

# HM Operating Instructions

## HM3000 Standard



**HULME MARTIN HEAT SEALERS**

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## **SAFETY INSTRUCTIONS – HEAT SEALING EQUIPMENT**

### **A. Protection against hazards arising from the electrical equipment**

1. Safety warnings and instructions in the operators instruction sheets and attached to the machine should be followed with care.
2. The equipment has an earthed power cable with integral 13-amp fuse to BS 1363/A fitted with a 5-amp fuse. The panel mounted fuse holder on the machine is fitted with a 3.15 antisurge fuse for additional protection. If either fuse fails the reason should be investigated and the machine inspected and tested to ensure that there are no causative faults. Higher value fuses must not be used, as they do not provide the required level of protection.
3. Ensure that the power is switched off and the cable plug is removed from the supply outlet before any servicing is undertaken on the product.
4. Increased user safety can be achieved if a residual current device (RCD) is used in the supply circuit to the heat sealer. This applies particularly in damp conditions but the equipment must not be allowed to get wet, either from sealing liquids, cleaning or inclement weather. Only specially designed water-resistant sealers should be used in these circumstances. Electrical components and internal wiring, unlike the element assembly, are not all protected by the low voltage safety transformer, which powers the element.
5. Switch off the power supply when the machine is not attended.
6. The equipment should be regularly serviced and subjected to Portable Appliance Test procedures in accordance with the Health and Safety Electricity At Work regulations 1989.
7. It is essential that only approved spares are used for servicing this equipment. Incorrect element wire can result in excessive electrical load on internal components, which can lead, to malfunction and failure.

### **Note**

Hulme Martin Heat Sealing equipment satisfies the Health and Safety requirements of the Electrical Equipment (Safety) Regulations 1994, CE Low Voltage Directive 2006/95/EC

B. Protection against non electrical hazards

1. The equipment is designed to be operated on a flat, level surface to ensure machine stability. In the case of chain operated machines, the equipment should be securely screwed to the workbench using the flanges provided, to avoid dislodging the machine when the pedal is depressed.
2. Heat sealing machines must not be used for packing flammable or explosive materials unless specifically modified to do so.
3. When sealing PVC and some other plastic films, which may produce potentially harmful fumes, adequate airflow ventilation or extraction may be required.
4. The heating element and jaws can become hot during sealing and adequate cooling time must be allowed before touching these parts of the machine.
5. Care should be taken on machines fitted with cutting knives that the blade is moved to a safe position before attempting to reach between the jaws. On hand operated machines, which are pivoted at one end of the pressure bar the knife will slide towards the pivot point when the pressure bar is lifted. For safety ensure that the blade is positioned at the pivot end before lifting the pressure bar.
6. A timer allowing a maximum heating time of 4 seconds controls the heating cycle on impulse sealers. If the timer indicator light does not go out at the selected time and heating continues, switch off the power immediately and investigate the fault after removal or disconnection of the element.
7. Repeated operation of the machine without sufficient cooling time between cycles can cause accumulative heat build up in the element resulting in poor seals, damaged elements and excessive temperatures
8. Ensure that hands and fingers are clear of the pressure bar before actuating the foot pedal. The element will not operate until the pressure bar is fully closed but some discomfort will result from the pressure applied manually or by solenoid operated units.

## **IMPULSE SEALING EQUIPMENT**

To ensure that satisfactory sealing performance is achieved and that service life of consumable spares (such as element wire, Teflon and rubber pressure pads) are maximised, it is necessary to understand the operating principles of this type of equipment.

1. To adjust the heat setting for a particular thickness of material, the power output is not varied, and varying the length of time that the current passed through the element resistance wire effects adjustment. The timer control allows infinitely variable time adjustment up to a maximum of around 3 ½ seconds.
2. When the red heating indicator light goes out the temperature has reached its maximum and the polythene is molten to effect the weld. It is important that before allowing the jaws to open for removal of the polythene a short cooling time is allowed to enable the polythene to solidify and to regain its original strength. On machines fitted with a dual timer control, the cooling time can be pre-set but on standard machines with simple heating time control, the operator should allow sufficient time for cooling before releasing the jaws. Depending on material thickness a cooling time of 1 to 7 seconds is usually sufficient.
3. To complete the seal in the minimum possible time considerable power is applied to the element for the short duration of the welding cycle. The instantaneous temperature reached during the brief cycle is very high, but close contact of the spring loaded rubber pressure pad removes excess temperature and prevents deterioration of the thin Teflon barrier tape.
4. It follows that if the pressure bar is released before the temperature reduces to a level that the Teflon can withstand, it will deteriorate rapidly and require premature replacement.
5. For this reason adequate cooling allowance is critical to the service life of the Teflon. Although capable of withstanding up to 20,000 seals before replacement, insufficient cooling time can cause burning within a very short period.

