting with the NL-17

**Turn on the NL-17.**

The on/off switch is situated on the left size of the swing head. Set the machine controls as necessary. See instructions for adjusting the pressure, and the operation of the time temperature unit.

## 3.2 Working with Heat Seal Materials

**1 Transfer paper**

Ascertain from the supplier that the transfer paper and/or the suppliers of the material, that the material to be used is suitable and has been prepared for transfer printing.

**2 Heat and time setting**

Obtain from the supplier of the transfer paper the recommended temperature, time and pressure settings for the material to be worked on. Approximate settings are usually within the following:

Heat setting ..... 180°C-200°C (350°F-400 °F)
Time dwell setting ..... 10-30 seconds

**3 Operating the machine**

Wait until the set temperature has been reached, signalled by the temperature on the controller display reaching the required figure. Swing the head to the right using the handle on the left of the head. Spread the material to be printed on the worktable, removing all wrinkles. Place the printing paper in the desired location and carefully swing the head back to the pressing position.

Start the sequence by pulling the button to unlock the handle from its vertical position. This will activate the microswitch which starts the timer. When the set time has elapsed, the buzer sounds. The handle is then unlocked and returned to the vertical position. The head may then be swung aside for unloading and loading.

**4 Labels, emblems and transfers**

Confirm that the fabric does not have a finish or contain impurities. If necessary, wash the fabric or put the part where the label will be positioned under the press for a few seconds.

Use the following press times:

**a Label tapes**

Poly/cotton and 100% polyester..... **12 seconds**

**b Emblems**

Thermocrest, Topline ..... **12 seconds**
Embroidered ..... **20 seconds**

**c Transfers**

Truflex ..... **12 seconds**
On paper..... **5 seconds**

**Attention !** Some modern fabrics like terylene and various types of nylon cannot withstand the press temperature of 204 °C. If you cannot be sure of the result, use a sample of the same fabric, if possible, to see the result**.**

**5 Removing heat seal material**

Because Thermopatch materials must be wash resistant to all industrial washing processes, it is not easy to remove heat seal material. You can act as follows:

1. Put the garments with the label to be removed under the press for about 7 seconds. The glue layer will return to its liquid state.
2. Leave the garment on the plate and remove the label, if necessary by means of a pair of blunt scissors or tweezers.
3. Please take care, the press plate is hot!
4. Repeat this procedure if you cannot remove the label from the garment.

## 3.3 Material fusing

When the press is to be used for the fusing of susible interlining/heat bonding etc., ascertain from the supplier of the material to be used, the correct settings for time and temperature for the process.

Heat setting ..... 120 – 170 °C (250 °F – 340 °F)
Time dwell setting .....5 – 30 seconds

The method of operation for fusing is the same as for transfer printing.

During the fusing operation it will be found to be advantageous to lay a piece of PTFE cover material (the same size as the table), over the article being fused. This will act as an anti-stick barrier to prevent strike through of any surplus adhesive fron the fusible materials adhering to the heat plate of the press.

### Note:

It not advisible that this PTFE cover material be used when the press is being used for transfer printing.

## 3.4 Pressing pad assembly

The pressing pad normally supplied with this machine is silicone rubber. Alternatively a pad of foam with a “Nomex” cover may be supplied to special order. The pressing pad must be maintained in good condition at all times and replaced when showing signs of wear. A worn pressing pad will always affect the quality of printing/fusing. Do not insert items into the machine which would tend to cut the pressing pad, i.e. buttons, pins, press studs or zips.

### Important note:

The pressing pad supplied with the machine is of the correct thickness. Using a thicker pad may invalidate your warranty.

## 3.5 Shutting down

To shut down the machine, turn off the green illuminated rocker switch on the operator’s left side of the machine head. The handle should be in the up position.

## 3.6 Fault diagnosis

This machine had a built in fault diagnosis. The display may show the following:

- **Heat fault**

  If the element of the heat press, or the thermal cut-out go open circuit, after approximately 20 minutes the display will show “Heat fault”. If this display is seen, contact your machine supplier immediately.

