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True Manufacturing Company, Inc.

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

Technical Service Manual ***(All Models)***

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NOTES

How to Maintain Your Cooler to Receive the Most Efficient and Successful Operation

You have selected one of the finest commercial refrigeration units made. It is manufactured under strict quality controls with only the best quality materials available. Your TRUE cooler when properly maintained will give you many years of trouble-free service.



TRUE MANUFACTURING COMPANY
2001 East Terra Lane • P.O. Box 970
O'Fallon, Missouri 63366

*Welcome to the World Wide Family of Proud and Happy Owners of **TRUE**® Coolers!!!*

TRUE Coolers are manufactured with the finest materials available under rigid quality controls. However, they still need a minimum amount of care from you to achieve years of trouble-free service.

Your TRUE Cooler will give you years of superior performance if you follow these simple suggestions.

CONDENSER

If you keep the Condenser clean you will minimize service calls and lower your electric costs. The Condenser is accessible by removing the Louvered Grill. Although your TRUE Cooler uses a minimum amount of electricity due to superior insulation in the cabinet and doors, it is very important to keep the Condenser clean. The cleaner the Condenser, the less the cooler will run. Cleaning of Condensers should be done when needed depending upon regional conditions and the location of your Cooler. Use compressed air to blow the dust and grime from your Condenser. A stiff brush will help. You must be able to see through your Condenser.

VOLTAGE

When your TRUE Cooler was installed the installation person should have checked your wiring to see that you had plenty of current to properly operate the refrigeration unit. Under no circumstances add additional loads between the source of power and the Cooler. Do not plug other electrical units into the same wall outlet your Cooler is plugged into or plug electrical units on the same circuit. ***Do not use an extension cord.***

TO CLEAN THE CABINET

The exterior may be wiped clean with soap and water. Use a good stainless cleaner on the countertop and the doors. The interior of the Cooler should be cleaned periodically and we recommend a mild solution of baking soda and water which will help reduce any inherent odors. Do not use harsh or abrasive cleaners on any surface of the interior.

REPLACEMENT PARTS

TRUE maintains indefinitely a record of the Cabinet serial number of your Cooler. If, at any time during the life of your Cooler, be it two years or twenty years, a part is needed, you may obtain this part by furnishing the serial number to the Company from whom you purchased the Cooler.

CABINET INSTALLATION AND SET-UP

Please read these instructions. Failure to follow maintenance guidelines may result in a **non-warranted** service call.

ELECTRICAL REQUIREMENTS

There are several factors that will affect the proper operation of your True unit. Among these factors, the electrical installation is the most important and should always be checked before connecting your True cabinet as follows:

- 1. Make sure the circuit is dedicated exclusively to your True unit.**
- 2. Make sure the electrical installation complies with national, state, and local codes.**
- 3. Make sure the circuit is properly ground.**
- 4. Check circuit for proper voltage at receptacle
(+/-10% 115 Volt)
(- 5% + 10% 208/230 Volt)**
- 5. Make sure that the wire gauge and breaker sizes are correct and comply with the minimum allowance for voltage drops**

Warning: Failure to comply with these requirements might result in personal injury and (or) property damage, and will void warranty.

Commonly
Used Plugs



115/60/1
NEMA-5-15R



115/208-230/1
NEMA-14-20R



115/60/1
NEMA-5-20R



208-230/60/1
NEMA-6-15R



208-230/60/1
NEMA-6-20R

▶ CONDUCTORS AND CIRCUITS

Wire Gauge for 2% Voltage Drop in Supply Circuits.

115 Volt Amps	Distance In Feet To Center of Load											
	20	30	40	50	60	70	80	90	100	120	140	160
2	14	14	14	14	14	14	14	14	14	14	14	14
3	14	14	14	14	14	14	14	14	14	14	14	12
4	14	14	14	14	14	14	14	14	14	12	12	12
5	14	14	14	14	14	14	14	12	12	12	10	10
6	14	14	14	14	14	14	12	12	12	10	10	10
7	14	14	14	14	14	12	12	12	10	10	10	8
8	14	14	14	14	12	12	12	10	10	10	8	8
9	14	14	14	12	12	12	10	10	10	8	8	8
10	14	14	14	12	12	10	10	10	10	8	8	8
12	14	14	12	12	10	10	10	8	8	8	8	6
14	14	14	12	10	10	10	8	8	8	6	6	6
16	14	12	12	10	10	8	8	8	8	6	6	6
18	14	12	10	10	8	8	8	8	8	8	8	5
20	14	12	10	10	8	8	8	6	6	6	5	5
25	12	10	10	8	8	6	6	6	6	5	4	4
30	12	10	8	8	6	6	6	6	5	4	4	3
35	10	10	8	6	6	6	5	5	4	4	3	2
40	10	8	8	6	6	5	5	4	4	3	2	2
45	10	8	6	6	6	5	4	4	3	3	2	1
50	10	8	6	6	5	4	4	3	3	2	1	1

Wire Gauge for 2% Voltage Drop in Supply Circuits.

230 Volt Amps	Distance In Feet To Center of Load											
	20	30	40	50	60	70	80	90	100	120	140	160
5	14	14	14	14	14	14	14	14	14	14	14	14
6	14	14	14	14	14	14	14	14	14	14	14	12
7	14	14	14	14	14	14	14	14	14	14	12	12
8	14	14	14	14	14	14	14	14	14	12	12	12
9	14	14	14	14	14	14	14	14	12	12	12	10
10	14	14	14	14	14	14	14	12	12	12	10	10
12	14	14	14	14	14	14	12	12	12	10	10	10
14	14	14	14	14	14	12	12	12	10	10	10	8
16	14	14	14	14	12	12	12	10	10	10	8	8
18	14	14	14	12	12	12	10	10	10	8	8	8
20	14	14	14	12	10	10	10	10	10	8	8	8
25	14	14	12	12	10	10	10	10	8	8	6	6
30	14	12	12	10	10	10	8	8	8	6	6	6
35	14	12	10	10	10	8	8	8	8	6	6	5
40	14	12	10	10	8	8	8	6	6	6	5	5
50	12	10	10	8	6	6	6	6	6	5	4	4
60	12	10	8	6	6	6	6	5	5	4	4	3
70	10	10	8	6	6	6	5	5	4	4	2	2
80	10	8	8	6	6	5	5	4	4	3	2	2
90	10	8	6	6	5	5	4	4	3	3	1	1
100	10	8	6	6	5	4	4	3	3	2	1	1

 True Product Holding Temperatures

TECHNICAL INFORMATION

- **T-Series Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **T-Series Freezer**
Holds -10°F (-23.3°C)
- **TS (300 Series stainless Steel) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TS (300 Series stainless Steel) Freezer**
Holds -10°F (-23.3°C)
- **TSD (Slide Door) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TH Series (Heated Cabinet)**
Holds 80°F to 200°F (26.6°C to 93.3°C)
- **TR, TA, TG (Specification Series) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TR, TA, TG (Specification Series) Freezer**
Holds -10°F (-23.3°C)
- **TR, TA, TG (Specification Series) Heated Cabinets**
Holds 80°F to 180°F (26.6°C to 82.2°C)
- **TSSU (Sandwich / Salad) Refrigerator**
Holds 33°F to 41°F (0.5°C to 5°C)
- **TPP (Pizza Prep Table) Refrigerator**
Holds 33°F to 41°F (0.5°C to 5°C)
- **TUC (Undercounter) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TUC (Undercounter) Freezer**
Holds -10°F (-23.3°C)
- **TWT (Worktop) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TWT (Worktop) Freezer**
Holds -10°F (-23.3°C)
- **TRCB (Chef Bases) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TMC (Milk Coolers) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **GDM (Glass Door Merchandiser) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **GDM (Glass Door Merchandiser) Freezer**
Holds -10°F (-23.3°C)
- **GDIM (Glass Door Ice Merchandiser)**
Holds 20°F to 25°F (-6.7°C to -3.9°C)
- **TAC (Vertical Air Curtain) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **THF (Horizontal Freezers)**
Holds -10°F (-23.3°C)
- **TSID (Single Duty Deli Cases) Refrigerator**
Holds 38°F to 40°F (3.3°C to 4.5°C)
- **TDBD (Double Duty Deli Cases) Refrigerator**
Holds 38°F to 40°F (3.3°C to 4.5°C)
- **TCGG (Curved Glass Deli Case) Refrigerator**
Holds 38°F to 40°F (3.3°C to 4.5°C)
- **TCGR (Curved Glass Display Case) Refrigerated Bakery**
Holds 38°F to 40°F (3.3°C to 4.5°C)
- **TCGR-CD (Curved Glass Display Case) Cold Deli**
Holds 36°F to 38°F (0.5°C to 3.3°C)
- **TDD (Direct Draw Beer Dispensers) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TBB (Back Bar) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TDB (Back Bar / Direct Draw Beer Dispenser) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TD (Horizontal Bottle Coolers) Refrigerator**
Holds 33°F to 38°F (0.5°C to 3.3°C)
- **TD-LT (Horizontal Bottle Coolers / Low Temp Models)**
Holds 20°F (-6.7°C)
- **T-GC (Glass & Plate Chillers / Frosters)**
Holds 0°F and below

Fahrenheit Conversion / Celsius Conversion

OPERATION INSTRUCTIONS

Fahrenheit	Celsius
-10	-23.33
-8	-22.22
-6	-21.11
-4	-20
-2	-18.89
0	-17.78
2	-16.67
4	-15.56
6	-14.44
8	-13.33
10	-12.22
12	-11.11
14	-10
16	-8.88
18	-7.78
20	-6.67
22	-5.56
24	-4.44
26	-3.33
28	-2.22
30	-1.11
32	0
34	1.11
36	2.22
38	3.33
40	4.44
42	5.56
44	6.67
46	7.78
48	8.89
50	10
52	11.11
54	12.22
56	13.33
58	14.44
60	15.56
62	16.67
64	17.78
66	18.89
68	20
70	21.11
72	22.22
74	23.33
76	24.44
78	25.56
80	26.67
82	27.78
84	28.89
86	30
88	31.11
90	32.22
92	33.33
94	34.44
96	35.56
98	36.67
100	37.78

Celsius	Fahrenheit
-24	-11.2
-22	-7.6
-20	-4
-18	-0.4
-16	3.2
-14	6.8
-12	10.4
-10	14
-8	17.6
-6	31.2
-4	24.8
-2	28.4
0	32
2	35.6
4	37.2
6	42.8
8	46.4
10	50
12	53.6
14	57.2
16	60.8
18	64.4
20	68
22	71.6
24	75.2
26	78.8
28	82.4
30	86
32	89.6
34	93.2
36	96.8
38	100.4

$$F = (9/5 \times C) + 32$$

Example:
Convert 212°F to C°
 $C = 5 \div 9 \times (212 - 32)$
 $C = 100.8$

$$C = 5/9 \times (F - 32)$$

Example:
Convert 75°C to F
 $F = 9 \div 5 = 1.8$
 $(1.8 \times 75) + 32$
 $F = 167°$

► **CABINET INSTALLATION AND SET UP CHECKLIST**

CABINET INSTALLATION AND SET UP CHECKLIST

- 1) Make sure cabinet is plugged into dedicated outlet. Before plugging in cabinet check to make sure voltage is adequate for your cabinet. **Do not use an extension cord, this will void cabinet warranty.**

- 2) Follow installation instructions for your specific cabinet. Each cabinet is shipped with specific installation and set up instructions. It is very important to read all information sent with your new cabinet.

- 3) Make sure shipping blocks (slide doors) and door support brackets (swing doors) are removed. Doors will not function correctly if this step is not followed.

- 4) Make sure that your cabinet is leveled correctly. Follow specific instructions with your cabinet and use castor shims were they are needed. Make sure that legs and castors are installed per instructions. If directions are not followed this may cause premature unwarranted failure of cabinet legs or castors. If your cabinet is not level this can cause performance problems that will not be covered as warranty repairs.

- 5) When cabinet is set in its final location, make sure the specific clearance guidelines are followed. These are very important for ventilation in the condensing unit area. If not followed can cause premature compressor failure.

- 6) Follow altitude adjustment for temperature control if applicable.

- 7) **IF YOU HAVE ANY QUESTIONS ABOUT SET UP OR INSTALLATION OF YOUR NEW CABINET PLEASE CALL OUR TECHNICAL SERVICE DEPARTMENT AT 1-800-325-6152.**

► Cabinet Installation and Step-up (Swing & Slide Doors)**INSTALLATION INSTRUCTIONS****SWING DOORS**

A. Remove all other tape securing the doors to the cooler. Remove the blue foam blocks approximately 1"x3"x1" (2.5 x 7.6 x 2.5 cm) that are between the door and the cooler. One foam block is located on each side of the door frame. (left and right).

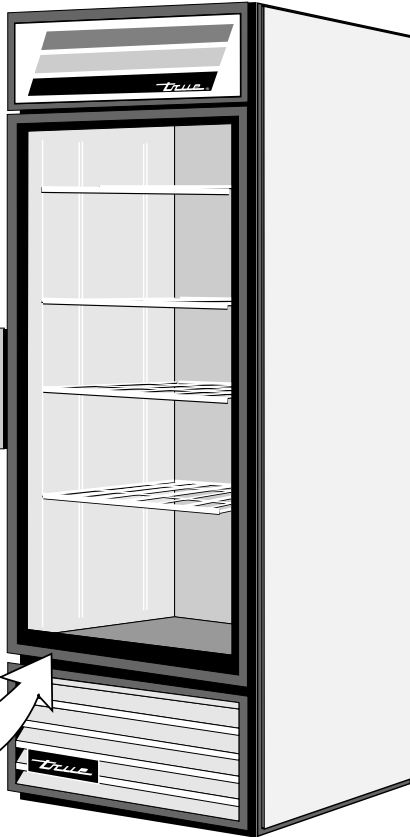
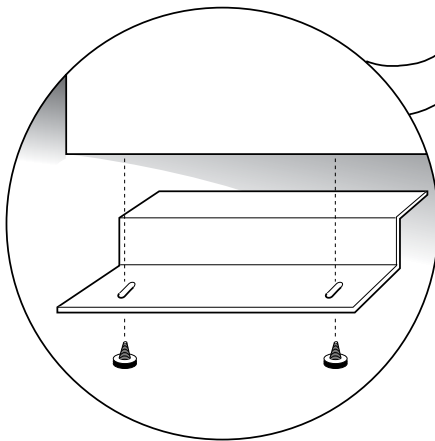
NOTE:

Your True Merchandiser has been secured for safe shipping. During installation, it is necessary to remove the door support bracket.

B. Remove the two Phillips screws that secure the bracket to the door. (see figure 1).

C. Remove bracket and save for future shipping.

D. Replace screws securely into door.

**SLIDE DOORS**

A. Remove all transparent tape on the door area. Remove the foam blocks in top channel in front on the right door approximately 1"x1"x20" (2.5 x 2.5 x 50 cm).

B. Remove both plastic brackets secured by tape from under the left door.

C. Open the left door.

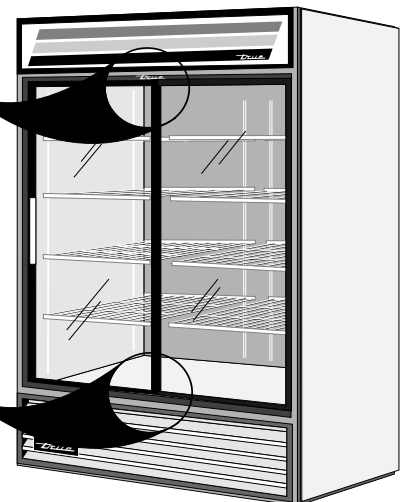
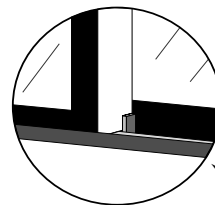
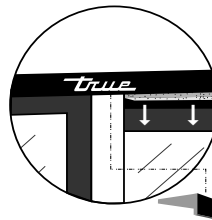
D. Remove the foam block from the top channel behind the left door.

E. Remove both plastic brackets from under the right door (see figure 2).

NOTE:

Door packing materials should NOT be removed until cooler is placed on location.

TRANSPORTATION OF THE CABINETS WITHOUT THE DOOR PACKING MATERIALS IN PLACE CAN RESULT IN DAMAGE TO DOORS, DOOR ROLLERS AND V-TRACK.



GDM / T-Series Freezers**INSTALLATION INSTRUCTIONS****Installing Castors**

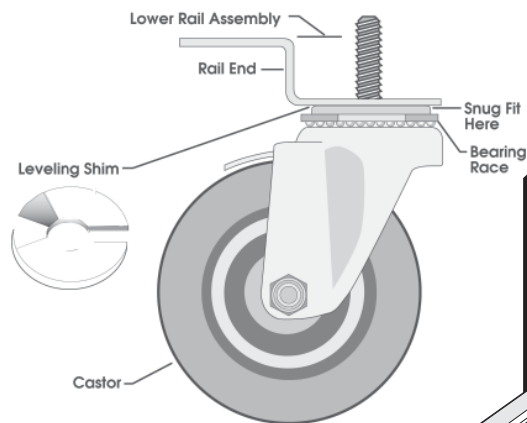
Install castors in the bottom rail assembly on the underside of the cooler. Castors with brakes should be installed in front. To obtain maximum strength and stability of the unit, it is important that you make sure each castor is secured with a 3/4" (19mm) open-end wrench. The bearing race on the castor must make firm contact with the rail.

Installing Leg Levelers

Screw leg levelers into the four corners of the lower rail assembly (larger models include levelers centered front and back also).

CAUTION

To avoid damage to lower rail assembly, raise unit slowly and carefully to upright position.

**Figure 3.****LEVELING**

A. Set unit in its final location. Be sure there is adequate ventilation in your room. Under extreme heat conditions, (100°F+, 38°C+), you may want to install an exhaust fan.

Warning
Warranty is void if ventilation is insufficient.

B. Proper leveling of your True cabinet is critical to operating success. Effective condensate removal and door operation will be effected by leveling.

C. The cabinet should be leveled front to back and side to side with a level (see figure 4). Place the level in the interior floor of the unit in the four positions illustrated.

For Castored Models:

Four shims have been provided in warranty packet for leveling castored units positioned on uneven floors. Shims must be positioned between rail end and bearing race. (see figure 3).

If the cabinet is not level use a 3/4" (19mm) open-end wrench to turn the anchoring bolt under the bearing race counter-clockwise until the cabinet is level.

Install the desired number of shims, making sure the slot of the shim is in contact with the threaded stem of the castor.

If more than one shim is used, turn the slot at a 90° angle so they are not in line.

Turn the anchoring bolt clockwise with a 3/4" (19mm) open-end wrench to tighten and secure the castor.

Leg Levelers For GDM Models:

If the cabinet is not level adjust leg levelers by first relieving weight to leveler and adjusting by either hand or wrench. Repeat with all leg levelers until cabinet is level in all directions.

D. Ensure that the drain hose or hoses are positioned in the pan.

IMPORTANT:

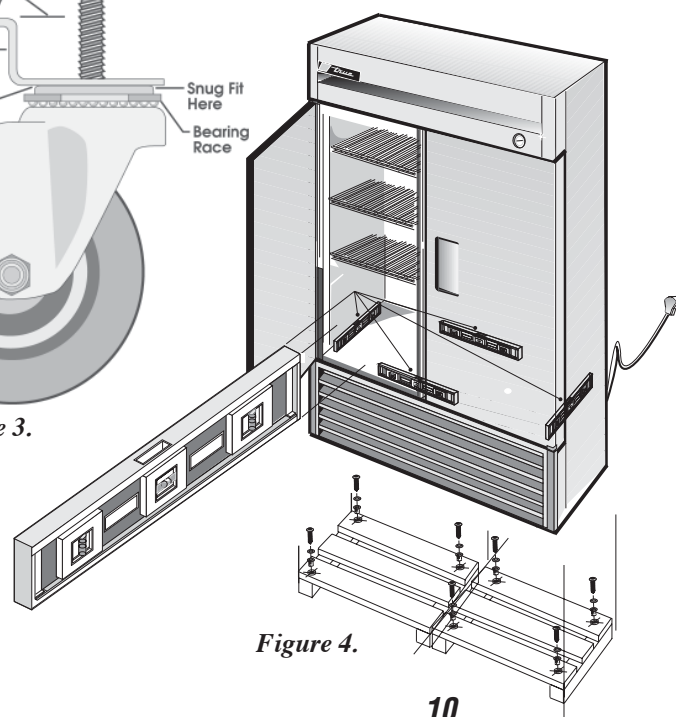
Make certain the metal strap holding the compressor during shipment is removed. Failure to cut strap could result in excessive noise and vibration (freezer).

E. Free plug and cord from inside the lower rear of the cooler (do not plug in).

F. The unit should be placed close enough to the electrical supply so that extension cords are never used.

WARNING

Compressor warranties are void if the unit is more than 6-1/2 ft. (2m) from plug-in connection.

**Figure 4.**

► New GE Temperature Control Adjustments

OPERATION INSTRUCTIONS

Required Tools:

- Jewelers Screw Driver (Small Screw Driver)

GE Control Instructions

This scale may be used as a guide for measuring degrees of rotation required for altitude correction. The arrows indicate direction of screw rotation.

Turn calibration screw counter clockwise to obtain colder operating temperatures.



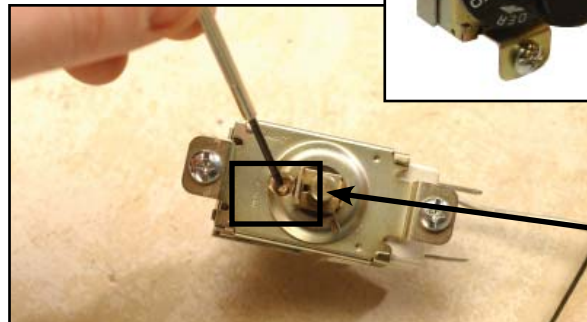
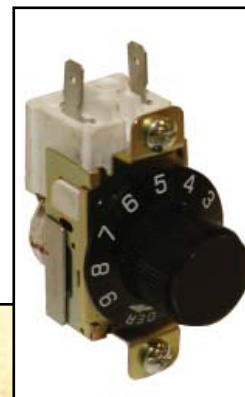
Note:

Only adjust the screw (small flathead) on the face of the control (next to the cam). Follow the Altitude Correction Table below.

<u>Altitude Correction Table:</u>	
<u>Calibration Screw Adjusts</u>	
<u>Both Cut-in and Cut-out</u>	
<u>Altitude (Feet)</u>	<u>Clockwise Turns</u>
2000	7/60
3000	11/60
4000	15/60
5000	19/60
6000	23/60
7000	27/60
8000	30/60
9000	34/60
10,000	37/60

Note:

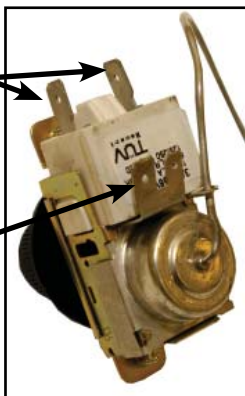
Each 1/4 turn of the calibration screw is equal to approximately 2 degrees F. Do not make more than 3/4 turn. After making adjustment measure temperature during three cycles before adjusting again.



Calibration screw

Compressor Terminals

Ground Terminal



Rear of temperature control.

To adjust the temperature control take the control knob off to view the cut-in screw. (See Photo Above)

Danfoss Temperature Control Adjustment for High Altitude Applications

INSTALLATION INSTRUCTIONS

Tools Required:

- Allen Wrench (5/64")
- Torx Screw (T-7)

Terms:

Cut-out - Temperature sensed by the controller that shuts the compressor off.

Cut-in - Temperature sensed by the controller that turns the compressor on.

Instructions:

STEP 1

Unplug the cooler.

STEP 2

Remove the screws that secure the temperature control to the inset box at the lower left side of the cabinet (when facing the front of the cabinet).

STEP 3

To make these adjustments it may be necessary to remove the temperature control from the housing.

NOTE:

You may have to remove the wires attached to the control. Take note as to which wire is on which spade terminal.

STEP 4

Pull out gently from cabinet.

NOTE:

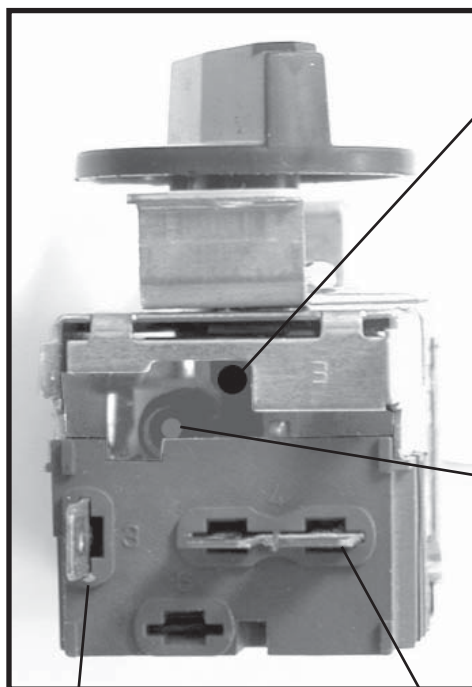
Mechanical temperature controllers are affected when functioning at high altitude. The cut-in and cut-out temperatures will be colder than when the controller functions closer to sea level.

STEP 5

For high elevation installations, it may be necessary to "warm up" the set points. To make the adjustment, insert the appropriate tool in each adjustment screw and turn 1/4 of a revolution clockwise (to the right). This procedure will adjust both the cut-in and cut-out about 2°F warmer.

STEP 6

Make sure to reconnect the wires to the proper spade terminal when reinstalling.



Cut-out Adjustment Screw Allen (5/64" or 2 mm.)

Cut-in Adjustment Screw Torx (T-7)

Compressor Connection

Compressor Connection

► Temperature Control Altitude Adjustment
INSTALLATION INSTRUCTIONS

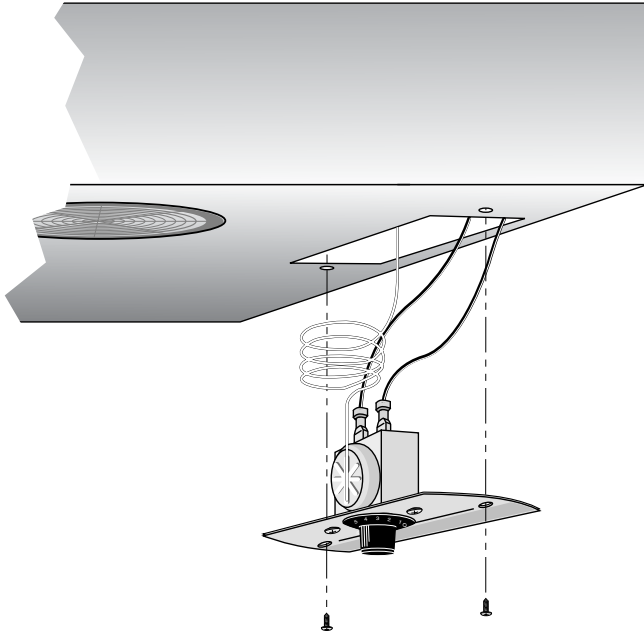
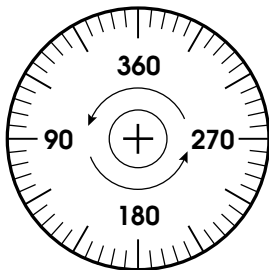


CHART	
Height	CCW Adjustment (based on 360°/complete turn)
2000'	42°
3000'	78°
4000'	114°
5000'	150°
6000'	186°
7000'	222°
8000'	258°
9000'	294°
10,000'	330°



This scale may be used as a guide for measuring degrees of rotation required for altitude correction. The arrows indicate direction of screw rotation.

REQUIRED TOOLS

- Phillips Head Screwdriver
- Hex Head Driver
- Jewelers Screwdriver

IMPORTANT
 Upright models ordered with "High Altitude" temperature controls are pre-calibrated and do not require adjustment.

_____ STEP 1 _____

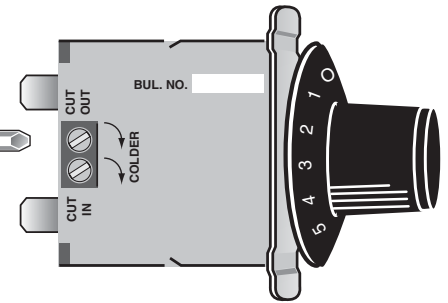
Unplug the cooler.

_____ STEP 2 _____

Turn the temperature control to the "9" position.

_____ STEP 3 _____

Remove the screws that secure the mounting plate to the evaporator top. ("A") See figure 1.



_____ STEP 4 _____

Pull control down gently from housing.

_____ STEP 5 _____

Turn screws counterclockwise (CCW) See Chart and figure 2.

_____ STEP 6 _____

Reassemble to cooler housing and return the temperature control to the "5" position.

► Defrost Time Clock Operation Instructions (Grasslin Defrost Timer)

OPERATION INSTRUCTIONS

RECOMMENDED DEFROST SETTINGS:

True Manufacturing has factory set your defrost time clock to a recommended time and duration defrost scenario. All refrigeration equipment operating below 30°F will accumulate frost on the evaporator coil and will require routine defrost. Your True equipment has been designed for three defrost periods (6:00 a.m., 2:00 p.m. and 10:00 p.m.). If you decide to deviate from these defrost time settings please follow the procedures for adjustment below.

REQUIRED TOOLS:

- Phillips Screwdriver
- 1/4" Nut Driver or Socket

Locating The Defrost Timer:

Take off louvered grill assembly by removing four (4) corner screws.

Single Door Models:

Defrost timer is located in the lower right corner behind the louvered grill (inside galvanized electrical box).

Two Door Models:

Defrost timer is located in the middle of the cabinet, behind the louvered grill. Timer is mounted to the left of the centered ballast box (Inside of gray timer box).

Three Door Models:

Defrost timer is located on the left upright post behind the louvered grill (Inside of gray timer box).

Setting the timer:

(UNPLUG UNIT FROM POWER SUPPLY!)

DO NOT SET THE TIME BY ROTATING THE "OUTER" DIAL.

Turn the minute hand clockwise until the time of day on the outer dial is aligned with the triangle marker on the inner dial (two o'clock position). (See image 2).

Adjusting The Defrost Timer:

(time initiated, time or temperature terminated).

Your True freezer contains a defrost system that is temperature terminated, however the time clock has been designed with a time termination back-up so that the defrost period will not exceed thirty minutes. While True requires a minimum

3 defrost periods not to exceed 30 minutes the procedure on this page should be followed to customize your specific needs.

Notice:

If timer is not set for a minimum of 3 defrost per day for 30 minutes each, the coil may develop excessive frost. This may lead to system failure and product loss, which is not covered under warranty.

The following procedure may be followed to customize your needs.

High usage, high temperature, and high humidity may require 4 defrost settings per day.

WARNING:
Always follow the manufacturer's recommended settings when programming the amount and duration of the defrost cycles.

STEP 1

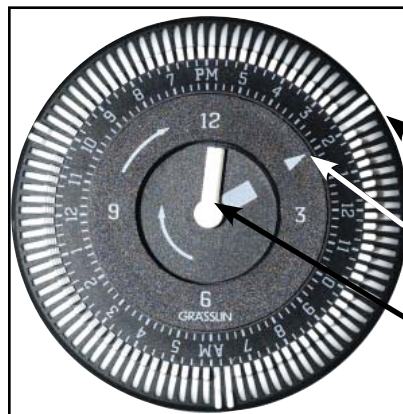
The white tabs located on the outmost area of the time clock have been factory set for (6:00 a.m., 2:00 p.m., and 10:00 p.m.). Each tab represents 15 minutes of defrost time. Notice that at each defrost time two white tabs are set for 15 minutes each for a total of 30 minutes of defrost.

STEP 2

In order to program the time to begin the defrost cycle, flip the white tabs out to set the defrost time. To eliminate a defrost time flip the white tabs back toward the center of the Defrost Timer.

STEP 3

True recommends a 30 minute defrost cycle three times per day.

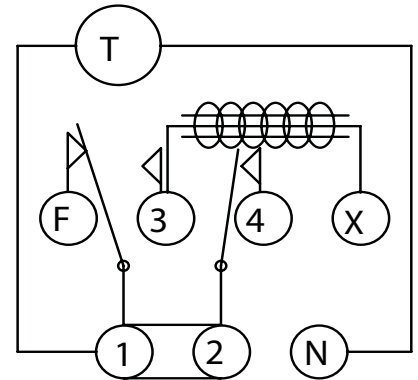


Defrost Timer Image 2



Defrost Timer Box Image 1

GRASSLIN TIMER CONFIGURATION



- 1. Line
- 2. Line if jumper installed
- F. Normally closed contact (temp control)
- 3. Normally open contact (defrost heater)
- 4. Normally closed contact (door switches)
- N. Neutral
- X. Defrost termination.

DISCLAIMER:
Wire colors are subject to change.

Outer most dial. White tabs represent 15 minutes of defrost time.

Time of day.

Inner most dial.

► **Defrost Time Clock Adjustment (Paragon Defrost Timer)**

DEFROST CONTROLS

Recommended Defrost Settings

True Manufacturing has factory set your defrost time clock to a recommended time and duration defrost scenario. All refrigeration equipment operating below 30°F will accumulate frost on the evaporator coil and will require routine defrost. Your True equipment has been designed for three defrost periods (6:00 a.m., 2:00 p.m. and 10:00 p.m.).

If you decide to deviate from these defrost time settings please follow the procedures and adjustment below.

REQUIRED TOOLS

- Slotted Screwdriver

Locating The Defrost Timer

Take off lower grill assembly by removing four (4) corner screws.

Single door models:

Defrost timer is located in the lower right corner behind the louvered grill.

Two door models:

Defrost timer is located in the middle of the cabinet, behind the louvered grill. Timer is mounted to the left of the centered ballast box.

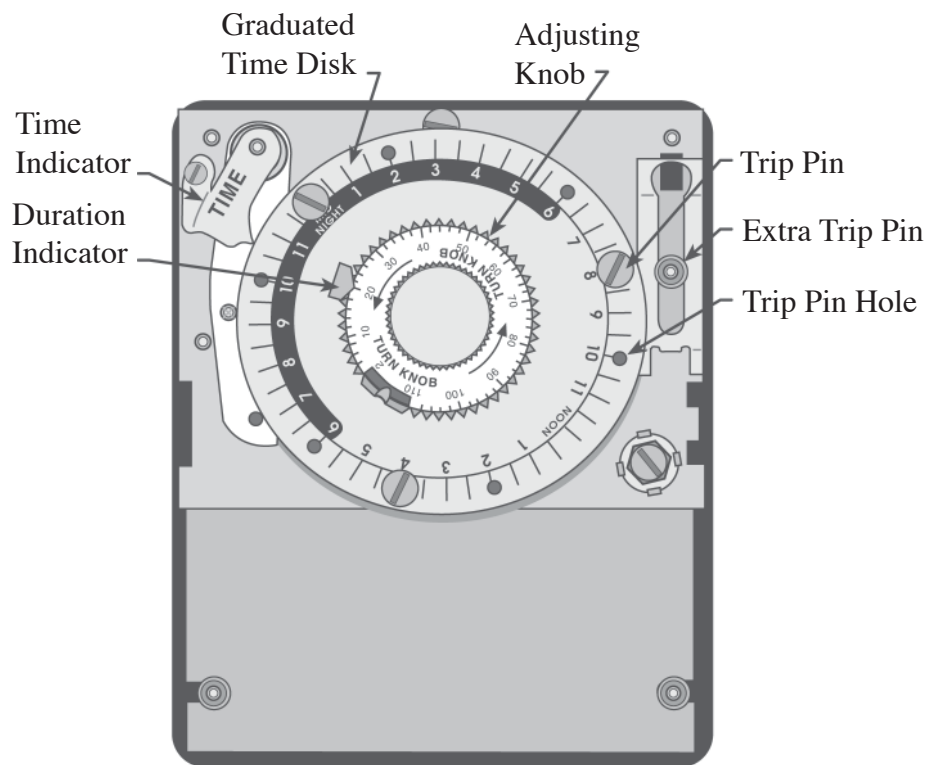
Three door models:

Defrost timer is located on the left upright post behind the louvered grill.

Adjusting The Defrost Control

(time initiated, temperature terminated)

Your True freezer contains a defrost system that is temperature terminated, however the time clock has been designed with a time termination back-up so that the defrost period will not exceed twenty minutes. While True recommends 3 defrost periods not to exceed 30 minutes the procedure below should be followed to customize your specific needs.



WARNING

Always follow the manufactures recommended settings when programming the amount and duration of the defrost cycles.

STEP 2

In order to program the time to begin the defrost cycle, insert threaded trip pins into the graduated time disk hole that corresponds to your customized defrost needs.

STEP 1

Referencing the outer graduated time disk, position the current time of day to align with the "TIME" indicator. To move the graduated time disk, grasp the adjusted knob and turn counter clockwise until the current time of day aligns with the "TIME" indicator.

