

## SECTION 3. OPERATION

### 3-1. INTRODUCTION

This section contains an explanation of all controls and components, and information on operating the HCH-930 and HCH-932. Read the Introduction, Installation and Operation Sections before operating the cabinet.

### 3-2. OPERATING CONTROLS

Figures 3-1 through 3-10 identify and describe the function of all operating controls and the major components of the cabinet.

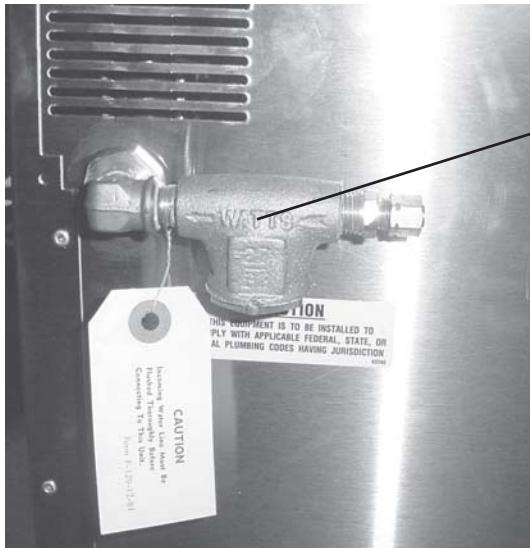


Figure 3-1

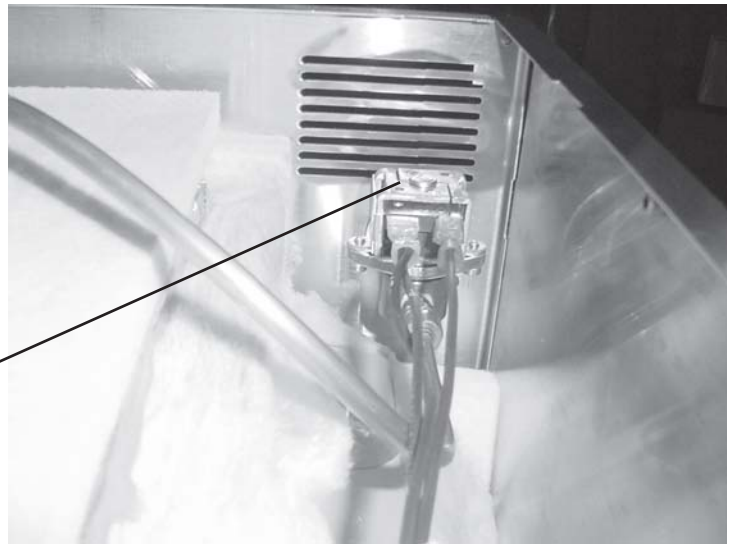


Figure 3-2

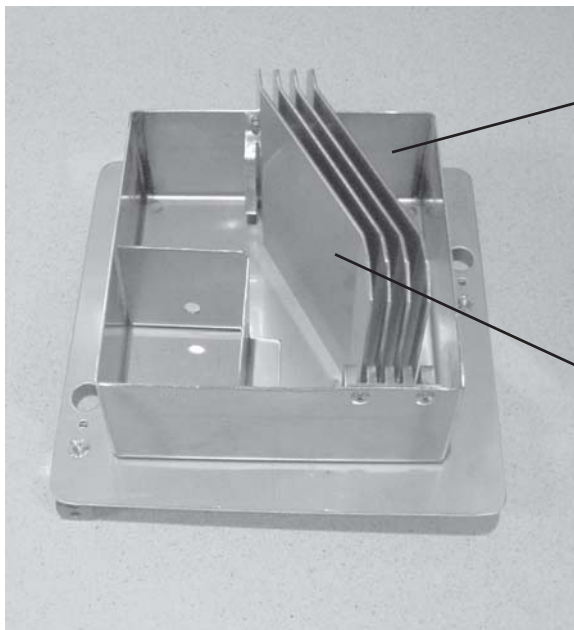


Figure 3-3

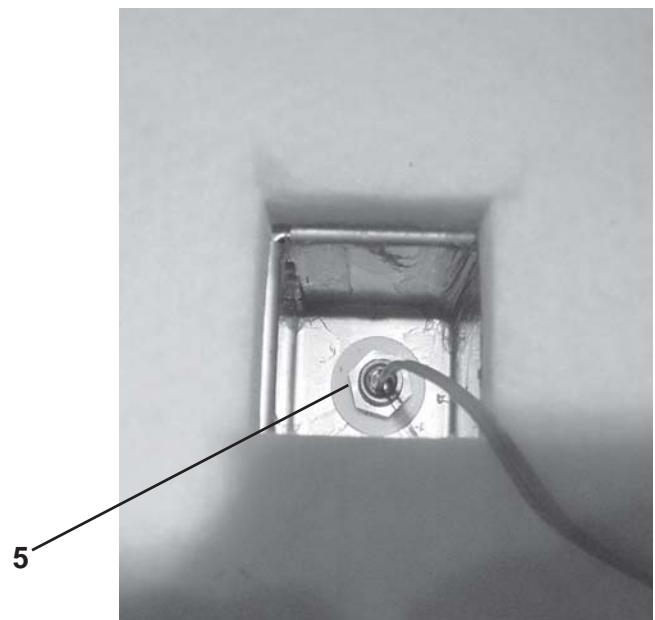


Figure 3-4

### 3-2. OPERATING CONTROLS (Continued)

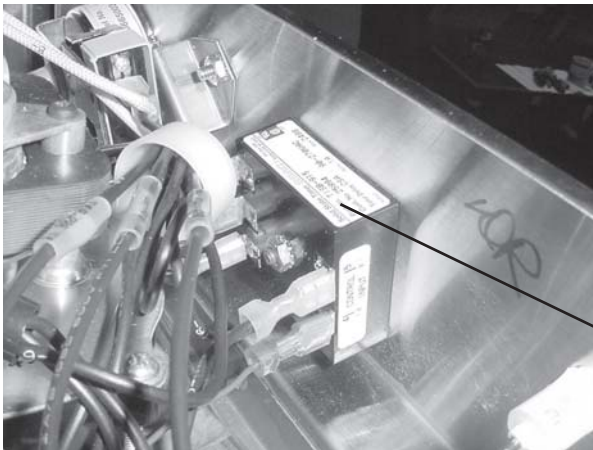


Figure 3-5

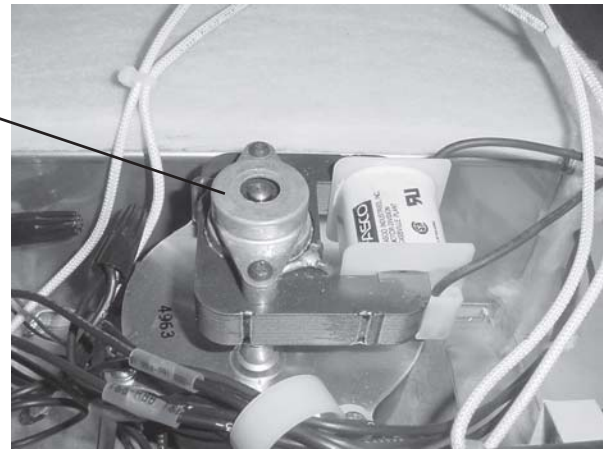


Figure 3-6

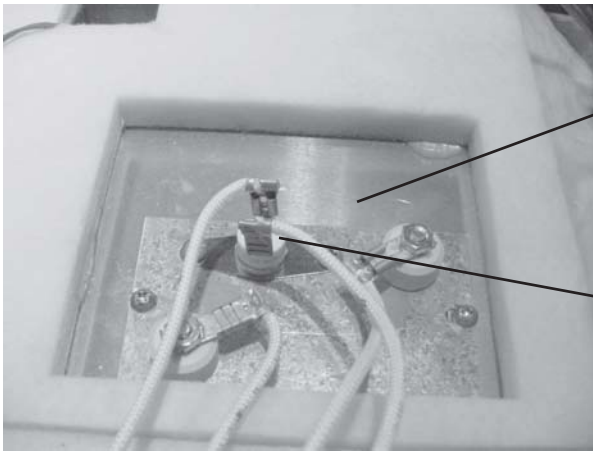


Figure 3-7

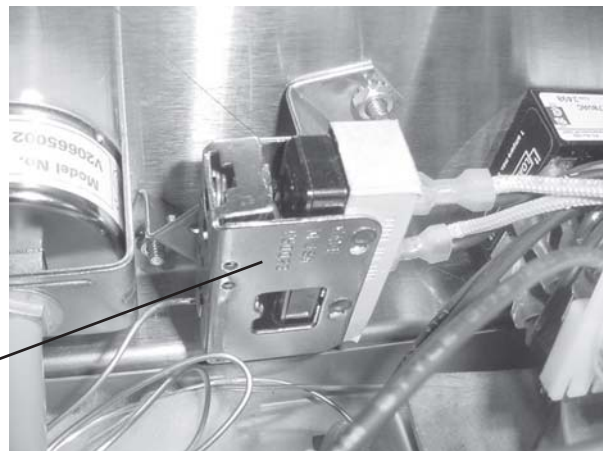


Figure 3-8