- **Probe fault**

  If the probe goes open circuit, the display will show “Probe Fault” immediately. Contact your machine supplier as soon as possible.

- **“CAL” Fault**

  If “CAL” appears in the controller display the controller will need to be recalibrated. Please act as follows:

  From cold: Switch power on, do not switch off until you have finished. The temperature will rise to 200 °C and the display will change from “CAL” to “ADJ”. Leave the press for 10-15 minutes to settle.

  When the dot on the display goes out for about 5-10 seconds, press the MODE button. You should now be able to set your temperature and time and use the press as normal.

## 3.7 Hints, tips and trouble shooting

### Transfer printing

Extra care should always be taken to ensure that transfer paper is placed print down onto the article as mistakes will result in the heat plate becoming soiled with ink and spoiling following work.

When transfer printing, it may be found advantageous to cover the press pad with paper to prevent strike-through of surplus ink, particularly when printing thin material as surplus print on the pressing pad cover can also strike back on the following work.

### Transfer paper/motifs fail to print out correctly

**CHECK**:

1. Heat and time dwell settings are correct
2. Article having transfer applied is locked in contact between pressing pad and heat plate
3. Pressing pad is in good condition, is flat and making complete contact over the whole area of the heat plate. See Pressing Pad details.

### Ghosting (=double image) of Transfer Prints

**CHECK:**

1. Material being used has been correctly heat set for transfer printing
2. Material being used does not shrink during printing process, i.e. measure material before and after printing
3. Transfer paper does not move after printing process upon lift off of the heat plate

4. If possible, use adhesive coated paper, particularly to overcome fabric shrinkage
5. By pre-shrinking of material in press before transfer printing

## Inferior press results

**Insufficient adhesion of the glue layer**

1. Press time too short. Increase the time in steps of 2 seconds and try again.
2. Temperature too low. Check with Thermolabels and increase the temperature, if necessary.
3. Press pad of the lower plate is worn-out. Install a new pad.
4. The coating of the press element is impure or worn-out. Clean with a damp cloth and replace it, if necessary. When replacing the , it is very important that adhesive residue is removed from the heating element. To do this it is necessary to heat up the machine, scrape off the glue remains by using a blunt pair of scissors or a blunt filling-knife. Try to minimise the scratching. After this is done, degrease the heating element and apply the selfadhesive .

**Glue layer and/or transfer ink runs**

1. Press time too long. Decrease the time in steps of 2 seconds and try again.
2. Temperature too high. Check with Thermolabels and decrease the temperature, if necessary.

## Machine failures

**Press does not warm up, indicator does not light up**

1. The machine is not connected to the electricity grid. Put the plug of the power cable in an earthed socket and switch the machine on.
2. The machine is not connected. Set the switch at the back of the machine to the correct position.

**Press does not warm up**

1. The sensor is defective. Please contact Thermopatch.
2. The safety thermostat has been activated. Please contact our service department.
3. The heating element is defective. Please contact our service department.

**The press time cannot be correctly set**

The electronics are defective. Please contact our service department.

**There is no signal at the end of the press time**

1. The timer is defective. Replace the timer with a new one.
2. The electronics are defective. Please contact our service department.

# 4. Maintenance and settings

## 4.1 Daily maintenance

For good press results it is important to keep the press surfaces clean. Therefore, wipe the heat plate with a clean, dry cloth before use when the plate is cold. Also clean the rubber of the press shoe daily with a dry cloth. Do not use solvents or other chemical substances to remove impurities. Do not let buttons, zips, etc. come between the plates. In this way, the silicone rubber will remain intact for a long time.

## 4.2 Periodic maintenance

The grease nipple (53 on the explodid diagram) in the rear of the base (52) needs to have a small amount of molybdenum grease pumped into it annually. The rubber pad and the the upper plate must be cleaned once or several times daily. Clean them with a clean and dry cloth when they have cooled down. They must be absolutely smooth and clean.

