



# True Manufacturing Company, Inc.

BUILDING THE FINEST COMMERCIAL REFRIGERATION-True, "The Best of the Cold Ones"



## INSTALLATION INSTRUCTION

**DANFOSS TEMPERATURE CONTROL REPLACEMENT FOR REFRIGERATORS & FREEZERS**  
(For TPP, TUC, TWT, & TSSU Cabinets With Larger Than 1/3 H.P. Compressors)

### STEP 2

Removing shelving standards and I-beams (for TUC, TSSU, & TWT-72 only):

A. To remove side shelf standards back-out two plastic thumb screws on either side of the cabinet (See Figure 1). Then back-out four 1/4" hex screws that support the center I-beam in the rear of the cabinet (See Figure 2). Mark locations and positions of standards with tape for easy installation.

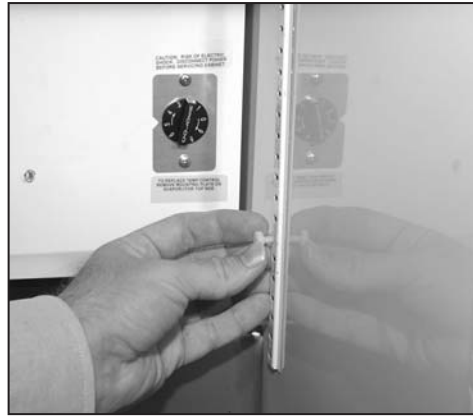


Figure 1



Figure 2

Figure 1. Removing Evaporator Housing Cover (TUC, TSSU, & TWT-72).

### STEP 3

Removing Evaporator Cover (TUC/ TWT-72 only):

A. Remove four slotted thumb screws with a standard screw driver. Then remove two phillips-head screws next to the temperature control knob. At this point all cabinets with pans (TSSU models) can have the pans removed for easier access to the temperature control. Gently move the evaporator cover away from the rear of the cabinet to reveal the temperature control. (See Figure 3)

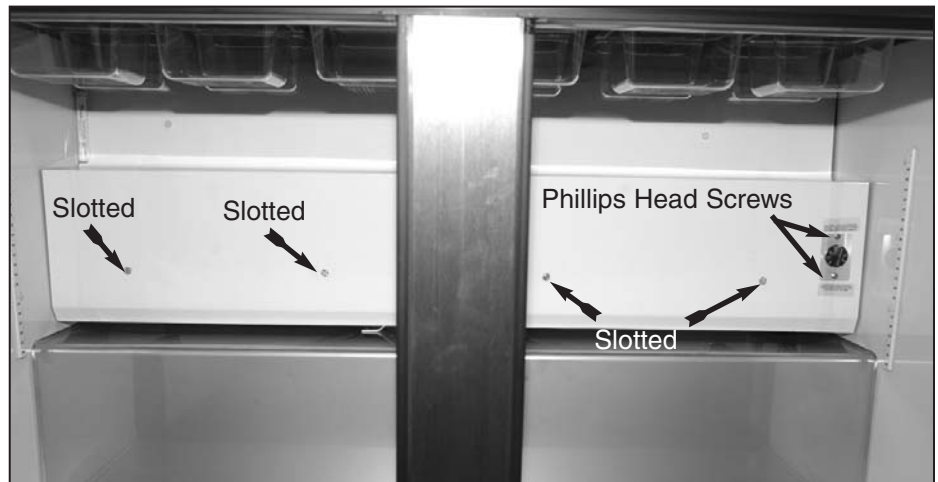


Figure 3. Removing evaporator lid

## WARNING:

**Failure to disconnect power to the unit may result in electrocution to field personnel.**

### Qualified Repair Personnel:

These repairs should be performed by a qualified service technician.

### Required Tools:

- Phillips-head Bit
- 1/4" Nut Driver Bit
- Wire Cutters
- Drill
- Needle-Nose Pliers
- Wire Strippers
- Crimping Tool
- Voltmeter
- Plastic Mallet or Hammer
- Slotted Screw Driver

### Contents of Relay Kit:

- Relay (and mounting screws)
- (4) Relay wires: 2 blacks, 1 pink, 1 white with insulated female spade connectors on one end.
- Grommet
- (4) Sta-con connectors
- New temperature control
- Instructions

### Kit Part Numbers

# 882635 for the TPP-93, TUC/TWT-93, TSSU-72-18's

# 882636 for the TSSU-72-30M-B's

# 883552 for the TPP-119, TWT-119, TUC-119

### STEP 1

Removing Power:

A. Disconnect power to the unit.

### Note:

Step 2 and 3 are related to TSSU, TUC, and TWT-72 models only. All other models go directly to step 4.