6. If the Teflon is not replaced when showing signs of wear, the polythene will stick and seal quality will deteriorate. Also the rubber pressure pad will start to wear and if this is allowed to continue to the stage where the surface of the pad is burnt and uneven, the resulting 'air gap' between the pad and element will reduce heat transfer and cause further rapid deterioration of the Teflon. Excessive burning will eventually result also in the element wire requiring replacement.
7. To avoid this 'vicious circle' always operate the machine at the minimum heat setting consistent with satisfactory seal quality. Allow sufficient cooling time between each successive seal. When sealing repetitively at high frequency reduce the heating time from its original setting to compensate for residual heat build up in the element.
8. The microswitch is set to avoid application of power to the element until the rubber pad is fully aligned and pressed closely to the Teflon to allow the necessary heat transfer. The rubber pressure pad is sufficiently pliable to accommodate several thickness' of polythene, but accidental closure onto thicker objects or attempting to seal bubble pack material and heavy paper laminate gusseted materials will cause deterioration of the Teflon for the reasons explained previously.
9. The rubber pressure pad, and element wire strip are easily replaceable, but care in operating and maintenance of the Teflon barrier tape can extend the service interval before element reconditioning becomes necessary.
10. If the machine fails to seal, but the on-off switch and indicator lights show that the power and timer circuits are operating correctly, unplug the element and check the condition of the resistance wire and Teflon. Simple replacement of these low cost consumable spares will normally restore the full performance of the equipment.

# **HM3000 POLYTHENE HEAT SEALER**

## **OPERATING INSTRUCTIONS**

### **General**

Before connecting the machine to the electricity supply, check the operating voltage on the name plate attached to the base of the machine.

The wires in the mains lead are coloured in accordance with the following code:-

Green & Yellow	- Earth
Blue	- Neutral
Brown	- Live

Ensure that the machine is correctly earthed and connected to the mains supply with a 5 amp fused plug.

The heating element operates at a reduced safety voltage and the machine has its own 3.15 amp internal fuse, accessible at the rear of the body.

### **Installation**

For transportation purposes the black handle has been fitted to the upper arm in the reverse position. Before operating the machine this handle should be fitted to the correct position.

### **Operating Instructions**

Switch on the machine using the amber on/off switch on the side of the machine. Check that the switch lights up to indicate that the machine is powered.

The HM3000 impulse sealer is fitted with a single electronic timer controlling the heating cycle. When sufficient pressure is applied to the pressure bar, the audible 'click' of the microswitch and the illumination of the red LED indicator light will confirm that power is being applied to heat up the element.

The heating time is variable between 0 and 3.5 seconds using the external control knob. The power is then automatically switched off even though the pressure should be maintained on the pressure bar for 2-5 seconds to allow the polythene to cool and regain its strength.

If the pressure bar is released before the LED light goes out, insufficient cooling can result in premature wear of the Teflon barrier tape and other consumable spares.

To extend the service life of the consumable items, always operate at the minimum setting consistent with good seals and allow adequate cooling time before removal of the bag.

### **Setting the Heating Time**

Switch on the machine and set the timer control to position No. 2. Place the polythene bag between the jaws and depress the upper jaw to the preset stop point. The timer light will illuminate for a period of approximately one second. Allow a further two seconds to cool before releasing the pressure from the sealed bag. Examine the seal and progressively increase the heating and cooling time until a satisfactory seal strength is achieved.

### **Maintenance**

The complete element assembly can be unplugged (without tools) from the machine body so that it can be replaced with a new or reconditioned unit.

Removal of the Teflon barrier tape from the displaced element enables the wire to be inspected and replaced if kinked or damaged. When rewiring the element, ensure that the wire passes over the pins, down through the hole at each end of the bar and up through the contact pin hole. Secure one end with the nut and washer and tension the wire strip before tightening the remaining nut. This ensures that any excess wire is on the top of the element. It is important that this excess is removed to avoid any risk of a short circuit to the metal body that can result in damage to the timer circuit.

To replace the pressure pad, fit approximately 30mm at each end of the pressure bar and work the pad into the gap working towards the centre.