## 4.3 Cleaning

Clean the outside of the machine frequently with a clean, moist cloth. This may convienently be carried out before starting when the machine is cool. First unplug the machine!

# 5. Drawings and diagrams

In Appendiccs A, B, C, D and E you find successively:

| | |
|---|---|
| Appendix A: | General layout |
| Appendix B | Control unit – Operation |
| Appendix C | Exploded diagram and parts list |
| Appendix D | Electric diagram |
| Appendix E | Controller – Electrical diagram |

# 6. Design change

With the policy of constant improvement and/or modification to meet changing conditions, the right is reserved to change the design and/or specifications at any time without prior notification, and therefore specifications may vary and not be in accordance with this manual.

# 7. Guarantee

This press is guaranteed to be free from defects in material and workmanship (excluding pressing pad assembly) for a period of 12 months from the date of supply.

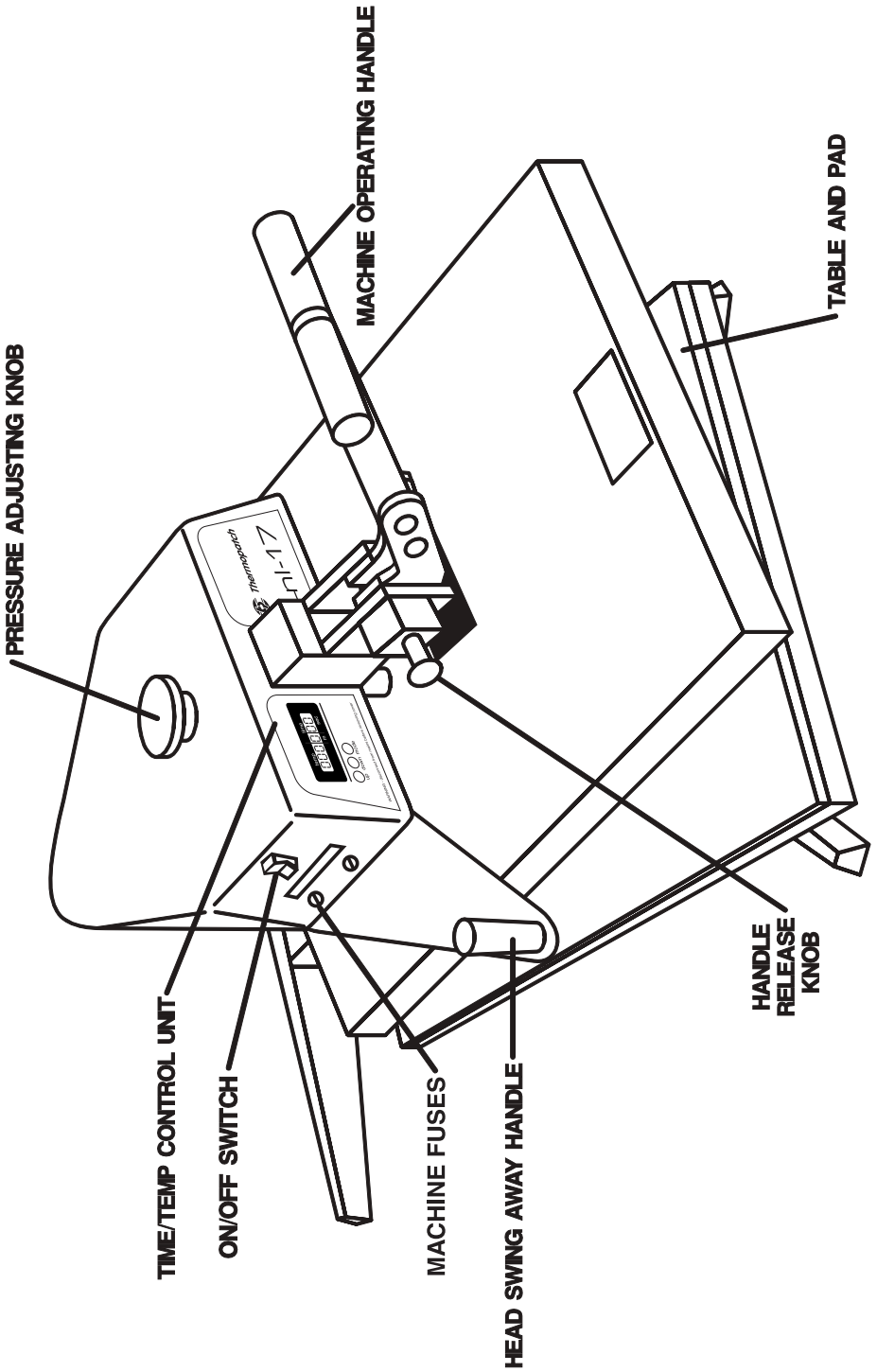
Should in our opinion any part of this press be defective in materials or workmanship, it will be replaced or repaired free of charge, provided that the press has been installed and operated in the correct manner and not subjected to misuse. (This is excluding any travelling and/or carriage costs which will be charged at our discretion.)

