Dixie-Narco, INC

Technical Bulletin

Bulletin Number: 509 Revision Number: R-01

Release Date: August 6, 1998 Revision Date: November 12, 2001

SUBJECT: **TEMPERATURE CONTROLS**

MODELS AFFECTED: DNCB, DN, and DCB

REASON: To provide Temperature Control part numbers and installation instructions for various Dixie-Narco models.

INDEX

A
Temperature Control Application Charts for Dixie-Narco Venders

CONTROLS

Models	Domestic GE #	Domestic GE KIT * #	Export GE #	Cutler Hammer (Seibe)
Ranson-DNCB 368, 168, 180, 276, 348, 414, 440, 240, 501T, 600T, 432T, 300, 630T, 522T, 432	802,800,62x.x1	432,017,90x.x4	802,800,72x.x1	802,800,09x.x1
630	802,800,63x.x1	432,018,00x.x4	802,800,73x.x1	802,800,38x.x1
Williston-DNCB 368, 168, 180, 276, 348, 414, 440, 240, 501T, 600T, 432T, 300, 630T, 522T, 432	802,800,59x.x1	572,012,10x.x4	802,800,69x.x1	802,800,48x.x1
DGM- 79", 66", 56" PRIOR TO 7015		NA		802,800,44x.x1
7015 AND HIGHER	802,800,65x.x1	588,012,20x.x4	802,800,75x.x1	802,800,47x.x1
FLEXPAK (dmv) 72W / 72N FRONT FLOW	802,800,59x.x1		802,800,69x.x1	802,800,48x.x1
72N REAR FLOW 6310 & UP 72W / 6325 & UP	802,800,58x.x1	572,012,70x.x4	802,800,68x,x1	802,800,50x.x1
DN 2145 Single Control ECC 2054, 2054, 2145	802,800,65x.x1	588,012,20x.x4	802,800,75x.x1	802,800,47x.x1
276E	802,800,57x.x1	615,010,00x.x3	802,800,67x.x1	802,800,54x.x1
501E & 600E	802,800,58x.x1	609,012,20x.x3	802,800,68x.x1	802,800,50x.x1
700CV (SWITCH)	802,800,61x.x1	617,010,80x.x4	802,800,71x.x1	802,800,51x.x1
501E Kodak	802,800,61x.x1	617,010,80x.x4	802,800,71x.x1	802,800,51x.x1
DN 5000	802,800,60x.x1 Defrost	N/A	802,800,70x.x1	802,800,55x.x1
2145 / 5500 Dual Control	802,800,66x.x1	622,010,30x.x3	802,800,76x.x1	W654-1
	802,800,60x.x1		802,800,70x.x1	802,800,55x.x1

\# GE Controls are not approved for International use at the release of this document.

***** Kit includes adapter (804,916,19x.x1) to convert a vender originally equipped with Seibe, Cutler Hammer, or Ranco Controls.

SENSORS

DN 5000	804,915,73x.x1
DN 501E HT1, HT2, HVV	804,917,84x.x1
2100 Frozen	W403

B

ADJUSTMENT OF VARIOUS TEMPERATURE CONTROLS FOR ALTITUDE VARIATIONS

Ranco A12-1558
Ranco K12-L1535
Cutler-Hammer 9531N272

All Models except DNCB
630/360 –5 & –6

Cutler-Hammer 9531N222 DNCB 630 / 360 –5 & –6 Only

This is a "constant cut in" type of control which has two adjustments. They are:

1. The temperature control cam on the outside of the temperature control box.
2. The inside range screw or screws – see page A2 for details.

Note: The differential screw located between the terminals of the control is sealed and MUST NOT BE CHANGED.

