

# HM Operating Instructions

## HM3550



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 73/23/EEC

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.

# HM 3550 HAND SACK SEALER

## Operating Instructions

### General

Before connecting the machine to the electricity supply, check that the supply voltage is in the range specified on the name plate attached to the base of the machine.

The wires in the mains lead are coloured as follows:

Green & Yellow	Earth
Blue	Neutral
Brown	Live

To ensure that the machine is correctly earthed it should be connected to the mains supply using the pre-fitted 5-amp plug. If the plug is removed or an extension lead is fitted, please ensure the correct fuse rating is used in the mains plug.

The machine has its own 3.15amp internal fuse, accessible at the side of the machine. The exposed heating element operates at a safe low voltage.

### Mode of operation

To operate simply fill the bag with the product to be packed and use both hands to position the open edge of the bag over the sealing element. Push on the pressure plate using your knuckles until the microswitch operates. This is confirmed by an audible click and by the two red LEDs which indicate the two phases of the sealing cycle.

There are two orientations for this machine:

**Vertical:** The jaws operate through an arc which ends up directly below the front of the machine body. This is generally used when sealing liquids, powders and heavy packages. The machine can be mounted on the wall using the two keyhole slots in the rear of the body. Make certain that the screws and fixings are adequate to take the weight of the machine.

**Horizontal:** The jaws operate through an arc in front of the machine body. The machine should be attached to a bench with the jaws overhanging the front edge. Make use of the screw holes through the flanges on each side of the machine's body.

The machine is normally supplied for sealing packages which are held vertically. If you wish to use it in the horizontal mode simply remove the two screws which attach the linkage to the body of the machine and swing the

jaws upward so that the links can be re-attached to the forward of the two bosses on either side of the body. (Note machines can be supplied for use in the horizontal mode if required).

## Operating Instructions

Once the machine has been securely positioned, operate the amber ON/OFF switch on the right hand side of the machine. Check that it illuminates to indicate that the machine is correctly connected to the mains supply.

The machine is fitted with a dual electronic timer to control both the welding and cooling cycles required to produce a satisfactory seal. The settings for the timer can be established by trial and error as follows. Initially set the heating control setting to No.2 and the cooling to No.10. Operate the machine and when the two LEDs have gone out examine the seal. If the material has not sealed correctly, progressively increase the heating setting until a satisfactory seal is achieved. Then make further seals reducing the cooling time until the seal has only just set when the cooling LED goes out.

If the pressure is released before the cooling period is finished, the lack of cooling time may lead to premature deterioration of the Teflon coated barrier tapes and the element wire. To extend the service life of these consumable items, always operate at the minimum heat setting consistent with good seals and allow adequate cooling time before removal of the bag.

## Maintenance

The complete element assembly can be unplugged from the machine without the aid of tools 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 back up through the hole which takes the contact pin. Secure one end with the nut and tension the wire along the bar, by lightly bowing the heater bar, then fasten the wire at the other end.

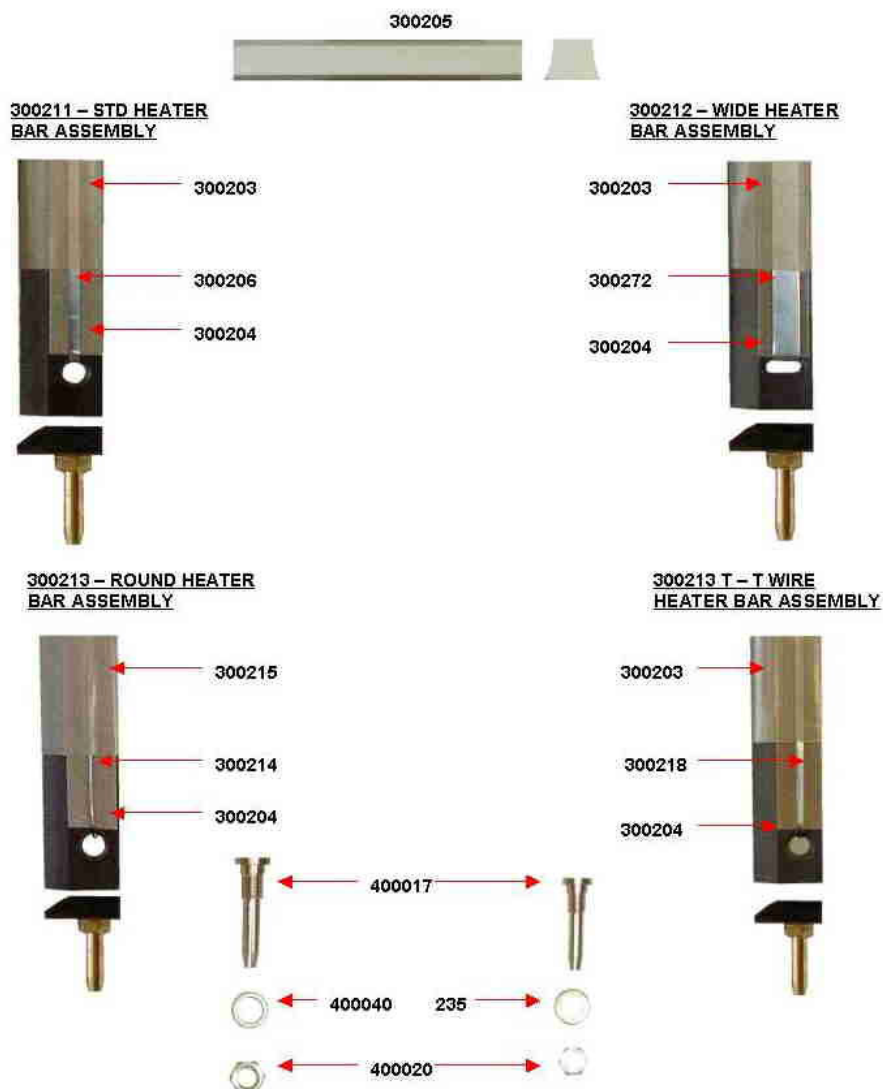
To replace the rubber pressure pad, fit approximately 30mm at each end of the brass pressure bar and work the pad towards the centre to ensure the pad is not stretched.