A charge will be made for any costs incurred if a reported fault on the press is found to be due to incorrect installation, operation and/or incorrect materials being used. It is the responsibility of the press user to ensure the suitability of the materials operating through the press.

In order for this warrant to be effective, no return of machine or parts may be made without prior factory authorisation.

The manufacturer shall not be liable for any injury, loss or damage, direct or consequential, arising out of the use or the inability to use the product.

# Appendix A.
# General Layout

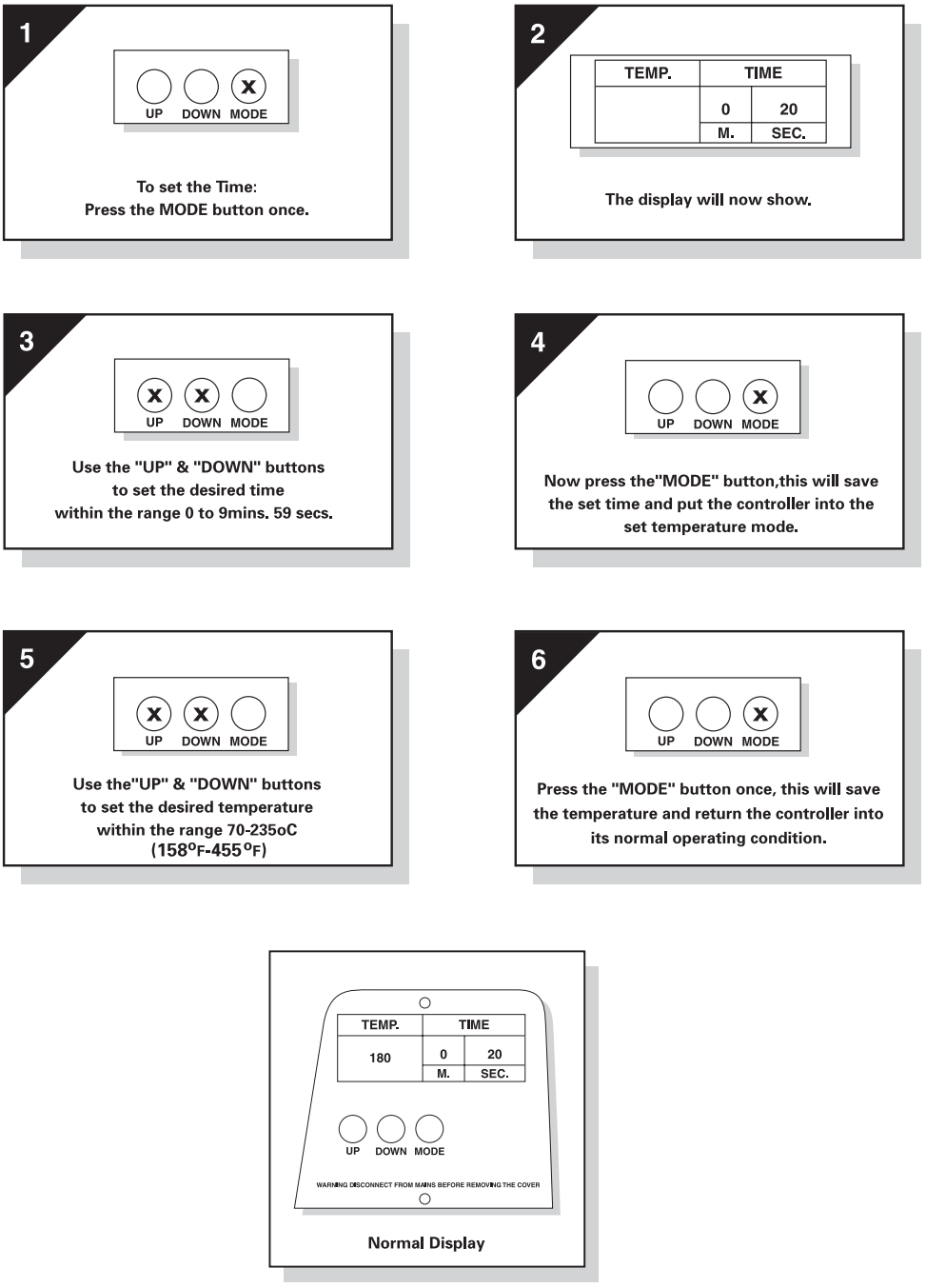



**Drawing 5.1: General Layout**

# Appendix B.
# Control Unit

### Operation of Control Unit, Setting Time and Temperature

(The head must always be in the up position before the controller is set.)