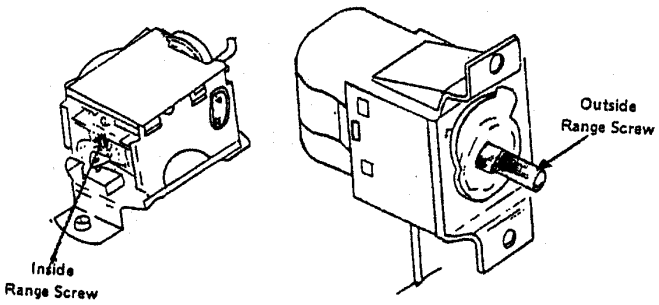
As to No. 1 Adjustment: (Outside Range)
The temperature control cam is set in an approximate neutral position. It can be used to make cut out temperture colder by turning the cam clockwise; or to make the cut out temperture warmer by turning the cam counter clockwise. When the cam is used to cut in temperature (which governs the defrost) remains constant.

As to No. 2 Adjustment: (Inside Range)
The inside range screw or screws are used for the altitude adjustment, see altitude below. This screw adjusts both the cut out and cut in settings on the RANCO. It may also be used for colder temperature by turning the screw counter clockwise or warmer by turning screw clockwise.

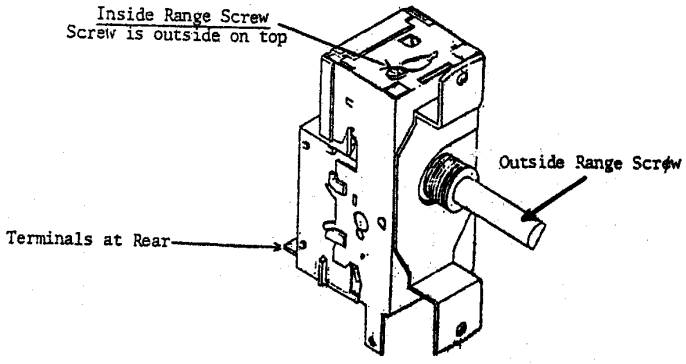
On Cutler-Hammer, there are two screws provided, one for cut in and one for cut out. Both must be adjusted for altitude corrections. For temperature adjustment, turn screws clockwise for colder and counter clockwise for warmer. When adjusting for temperature DO NOT TURN more than 1/8 of a turn at a time. Let the machine run over night before making further adjustment.

TEMPERATURE CONTROL ALTITUDE ADJUSTMENT
The temperature control is factory set for an altitude of 500 ft. For higher altitudes, the control should be adjusted to prevent product freeze-up. Adjust inside range screw as follows:

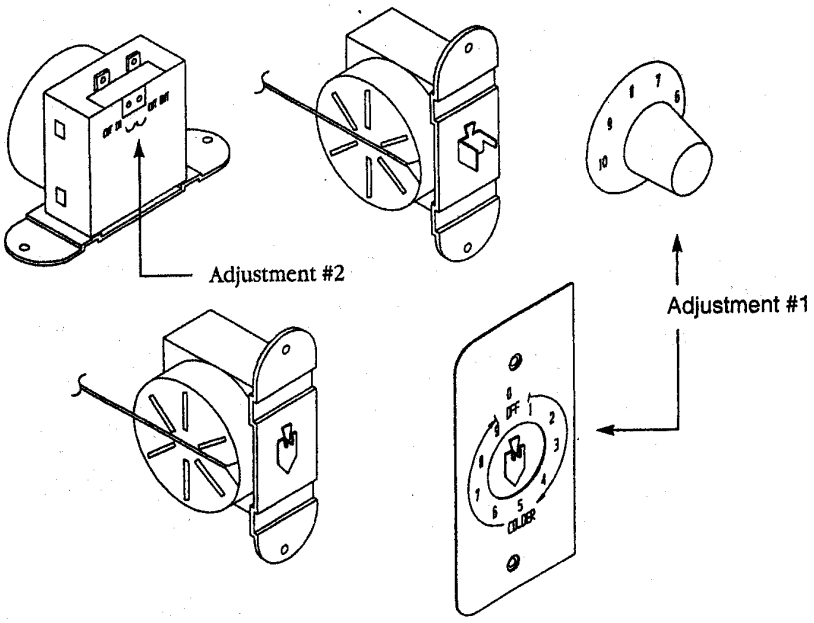
Altitude (FT)	**GE (see diagram pg. 4)**	**Ranco A12-1558**	**Ranco K12-L1535**	**Cutler-Hammer 9531N272 – 9531N222**
	Screw Counter-Clockwise	Screw Clockwise	Screw Clockwise	Both Screws Counter-Clockwise
2000	7/60 turn	1/4 turn	1/4 turn	1/8 turn
4000	15/60 turn	1/2 turn	5/8 turn	1/4 turn
6000	23/60 turn	3/4 turn	1 turn	1/2 turn
8000	1/2 turn	1 turn	1 3/8 turn	5/8 turn