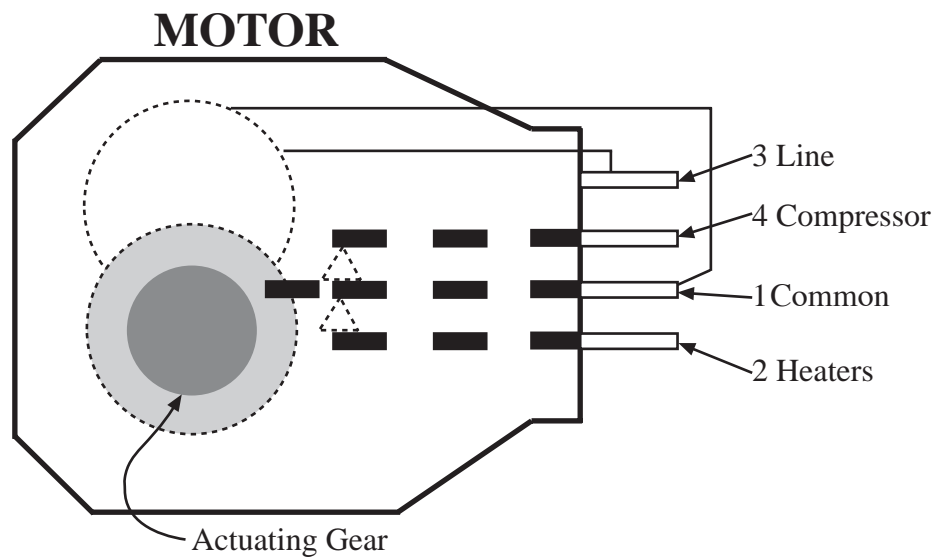
STEP 3

True recommends a 30 minute defrost cycle three times per day. Changing the recommended duration requires pressing down and sliding the copper duration indicator.

▶ Defrost Controls**OPERATION INSTRUCTIONS****2. TIME INITIATED, TIME TERMINATED**

Like in the time initiated, temperature terminated controls; these systems have a temperature sensor that will disconnect the heaters to keep the cabinet from over heating. However it won't restart the freezing cycle until the control completes the factory set time. These systems are also equipped with temperature sensors to delay the fan motors once the defrost cycle has been completed, to prevent the circulation of warm air inside the cabinet.

To adjust the defrost cycle time there is only one possible adjustment; Once the cabinet has reach the design temperature, pick the time of the day that you want the unit to defrost. Turn the actuating gear clockwise until the contacts change position initiating the defrost cycle.



REFRIGERATION SECTION

In this section you can find information that is helpful for the customer and the service technician to help you understand how our refrigeration system works along with how to diagnose and correct any problems that might arise.

 **Good Refrigeration Practices****OPERATION INSTRUCTIONS**

Good refrigeration practices

Good refrigeration practices will always start with detective work, find out what caused the failure so it doesn't happen again, the recovery of refrigerant before the faulty component is removed, testing the oil, achieving a 500-micron vacuum, and getting the system closed back up as quickly as possible.

Before opening the refrigeration system remember that POE oil is very Hydroscopic and absorbs moisture very quickly you should not leave the system open to the atmosphere for more than 15 minutes. So make sure you have the tools and parts needed to do the job before you open the system. **AND ALWAYS CHANGE THE DRIER WHENEVER YOU OPEN THE REFRIGERATION SYSTEM!**

Now that we have recovered the refrigerant from the system we can remove the faulty refrigeration component by cutting them out with a tubing cutter. We would recommend this method over removing it with a torch since that could destroy the evidence of what may have caused the failure.

Take a look at the drier and the components that have been removed for signs of oil break down, foreign objects like desiccant, metal pieces from valves etc.

When replacing a compressor make sure you check the amount of oil in the compressor. This can be done in several manners depending on the type of compressor being replaced. In a semi hermetic compressor it is very easy to check the oil level, since it has a sight glass that should be 3/4 covered in oil during operation. A hermetic compressor is a little harder to measure the level of oil. You will have to drain the oil out in to a measuring cup and know the ounces of oil charge. If its close then we know we don't have oil trapped in system. If the oil level is fairly low then we need to blow nitrogen through the system to clear the excess oil out of the system. Be sure and test the oil for contamination using the proper test kit for the type of oil. If the oil is contaminated be sure do drill a 1/8" hole in the bottom of the accumulator so we do not leave contaminated oil in the system after blowing this out with nitrogen. Also, be sure to solder the hole you drill closed.

Now that the system has been cleaned up, install the new compressor after all other work to the sealed system has been done so we can seal the compressor back up in less than 15 minutes. Start pulling a vacuum as soon as possible to get the moisture out of the lines we introduced when the system was open. Using a micron gauge, pull the system down to 500 microns. See if the system will hold this micron level once the pump is switched off. Charge the system up using an electronic scale to weigh the ounces of refrigerant into the system using liquid only. When leak checking, be sure to use nitrogen with a trace refrigerant. The nitrogen will aid in building up the pressure.

► **The CFC Report - Leading The Way Into A New Age**

POLYOL ESTER LUBRICANT

Polyol Ester Lubricant

After exhaustive research and testing, Copeland has determined that PolyolEster (POE) lubricants provide the best combination of characteristics for use with the new generation of chlorine-free refrigerant. In addition to providing superior lubrication. POE has other advantages which increase its attractiveness for use in refrigeration.

Polyol Ester is a synthetic lubricant used primarily for jet engine lubrication. It is manufactured by numerous companies and there are various types and grades available. Therefore, it is important to recognize that all POE's are not the same.

Since POE is synthetic, it has better resistance to high temperature degradation than refrigeration mineral oils. POE is also made from more expensive base stocks making it significantly more expensive than other refrigeration oils. Furthermore, POE is compatible with common refrigerant and mineral oil. Therefore, a compressor containing the oil can be installed in a system containing HCFC's or HFC's. In short, POE provides significant flexibility in the face of changes brought on by the CFC issue.

HFC refrigerant require the use of POE for all Copeland compressors. This is necessary for two specific reasons. First, mineral oils are not readily miscible in HFC's. When using HFC's conventional oils will not return to the compressor. Secondly, the chlorine contained in CFCs and HCFCs aids in the lubricity of mineral oil.

One drawback from using POE is that they absorb moisture from the air at a much greater rate than do mineral oils. As a result, they must be handled and packaged with much more care than conventional

oils. Copeland has not tested all types of compressors or all combinations of refrigerant and con-Industry knowledge of POE must rapidly increase in order to maintain and improve expected reliability.

After conducting extensive tests for both compressor durability and reliability on more than 40 refrigerant/oil combinations, Copeland identified Mobil Oil Corporation as our preferred U.S. supplier of polyol ester oil in terms of both the oil itself and Mobil's ability to package and deliver the oil with acceptable low moisture levels. Because of its technical superiority. Copeland has approved Mobil's EAL Artic 22 CC polyol ester oil for use in our compressors.

To serve our customers, Copeland will distribute EAL Artic 22 CC to the after market through Copeland's network of 800 authorized wholesalers. The lubricant will be charged into our new production compressors whenever a polyol ester is specified. Currently, certain approved compressor models sold to OEMs are available with this oil installed during manufacture. Refrigeration service compressors charged with POE will be supplied in the near future.

► ATTENTION PLEASE

SERVICE CONTRACTORS

SERVICE CONTRACTORS

..... ATTENTION PLEASE

This is a Tecumseh hermetic compressor specifically designed for use with environmentally friendly HFC refrigerant R404A. However, it is acceptable to use this compressor as a service replacement with R502.

The Tecumseh approved polyolester (POE) oil contained in this compressor is compatible with all internal component materials and is miscible (mixes) with R502 to effect proper oil return. Using R502 with this R404A compressor will result in very similar performance to the replaced R502 compressor. But, the following precautions should be taken.

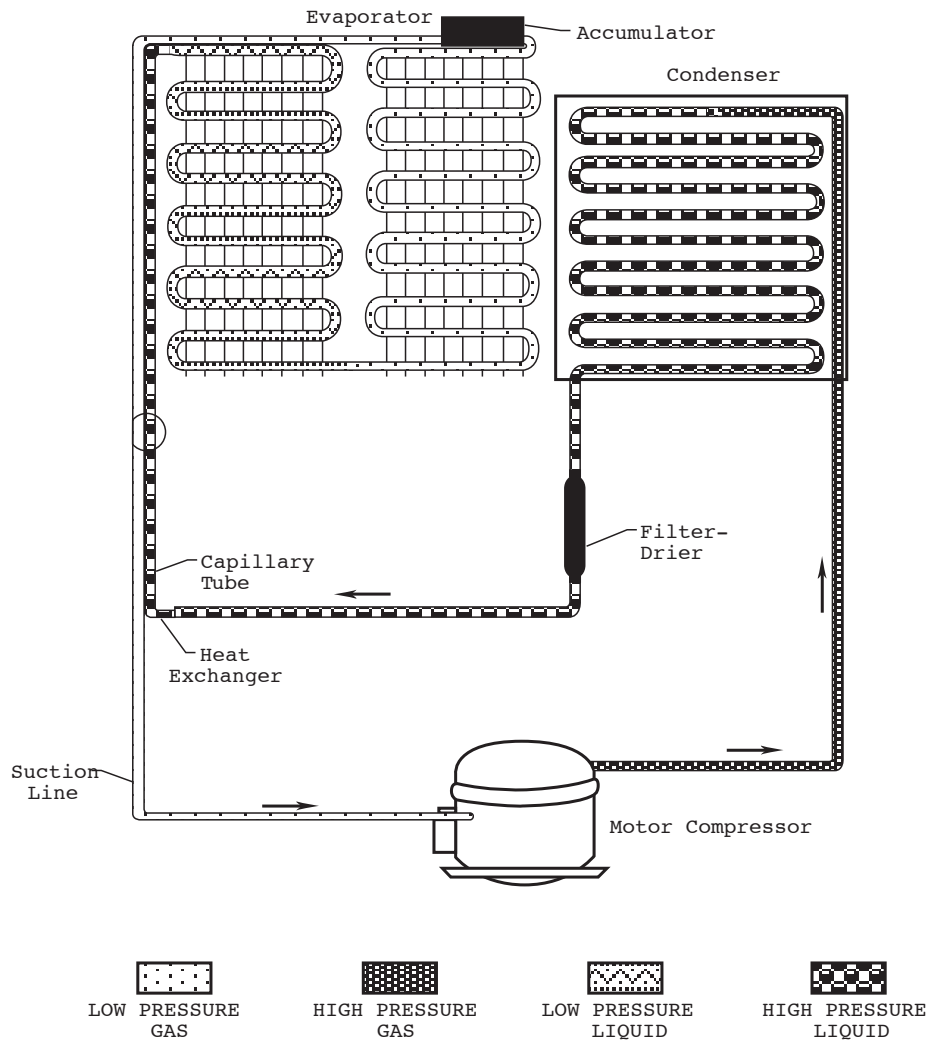
- 1) Care must be taken to assure that most of the mineral oil is removed from the system before the new compressor is installed. Small amounts of mineral oil (up to 5%) left in the system are acceptable but 1% or less if achievable is desired.
- 2) POE oils are 100 times more hygroscopic (ability to absorb moisture) than mineral oils thus the utmost care must be taken to prevent moisture from entering the system. The compressor or system should not be left open to the atmosphere for longer than 15 minutes maximum.
- 3) The appropriate new drier provided must be installed in the system.
- 4) Established industry procedures for recovery, evacuation, refrigerant charging and leak testing should be followed.

TRUE MANUFACTURING COMPANY

► **Capillary Tube System**

REFRIGERATION BASICS

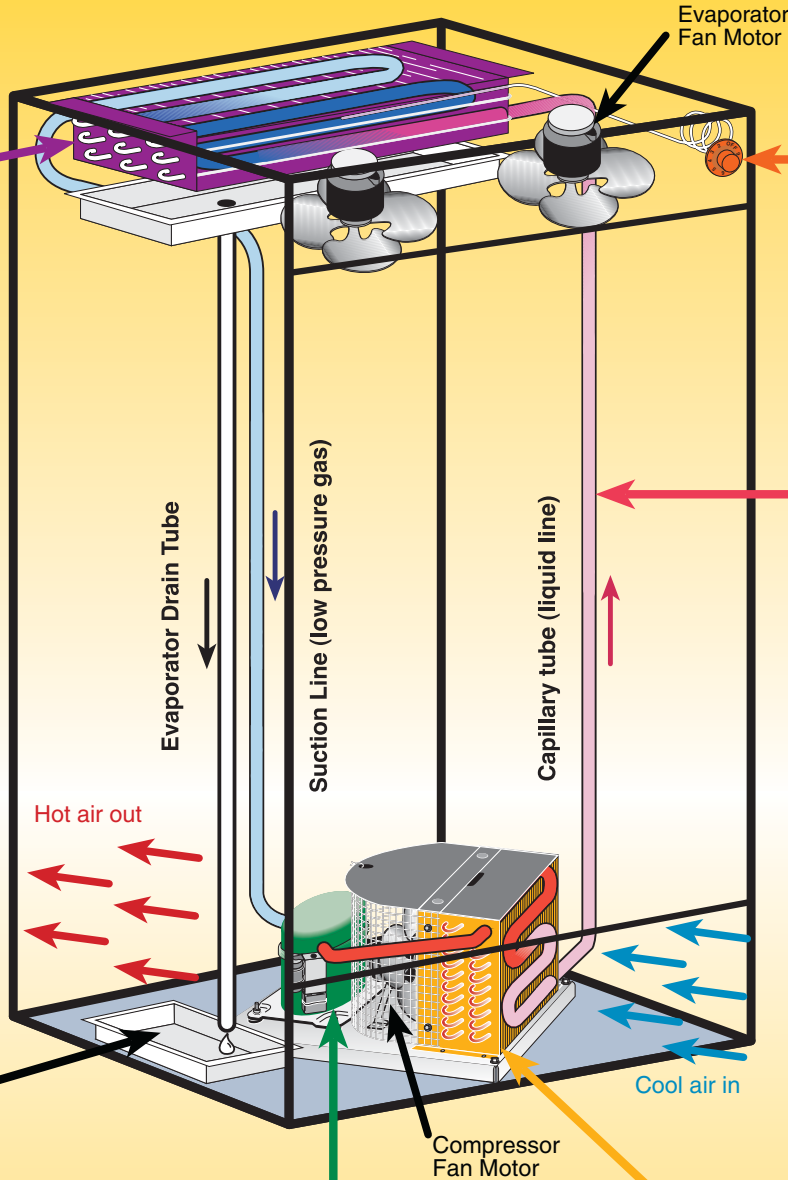
THE CAPILLARY TUBE SYSTEM



Starting at the Capillary Tube, refrigerant flows into the evaporator and changes from a liquid to a gas. As it absorbs heat, after leaving the evaporator, it flows through the accumulator. The accumulator is a part that is designed like a reservoir to allow any refrigerant, that has not changed from a liquid to a gas, space to do so before returning to the compressor. After flowing through the accumulator, refrigerant flows through the suction line as a low pressure gas into the compressor. The compressor pumps the refrigerant from a low pressure gas to a high pressure gas and forces it into the condenser. In the condenser with a fan circulating air over it the refrigerant condenses from

high pressure gas to high pressure liquid. After leaving the condenser refrigerant flow through the drier which is designed to remove any particles or moisture in the system. Refrigerant then flows through the liquid line into the capillary tube. The capillary tube is designed to allow a certain amount of refrigerant to flow through it to keep the evaporator evenly flooded. The capillary tube is taped to the suction line to cool the liquid to allow the best heat transfer. When the refrigerant enters the evaporator as a liquid, warm air from inside the cabinet is circulated through the evaporator coil and the heat from the air is then absorbed in the refrigerant.

The True Refrigeration Cycle



Evaporator
As air is pushed through the evaporator by the fan motors liquid refrigerant absorbs heat through the walls of the evaporator coils and vaporizes - thus becoming a low pressure gas.

Thermostat
Senses evaporator temperature
@40°F cuts in - starts compressor
@18°F cuts out - shuts compressor off

Capillary Tube
Meters the amount of liquid refrigerant into the evaporator where it absorbs heat.



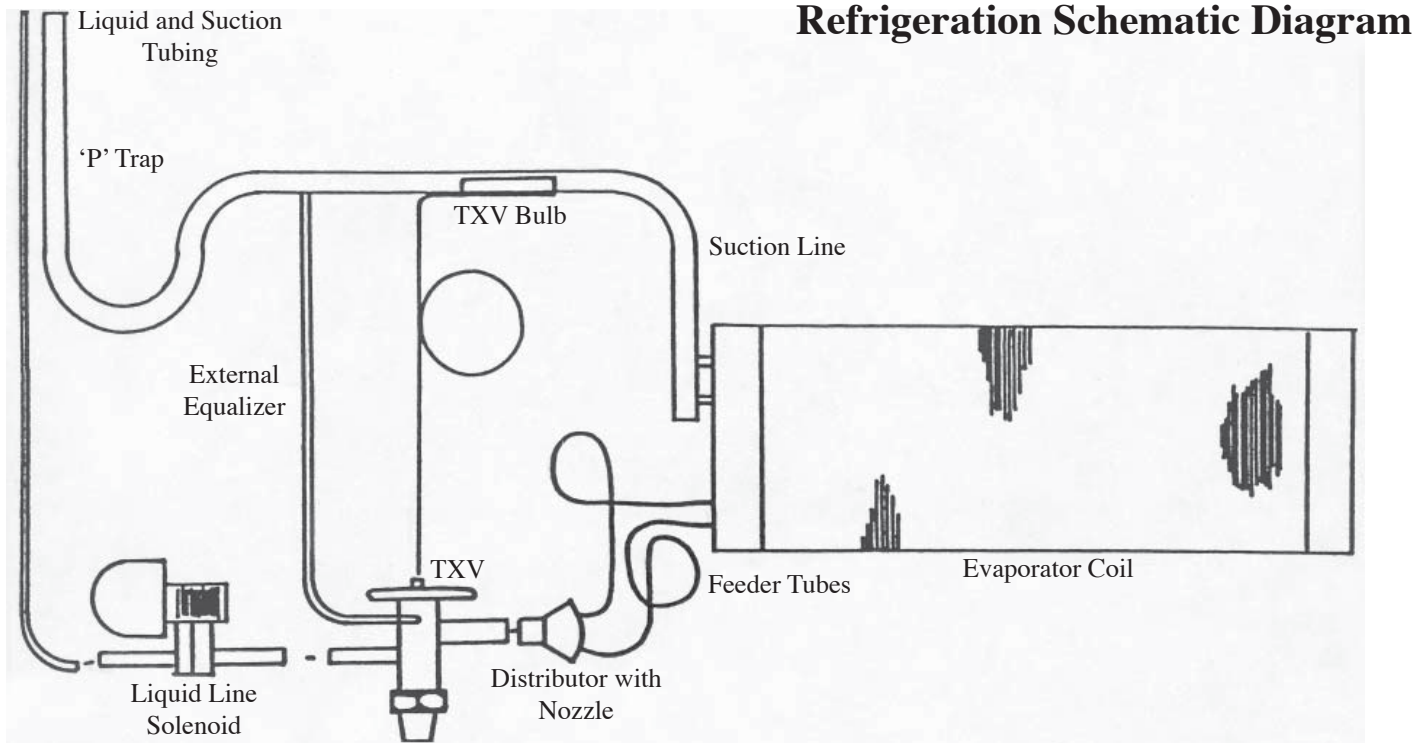
Condensate Pan
The resulting warm air from the condensor blows over the condensate pan and evaporates the water.



Color Chart
Dark Blue = Low pressure liquid
Light Blue = Low pressure gas
Red = High pressure gas
Pink = High pressure liquid

Compressor
Combines heat absorbed in the evaporator coils with heat of compression from the piston stroke then pushes high pressure gas (vapor) on into the condenser.

Condenser
High pressure gas is condensed into a high pressure liquid when the heat is removed. By pulling air in the front of the condenser by means of the fan motor. The air will be used to evaporate the drain pan water.

▶ TRUE'S REMOTE SYSTEM - HOW IT WORKS**OPERATION INSTRUCTIONS****Refrigeration Schematic Diagram**

The suction line will exit the evaporator coil as usual for self-contained models, except it shall include an Oil "P" trap. This is used to trap oil in low velocity suction gases at a point just prior to a vertical rise. Whether the compressor is to be located above or below the evaporator, (True does not have control over this), the suction will always have a "P" trap in case the compressor is installed overhead.

The liquid line shall enter the cabinet and go directly to the liquid line solenoid, this is a normally closed refrigerant valve which will be energized and wired in series with the thermostat. When the thermostat is closed (requires refrigeration) the solenoid will be energized to open, allowing refrigerant to pass to the "thermal expansion valve" (TXV). The TXV allows refrigerant through to the evaporator coil. If the evaporator has more than one circuit, a distribu-

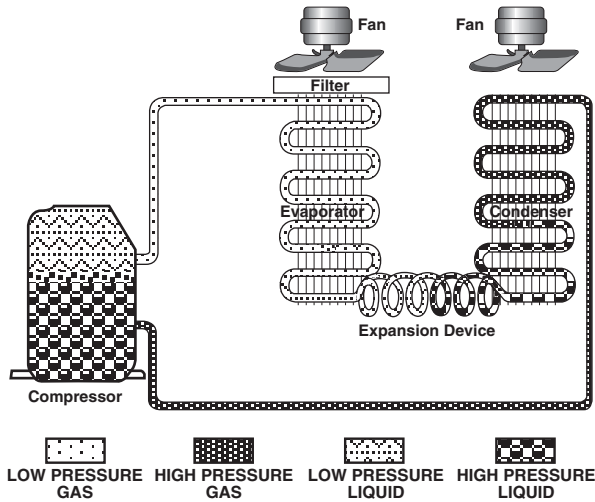
tor is used which evenly distributes refrigerant to each circuit. The TXV is made to open and close by its sensing bulb which senses suction line temperature on the other side of the evaporator. The sensing bulb has the same refrigerant that is used in the refrigeration system. When hot air passes over the evaporator coil and warms the refrigerant, the sensing bulb senses the warm condition and pushes the sensing valve open. When too much refrigerant flows into the evaporator, the sensing bulb's refrigerant cools and contracts allowing the diaphragm to ease away the needle valve, thus closing the valve.

The external equalizer is another sensing element which helps the sensing bulb to more accurately feed refrigerant. The external equalizer line must be downstream of the TXV bulb. The TXV bulb should be insulated with corksput.

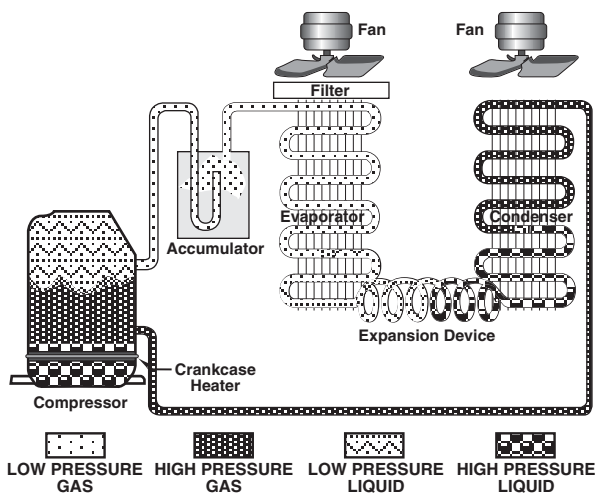
► Basic Refrigeration

REFRIGERATION BASICS

Control of Liquid Refrigerant Floodback To The Compressor During Operation



Liquid floodback during operation can be caused by fan failure, or dirty clogged filters that can reduce the heat transfer rate to such a point that the liquid refrigerant floods through, instead of vaporizing. When this situation occurs, liquid refrigerant may enter the compressor under conditions which result in separation of the oil and refrigerant. This separation may result in an accumulation of the refrigerant under the oil. Thus, when the compressor is started, the first liquid to be pumped to the bearings will probably be refrigerant, not oil. Even if this oil-refrigerant separation does not occur, the large amount of liquid refrigerant in the crankcase will instantly vaporize and boil away the oil charge when the compressor starts. Thereby leaving the compressor oil-starved for many seconds.



Liquid floodback can be prevented by the application of a properly designed and sized suction line accumulator. Using a totally new concept, Tecumseh engineers have designed a suction line accumulator available in eight basic sizes covering a full range of system applications and refrigerant. When properly selected based upon system charge, a Tecumseh suction line accumulator will improve compressor reliability and endurance by preventing damaging liquid refrigerant floodback.

LIQUID REFRIGERANT ACCUMULATION IN THE COMPRESSOR CAN ALSO BE CAUSED BY LIQUID MIGRATION TO THE COMPRESSOR DURING PERIODS OF SHUTDOWN. THIS CONDITION CAN BE CONTROLLED BY THE APPLICATION OF A CRANKCASE HEATER. A SUCTION LINE ACCUMULATOR DOES NOTHING TO PREVENT LIQUID MIGRATION AND A CRANKCASE HEATER DOES NOTHING TO PREVENT LIQUID FLOODBACK. EACH WITHOUT THE OTHER IS HALF A JOB - BOTH TOGETHER PROVIDE BALANCED COMPRESSOR PROTECTION.

 **Refrigeration Troubleshooting****TROUBLESHOOTING INSTRUCTIONS****REFRIGERATION TROUBLESHOOTING CHART
(REFRIGERATOR)****PROBLEM** Cabinet is running warm.

1. Are lights and evaporator fan working?

NO Check to make sure cabinet is plugged in, check to make sure circuit breaker is not tripped, check to see if temperature control is set on #5.**YES** Remove the grill covering the condensing unit.2. Is the condenser coil (looks like a car radiator) clean? If not clean this with a brush and either a vacuum or condensed air. Wait and let the cabinet run with a clean coil and see if that solves problem.
(CONDENSER COILS SHOULD BE CLEANED MONTHLY)

3. Can you here the compressor and condenser fan motor running?

NO Check the voltage at the compressor receptacle. It should be 115 volts $\pm 10\%$. Using a remote reading thermometer, check the evaporator coil temperature. If the temperature control is set on #5 and the coil temperature is above 40 degrees the control should be closed calling for the compressor to run. If the coil temperature is above 40 degrees and the temperature control does not close.

A. remove the temperature control from the evaporator housing and either calibrate or replace control.

• Note: Some models use a temperature control relay.**YES** Is the evaporator coil frozen? Check to see if temperature control is operating correctly. If the evaporator coil is not iced up and the compressor and condenser fan is running please install piercing valves on both the suction and discharge process tubes.

1. If pressures are equalized (high suction pressure, low head pressure) and compressor is running low amp draw, compressor has bad valves replace compressor.

2. If you have low suction pressure and low discharge pressure first check to make sure there are no kinks in the compressor pullout or the suction line after doing this you have a few options.

A. Add a few ounces of refrigerant and see what happens.

B. Recover charge and weigh in correct amount of refrigerant.

► **Refrigeration Troubleshooting ...Continued**

TROUBLESHOOTING INSTRUCTIONS

If the pressures rose and the cabinet began to function correctly, the cabinet was low on charge. This means that there is a leak in the refrigeration system that must be located. A technician can raise system pressure up to 200 psi with nitrogen to aid in the leak search. (Remember that the foam insulation within the cabinet will make a leak detector sniffer type react.)

AFTER LEAK IS LOCATED IT IS VERY IMPORTANT THAT THE SYSTEM DRIER IS CHANGED AND THAT A 500 MICRON VACUUM IS PULLED THROUGH BOTH THE HIGH AND LOW SIDE ACCESS FITTINGS.

When leak is found recover refrigerant, at this time the technician may want to remove piercing valves and solder on access valves to pull vacuum and recharge system. (After charging system both service valves should be removed from the system.)

If the head pressure rises but falls right back down after you stop adding gas and the suction pressure stays low there may be a restriction in the system. Recover the charge and cut out the drier also cut about 2" off of the capillary tube. Circulate nitrogen through the system to clear any restrictions in the evaporator. Evacuate the system and recharge.

If the problem still exists capillary tube may need to be replaced.

 **Freezer Troubleshooting****TROUBLESHOOTING INSTRUCTIONS****REFRIGERATION TROUBLESHOOTING
(FREEZER)**

PROBLEM Cabinet is running warm.

Can you hear the compressor running?

NO If nothing is running and cabinet is warm check to make sure cabinet is plugged in and then check circuit breaker. On older GDM models the cabinet lights will not come on until the temperature reaches 20 degrees but on T-Series cabinets lights will work when you open the door at any temperature. All freezers have a fan delay that will not allow the evaporator fans to start before the fan delay / defrost termination switch is satisfied.

Remove the grill covering the condensing unit. Check the defrost timer to see if cabinet is in defrost. Do not turn dial on defrost timer, take a pencil and mark a spot on the outer dial and watch this to see if timer is working. This should take no more than 10 minutes to verify. While waiting, look to see if the condenser coil (looks like a car radiator) is clean. If coil is dirty clean with a brush and a vacuum or compressed air. (CONDENSER COILS SHOULD BE CLEANED MONTHLY)

If cabinet is not in defrost and the compressor and condenser fan motor is not running, unplug the condensing unit and check the voltage at the compressor receptacle. The voltage should be within 10% on a 115 volt compressor and within 5% on a 208 /230 volt compressor.

Any voltage less than that unplug cabinet and remove the temperature control from the evaporator housing and check out control. Control could be stuck open or be pitted due to low voltage or short cycling. Refer to Temperature Control Change-Out Instructions, page 175-176.

- **There is a wiring diagram on the back of the electrical box cover plate.
Use this to help you troubleshoot.**

YES The compressor is running and cabinet is warm. Does the evaporator coil have an ice build up on it? If so follow above directions on how to verify if timer is advancing. If it is manually turn timer and put freezer into defrost to check defrost heaters.

After ice build up is gone restart cabinet if box starts to freeze properly cabinet may not have enough defrost times. Set timer for 4 defrosts a day. You may also want to check out defrost heater voltage and amperage at this time to verify that there is not a heater or voltage problem.

If the compressor is running and there is no ice build up on the evaporator coil, install gauges on the suction and discharge side of the system and check the system operating pressures.

 **Freezer Troubleshooting Continued****TROUBLESHOOTING INSTRUCTIONS**

1. If compressor is running and you have a low amp draw with a high suction pressure and a low head pressure your compressor has bad valves replace compressor.
2. If you have a low suction pressure and a low head pressure you may have one of a few different things happening with your system.
 - A. Kinks in the suction line or compressor pullout.
 1. Check for kinks and repair tubing if needed.
 - B. CRO valve not functioning correctly.
 1. Install a line tap in suction line to verify pressure upstream of valve, replace valve if needed.
 - C. Evaporator or accumulator may be logged with oil.
 1. Disconnect termination switch from timer and run system through an extended defrost cycle to warm oil and get it to return to the compressor after putting back in freeze cycle.
 2. Allow evaporator to warm up and remove capillary tube from evaporator then blow nitrogen through evaporator. You may also want to poke a hole in the accumulator with a scratch awl to add in the oil removal.
 - D. You may also have a system that is low on refrigerant charge or have a capillary tube or drier that is restricting refrigerant flow.
 1. Add a few ounces of refrigerant to system.
 2. Recover the charge and weigh in the correct amount of refrigerant.

With either of these options used if the pressures rise and the cabinet begins to function correctly we know that the cabinet was low on charge. This means that there is a leak in the refrigeration system that now must be located. A technician can raise the system pressure up to 200 psi with nitrogen to aid in the leak search. Remember that the foam itself will make a leak detector (sniffer type) react.

AFTER LEAK IS LOCATED IT IS VERY IMPORTANT THAT THE SYSTEM DRIER IS CHANGED AND THAT A 200 MICRON VACUUM IS PULLED THROUGH BOTH THE HIGH AND LOW SIDE ACCESS FITTINGS.

When leak is located recover refrigerant, at this time the technician may want to remove any line taps they might have installed and solder on access fittings to pull the vacuum and recharge the system. (After charging the system both of the access valves must be removed from the system.)

If the head pressure falls right back down after you stop adding refrigerant and the suction pressure stays low there may be a restriction in the system Recover refrigerant and cut out the drier along with about 2" of the capillary tube. Circulate nitrogen through the system to clear any restrictions in the evaporator. Evacuate the system and recharge.

If the problem still exists the capillary tube may need to be replaced.

► **Capillary Tube Replacement Instructions (Upright GDM/T-Series Equipment / Single Door Cabinets)**
INSTALLATION INSTRUCTIONS

TOOLS REQUIRED:

- Drill
- 5/8" Hole Saw
- (2) - 1/2" Copper Coupling
- Torch
- Heat Shield
- Tube Cutter
- Foam Insulation
- Cap Tube Suction Line Assembly (Supplied)
- Liquid Line Filter Drier (Supplied)
- Cover (Supplied)
- Wire Back Guards (Supplied in freezers only).

NOTE: (GDM/T-23 Freezer Model only require ordering two of the following part number 872977)

STEP 1

Inspect supplied cap tube suction line assembly. The kit should include one 1/2" suction line, cap tube, accumulator section (shipped loose).

NOTE:

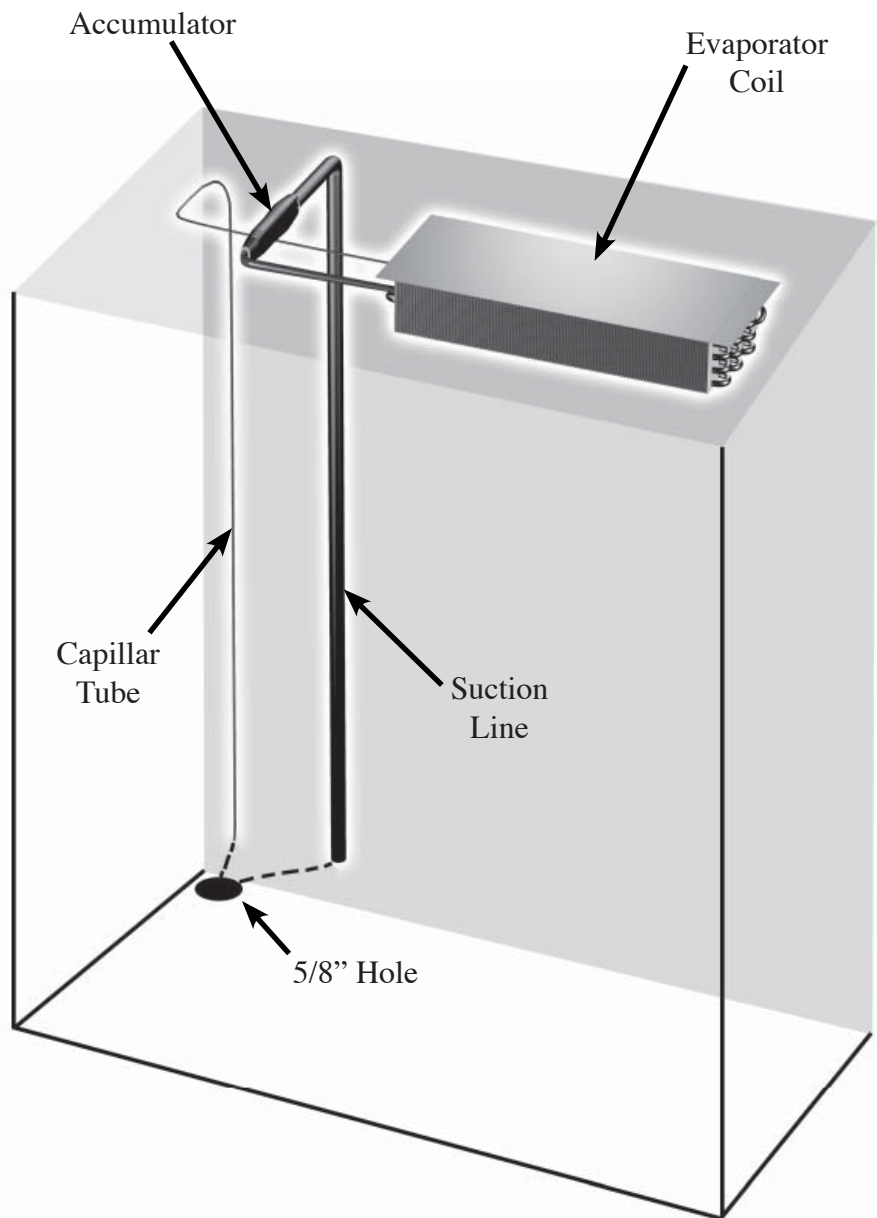
You may have to secure the cap tube to the suction line with the supplied foil tape. Be sure to use all of the supplied cap tube. The excess cap tube should be coiled up and left inside the evaporator section.

STEP 2

Remove the power supply to the cabinet.

STEP 3

Recover the refrigerant from the unit.



▶ Capillary Tube Replacement Instructions (Upright GDM/T-Series Equipment) ...Continued**INSTALLATION INSTRUCTIONS**

————— STEP 4 —————
Remove all of the shelves.

————— STEP 5 —————
Disconnect the evaporator drain line.

————— STEP 6 —————
Drop down the evaporator housing by removing the 1/4" screws that hold it in place. Remove the temperature control wires and remove the housing

————— STEP 7 —————
Locate the two 1/4" screws that hold the left side evaporator up and remove them.

————— STEP 8 —————
Un-solder the capillary tube from the evaporator.

NOTE:
The use of a heat shield is recommended.

————— STEP 9 —————
Un-solder the evaporator and suction line from the accumulator. After the old suction lines cools down you can crimp it closed.

NOTE:
The use of a heat shield is recommended.

————— STEP 10 —————
Drill a 5/8" hole in the floor as close to the left rear corner of the cabinet as possible. See Figure 1.

————— STEP 11 —————
Place the cap tube suction line and accumulator assembly in the cabinet to prefit the assembly before doing any brazing.

NOTE:
Figure 2a will need to be cut to fit.

————— STEP 12 —————
Remove the assembly from the cabinet to solder all of the connections.

————— STEP 13 —————
Reinstall the assembly and solder the new assembly to the evaporator coil, liquid line and compressor pull out.

