



Horrods

70 years of engineering excellence

Operating Instructions

**For safe use of
1-5 Drum Gas Fired Hot Air Rubber Melters
110 Volt Single Phase Electric Drive**



January 2023

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INTRODUCTION

Thank you for choosing to purchase a new W.J. Horrod Ltd Hot Air Rubber Melter. All our products are made to a very high, and recognised engineering standard, and if used correctly by a trained, certificated operative, to our operating and maintenance instructions, will increase the machines longevity.

Operatives must always read the manufacturers operating instructions before attempting to use the machine.

No attempt must be made to carry out any repairs or maintenance whilst equipment is in operation. Safe working practise is a legal requirement and must always be adhered to. Protective clothing should always be worn when operating this equipment.

Faulty equipment should be immediately shut down and reported directly to the supervisor/person in charge, and not used again until the fault has been rectified.

PLEASE NOTE

This unit was manufactured for use with hot rubber material only. Using any other materials goes against its intended use.

Using this unit for any other material could nullify the manufacturer's warranty.

IMPORTANT INFORMATION

- 1] NEVER attempt to operate the machine before carefully reading the following operating instructions and having been shown to do so by a qualified person. The machine must always be used outside.
- 2] Check power lead for damage and wear (where applicable) and ensure that the main power source is no more than **20 metres** from the Melter, as this will reduce the power flow and may lead to problems with the machine being unable to start. NEVER USE A 16-AMP CONVERTER LEAD ON A 32-AMP INLET PLUG. THIS WILL BURN OUT YOUR ELECTRIC MOTOR.
- 3] **Material should be placed into machine before lighting. IMPORTANT when adding material please ensure that the paddles are NOT running and should be stopped in the centre of the pan, i.e., vertical to the shaft. Once added close lids and re-engage paddle.**
- 4] **Material MUST always be covering THERMOSTAT CAPILLARY sensor tube to avoid OVER HEATING of material which can cause material to FLASH and CATCH ALIGHT.**
- 5] NEVER carry out any repairs or servicing whilst the machine is in use. All such repairs/service should only be undertaken with the motor stopped, and the gas turned off at the cylinder. Always allow the machine to go cold.
- 6] **When faults are discovered the machine should be shut down immediately, and these faults should be reported to the person directly responsible. The machine should, on no account, be used again until all faults have been corrected.**
- 7] NEVER operate the machine with safety guards or covers removed.
- 8] Always carry out oil level checks on gearbox when machine is cold before starting work. NEVER attempt to fill oil level whilst the machine is running. Carry out all necessary lubrications and service checks at the same time – using the correct or recommended lubricants.
- 9] **The machine should NEVER under any circumstances be left unattended when in use.**
- 10] **IMPORTANT: De-mountable machines must ONLY be lifted empty and NEVER with undercarriage attached.**
- 11] **CARE should be taken when using SCRAPERS, and TROWELS. If these items are dropped into the machine, IT WILL JAM the PADDLE which in turn will BURN out the ELECTRIC MOTOR/GEARBOX.**

I m p o r t a n t I n f o r m a t i o n

P R E - C H E C K S

G A S S Y S T E M : P R E - C H E C K S

For machines using LPG propane gas heating systems, all fixtures and fittings **MUST** be checked prior to every use for any damage or excessive wear & tear.

All joins should be leak tested using leak detector spray. Never use a naked flame to leak test.

P A T T E S T I N G : P R E - C H E C K S

Always ensure that the machines PAT test is up to date.

PAT Tests should be carried out every 3 months.

Lifting point certificate should be checked for validity and must be completed every 6 months, records should be kept.



- ✚ Digital thermostats will not function below zero. In order to ensure the correct operation, **turn on the stat** when starting the machine, and close the control box door. This will bring the digital stat up to working temperature.