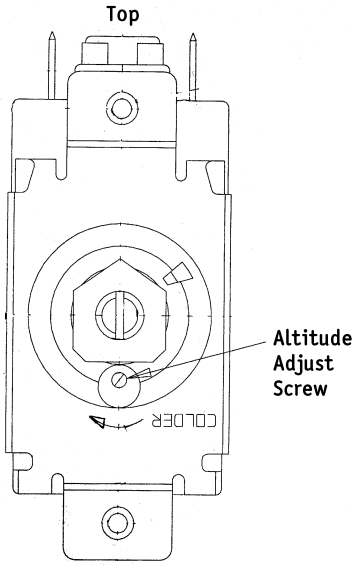
RANCO A12-1558

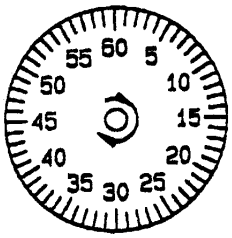


RANCO K12-L1535



CUTLER-HAMMER
9531N22-951N272





GE

C

DN, DCB, DNCB, & DNC (EXCEPT: DNCB 630/360-5 & -6)
TEMPERATURE CONTROL INSTALLATION INSTRUCTIONS
(VENDERS MANUFACTURED WITH TEMPERATURE CONTROLS WITH "EYELETS")

SUBJECT: Temperature Control – Revised (Cutler-Hammer)

REASON: To provide a Temperature Control with:

1. Terminals that require push on leads, (See Fig. 1) instead of eyelet type leads.
2. Power element that has a hairpin type configuration instead of a coiled pigtail. (See Fig. 1)

PART NUMBER OF TEMPERATURE CONTROL: 802,800,09x.x1-Cutler-Hammer (9531-N272)

INSTALLATION INSTRUCTIONS

1. Cut off eyelets.
2. Wire strip, install, and crimp .250 receptacle.

KIT FOR ONE TEMPERATURE CONTROL CONSISTS OF:

2 pieces 904,601,070.01-Amp #3-520141-2 Ultra Fast Receptacle .250 X .032
(Ship 2 Receptacles with each temperature control.)

