



Prof. T. W. Tibbitts
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6. Defrost cycle - Frequency and time of defrost varies. These are standard Paragon 24-hour timers in which pins can be added or removed to change frequency of defrost cycles.
7. If alarm lights go on -
 - a. Low temperature light - Check temperature on room thermometer. If low temperature persists, call for service on controls and monitor the room temperature if critical.
 - b. High temperature light - As certain if due to unusual load (door open, or increase in internal load) check room temperature shown on thermometer. Check to see if pump above room is running. Check brine temperature at chiller in penthouse. If the chiller is off for an extended period, it probably would be best to pull the room disconnect and keep the door closed until it is repaired.
8. Pulling main disconnect on outside of room will stop unit cooler and Dry-0-Matic fans, shut off power to all heating coils, stop the flow of brine to the cooling coils, and stop the individual room brine circulating pumps.
9. Very little routine maintenance is required. We will submit information on any recommended procedures beyond those shown in previous submittal.

On your question about turning off the Dry-0-Matic unit if necessary, I recommended turning the switch on the Dry-0-Matic unit to the "off" position. The ventilation air supplied to the Dry-0-Matic unit is taken from the building ventilating system which according to the specifications should not go above 55°F. I also suggested closing the air opening with tape to prevent leakage into the cold room if the Dry-0-Matic unit is not functioning. The Dry-0-Matic has an auto-off-manual switch mounted on the surface of the unit. In room 404 this is above the cold room ceiling.

We believe that the humidity problems encountered last November were caused by lack of proper pressure balance between the process air and the reactivation air (see page 8 of the Dry-0-Matic "Installation, Operations and Maintenance Instructions").

MESSNER
INCORPORATED



BOX 709 • 1326 EAST WASHINGTON • MADISON, WISCONSIN 53701

PHONE: 608-256-0695

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Closed dampers in the building ventilating system had reduced the process air drastically and the system had to be rebalanced.

When the new operating instructions are completed, I want to arrange a meeting with you, other interested University personnel and a representative of Climatic Controls.

Sincerely,

MESSNER, INCORPORATED

G. H. Harder
President

GHH/bb

CC: Don Sorenson
R. Lower
R. Ruechle
R. Zach

Simon

University of Wisconsin-Madison

Department of Horticulture
1575 Linden Drive
Madison WI 53706
(608) 262-1490

April 10, 1984

TO: Horticulture and Agronomy staff
FROM: T. Tibbitts
RE: Meeting with Messner, Inc.

A meeting with Messner, Inc. personnel is scheduled for Thursday, April 12 at 1:30 p.m. in Room 473 to answer questions and explain the control and operation of the controlled environment rooms in our new building.

The attached additional operating instructions have been provided to us. Please go over these and then come to the meeting and bring any specialists that might have responsibility for the room.

364-5373

From: Messner, Incorporated, Madison
Re: Plant Science Cold Rooms

Operating Instructions

Rooms 107, 109, 111, 113, 115, 117, 119, 27/A

Control Panels (See Wiring Diagrams B2532-1 and 2)

1. To set room temperature, turn set point knob on the TC4100-4 temperature controller to desired temperature in degrees centigrade (knob labeled "TC")
 2. For maximum humidity the dehumidification switch (labeled "DS") should be "off."
 - *3. For dehumidification turn dehumidification switch to "on" and turn knob on humidity controller (labeled "HC") to the desired percent of relative humidity.
 4. The low and high limits adjust automatically with changes in set point of room temperature control. The differential can be changed by adjusting the pick up and drop out voltage of the NQ4500-5 relays. (see climatic drawing B2532-1)
- *For additional dehumidification, turn-off some fans on the unit coolers. Manual fan switch mounted on one end of unit coolers inside the cold rooms.

Defrost - Paragon timer with 24 hour clock can be set for defrost as required. The pins have been taken out of most of the timers because frosting has not been a problem.

TROUBLE SHOOTING (by Lab Scientists)

1. Low temperature light "on" - Compare temperature readout in panel with room temperature control setting. If the temperature readout is substantially below the control setting, call for service.
2. High temperature light "on" - Compare temperature readout with room temperature control setting. If it is substantially higher find out if due to unusual load (door open, or increase in internal load). Check to see if circulating pump above the cold room is running. Check brine temperature at chiller in penthouse. If chiller is off for extended period pull the room disconnect and keep cold room door closed until chiller is operating.

