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In the event of an enquiry please quote this serial number.



## OPERATING AND MAINTENANCE MANUAL

# MERLIN

### “L” SEALER


This machine is designed for use with Polypropylene (Polyolefin) films and is **not suitable for use with PVC or Polythene.**



## DECLARATION OF CONFORMITY

We hereby declare that this machine complies with the essential health and safety requirements of :-

- The Machinery Directive 2006 / 42 / EC
- The Low voltage Directive 2006 / 95 / EC
- The requirements of the Electromagnetic Compatibility Directive 2004 / 108EC, 91 / 263 / EEC, 92 / 31 / EEC
- The General Safety of Machinery and food processing Standards applicable
- Materials and Articles intended to come into contact with food - Regulation (EC) No. 1935 / 2004
- Good manufacturing practice for Materials intended to come into contact with food - Regulation (EC) No. 2023 / 2006

<b>Signed</b>	
G.A.Williams – Quality Manager	

<b>Date</b>	
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<b>Machine FG Code.</b>		<b>Machine Serial No.</b>	
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A technical construction file for this machine is retained at the following address:

**MONO EQUIPMENT**  
Queensway,  
Swansea West Industrial Park,  
Swansea  
SA5 4EB  
UK

**MONO EQUIPMENT** is a business name of **AFE GROUP Ltd**  
Registered in England No.3872673 VAT registration No.923428136


Registered office: Unit 35,  
Bryggen Road,  
North Lynn Industrial Estate,  
Kings Lynn Norfolk,  
PE30 2HZ

**Failure to adhere to the cleaning and maintenance instructions detailed in this booklet could affect the warranty of this machine.**



This machine is designed for use with Polypropylene (Polyolefin) films and is **not suitable for use with PVC or Polythene.**

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# 1.0 INTRODUCTION

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The MERLIN sealing machine combined with Polyolefin/Polypropylene film offers the most efficient use of space and give the ultimate in protection and eye appeal to your products.

Perforated films are used so bread can be packed and put on display hot (saving vital space otherwise needed for cooling) giving the customer an attractive, eye appealing, fresh product. Film is supplied in various sizes and forms to suit your entire range of product.

The aim is always to have a neat and tidy pack with the minimum amount of trim waste from the sealing machine. The MERLIN is designed to facilitate simple and quick film roll change so that different widths or different permeability film can be quickly selected.

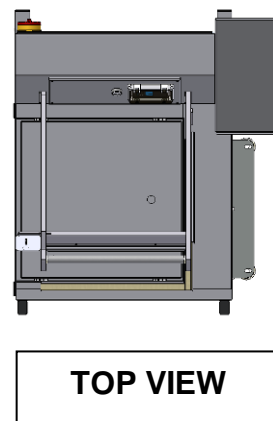
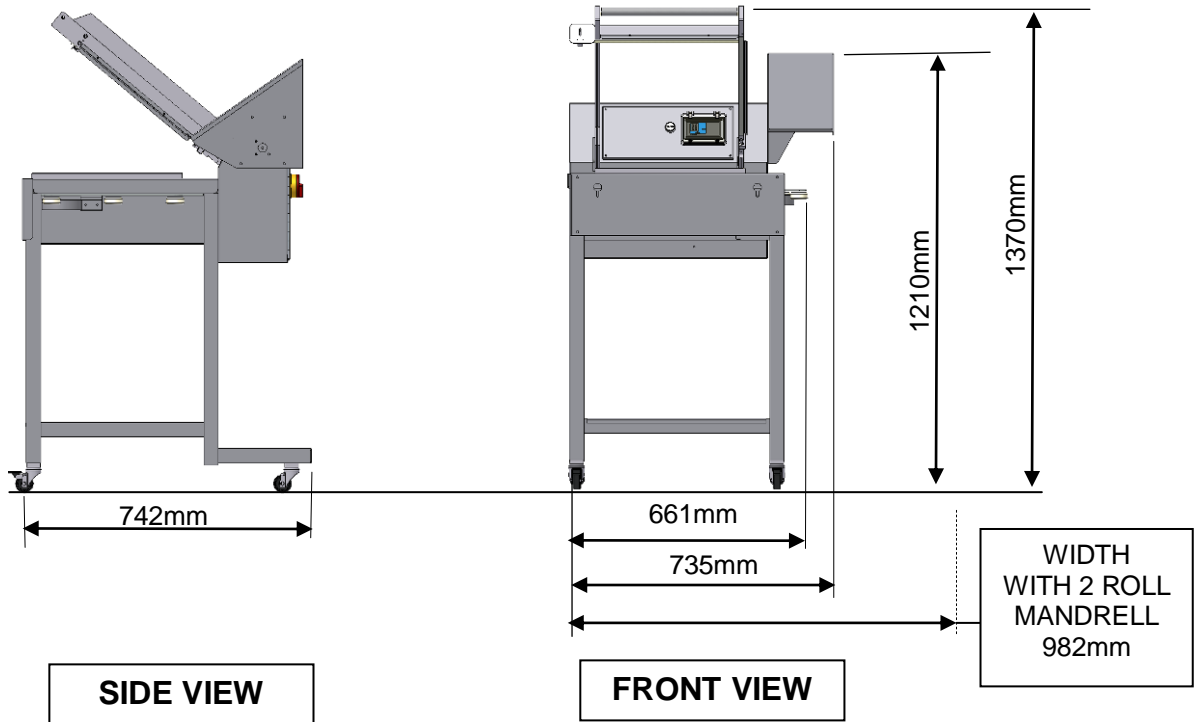
Anti-fog film which is ideally suited to the packing of plated salads and similar moist items, when these are to be displayed in a chill cabinet, is also available.