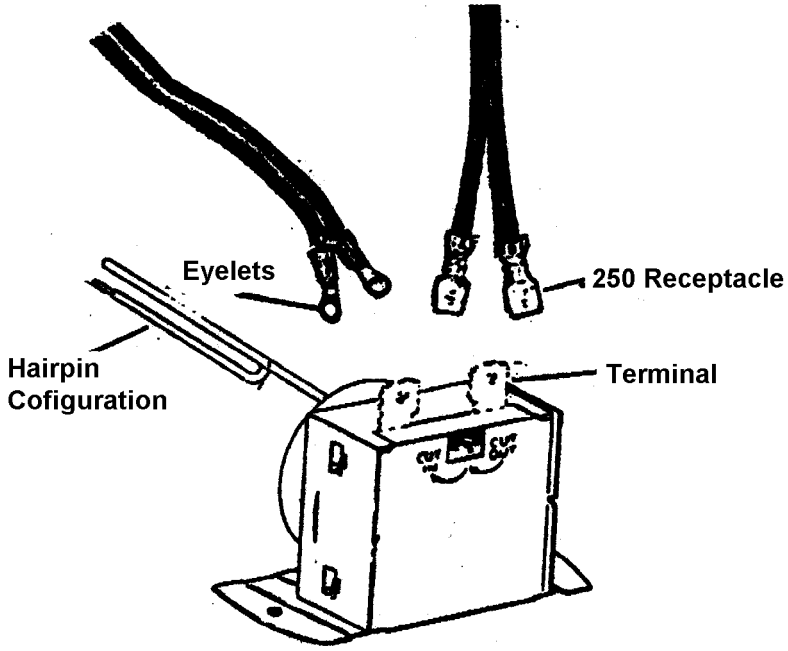


Figure 1

D

DN 2145 SINGLE TEMPERATURE CONTROL INSTALLATION INSTRUCTIONS

Models Affected : All DN 2145 venders built prior to 0001-8012CW.

Order: 802,800,47x.x1 Temperature Control (less tubing)

INSTALLATION INSTRUCTIONS:

1. Unplug the vender from the wall.
2. Remove the recovery unit.
3. Unload the bottom tray of the Glass Front Vender.
4. Cut the two wire ties that secure the front of the bottom tray.
5. Lift the front of the bottom tray and remove the bottom tray guard.
6. Lift the front of the tray up as high as possible and put a spacer between the bottom of the tray and tank to hold it up to allow access to the evaporator and temperature control tube. (Note: The cash box works as a good spacer when laid on its side.)
7. Remove the temperature control, control tube and clip from the evaporator.
8. Remove the two screws securing the temperature control to the AC distribution box.
9. Remove the top left screw securing the ground wire and AC distribution box to the vender.
10. Loosen the remaining top and two bottom screws securing the AC distribution box. (Note: Do not remove the screws as there are key holes in the AC distribution box.)
11. Lay the AC distribution box on its face.
12. Remove the existing temperature control by cutting or breaking the control tube near the temperature control body. Then pull the control tube through the hole in the cabinet, from the refrigerated side of the cabinet. Discard the old control, control tube, and clip.
13. Straighten the control tube of the new control. Be careful not to kink or crack the control tube.
14. Secure the new temperature control to the AC distribution box with two screws removed in step 8. Note: Verify that the OFF position of the temperature control aligns with the OFF position on the label.
15. Remove the bushing on the left side of the AC distribution box that the control tube passes through.
16. Place the bushing over the control tube of the new control.
17. Route the control tube through the bottom cable hole in the side wall and over to the evaporator. (Note: This is the hole you remove the existing element through in step 12.) Again, be careful not to kink or crack the control tube.
18. Carefully put the control tube in the key hole in the side of the AC distribution box and slide and snap the bushing (removed in step 15) back in the hole.
19. Carefully place the AC distribution box back in position on the three mounting screws and secure by tightening the screws.
20. Install the ground wire and screw removed in step 9.
21. Locate the end of the temperature control tube in the cabinet.
22. Using your index finger as a forming device, at approximately 3" from the end, bend the control tube over the end of you index finger as shown in figure 1. Check figure #3 for example of installation. Be careful not to kink or crack the control tube.

23. Again, using your index finger as a forming device, put a right angle bend (B) in the control tube as shown in figure 2. Again, be careful not to kink or crack the control tube.
24. Carefully push the bend created in step 21 in the evaporator between the bottom and second coil. Note: Area "A" goes in first (see figure 1.).Remove the spacer (cash box) and place the bottom tray back in position.
25. Lift the front of the bottom tray and install the bottom tray guard removed in step 6.
26. Secure the bottom tray to the mounting bracket with wire ties.
27. Install the recovery unit.
28. Ensure temperature control is at setting #5.
29. Plug in the vender and test for proper operation.