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### **STEP 4**

**Locating and removing temperature control (for all models):**

A. The temperature control is inside the cabinet on the right-hand side. Back-out two thumb screws holding the temperature control plate in place.  
(See Figure 4).

### **STEP 5**

**Replace existing temperature control with new Danfoss control in repair kit:**

A. Once the temperature control is revealed you can then disconnect the old temperature control (remove the control knob and then back out two phillips screws).

B. Unplug control wiring from old control.

C. Pull control capillary out of 3/16" tubing inserted into coil

Note: Be careful not to pull 3/16" tubing out of coil.

D. To install new control push control capillary into 3/16" tubing until it stops. This must be a minimum of 8 inches. Using permagum reseal around capillary & 3/16" tubing.



**Figure 4 Removing temperature control plate (for TPP, Deep TWT, & Deep TUC cabinets).**



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### STEP 6

**Installing and wiring relay for all TPP,  
TUC, TWT, and TSSU cabinets  
(REFRIGERATORS ONLY):**

A. The new relay can be installed in the back of the cabinet behind the rear grill(Phillips screws will need to be backed out of the rear grill for easy access).

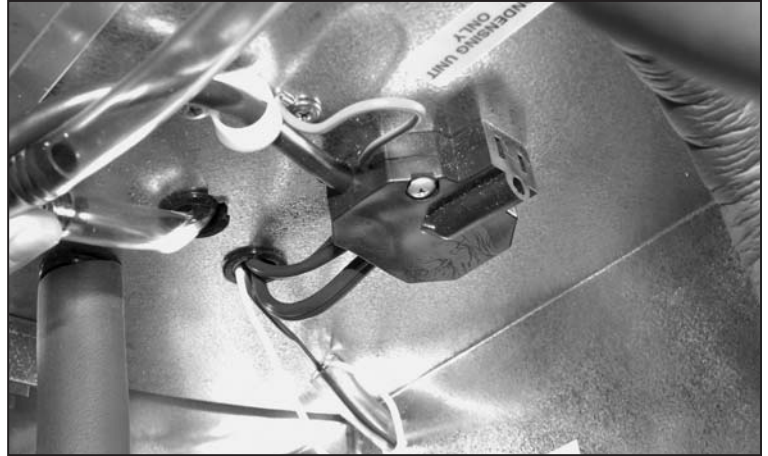


Figure 5

B. Pull wire pair down until it stops. You should have approximately 4 inches of wire to work with. This amount of wire will be more than enough.

**Note:**

***After pulling the wire down, cut the wire so there is equal distance from the relay and to the source from which you pulled the wire down from.***

C. Cut the wire pair for the temperature control as shown in figure 6. This pair is located on the side of the receptacle opposite the mounting screw location.



Figure 6

D. Strip each wire approximately 1/2". (See figure 7).



Figure 7

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E. Mount relay to back wall using provided self tapping screws. (See figure 8).

F. Connect both ends of the previously cut ribbed wire with a 14ga loose black wire using a supplied Sta-con. Connect other end of wire to the normally open contacts of the relay. (See figure 9 & 14 for the next 3 steps).

G. Connect the smooth wire from the junction block to the other loose black wire. Connect other end of wire to the other normally open contacts of the relay.

H. Connect the smooth wire from inside the cooler (temp control) to the supplied pink wire. Connect the other end of the pink wire to one side of the relay coil.

I. Cut visible white wire. Strip both ends. Reconnect along with supplied loose white wire. Connect other end of white wire to the other side of the relay coil.

#### FOR FREEZERS:

A. Cut the yellow wire from the junction block (leave enough wire to connect wires to the relay). Connect yellow wire from junction block to terminal #6. Connect other yellow wire to #1

B. Cut the black wire that travels from junction block to interior of cabinet. Black loose wire terminal #4 connects to both ends of cut black wire. (See figure 12 & 13).