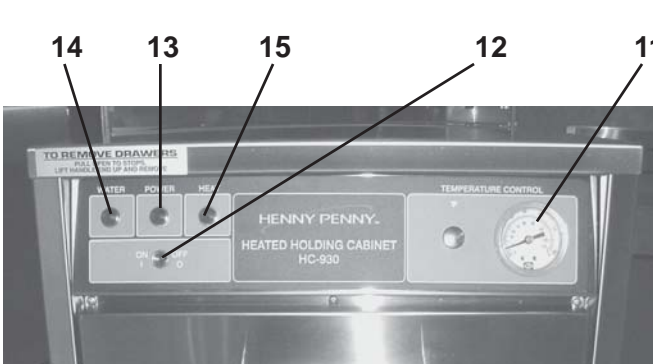


Figure 3-9



Figure 3-10

**3-2. OPERATING CONTROLS (Continued)**

<b>Fig. No.</b>	<b>Item No.</b>	<b>Description</b>	<b>Function</b>
3-1	1	Water Strainer	A filter preventing particles from entering the water line and blocking the water valve
3-2	2	Water Valve	A valve, opened by the float switch, that allows water to flow into the water pan
3-3	3	Water Pan	Holds the water for creating humidity inside the cabinet
3-3	4	Baffles	Metal plates placed in the water pan to transfer heat to the water to create humidity
3-4	5	Float Switch	An electromechanical level switch controlling the water level in the water pan
3-5	6	Solid State Time Delay Relay	Used to reduce the electrical load on the float switch and provide an automatic delay of 10 seconds to avoid overflowing the water pan
3-6	7	Blower	Circulates air up from the cabinet, through the heater coils, and water baffles, and back down into the cabinet
3-7	8	Heater	An 810 watt, open coil type heater
3-7	9	High Limit	A safety device mounted on the heater plate which protects the unit from overheating
3-8	10	Thermostat	An electromechanical device controlling the temperature inside the cabinet
3-9	11	Thermometer	Indicates the temperature inside the cabinet
3-9	12	Power Switch	Controls electrical current to the cabinet
3-9	13	Power Light	When lit, indicates the power switch is on, and that the components have electrical current supplied to them
3-9	14	Water Light	When lit, indicates the float switch is calling for water
3-9	15	Heat Light	When lit, indicates the thermostat is calling for heat
3-10	16	Fan	Circulates fresh air around the operating components

### **3-3. START-UP**

## **NOTICE**

Before using the heated holding cabinet, thoroughly clean the unit as described in the Cleaning Procedures Section of this manual.