**Drawing 5.2: Control Unit**

# Appendix C.
# Exploded Diagram & Parts List

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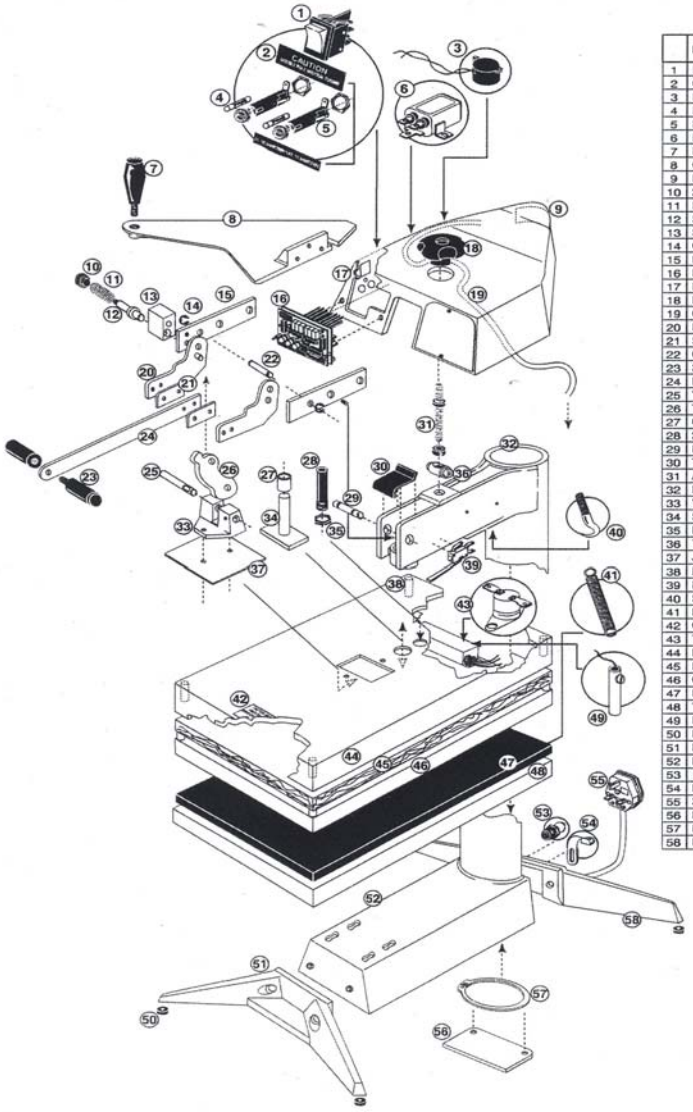
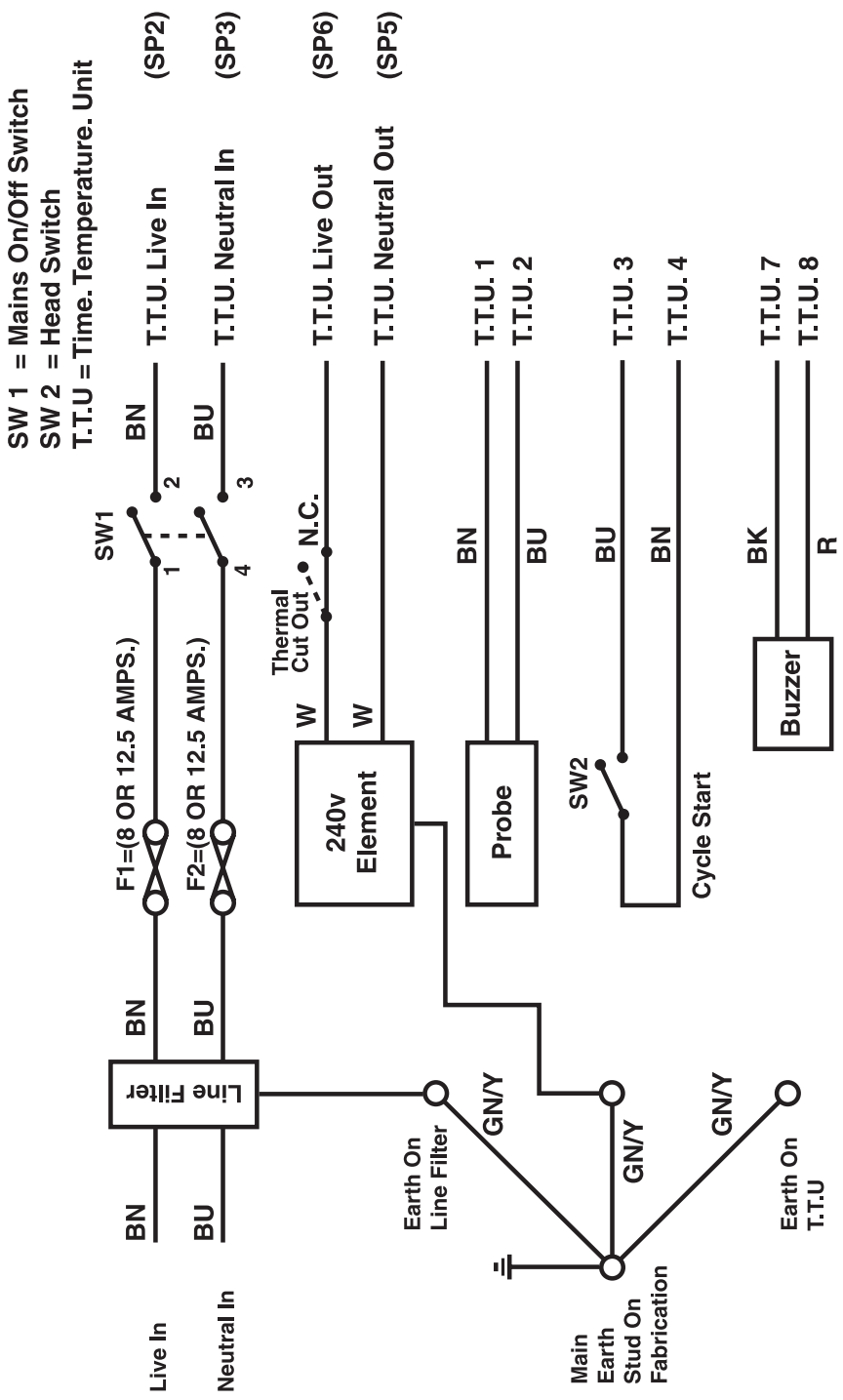
Exploded Diagram & Parts List