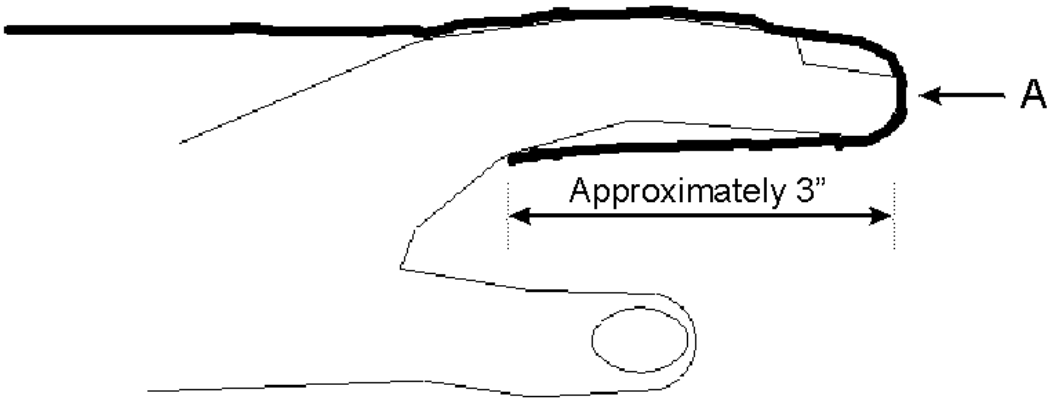


Figure 1

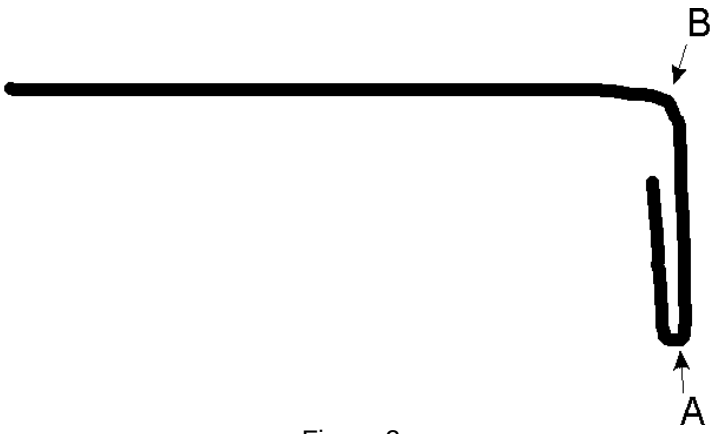


Figure 2

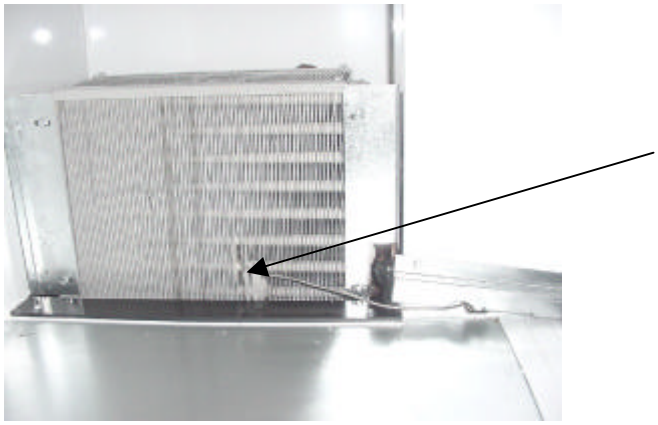


Figure 3

E
DN and DNCB Venders

Installation Instructions:

1. Unplug the vender from the wall.
2. Remove the mounting screws of the temperature control.
3. Remove the sensor of the control from the evaporator fan shroud. To ease the removal of the sensor, insert a wide blade screwdriver in the slot of figure 3, twist the screwdriver slightly which will open the slot enough for removing the sensor.
   On Ranson produced venders prior to run # xxxx-6000 the sensor will be placed behind the evaporator in a copper tube approximately ½" in diameter.
4. Reinsert the sensor lead of the control (figure #1) in the slit provided in the evaporator fan shroud (figure 2).
   In Ranson produced venders, insert the sensor in the copper tube behind the evaporator. Push the lead in the tube until it stops.
5. Repower the vender.