C. Cut white wire that is connected to blue heater wire, white wire from relay and white wire from junction block.



Figure 8

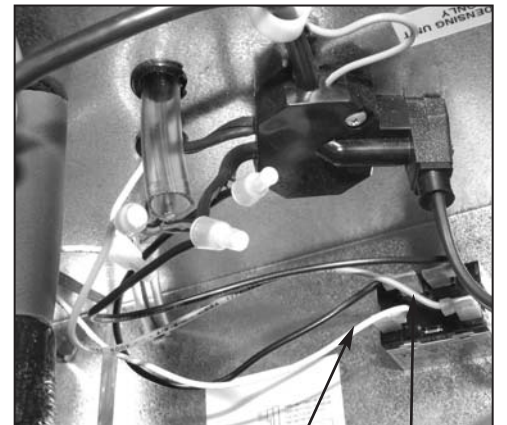


Figure 9 White Wire Pink Wire



Figure 10 Danfoss temperature control wiring

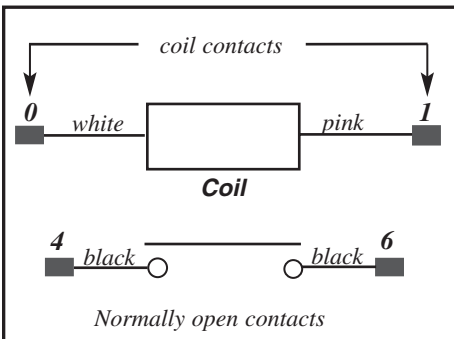


Figure 11. Relay Wiring Diagram for refrigerators.

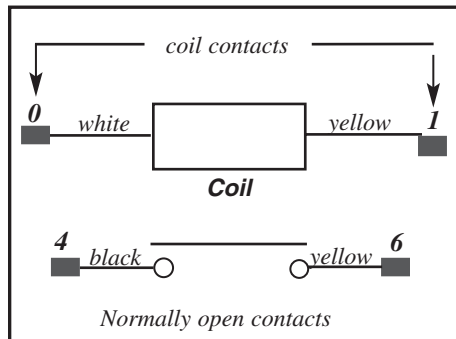


Figure 12. Relay Wiring Diagram for freezers.

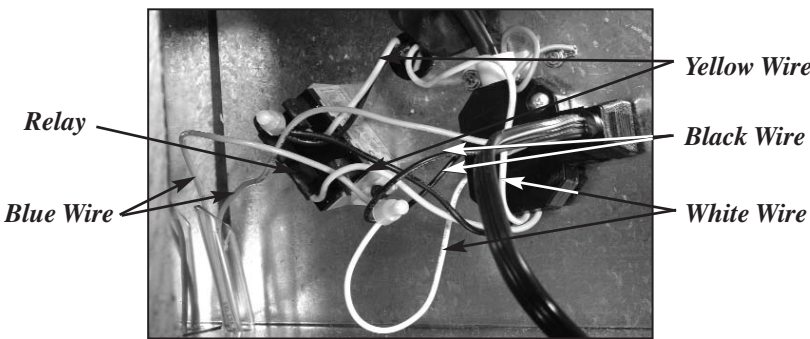


Figure 13 Freezer wiring.

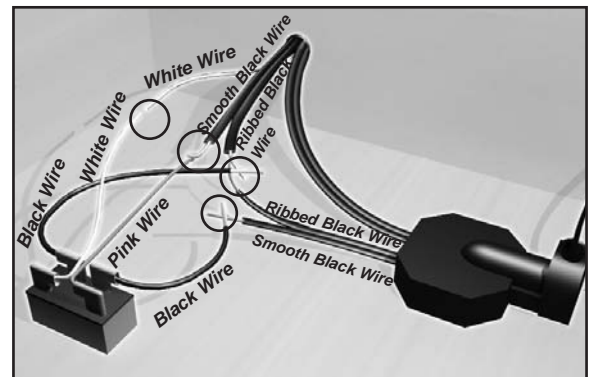


Figure 14. Relay wiring illustration for refrigerators.



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**STEP 7**

**Installing new Danfoss temperature control:**

- A. Connect one black wire from old control one of the horizontal terminals on the new temperature control.
- B. Place the plastic-coated spade clip on secondary on the other horizontal terminal.
- C. Connect other black wire from old control to the single vertical terminal on the new temperature control.  
(See Figure 10).

**STEP 8**

**Checking Relay Operation:**

- A. Unplug the condensing unit from the compressor receptacle ( located on the ballast box).
- B. Plug cabinet into power source.
- C. Turn the new control to the "0", (zero), position by aligning the zero indication on control knob with the arrow stamped into the evaporator housing. Ensure that control is off by listening for an audible click. This will indicate an off position.
- D. Plug voltmeter into compressor receptacle.
- E. Turn control between 4-5 and check voltage at receptacle. Receptacle voltage should be at cabinet rating.
- F. If voltage is correct, unplug main power, reinstall compressor cord, and reinstall components.

**STEP 9**

Reinstall rear grill and all other components.

**STEP 10**

**Re-connect Power Cord.**

**STEP 11**

**Return Temp Control to normal (#5 position) setting, and check cabinet operation.**