#### **For CDT units:**

To operate the unit, move the power switch to the ON position.

Select either the A or B mode by depressing the UP button for A, or the DOWN button for B.

The display shows an increasing temperature indicating the cabinet is heating. When the operating pre-set temperature is reached, the display reads  $74^{\circ}\text{C} \pm 3^{\circ}\text{C}$  ( $165^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ) in the A mode, or  $85^{\circ}\text{C} \pm 3^{\circ}\text{C}$  ( $185^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ) in the B mode.

Place product inside the drawers, and press the appropriate timer button.

#### **For electromechanical units:**

Turn the power switch to the ON position to operate the cabinet.

The power light illuminates, indicating the unit is operating.

The water light illuminates, indicating water is flowing into the water pan. When the pan is full, the light goes out and the water stops flowing.

## **NOTICE**

A 10 second delay occurs before the float switch activates the water solenoid. This prevents overworking the components if the cabinet is bumped, or moved.

The heat light illuminates, indicating the unit is heating. Once operating temperature is reached, the light goes out. The operating temperature is factory preset and is reached within one hour.

### **3-4. OPERATION WITH PRODUCT**

1. Place hot product in the wire baskets, or pans, inside the drawers.
2. Serve the product first, that has been in the cabinet the longest.
3. Open the drawers only as necessary to load and serve product.

### 3-5. CLEANING PROCEDURES



**Step 3**



**Step 5**



**Step 7**

1. Move the Power Switch to the OFF position.
2. Disconnect electrical supply to the unit.



**To avoid burns, allow the unit to cool before cleaning.**

3. Remove the wire baskets from the drawers.
4. Take the baskets to a sink and thoroughly clean.
5. Remove drawers by pulling them out and tilting them up.
6. Clean the drawers with a cloth and soapy water.
7. Remove the drip tray from the bottom of the cabinet and clean it at a sink.
8. Clean the cabinet interior with a cloth and soapy water.



*Do not use steel wool, other abrasive cleaners or cleaners/sanitizers containing chlorine, bromine, iodine or ammonia chemicals, as these will deteriorate the stainless steel material and shorten the life of the unit.*

***DO NOT** use a water jet (pressure sprayer) to clean the unit, or component failure could result.*

9. Wipe the cabinet exterior with a damp cloth. Avoid getting water in the area of the control panel.
10. Replace the drip tray, drawers, and wire baskets.
11. If the unit is to remain turned off, leave the top drawer open two or three inches to help dry the interior.



### **3-6. PROGRAMMING** **(HCH-930/932 CDT Only)**

#### **Temperature Setting**

To change the setpoint temperature:

1. Press and hold the SET/TEMP button, and the setpoint temperature is displayed.
2. While pressing the SET/TEMP button, press the UP or DOWN button until the desired setpoint is displayed.
3. Release the SET/TEMP button to return to operating mode.

#### **NOTICE**

Before a temperature setting can be changed, the controls must be unlocked. See Special Program Mode Section of this manual.

#### **Timers Setting**

To change the timers setting:

1. Make sure the timer is not running. (Display is dim.)
2. Press the timer button to be changed and the preset time shows in the display.
3. While pressing the timer button, press the UP or DOWN buttons until the desired time is displayed.
4. Once the desired time shows in the display, release both buttons. The timer reverts back to the last mode of operation.

#### **NOTICE**

Before a timer setting can be changed, the controls must be unlocked. See Special Program Mode Section of this manual.

A timer can also be changed while it is in the countdown mode. This is only in effect for the remainder of that timing cycle. At the end of the timing cycle the timer reverts back to the previous time. To permanently change the timer, program it when the timer display is dim.