————— STEP 14 —————
Pressurize the system using nitrogen to leak and repeat this step.

————— STEP 15 —————
Silicone the hole in the floor and insulate the suction line where the line comes out under the cabinet.

————— STEP 16 —————
Pull a vacuum on the unit.

NOTE:
The use of a micron gauge is recommended.

————— STEP 17 —————
Reassemble the evaporator section.

————— STEP 18 —————
Place the cover over the new cap tube suction line assembly and secure it to the back wall using several small sheet metal screws or some white pop rivets.

————— STEP 19 —————
Place the new or existing back guards back in the unit.

————— STEP 20 —————
Check the cabinet operation

————— STEP 21 —————
Finish reassembling the cabinet.

*Figure 2a.**Figure 2b.*

Should you have any additional questions, please feel free to contact the technical service department at 800-325-6152

▶ Capillary Tube Replacement Instructions for the GDM-72 and the T-72**INSTALLATION INSTRUCTIONS****TOOLS REQUIRED:**

- Drill
- 5/8" Hole Saw or Drill Bit
- 1/2" Copper Elbows
- 1/2" Copper Couplings
- Tube Cutter
- Torch/Solder/Vacuum Pump
- Heat Shield
- Perma Gum or Silicone

STEP 1

Inspect the supplied cap tube suction line assembly kit. The kit should include three corner covers (white or stainless steel to match the interior of the cabinet). Two each of the 1/2" suction line, cap tube, accumulator, 5/8" plastic bushing. Additionally, there should be foil tape, and a liquid line filter drier.

NOTE:

Be sure to use all of the supplied cap tube. The excess cap tube should be coiled up and left inside the evaporator section. These parts may be shipped loose and some assembly will be required.

STEP 2

Remove the power supply from the cabinet.

STEP 3

Recover the refrigerant from the unit.

STEP 4

Remove all the shelves from the cabinet.

STEP 5

Remove the drain lines from the evaporator. (See image 1).

**Image 1.****STEP 6**

Remove the right side drain line cover from the back wall. To do this remove all the 1/4" hex head screws that hold the cover in place. (See image 2).

**Image 2.****STEP 7**

Remove the evaporator housing. To do this remove all the 1/4" hex head screws that hold the housing in place. Also be sure to remove the light switch by unscrewing the lock nut around the switch and unscrew the temperature control mounting plate. This will allow you to pull evaporator cover out of the unit. You will also

have to remove the center pilasters from the cabinet. (See image 3).

**Image 3.****STEP 8**

Remove the temperature control cap tube from the evaporator coils.

STEP 9

Remove the existing cap tube and suction line from the right evaporator coil. Cut the copper lines coming out of the ceiling and solder them shut. (See image 4).

**Image 4.****STEP 10**

Starting with the right evaporator line set. Drill a 5/8" hole in the floor in the middle of the area where the drain line cover sits. Approximately 25" from the right side wall or between the two screws holes on the back wall for the drain line cover.

► Capillary Tube Replacement Instructions for the GDM-72 and the T-72 ...Continued...**INSTALLATION INSTRUCTIONS****STEP 11**

Place one of the 5/8" bushings in the hole and then run the cap tube suction line assembly through it. You should have at least 6-8" of cap tube sticking out past the end of the suction line into the condensing area. Fill the hole in the floor with perma gum or silicone.

STEP 12

Take the drain line cover that was removed in Step 6 and trim approximately 1 3/4" from the top using a tin snips. Place the drain line cover back over the refrigeration lines.

STEP 13

Add the accumulator to suction line to the assembly to pre-fit prior to doing any soldering. After sizing the assembly, solder it to the evaporator.

NOTE: Will need to be cut to fit and possibly add additional 1/2" after.

STEP 14

Repeat this step for the left hand side cap tube suction line assembly. Drill a 5/8" hole in the floor approximately 9 1/2" from the left wall.

STEP 15

Remove the existing cap tube and suction line from the left evaporator coil. Cut the copper lines coming out of the ceiling and solder them shut. (See image 5).

*Image 5.***STEP 16**

Measure in approximately 9 1/2" from the left wall and drill a 5/8" hole in the floor. Place the other 3/8" bushings in the hole and then run the cap tube suction line assembly through it. You should have at least 6-8" of cap tube sticking out past the end of the suction line into the condensing area. Fill the hole in the floor with perma gum or silicone. (See image 6-7).

*Image 6.**Image 7.***STEP 17**

Add the accumulator to suction line to the assembly to pre-fit prior to doing any soldering. After sizing the assembly, solder it to the evaporator.

NOTE: Figure ? (This will come from original instructions and is Fig. 2) will need to be cut to fit.

STEP 18

Down below in the condensing area find the new cap tubes and suction lines that have been pushed through the floor and solder them into respective lines.

STEP 19

Pressurize the system with nitrogen and your choice of refrigerant to leak check.

STEP 20

Change the drier. Pull a vacuum on the unit. Weigh-in the charge of the unit.

NOTE: The use of micron gauge is recommended.

STEP 21

Place the evaporator cover back in place. As well as all other covers that may have been removed.

STEP 22

Plug the unit back in and check its operation.

GDM SERIES CABINETS

▶ **GDM Series Basic Cooler Operation with the Exception of the TAC & Deli Cabinets**

SEQUENCE OF OPERATION

Now that your equipment has been uncrated, the **electrical supply has been verified**, and the unit has been installed at its final location. You may plug in the cabinet.

After the cabinet is plugged in the evaporator fans (interior fans) will start. These fans will run all the time, they will not cycle off like a residential refrigerator. This is done to give an even and consistent product temperature throughout the interior of the cabinet.

If the light switch is in the on position the lights will also come on. (The light switch turns on and off all lights whether they are in the sign panel or inside of the cabinet).

The temperature control should be set between #4 or #5. If this is done the compressor will start. The compressor / condensing unit is turned on and off by the temperature control which is sensing evaporator coil temperature. **This is very important to remember.** We do not concern ourselves with interior air temperature. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. The compressor will run until the evaporator coil reaches the correct cut out temperature. The compressor will then shut off. The evaporator fans will continue to run circulating air through the evaporator coil. This will allow any ice or frost that has built up on the evaporator coil during the compressor run cycle to defrost during the compressor off cycle. When the evaporator coil temperature reaches the correct cut in temperature the cycle starts all over again.

► **Basic Freezer Operation for Upright Models**

SEQUENCE OF OPERATION

Now that your equipment has been uncrated, the electrical supply has been verified, the unit has been installed at it's final location, and the time clock has been set (if applicable).

Once the unit is plugged in the compressor should come on immediately. You should be able to here the compressor operating. The temperature control should be set to #4 or #5. On some models (upright) the cabinet and sign lights may also come on immediately. Otherwise the lights, perimeter heater and mullion heater(s) are controlled by a temperature sensing device that will not allow these items to come on until the box temperature is below 20°F. If the compressor is not operating be sure that the unit is not in defrost. Locate the time clock. On all the upright models the time clock will be located near the condensing unit. Advance the time clock counter clock wise a quarter of a turn. The compressor should then come on. The evaporator fans inside the cabinet will not come on until the fan delay/defrost termination switch is satisfied. Once the evaporator fans come on they will continue to run until the unit goes into defrost, or the doors are opened, or on some upright models when the temperature control is satisfied. If the fans are cycling off on the temperature control once the cabinet temperature rises and closes the temperature control, the evaporator fans will come back on along with the compressor and the cooling process will start all over again.

The defrost cycle on all freezers is controlled by a time clock. On our upright models the time clock is located near the condensing unit and the clock is adjustable. This means that you can increase the duration of defrost as well as add and additional defrost setting. During defrost the compressor and evaporator fans will shut off. The evaporator coil heater will come on and remain on until either a heater termination switch is satisfied and or the defrost duration (time) has completed. At this time the unit will go back into the freeze cycle. The compressor will start up and the evaporator fans will not come on until the fan delay/defrost termination switch is satisfied.

► **Slide Door Instruction - To improve slide door closing**

INSTALLATION INSTRUCTIONS

Check the cooler to see that it is level before searching for a solution. Place a level on the center of the lower channel and on the v-track in several places. The different areas involved with the closing of the door are as follows...

———— Plastic Channel ————

The plastic channel area: This includes the top, bottom, v-track, and bumpers.

- a. Inspect the top and bottom channels for blockage. Inspect the v-track for dents or movements that may be causing the door to bind. The v-track may be adjusted slightly by bending the "v" with a number 8r vise grips. The v-track can be realigned or replaced. Shims under the door can be adjusted or added to, to improve the seal and speed of closing of the door.

———— Door ————

The door: This area includes v-roller bracket assembly, stainless insert holder, slot on top of door (where cord is fastened) the foam tape on the door, and the plastic buttons on the inside of the door.

- a. Inspect the v-rollers, clean, realign, and lubricate (the rollers should spin freely) or replace. Be sure the roller bracket screws do not touch the v-track.

- b. Check to make sure door is square. If not loosen stainless insert holders then retighten insert holders. Push on glass insert and break the seal between insert and 2 sided tape. Square the door by placing shims between frame and glass insert, and then reinstall the insert holders.

- c. Replace the door (with door disconnected) from cord. Slide the door in both directions. Look for binding in the channel area at the top and bottom. Check the stainless insert holder, the 1/4" - 3/8" foam tape, the nylon buttons, and the gasket. Adjust or replace the v-track to ease any binding.

———— Door Weights ————

The door weight area: This area includes the weight, the nylon cord, the assembly for holding the door open, and the copper guides for the nylon cord.

- a. Remove the door and disconnect the cord. Pull the cord and release it gradually. Does the weight feel like it is binding? Remove the knot in the weight. Remove any excess cord at the knot. The knot should be inside the weight to minimize the friction. The weight should hang in a vertical position (no angle). Inspect the weight itself and the holes in it. Replace the weight if holes are too far off center and are affecting the travel in the door weight area.

———— Gasket ————

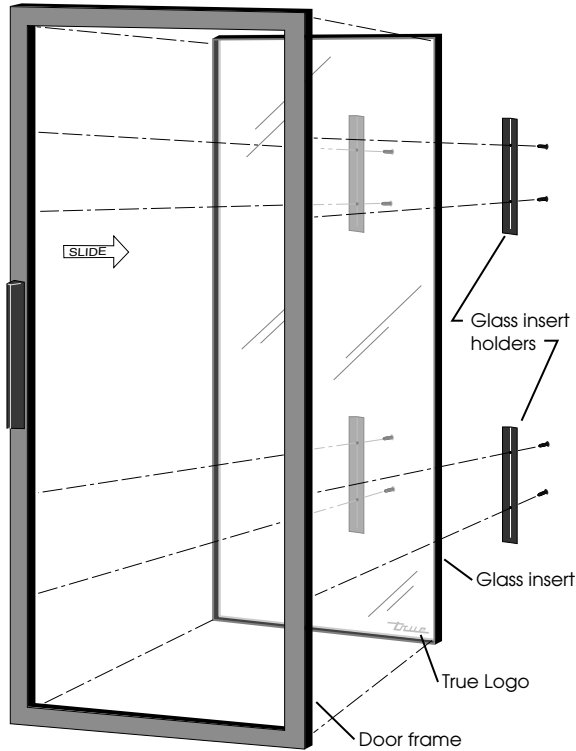
The gasket area: This area includes the 3" plastic, 1 3/8 plastic, the gasket and the 11/16" gasket insert holder. Inspect the door to make sure it is seating against gasket.

TO ELIMINATE GAPS ON SLIDE DOOR COOLERS

1. Adjust leg levelers to eliminate gap.
2. Place shims between the roller brackets and the door.
3. Remove gasket and shim at needed locations.
4. Shim v-track.

Glass Insert - Slide Door

INSTALLATION INSTRUCTIONS



REQUIRED TOOLS

- Phillips Head Screwdriver
- 3/8" Wide Double-Sided Tape

STEP 1
 Slide left door (door positioned on outside track) to the right. Lift door up and pull out at the bottom. Right door (door positioned on inside track) can be removed in the same manner.

STEP 2
 Remove the nylon cord from the top of the door.

STEP 3
 Set the door (handle side down) on a flat surface.

STEP 4
 Remove the screws that secure the four glass insert holders to the door. Remove all four aluminum pieces.

STEP 5
 Beginning at the corners carefully pry the broken glass loose from the frame. If necessary use heat gun or hair dryer aimed in the space between glass insert and door frame to lessen adhesion of double-sided tape. Carefully dispose of the damaged glass.

STEP 6
 Remove any excess tape or glass from the lip on the door frame. Replace with new double-sided tape on the 1/2" lip.

STEP 7
 Remembering to keep the tempered glass to the handle side of the frame place the new glass insert inside the frame and press against the two-way tape. (The etched TRUE logo is positioned on the tempered glass side.)

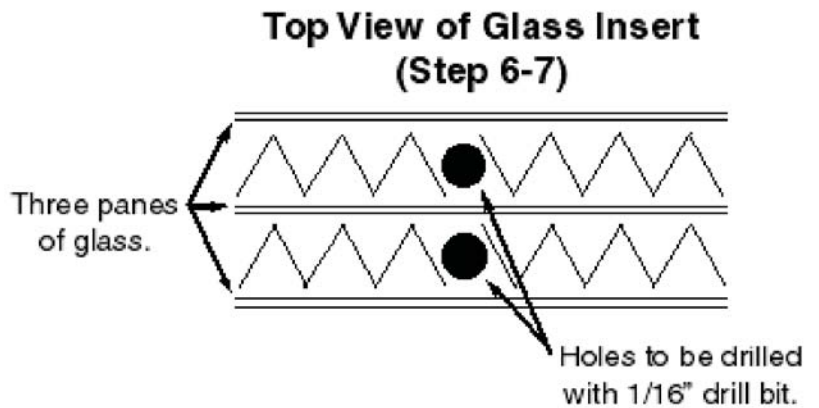
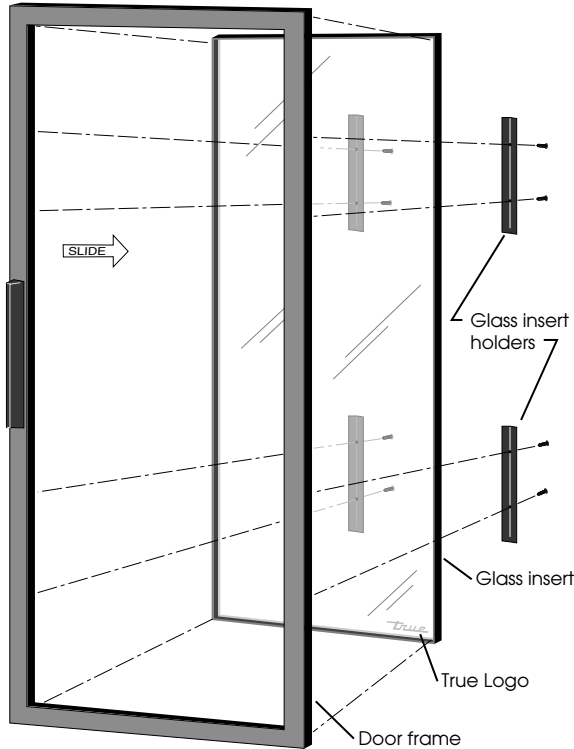
STEP 8
 Replace the four Aluminum glass insert holders.

STEP 9
 Reconnect the nylon cord to the top of the door and replace the door as originally removed.

NOTE:
 Door frames on some models are one piece.

Glass Insert Gas Release (High Altitude Installation) for Triple Pane Glass

INSTALLATION INSTRUCTIONS



REQUIRED TOOLS:

- Phillips head screwdriver
- 3/8" Wide double sided tape
- 1/16" Drill Bit
- Drill
- Silicone

STEP 1

Slide left door (door positioned on outside track) to the right. Lift door up and pull out at the bottom. Right door (door positioned on inside track) can be removed in the same manner.

STEP 2

Remove the nylon cord from the top of the door.

STEP 3

Set the door (handle side down) on a flat surface.

STEP 4

Remove the screws that secure the four glass insert holders to the door. Remove all four aluminum pieces.

STEP 5

Remove glass insert by pushing on insert in upper corner of the handle side. If necessary, use a heat gun or hair dryer aimed in the space between glass insert and door frame to lessen resistance of double stick tape.

Note:

For safety, gloves and eye protection should always be worn when handling glass.

STEP 6

Carefully use the drill with a 1/16" drill bit to drill through the spaces between the glass.

STEP 7

After gas is released from in between both panes use the silicone to reseal drill holes.

STEP 8

Remove any excess tape or glass from the lip on the door frame. Replace with new double-sided tape on the 1/2" lip.

STEP 9

Remembering to keep the tempered glass to the handle side of the frame place the new glass insert inside the frame and press against the two-way tape. (The etched TRUE logo is positioned on the tempered glass side.)

STEP 10

Replace the four Aluminum glass insert holders.

STEP 11

Reconnect the nylon cord to the top of the door and replace the door as originally removed.

► Wiper Gasket Installation**INSTALLATION INSTRUCTIONS****REQUIRED TOOLS**

- Drill
- 1/8" Drill Bit
- Pop Rivet (2 Per Door)

*Top View of Wiper Gasket.*

The short side of the gasket is what seals between the doors.

SHOULD YOU HAVE ANY ADDITIONAL QUESTIONS, PLEASE FEEL FREE TO CONTACT THE TECHNICAL SERVICE DEPARTMENT AT 1-(800)-325-6152.

————— STEP 1 —————
 Before removing the doors from the cabinet, mark each door in the area where the wiper gasket will be applied at the point of the center leg on the top and bottom door channels. See #1. Use the reference marks for the vertical positioning of the wiper gasket.

————— STEP 2 —————
 Remove the doors by lifting the left door up and swing the bottom out. Remove the door cord attached to the top of the door. Repeat these steps for right door. Place the left door with the handle down and place the right door with the handle up.

————— STEP 3 —————
 Drill out the rivets that secure the wiper Gasket and remove all residues from the door surface where the wiper gasket will be applied.

————— STEP 4 —————
 Peel off the adhesive tape on the back side of the gasket and apply one wiper gasket to the back of the outside (left) door. Position the wiper gasket at least 3/8" in from the door frame on the inside (right) door.

————— STEP 5 —————
 Drill one 1/8" hole through the top and Bottom of the wiper gasket holder and in to the door frame about 2" from the top of the blade and replace the pop rivets.

————— STEP 6 —————
 On coolers with 3 doors, locate and adjust the blade to the back frame in the center door as needed making sure that the right door will operate freely and secure it with pop rivets. Make sure that the wiper gasket does not drag against the door tracks.

Ratchet Lock & Plastic Door Stop - Slide Door

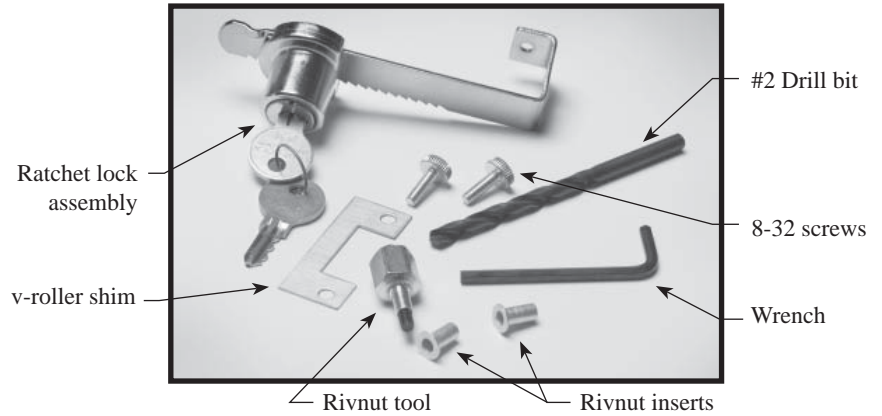
INSTALLATION INSTRUCTIONS

INCLUDED IN KIT:

- Ratchet lock assembly
- (1) v-roller shim
- (2) 8-32 rivnuts with tool
- (2) 8-32 screws
- #2 Drill bit

REQUIRED TOOLS:

- Marking utensil
- Electric drill
- Exacto knife or razor blade



Step 1

Remove left side door by lifting up and out of the bottom track.

Step 2

Position ratchet bar over left side of the right hand door. Center from top to bottom. Place shim in-between the ratchet bar, and left edge of door (image 1).

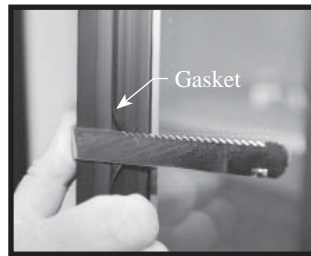


Image 1

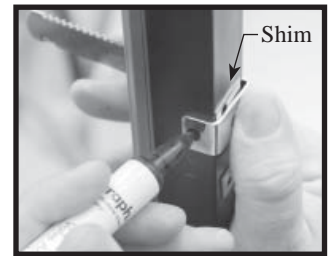


Image 2

Step 3

Using the ratchet bar as a template, mark the hole to be drilled and mark rubber gasket (on the front side of the door) top and bottom of the ratchet bar (image 2).



Image 3

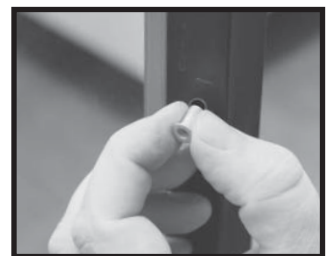


Image 4

Step 4

Drill hole where marked using #2 drill bit (image 3).

Step 5

Place rivnut insert (provided in kit) in drilled hole (image 4).

Step 6

Install rivnut using rivnut tool provided in kit (image 5 & 6).



Image 5

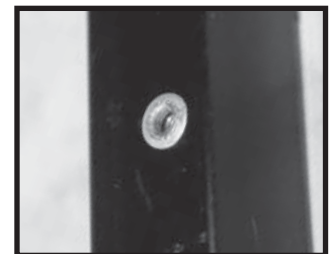


Image 6

Step 7

Using an exacto knife or razor blade carefully cut rubber gasket to create notch for ratchet bar (image 7).



Image 7



Image 8

Step 8

Reposition ratchet bar and secure using 8-32 screw into rivnut.

Step 9

Replace left side door and check slide operation.

Step 10

To lock cabinet, slide ratchet lock onto the ratchet bar through slot (lock should be oriented with slot towards top of lock (image 7)).

► Ratchet Lock & Plastic Door Stop - Slide Door Continued**INSTALLATION INSTRUCTIONS*****Plastic Door Stop Installation***

Instruction (Unnecessary if factory installed)

REQUIRED TOOLS

- Drill With 1/8" Bit
- Phillips Head Screwdriver

STEP 1

Remove left side door by lifting up and out of bottom track.

STEP 2

Position the plastic door stop centered in the front door channel. Center within the confines of the door that was removed.

STEP 3

Install phillips counter-sunk screws provided. (see figure 3.)

STEP 4

Replace left side door and check slide operation. If door stop impedes closing of left hand door, remove door, detach plastic door stop and remove one layer or piece of the door stop and reinstall.

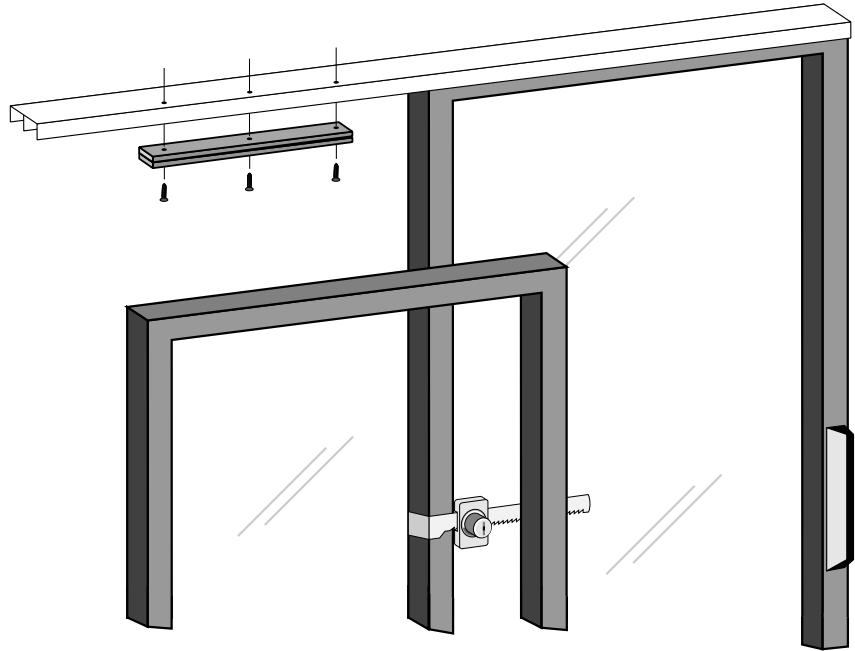


Figure 3

NOTE:

*Length of door stop and
number of screws determined
by cooler model*

▶ Barrel Lock Installation (GDM slide door models)

RETROFIT INSTRUCTIONS

REQUIRED TOOLS

- Dremel tool or sharp knife
- 3/4" hole saw
- Pop rivet tool
- 7/8" deep well socket
- Tape measure
- Phillips screw driver
- Slot screw driver
- #32 drill bit

INSTALLATION

STEP 1

Use tape measure and mark a center line at 34 3/4" down from the top of the cabinet on the left end. Mark second center line 7/8" from outside edge of cabinet. This should locate the hole in the end of the cabinet.

STEP 2

Use 3/4" hole saw and drill hole on center mark.

STEP 3

Remove door jamb gasket from left door jam.

STEP 4

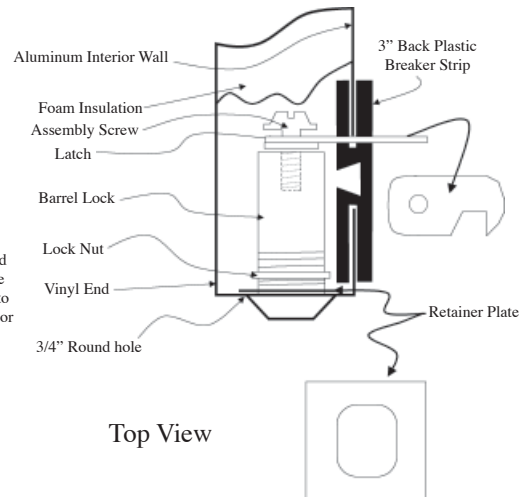
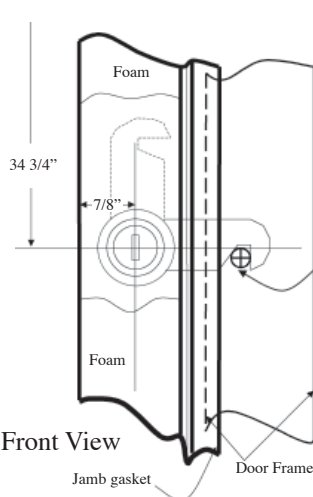
Draw center line on black plastic fill in. Align fill in center line with cabinet center line and mark a line along top and bottom to fill in.

STEP 5

Using dremel tool or sharp knife, cut out black plastic breaker on marked lines. Remove this section of breaker completely. Some of the aluminum wall will need to be removed to create a large enough compartment to work in.

STEP 6

Once the breaker is removed, now the foam can be dug out to form the lock box. Only enough foam should be removed to install lock.



STEP 7

Install lock assembly through 3/4" hole. Place retainer plate and lock nut end, tighten with 7/8" socket: Install tumbler and latch assembly and tighten screw.

STEP 8

Install black plastic fill in plate working lock to make sure latch will move through the slot. When components operate properly, fasten fill in with black pop rivets.

REMINDER

Remember to install left door gasket

STEP 9

With left door installed, mark rear of door where the notch in the latch meet the door frame. Drill a #32 hole on the mark. Install screw and latch tube assembly into drilled hole. Latch should drop onto tube assembly and lock left door.

STEP 10

Install the lock bar assembly to the left side of the rear right door. To do so, remove the left door if you have not already removed it. Be sure that the right hand door is closed all the way. Your going to install the bar so the top of it sits down approximately 2" from the top of the door. (See image 1).



Image 1.

▶ Barrel Lock Installation (GDM slide door models) ... Continued ...**RETROFIT INSTRUCTIONS****STEP 11**

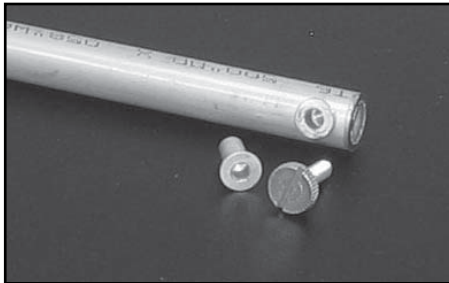
Place the top bracket on the side of the right hand door approximately 3" down from top of the door and secure side of the door. (See image 2).

*Image 2.***STEP 12**

Take the bar and place it in the opening to be sure that it fits. You may have to shorten the bar down. A tube cutter will aide in this. Place the bar in the upper bracket. You may have to pinch in the to arms on the bracket to secure the bar. Take the lower bracket and place it over the bar near the end of the bar and secure it to the door. Mark the hole where the horizontal arms hit the bar. This is where your going to have to drill a 7/32" hole in the aluminum bar for the riv-nut. (See image 3).

*Image 3.***STEP 13**

Place the riv-nut into the bar. Secure the bar to the bottom bracket and check again to be sure that the bar will fit in the opening. Again, you may have to shorten the bar. See image 4 and image 5.

*Image 4.**Image 5.***STEP 14**

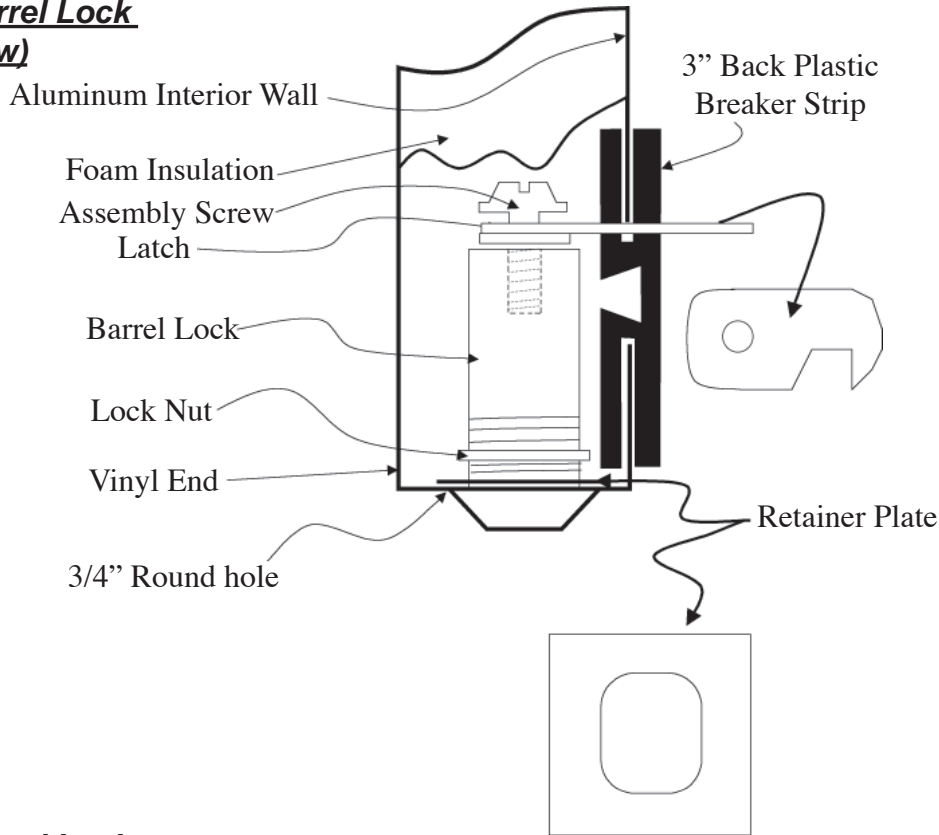
Take the support bracket and place it on the end of the bar. Place the bracket in the center of the 3" black plastic breaker strip on the left wall and secure. Be sure that the bar is level by placing a small level on top of it. (See image 6).

*Image 6.*

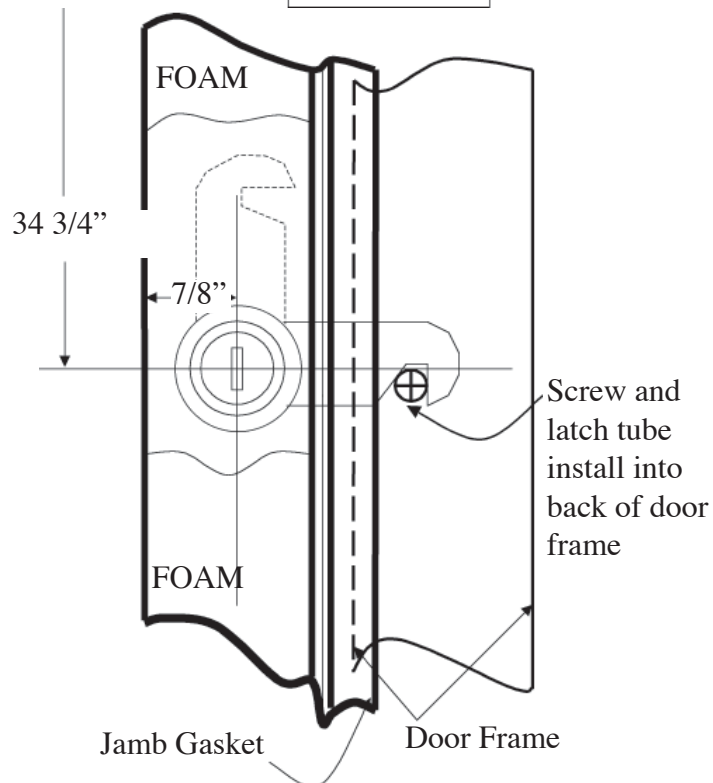
► **Slide Barrel Lock (Top View and Front View)**

INSTALLATION INSTRUCTIONS

Slide Barrel Lock
(Top View)



Slide Barrel Lock
(Front View)



► Removal of GDM Doors

INSTALLATION INSTRUCTIONS

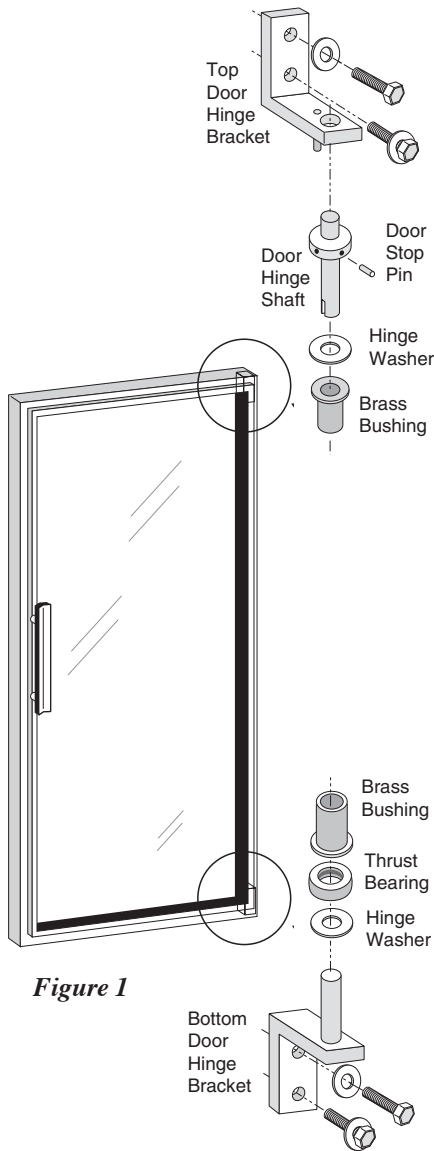


Figure 1

REQUIRED TOOLS:

- (2) - 1/8" Drift Punches (forged)
- Needle - Nose Pliers
- Phillips Head Screwdriver
- Slotted Screwdriver

STEP 1
Turn the cooler off.

STEP 2
Remove the four mounting screws from louvered grill and remove grill.

STEP 3
For models with the integrated door light feature, unplug light from ballast box.

IMPORTANT:
Freezer doors have heater wires which must be unplugged before doors can be removed.

STEP 4
Locate the top hinge assembly.

STEP 5
Remove door stop pin by placing a drift punch into the stop pin hole two holes to the left (for right side door) of the stop pin position. With drill bit firmly anchored in position, apply back pressure to the left and remove the stop pin with a needle-nosed pliers. While firmly holding the drill bit with your left hand begin rotating the hinge shaft to the right relieving spring tension. Insert second drift punch into hole to the left and repeat process until all spring tension is relieved.

STEP 6
In some instances it is necessary to relieve spring pressure one hole position at a time until spring pressure is relieved.

NOTE:
Operation is reversed for left side door.

NOTE:
If cabinet is equipped with integrated door light be sure to unplug from ballast box.