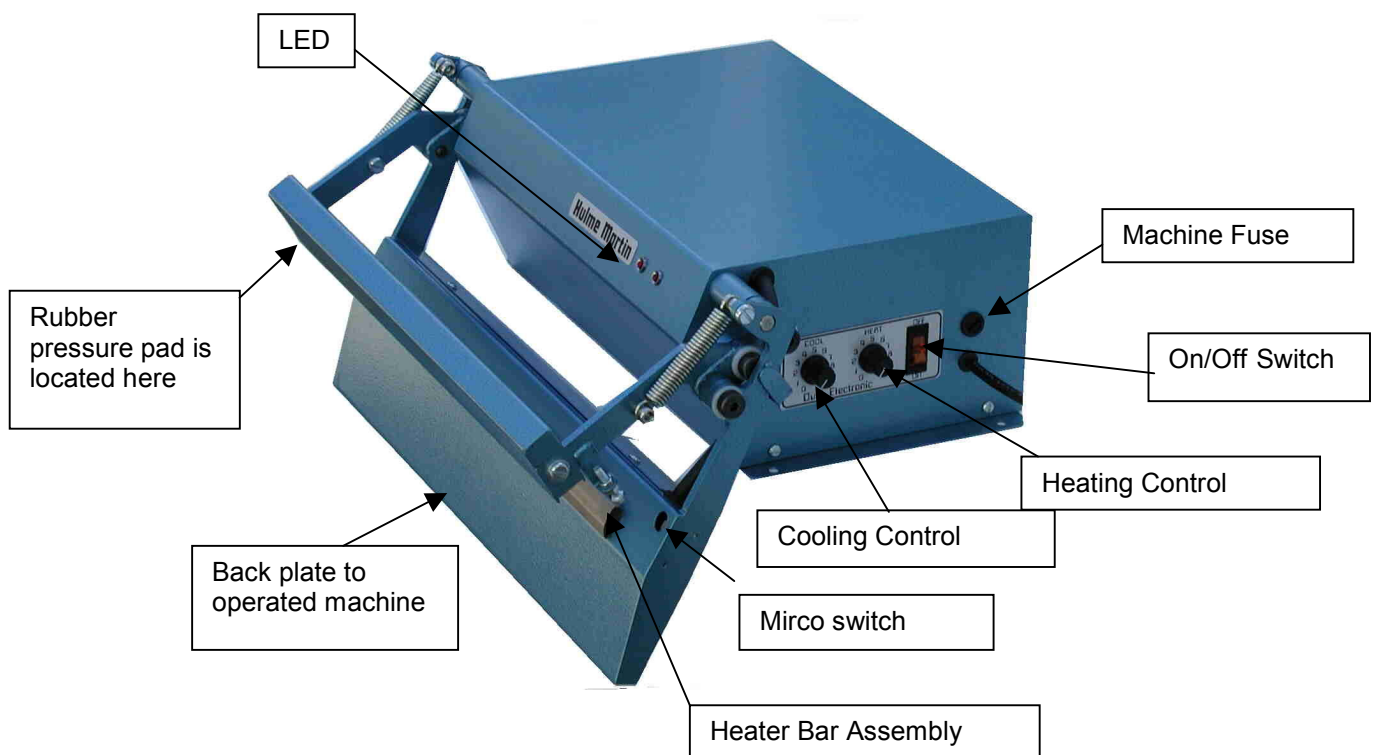
## Spares

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

300211	Element Assembly	each
300206	Element wire strips	pack of 5
300203	Teflon Barrier tapes	pack of 5
300204	Under wire insulation tape	pack of 5
300205	Rubber pressure pad	each

When ordering spares please quote the serial number on the base of the machine. If any modifications have been made please inform our spares department when ordering.





For use in the vertical, wall mounted position, the fixing centres are 288mm. We recommend No.10 round head fixing screws of an appropriate length depending upon the type of wall the machine is mounted on.

## 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 89/392/EEC (Amended 98/37/EEC)

The Low Voltage Directive (73/23/EEC) as amended 93/68/EEC  
89/336/EEC / Directive 2004/108/EC Electromagnetic compatibility.

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.

**HULME MARTIN HEAT SEALERS LTD  
Unit 5B, Country Business Centre,  
White Cottage Farm,  
Lucas Green Road,  
West End,  
Woking,  
Surrey  
GU24 9LZ**

Telephone 01483 476767 Fax 01483 486343

**[www.hulmemartin.co.uk](http://www.hulmemartin.co.uk)**