### **3-6. PROGRAMMING** **(HCH-930/932 CDT Only)** **(Continued)**

#### **Timer Operation**

When the timer is not running, the timer display is dim. By pressing the timer button and starting a timing cycle, the time remaining shows in the full brightness, and the decimal point in the lower right corner blinks.

All timers operate independently of each other and may be started, stopped, or aborted regardless of the status of the other timers. At the end of the timing cycle an alarm sounds, “00” flashes in the timer display, and the decimal point stops blinking. Press the timer to reset.

#### **Timing Through Power Down**

If a power interruption, such as brown out, occurs, the control checks the timers and cabinet temperature, once power is restored. If the cabinet temperature drops more than 7°C (10°F) the timing cycle ends and the alarm sounds. This informs the operator that this temperature drop may affect the product.

If the cabinet temperature drops less than 7°C (10°F), the timers continue timing from the point of the power interruption.

#### **Special Program Mode**

This special program mode consists of the following features:

1. Fahrenheit, “F” or Celsius, “C”.
2. Program Mode Lockout: Locked, “L” or unlocked, “U”.
3. One-button programming for times and temperature.

#### **To enter the special program mode:**

1. Turn the power switch to OFF.
2. Press and hold the SET/TEMP button while turning the power switch to ON.
3. Release the SET/TEMP button. “F” or “C” displays in the timer display, and “L” or “U” displays in timer 2 display.

### **3-6. PROGRAMMING** **(HCH-930/932 CDT Only)** **(Continued)**

#### **Celsius and Fahrenheit**

To change from Celsius (C), to Fahrenheit (F), or vice versa, enter the Special Program Mode, depress and release timer 1 button. This toggles the display from “C” to “F”, or “F” to “C”.

Turn unit off, then back on again to normal operation.

#### **Locked or Unlocked Controls**

The controls can be locked to prevent anyone from changing the times and temperature. The timers and temperatures cannot be changed until the controls are unlocked.

To unlock the controls, enter the Special Program Mode. Then press and release timer 2 button. The display toggles from “L” to “U”.

Turn unit off, then back on to normal operation.

#### **Initialization of Control Board**

The control can be reset to factory preset times and temperatures.

To reset the controls, enter the Special Program Mode. Press and release timer 3 button. The control reverts to factory settings.

Turn unit off, then back on again to normal operation.



### **3-7. PREVENTIVE MAINTENANCE**

#### **Deliming Water Pan and Baffles**

Inspect the water pan and baffles every 10 days for lime buildup, and clean when necessary.

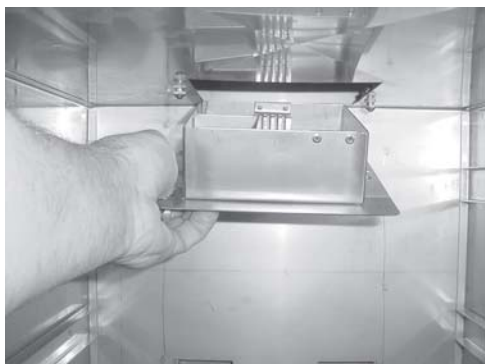
#### **CAUTION**

*Failure to keep the water pan and baffles free of lime buildup reduces the performance of the cabinet.*

1. Disconnect the electrical supply to the cabinet.

#### **CAUTION**

*Failure to disconnect power to the cabinet causes the interior of the cabinet to be “flooded” with water from the automatic water fill system.*



**Step 3**

2. Remove the top drawer from the cabinet.
3. Remove the water pan and baffles by supporting the pan with one hand and pulling out on the latches with the other hand. The water pan drops down from the ceiling.
4. Remove the 4 baffles from the water pan.
5. Clean the baffles and water pan with a brush, or other tool, to loosen and remove any buildup. If the buildup is excessive, a liquid chemical lime remover may help to remove lime.