USEFUL OPERATING INFORMATION AND ADVICE

- 1] **Never leave material in the machine unless:**
 - a] **it is unavoidable due to circumstances beyond your control i.e., weather conditions or the job is not ready to use the material etc.**
 - b] **The material is going to be used the following day.**

- 2] **We recommend this for the following reasons.**
 - a] **When a large volume of material is allowed to go cold, care must be taken, and more time allowed to re-heat the material before agitation of the material can begin. IMPORTANT: PLEASE ENSURE THERE IS NO WATER LYING INSIDE THE PAN EMPTY OR WITH MATERIAL INSIDE BEFORE YOU USE THE MELTER.**
 - b] **The material level must never be permitted to fall below the thermostat sensor probe, (illustrated on page 7 *Thermostat Capillary Tube*) whilst the Melter is in use.**
 - c] **Full protective clothing, including a full-face shield must be worn at all times.**
 - d] **Always load the machine equally using both loading hatches, this will prevent uneven loading and damage to the paddle assembly.**
 - e] **Always place the machine on level ground and apply all the brakes available.**
 - f] **Always secure the material outlet, and engine cover doors with suitable padlocks when leaving machine unattended, to prevent vandalism.**
 - g] **Never leave gas cylinders attached to the machine once you have finished using the machine for the day, they must be stored in a suitable lockable, gas cylinder cage.**

- 3] **I n t h e e v e n t o f a f i r e , p l e a s e f o l l o w t h e i n s t r u c t i o n b e l o w , i f i t i s s a f e t o d o s o ;**
 - a] **Turn off the gas from the cylinder(s), if the lids are not already closed, and it is safe to do so, close the lids. Disconnect the bottle and remove to a safe place. Do not open the lids for a least 60 minutes after the fire to allow the material, and the temperature within the pan to cool down. A full-face mask, and protective clothing should always be worn when operating Melters.**

Power - 110-volt motor/gearbox.

Check the power lead for damage and wear (where applicable) and ensure that the main power source is no more than 20 metres from the Melter, as this will reduce the power flow and may lead to problems with the machine being unable to start.

Electric Thermostat Control Machines

Warning: A red flashing beacon located on top of the gear box housing indicates the machines paddles are working.

If the red beacon is not flashing this indicates the paddle and the burner have stopped working, but the pilot(s) will still be alight. If your power supply should trip out, please ensure you have turned off the burner(s) before power is restored.

IMO/Stop/Start Control Box

Plug your lead into the male panel point on the machine; make sure the lead is placed so there is no danger of someone tripping over it. A 10-amp fuse is located in the small junction box under the left-hand gas control box.

The I.M.O controller has a red and green button on the front face. (As illustrated below)

It is also fitted with an AMP meter to show correct voltage.



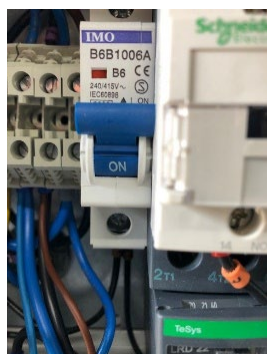
A red emergency stop mushroom button on the side – Green is on – Red is off.



Push the **GREEN** button to operate the paddle – push **RED** button to stop the paddle.

If you try to engage the paddles but it's not paddling back and forth, and you do not then stop the paddle, you will cause damage to the electric motor. Wait until the material is melted enough to allow the paddle to freely move it.

- To reset: Press and **HOLD** the **RED** button.



Power trip switch, if you have a power to the machine, please check the following;

Carefully remove the 4 corner screws, take the face cover off and locate the blue power switch.

This is the correct position the switch should be in, if switch is in the down position the unit has tripped out.

This can happen for a number of reasons, power surge, damp conditions or not enough power.

L i g h t i n g :

The cylinders to be used should always be checked to ensure no damage or debris is located in the inlet/outlet valve of the cylinder. Clearing dirt or debris with an air hose or similar, is the preferred clearing method. Using a clean dry cloth to ensure no particulates can obstruct a true seal between the connections. **Never use a short blast from opening the gas cylinder in an attempt to clear the threads.**

Connect 2 full 47 kg propane cylinders.

Connect the hose assembly(s) attached to the Melter, to the cylinder(s).

As above, ensure the connections are clean and free from dirt before connecting them to the bottle, the minimum distance between the cylinders and the machine should be 3 metres, and the armoured hose should be laid flat along the ground to prevent any trip hazards. The armoured hose that we supply with the machine is 6 metres long.

Once gas connections are completed check all gas tap(s) on the Melter are in the off position.

Turn the gas on at the cylinder(s), check connections at the bottle(s) and Melter for leaks using a LEAK DETECTOR SPAY, propane has a very distinctive smell.

Never use a naked flame to test for gas leaks.

M E C H A N I C A L T H E R M O S T A T :

Turn on and light the auto torch, depress the blue flame failure button, and light the pilot burner(s) using the auto torch. Keep the button depressed for approximately 15 seconds. After the pilot flame has been established turn off the auto torch.