Plain (non-perforated) film should be used for packing cake, scones, sandwiches, plated salads etc. except where these are to be displayed in a chill cabinet.



Whilst the ROBIN has been designed primarily for use in Catering operations with attention given to the ease of hygienic cleaning, the unit can also be effectively used for the packaging of non-food items.

## 2.0 DIMENSIONS



Space needs to be allowed for a mandrel to hold the film rolls.  
This design varies to customer requirements i.e. 2 rolls or 4 rolls.

## 3.0 SPECIFICATIONS

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### DIMENSIONS

Height closed -- 1210mm

Height open -- 1370mm

Width -- 735mm (983mm with standard 2 roll mandrel)

Depth -- 742mm

Space needs to be allowed for a mandrel to hold the film rolls.  
This design varies to customer requirements i.e. 2 rolls or 4 rolls.

**POWER** -- See serial No. plate

230/250v. AC., 50Hz, single phase 13amp.

or

220v. AC, 60Hz single phase 13amp

### NOTE

If a sensitive magnetic trip is used in the supply line, this must allow for a peak impulse current of 20amps.

### FUSES

13amp in plug.

1amp magnetic fuse.

3.15amp control circuit fuse.

### SEALING PLATFORM

To suit various height packs the platform can be set in 3 positions.

Sealing wire - 22swg.

Sealing pad surface material - P.T.F.E.

Operation only when sealing arm is within 3mm-4mm of sealing pads.

This machine is designed for use with Polypropylene (Polyolefin) films and is **not suitable for use with PVC or Polythene.**



STATEMENT TO USERS OF  
MONO PACKAGING MACHINES PRODUCTS.  
**(HEALTH & SAFETY AT WORK ACT 1974)**

Under the terms of the above Act it is obligatory, rather than simply a matter of good business practice, to advise our customers on the safe use of our products. There are no significant known hazards in the use of our products provided they are handled according to normal good safety practice and in accordance with the information in this instruction manual. We would nevertheless draw your attention to the following information which must be taken into account to ensure safe working.

### **MACHINES**

1. The sealing and cutting wire is heated by electrical impulse each time the machine is operated and therefore care should be taken to avoid touching any part of the wire when hot or within one minute of operation (due to residual heat). Cleanliness in the vicinity of the seal wire and the use of minimum heat setting, sufficient only to seal and cut, is important to minimise any fuming that might occur.
2. Machine electrical compartments must not be opened, due to the danger of electrical shock, except by a competent person and only then after first being isolated from the mains electrical supply.
3. This machine is designed for use with Polypropylene (Polyolefin) films and is not suitable for use with PVC or Polythene.

### **MATERIALS**

#### 1. FLAMMABILITY

Polyolefin films are combustible when exposed to ignition sources and should be stored in an area equipped with fire control safeguards. This is particularly important if large quantities of material are to be stored, in which case we recommend heat and smoke detection perhaps coupled with a water sprinkler system. In common with other combustible materials, polyolefin films burning freely in a fire will produce complex combustion products dependent upon factors such as temperature, the degree of ventilation and the fire dynamics of the situation. It is therefore not possible to specify the combustion products precisely, but typically they would include carbon monoxide, carbon dioxide, trace levels of organic compounds and water. For this reason it is recommended that all areas in the proximity of a fire should be immediately evacuated of all personnel and fire-fighters should be equipped with self-contained breathing apparatus.