STEP 7
In a squatted position, rest the bottom of the open door on your left knee (for right side door) as you face the outside of the door. Create an upward pressure and remove the two 3/8" bolts from the bottom hinge assembly. Remove the bottom hinge assembly. (Figure 2)

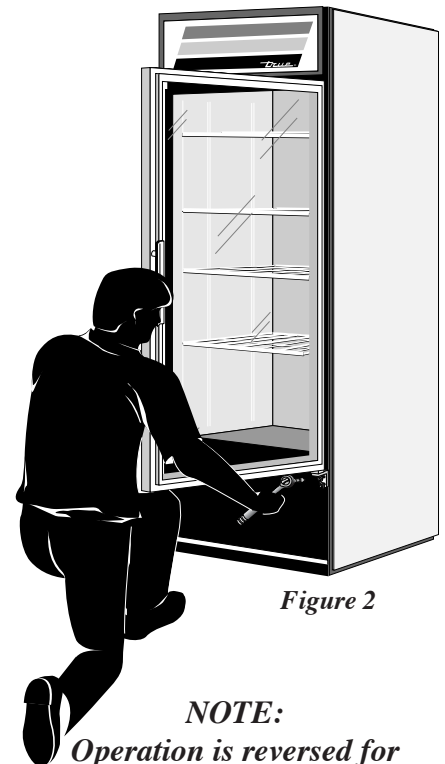


Figure 2

NOTE:
Operation is reversed for left side door.

► Installation of a GDM-Swing Door

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- (2) - 1/8" Drift Punches (forged)
- Phillips-Head Screwdriver

NOTE:

It may be necessary to verify stop pin location and door block material for some models. Or call 800-325-6152 for assistance.

STEP 1

Beginning with the top hinge assembly of the replacement door place the hinge washer over the hinge shaft and slide into top door block. (figure 1).

NOTE:

The slot at the base of the hinge shaft must seat over the head of the door hinge spring.

STEP 2

Insert the bottom hinge assembly (hinge bracket, hinge washer, thrust bearing) into the door block and brass bushing inside bottom frame. (figure 1).

STEP 3

While holding bottom hinge in place lift door and slide top door hinge together. Maintain vertical pressure by resting door bottom on your knee while squatting, or have someone assist in order to re-attach lower hinge to cabinet. Fasten hinge with 3/8" bolts and washers.

STEP 4

For models with integrated door lighting. Be sure and plug into ballast box.

STEP 5

Adjust the spring by rotating the door hinge shaft to the left (using two drift punches) hole by hole to the desired tension (approximately one-half turn). Replace the stop pin in the door hinge shaft.

NOTE:

If cabinet is equipped with integrated door light, be sure to plug into ballast box.

NOTE:

Freezer doors have heater wires which must be plugged in before operation.

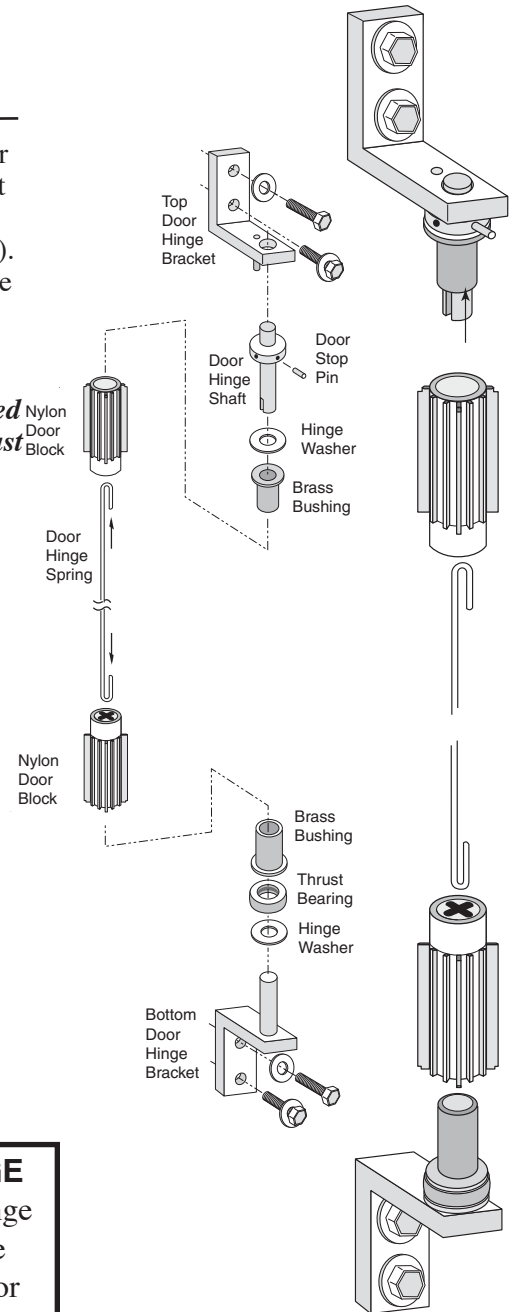
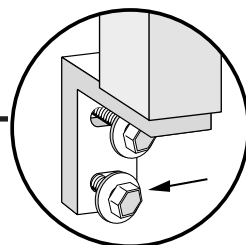


Figure 1

TO ADJUST DOOR HINGE
Loosen bolts from bottom hinge assembly and lightly tap the hinge bracket with a plastic or rubber hammer. When door hangs true, tighten bolts.



TORSION SPRING REPLACEMENT GDM Radius Front - Swing Door
INSTALLATION INSTRUCTIONS

NOTE:
 If the torsion spring is broken, there is no need for steps 1-4.

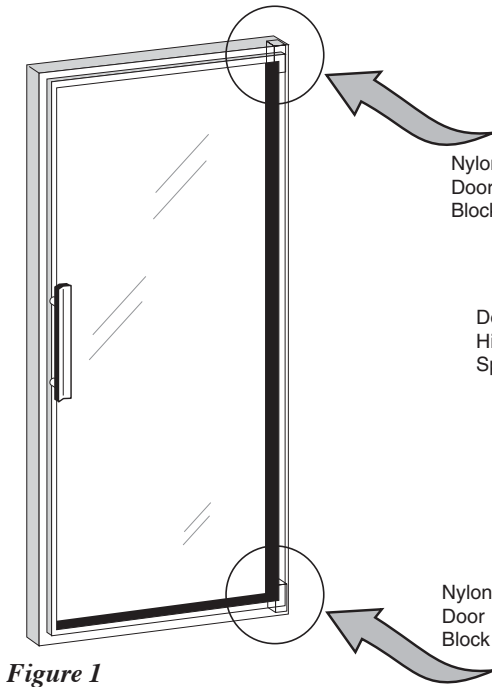


Figure 1

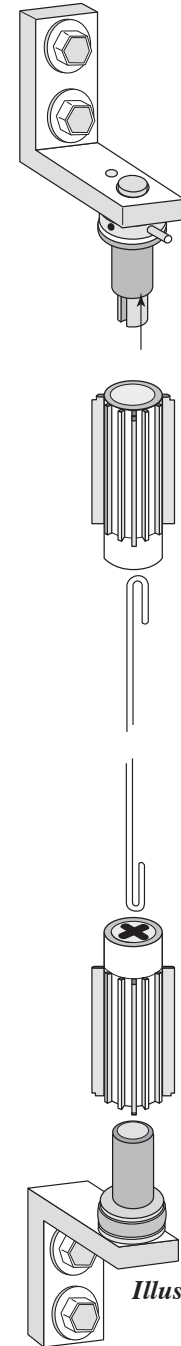
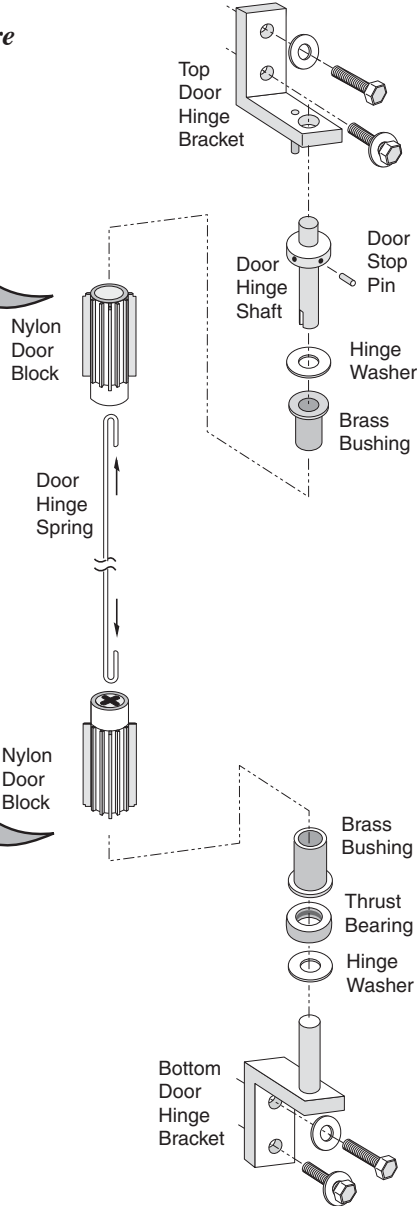


Illustration 1

REQUIRED TOOLS

- (2) - 1/8" drift Punch (forged)
- Needle-Nose Pliers
- Phillips-Head Screwdriver
- Wrench (3/8")

STEP 1
 Turn the cooler off.

STEP 2
 Locate the top hinge assembly.

STEP 3
 If spring remains taut, relieve tension by placing a 1/8" drift punch into the stop pin hole, two holes to the left (for right side door) of the stop pin position.

STEP 4
 With punch firmly anchored in position, apply back pressure to the left and remove the stop pin with needle-nosed pliers.

NOTE: Operation is reversed for left side door.

While firmly holding the drift punch with your left hand begin rotating the hinge shaft to the right relieving spring

tension. Insert second drift punch into hole to the left and repeat process until all spring tension is relieved.

In some instances it is necessary to relieve spring pressure one hole position at a time until spring pressure is relieved.

► **TORSION SPRING REPLACEMENT GDM Radius Front - Swing Door Continued**
INSTALLATION INSTRUCTIONS

STEP 5

Remove all 4 anchor screws from louvered grill and remove grill.

NOTE:

If cabinet is equipped with integrated door light be sure to unplug from ballast box.

NOTE:

Freezer doors have heater wires which must be unplugged before doors can be removed.

STEP 6

In a squatted position rest the bottom of the open door on your left knee (for right side door) as you face the outside of the door. Create an upward pressure and remove the two 3/8" bolts from the bottom hinge assembly. Remove the bottom hinge assembly. (figure 2)

STEP 7

Remove the door and carefully place door on a flat surface with the door handle on the bottom. The door should be in a rectangular position.

STEP 8

Remove upper and lower brass bushing from from the top and bottom of door.



Figure 2

NOTE:

It may be necessary to verify stop pin location and door block material for some models. Or call 800-325-6152.

STEP 9

Remove the broken torsion spring from the top of the door. To do this you might need to bend a hook on the end of a piece of metal such as a coat hanger. Place this hook in the top of the door grabbing the top of the torsion spring. Pull the torsion spring out the bottom. **NOTE:** You may only be able to pull out part of the broken torsion spring. If so go to the bottom door block and insert a 3/16" drill bit into the 3/16" hole in the block till it stops. Then drive it in about two inches to push the old rod out of the door block. See Illustration 1.

STEP 10

Before installing new spring be sure that the ends of the new torsion spring are a "U" shape. If not, squeeze down on the end of the hook closing the gap.

STEP 11

Insert the new spring from the top of the door ensuring that the end hooks into the cross in the bottom door block. You will need to use the door shaft to ensure that the spring is down in the cross of the door block. By turning and pushing down on the spring in either direction 90° the spring should fall into place.

STEP 12

Install new upper and lower bushings.

STEP 13

Assemble top hinge. Place the hinge washer over the door hinge shaft, slide into brass bushing and fit into plastic door block. (figure 1)

STEP 14

Assemble bottom hinge. Place the hinge washer over the bottom hinge bracket, replace the thrust bearing over the washer, slide this assembly into the brass bushing and fit into aluminum door bracket.

STEP 15

While holding bottom hinge in place lift door and slide top door hinge together. Maintain vertical pressure by resting door bottom on your knee while squatting, or have someone assist in order to re-attach lower hinge to cabinet. Fasten hinge with 3/8" bolts and washers.

STEP 16

Adjust the spring tension by turning counter-clockwise (right door) to the desired tension (approx. 1/2 turn). Again use a 1/8" drift punch to adjust and replace stop pin.

NOTE:

If cabinet is equipped with integrated door light be sure to plug into ballast box.

NOTE:

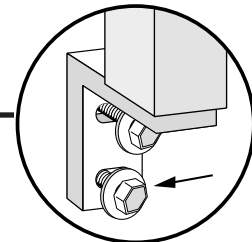
Freezer doors have heater wires which must be plugged in before operation.

STEP 17

Replace louvered grill and secure with four screws.

TO ADJUST DOOR HINGE

Loosen bolts from bottom hinge assembly and lightly tap the hinge bracket with a plastic or rubber hammer. When door hangs true, tighten bolts.



Torsion Spring Replacement GDM - Swing Door
INSTALLATION INSTRUCTIONS

NOTE:
 If the torsion spring is broken, there is no need for steps 1-4.

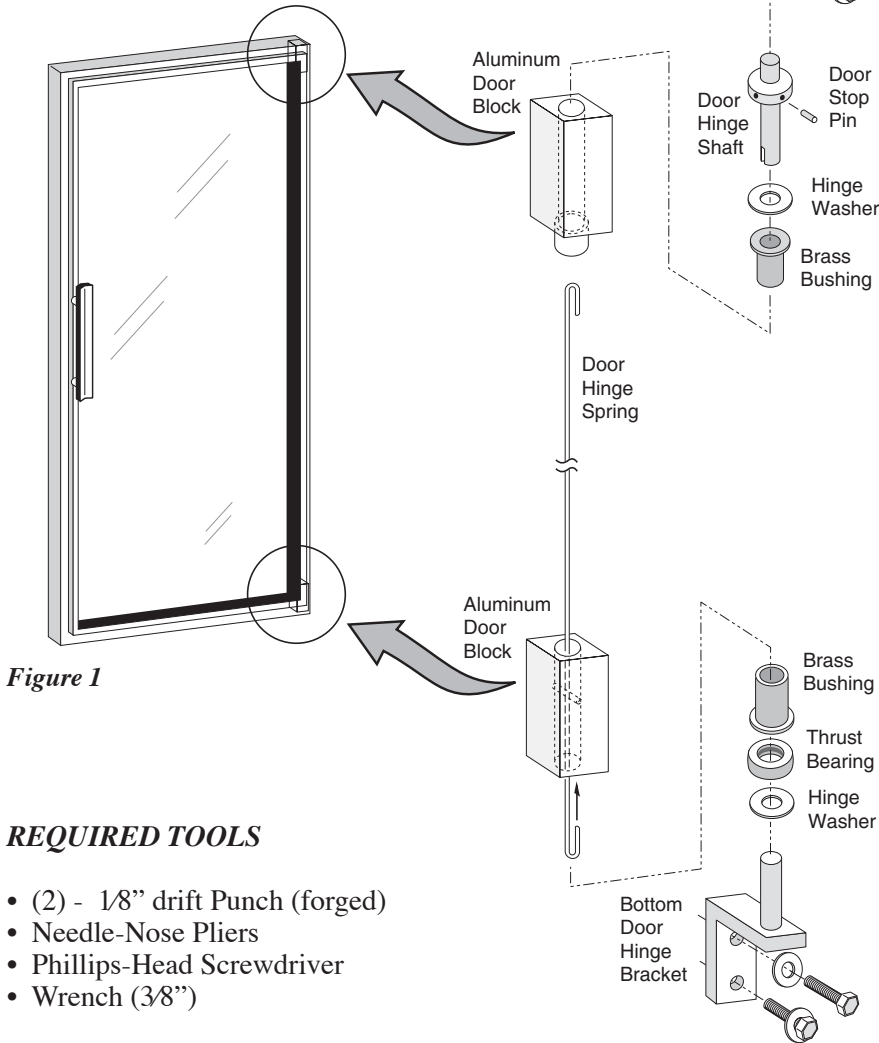


Figure 1

REQUIRED TOOLS

- (2) - 1/8" drift Punch (forged)
- Needle-Nose Pliers
- Phillips-Head Screwdriver
- Wrench (3/8")

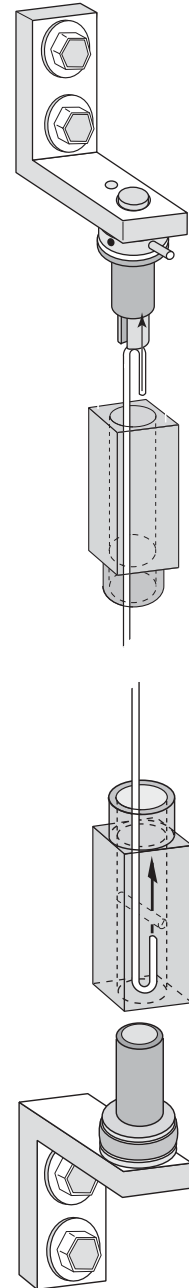
STEP 1
 Turn the cooler off.

STEP 2
 Locate the top hinge assembly.

STEP 3
 If spring remains taut, relieve tension by placing a 1/8" drift punch into the stop pin hole, two holes to the left (for right side door) of the stop pin position.

STEP 4
 With punch firmly anchored in position, apply back pressure to the left and remove the stop pin with needle-nosed pliers.

NOTE: Operation is reversed for left side door.
 While firmly holding the drift punch with your left hand begin rotating the hinge shaft to the right relieving spring



tension. Insert second drift punch into hole to the left and repeat process until all spring tension is relieved.

In some instances it is necessary to relieve spring pressure one hole position at a time until spring pressure is relieved.

► Torsion Spring Replacement GDM - Swing Door Continued**INSTALLATION INSTRUCTIONS****STEP 5**

Remove all 4 anchor screws from louvered grill and remove grill.

NOTE:

If cabinet is equipped with integrated door light be sure to unplug from ballast box.

NOTE:

Freezer doors have heater wires which must be unplugged before doors can be removed.

STEP 6

In a squatted position rest the bottom of the open door on your left knee (for right side door) as you face the outside of the door. Create an upward pressure and remove the two 3/8" bolts from the bottom hinge assembly. Remove the bottom hinge assembly. (figure 2)

STEP 7

Remove the door and carefully place door on a flat surface with the door handle on the bottom. The door should be in a rectangular position.



Figure 2

STEP 8

Remove upper and lower brass bushing from from the top and bottom of door.

NOTE:

*It may be necessary to verify stop pin location and door block material for some models.
Or call 800-325-6152.*

STEP 9

Remove the broken torsion spring from the bottom of the door. To do this you might need to bend a hook on the end of a piece of metal such as a coat hanger. Place this hook in the bottom of the door grabbing the bottom of the torsion spring. Then pull the torsion spring out the bottom. NOTE: You may only be able to pull out part of the broken torsion spring. If so, cut the spring allowing the remainder to fall back into the door.

STEP 10

Before installing new spring be sure that the ends of the new torsion spring are a "U" shape. If not, squeeze down on the end of the hook closing the gap.

STEP 11

Insert the new spring from the bottom of the door ensuring that the end hooks into the horizontal pin in the bottom door block. Inset the new brass bushing behind it so it stays in position.

STEP 12

Assemble top hinge. Place the hinge washer over the door hinge shaft, slide into brass bushing and fit into aluminum door block. (figure 1)

STEP 13

Assemble bottom hinge. Place the hinge washer over the bottom hinge bracket, replace the thrust bearing over the washer, slide this assembly into the brass bushing and fit into aluminum door bracket.

STEP 14

While holding bottom hinge in place lift door and slide top door hinge together. Maintain vertical pressure by resting door bottom on your knee while squatting, or have someone assist in order to re-attach lower hinge to cabinet. Fasten hinge with 3/8" bolts and washers.

STEP 15

Adjust the spring tension by turning counter-clockwise (right door) to the desired tension (approx. 1/2 turn). Again use a 1/8" drift punch to adjust and replace stop pin.

NOTE:

If cabinet is equipped with integrated door light be sure to plug into ballast box.

NOTE:

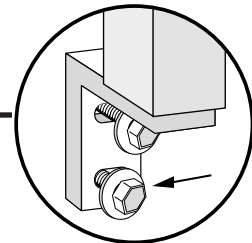
Freezer doors have heater wires which must be plugged in before operation.

STEP 16

Replace louvered grill and secure with four screws.

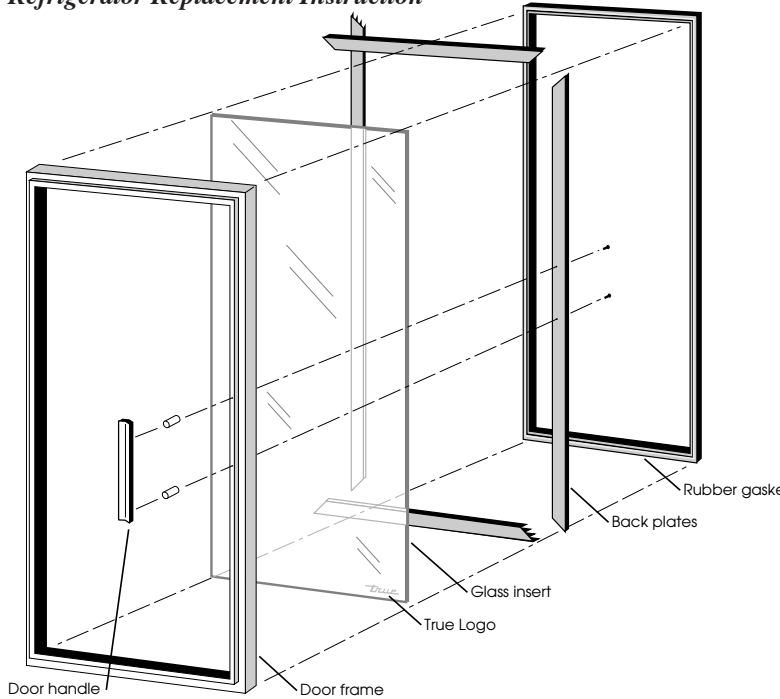
TO ADJUST DOOR HINGE

Loosen bolts from bottom hinge assembly and lightly tap the hinge bracket with a plastic or rubber hammer. When door hangs true, tighten bolts.



Glass Insert - Swing Door
INSTALLATION INSTRUCTIONS

Glass Door Refrigerator Replacement Instruction



GDM-49

REQUIRED TOOLS

- Phillips Head Screwdriver
- 3/8" Wide Double-Sided Tape

STEP 1
Turn the cooler off.

STEP 2
Remove the rubber gasket from the perimeter of the interior side of the door.

IT IS NOT NECESSARY TO REMOVE THE DOOR FROM THE CABINET

STEP 3
Remove the door handle (two screws).

STEP 4
Remove the screws that secure the four back plate pieces to the door. Remove all four back plates.

STEP 5
Beginning at a corner carefully pry the broken glass loose from the

frame. If necessary use heat gun or hair dryer aimed in the space between glass insert and door frame to lessen resistance of double-sided tape. Carefully dispose of the damaged glass.

STEP 6
Remove any excess tape or glass from the lip on the door frame. Replace with new double-sided tape on the 1/2" lip.

STEP 7
To support glass insert use one-sided tape to secure two plastic shims (3/32" x 7/8" x 2-1/2") on opposite ends of bottom door frame a few inches from the corners.

STEP 8
Remembering to keep the tempered glass to the handle side of the frame place the new glass insert inside the frame and press against the two-way tape. (The etched TRUE logo is positioned on bottom corner of the tempered glass side.)

STEP 9
Square up door by adding shims between glass insert and the handle side of the door frame. Place double sided tape on all edges of glass insert to create a seal with the back plate.

STEP 10
Replace bottom back plate then top and side plates. Tighten all screws.

STEP 11
Replace the handle.

STEP 12
Snap the gasket back into the back plate.

WARNING:
The edges on the glass insert are very sharp. To avoid personal injury, use adequate protection for your eyes and hands when working or handling this or any other glass component.

► GDM Cooler IDL Glass Insert Replacement
INSTALLATION INSTRUCTIONS

Warning:
The Edges on the glass insert are very sharp. To avoid personal injury, use adequate protection for your eyes and hands when working or handling this or any other glass component.

REQUIRED TOOLS:

- Phillips head screwdriver
- 3/8" Wide double sided tape
- Side cutters (if working with freezers)
- Butt connectors (if working with freezers)
- Crimping tool (if working with freezers)

NOTE:
 The door does not need to be removed on some models.

————— **STEP 1** —————
 Disconnect power to the cabinet.

————— **STEP 2** —————
 Disconnect IDL plug from cooler.

————— **STEP 3** —————
 Loosen up the tension from torsion spring and remove door. Refer to Removal and Installation of GDM Swing Door Instructions. (See images 1-2).



Image 1. (Releasing door tension).



Image 2. (Removing door bottom hinge).

————— **STEP 4** —————
 Remove door handle and place door on a flat surface.

————— **STEP 5** —————
 Remove door gasket and back plates from the top, bottom and handle side. (See images 3-4).



Image 3. (Removing door gasket).



Image 4. (Removing door back plates).

————— **STEP 6** —————
 Beginning at the upper corner in the handle side, carefully pry the broken glass loose. If necessary, use a heat gun or hair dryer to loosen up the insert from double sided tape. (See image 5).

Note:
Do not forget to disconnect the glass insert heater wires before pulling it out and reconnect them before sliding the new glass insert in.

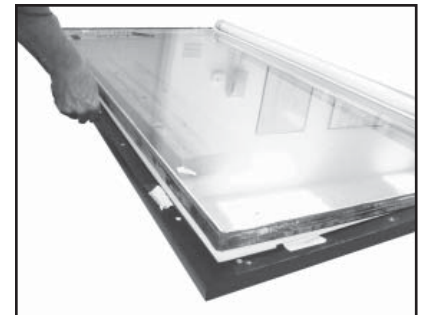


Image 5. (Removing glass insert).

————— **STEP 7** —————
 Remove any excess tape and glass from the lip on the door's frame and replace with new double sided tape.

NOTE:
Make sure the TRUE logo on the insert, is located outside at the bottom of the frame. (See image 6).



Image 6.

————— **STEP 8** —————
 Install the new glass insert by pushing it into the light channel first and then work out-wards toward the handle side.

————— **STEP 9** —————
 Install gasket back plates and gasket.

————— **STEP 10** —————
 Mount door and tighten torsion spring. Refer to Removal and Installation of GDM Swing Door Instructions.

GDM Freezer IDL Glass Insert Replacement

INSTALLATION INSTRUCTIONS

WARNING:

The edges on the glass insert are very sharp. To avoid personal injury, use adequate protection for your eyes and hands when working or handling this or any other glass component.

REQUIRED TOOLS

- Phillips Head Screwdriver
- 3/8" Wide Double-Sided Tape
- Side cutters (if working with freezers)
- Butt connectors (if working with freezers)
- Crimping tool (if working with freezers)

————— **STEP 1** —————
Disconnect power to the cabinet.

————— **STEP 2** —————
Disconnect IDL.

————— **STEP 3** —————
Loosen up the tension from torsion spring and remove door. Refer to Removal and Installation of GDM Door instruction page.

————— **STEP 4** —————
Remove doors handle and place door on flat surface.

————— **STEP 5** —————
Remove door gasket and backing plates from the top, bottom and handle side.

Freezer doors have heater wires running through the door frame and around the rear side of the glass insert which junction at the lower inside corner and plug into the compressor area. The glass insert must be carefully pried loose starting from the top corner and working down to gently free the glass insert without damaging the heating element. If necessary use heat gun or hair dryer aimed in the space between glass insert and door frame to lessen resistance of double-sided tape. It is recommended that one person support the damaged glass insert while the other releases the wires from the two self stripping connectors.

————— **STEP 6** —————
Beginning at the upper corner in the handle side, carefully pry the broken glass loose. If necessary, use a heat gun or hair dryer to loosen up the insert from double sided tape.

NOTE:
Do not forget to disconnect the glass insert heater wires before pulling it out and reconnect them before sliding the new glass insert in.

————— **STEP 7** —————
Remove any excess tape and glass from the lip on the door's frame and replace with new double sided tape.

NOTE:
Make sure the TRUE logo on the insert, is located outside at the bottom of the frame.

————— **STEP 8** —————
Install the new glass insert by pushing it into the light channel first and then work out-wards toward the handle side.

————— **STEP 9** —————
Install gasket back plates and gasket.

————— **STEP 10** —————
Mount door and tighten torsion spring. Refer to Removal and Installation of GDM Door Instructions.

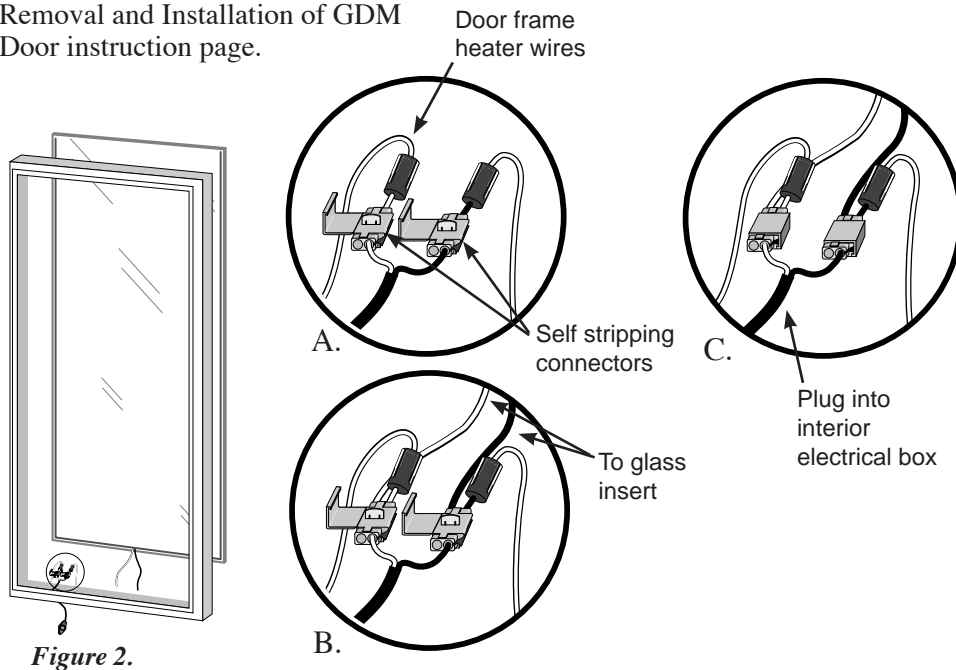


Figure 2.

► Shimming the Glass Insert on a GDM Series Cabinet**INSTALLATION INSTRUCTIONS**

Under normal circumstances your True Merchandiser won't require any type of adjustments, except for the ones already outlined in your installation instructions. When installed properly you will have a perfectly aligned piece of equipment. There will be however some occasions in which it will be necessary to go a little deeper in order to accomplish a perfect alignment. One of the most common problems at installation is the door(s) sagging or unaligned, to correct this condition here are the recommended procedures:

1. Make sure that there is no damage to the door(s) or the cabinet.
2. Try to level the door(s), by adjusting the leveling legs. Perform this procedure by adding castor shims if the unit is on castors.
3. Try to align the door(s) by adjusting the bottom hinge left or right on the swing type door(s).

Usually by performing these procedures the alignment of the door(s) is accomplished. If after performing these procedures the problem persists, it is recommended to adjust the glass insert to square door by shimming it. To shim the glass insert the recommended procedures are as follows:

WARNING: SAFETY GLASSES SHOULD BE USED WHEN HANDLING OR WORKING WITH THIS OR ANY OTHER GLASS.

- a. Remove the gasket from the gasket base.
- b. Remove the screws holding the gasket base around the door and remove the gasket base.
- c. With a putty knife loosen up the glass insert around the door frame. It might be necessary to use a heat gun.
- d. With a two by four or a similar device, proceed to lift the door frame by prying from the bottom outer corner. See Photos 1 and 2.
- e. Shim the glass insert wherever there is a space between the frame and the insert. See photo 3 and 4.
- f. Press the insert against the door frame and re-install the gasket base and the gasket.

► **Shimming the Glass Insert on a GDM Series Cabinet Continued**

INSTALLATION INSTRUCTIONS



IDL Lamp Replacement

INSTALLATION INSTRUCTIONS

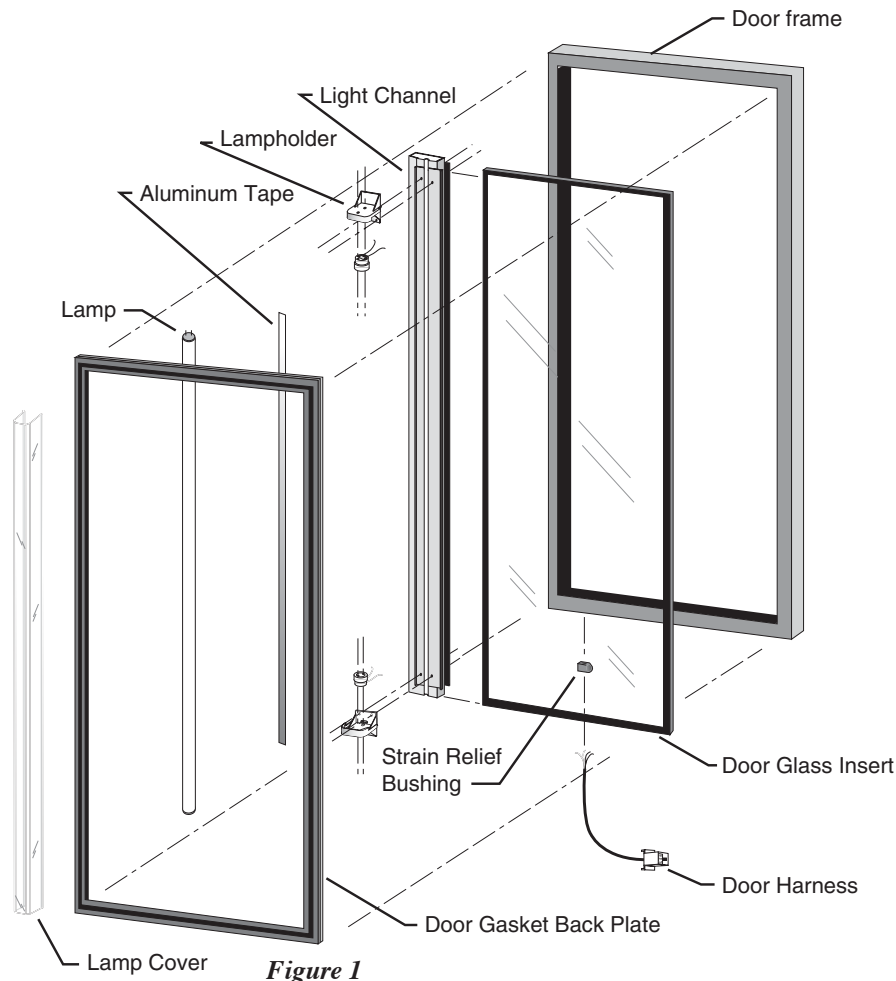


Figure 1

STEP 1
Unplug the cooler.

STEP 2
Remove lamp cover by squeezing it in the center with one hand and with the other hand about 4" from the top push down on the lamp cover, twist and pull outward. (figure 1)

STEP 3
The lamp can then be removed by pushing it up and then out. This will release the lamp from the lower lamp holder. At this point the lamp can be totally removed.

STEP 4
Install the new lamp by placing the lamp terminals in the upper lamp holder first.

STEP 5
Push up on the bulb to recess the upper holder.

STEP 6
With the upward pressure applied, line up the terminal on the lower end of the bulb with the lamp holder. Once aligned the lamp will snap into place.

STEP 7
Pull on bulb to make sure it is seated properly.

STEP 8
Replace lamp cover by squeezing and snapping into retainer on lamp assembly.

STEP 9
Plug in the cabinet.

STEP 10
If lamp does not illuminate another problem may exist.

► Lock Installation (GDM-5 & GDM-5PT Swing Door Models)

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Tape Measure
- 1/4" Drill
- 2" Saw Drill Hole Saw
- 3/4" Saw Drill Hole Saw
- Straight Edge
- Tin Snips
- Phillips Screw Driver
- File
- Drill Bit For Screws on Lock Cup

FIRST...

Before beginning installation, remove front shelf standard from interior wall on handle side of cabinet.

INSTALLATION

STEP 1

Drill 3/4" hole on outer cooler wall of foam. (Do not penetrate inner wall). (See diagram) Center point of hole is 2 1/4" from front of cooler (including plastic trim) and 13 3/8" from bottom of cooler.

STEP 2

Drill 2" hole on inner cooler wall, centered over 3/4" hole. Drill just deep enough to accommodate white-metal backing plate.

CAUTION

Do Not Drill Too Deep.

STEP 3

Remove insulation so white-metal backing plate will fit in hole.

STEP 4

Check fit of locking cylinder after inserting through the outer cooler wall. Fill any air space around cylinder and plate with insulation.

STEP 5

Place white-metal backing plate over locking cylinder, into 2" hole. Attach lock nut to secure cylinder. Drill holes and attach white metal backing plate to inner cooler wall. (this can be done with screws or pop rivets your option. Parts not provided.)

STEP 6

Attach lock arm to locking cylinder with 1/2" screw (provided). Tighten lock nut and screw. Locking mechanism on cooler wall should now be complete. Check operation.

STEP 7

Remove rubber gasket from plastic door channel.

STEP 8

Determine proper height for strike plate extension to be engaged by lock-arm. Then determine location for two drill holes to attach strike plate to door frame. Drill two 3/16" holes for strike plate through door frame and innermost plastic channel. (CAUTION: Make sure strike plate is positioned on the door so when the door is closed it will pass as close to the edge of the opening as possible without hitting.)

