

FOREWORD

The information contained in this Instruction Manual is provided to you for the maintenance of your Thoreson-McCosh equipment.

Also included in this manual are operating instructions, a service parts list, and wiring diagrams. Please file this manual for future use.

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Section 1: THORESON McCOSH PRODUCT WARRANTY

Thoreson McCosh warrants each product of its manufacture to be free from defects in material and workmanship for a period of one (1) year from the date of delivery to the original purchaser. Thoreson McCosh's obligation under this warranty is limited to repairing or replacing any part returned to the Thoreson McCosh factory with transportation charges prepaid, and which, on examination by Thoreson McCosh, shall disclose to Thoreson McCosh's satisfaction to have been defective.

The purchaser must notify Thoreson McCosh of such defects and promptly deliver the defective part(s) in accordance with Thoreson McCosh's shipping instructions, delivery prepaid. Parts will be replaced F.O.B. Thoreson McCosh factory, by Thoreson McCosh, and will be invoiced to the purchaser with "credit on return of defective part", if the part is returned within fifteen (15) days after shipment of replacement part. Thoreson McCosh is not liable for installation or cost to install the replacement part or removal of the defective part.

Thoreson McCosh is not responsible for any failure of its product due to improper use, installation, or operation. Thoreson McCosh shall not assume any expense or liability for repairs made to any Thoreson McCosh unit or equipment outside Thoreson McCosh's own factory unless specifically agreed to in writing by Thoreson McCosh.

Equipment and accessories furnished by us, but manufactured by others, are guaranteed to the extent of the original manufacturer's guarantee to Thoreson McCosh, if that guarantee exceeds one (1) year.

It is expressly understood that Thoreson McCosh is not responsible for damage and/or injury caused to buildings, contents, products, or persons by reason of installation or use of any of our products. Thoreson McCosh shall not be liable for loss, damage or expenses arising directly or indirectly from, or being consequential or incidental to, the use of its products or from any other cause.

The above warranty supersedes, and is in lieu of all other warranties expressed or implied; and no person, agent, representative or dealer is authorized to give any warranties on behalf of Thoreson McCosh, not to assume for Thoreson McCosh any other liability in connection with Thoreson McCosh products.

Section 2: Operation

Section 2.1: Introduction

Tech III Multidry Controller: Introduction

The Tech III Multidry Controller determines material dryness based on the idea that as the return temperature from the hopper approaches the inlet temperature, the material is dry. Obviously, due to losses along the way, the inlet and outlet temperatures will never be the same, but at some point the difference (Delta T) is small enough that it will indicate that the material is dry. The program has been somewhat misleadingly labeled "Delta T" (T for temperature). However, in order to make the program more user friendly, we are only looking at the exhaust temperature to determine if the material is sufficiently dry, rather than a difference between the hopper inlet and exhaust temperatures.

Section 2.2: HOW IT WORKS

When the dryer is turned on, the preheater heats the air being sent to the hopper. The air temperature is measured at the exhaust of the preheater to control the temperature of the air to the **Process Set Point** temperature. The air continues to the drying hopper. In the hopper, some of the heat warms the plastic, thereby lowering the air temperature. At the exhaust of the hopper, the temperature of the air is again measured. Once the air at the exhaust of the hopper reaches the **Hopper Exhaust Set Point**, the dryer no longer tries to control the temperature of the air to the **Process Set Point** temperature, but instead, it uses the **Maintenance Set Point** temperature. It will continue to use the **Maintenance Set Point** until air at the exhaust of the hopper drops below the **Exhaust Set Point**. It will then return to using the **Process Set Point** until the exhaust temperature once again reaches the **Hopper Exhaust Set Point**.

2.3 Installation and Setup

The Multi-dry stand with preheater box should be hooked up as follows: Connect red 16 AWG wire from the preheater control box terminal block #3, to the dryer control box terminal block #3. Connect white 16 AWG wire from the preheater control box terminal block #2, to the dryer control box terminal block #2. Connect the fuse block in the preheater control box to a high power source with the proper gage (AWG) and voltage wire.

Section 2.4: THE TECH III DISPLAY

The first display shown is a scrolling display. This display reveals 2 lines of information per hopper. The first line shows whether the hopper control is on or off, the hopper inlet temperature, and the alarm status. Example:

Hopper Wet Hopper #1 Inlet=200°F

Or, alternatively:

Probe Failed Hopper #1 Inlet=200°F

NOTE: The "HOPPER WET" message is not an alarm, it is an indication that the Hopper Exhaust Temperature is not greater than the Hopper Exhaust Setpoint. This message will typically appear when the preheater is first turned on.

The next line to be shown will print out the temperature of the air leaving the hopper, and the process air temperature setpoint. Example:

Exhaust=125°F Setpt=200°F

The display will sequentially show the two lines from each hopper, scrolling automatically every three seconds to the next two lines to be shown. To "freeze" the display to show only the same two lines, press the TIME/AUTOSTART SETPOINTS button.. Press the ENTER button to start the display scrolling again.

Section 2.5: EDITING THE SETPOINTS

The setpoints can be edited by putting the key in the adjust setpoints position and pressing the TEMPERATURE SETPOINTS button. The display will show:

**Select Hopper number to edit Setpoints
Or press <RETURN>**

Select the Hopper to edit, or press the RETURN button to go back to the scrolling display. Example: Pressing 1, the display will show:

**HOPPER#1 INLET SETPOINT=200°F
NEW= °F Press <enter>**

This is the setpoint the preheater will try to maintain until the Hopper Exhaust Temperature exceeds the Hopper Exhaust Setpoint. Enter in the new setpoint and press the enter key. The display will cycle through each process air temperature setpoint, Hopper Exhaust Setpoint and each

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Maintenance setpoint. Example: once the Inlet Setpoint has been selected and the <enter> button pressed, the display will now show:

HOPPER#1 EXHAUST SETPOINT=120°F
NEW= °F Press <enter>

Until this setpoint temperature at the exhaust of the hopper is reached, the display will indicate that the Hopper is Wet, the Red light for the hopper will be on, and the preheater will control the temperature at the Inlet Setpoint. Enter in the new setpoint and press the enter key. The display will now ask for a Maintenance setpoint. Example: once the Exhaust Setpoint has been selected and the <enter> button pressed, the display will now show:

HOPPER#1 MAINT. SETPOINT=170°F
NEW= °F Press <enter>

Once the Exhaust setpoint temperature at the exhaust of the hopper is reached, the display will indicate that the Hopper is Dry, the Green light for the hopper will be on, and the preheater will control the temperature at the Maintenance Setpoint. Enter in the new setpoint and press the enter key. You will now be back to the following screen:

Select Hopper number to edit Setpoints
Or press <RETURN>

Select the Hopper to edit, or press the RETURN button to go back to the scrolling display.

Section 3: Alarm Message Chart

<u>Alarms</u>	<u>Message</u>
Hopper Inlet Temperature too high	TEMP TOO HIGH
Hopper Inlet Temperature too low	TEMP TOO LOW
Thermistor temperature probe failed. The failed probe's temperature will now read 999°F	PROBE FAILED