## 2. HEAT SEALING & TRIMMING

The heat sealing and cutting of plastic films inevitably gives rise to some fumes. Analysis of the fumes generated by this process and given off from Polyolefin/Polypropylene film indicates that under typical operation conditions no organic compounds are present in concentrations greater than 5% of the Occupational Exposure Limits determined by the Health & Safety Executive, with concentrations generally less than 1% of OEL. However, even low concentrations of fumes can be irritating to sensitive persons and it is recommended that adequate ventilation should be provided to the working area to avoid a build up of fumes over a period of time. It is advisable to ensure that operatives and personnel in the working area do not have a history of respiratory or pulmonary illness and that the sealing equipment is maintained in good and clean condition.

Attention to the cleanliness of the trimsealing heads is important as an accumulation of dirt or melted plastic can cause excessive fuming. Running the heat control at too high a setting can also contribute to excessive fuming and it is usually found in these circumstances that a reduction in the heat setting, combined with increased pressure on the sealing head, will give a better seal performance.

## 3. STATIC ELECTRICITY

Build up of static electricity in rolls of plastic film may cause problems when the charge earths by sparking. Where work involves potential fire or explosion hazards, steps should be taken to eliminate safely the static charge and to prevent subsequent recharging during further processing. Because of the possibility of generating and or discharging an electrostatic charge, protective wrappings should not be removed from film rolls in areas where the atmosphere conditions are such as to present a fire or explosion hazard.

## 4. SLIP

Most plastic films are high slip materials and if allowed to lie on the floor, can present a safety hazard to pedestrians. Care should therefore be exercised to ensure that scrap off-trims of film, are tidied away in appropriate disposal containers and not be allowed to litter the floor.

## 5. DISPOSAL

Disposal of scrap film should either be through the normal trade re-use outlets, burial or incineration. Incineration can be used for disposal where the incinerator is designed to cope with corrosive flue gasses.

### **NOTE!**

The Materials information set out above is based on information supplied by a manufacturer of Polyolefin Film and is correct to the best of our knowledge and belief. However, whatever film you decide to use, since the chemical composition may vary from manufacturer to manufacturer, you must satisfy yourself, by reference to the material supplier, that the material is safe to use on a heat seal and cut machine such as the MERLIN and that any fumes given off are not toxic or harmful.

Mono Equipment does not accept any liability whatsoever for any consequences arising from your choice of wrapping film.

## 5.0 INSTALLATION

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- The sealer will be supplied completely assembled and ready for use, including a fitted power supply plug.
- The sealer's electrical supply must be 230/250V a.c., Single Phase, 50Hz, capable of carrying 13 amps.
- If a sensitive magnetic trip is used in the supply line, this must be rated at 20 amps. to allow for the peak impulse current.
- The sealer must be installed on a level floor.
- Check the sealing arm is level and adjust if necessary.
- Ventilation should be adequate to allow the small amount of fumes to be removed from the working area.
- The sealer should be installed away from areas where the atmospheric conditions are such as to present a fire or explosion hazard. (dust ,flour etc.)

## 6.0 ISOLATION

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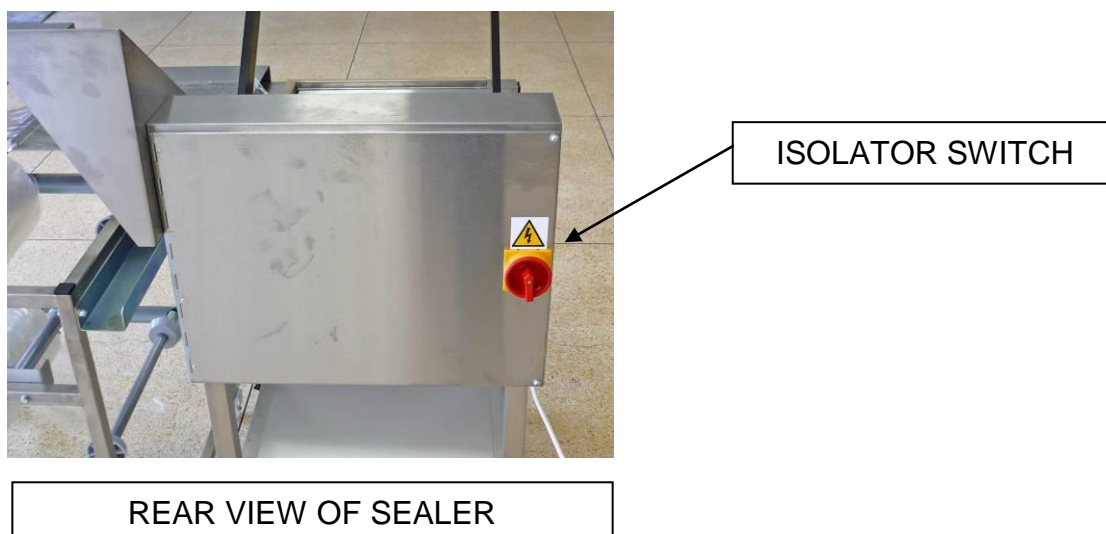
### 'ON/OFF' SWITCH / POWER NEON.