STEP 9

Remove portion of the plastic channel wall where the strike plate will be located.

STEP 10

Securely attach strike plate to metal frame (through plastic channel) with 3/4" screws (provided).

STEP 11

Replace rubber gasket in plastic door channel.

STEP 12

Check for proper operation.

STEP 13

Install split standard (2 pieces) in place of original one piece standard. Use original mounting holes and secure.

NOTE

Shorter piece should be at top.

Lock Instruction - GDM-7

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Tape measure
- 1/4" drill
- 2" saw drill hole saw
- 3/4" saw drill hole saw
- Straight edge
- Tin snips
- Phillips screwdriver
- File
- Drill bit for screws on lock cup

STEP 1

Remove shelf standard. (Figure 1)



Figure 1

STEP 2

Drill 1/4" pilot hole 20" from the top of the cooler and 1-9/16" down from end panel edge. Pierce through wall thickness and then rock slightly to create a vertical slot approximately 1/2". (Figure 2)

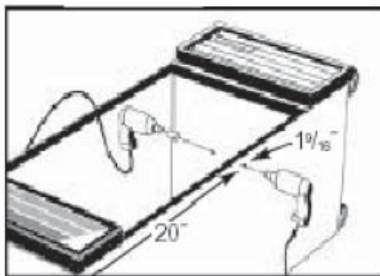


Figure 2

STEP 3

Using a 2" hole saw, insert drill into existing hole and align top of bit with the cooler's black tank plastic. Drill far enough to pierce the interior skin (stop at the insulation). (Figure 3 & 4)



Figure 3

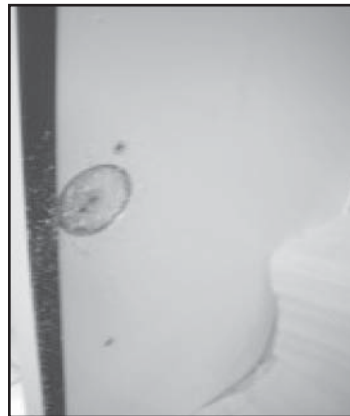


Figure 4

STEP 4

Insert 3/4" hole saw into original, exterior pilot hole, and drill through insulation. Remove insulation from created hole and smooth burs with a file. (Figure 5)

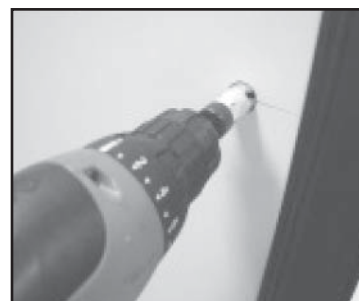


Figure 5

STEP 5

Using straight edge, pencil mark a straight line (figure 6), parallel to the lock cup knockout opening. With tin snips, trim off top of lock cup. (Figure 7)

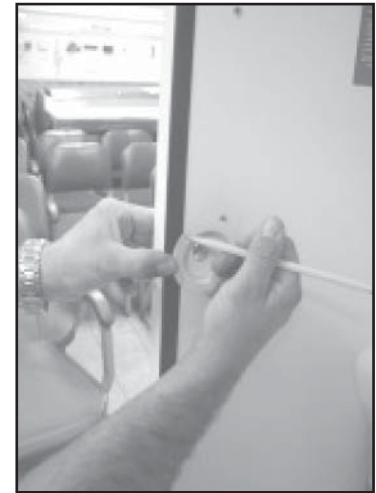


Figure 6



Figure 7

STEP 6

Insert lock cup into drilled opening (interior wall) (figure 8) and use it as a template. Mount the shelf standard holding it with a screw from the upper rivet nut and mark the spots where the standard will have to be cut around the cup. (Figure 9)



Figure 8

► **Lock Instruction - GDM-7 Continued**

INSTALLATION INSTRUCTIONS



Figure 9

STEP 7

Cut shelf standard where it was marked. (Figure 10)



Figure 12



Figure 15

STEP 10

Secure the lock plate to the door trim with the self-tapping screws Figure 16. Check the lock operation Figure 17. Re-install the door gasket and the shelves.



Figure 10

STEP 8

Drill 1/4" pilot hole 20" from the top of the cooler and 1-9/16" down from end panel edge. Pierce through wall thickness and then rock slightly to create a vertical slot approximately 1/2". (Figure 12 & 13)



Figure 13

STEP 9

Remove gasket away from door trim. Using masking tape as a center point. Score interior door trim using the strike plate to measure top and bottom width Figure 14. With tin snips, cutaway door trim in order to accommodate lock plate. (Figure 15)



Figure 16

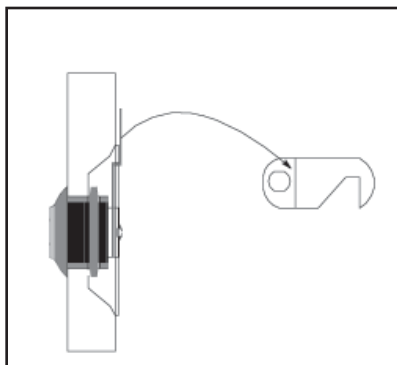


Figure 11



Figure 14



Figure 17

Note:

To install on other single swing door cabinets please consult True Manufacturing Technical Service at 800-325-6152.

► Lock Installation - GDM - model 23/26 single swing door

INSTALLATION INSTRUCTIONS

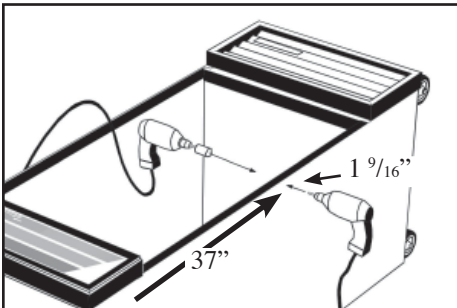
REQUIRED TOOLS

- tape measure
- 1/4" drill
- 2" saw drill hole saw
- 3/4" saw drill hole saw
- straightedge
- tin snips
- Phillips screwdriver
- file
- drill bit for screws on lock cup

NOTE:
These instructions are not to be used with cabinets that use a wide door gasket.

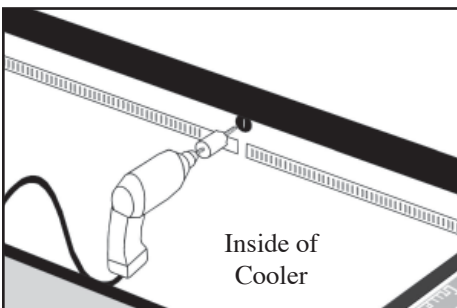
STEP 1

Drill 1/4" pilot hole 37" from the top of the cooler and 1 9/16" down from end panel edge. Pierce through wall thickness and then rock slightly to create a vertical slot approximately 1/2".



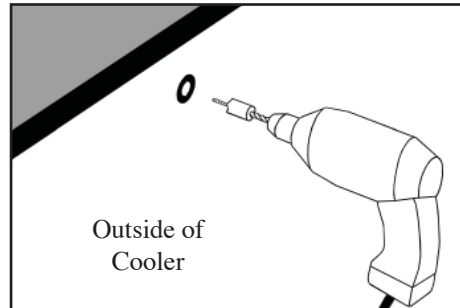
STEP 2

Using a 2" hole saw, insert drill into existing hole and align top of bit with the cooler's black tank plastic. Drill far enough to pierce the interior skin (stop at the insulation).



STEP 3

Insert 3/4" hole saw into original, exterior pilot hole, and drill through insulation. Remove insulation from created hole and smooth burs with a file.

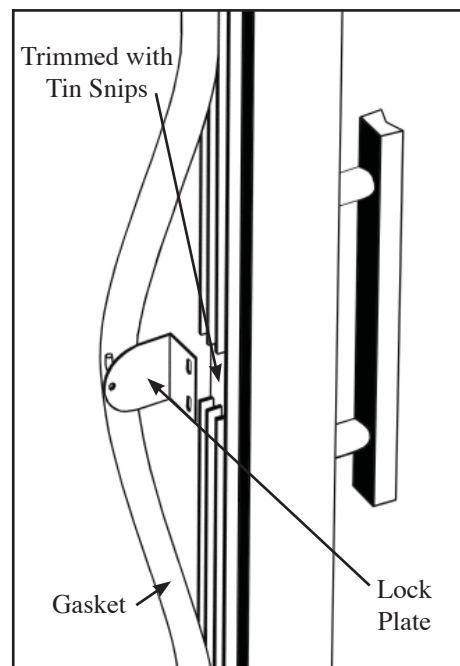


STEP 4

Using straightedge, pencil mark a straight line, parallel to the lock cup knockout opening. With tin snips, trim off top of lock cup.

STEP 5

Insert lock cup into drilled opening (interior wall), while inserting lock assembly from the exterior wall. Fasten assembly by attaching hex nut. Anchor lock cup with three self-tapping screws.

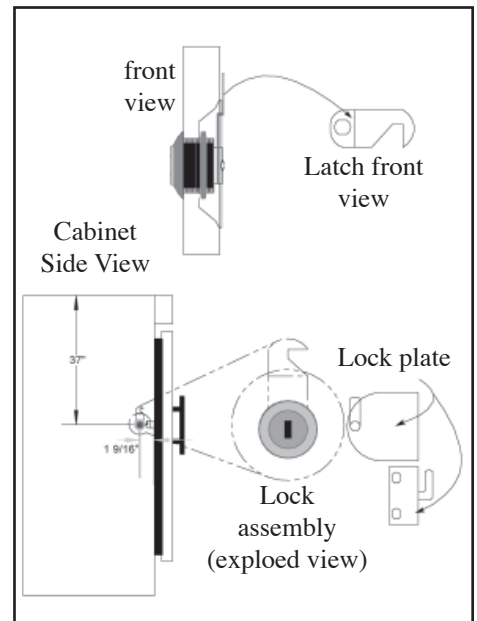
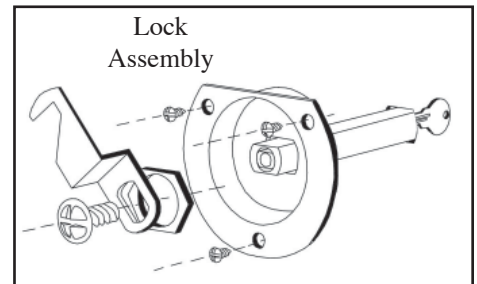


STEP 6

Install latch and secure with Phillips washer head screw.

STEP 7

Pull gasket away from door trim. Using masking tape as a center point. Score interior door trim using the lock to measure top and bottom width. With tin snips, cut away door trim in order to accommodate lock plate.



Note:
Other single swing door cabinets please consult True Manufacturing Technical Service at 800-325-6152.

GDM Series Freezer Perimeter Heater Wire Replacement
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Phillips Head Screwdriver
- Drill
- 1/8" Drill Bit

NOTE:
There can be no ice on the face of the cabinet prior to this repair.

STEP 1
Disconnect the power supply, unload contents of cabinet and lay cabinet on its back.

STEP 2
Remove the lower louvered grill. Remove the stainless steel skirt around the louvered grill.

STEP 3
Remove the sign on the louver section above the door (s).

STEP 4
Remove hinges and door (s).

STEP 5
Drill out pop rivet on right top corner of plastic and stainless steel mullion trim. Remove the top horizontal stainless steel strip by sliding it to the right of the tracks in the plastic. Be sure to raise the corner of the plastic trim where the pop rivet was removed so that the stainless trim slides beneath it. Drill out the two pop rivets in the top plastic trim which was hidden by the horizontal piece of stainless trim.

STEP 6
Remove left and right vertical stainless steel trim pieces by sliding them out of the plastic trim. Be sure to raise the top horizontal plastic trim piece so that the stainless trim passes underneath it toward the top of the cabinet.

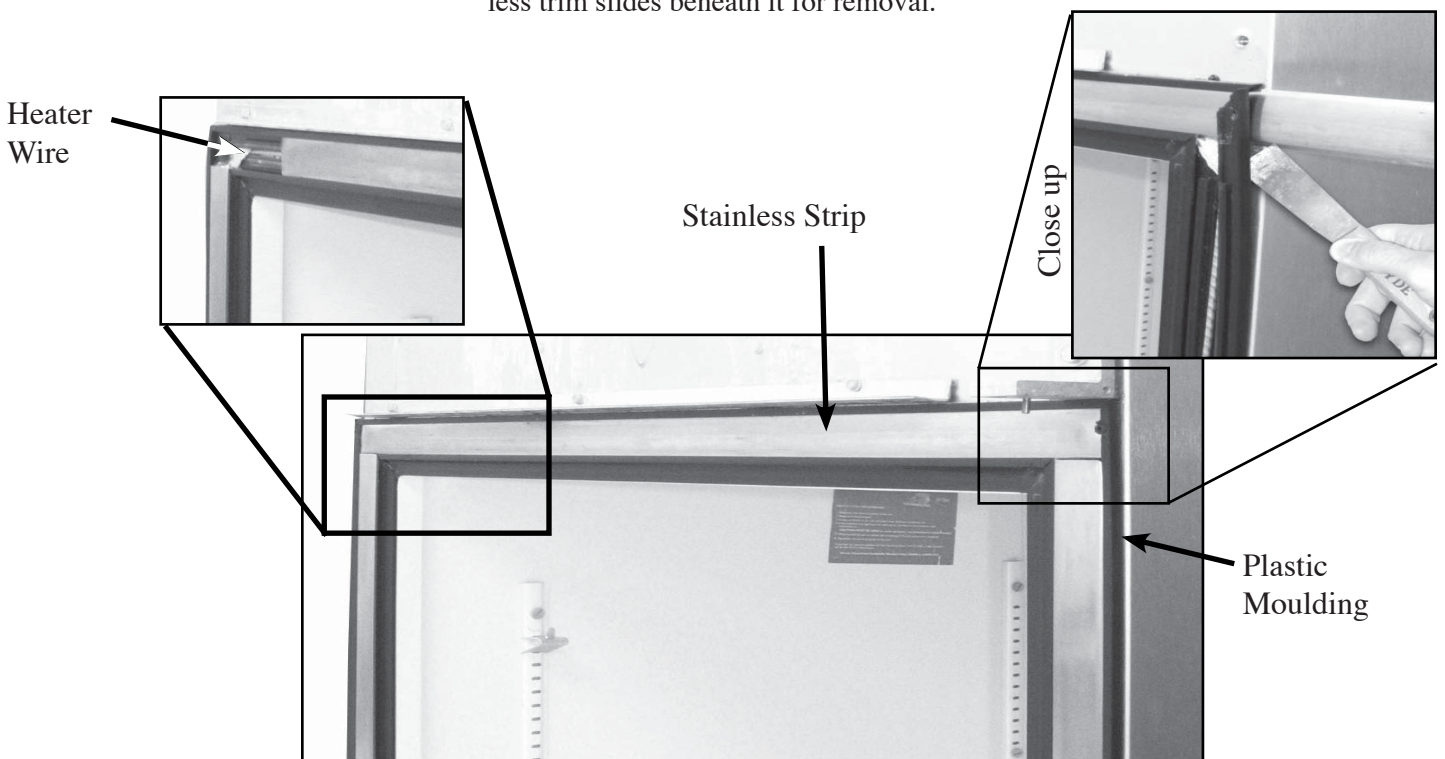
STEP 7
Drill out the pop rivet that was hidden by the stainless steel trim in the lower right corner of the vertical plastic piece so that the lower vertical stainless trim slides beneath it for removal.

STEP 8
Disconnect heater wires in the junction box. Remove heater wire loop by unhooking at the corners where it is retained by the plastic trim pieces.

STEP 9
Replace inoperative heater wire loop, being sure to hook under the corners of the plastic trim as observed during disassembly.

STEP 10
Reverse assembly sequence to replace trim. Use the four (4) small sheet metal screws furnished with the heater wire in the same sequence as the pop rivets were removed.

STEP 11
Attach the heater wires to the power supply in junction box. Replace all other assemblies in reverse sequence in which they were removed.



GDM Series Replacement of Door Frame Heater on IDL Freezer Doors

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS:

- Phillips Head Screwdriver
- 3/8" Socket Set
- Awl
- Wire Strippers-Crimper
- Needle Nose Pliers

Note:

For greater safety and ease of installation, it is recommended that two persons assist in the replacement procedure.

Note:

It may not be necessary to remove the door from the cabinet if two persons are assisting in the replacement procedure.

STEP 1

Disconnect electrical power to cabinet.

STEP 2

Remove door from cabinet and lay on a flat surface. Refer to Removal and Installation of GDM and T-Series Swing Door Instructions on page 46-47.

STEP 3

Remove door gasket from the perimeter of the interior side of the door.

STEP 4

Remove door handle (2 screws).

STEP 5

Remove the screws that secure the four back plates to the door.

STEP 6

With your Awl, pry out plastic shims wedged between glass insert and door frame.

STEP 7

Before removing glass insert, disconnect the electrical wiring to door frame heater and heater inside glass insert. Note: Wiring harness connection for your info: 2-whites go to 2-whites on lower lamp socket. 2-blacks go to 2-blacks on upper lamp socket. 1 red is 115v lead to both frame and insert heaters. 1 blue is neutral to both frame and insert heaters.

STEP 8

Remove glass insert by pushing on insert in upper corner of the handle side. If necessary, use a heat gun or hair dryer aimed in the space between glass insert and door frame to lessen resistance of double stick tape.

Note:

For safety, gloves and eye protection should always be worn when handling glass.

STEP 9

Once glass has been removed, this will expose the heater wires inside door

frame. Remove old heater and replace with new heater cable.

STEP 10

Remove any old tape from the lip on the door frame. Replace with new double-sided tape on the 1/2" lip.

STEP 11

Re-install glass insert by first installing two of the plastic shims to opposite ends of bottom door frame a few inches from the corners. Remember to keep the tempered glass to the handle side of the frame and press against the two-way tape.

Note:

The etched TRUE logo is positioned on bottom corner of the tempered glass side.

STEP 12

Square glass insert to door frame by adding shims to the handle side.

STEP 13

Replace backplates, door handle and gasket.

STEP 14

Re-install door on freezer (if removed). Refer to Removal and Installation of GDM and T-Series Swing Door Instructions on page 58-61.

► Surge Protector's for the GDM-Series
INSTALLATION INSTRUCTIONS

LOCATING POWER CORD WIRING FOR CUTTING (cont.)

STEP 1

Locate the junction of tan, pink and black wires coming from power cord area. See figure 1 and Figure 2. If cabinet is supplied with a European style cord, the power cord, black, wire will be brown.

At this junction, cut the pink wire several inches from the junction. Strip each end of wire 1/2". See figure 2.

ATTACHING THE SURGE PROTECTOR TO THE BALLAST BOX

STEP 2

Position the surge protector on left side of ballast box toward back edge. Allow for cover clearance. See Figure 1. # 7

Using self-drilling screws, attach the surge protector on the ballast box, as illustrated in Figure 1, step # 7.

NOTE

For GDM-23 mount surge protector below flooring.

SPLICING INTERCONNECTING WIRING TO SURGE PROTECTOR

STEP 3

- Route all interconnecting wires through newly created knockout hole. See Figure 2.
- Take one pre-cut 15" pink wire, and locating pink wire still connected to wire junction, connect these together with an in-line splice or butt splice. On surge protector, connect another end of pink wire to "LINE IN", (marked on surge protector).

- Next, locate other loose pink wire in ballast box, connect the remaining pink wire with in-line splice or butt connector.
- On surge protector, connect other end of pink wire to "LINE OUT".
- Now create a 15" long white wire. Strip both ends 1/2". On one end put 1/4" quick-connect insulated slip on connector.
- Locate junction of white wires in ballast box. (if cabinet is supplied with a European style cord, this wire will be blue.)
- Cut end connector off junction, re-strip wires and add white wire. Re-crimp the connection using a large closed-end connector.
- On surge protector, connect other end of white wire to "NEUTRAL".

ENCLOSING WIRING AND UNIT START-UP

STEP 4

- Neatly replace wires into ballast box and replace lid.
- Plug in cabinet. Green light on surge protector should be "off".
- Cabinet now has power. There will be a 3 minute delay before the pump will start.
- Test voltage.
- After start-up delay, cabinet should operate normally.
- Replace louvered grill cover and secure with four phillips-head screws.

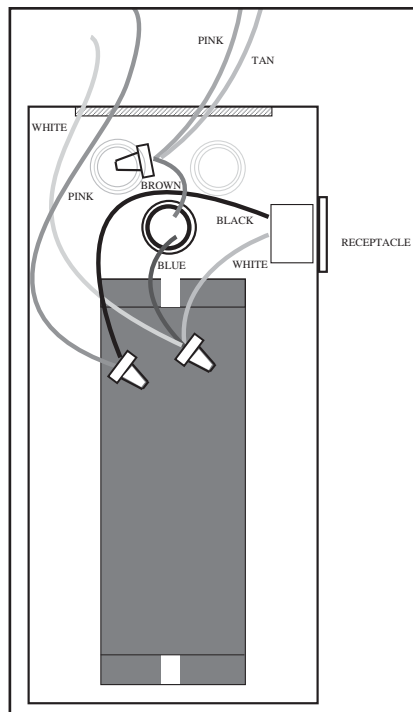


Figure 2
Ballast Box Before Surge Protector

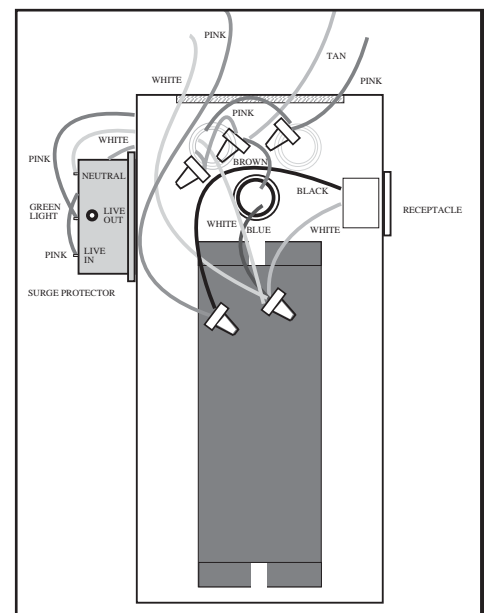


Figure 3
Ballast Box After Surge Protector

NOTE

Check all wiring to make sure it is correct. Connections should be verified against Figures 3 and 4.

► Surge Protector's for the GDM-Series
INSTALLATION INSTRUCTIONS

SURGE PROTECTOR INSTALLATION

This instruction is True's recommended procedure for installing surge protection - part no. VD S16P.



REMOVING POWER

STEP 1
 Disconnect power before installing surge protector.

REQUIRED TOOLS

- Multi-meter
- Adjustable Wrench
- Phillips Screwdriver
- Wire Strippers
- Wire Cutters
- Crimper

LOUVERED GRILL REMOVAL

STEP 2
 Remove louvered grill by removing the four Phillips-head screws as shown in Figure 1, # 2.

BALLAST BOX ACCESS

STEP 3
 Remove ballast box cover by unscrewing two 1/4" hex-head screws, center-positioned on both sides of cover plate. See Figure 1, #3.

KNOCKOUT LOCATION AND BUSHING INSTALLATION

STEP 4
 Locate 5/8" knockout positioned on the inside, upper left, of ballast box. Figure 1, # 4.

CREATING WIRE CONNECTION FOR SURGE PROTECTOR

STEP 5
NOTE
 Installer will need to provide #16 wiring for splicing.

From this installer supplied wiring, cut two, pink, 15" pieces and strip both ends 1/2" from ends. On one end of each wire, crimp on a 1/4", quick-connect, insulated, slip-on connector.

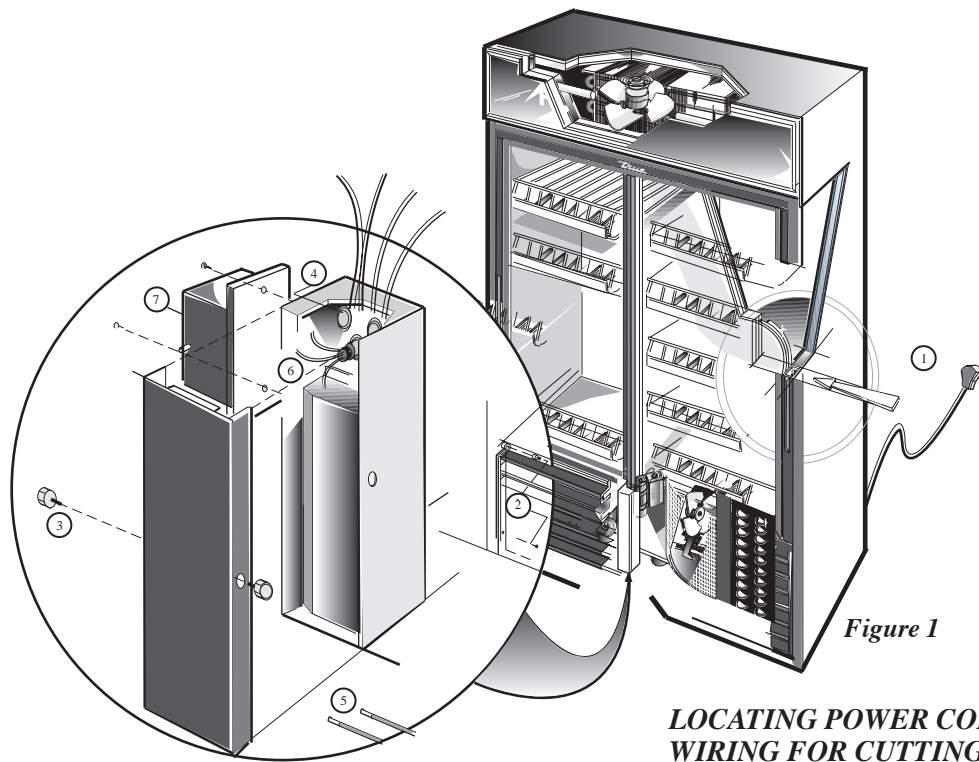
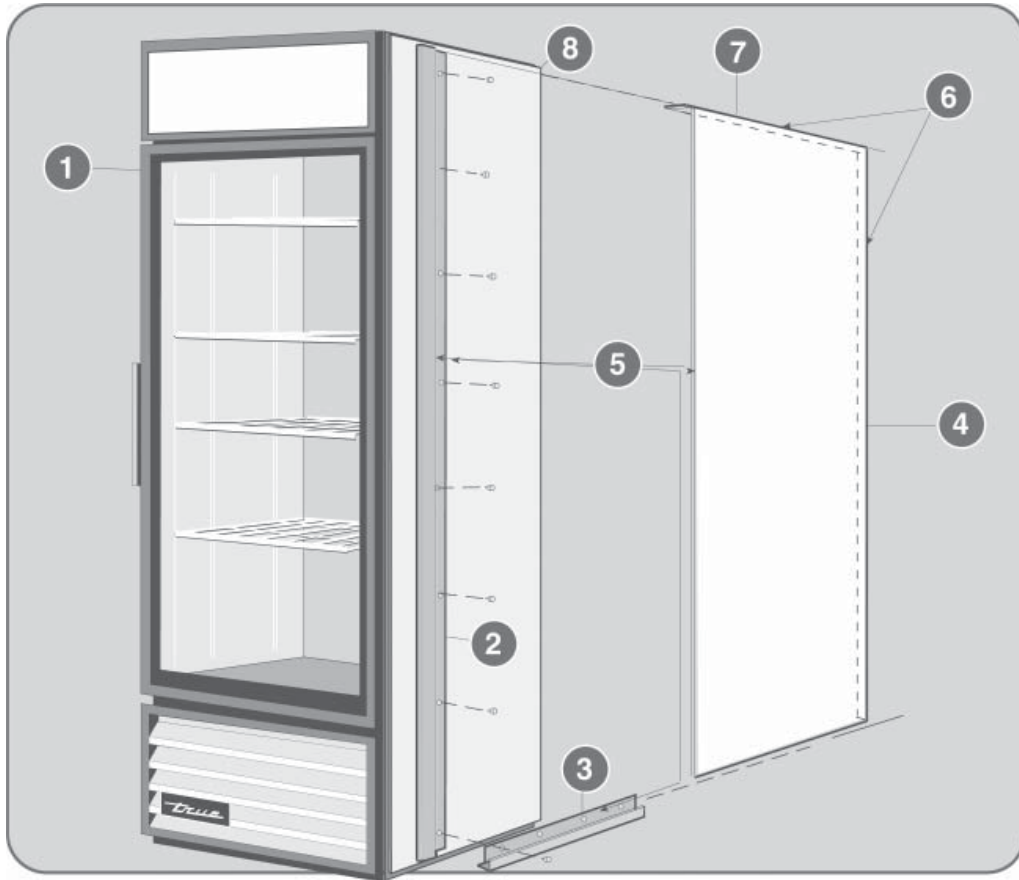


Figure 1

LOCATING POWER CORD WIRING FOR CUTTING

STEP 6
 The power cord wiring is routed through the middle knockout in the cluster of three knockouts in the upper inside of the ballast box. See Figure 1, #6.

► Side Panel Replacement - GDM Series**INSTALLATION INSTRUCTIONS****REQUIRED TOOLS**

- 1/8" drill
- Rivet Tool
- Silicone Caulk

STEP 1

Make sure that both sides of the cabinet are free from dirt. Clean if necessary.

STEP 2

Attach the plastic extrusion to the front side corner of the cabinet side (see illustration). Use a 1/8" drill bit to drill through the extrusion and the cabinet. Use pop rivets provided to fasten extrusion. Drill and pop rivet every 8" to 10" so that the extrusion remains straight.

STEP 3

Attach the other plastic extrusion to the bottom side corner of the cabinet (see illustration). Drill and pop rivet every 6" to 8" so that the extrusion remains straight.

STEP 4

If the cabinet will be placed outdoors, the back side of the 3/4" wide flange should be silicone caulked to stop rain water from getting behind the panel.

STEP 5

Position and place artwork panel against cabinet so that the 3/4" wide flange is at the top and rear of the cabinet. Slide panel into the slots provided in the plastic extrusions.

STEP 6

Check to see that there is no gap under the top and rear 3/4" wide flange.

STEP 7

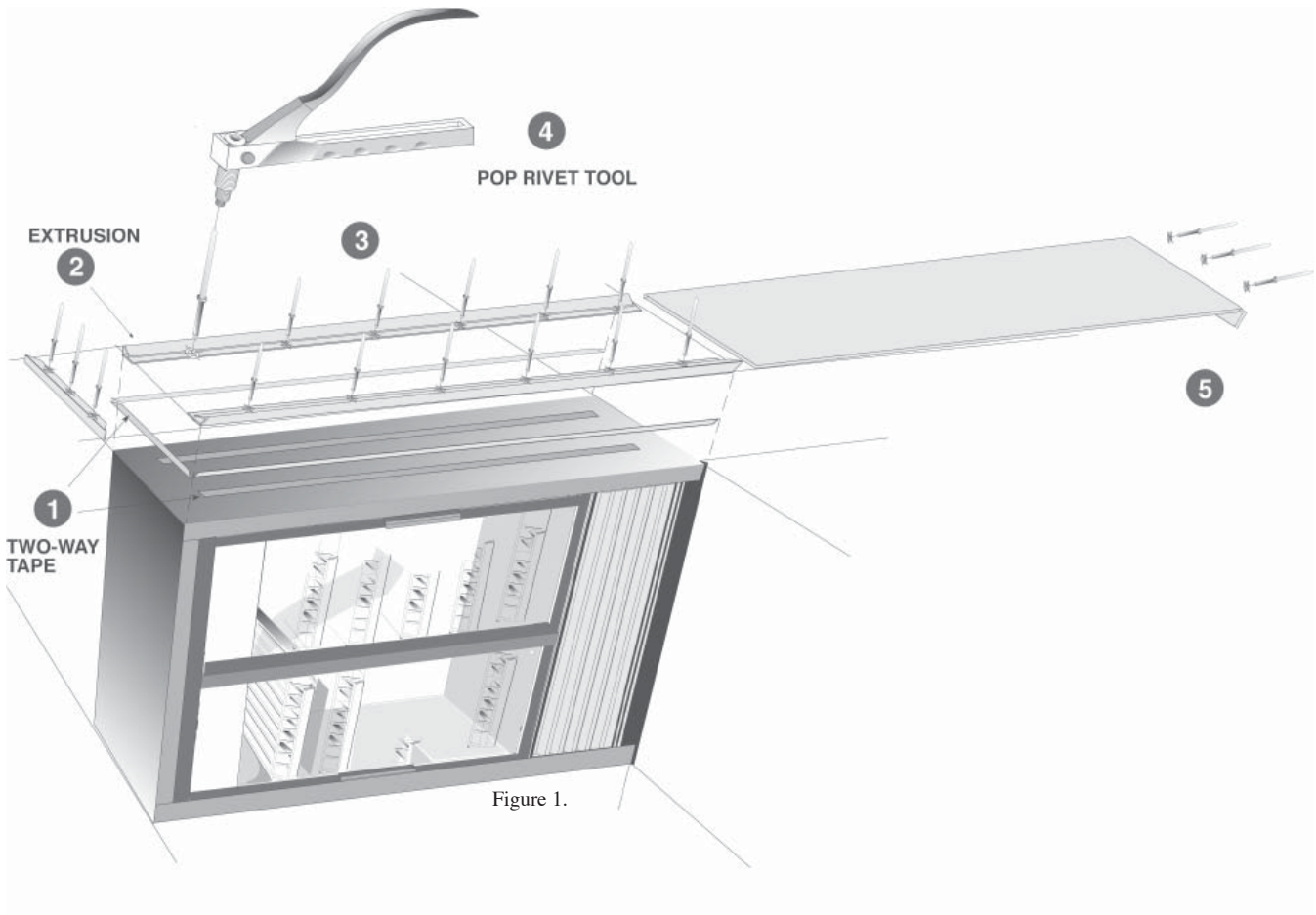
Drill and pop rivet the artwork panel to the cabinet using the 3/4" wide flanges provided at the rear of the cabinet and the top.

STEP 8

Wipe off excess silicone caulking when sealing is completed.

► **Side Panel Replacement - GDM-33C-PT**

RETROFIT INSTRUCTIONS



The procedure listed below will enable you to create a frame around the end panel and will secure your new replacement panel.

REQUIRED TOOLS

- 1/2" drill
- Rivet tool

STEP 1

Peel backing on two-way tape and attach as indicated in figure 1. Apply tape in two areas as shown. this will secure replacement panel when inserted into frame.

STEP 2

Peel backing away from two-way tape and secure to black plastic extrusion. Peel other side of tape and adhere extrusion to panel in the three locations indicated.

STEP 3

For the two longest extrusions, drill six holes. (1/2" deep), through both the extrusion and the cooler end panel. Drill three holes into the top extrusion and into the cooler top. Place at equal distance.

STEP 4

Anchor all three plastic extrusions with pop-rivets. (6 pop-rivets for the sides and three for the top panel.)

STEP 5

Slide replacement panel into newly created frame and anchor bottom flange with three poprivets.

► Vandal Panel Installation for a GDM-33CPT-54
INSTALLATION INSTRUCTIONS

Kit Materials

1. (16) Pop Rivets
2. (8) Mounting Brackets
3. (2) Vandal Panel

STEP 1

Two Mounting Brackets need to be positioned on the upper left and right hand corners of the cabinet. The Mounting Brackets must be off 1/16" down from the top of the cabinet. See Illustration one. Drill holes with 7/32 drill bit and attach bracket via pop rivets.

STEP 2

The two other Mounting Brackets are mounted 32 7/8" from the top of the cabinet to the bottom of the Mounting Bracket. The two bottom brackets must be installed facing the opposite direction from the top two brackets already installed in Step A. See Illustration 2.

STEP 3

The Vandal Panel slides down on top of the Top Mounting Brackets (see Illustration 3). Then the bottom brackets lock onto the Vandal Panel.

STEP 4

Repeat Procedure for installation of other vandal panel on back of cabinet.