#### **CAUTION**

*Do not use steel wool, other abrasive cleaners or cleaners/sanitizers containing chlorine, bromine, iodine or ammonia chemicals, as these will deteriorate the stainless steel material and shorten the life of the pan and baffles.*

6. After removing all lime buildup, rinse pan and baffles, and place water pan and baffles back into cabinet. Make sure water pan is secure against the ceiling of the cabinet.
7. Replace the top drawer and reconnect electrical supply to unit.

**3-7. PREVENTIVE  
MAINTENANCE**  
**(Continued)**



**Step 2**

**Clean Water Strainer**

If the flow of water into the cabinet slows or stops, the water strainer screen may be clogged. Follow the steps below to check and clean the screen.

1. Shut off water supply.
2. Remove the hex cap at the bottom of the strainer.
3. Remove the screen from the strainer and clean it. If strainer has a lime buildup, lime remover can be used.
4. Reassemble in reverse order.
5. Turn on water supply and check for leaks.

### **3-8. TROUBLESHOOTING GUIDE**

<b>PROBLEM</b>	<b>CAUSE</b>	<b>CORRECTION</b>
Product not holding temperature	<ul style="list-style-type: none"> <li>• Drawers are left open</li> <li>• Product held too long</li> <li>• Thermostat set too low</li> </ul>	<ul style="list-style-type: none"> <li>• Keep drawers closed except to load and serve product</li> <li>• Hold product only for the recommended times</li> <li>• Increase thermostat setting by removing hole plug on control panel and turning the shaft clockwise with a screwdriver</li> </ul>
Cabinet steaming or product soggy	<ul style="list-style-type: none"> <li>• Too much humidity inside cabinet</li> </ul>	<ul style="list-style-type: none"> <li>• Remove one or more baffles from water pan</li> </ul>
Water pan not filling	<ul style="list-style-type: none"> <li>• Water supply off or disconnected</li> <li>• Plugged water strainer</li> <li>• Corroded water pan</li> <li>• Faulty or corroded water valve</li> </ul>	<ul style="list-style-type: none"> <li>• Check water supply line</li> <li>• Clean water strainer</li> <li>• Clean water pan</li> <li>• Clean water valve; replace if necessary</li> </ul>
Water pan overflows	<ul style="list-style-type: none"> <li>• Water pan not installed or installed improperly</li> <li>• Corroded water pan</li> <li>• Faulty or corroded water valve</li> <li>• Faulty float switch</li> </ul>	<ul style="list-style-type: none"> <li>• Check water pan installation</li> <li>• Clean water pan</li> <li>• Clean water valve; replace if bad</li> <li>• Check float switch</li> </ul>
With switch in ON position the cabinet is completely inoperative	<ul style="list-style-type: none"> <li>• Unit not connected to electrical supply</li> <li>• Open breaker or fuse</li> <li>• Faulty cord or plug</li> </ul>	<ul style="list-style-type: none"> <li>• Plug cord into electrical outlet</li> <li>• Reset breaker or install new fuse in junction box</li> <li>• Check cord and plug</li> </ul>

## **NOTICE**

More detailed troubleshooting information is available in the Technical Manual, available at [www.hennypenny.com](http://www.hennypenny.com), or 800-417-8405 or 937-456-8405.

### **3-9. ERROR CODES**

<b>DISPLAY</b>	<b>CAUSE</b>	<b>PANEL BOARD CORRECTION</b>
“E-4”	Control board overheating	Turn switch to OFF position, then turn switch back to ON; if display shows “E-4,” the control board is getting too hot; make sure unit is not overheating
“E-6”	Wrong number of drawers programmed, or faulty temperature probe	Check to see if unit is set to the correct number of drawers, ex: MP-942=2 drawers (see programming instructions); have temperature probe checked for faulty probe
“E-41”	Memory scrambled	Press and release the UP and DOWN buttons to initialize the program; if “E-41” persists replace the control board
“Hi”	Unit over-heating; faulty relay or control board	Have relay or control board replaced