Turn on the main burner toggle switch, slowly open the yellow handle burner ball valve(s).

Now leak test all remaining gas joints with the Leak detector spray.

Set the thermostat to the required temperature. Using the regulator on the propane bottle you can adjust the working pressure to the Melter. The regulator in the control box(es) has been set to 1.5 bar – 22 PSI.

PLEASE NOTE: Burner(s) will shut down once material has reached the required temperature, the material temperature will continue to rise between 10-20°C, this is due to residual heat in the machine. Once all the material has melted the temperature should equalize.

D I G I T A L T H E R M O S T A T :

Thermostats are factory set at 200°C Maximum and can be easily adjusted by the operator to suit material working temperature.

NOTE: Once the burners have switched off at the set temperature, the material heat will continue to rise between 10 and 20°C. Once the material is fully melted the temperature should equalize.

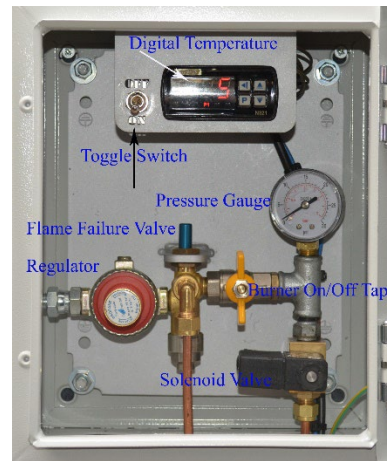
A d j u s t i n g T e m p e r a t u r e S e t t i n g :

- 1] Switch power on at the toggle switch.
- 2] Press 'P' for 1 second until 'SP' flashes.
- 3] Using up and down buttons set required temperature.
- 4] Press 'P' again to return to operation screen.

When temperature is below 0°C the digital display will present 3 dash lines - - -, leave the power switch and thermostat on and close the control box door, this will allow the heater which is fitted in the control box to raise the temperature above 0°C in the box.

PLEASE DO NOT ADJUST ANY OTHER SETTINGS.

MECHANICAL THERMOSTAT - DIGITAL THERMOSTAT

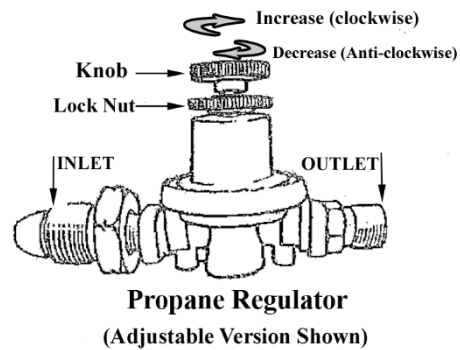
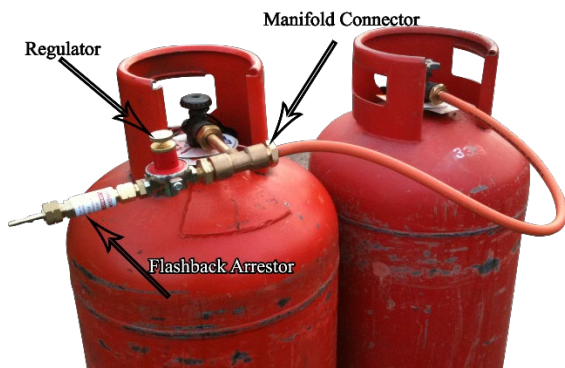


REMEMBER THAT LIGHTING THE BURNERS SHOULD ONLY TAKE PLACE ONCE THE MACHINE IS LOADED WITH MATERIAL.

NEVER PLACE HANDS WITHIN THE PAN WHEN THE MACHINE IS IN USE.

The photo below illustrates how you couple 2 bottles together with a manifold connector, if required, to stop cylinders freezing in the colder weather, and a diagram of the propane regulator supplied by Horrod's.

Propane Bottles Correctly Coupled together



All illustrations are for information and recognition purposes only and may not always be set up in the same manner on each machine. This is always contingent on the needs of the customer.