This switch provides power to the machine and incorporates a neon to indicate 'POWER ON'. Press to turn on/off.



### MAIN ISOLATOR

On the rear of the main body there is an isolator switch. This will turn off power to the sealer. This must be turned to off before the door can be opened to give access to the electrical parts.



## 7.0 CLEANING INSTRUCTIONS

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**ALL CLEANING AND MAINTENANCE OPERATIONS MUST BE MADE WITH THE MACHINE DISCONNECTED FROM THE POWER SUPPLY**

**DO NOT ALLOW WATER TO ENTER THE CONTROL PANEL AREA.**

**DO NOT USE A SPIRIT OR SOLVENT TO CLEAN THE MACHINE.**

### **DAILY CLEANING**

1. Brush crumbs etc off tables.
2. Wipe metalwork with a damp cloth and sanitising solution.

### **WEEKLY CLEANING**

1. Vacuum clean the machine.  
(Paying special attention to the underside of the sealing platform).
2. Wipe metalwork with a damp cloth and sanitising solution.
3. Check condition of sealing pads.  
(Replace if burn marks are excessive).
4. Check condition of sealing wires.  
(Clean off residual deposits with a stiff brush).

## 8.0 ADJUSTMENTS

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It should be noted at this point that no two heat sealable materials will work the same at the same machine settings.

### WIRE TEMPERATURE CONTROLLER.

This component is used to control the level of impulse temperature. The desired setting is controlled by altering the digital display by pressing the plus or minus buttons.



Pulse light.  
This comes  
on when the  
sealing wire  
is powered

### WIRE TEMPERATURE.

Controlled as set out above. For all gauges and types of film it is recommended that a low setting is first tried, gradually increasing to find the lowest setting at which a satisfactory clean cut-off is achieved. The number (on the controller) thus established should be noted for future reference in relation to the particular type and gauge of film in use. On no account should too high a setting be used as this will reduce the life of both sealing wire and sealing pads and might give rise to unpleasant fumes.

## 9.0 CONTROLS

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### WIRE TEMPERATURE.

This component is used to control the level of impulse temperature. The desired setting is controlled by altering the digital display by pressing the plus or minus buttons.

### 'ON/OFF' SWITCH / POWER NEON.

This switch provides power to the machine and incorporates a neon light to indicate 'POWER ON'.

### **PULSE LIGHT.**

This comes on when the sealing wire is powered.  
Release arm when it goes out.



### LOADING PLATFORM/FILM SEPARATOR.

This component, which is a combined film splitting and product loading plate, can be slid in and out to suit the film width being used. Under the platform there will be found a locking screw (Thumb Screw), for fixing the platform in the desired position.

### Sealing Platform.

To suit various height packs, this platform may be set in any of three positions. These heights are achieved by raising or lowering the seal platform and engaging its support rods at the appropriated level. For most efficient use, the level should be set at approx. half the product height. After use, this platform may be lifted from the machine to facilitate machine cleaning.

## 10.0 OPERATING INSTRUCTIONS

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1. Place the desired type and size of centrefolded film on the film mandrel and locate and lock in position using the cones provided, the open side of the film should be towards the fixed cone.
2. Place the mandrel on the bearing carriers, with the open side of film towards the front, unreel film, passing the free end over the guide roller. Slide the whole film cradle backwards or forwards to the desired position (to suit the pack) and align the film fold line relative to the sealing pad.
3. Place the loading platform/film separator between the film layers pulling the free end of film under the seal arm. Ideally the platform should be positioned so that it's tip comes to within half the pack height of the film fold line. When correct, lock in position with the thumb screw to be found on the underside.
4. Switch power 'ON' and observe 'POWER ON' Neon is illuminated. (If not check that the power lead is plugged in).
5. Set 'WIRE TEMP.' to specified recommendation and with the film under the right-hand sealing arm, lower arm onto the film and hold down under moderate pressure. When the neon on the temperature controller goes out, release the arm and observe the welded film. *There should be a clean cut-off and weld with no gaps evident.*
6. Place product between the film layers, on the loading plate and move to the left and into the sealing area, having first set the seal platform to the required height. *The product and film should always be pulled into position rather than pushed to protect the leading seal.*
7. Close the seal arm and hold down firmly until the controller neon goes out at which point the arm can be released, as the film will have been welded and cut from the stock.

WASTE FILM IS GENERATED FROM THIS PROCESS AND, SINCE IT IS SLIPPERY AND COULD CAUSE AN ACCIDENT ,THIS SHOULD NOT BE LEFT TO PILE UP ON THE FLOOR.