Illustration 1

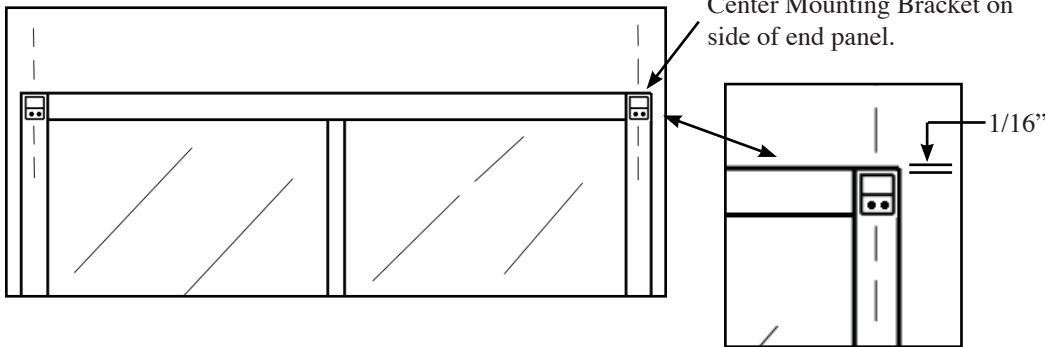


Illustration 2

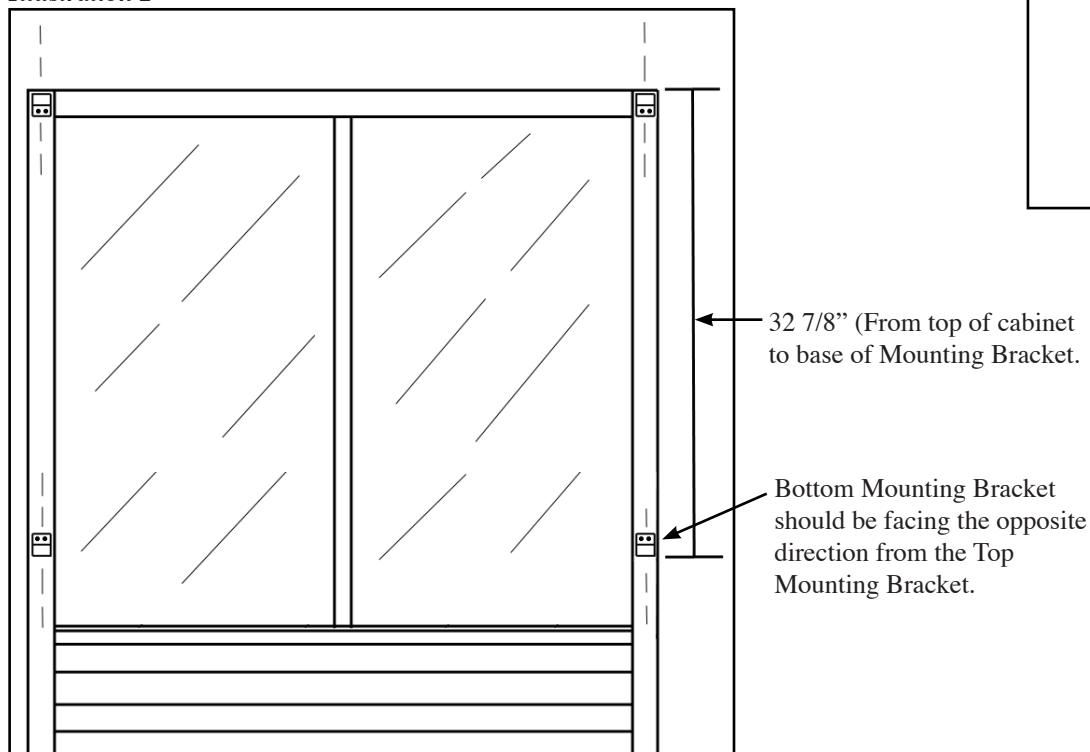
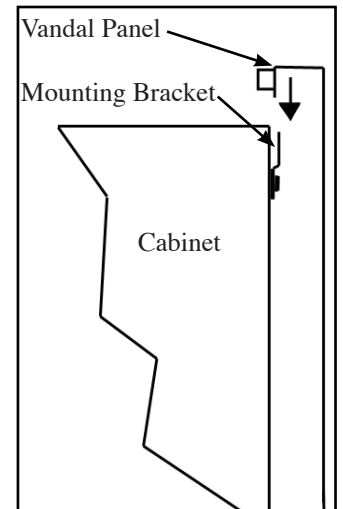
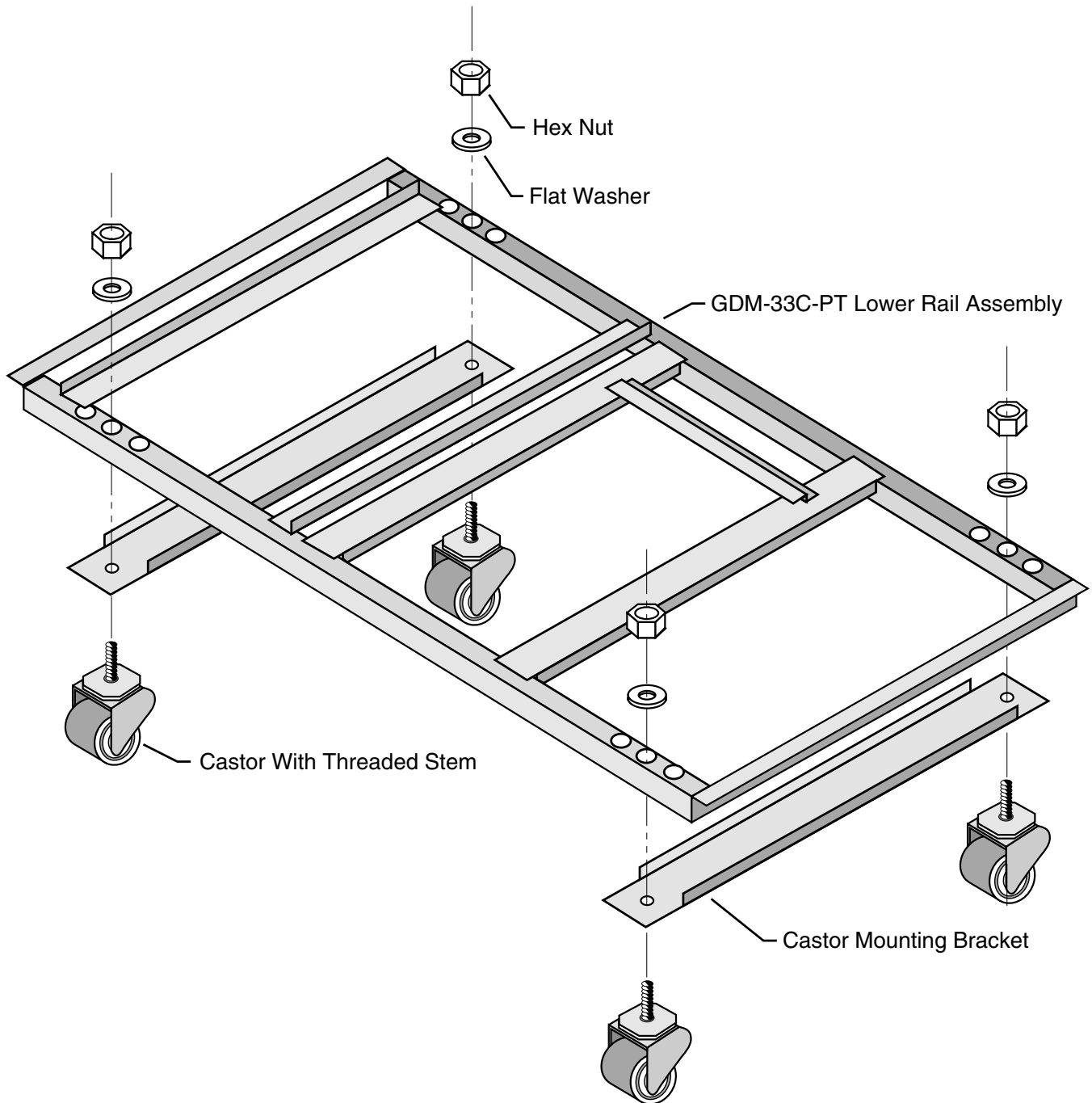


Illustration 3



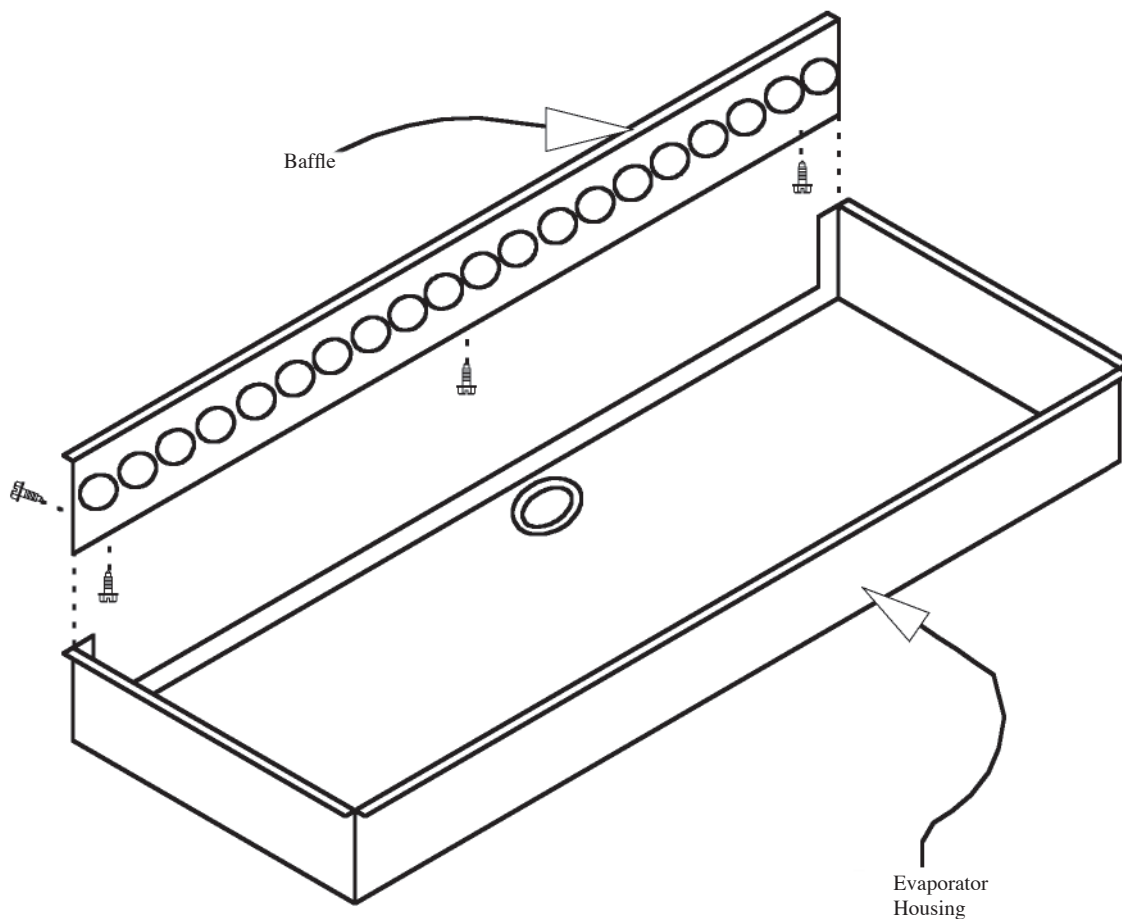
GDM-33CPT Castor Mounting Assembly
INSTALLATION INSTRUCTIONS



► Floral Case Baffle Installation**INSTALLATION INSTRUCTIONS**

The baffle is installed on floral cabinets to slow the velocity of the air down. This will make the flowers last longer, because the pedals do not dry out as quickly.

1. Trim a small square out of top left side of baffle to accommodate the suction line.
2. Place baffle in place and install #6 x 1/2 screws into 1/2" lip of the baffle and top of cabinet.
3. Install #6 x 1/2 screws into 1/2" lip and evaporator cover being careful not to puncture evaporator drain pan.



GDM-23FC Mirror Retrofit Kit

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- 1/16" Drill
- 1/8" - 1/4" Shim (2)
- Socket wrench

STEP 1
 Remove all products and shelving from interior of cabinet.

STEP 2
 Disconnect power to the unit.

STEP 3
 Wipe interior of cooler with a clean dry cloth to remove dirt and moisture. Surface must be clean and dry for adhesive on extrusions (mirror support strips).

STEP 4
 Measure 15/16" from rear interior wall forward and mark the side wall for the mirror support strip location. Select two shims of equal height between 1/8" - 1/4" (one for each side of the cabinet). Measure and mark the height of the shim against the side wall. Repeat on the opposite wall (see figure 1 & 3).

STEP 5
 Locate two channel extrusions (mirror support strips). Remove paper strip covering adhesive from one of the mirror support strips.

STEP 6
 Carefully secure mirror support strip against the side wall the height of the shim mark and along the mark 15/16" from the back wall. Repeat on the opposite wall (adhesive backing is the only anchor for the mirror supports).

STEP 7
 Place shims on the interior floor in line to support the mirror when in position.

STEP 8
 Slip one edge of the mirror in the mirror support strip channel, bow

mirror and feed into the other mirror support strip. Work until mirror fits flat inside support strips and rests on top of the floor shims (see figure 2).

STEP 9
 Locate left edge of the drain line cover at the rear of the cabinet. At the top edge of the mirror measure in 1" and down 2". Mark center point. At the bottom edge of the mirror measure in 1" from the drain line cover and up 2" from the bottom edge of the mirror. Mark center point. (see figure 3).

NOTE:
 If the drain line cover edge at the tank bottom is difficult to locate measure the distance from the side wall to the center point at the top of the mirror and use that measurement for the bottom center point.

STEP 10
 Drill pilot holes at both center points with a 1/16" drill bit through the mirror and drain line cover.

STEP 11
 Fasten 10-16 x 1/2 hex knurled head screw (included) in both pilot holes snug against mirror.

WARNING
Do not over tighten screw to avoid cracking mirror.

STEP 12
 Remove shims, replace shelving and reconnect power to cabinet.

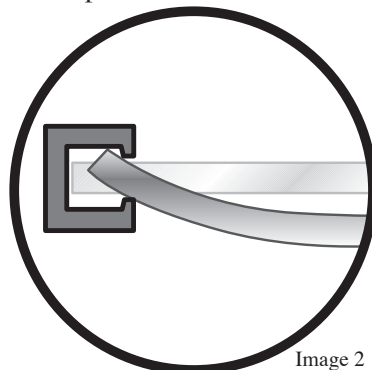


Image 2

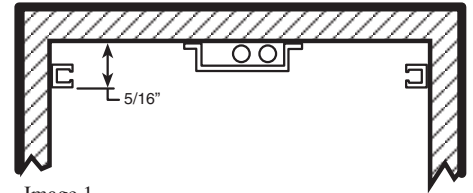


Image 1

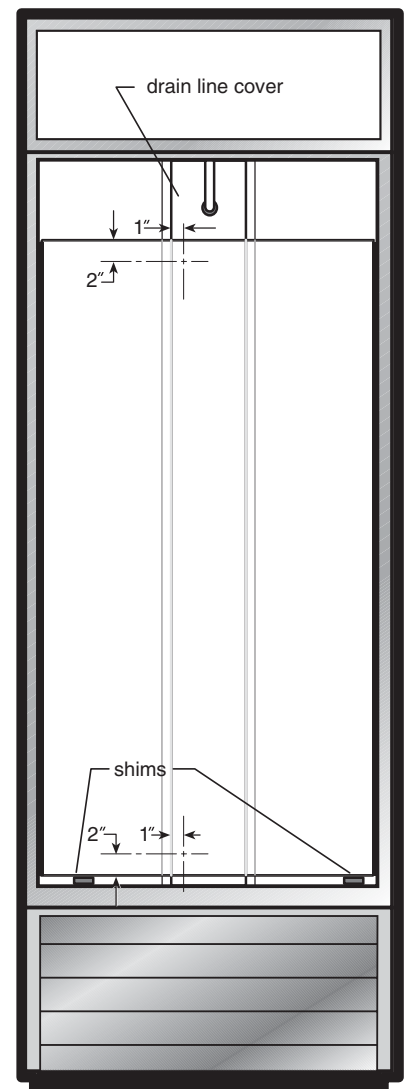


Image 3

► **Vandal Panel - GDM-69**

INSTALLATION INSTRUCTIONS

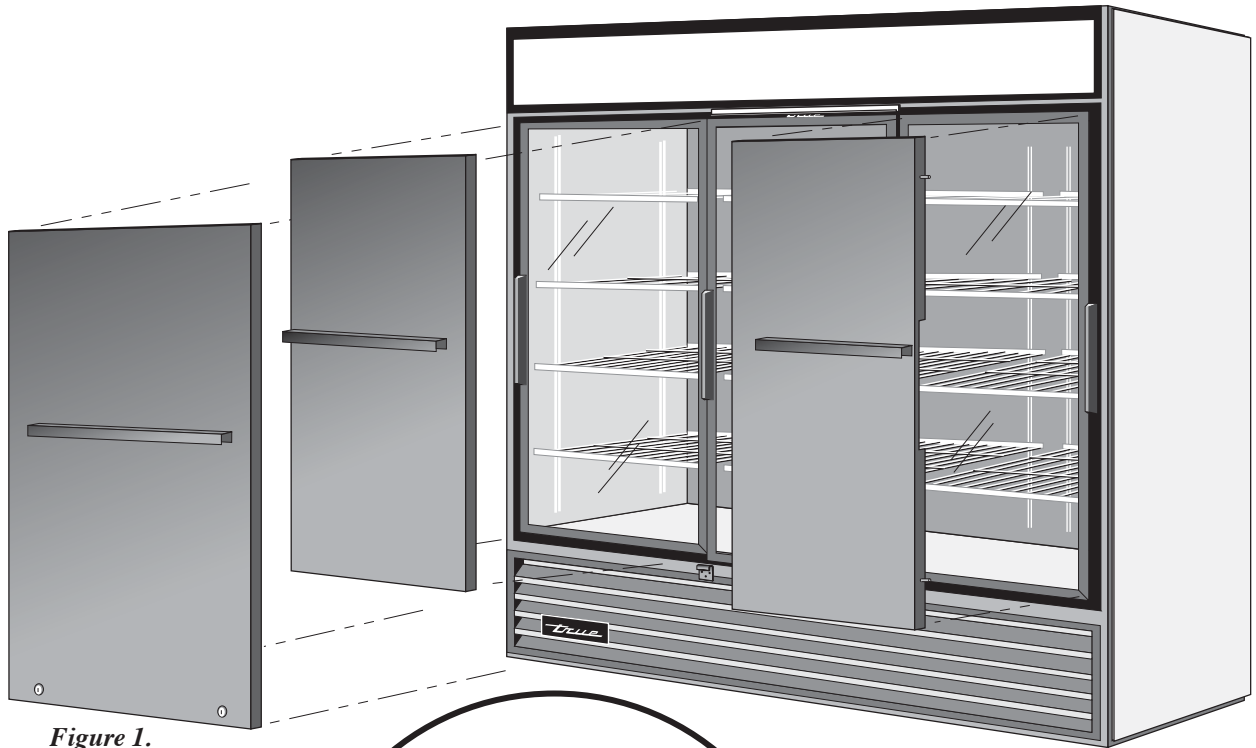


Figure 1.

REQUIRED TOOLS

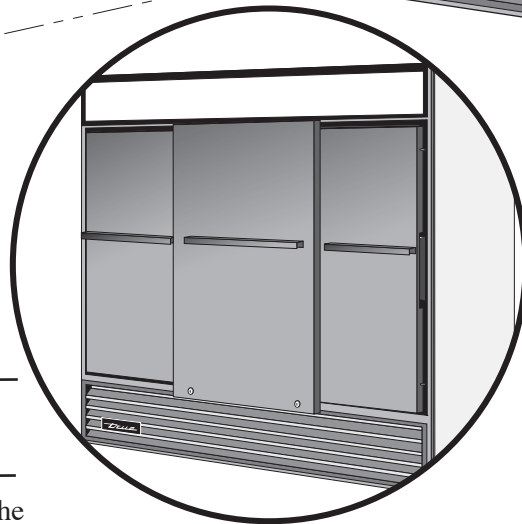
- Drill - 1/4" Bit
 - 3/16" Bit
- Pop-Rivet gun
- Tape Measure

STEP 1
 Unplug the cooler.

STEP 2
 Position bracket "A" directly under the sign panel trim with the lip down. (See figure 2.)

STEP 3
 Center the bracket on the front of the cooler.

STEP 4
 Drill five holes in the cooler front by transferring them through the pre-drilled bracket.



STEP 5
 Pop-rivet the bracket in place.

STEP 6
 The two brackets "B" will be mounted on the front of the cooler, directly below the bottom door tracks.

STEP 7
 Position one bracket "B" so that the center of the bracket is 26 1/2" from the right hand edge of the cooler. Located the second bracket "B" so that it is 26 1/2" from the left hand edge of the cooler. (See figure "2")

STEP 8
 Check the height of the brackets before drilling.

The dimension from the top of the lip on bracket "A" to the bottom of the lip on bracket "B" must be 53". (See figure "2")

IMPORTANT

Check all dimensions carefully before drilling

► **Vandal Panel - GDM-69 ... Continued**

INSTALLATION INSTRUCTIONS

STEP 9
When in place, drill with 3/16" bit and fasten with rivets.

NOTE:
The right side of the cooler is determined when facing the cooler.

STEP 10
Two (1/4") holes need to be drilled in both the left and right vertical door tracks. Lay the "left side" template against the front and inside edge of the cooler. The bottom edge of the template must rest on the top of the lower plastic door track. (See figure

"3".) Transfer the holes from the template into the side wall of the cooler. Drill the holes only 1" deep. Do not drill through the walls.

Repeat this operation for the right side. (templates are marked left and right and the top is also indicated.)

To Mount The Panels

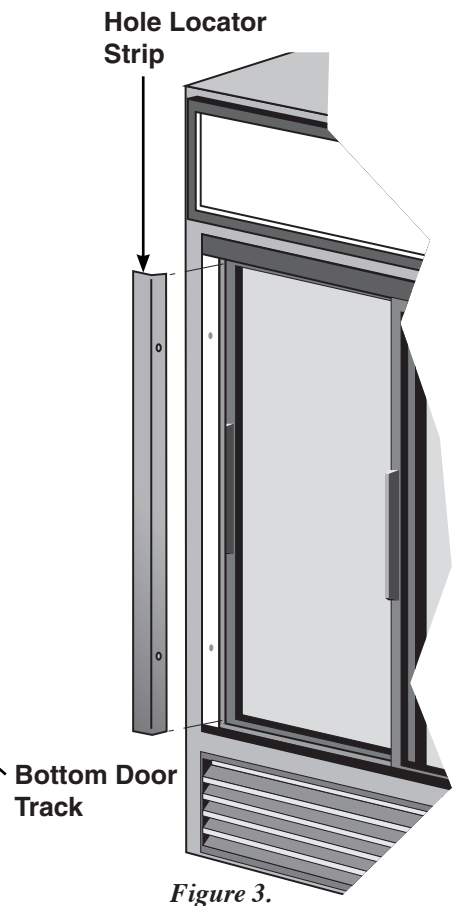
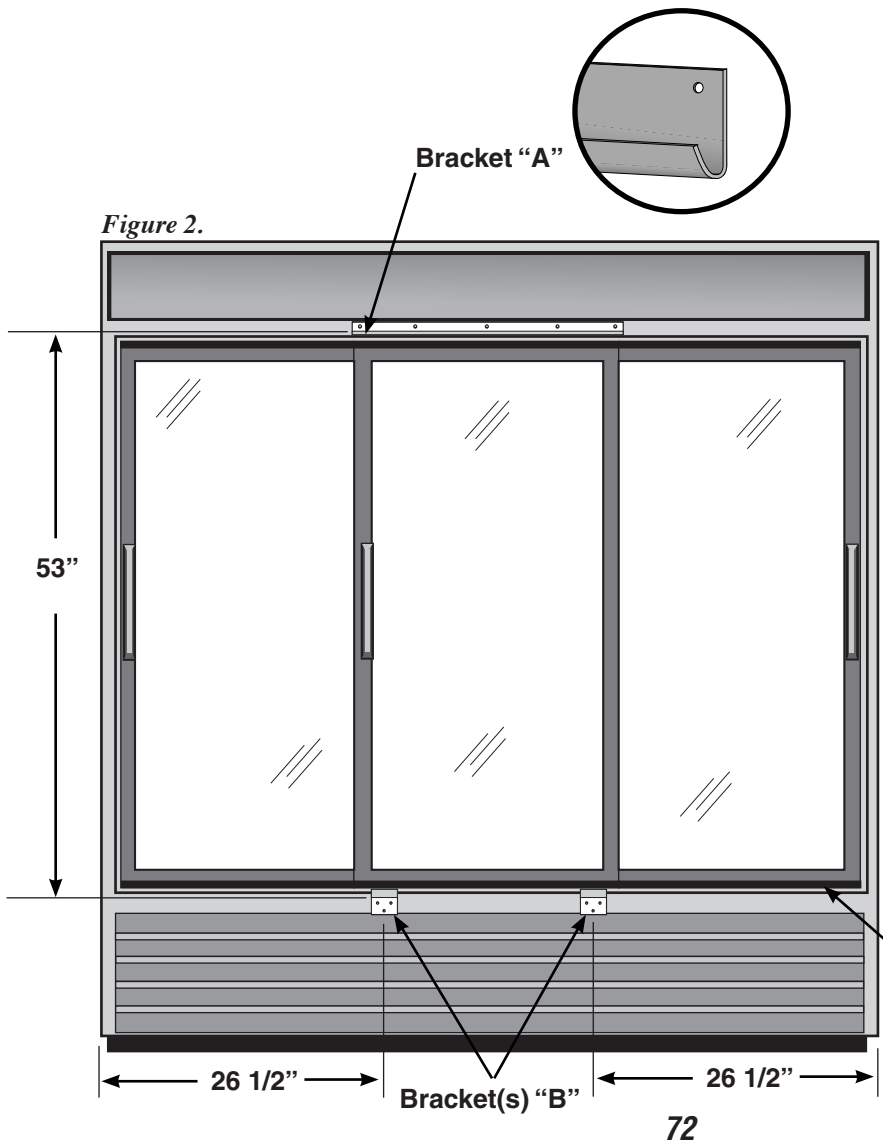
STEP 1
Slide the right hand panel into place by guiding the two pins into the drilled holes in the vertical door track. Push the panel to the right and back until

the foam tape rest against the center door. Repeat for the left panel.

STEP 2
Hang the lip of the center panel on the lip on bracket "A".

NOTE:
Panels may be shipped in the locked position - in this case turn lock to fit panel over bracket "B".

STEP 3
Lock in place by turning the key locks to engage brackets "B".



► Louver Retrofit Instructions for GDM-33, 37, 41, 45, 47, 61, 69, and GDM-47RL Models
RETROFIT INSTRUCTIONS

KIT PARTS

- a • (2) - Louver clips
- b • (2) - Black Phillips head screws
- c • (4) - Hex head screws
- d • (1) - #32 drill bit
- e • (1) - Louver (grill)
- f • (2) - Paper templates

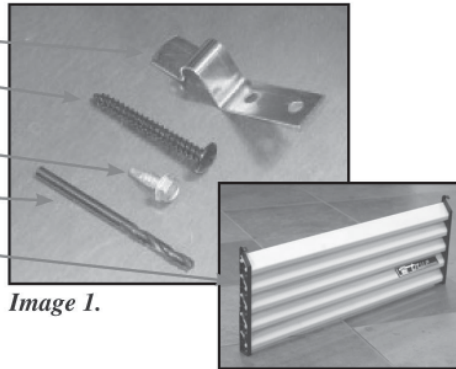


Image 1.

Note:

Check to make sure all parts listed are in the packaging. Any parts missing please contact us at 1-800-325-6152

Step 1

To remove existing louver back out the two black Phillips head screws that are on either side of the cabinet toward the bottom of the louver. (See Image 2)

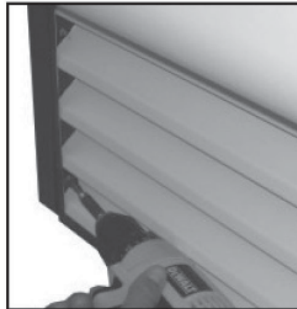


Image 2.

Once the bottom two louver screws are removed pull the bottom of the louver out. The top of the louver will pivot letting the bottom swing out. (See image 3). Then to remove the louver, unhook the louver bracket from the spacer. (See images 4). Back out the screw holding the spacer. Keep spacer for reinstall.



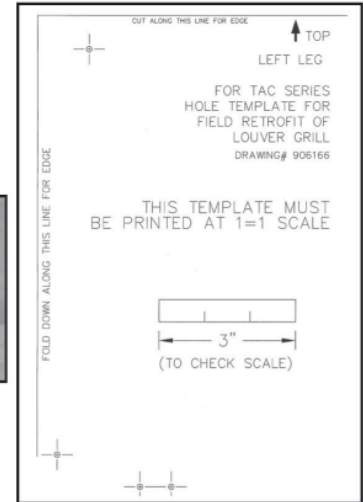
Image 3.

Step 2

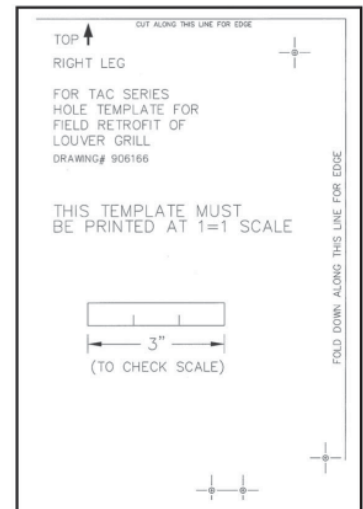
There are two paper templates that are in the retrofit kit. One template is for the left side of the cabinet and the other is for the right side of the cabinet. Each template has dotted lines that will need to be cut with scissors. Read directions on paper templates. Once the dotted lines have been cut, tape the left template within the left louver area. (See image 5 & 6). Then do the same to the right side of the louver area with the right template.



Image 4.



Left side (paper template)



Right side (paper template)

► Louver Retrofit Instructions for GDM-33, 37, 41, 45, 47, 61, 69, and GDM-47RL Models
RETROFIT INSTRUCTIONS

Step 3

Drill into the template locating the four proper holes with the #32 drill bit. (See image 7). Then do the same for the opposite side of the louver area. See image 6 for louver clip location. Fasten the two louver clips on either sides of the cabinet with the clip facing out toward the front of the unit.

Step 4

Reinstall the spacer/screw into the new location on either side of the unit. Reinsert the grill by hooking the louver brackets onto the newly located spacer/screw. Pivot the louver down toward the bottom of the cabinet until louver assembly snaps into the new louver clips on both sides of the cabinet.

Step 5

Anchor the louver with (b) two black Phillips head screws for the left and right side of the louvers. (See image 8).

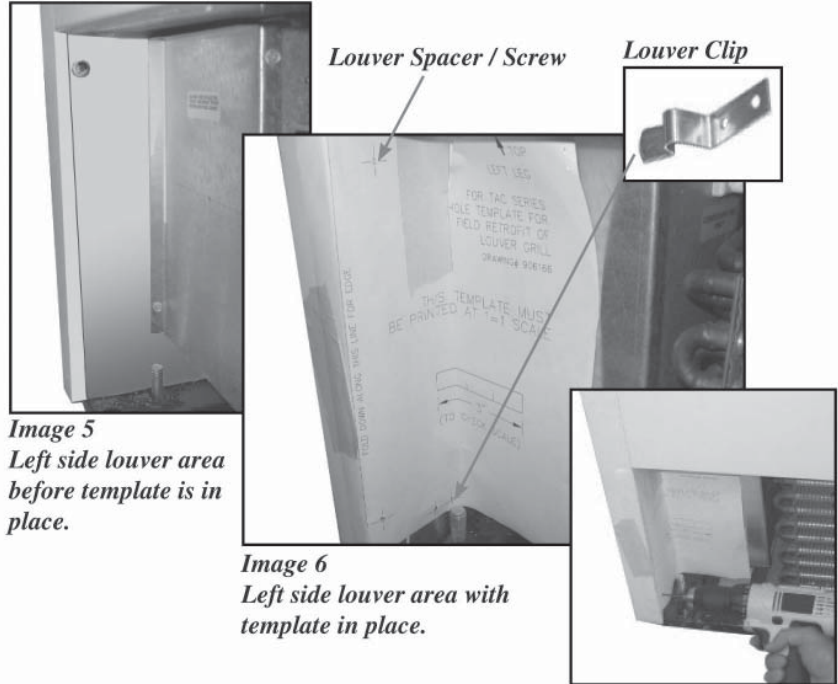


Image 5
 Left side louver area before template is in place.

Image 6
 Left side louver area with template in place.

Image 7
 Drill the four holes specified on the paper template.



Image 8



T-SERIES CABINETS

► T-Series Basic Cooler Operation with the Exception of the TAC & Deli Cabinets**SEQUENCE OF OPERATION**

Now that your equipment has been uncrated, the **electrical supply has been verified**, and the unit has been installed at its final location. You may plug in the cabinet.

After the cabinet is plugged in the evaporator fans (interior fans) will start. These fans will run all the time, they will not cycle off like a residential refrigerator. This is done to give an even and consistent product temperature throughout the interior of the cabinet.

If the light switch is in the on position the lights will also come on. (The light switch turns on and off all lights whether they are in the sign panel or inside of the cabinet).

The temperature control should be set between #4 or #5. If this is done the compressor will start. The compressor / condensing unit is turned on and off by the temperature control which is sensing evaporator coil temperature. **This is very important to remember.** We do not concern ourselves with interior air temperature. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. The compressor will run until the evaporator coil reaches the correct cut out temperature. The compressor will then shut off. The evaporator fans will continue to run circulating air through the evaporator coil. This will allow any ice or frost that has built up on the evaporator coil during the compressor run cycle to defrost during the compressor off cycle. When the evaporator coil temperature reaches the correct cut in temperature the cycle starts all over again.

► Basic Freezer Operation for Upright Models**SEQUENCE OF OPERATION**

Now that your equipment has been uncrated, the electrical supply has been verified, the unit has been installed at it's final location, and the time clock has been set (if applicable).

Once the unit is plugged in the compressor should come on immediately. You should be able to here the compressor operating. The temperature control should be set to #4 or #5. On some models (upright) the cabinet lights may also come on immediately. Otherwise the lights, perimeter heater and mullion heater(s) are controlled by a temperature sensing device that will not allow these items to come on until the box temperature is below 20°F. If the compressor is not operating be sure that the unit is not in defrost. Locate the time clock. On all the upright models the time clock will be located near the condensing unit. Advance the time clock counter clock wise a quarter of a turn. The compressor should then come on. The evaporator fans inside the cabinet will not come on until the fan delay/defrost termination switch is satisfied. Once the evaporator fans come on they will continue to run until the unit goes into defrost, or the doors are opened, or on some upright models when the temperature control is satisfied. If the fans are cycling off on the temperature control once the cabinet temperature rises and closes the temperature control, the evaporator fans will come back on along with the compressor and the cooling process will start all over again.

The defrost cycle on all freezers is controlled by a time clock. On our upright models the time clock is located near the condensing unit and the clock is adjustable. This means that you can increase the duration of defrost as well as add and additional defrost setting. During defrost the compressor and evaporator fans will shut off. The evaporator coil heater will come on and remain on until either a heater termination switch is satisfied and or the defrost duration (time) has completed. At this time the unit will go back into the freeze cycle. The compressor will start up and the evaporator fans will not come on until the fan delay/defrost termination switch is satisfied.

► Removal of T-Series Door

INSTALLATION INSTRUCTIONS

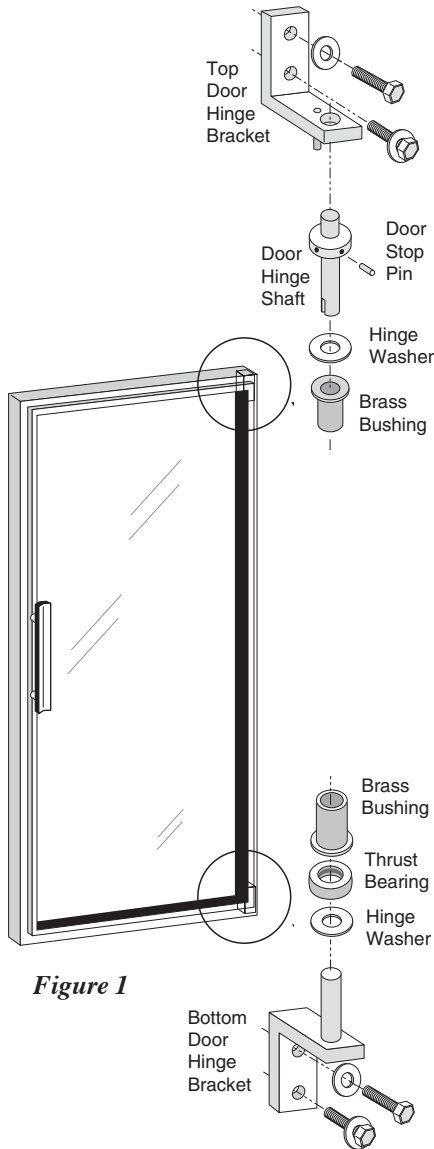


Figure 1

REQUIRED TOOLS:

- Two Drift Punches (or two 1/8" drill bits)
- Needle - Nose Pliers
- Phillips Head Screwdriver
- Slotted Screwdriver

STEP 1
Turn the cooler off.

STEP 2
Remove the four mounting screws from louvered grill and remove grill.

STEP 3
For models with the integrated door light feature, unplug light from ballast box.

IMPORTANT:
Freezer doors have heater wires which must be unplugged before doors can be removed.

STEP 4
Locate the top hinge assembly.

STEP 5
Remove door stop pin by placing a drift punch or 1/8" drill bit into the stop pin hole two holes to the left (for right side door) of the stop pin position. With drill bit firmly anchored in position, apply back pressure to the left and remove the stop pin with a needle-nosed pliers. While firmly holding the drill bit with your left hand begin rotating the hinge shaft to the right relieving spring tension. Insert second drift punch or drill bit into hole to the left and repeat process until all spring tension is relieved.

STEP 6
In some instances it is necessary to relieve spring pressure on hole position at a time until spring pressure is relieved.

NOTE:
Operation is reversed for left side door.

NOTE:
If cabinet is equipped with integrated door light be sure to unplug from ballast box.