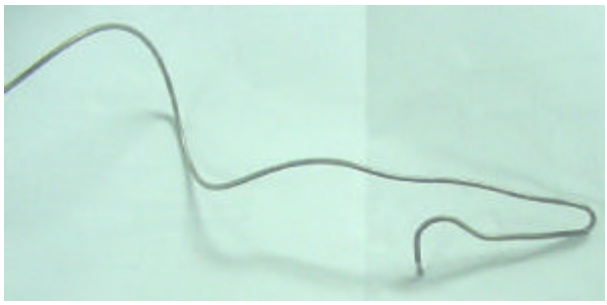


Figure 1

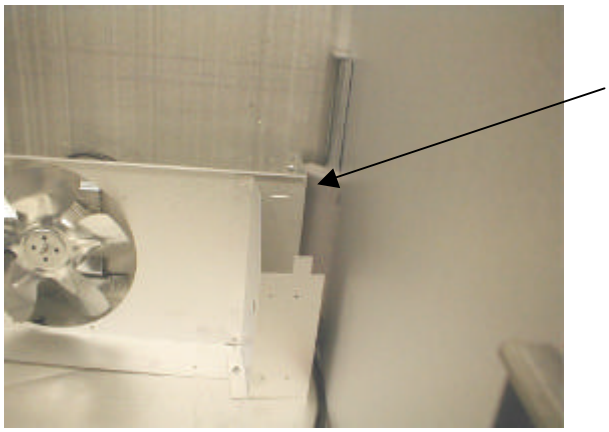


Figure 2

Figure 3

F

DN 5000 Glass Front Vender
Defrost Control Installation Instructions

Tools Required:

3/8” socket
#2 Philips screwdriver
7/16” socket

Installation Instructions:

1. Remove power from the wall outlet.
2. Remove the Air Deflector from the top of the refrigeration unit and lay it flat. The Air Deflector will be used to shield the main power harness.
3. Unplug the evaporator, main power harness, and refrigeration from the AC distribution box.
4. Remove 7/16” nuts securing the top hinge of the service door.
5. Lift the door from the lower hinge and lean it against the right side of the cabinet.
6. Remove the 3/8” bolts securing the refrigeration unit.
7. Remove the refrigeration unit.
   IMPORTANT: Use caution when sliding the unit by the row harnesses on the left.
8. Check figures 1 and 2. Notice the positioning of the sensor lead on the Defrost Control.
9. Remove the sensor from the evaporator.
10. Remove the Phillips screws that are securing cover of the defrost control and then the Phillips that are securing the Defrost Sensor.
11. Install the new Defrost Sensor.
12. Install the defrost control cover. Remember the wires to the control are strapped to the cover.
13. Reverse instruction #1-9.