MAINTENANCE

1. Controls require no maintenance.
2. Unit coolers require no maintenance.
3. Circulating pumps - See B & G "Instruction Sheet" for lubrication information.

April 5, 1984

From: Messner, Incorporated, Madison
Re: Plant Science Cold Rooms

Operating Instructions
Rooms 201A, 211A, 248A, 319A

Control Panels (See Wiring Diagram B2530)

1. To set room temperature, turn set point knob on the TC4100-4 temperature controller to desired temperature in degrees centigrade (knob labeled "TC")
2. The low and high limits adjust automatically with changes in set point of room temperature control. The differential can be changed by adjusting the pick up and drop out voltage of the NQ4500-3 relays. (See climatic drawing B2530)

Defrost - Paragon timer with 24 hour clock can be set for defrost as required. The pins have been taken out of most of the timers because frosting has not been a problem.

TROUBLE SHOOTING (by Lab Scientists)

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MAINTENANCE

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April 5, 1984

From: Messner, Incorporated, Madison
Re: Plant Science Cold Rooms

Operating Instructions
Rooms 404 and 436B

Control Panels (See Wiring Diagrams B2531-1 and 2)

1. To set room temperature, turn set point knob on the TC4100-4 temperature controller to desired temperature in degrees centigrade (knob labeled "TC")
2. For dehumidification, turn knob on humidity controller (labeled "HC") to the desired percent of relative humidity.
3. The low and high limits adjust automatically with changes in set point of room temperature control. The differential can be changed by adjusting the pick up and drop out voltage of the NQ4500-5 relays. (see climatic drawing B2531-1)

*For additional dehumidification, turn-off some fans on the unit coolers. Manual fan switch mounted on one end of unit coolers inside the cold rooms.

4. Defrost - Paragon timer with 24 hour clock can be set for defrost as required. The pins have been taken out of most of the timers because frosting has not been a problem.
5. The second TC4100-4 temperature controller controls the temperature of the ventilation air as it leaves the after-cooling coil in the Dry-O-Matic circuit. Normally it should be set at the same temperature as the room temperature controller
6. The Dry-O-Matic dehumidifier has an "auto-off-manual" switch on the side of the cabinet. This should normally be in "auto" position.

TROUBLE SHOOTING (By Lab Scientists)

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April 5, 1984

TROUBLE SHOOTING Cont.

2. High temperature light "on" - Compare temperature readout with room temperature control setting. If it is substantially higher find out if due to unusual load (door open, or increase in internal load). Check to see if circulating pump above the cold room is running. Check brine temperature at chiller in penthouse. If chiller is off for extended period pull the room disconnect and keep cold room door closed until chiller is operating.

3. If humidity in room or in ventilation air rises drastically check the "Operations and Adjustments" instructions on pages 8 and 9 of Dry-O-Matic manual. Because the Dry-O-Matic is connected to the building ventilation system (both supply and exhaust) it can be thrown out of balance by changes in VAV boxes and/or system dampers. Note the necessity of maintaining proper pressure balance between the two air streams in the Dry-O-Matic.

Kristin

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1575 Linden Drive
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April 10, 1984

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FROM: T. Tibbitts

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291A was meant to be able to be higher
404 hum. 40% (recently) steady → depends on [outside ventilation pressure (wh. varies because they clog)]. May hook up to building air instead. Will see.
Basement cold rooms 115

DS

dehumidification switch - should be off

if you want low hum. turn it on &

humidity control will occur

* can shut off fans on the blowers (1 at a time manually). This will help to reduce humidity because the air would move more slowly past the cooling coils.

19-21° F is normal brine T.
(on big red pump in penthouse)
(no shingles on it) UTILITY
key

If the brine gets hot & the rooms are being heated up pull the disconnect switch. This closes the 3-way valve & the fans. The brine bypasses the room & the fans won't be adding heat.

404 3rd "box" below humidity control
is a T control for
discharge air from cooling coil
after dehumidification (it is heated up
during dehumidification)
in the "dry-o-matic"

From: Messner, Incorporated, Madison
Re: Plant Science Cold Rooms

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