STEP 7
In a squatted position, rest the bottom of the open door on your left knee (for right side door) as you face the outside of the door. Create an upward pressure and remove the two 3/8" bolts from the bottom hinge assembly. Remove the bottom hinge assembly. (Figure 2)

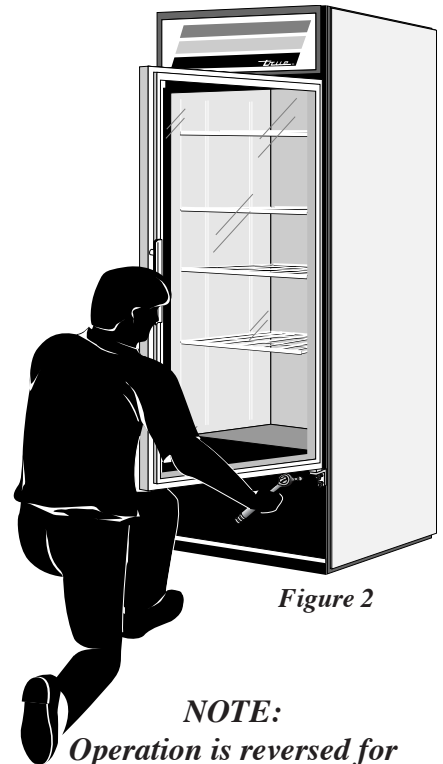


Figure 2

NOTE:
Operation is reversed for left side door.

Installation of a T-Series Door

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Two Drift Punches
 (or two 1/8" drill bits)
- Phillips-Head Screwdriver

NOTE:

It may be necessary to verify stop pin location and door block material for some models. Or call 800-325-6152 for assistance.

STEP 1

Beginning with the top hinge assembly of the replacement door place the hinge washer over the hinge shaft and slide into top door block. (figure 1).

NOTE:

The slot at the base of the hinge shaft must seat over the head of the door hinge spring.

STEP 2

Insert the bottom hinge assembly (hinge bracket, hinge washer, thrust bearing) into the door block and brass bushing inside bottom frame. (figure 1).

STEP 3

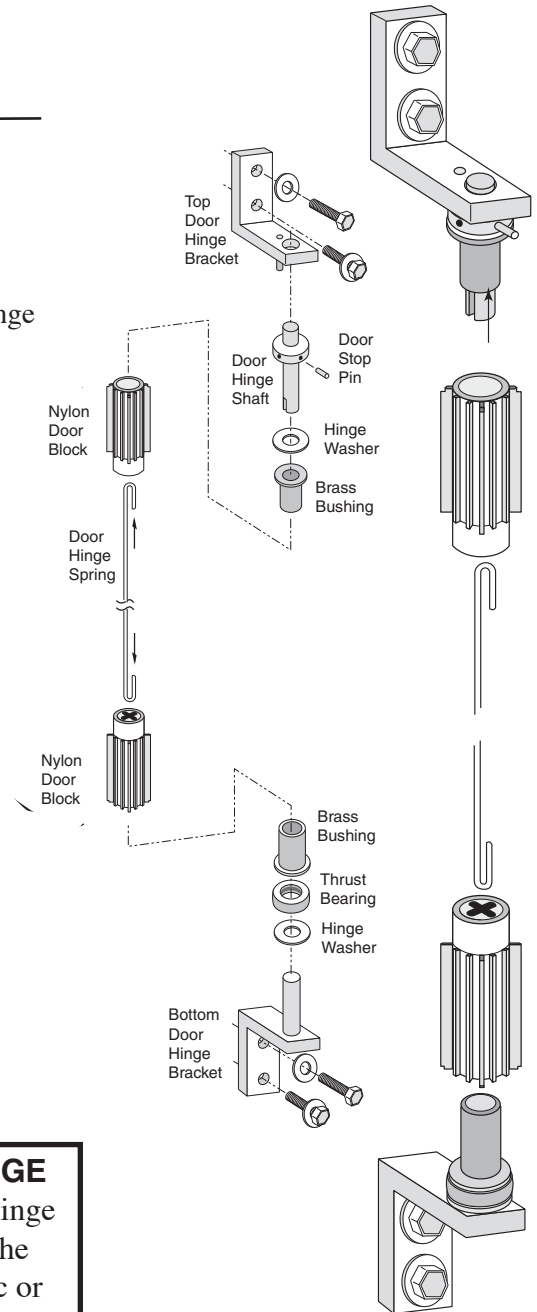
While holding bottom hinge in place lift door and slide top door hinge together. Maintain vertical pressure by resting door bottom on your knee while squatting, or have someone assist in order to re-attach lower hinge to cabinet. Fasten hinge with 3/8" bolts and washers.

STEP 4

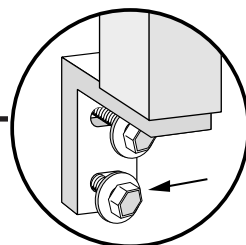
For models with integrated door lighting or this is a freezer, be sure to plug in the wire harness.

STEP 5

Adjust the spring by rotating the door hinge shaft to the left (using two drift punches or 1/8" drill bits) hole by hole to the desired tension (approximately one-half turn). Replace the stop pin in the door hinge shaft.



TO ADJUST DOOR HINGE
 Loosen bolts from bottom hinge assembly and lightly tap the hinge bracket with a plastic or rubber hammer. When door hangs true, tighten bolts.



**Figure 1
 (NEW STYLE)**

TORSION SPRING REPLACEMENT T-Series - Swing Door
INSTALLATION INSTRUCTIONS

NOTE:
 If the torsion spring is broken, there is no need for steps 1-4.

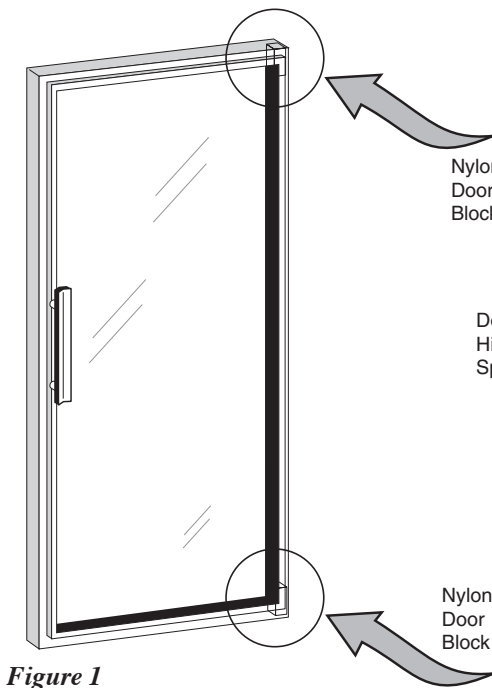
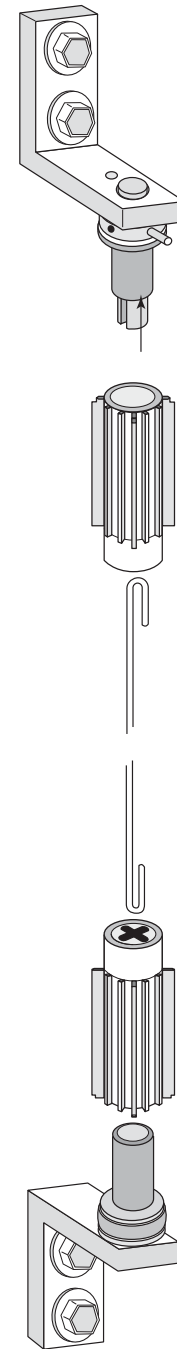
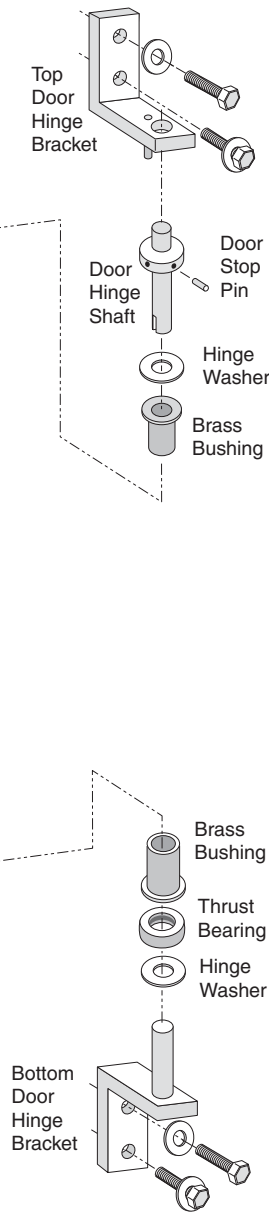


Figure 1



REQUIRED TOOLS

- Two drift Punch (or 1/8" drill bit)
- Needle-Nose Pliers
- Phillips-Head Screwdriver
- Wrench (3/8")

STEP 1
 Turn the cooler off.

STEP 2
 Locate the top hinge assembly.

STEP 3
 If spring remains taut, relieve tension by placing a drift punch or 1/8" drill bit into the stop pin hole, two holes to the left (for right side door) of the stop pin position.

STEP 4
 With drill bit firmly anchored in position, apply back pressure to the left and remove the stop pin with needle-nosed pliers. While firmly holding the drill bit with your left hand begin rotating the hinge shaft to the right relieving spring tension. Insert second drift punch or drill bit into hole to the left and repeat process until all spring tension is relieved.

In some instances it is necessary to relieve spring pressure one hole position at a time until spring pressure is relieved.

NOTE:
 Operation is reversed for left side door.

► **TORSION SPRING REPLACEMENT T-Series - Swing DoorContinued....**

INSTALLATION INSTRUCTIONS

STEP 5

Remove all 4 anchor screws from louvered grill and remove grill.

NOTE:

If cabinet is equipped with integrated door light be sure to unplug from ballast box.

NOTE:

Freezer doors have heater wires which must be unplugged before doors can be removed.

STEP 6

In a squatted position rest the bottom of the open door on your left knee (for right side door) as you face the outside of the door. Create an upward pressure and remove the two 3/8" bolts from the bottom hinge assembly. Remove the bottom hinge assembly. (figure 2)

STEP 7

Remove the door and carefully place door on a flat surface with the door handle on the bottom. The door should be in a rectangular position.

STEP 8

Remove upper and lower brass bushing from from the top and bottom of door.



Figure 2

NOTE:

It may be necessary to verify stop pin location and door block material for some models. Or call 800-325-6152.

STEP 9

Remove the broken torsion spring from the top of the door. To do this you might need to bend a hook on the end the end of a piece of metal such as a coat hanger or something similar. Place this hook in the top of the door grabbing the top of the torsion spring. Then pull the torsion spring out the bottom. NOTE: You may only be able to pull out part of the broken torsion spring. If so, cut the spring allowing the remainder to fall back into the door.

STEP 10

Be sure that the ends of the new torsion spring are a "U" shape. If not, squeeze down on the end of the hook closing the gap.

STEP 11

Insert the new spring from the top of the door ensuring that the end hooks into the cross in the bottom door block. You will need to use the door shaft to ensure that the spring is down in the cross of the door block. By turning and pushing down on the spring in either direction 90° the spring should fall into place.

STEP 12

Install new upper and lower bushings.

STEP 13

Insert the new spring from the top of the door ensuring that the end hooks into the cross in the bottom door block.

STEP 14

Assemble top hinge. Place the hinge washer over the door hinge shaft, slide into brass bushing and fit into plastic door block. (figure 1)

STEP 15

Assemble bottom hinge. Place the hinge washer over the bottom hinge bracket, replace the thrust bearing over the washer, slide this assembly into the brass bushing and fit into aluminum door bracket.

STEP 16

While holding bottom hinge in place lift door and slide top door hinge together. Maintain vertical pressure by resting door bottom on your knee while squatting, or have someone assist in order to re-attach lower hinge to cabinet. Fasten hinge with 3/8" bolts and washers.

STEP 17

Adjust the spring tension by turning counter-clockwise (right door) to the desired tension (approx. 1/2 turn). Again use a 1/8" drill or drift punch to adjust and replace stop pin.

NOTE:

If cabinet is equipped with integrated door light be sure to plug into ballast box.

NOTE:

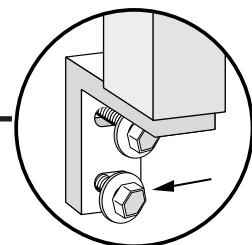
Freezer doors have heater wires which must be plugged in before operation.

STEP 18

Replace louvered grill and secure with four screws.

TO ADJUST DOOR HINGE

Loosen bolts from bottom hinge assembly and lightly tap the hinge bracket with a plastic or rubber hammer. When door hangs true, tighten bolts.



Torsion Spring Replacement Old Style T-Series - Swing Door

INSTALLATION INSTRUCTIONS

NOTE:

If the torsion spring is broken, there is no need for steps 1-4.

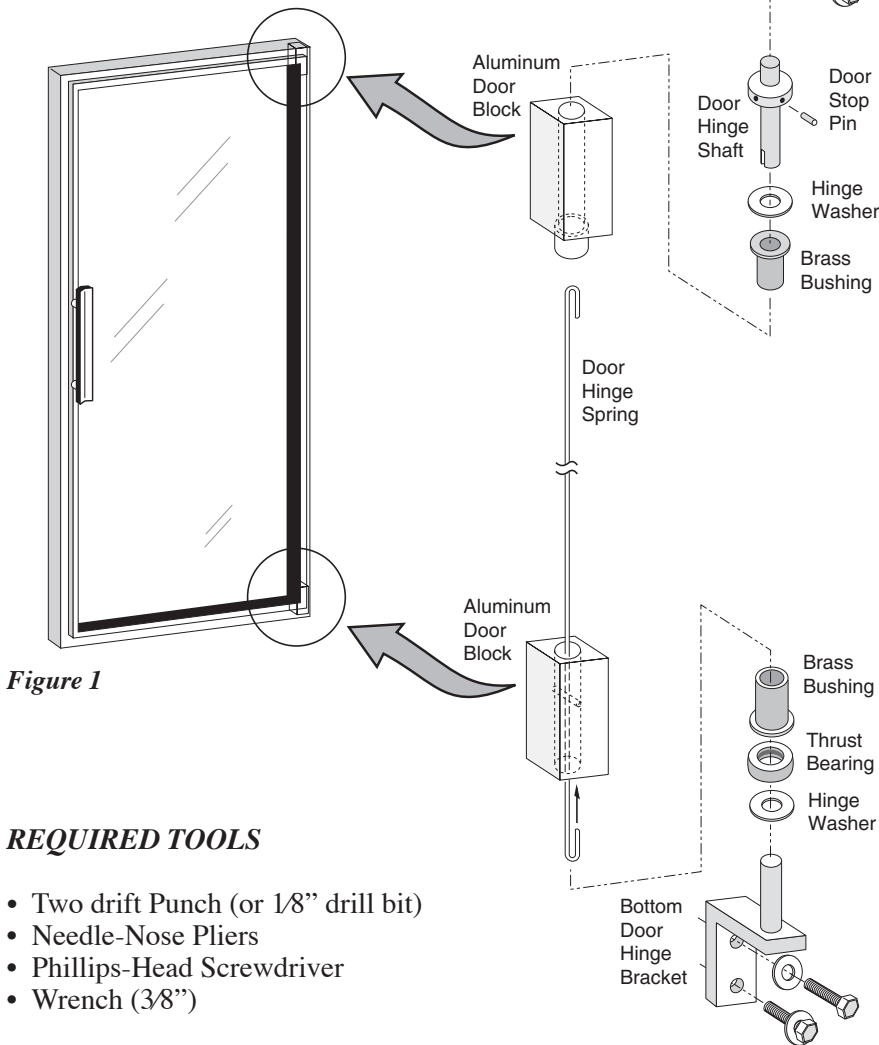
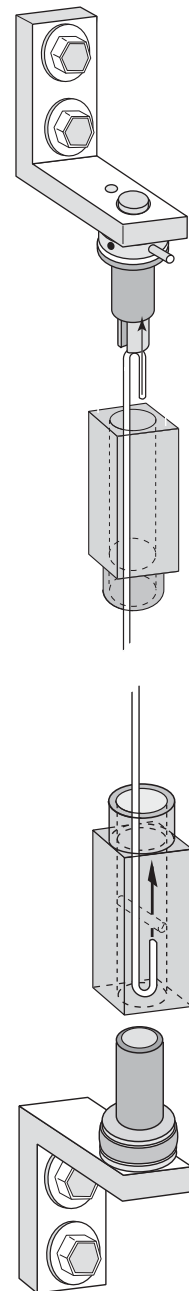


Figure 1

REQUIRED TOOLS

- Two drift Punch (or 1/8" drill bit)
- Needle-Nose Pliers
- Phillips-Head Screwdriver
- Wrench (3/8")



STEP 1
Turn the cooler off.

STEP 2
Locate the top hinge assembly.

STEP 3
If spring remains taut, relieve tension by placing a drift punch or 1/8" drill bit into the stop pin hole, two holes to the left (for right side door) of the stop pin position.

STEP 4
With drill bit firmly anchored in position, apply back pressure to the left and remove the stop pin with needle-nosed pliers. While firmly holding the drill bit with your left hand begin rotating the hinge shaft to the right relieving spring tension. Insert second drift punch or drill bit into hole to the left and repeat process until all spring tension is relieved.

In some instances it is necessary to relieve spring pressure one hole position at a time until spring pressure is relieved.

NOTE:
Operation is reversed for left side door.

► Torsion Spring Replacement Old Style T-Series - Swing DoorContinued....**INSTALLATION INSTRUCTIONS****STEP 5**

Remove all 4 anchor screws from louvered grill and remove grill.

NOTE:

If cabinet is equipped with integrated door light be sure to unplug from ballast box.

NOTE:

Freezer doors have heater wires which must be unplugged before doors can be removed.

STEP 6

In a squatted position rest the bottom of the open door on your left knee (for right side door) as you face the outside of the door. Create an upward pressure and remove the two 3/8" bolts from the bottom hinge assembly. Remove the bottom hinge assembly. (figure 2)

STEP 7

Remove the door and carefully place door on a flat surface with the door handle on the bottom. The door should be in a rectangular position.



Figure 2

STEP 8

Remove upper and lower brass bushing from from the top and bottom of door.

NOTE:

*It may be necessary to verify stop pin location and door block material for some models.
Or call 800-325-6152.*

STEP 9

Remove the broken torsion spring from the bottom of the door. To do this you might need to bend a hook on the end the end of a piece of metal such as a coat hanger or something similar. Place this hook in the bottom of the door grabbing the bottom of the torsion spring. Then pull the torsion spring out the bottom. NOTE: You may only be able to pull out part of the broken torsion spring. If so, cut the spring allowing the remainder to fall back into the door.

STEP 10

Be sure that the ends of the new torsion spring are a "U" shape. If not, squeeze down on the end of the hook closing the gap.

STEP 11

Insert the new spring from the bottom of the door ensuring that the end hooks into the horizontal pin in the bottom door block.

STEP 12

Assemble top hinge. Place the hinge washer over the door hinge shaft, slide into brass bushing and fit into aluminum door block. (figure 1)

STEP 13

Assemble bottom hinge. Place the hinge washer over the bottom hinge bracket, replace the thrust bearing over the washer, slide this assembly into the brass bushing and fit into aluminum door bracket.

STEP 14

While holding bottom hinge in place lift door and slide top door hinge together. Maintain vertical pressure by resting door bottom on your knee while squatting, or have someone assist in order to re-attach lower hinge to cabinet. Fasten hinge with 3/8" bolts and washers.

STEP 15

Adjust the spring tension by turning counter-clockwise (right door) to the desired tension (approx. 1/2 turn). Again use a 1/8" drill or drift punch to adjust and replace stop pin.

NOTE:

If cabinet is equipped with integrated door light be sure to plug into ballast box.

NOTE:

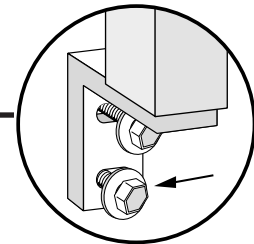
Freezer doors have heater wires which must be plugged in before operation.

STEP 16

Replace louvered grill and secure with four screws.

TO ADJUST DOOR HINGE

Loosen bolts from bottom hinge assembly and lightly tap the hinge bracket with a plastic or rubber hammer. When door hangs true, tighten bolts.



T-Series IDL Glass Insert Replacement
INSTALLATION INSTRUCTIONS

Warning:
The Edges on the glass insert are very sharp. To avoid personal injury, use adequate protection for your eyes and hands when working or handling this or any other glass component.

REQUIRED TOOLS:

- Phillips head screwdriver
- 3/8" Wide double sided tape
- Side cutters (if working with freezers)
- Butt connectors (if working with freezers)
- Crimping tool (if working with freezers)

————— **STEP 1** —————
 Disconnect power to the cabinet.

————— **STEP 2** —————
 Disconnect IDL plug from cooler.

————— **STEP 3** —————
 Loosen up the tension from torsion spring and remove door. Refer to Removal and Installation of GDM Swing Door Instructions. (See images 1-2).



Image 1. (Releasing door tension).



Image 2. (Removing door bottom hinge).

————— **STEP 4** —————
 Remove door handle and place door on a flat surface.

————— **STEP 5** —————
 Remove door gasket and back plates from the top, bottom and handle side. (See images 3-4).



Image 3. (Removing door gasket).



Image 4. (Removing door back plates).

————— **STEP 6** —————
 Beginning at the upper corner in the handle side, carefully pry the broken glass loose. If necessary, use a heat gun or hair dryer to loosen up the insert from double sided tape. (See image 5).

Note:
Do not forget to disconnect the glass insert heater wires before pulling it out and reconnect them before sliding the new glass insert in.

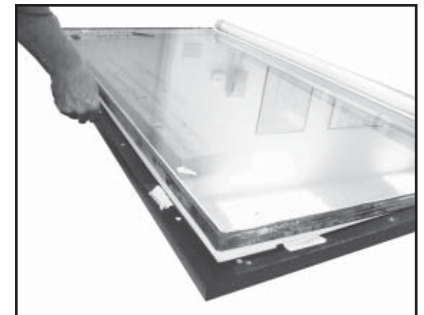


Image 5. (Removing glass insert).

————— **STEP 7** —————
 Remove any excess tape and glass from the lip on the door's frame and replace with new double sided tape.

NOTE:
Make sure the TRUE logo on the insert, is located outside at the bottom of the frame. (See image 6).



Image 6.

————— **STEP 8** —————
 Install the new glass insert by pushing it into the light channel first and then work out-wards toward the handle side.

————— **STEP 9** —————
 Install gasket back plates and gasket.

————— **STEP 10** —————
 Mount door and tighten torsion spring. Refer to Removal and Installation of GDM Swing Door Instructions.

T-Series Thermometer Replacement
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS:

- #2 Phillips screwdriver
- ¼ inch nut driver
- Adjustable wrench

STEP 1

Remove the ¼ screws holding the evaporator cover. Remove cover. (See image 1).



Image 1

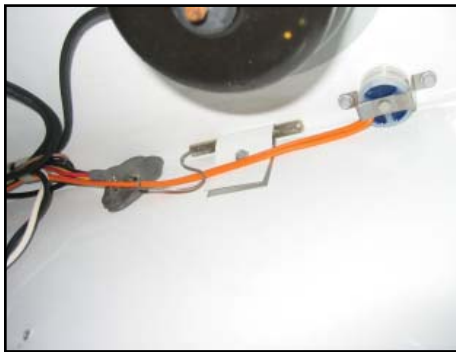


Image 2

STEP 2

Remove ¼ screw and clip that is holding sensing bulb to front of cabinet. (See image 2).

STEP 3

Remove the top, side, and bottom Phillips screw to the louver panel. (See image 3).



Image 3

STEP 4

Remove perm gum from hole that is drilled through cabinet facing. Pull sensing bulb through hole. (See image 4).

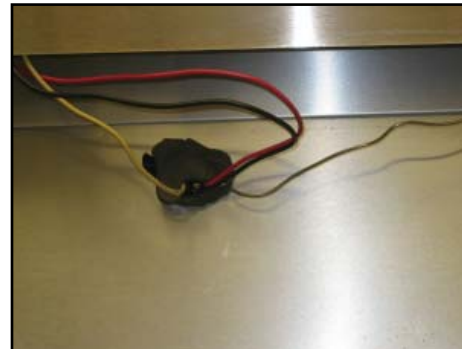


Image 4

STEP 5

Remove mounting nut from back of thermometer. (See image 5).



Image 5

STEP 6

Pull thermometer from front of louver cover. (See image 6).



Image 6

STEP 7

Rout new sensing bulb through louver cover, through cabinet facing and remount sensing bulb with ¼ screw and bracket.

STEP 8

Install mounting bracket to back side of thermometer with nut.

STEP 9

Install perma gum into opening of cabinet facing to insure ambient air does not enter cabinet.

STEP 10

Install louver cover in opposite order of removal.

T-Series Lock Replacement

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS:

- #2 Phillips screwdriver
- Adjustable wrench

STEP 1

Remove the top, side, and bottom Phillips screw to the louver panel. (See image 1).



Image 1

STEP 2

Remove back Phillips screw and latch lever from lock. (See image 2).

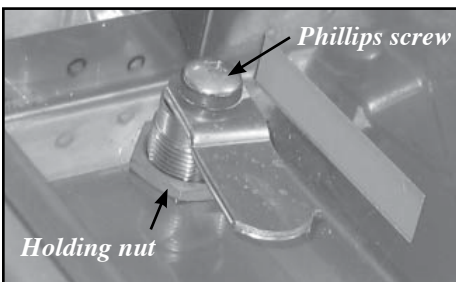


Image 2

STEP 3

Remove holding nut from lock assembly. (See image 2).

STEP 4

Pull lock from front of panel. (See image 3).



Image 4

STEP 5

- Install new lock into existing panel cut out.
- Install holding nut.
- Install latch and screw.
- Install louver cover in opposite order of removal.

► Perimeter Heater Wire Replacement
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Phillips Head Screwdriver
- Drill
- 1/8" Drill Bit

STEP 1

Disconnect the power supply, unload contents of cabinet and lay cabinet on its back.

NOTE:
 There can be no ice on the face of the cabinet prior to this repair.

STEP 2

Remove the lower louvered grill. Remove the side brackets on the face of the cabinet. (See image 1).



Image 1

STEP 3

Remove the rain shield above the door (s). (See image 2).



Image 2

STEP 4

Remove hinges and door (s). (See images 3-4).



Image 3



Image 4

STEP 5

Drill out pop rivet on right top corner of plastic and stainless steel mullion trim. Remove the right side vertical stainless steel strip by sliding it out of the plastic tracks. Then remove the top horizontal stainless steel mullion. Be sure to raise the corner of the plastic trim where the pop rivet was removed so that the stainless trim slides beneath it. (See image 5).



Image 5

STEP 6

Remove the left vertical stainless steel trim piece by sliding it out of the plastic trim. Be sure to raise the top horizontal plastic trim piece (use a putty knife) so that the stainless trim passes underneath it toward the top of the cabinet. (See images 6-7).



Image 6



Image 7



Close up

STEP 7

Drill out the pop rivet that was hidden by the stainless steel trim in the lower right corner of the vertical plastic piece so that the bottom horizontal stainless trim slides beneath it for removal.

STEP 8

Disconnect heater wires in the junction box. Remove heater wire loop by unhooking at the corners where it is retained by the plastic trim pieces.

STEP 9

Replace inoperative heater wire loop, being sure to hook under the corners of the plastic trim as observed during disassembly.

STEP 10

Reverse assembly sequence to replace trim. Use the four (4) small sheet metal screws furnished with the heater wire in the same sequence as the pop rivets were removed.

STEP 11

Attach the heater wires to the power supply in junction box. Replace all other assemblies in reverse sequence in which they were removed.

► Sealing Process for Door Gaskets**INSTALLATION INSTRUCTIONS****REQUIRED TOOLS:**

- Tube of Black / Clear Silicone

STEP 1

Remove the door gasket in each corner. Pull the gasket out about 8" from the black plastic trim on the backside of the door. The gasket on the hinge side should sit on the inside track. The gasket on the top, side, and bottom should sit on the outside track.

STEP 2

Place a bead of silicone inside the black plastic trim running out about 6". Also fill in notched area completely with silicone.

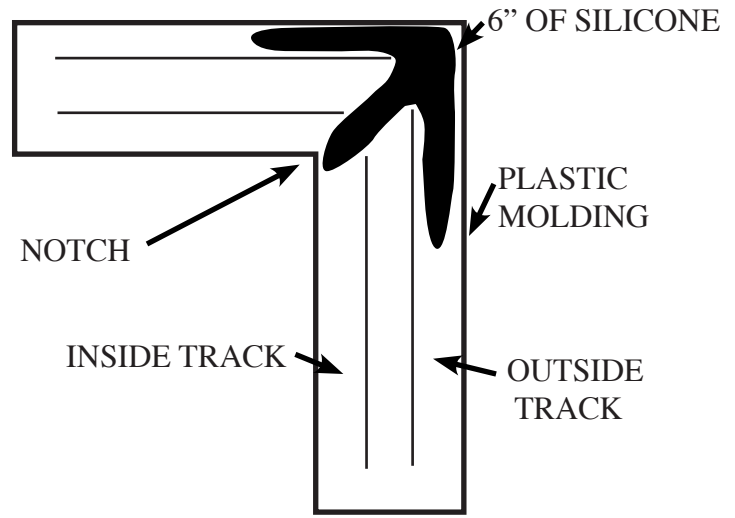
STEP 3

Push door gasket back into channel. Be sure you see some silicone pushing out of the channel.

STEP 4

Repeat steps 1-3 for the other three corners. Be sure that the gasket is pushed down completely in the black plastic door track.

NOTE: AFTER FILLING IN THE NOTCH WITH SILICONE AND PUSHING IN THE GASKET, BE SURE TO CHECK AND SEE IF THERE IS ANY LIGHT OR A GAP IN THE SILICONE UNDER THE DOOR GASKET. ALSO, ALLOW SILICONE TO SET BEFORE USING THE CABINET.

SEALING PROCESS FOR DOOR GASKETS**BACK VIEW OF DOOR**

► End Cap Replacement - T-Series Swing Door

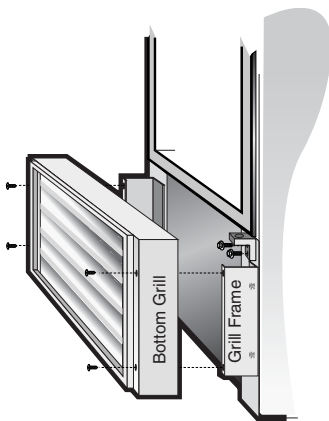
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Phillips Head Screwdriver
- 1/4" Hex Head Driver
- Putty Knife
- Two-Way Tape
- Rubber Mallet
- .30 drill
- Rivet Gun
- Black Silicone (optional)
- Silver/Gray Silicone Caulk (optional)

STEP 1
Disconnect power to unit.

STEP 2
Take off lower grill assembly by removing four front corner screws. Loosen (do not remove) two screws in grill bracket on the side to receive replacement panel.



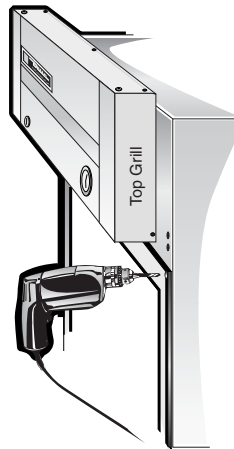
STEP 3
Take off top grill assembly by removing three screws along the rear edge on top, two screws in the front underside and single screw on right side into top hinge bracket.

Gently lift grill and slide away from side to receive replacement panel. Be careful not to disconnect wiring to thermometer.



STEP 4
If replacement is on the hinge side of the cooler remove the door and hinges.

STEP 5
Drill out rivet in stainless gasket base on right side top with a .30 bit. (no rivet on left side) and bottom.



STEP 6
Install 5 strips of two-way tape vertically the length of the side being capped.

STEP 7
Remove replacement panel from maisonette box. (replacement panel may be used on either end) 1/2" lip faces front.

STEP 8
Carefully bend 1 3/4" rear lip inward slightly in order to create an angle less than 90° to produce a snug fit while installing.

STEP 9
Peel plastic film away from 1/2" front lip only.

Install panel by working the top front 1/2" lip in slot between cabinet and plastic gasket base and continue down the cabinet and under bottom grill frame.



It may be necessary to use a putty knife to widen gap. When cap is in position gently tap folded edge with a rubber mallet until flush.

STEP 10
Tighten screws in bottom grill frame

STEP 11
Smooth replacement end over two sided tape and around rear edge.

Remove protective film.

► End Cap Replacement - T-Series Swing Door Continued**INSTALLATION INSTRUCTIONS****STEP 12**

Drill pilot holes for rivets using .30 drill bit. Four down the front edge, and three across top and bottom edges (see figure 5).

STEP 13

Install rivets.

Replace drilled out pop rivet in top right side gasket base.

STEP 14

Drill 3 holes, one at top, one in middle, one at the bottom. (see figure 6)

Install rivets.

STEP 15

If necessary use black silicone to create a good seal where front corner meets plastic gasket molding. Use silver/gray silicone caulk to seal rear raw edge.

STEP 16

Reinstall doors and louvers.

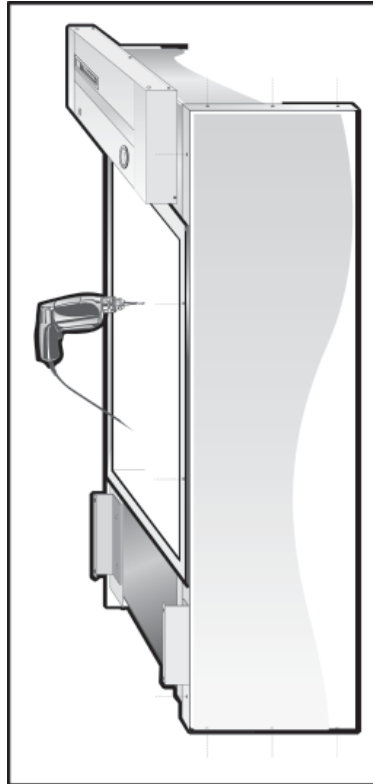


FIGURE 5.

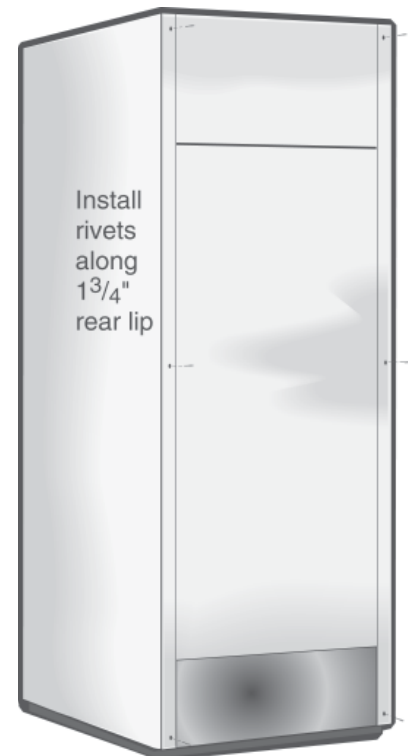


FIGURE 6.

TR / TA / TG

▶ **TR/TA/TG Series Basic Cooler Operation with the Exception of the TAC & Deli Cabinets**
SEQUENCE OF OPERATION

Now that your equipment has been uncrated, the **electrical supply has been verified**, and the unit has been installed at its final location. You may plug in the cabinet.

After the cabinet is plugged in the evaporator fans (interior fans) will start. These fans will run all the time, they will not cycle off like a residential refrigerator. This is done to give an even and consistent product temperature throughout the interior of the cabinet.

If the light switch is in the on position the lights will also come on. (The light switch turns on and off all lights whether they are in the sign panel or inside of the cabinet).

The temperature control should be set between #4 or #5. If this is done the compressor will start. The compressor / condensing unit is turned on and off by the temperature control which is sensing evaporator coil temperature. **This is very important to remember.** We do not concern ourselves with interior air temperature. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. The compressor will run until the evaporator coil reaches the correct cut out temperature. The compressor will then shut off. The evaporator fans will continue to run circulating air through the evaporator coil. This will allow any ice or frost that has built up on the evaporator coil during the compressor run cycle to defrost during the compressor off cycle. When the evaporator coil temperature reaches the correct cut in temperature the cycle starts all over again.

 **Basic Freezer Operation for Upright Models****SEQUENCE OF OPERATION**

Now that your equipment has been uncrated, the electrical supply has been verified, the unit has been installed at it's final location, and the time clock has been set (if applicable).

Once the unit is plugged in the compressor should come on immediately. You should be able to here the compressor operating. The temperature control should be set to #4 or #5. On some models (upright) the cabinet lights may also come on immediately. Otherwise the lights, perimeter heater and mullion heater(s) are controlled by a temperature sensing device that will not allow these items to come on until the box temperature is below 20°F. If the compressor is not operating be sure that the unit is not in defrost. Locate the time clock. On all the upright models the time clock will be located near the condensing unit. Advance the time clock counter clock wise a quarter of a turn. The compressor should then come on. The evaporator fans inside the cabinet will not come on until the fan delay/defrost termination switch is satisfied. Once the evaporator fans come on they will continue to run until the unit goes into defrost, or the doors are opened, or on some upright models when the temperature control is satisfied. If the fans are cycling off on the temperature control once the cabinet temperature rises and closes the temperature control, the evaporator fans will come back on along with the compressor and the cooling process will start all over again.

The defrost cycle on all freezers is controlled by a time clock. On our upright models the time clock is located near the condensing unit and the clock is adjustable. This means that you can increase the duration of defrost as well as add an additional defrost setting. During defrost the compressor and evaporator fans will shut off. The evaporator coil heater will come on and remain on until either a heater termination switch is satisfied and or the defrost duration (time) has completed. At this time the unit will go back into the freeze cycle. The compressor will start up and the evaporator fans will not come on until the fan delay/defrost termination switch is satisfied.