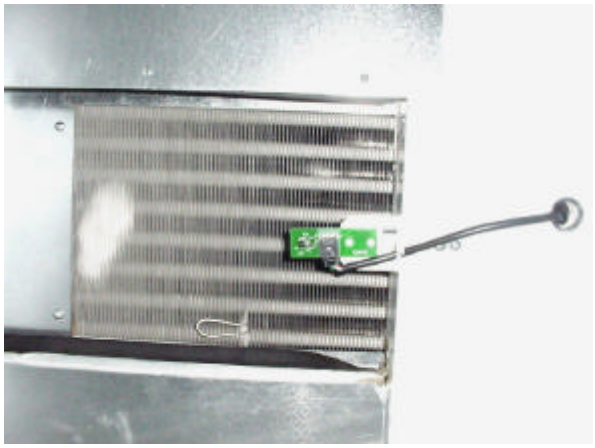


Figure 1

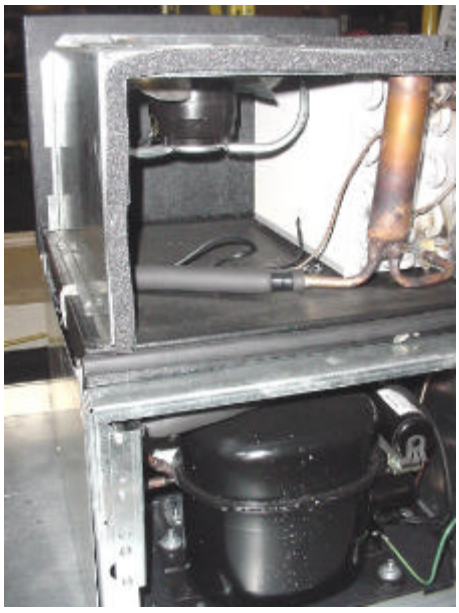


Figure 2

G

Electronic Sensors Installation Instructions
DN 5000, HT1, HT2, HVV, DN 2145, ECC 2054, ECC 2045, ECC 2145

Installation Instructions:

1. Remove power from the AC distribution box. On ECC models, turn the power switch to the “OFF” position.
2. To insert the Temperature Sensor in the Evaporator check:
   a. Figure 1 for DN 2145 and ECC models
   b. Figure 2 for DN 5000
   c. Figure 3 for sensor in DN 501E and DN 600E.
3. On DN 5000, DN 2145, and ECC 2145, remove the product from the bottom shelf in the #9 position. On earlier ECC 2054 and 2045 models, the tray will need to be lifted and support the tray to install the sensor.
4. Remove the slide or product pusher to insert the sensor.
5. Insert the sensor in the center of the evaporator between the coils.
6. Remove the putty sealing the opening in the center wall.
7. Insert the harness through the opening . Tape the connector down to prevent it from jamming in the insulation of the wall.
8. Insert the putty in the opening of the center wall.
9. Plug the connectors to the sensor and the connector on the control board labeled “TEMPSENS” or “TEMPERATURE”.
10. Re-power the vender.
11. To check for proper operation of the sensor, press “F*” for Fahrenheit (“C” for Centigrade) for the DN 2145, ECC 2054, 2045, and 2145. On DN 5000, DN 501E, and DN 600E enable the “DISPLAY” routine. Monitor temperature for several minutes to ensure proper operation.

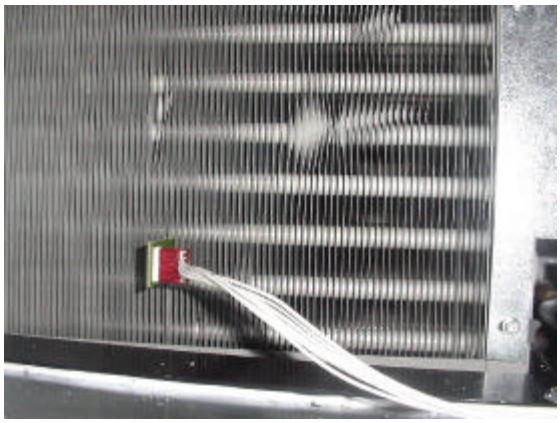


Figure 1

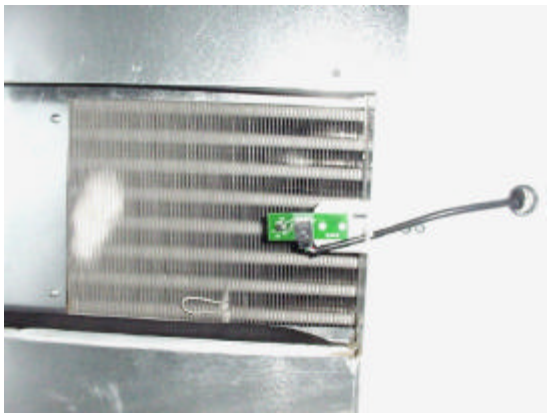


Figure 2

Figure 3

H

Electronic Sensors Installation Instructions
ECC 2100

Tools required: #2 Phillips Screwdriver

Installation Instructions:

1. Turn the power switch to the “OFF” position on the AC distribution box.
2. Open the glass door.
3. Remove the screws securing the evaporator cover in place. When removing the second screw, the cover will drop down. Don’t forget about the bushings.
4. Remove the sensor from the evaporator. See figure 1 below.
5. Reverse the procedures to install.

Figure 1