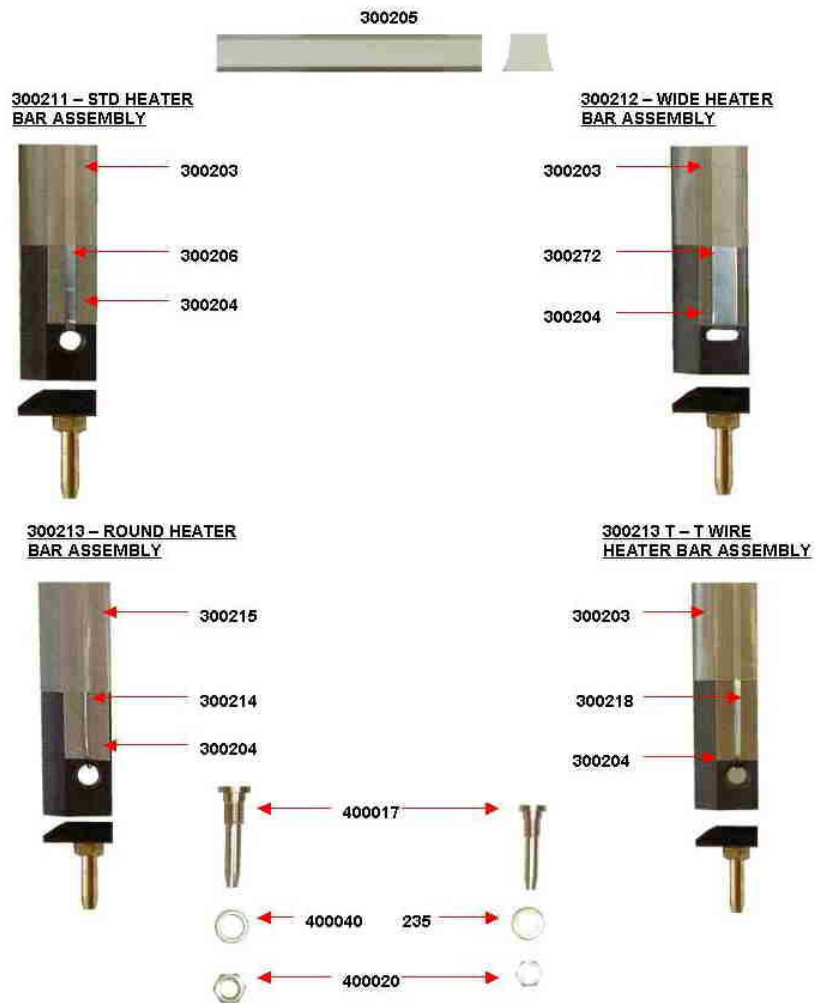


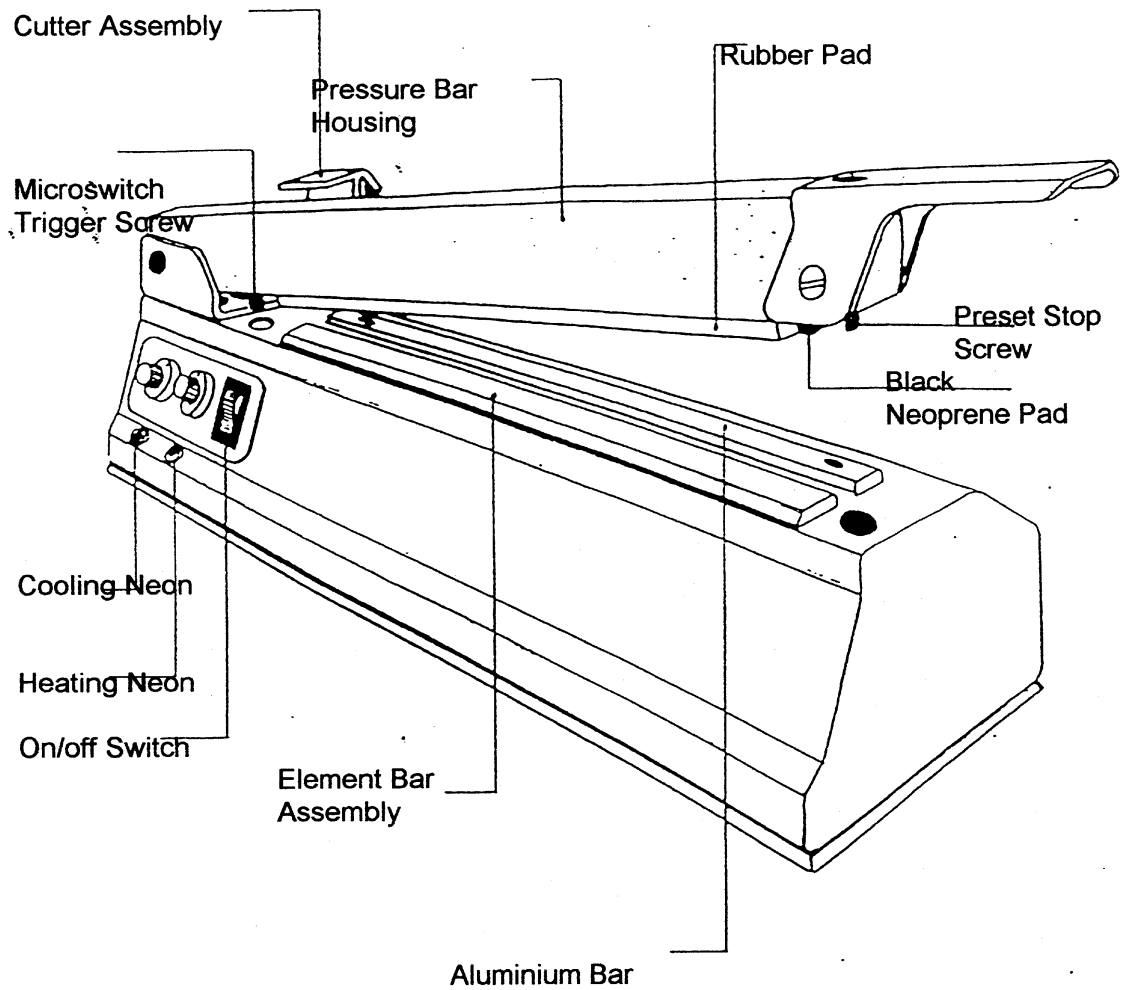
## SPARES

The following consumable spares will enable the machine to be serviced as required.

300211	Element Assembly complete	each
300203	Teflon Barrier Tape	pkt 5
300205	Rubber Pressure Pad	each
300204	Underwire Insulating tape	pkt 5
300206	Resistance wire strips	pkt 5

When ordering spares please quote the serial number of the machine as etched on the plate on the base of the machine. If special modifications such as wide seal elements have been fitted to the machine ensure that the spares department are informed when ordering these parts.





Spares Items For	3000
Element Bar Assy	300211
Teflon Barrier Tape	300203
Element Wire Strip	300206
Insulation Tape	300204
Soft Rubber Pad	300205
Black Neoprene Pad	300265
Safety Cutter Assy	445
Cutter Blades	490

## Hulme Martin Heat Sealers Duty of Care

### Directive 2002/95/EC on the restriction of the use of certain hazardous substances in Electrical and Electronic Equipment(RoHS)

The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

All machines manufactured from 1<sup>st</sup> April 2006 comply with the above directive.

### Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE)

The WEEE Directive aims to reduce the quantity of waste from electrical and electronic equipment and increase its re-use, recovery and recycling.

From 1<sup>st</sup> March 2007 Hulme Martin machines are marked with the 'crossed out wheeled bin symbol' to ensure they are dealt with separately from general waste. We can arrange to collect machines that are no longer required and ensure they are either recycled or disposed safely. We will record details of all collected and recycled machines.

**WEEE REG No WEE/DB1381SS**

### Packaging Directive

Directive 2004/12/EC (94/62/EC). Whilst we are not required to register under this directive we use minimal packaging to ensure your purchase reaches you in a first class condition. Packaging used has been recycled wherever possible and can be reused or recycled by the receiver.