### **WIRE TEMPERATURE.**

Controlled as set out above. For all gauges and types of film it is recommended that a low setting is first tried, gradually increasing to find the lowest setting at which a satisfactory clean cut-off is achieved. The number (on the simulator) thus established should be noted for future reference in relation to the particular type and gauge of film in use. On no account should too high a setting be used as this will reduce the life of both sealing wire and sealing pads and might give rise to unpleasant fumes.

# 11.0 MAINTENANCE

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**ALL CLEANING AND MAINTENANCE OPERATIONS MUST BE MADE WITH THE MACHINE DISCONNECTED FROM THE POWER SUPPLY**

## Weekly

Check condition of sealing pads and top cover tape for excessive burn and replace tape if necessary.

Check condition of and clean, seal wires and seal wire insulation strips. To clean wires, operate machine two or three times to heat the wires, switch off machine, then with a wire brush, clean the wires. Repeat if necessary. In the absence of a wire brush, a ball of Crispywrap film or a cloth can be used.

## Six Monthly (Mechanical)

Carry out weekly service.

Check condition of seal wire insulation strips and replace if badly burned showing deep grooves. To replace, cut off old strip, clean metal surface and apply a suitable contact adhesive. Apply new strip to prepared surface and press down into position. When replacing insulation strips, always replace the sealing wires and ensure when so doing that the wire tension springs are properly compressed.

Check condition of seal pads. If cover tape (PTFE) has been changed at regular weekly service periods, these components should be serviceable. If however, the pads have been badly burned, new pads should be fitted. Pads may NOT be turned over to extend their life, due to a metal strip used in construction which could cause an electrical short.

## Six Monthly (Electrical)

Disconnect machine from Mains Electrical Supply and open the Console rear door.

Check condition of and clean Contactor.

Inspect condition of wiring insulation and examine all terminals for security.



# **SERVICE REPAIRS (MECHANICAL).**

## **SEAL PAD COVERING.**

A length of adhesive backed, 13mm wide, P.T.F.E. glass tape, is fixed to the pads for protection. This replaceable tape should be renewed when seals become sub-standard, the film sticks to the pad or pronounced burn marks are apparent.

## **SEALING WIRE INSULATION STRIPS.**

These components may become damaged due to incorrect machine setting or heavy usage and require replacement.

## **SEALING PADS.**

These components may become damaged due to incorrect machine setting or failure to replace the cover tape and require replacement.

**CAUTION! Isolate machines from mains electrical supply before opening electrical compartment**

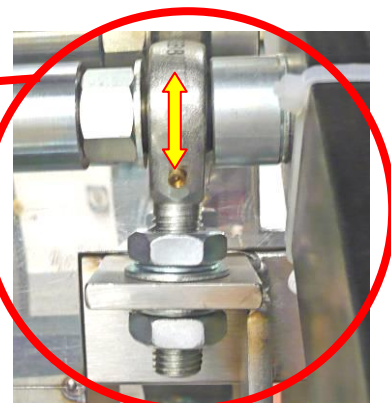
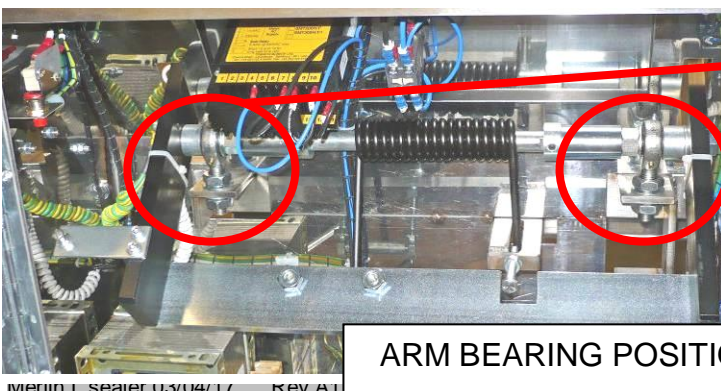
## **LEVELLING OF SEALING ARM & ADJUSTING 'HEAT ON' SWITCH.**

The arm is levelled by adjusting the two bearings housed in the Control Console. After isolating the machine from the Mains Electrical Supply and opening the Console rear door, the procedure for adjustment is as follows:-

Pull the arm down onto the pad and look along the length of both pads to see if there are any gaps.

If gaps are noted, adjust following the steps below:-

- a. If the left-hand end of the front seal arm is not touching the seal pad, raise the right-hand bearing.
- b. If the right-hand end of the front seal arm is not touching the seal pad, raise the left-hand bearing.
- c. If the rear of the transverse seal arm is not touching the seal pad, lower both bearings.
- d. If the transverse seal arm is touching the rear of the seal pad long before the front seal arm reaches the front seal pad, raise both bearings.