| | Part Description | 15 x20 Part No. |
|---|---|---|
| 1 | Rocker Switch | (BM448) |
| 2 | Caution Fusing Label | (BM470) |
| 3 | Buzzer (Part Of Led Controller) | (BUZZ1) |
| 4 | Fuse Cartridge 12.5 Amp | (BM356) |
| 5 | Fuse Holder | (BM468) |
| 6 | Mains Inlet Filter | (AM348) |
| 7 | Handle, 80mm Long | (MP6535) |
| 8 | Cast Handle | (BM11) |
| 9 | Danger Electrical Connection Label | (MP8549) |
| 10 | 26mm Dia Knurled Knob | (BM224) |
| 11 | Pressure Spring | (BM225) |
| 12 | Stop Bar | (BM19/F) |
| 13 | Stop Block | (BM19/G) |
| 14 | Circlip | (BM352) |
| 15 | Lh & Rh Pivot Arm (Pair) | (BM19/K) |
| 16 | Led Controller Unit | (BM322) |
| 17 | Instrument Cover | (BM10) |
| 18 | Hand Wheel | (MP6518) |
| 19 | Cable | (3183Y) |
| 20 | Pivot Plate Lh & Rh (Pair) | (BM19/J) |
| 21 | Spacer (Pair) | (BM19/E) |
| 22 | Outer Pin | (BM19/A) |
| 23 | 3 Piece Handle | (BM19/H) |
| 24 | Lever | (BM19/M) |
| 25 | Yoke Pin | (BM22) |
| 26 | Toggle Lock & Pressure Plate (Cam) | (BM19/L) |
| 27 | Oilite Bush | (BM321) |
| 28 | 20mm Conduit Cable Post | (BM436) |
| 29 | Inner Pin | (BM19/D) |
| 30 | Toggle Cover | (BM464) |
| 31 | Adjusting Stud & Lock Ring | (BM19/C) |
| 32 | Fabricated Arm | (BM18) |
| 33 | Yoke | (BM15) |
| 34 | Solid Guide Post | (BM348) |
| 35 | Lock Nut 20mm | (CP36) |
| 36 | Thrust Bar | (BM19/B) |
| 37 | Jacking Plate | (BM491) |
| 38 | PTFE Pillar | (AM207) |
| 39 | Micro Switch | (BM462) |
| 40 | Spring Hook | (BM347) |
| 41 | Heat Plate Spring | (BM346) |
| 42 | Caution Hot Label | (MP6548) |
| 43 | Thermal Cut Out | (BM338) |
| 44 | Insulation Cover | (BM27) |
| 45 | Rock Wool | (BM28) |
| 46 | Cast Element 240 Volts 2500 Watts | (BM460) |
| 47 | Black Silicone Pad 10mm | (BM341) |
| 48 | Table | (BM17) |
| 49 | Probe | (BM478) |
| 50 | Rubber Feet | (SW33) |
| 51 | Front Foot | (BM13) |
| 52 | Base | (BM12) |
| 53 | ⅛ BSP Grease Nipple | (BM201) |
| 54 | P Clip | (BM242) |
| 55 | 3 Pin Plug | (BM425) |
| 56 | Retaining Plate | (BM345) |
| 57 | External Circlip | (BM207) |
| 58 | Rear Foot | (BM14) |