### EC Declaration of Conformity

Machinery Directive 2006/42/EC

The Low Voltage Directive 2006/95/EC.

Electromagnetic compatibility directive 2004/108/EC.

Our machines comply with the above directives. All new machines are built to a high standard and subjected to visual and electrical tests at several stages during their manufacture. Once assembled we produce test seals to ensure quality standards are met. Finally every machine is Portable Appliance Tested to ensure electrical safety requirements are met.

### ISO 9000 Quality Management

Hulme Martin Heat Sealers Ltd operates from documented quality management systems to ensure we meet our customers' requirements. We conform to the required directives as listed above, and our equipment meets CE requirements. Customers are welcome to visit our factory to inspect our documentation and manuals.

### ISO 14000 Environmental Management

Hulme Martin Heat Sealers ensures its activities causes minimal effects on the environment. We continually monitor our practices to achieve the best possible improvement on our environmental performance.

### **Warranty**

In the unlikely event that it becomes necessary to return the machine for repair or maintenance, please ensure that it is adequately packed to avoid accidental damage and include your advice note detailing the date of purchase and invoice reference number. Defects occurring from faulty materials or manufacture will be repaired free of charge within the 12 month warranty period provided that the machine has not been misused; is correctly maintained, and has not been subject to unauthorised repair. Consumable spares items such as the heating element assembly, resistance wire strips, Teflon barrier tapes, rubber pressure pads and transportation costs are excluded from the warranty.

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