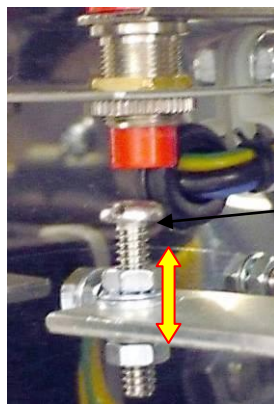


If there are no visible gaps, check fine levelling using a 1" wide strip of paper. Place the paper strip between the pad and seal arm, close the arm using one hand and with the other, pull the paper across the pad, checking whether the paper is being gripped. This should be tried along the length of both pads and if an area of poor grip is found, adjustment should be carried out as detailed above.

A further test is to use strips or a sheet of Kraft paper over the full length of both pads and operate the machine. When the seal frame releases, burn lines will be seen on the Kraft paper which should be of even thickness, indicating even pressure over the full length of both wires. If the burn is not even or there are gaps, the seal arm should be levelled.

### **Adjusting 'Heat On' Switch**

After adjusting the bearings, check that the "Heat On" Switch actuating screw is set so that the switch is actuated when the seal arm is within 3mm to 4mm of touching the front seal pad. The switch is situated in the top left-hand corner of the Control Console.

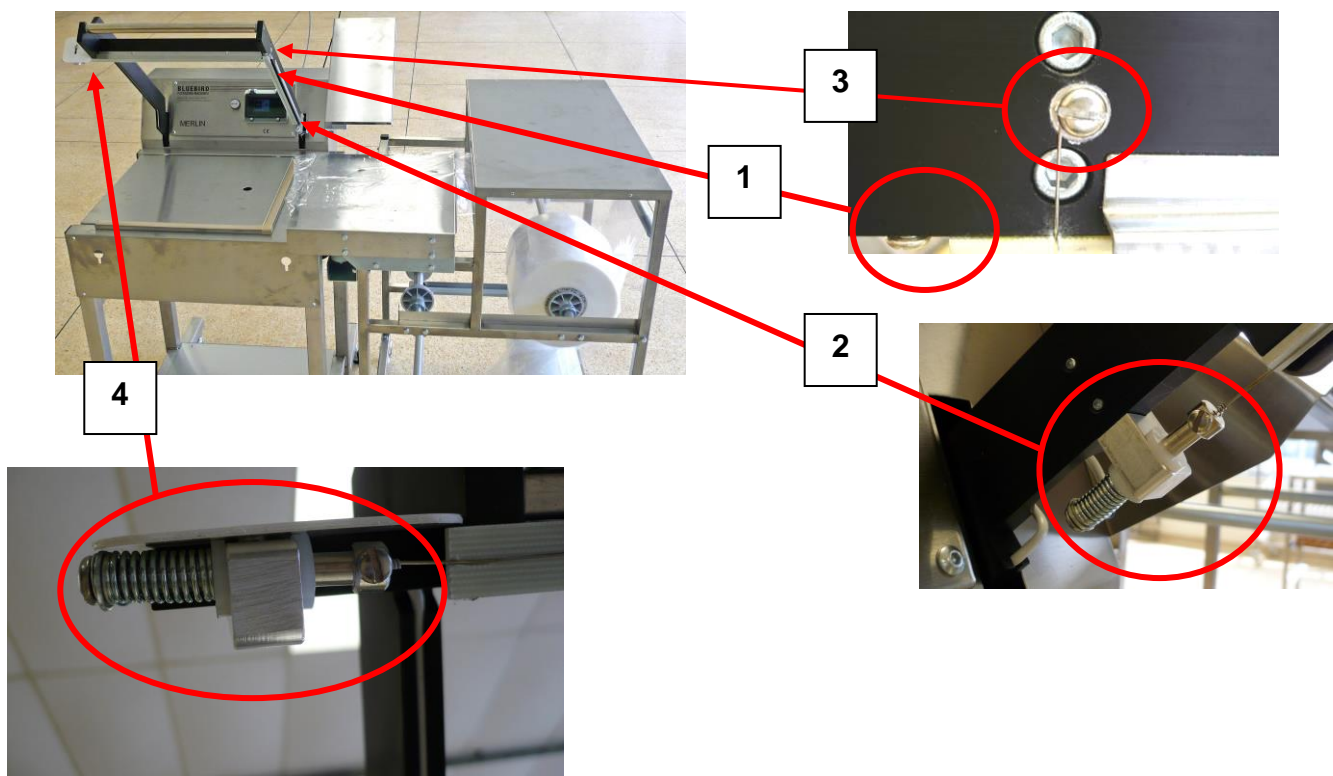


"Heat On" Switch  
actuating screw

## **CHANGING SEALING WIRES.**

### **SIDE WIRE**

To remove the old wire, loosen earth screw (1), located in the right-hand front corner of the seal arm and loosen the screw (2) in the relevant spring loaded piston and remove the old wire. Feed the new wire through the spring loaded piston (Wireholder) while compressing the spring so that the wire emerges from the side by about 1/4". Bend the wire back on itself then tighten the clamp screw. Take care that the new seal wire, when fitted, does not touch any metal part other than the spring loaded wireholder, either when the seal arm is 'Up' or 'Closed'. Pull the wire taut, fully compressing the tensioning spring and wind free end around the earth screw before tightening. It may be necessary after a few operations to adjust the spring compression due to expansion of the wire when it settles in. ALWAYS ensure that the side wire is fitted last so that it lies over the front wire (looking up from below) at the corner crossover point.



