DIGITAL WARMING CABINETS

BASIC & D-SERIES

INSTALLATION-OPERATION-MAINTENANCE

USER MANUAL
For commercial Use Only
Contents

1. Warnings and Cautions

2. Installation

2-3. Operation / Troubleshooting

4. Fan Replacement (Upper)

5. Fan Replacement (Lower)

6. Door Hinge Reversal

7. Replacement Parts List

8-12. Wiring Diagrams

13. Error Codes
Warnings and Cautions

The following is a list of safety precautions that must be observed when operating this equipment.

⚠️ **Warning: Injury Hazard**

REPAIRS AND ADJUSTMENTS should be attempted only by experienced service representatives. Use of unqualified persons to work on this equipment could result in personal injury or costly damage.

⚠️ **Warning: Burn Hazard**

**Do Not** exceed 150 F for non-vented closures; (screw caps, crimp seals, plastic pouches, etc.). Do not exceed pre-sterile solution manufacturer’s temperature requirements.

**Do Not** raise set temperature to increase rate of heating. Allow approximately 4-6 hours for solutions to reach desired temperatures.

**Do Not** use liquids on or inject into living tissue, unless actual liquid temperature has been measured and is acceptable. Temperature of warming cabinet’s contents may be hotter than the displayed air temperature. For patient safety, in accordance with good medical practice, always check liquid temperature prior to using.

⚠️ **Warning: Electric Shock Hazard**

**Do Not** remove control tray. Contact a qualified service representative.

⚠️ **Warning: Explosion Hazard**

**Do Not** use in the presence of flammable anesthetics. **Do Not** heat liquids in the presence of flammable solvents.

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**Caution: Possible Equipment Damage:**

Some items are not acceptable in these warming cabinets. If in doubt as to whether an item can be safely processed, have facility supervisor contact the manufacturer of the item.

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**Routine Preventative Maintenance**

- Check the temperature accuracy on a semiannual basis by placing a thermometer near the fan inlet.
- Air temperature should be +/- 1 degree F for upper chamber and counter top units, and +/- 3 degrees F for lower compartment and large single cabinet units.
- If the cabinet is not within these guidelines contact Mac Medical for further assistance.

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**Location for use**

This unit is intended for use in a stable ambient environment, with an ideal temperature of 72 degrees F or less. The unit should never be used directly next to any appliance that may produce heat, such as an autoclave. If the unit location is near an autoclave or similar appliance, modifications may be made to ensure proper operation. Contact Mac Medical for information.

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**Recommended Settings**

Mac Medical does not recommend chamber set points. For appropriate heating temperatures, please contact the manufacturer of the goods being heated. For more information please contact Mac Medical.
Warning
Please review all safety precautions before operating Mac Medical equipment.

Installation

- Carefully un-wrap packaged parts.
- Place cabinet in front of its permanent location.
- Plug the unit into the correct electrical supply… 120 VAC, 15 amp max or 220 VAC, 7 amp max.
- Carefully slide the unit into its permanent location.

Installation for units to be wired directly to supply

- Remove screws and top cover (see page 6).
- Remove protection plate under top cover.
- Feed electrical supply into cabinet through rear of cabinet.
- Connect electrical supply as shown below.
- Reinstall cover and top.
- Carefully slide the unit into its permanent location.

Operation

This cabinet has been designed to heat:

- Liquids in vented containers.
- Liquids in non-vented containers to a temperature of 150 F maximum.
- Metal objects.
- Muslin or cotton sheets and wool blankets.
- Glass containers must be annealed borosilicate glass (Pyrex type).
- Plastic containers must be rated “Thermal” capable of withstanding temperatures in excess of 300 F.

Note:

- Load contents into compartment with a minimum of 1 inch of space between walls and fan to allow for circulation (as seen above).

Load

- Open the heating compartment door(s) and place the articles to be heated in the chamber, then close the door(s).