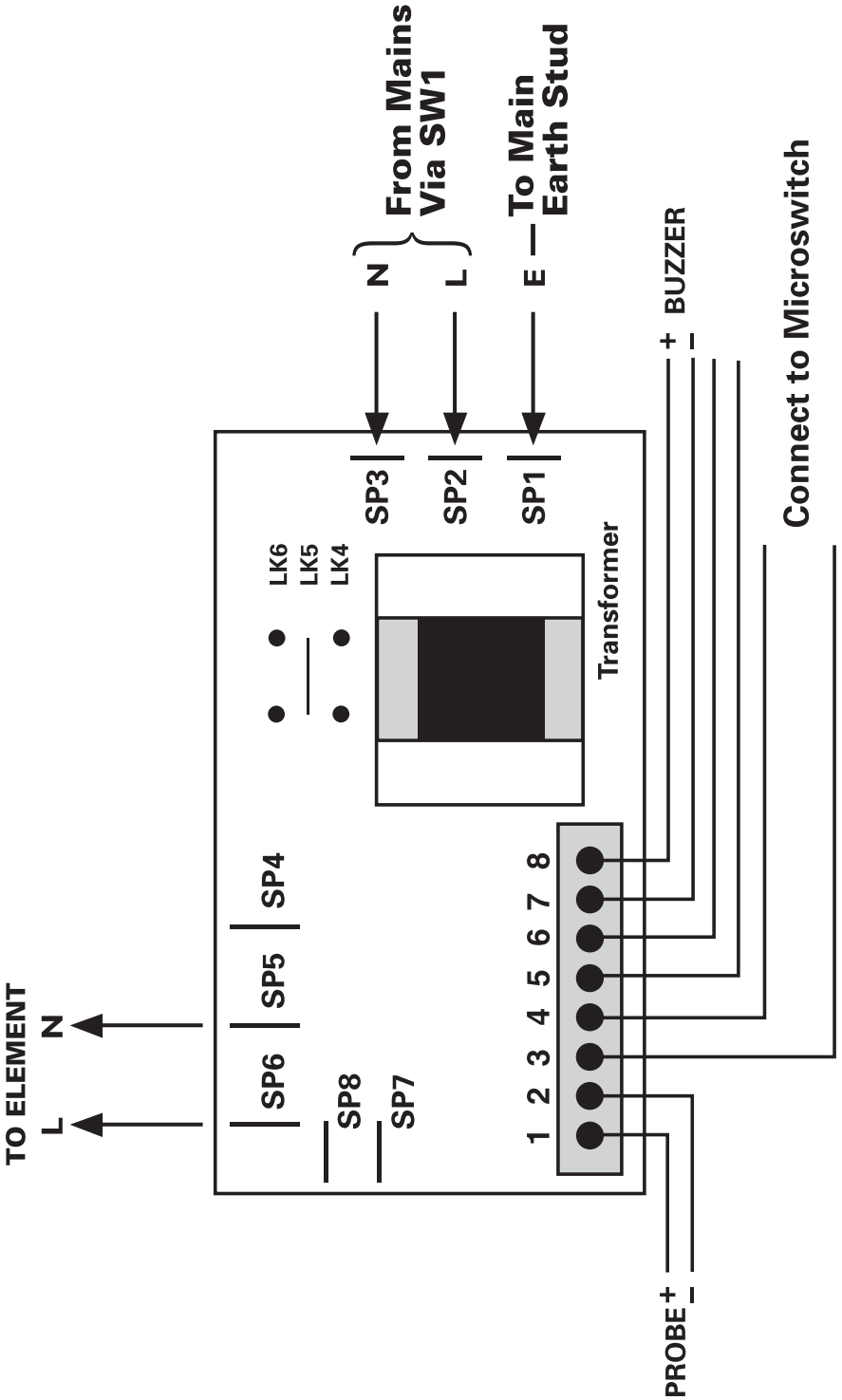
**Drawing 5.3: Exploded Diagram & Parts List**

# Appendix D.
# Electrical Diagram




**Drawing 5.4: Electrical Diagram**

# Appendix E.
# Controller – Electrical Diagram




**Drawing 5.5: Controller – Electrical Diagram**