### **FRONT WIRE**

Loosen the side wire as above but do not remove unless replacing.

*(This is because the side wire is fitted last so that it lies over the front wire (looking up from below) at the corner crossover point).*

To remove the old wire, loosen earth screw (3), located in the right-hand front corner of the seal arm and loosen the screw (4) in the relevant spring loaded piston and remove the old wire. Feed the new wire through the spring loaded piston (Wireholder) while compressing the spring so that the wire emerges from the side by about 1/4". Bend the wire back on itself then tighten the clamp screw. Take care that the new seal wire, when fitted, does not touch any metal part other than the spring loaded wireholder, either when the seal arm is 'Up' or 'Closed'. Pull the wire taut, fully compressing the tensioning spring and wind the free end around the earth screw before tightening. *It may be necessary after a few operations to adjust the spring compression due to expansion of the wire when it settles in.* Retighten the side wire as above. ALWAYS ensure that the front to back wire is fitted last so that it lies over the front wire (looking up from below) at the corner crossover point.

## 12.0 SPARES AND SERVICE

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If a fault arises, please do not hesitate to contact the  
Customer Service Department, quoting the **machine serial number**  
on the silver information plate of the machine and on the front cover of this manual



Queensway  
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**[Web site:www.monoequip.com](http://www.monoequip.com)**

## 13.0 SPARES LIST

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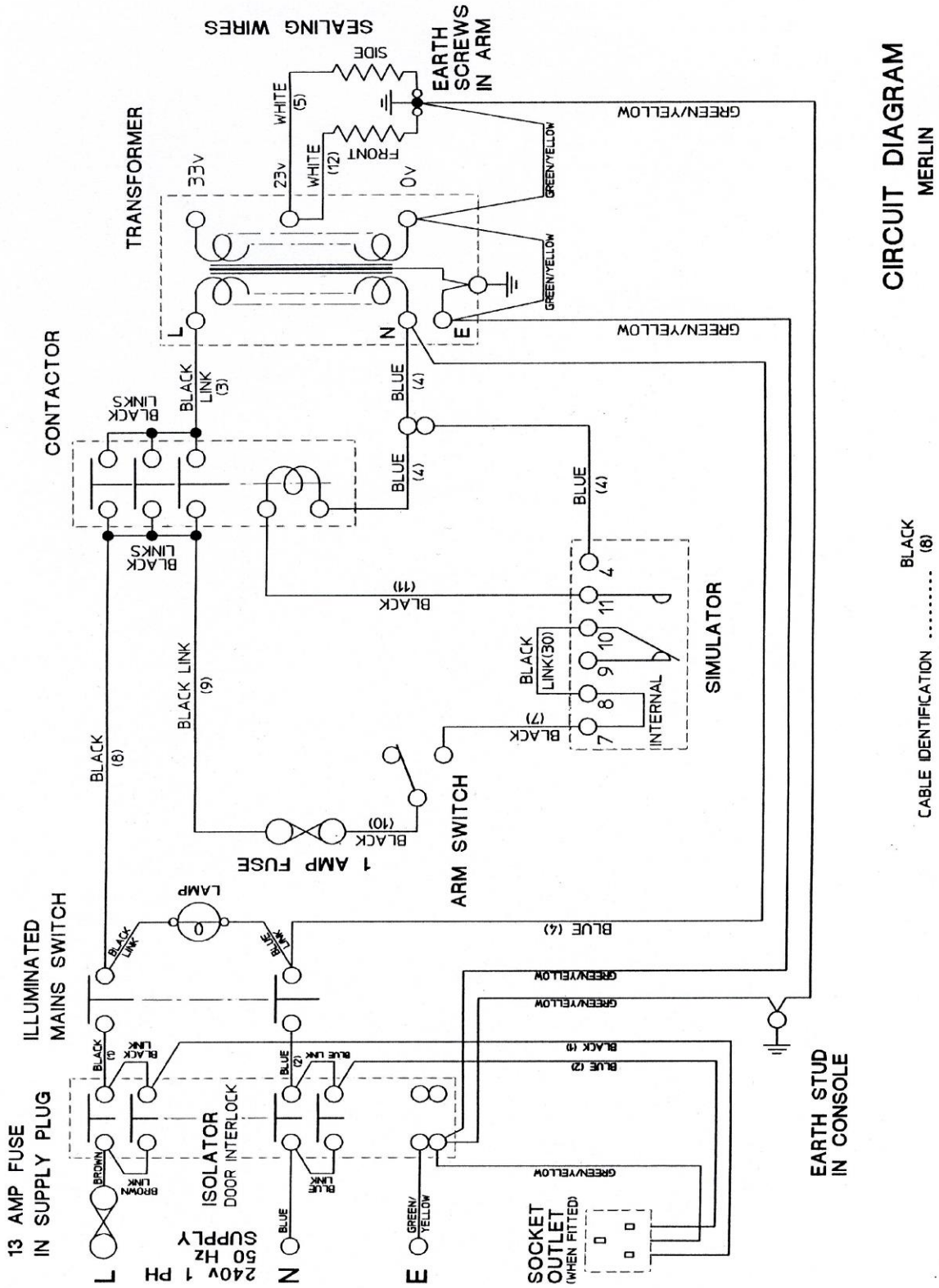
### RECOMMENDED SPARES