Heating Process:

Hot air machines work by producing heat from an open nozzle propane burner firing down a series of stainless-steel perforated tubes, allowing hot air and radiated heat into the heat exchange chamber. This type of machine has no oil-jacket and therefore heats the material faster, care should be taken not to heat the material too quickly, as this will create hotspots, especially on the first load when the machine is cold. Machines are fitted with a thermostat control unit, once the material reaches the temperature the unit has been set at, it will cut out the burners – the thermostat then controls the burners to maintain the heat level required to optimize the materials. (As from 2010 all new machines are fitted with Thermostat Control – it is no longer an option).

Thermostat Capillary Tube:

At no time should the molten material be permitted to fall below the thermostat temperature probe located within the material pan – as shown below in the diagram. The probe indicates the temperature to the thermostat unit and if this is not detected the burner(s) will remain lit and overheat the material causing it to ignite.



IMPORTANT: – When adding material DISENGAGE/STOP the paddle. Always STOP the paddle in the centre of the pan, i.e., vertical to the shaft. Once the material has been added, close the lids and engage the paddle.

When emptying the machine, always turn the main burner off.

Working Temperature:

170°C - 218°C – based on the information available at the time of writing. However, this may vary depending on the material manufacturer. Always check the manufacturer's guidelines and instructions when using these materials.

Expansion:

Material expansion is approximately 25% at working temperature. **Never overfill.**

A g i t a t i o n o f M a t e r i a l :

We are always asked the question when should the paddle(s) be initiated? The answer is when the material starts to melt and the paddles will operate, be very carefully at first as un-melted material may be present. NEVER force the machine if paddles are stuck, this will only result in damage to drive arms, etc.



M a t e r i a l P a c k a g i n g :

The material was packed in the beginning in what the manufacturers called 'drums', but this proved to be a health and safety issue due to the size and weight. The material is now packed in various ways, and differing weight/sizes depending on the manufacturer.

Shutting down the machine and leaving it safe/secure:

Procedure:

- 1) Turn off both gas cylinders. Once the burner and pilot are fully extinguished, turn all gas taps to the off position. (Flick toggle switch to the off position.)
- 2) Turn engine off (hydraulic drive only)
- 3) Remove plug from power source (electric drive only)
- 4) Dismantle hose and regulator assembly from the cylinders and store in a lockable cage or similar.
- 5) Lock the material outlet.
- 6) Make sure lids are closed and where possible lock the lid and engine access doors.
- 7) In accordance with the law, propane gas cylinders should be stored in a lockable cage/storage container

IMPORTANT:

Always ensure that you release the pressure from the regulator before you open full cylinders. This will avoid lockup pressure that will damage the flame failure valve.

HEALTH & SAFETY

- 1: Equipment should only be used by a trained, certified operative.
- 2: Lids must be closed at all times whilst the paddle is engaged.
- 3: Protective clothing and full-face mask should always be worn when operating this machine without exception.
- 4: Never leave equipment unattended when alight or running.
- 5: If a fault occurs, shut down the equipment immediately and report the fault to the person directly responsible.
- 6: Always turn the engine/burners off, and where applicable allow cooling before maintenance or repairs are carried out. Remove external power sources (where applicable).
- 7: When the machine is being used where the general public may come into contact 'HOT SURFACE' warning signs should be posted on and around the machine, and the machine enclosed with protective fencing.
- 8: Important (de-mountable machines only), machine must only be lifted empty and never with the undercarriage attached.
- 9: All machines are fitted with tested lifting eyes at time of manufacture; this means the machine has been test lifted. All our hire machines where applicable will always come to site with a current examination certificate for the shackles as the eyebolt are part of the machine and do not need certification. It is your responsibility to ensure any machines that are owned by your company are examined every 6 months. (Many sites require test lift certified documentation.)
- 10: Last, but not least, always remember that safety is everyone's responsibility, never do anything that is likely to put yourself or anybody else at risk.
- 11: Machine must never be used inside – only outside.

Horrod's advise that all operatives are retrained at least once every 24 months, to ensure that the knowledge acquired on these courses are of continued benefit to the user and any advances can be incorporated.

Regulators must be marked BS:3016 or BS: EN:12864 or BS: EN:16129. Any regulator marked BS:3016 will be over 10 years old and should be replaced.

Use only certified hoses to BS:3212 or BS: EN:1763-1 or BS: EN:16436-1 which bear the year and name of manufacturer or stainless-steel convoluted hoses marked EN:10380 as LPG attacks and erodes natural rubber.

WJ Horrod Ltd reserves the right to alter or change the content herein should legislation or other recommendations from manufacturers or suppliers change.

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