Start

- Apply power to the system by pressing the power switch to the “ON” position. (Each chamber has its own power switch).
### Operation

**Set processing temperature**

- Press “SET” and release.
- Press one of the arrow keys either up or down to reach desired set point.
- Press “SET” again to complete the change (If dual chamber unit, steps must be completed for both chambers).

**Note:**
The temperature setting may be changed at any time, however, reducing the temperature could activate the over temp alarm.

If alarm is activated and the control panel reads “HI”, complete the following steps.

- Press “ALARM RESET” to silence alarm.
- Open door(s) to release heated air.
- If the display reads “HI” and alarm remains, open door(s) and allow more cooling time.

**Note:**
If the alarm is activated under normal operating conditions, turn power to specific chamber off and call your Mac Medical representative at 1-877-828-9975

### Troubleshooting

**The Unit will not heat**

- Check that the doors are closed.
- Check that the power is on.
- Check that the building power is activated.
- Open doors and hold down door switch. If no noise is heard from fan operation, contact Mac Medical.

**The unit heats, but does not reach the selected temperature.**

- Allow enough operating time for the unit to reach the set point.
- Open doors and hold down door switch. If no noise is heard from the fan operation, contact Mac Medical.

**Audible alarm and “HI” message alert**

- The alarm is activated when actual temperature exceeds the set point by ten degrees.

**Audible alarm and “HI” message alert (Upper Chamber Only)**

- Possible heat transfer from lower unit.
- The temperature of the lower unit can be no more than 30 degrees F greater than the temperature of the upper unit.
- This problem can be prevented by lowering the temperature of the lower unit or by reversing the contents of the two compartments.
Fan Replacement (upper Drawer)

1. Turn off power switch and disconnect power to the unit.

2. Remove top cover from unit (the top cover has six (6) screws and two separate layers to remove).

3. Disconnect the black and white wires connected to the fan motor.

4. From inside the heating chamber, remove the outer fan guard (four (4) screws).

5. Remove the inner fan guard (two (2) screws).

6. Remove the nut from the fan’s drive shaft and remove the fan impellor (the nut has left-hand threads).

7. From underneath drawer, remove fan motor mounting screws, (three (3) screws). Remove fan motor from top of drawer.
   (The E clip on the motor shaft may snag. If so, tilt the shaft at an angle and feed it through the drawer base).

8. Install new motor.
   (The E clip on the motor shaft may snag. If so, tilt the shaft at an angle and feed it through the drawer base).

9. Be sure the terminals on the motor face the rear of the cabinet.

10. Install the three (3) mounting screws in the new motor; attach the black and white wires. **DO NOT** connect the (RED) element wire to the motor. This could cause serious mechanical damage.

11. Install the NEW washer, fan impellor, and nut. **DO NOT** over tighten nut.

12. Reassemble the fan guards and replace the top of the cabinet.
**Fan Replacement (Lower Drawer)**

1. Turn off power switch and disconnect power to the unit.

2. Open lower door and remove the drawer screws from underneath drawer (two (2) screws).

3. Carefully pull the drawer 3/4 of the way out, or until motor is accessible.

4. Disconnect the black and the white wires connected to the fan motor.

5. From inside the unit, remove the outer fan guard (four (4) screws).

6. Remove the inner fan guard (two (2) screws).

7. Remove the nut from the fan’s drive shaft and remove the fan impellor (the nut has left-hand threads).

8. From underneath drawer, remove fan motor mounting screws, (three (3) screws). Remove fan motor from top of drawer. *(The E clip on the shaft may snag. If so, tilt the shaft at an angle and feed it through the drawer base).*

9. Install new motor. *(The E clip on the shaft may snag. If so, tilt the shaft at an angle and feed it through the drawer base).*

10. Be sure the terminals on the motor face the rear of the cabinet.

11. Install the three (3) mounting screws in the new motor. Attach the black & white wires (See previous page).

12. Install the **NEW** washer, fan impellor, and nut. **DO NOT** over tighten nut.

13. Check to ensure that no other connections have been disturbed before pushing in drawer.

14. Replace drawer and drawer screws.
**Door Hinge Reversal**

1. Turn off power switch and disconnect power to the unit.

2. Remove top cover from unit (the top cover has six (6) screws and two separate layers to remove).

3. Open the cabinet door and remove the screws from the side panels inside the cabinet. *(The number of screws varies according to cabinet size).*

4. Remove all screws from the outer edge of the rear of the cabinet. These are the screws that secure the side panels of the unit (number of screws varies according to cabinet size).