The machine is supplied with a basic spares kit, however, we recommend that in order to minimise machine down time, users should at least hold:-

- |  |                    |
|--|--------------------|
| 1 - Reel 22swg Seal Wire -----                     | Pt No B944-95-002  |
| 1 - Roll 13mm wide P.T.F.E. Glass Tape (1.2Mtrs) – | Pt No A900-12-120  |
| 1 - Wireholder with spring. -----                  | Pt No 480-04-00000 |
| 1 - Packet 1amp. Fuses. (10) -----                 | Pt No B842-85-025  |
| 1 - Packet 13 amp. Fuses (10) -----                | Pt No B842-85-011  |

For these and other spares please contact Mono spares dept. Tel. 01792 564039

# 14.0 ELECTRICAL INFORMATION



CIRCUIT DIAGRAM  
MERLIN

CABLE IDENTIFICATION ..... (8)  
BLACK (8)

## **15.0 FAULT TRACING TABLE**

<b>FAULT</b>	<b>CAUSE</b>	<b>ACTION</b>
Wires burning out	Wires shorting on frame. Worn insulating strips. Excessive heat setting used. Faulty simulator. Faulty contactor, wires heat as soon as m/c is turned on.	Replace faulty items.
No heat on wire with power "ON" neon healthy.	1 amp control fuse blown. Broken supply wire. Bad earth termination.  Heat "ON" switch not triggering. Faulty contactor.  Faulty transformer.  Faulty simulator.	Replace. Replace. Check, ensure the wires are clean and properly clamped. Adjust actuating screw or replace switch. Check coil. Manually depress coil with screwdriver. If centre does not move, change contactor. Check and replace if necessary. Check and replace if necessary.
Neon light dims when operating machine.	Poor neutral return.	Check supply neutral. Poor connection in supply plug.
Fuse blows in supply plug.	High resistance in earth return - broken earth wire. Seal wire or clamp screw shorting on arm. Insulation strip missing. Supply wire bare and shorting to frame. Short circuit in control console. See also "Wires burning out".	Look for break in wire.  Look for burn marks.

<b>FAULT</b>	<b>CAUSE</b>	<b>ACTION</b>
Wires too hot on lowest simulator setting.	Faulty simulator	Change simulator.
Only one wire heats up.	Bad earth connection. Broken supply lead.	Check both.
Seal Pad strips burnt out.	Continued use of excessive heat or failure to replace tape when necessary.	Change Seal Pads.
Pack seal bursts open.	Dirty seal area. Dirty seal wire. Pack too tight in film. Insufficient clamp pressure.	Change tape. Clean wires. Allow more slack. Increase pressure.
Power switch "ON" but neon does not light.	No fault  Power supply is faulty.	Ensure power supply is "ON" Check fuse in plug, wiring and supply.
Fault remains.	Neon has failed, machine working.	Replace switch.
Film cuts off but fails to weld.	Tension on film does not permit seal during cut-off.	Relax tension on film when sealing.
Seal wire insulation strip badly burnt.	Continued use of excessive heat. Maintenance schedule not followed.	Replace insulation strips.





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- **DISPOSAL**

Care should be taken when the machine comes to the end of its working life. All parts should be disposed of in the appropriate place, either recycling or other means as the law permits at the time.