5. Carefully slide each side panel toward the rear of the cabinet 2-3 inches and then remove the entire panel.

6. Tap out the door hinge pins (glass door only), and remove the glass door.

7. Remove the nuts from the rear of the hinge mount and remove the hinges.

8. Remove the hole plugs from the front of the opposing side of the unit.

9. Mount the hinges on the opposing side leaving them hand tight.

10. Reinstall the door, door hinge pins, align, and tighten the hinge mounts.

11. Reinstall side panels and top.

12. The door handles are now in the wrong position. Remove the opposing screws in the side of the door and reinstall.

*For dual steel door cabinets* a LH intermediate hinge, (part no. W0016) is needed to reverse doors. Contact your retailer or service technician for more information.
### REPLACEMENT PARTS FOR METAL OR GLASS DOOR WARMING CABINETS

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<thead>
<tr>
<th>Heating Elements</th>
<th>110V</th>
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- Foot Levelers…..W0135 (Counter Top Units)
- Glass Door Hinge…..W0068
- RH Intermediate Hinge……W0015
- LH Intermediate Hinge…..W0016
- RH Hinge…W0017
- LH Hinge…..W0018
- Door Switch…..W0012
- Door Switch w/long Stem…..W0012-01 (For bottom glass doors on dual chamber units and all stainless steel doors)
- Power Switch ON/OFF…..W0011
- Fuse Holder…..W0004
- 10” Data Cable…..W0108
- Ceramics…..W0010
- Fuse Holder (1518)…..W0188

Fuse 7A…..W0395
Fuse 10A…..W0396
Fuse 15A…..W0124
Fuse 20A…..W0125
Fan Motor (w/fan blade) 120V…..W0036
Fan Motor (w/fan blade) 220V…..W0106
Thermocouple….W0037
Overtemp Thermostat…W0042
Buzzer 110V…..W0013
Buzzer 220V…..W0013-220
Key Lock….W0102
Keys Only….W0102-Key
Solid State Relay….W0083
Heat sink Pad….W0137

**Old Style Control…..W0001**

**Current Control…..W0084**

Current Controler with Data Logger…..W0084-D
CONNECTIONS FOR SINGLE WARMING CABINETS
CONNECTIONS FOR TRIPLE WARMING CABINETS 110 AND 220
CONNECTIONS FOR SWC1518 WARMING CABINETS
CONNECTIONS FOR SINGLE USB
WARMING CABINETS 110 AND 220
CONNECTIONS FOR DOUBLE USB WARMING CABINETS 110 AND 220
CONNECTIONS FOR TRIPLE USB WARMING CABINET WIRING 110 AND 220
CONNECTIONS FOR SINGLE WARMING CABINETS
OLD STYLE CONTROL
CONNECTIONS FOR DUAL WARMING CABINETS
OLD STYLE CONTROL
Error Codes

Reversed Thermocouple connection +/-.

Sensor type Mismatch or open RTD.

Sensor type mismatch.

Open thermocouple, bad connection, broken wire.

Electrical noise.

Control is inoperable.

Cabinet temp is 10 degrees higher than setting.

Input temperature is lower than input range.

Input temperature is higher than input range.

Input sensor is not connected.

Controller failure

To Download Data:
1. Insert supplied USB stick into USB slot
2. Data download will automatically begin
3. During download display will read
   ![Image](801x690 to 982x743)
4. Download is complete once display reads actual temperature
5. Remove stick and insert into any PC
6. File will be in. CSV format and can be opened with most spreadsheet programs

Sample Printout

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