► Reversing TR-Series Door Swing**INSTALLATION INSTRUCTIONS****REQUIRED TOOLS**

- Phillips Head Screwdriver
- Putty Knife
- Slotted Screw Driver
- Pliers

NOTE:

Be sure unit is unplugged before proceeding.

STEP 1

Remove the four Phillips screws anchoring the rainshield.

(Two anchoring screws are located at the top and two are positioned at the bottom) See figure 1.

STEP 2

Place rainshield on top of the top mount compressor area, being careful not to disconnect digital readout wires.



Figure 1.

STEP 3

Remove nine black plugs with a putty knife to expose hinge mounting holes. See figure 1.

WARNING:

Do not drill plugs out. Plugs are safe-guarding threaded female anchor points.

STEP 4

Remove door by carefully lifting straight up 1 1/2" until hinge shafts clear mounting brackets. Door is now free to place aside.

STEP 5

Remove all three hinges from cabinet front by backing out three Phillips screws per bracket. See figure 2.

NOTE:

Each bracket is complete with two shims each. To avoid scratching cabinet due to falling shims, hold entire assembly in place while backing out screws.

STEP 6

Remount all three hinges on opposite side of cabinet where plugs were removed. Include shims in reassembly and snug in place. See figure 2.

STEP 7

For each hinge assembly, adjust white nylon bushing with vice grips or pliers so that the "V" notch faces toward cabinet opening. See figure 2.



Figure 2.

STEP 8

Locate new black plugs positioned inside warranty packet and place into exposed three holes (where hinges were previously mounted). Complete for all nine exposed holes.

▶ Reversing TR-Series Door Swing Continued**INSTALLATION INSTRUCTIONS****STEP 9**

Remove hinge cartridge cover by sliding cover straight down. See figure 3.

STEP 10

Back out three Phillips screws from all three door hinges. Save all three door hinge assembly for later installation.



Figure 3.

STEP 11

Remove seven slotted screws from ramp wiper gasket retainer and remove gasket. See figure 4.



Figure 4.

STEP 12

Remove door bumper by loosening three screws and lifting straight up.



Figure 5.

STEP 13

Remove door gaskets, by pulling from upper corners. Turn door 180° and re-insert gasket. Flip door hinges 180° and re-install into pre-drilled door holes. Re-install door bumper and door wiper assembly. See figures 4 and 5.



Figure 6.

STEP 14

Replace door, by positioning into all three hinges, align and tighten mounting hardware with full torque.



Figure 7.

STEP 15

Re-install rainshield.

► Dixell Temperature Control on TR/TA/TG Models**OPERATION INSTRUCTIONS**

The Dixell XR160 control used on the TR/TA/TG cabinets is a microprocessor control. Its purpose is to monitor cabinet temperature to cycle the compressor on and off, to initiate, and terminate the defrost cycle. So as to not over complicate it this control is just a temperature control and a defrost timer rolled into one. In the cooling mode it has a cut in and a cut out. In defrost mode it is turning on a heater and terminating on either time or coil temperature just like our mechanical timer and control.

Cooling operation

The Dixell control has a cut in and cut out temperatures with a set differential. This control uses the terminology of SET POINT AND HY POINT. The set point is the temperature the control has been set at to cut out, or turn compressor off. The HY is the setting that the control cuts in or turns the compressor on. The HY is always set up as the temperature differential. For example if we want the unit to cycle from 40 degrees to 20 degrees we would set the set point at 20 (temperature of cut out) and set the HY (cut in temperature) at 20 this is 20 + 20 giving us the cut in temperature of 40.

Setting the set point and HY point.

The Dixell control is already set up to run giving us a product temperature of 36-38 on coolers, and product temperature of -10 on freezer. The control should not need to be reset. However should the rare case come to pass here are instructions to change the Set and HY points.

SET POINT

To see the set point value, push and immediately release the "SET" key. This will display what the current set point is.

To change the set point, push the "SET" key for more than 2 seconds the value of the set point will be displayed. To change, push the "up" or "down" arrow. Then press "SET" again the entered value will flash.

**HY POINT**

- 1) Press and hold the "SET" and "down" arrow for 7 seconds.
- 2) Press the down arrow until Pr2 is displayed press "SET".
- 3) PAS will flash then the number 0.
- 4) Press the "up" arrow to display 3, press "SET".
- 5) Press the "up" arrow to display 2, press "SET".
- 6) Press the "up" arrow to display 1, press "SET".
- 7) The HY will now be displayed press set again. The value of HY will be displayed. Using the "up" and "down" arrows change to the value needed press "SET" and the value is now entered.



Dixell Temperature Control on TR/TA/TG Models Continued**OPERATION INSTRUCTIONS****DEFROST OPERATION. (Freezer Models only)**

The Dixell control has an automatic defrost system, which is preset at the factory. Like a mechanical timer it is set up to go into defrost based on time. The controller will kick out of defrost when the evaporator reaches 40 degrees or 15 minutes has elapsed. Which ever comes first. The defrost temperature is being sensed by the p2 probe. This defrost setting should be more than adequate. Should the need arise to where more defrost are needed the values can be changed.

Setting the Defrost intervals

True Manufacturing recommends only changing the interval times (the time between defrosts) not defrost terminating temperature or defrost time limit.

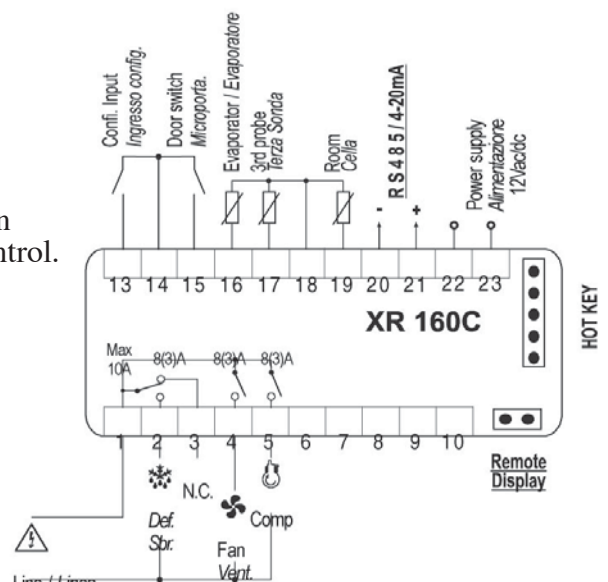
- 1) Press the "down" arrow and "SET" key for 7 sec.
- 2) Scroll down using the "down" arrow key to Pr2, press set wait for a flashing 0.
- 3) Press "up" arrow to the 3 value press "SET".
- 4) Press "up" arrow to the 2 value press "SET"
- 5) Press "up" arrow to the 1 value press "SET" (321)
- 6) Press the "up" arrow till IdF appears press "SET"
- 7) Using the "up" or "down" arrow reset to the value needed and press "SET" (this is time in hours between defrosts.

MANUAL DEFROST

To put the Dixell control into a manual defrost, push and hold the "Melting Ice" button until "def" is displayed. Please note you can only put the control into defrost. You cannot take it back out of defrost manually.

TESTING CONTROL OUTPUTS**To test the control's compressor contact with the control calling for cooling**

1. Set meter to read 120vac scale
2. Insert on lead into known neutral wire.
3. Insert 2nd lead into the 5th terminal from left looking at the rear of the control. You should read 120v.
4. If reading is 0 check for incoming hot at terminal 1, 1st terminal from left looking at rear of control. If you are reading 120 ac then contact inside control is faulty change the control.
5. If reading is 0 hot leg to control is open and cabinet wiring must be checked.



► Dixell Temperature Control on TR/TA/TG Models Continued**OPERATION INSTRUCTIONS****To test the control's defrost contacts with the control in defrost mode.**

1. Set meter to read 120vac scale
2. Insert on lead into known neutral wire.
3. Insert 2nd lead into terminal 2.2nd terminal from the left looking at the rear of the control. You should have 120vac.
4. If reading is 0 check for incoming hot at terminal 1,1st terminal from left looking at rear of control. If you are reading 120 ac then contact inside control is faulty change the control.
5. If reading is 0 hot leg to control is open and cabinet and wiring must be checked.

CONTROL INPUTS AND LOCATION

The Dixell XR160 control has 3 inputs. These are P. T. C. probes. They are designed so that as temperatures rise so does the probes resistance. At room temperature (77 degrees) the probes will read about 1100 ohms.

Probe one (pr1) is the thermostat control probe, and is located in front of the evaporator coil.

Probe two (pr2) is the defrost termination probe it is located on the evaporator coil. Viewing from front of cabinet it is on the left side rear of the coil.

Probe three (pr3) is the display temperature probe. It is located on the back wall mounted to one of the evaporator fan motor bracket.

Upon a PR1 failure the control will sound an alarm, display the probe number and go into a default mode. This mode will cycle the compressor on and off based on time only and not on temperature.

To silence the alarm simply push any button.

ALARM SIGNALS

PR1	Thermostat probe failure
PR2	evaporator probe failure
PR3	temperature reading probe failure
HA	Max temperature alarm
LA	Min. temperature alarm
EE	Data or memory failure

Control Reprogramming

The Dixell control comes with a quick programming feature. Should the controller ever loose its programming or have been tampered with. The original programming can be easily loaded through the use of a hot key.

Uploading hot key

- 1) Obtain hot key from True Manufacturing technical service (1-800-325-6152)
- 2) Remove power to cabinet.
- 3) Access the rear of the controller
- 4) Push hot key into 5 pin connector on right side of controller. (Viewed from back).
- 5) Apply power to cabinet the control will automatically up load the program. "dol" will be displayed. This takes about 10 seconds.
- 6) Remove power to cabinet.
- 7) Remove key (keep for future use)
- 8) Apply power. The controller will now have the program from the hot key.

► **Replacing Spec Series Door Locks**

INSTALLATION INSTRUCTIONS

Spec Series Lock Kit #912987

- a. (1) - Master key (T42-A)
- b. (1) - Standard key (T42)
- c. (1) - Cam (flat bar)
- d. (1) - Plug (Key receptacle)

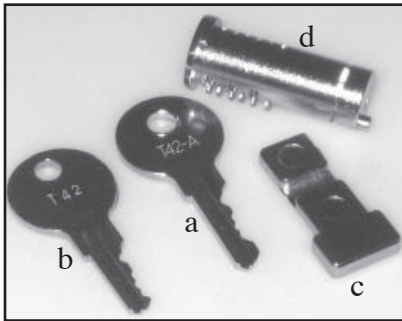


Image 1

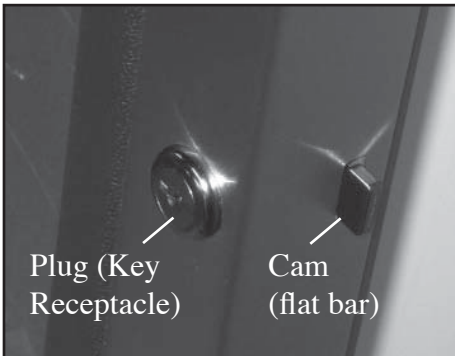


Image 2

REMOVING LOCK

STEP 1

Before replacing lock, inspect it for visual damage.

STEP 2

Use the master key (T42-A) and insert it all the way into the plug (key receptacle). Then pull out the key and the old plug (key receptacle) will automatically come out with the master key. (See image 3).

STEP 3

If the cam (flat bar) is damaged use a screw driver and insert it into the hole where the plug (key receptacle) was removed. Push the cam out of the way with the screwdriver and throw it away. (See images 4 & 5).

INSTALLING LOCK

STEP 4

If necessary, install the new cam by sliding it into the door where the old cam was removed.

STEP 5

Insert the new master key (T42-A) into the new plug (key receptacle) and slide both into the lock hole. Remove the master key while holding the plug (key receptacle) in place. (See image 6).

STEP 5

Use the standard key (T42) and lock and unlock the door. Make sure the lock operates smoothly and correctly.



Image 3 (Removing plug / key receptacle)

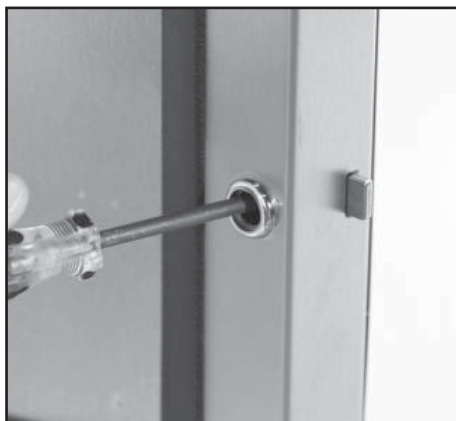


Image 4 (Screwdriver removing cam).



Image 5 (Removing Cam / flat bar).



Image 6 (Installing new plug / key receptacle)

TAC CABINETS

▶ **TAC-30 & TAC-36 SPECS**
CABINET SPECS



TAC-30

- 115volt 60cycle



115/60/1
NEMA-5-20R



TAC-36

- 208/230volt 60cycle



208-230/60/1
NEMA-6-15R



208-230/60/1
NEMA-6-20R

▶ **TAC-48 & TAC-48GS SPECS**
CABINET SPECS



TAC-48

- 208/230volt 60cycle



208-230/60/1
NEMA-6-15R



208-230/60/1
NEMA-6-20R



TAC-48GS

- 208/230volt 60cycle



208-230/60/1
NEMA-6-15R



208-230/60/1
NEMA-6-20R

TAC Installation Tips

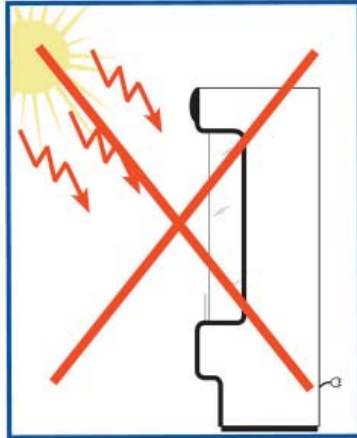
- Make sure the correct voltage and receptacle are present
Check for correct voltage
- Maximum Ambient Condition 75 degrees 55% Relative Humidity
- Do not place into direct sunlight
- Level Cabinet
- Place cabinet in an area that will not have any air drafts
Accessive air flow around cabinet can effect interior cabinet airflow (air-curtain).
No HVAC supply or return air vents pushing air into or pulling air out of cabinet.
No doorways
No ceiling fans
- Check for correct clearance space in back of cabinet and above
A 4" clearance requirement for the rear of cabinet and 12" clearance above cabinet.
- Do not load product to where it would over hang the shelf

NOTE:
Cabinet must be fully loaded for proper operation

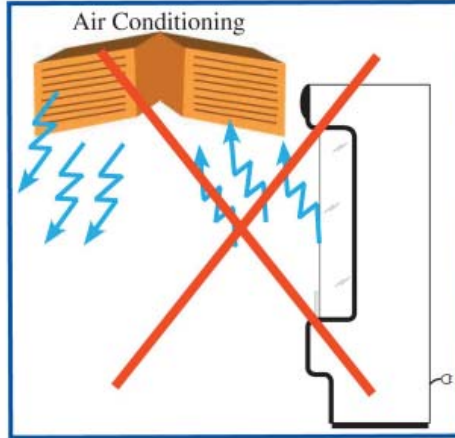


► **TAC Recommended Cooler Placement**
RECOMMENDED PLACEMENT

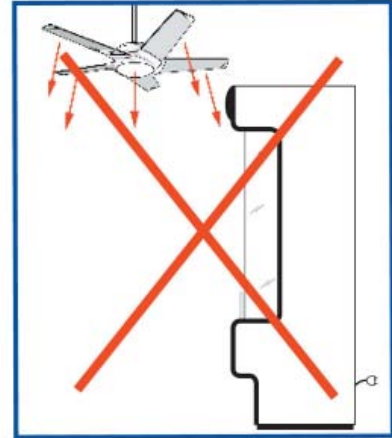
TAC (True Air Curtain) Recommended Operating Conditions



• Units should not be installed in direct sunlight.



• Units should not be installed near HVAC vents.



• Units should not be installed near fans.



• Units should not be installed near doorways.



• Level cabinet front to back and side to side.



• Check for proper clearance for air flow.



• Operating environment not to exceed 75°F (23°C) and 55% humidity.

► **Component Location with Mechanical Temperature Control**

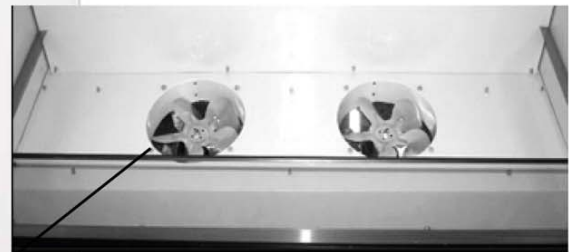
COMPONENT LOCATION



Sign lamp and ballast



Interior lamp and switch



Evaporator fan motors



Thermostat knob



Pressure switch



Defrost Timer



Condensing unit

► **TAC-48 Sequence of Operation with a Mechanical Temperature Control.**

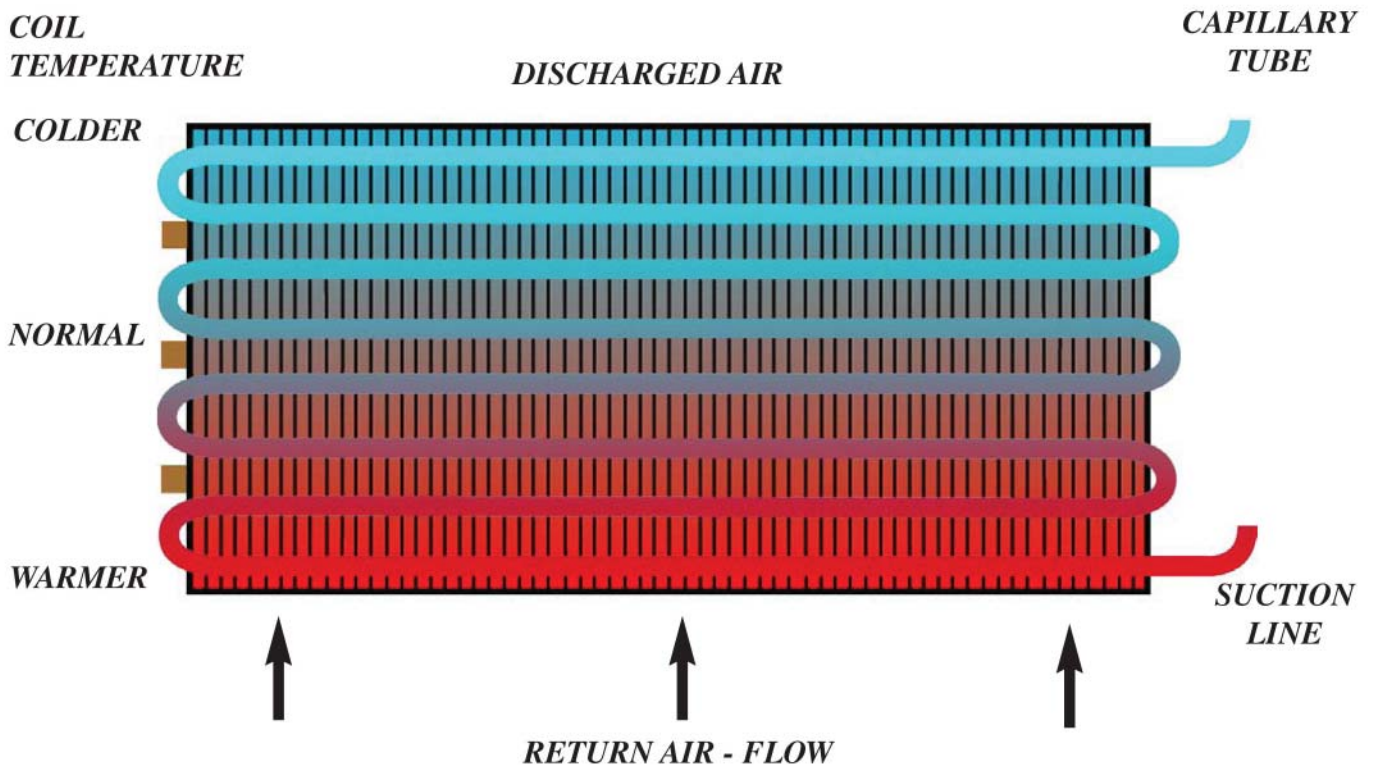
SEQUENCE OF OPERATION

TAC-48 Sequence of Operation with a Mechanical Temperature Control.

When the cabinet is plugged in the evaporator fans will come on, the condenser fans will come on, and if the light switch is in the on position the lights will come on. If the temperature control is calling for cooling voltage will flow through the temperature control to the low-pressure switch. If the pressure switch is closed voltage will flow through it to the temperature control relay. The relay will close and supply voltage to the compressor.

The compressor will continue to cycle off of the temperature control until the defrost timer initiates defrost. The timer is set to go into defrost 3 times a day (every 8 hours) for 30 minutes. During this time the electrical circuit going to the temperature control will open so the compressor will not operate. The evaporator fans will continue to run and the timer will switch power to the reverse windings in the condenser fan motors to make the motors run in the opposite (reverse) direction. After the 30 minutes are up the timer will then supply voltage back to the temperature control and also switch the condenser fans to normal rotation.

EVAPORATOR COIL OPERATION



► **TAC Mechanical Temperature Control Adjustment**

SEQUENCE OF OPERATION

An air curtain type of merchandiser is affected by the temperature and relative humidity of the surrounding ambient.

A. The adjustment knob and body of the temperature control is mounted to the left interior back panel of the cabinet, about six inches off of the "floor" of the cabinet, in a recessed area, near the evaporator coil.

- To raise the product temperature (*warm up* the cabinet), turn the control knob counterclockwise.
- To lower the product temperature (*cool down* the cabinet), turn the control knob clockwise.

B. If the above does not give desirable results, further adjustments are possible in the field. Disconnect power to the cabinet. Remove the full length back panel that the temperature control is mounted to: (See figure 1 & 2)

The temperature probe is inserted in the left end of the evaporator coil.

- To raise the product temperature (*warm up* the cabinet), relocate the temp control probe in the *top tube well location* in the end of the coil.
- To lower the product temperature (*cool down* the cabinet), relocate the temp control probe in the *bottom tube well location* in the end of the coil.

Note:

The sensor end of the temp control should be inserted in the tube well until it stops (bottom out). Reassemble the lower back panel, restart the unit and set the control to midpoint "5", for further temperature adjustment.

End view - left end of the evaporator coil

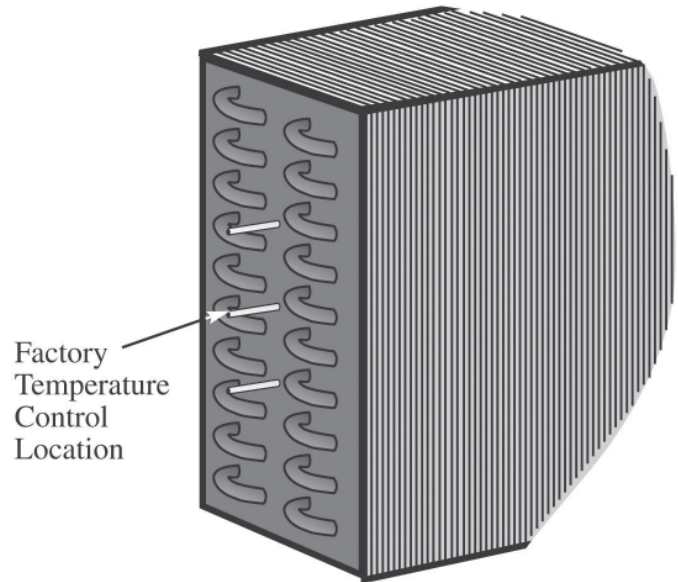


Figure 1

End view - left end of the evaporator coil

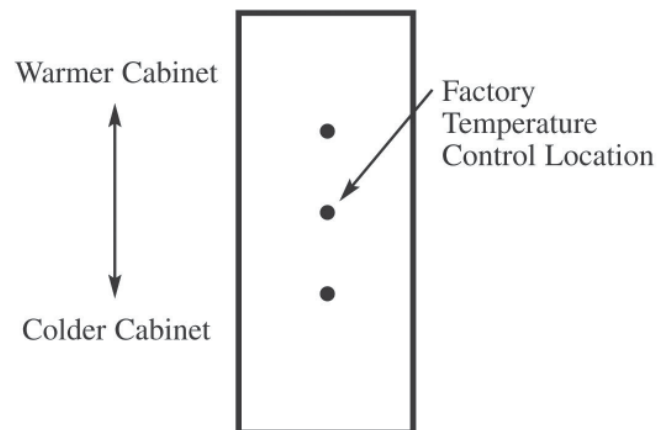


Figure 2

► **Sequence of Operation (TAC Cabinets with Dixell Control)**

SEQUENCE OF OPERATION

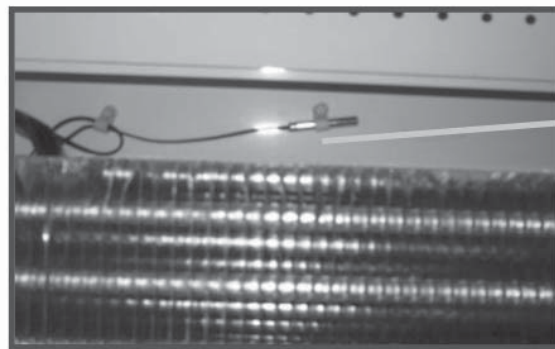
Dixell control operates similar to a mechanical control that we use. When adjusting the set point to change cabinet temperature you will be adjusting the controls cut out. The control will cut back in automatically when the temperature rises to meet to preprogrammed differential of 40.5°F (4.7°C).



XW60VS

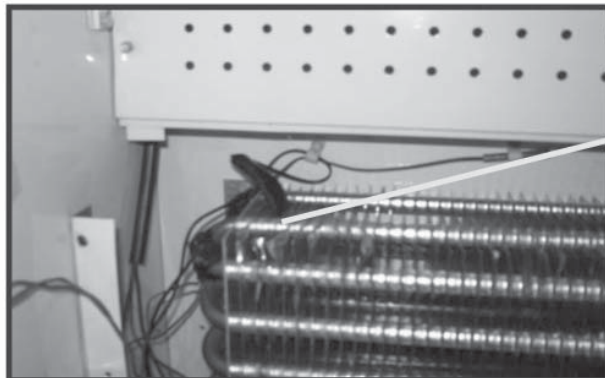
The following turn of events will occur in the TAC cabinets equipped with Dixell controls:

When the cabinet is plugged in, the lights, the evaporator and the condenser fan motors will come on. The temperature control delays the operation of the compressor for 3 minutes. After 3 minutes if the temperature is 41°F (5.5°C) the compressor will turn on. When the temperature in the cabinet goes down to 33°F (0.8°C) the control cuts the compressor off, leaving the evaporator and condenser fan motors operating, and re-starts it again when the temperature goes up to 41°F (5.5°C). The temperature control probe (P1) is located right above the evaporator coil.



Thermostat Sensor P1

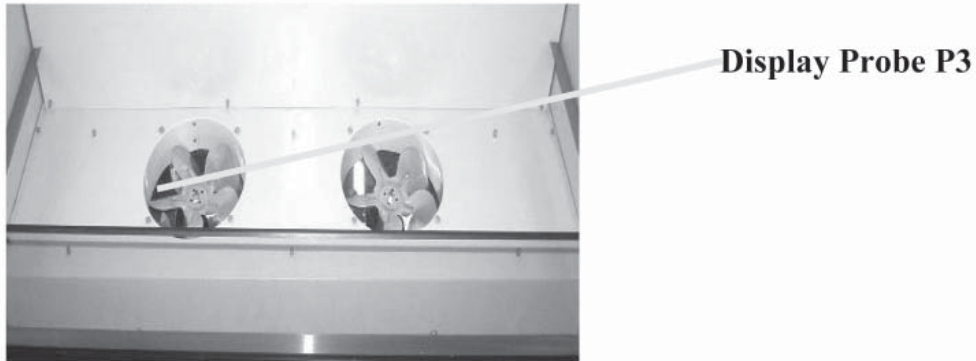
Every 8 hours, the temperature control will initiate the defrost cycle (Off cycle) which will last for 30 minutes. During the defrost cycle, the evaporator fan motors will operate continuously and the condenser fan motors will reverse. During the 30 minutes if the defrost probe reaches 41°F (5.5°C) this will eliminate the defrost and restart the refrigeration cycle. The sensor probe (P2) for the defrost termination is located in between the fins of the evaporator coil.



Defrost sensing probe P2

► Evaporator Coil Operation (TAC Cabinets with Dixell Control) ... Continued ...**SEQUENCE OF OPERATION**

The control is located behind the louvered grill on the left hand side (left of the condenser coil). The display temperature (air temperature) is monitored by sensing probe (P3) located in the return air near the evaporator fan.



The temperature control is also a safety that will delay the operation of the compressor; in case there a electrical condition, which will make it, short cycle such as power surges or voltage fluctuations. This delay will be for 3 to 4 minutes

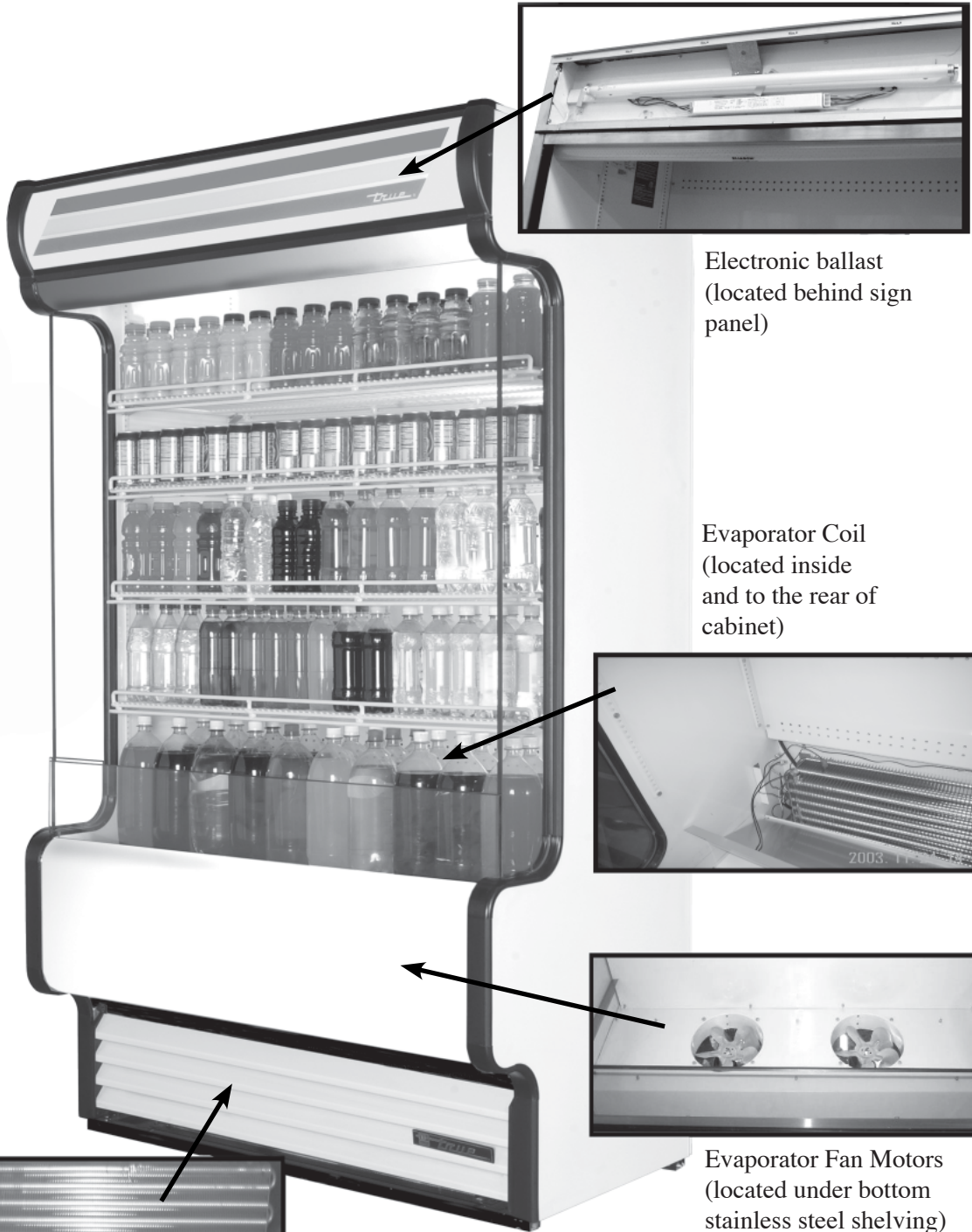
The TAC-48 includes a pressure control that will shut the compressor off if the refrigerant pressure goes down to 15 PSIG, to minimize icing of the evaporator coil and will reset when the refrigerant pressure goes up to 80 PSIG. It will work as safety if the refrigerant pressure is lost (refrigerant leak, low ambient conditions, etc) minimizing possible damage to the compressor due to contamination or oil migration.



- Left column is cut-in 80 PSI
- Right column is differential set at 65 PSI cut-out 15 PSI

► **Component Location with Dixell Temperature Control**

COMPONENT LOCATION



Electronic ballast
(located behind sign panel)

Evaporator Coil
(located inside and to the rear of cabinet)

Evaporator Fan Motors
(located under bottom stainless steel shelving)

Condensing Unit
(located behind louvered grill)

Digital temperature control is located behind the louvered grill to the left of the condenser coil.

Dixell Temperature Controller Programming Instructions

SEQUENCE OF OPERATION

**BASIC CONTROL OPERATION :
DIXELL # XW60VS**

Dixell control operates similar to a mechanical control that we use. When adjusting the set point to change cabinet temperature you will be adjusting the controls cut out. The control will cut back in automatically when the temperature rises to meet to pre programmed differential of 40.5°F (4.7°C).

How to set the max and min temp recorded:
Press the set key until the RST label starts blinking , this means the recorded temperature has been cleared.

**A Quick Overview Of The
Dixell Model # XW60VS
Temperature Controller.**

The XW60VS is a microprocessor-based controller that controls all of the following functions listed to the right whose parameters have already been reset at the factory for the units to operate at their highest efficiency. The settings should never be lost even when the power is disconnected to the units.

If the parameters (side chart) are changed the unit may not function properly. So the access to these functions has been blocked out and cannot be accessed without a code. If something would happen to the controller and it lost its memory we would replace the controller and have the old one sent back for examination. In a emergency case we could walk the service tech through the reprogramming process or send a hot key that will reprogram the control automatically.

Label	Name	Range
REGULATION		
Set	Set point	LS+US
Hy	Differential	0,1+25,5 °C / 1+45°F
LS	Minimum set point	-50,0°C+SET / -58°F+SET
US	Maximum set point	SET + 110°C / SET + 230°F
OdS	Outputs activation delay at start up	0+255 min.
AC	Anti-short cycle delay	0+30 min.
CCt	Compressor ON time during fast freezing	0 + 23h 50 min.
COOn	Compressor ON time with faulty probe	0+255 min.
COF	Compressor OFF time with faulty probe	0+255 min.
DISPLAY		
CF	Temperature measurement unit	°C + °F
rES	Resolution (integer/decimal point)	in + de
Lod	Local display	P1 + 1r2
DEFROST		
tdF	Defrost type	rE, rT, in
EdF	Defrost mode	In, Sd
SdF	Set point for SMART DEFROST	-30 + +30°C / -22++86°F
dtE	Defrost termination temperature	-50,0+110°C/ -58+230°F
ldF	Interval between defrost cycles	1+120h
MdF	(Maximum) length for 1° defrost	0+255 min.
dFd	Displaying during defrost	rt, it, SET, dEF, dEG
dAd	MAX display delay after defrost	0+255 min.
dSd	Delay before defrost	0+255 min.
Fdt	Draining time	0+60 min.
dPO	First defrost after start up	n + y
dAF	Defrost delay after fast freezing	0 + 23h 50 min.
FANS		
FnC	Fans operating mode	C-n, C-y, O-n, O-y
FnD	Fans delay after defrost	0+255 min.
FSt	Fans stop temperature	-50,0+110°C/ -58+230°F
ALARMS		
ALC	Temperature alarms configuration	rE+Ab
ALU	MAXIMUM temperature alarm	-50,0+110°C/ -58+230°F
ALL	minimum temperature alarm	-50,0+110°C/ -58+230°F
AFH	Temperature alarm differential	0,1+25,5 °C / 1+45°F
ALd	Temperature alarm delay	0+255 min.
dAO	Delay of temperature alarm at start up	0 + 23h 50 min.
EdA	Alarm delay at the end of defrost	0+255 min.
dot	Delay of temperature alarm after closing the door	0+255 min.
dOA	Open door alarm delay	0+255 min.
nPS	Pressure switch number	0+15
ANALOGUE INPUTS		
Ot	Thermostat probe calibration	-12,0+12,0°C / -21+21°F
OE	Evaporator probe calibration	-12,0+12,0°C / -21+21°F
O3	Display probe calibration	-12,0+12,0°C / -21+21°F
P2P	Evaporator probe presence	n + y
P3P	Display probe presence	n + y
HES	Temperature increasing during the Energy Saving cycle	-30+30°F/-54+54°F
DIGITAL INPUTS		
Odc	Open door control	no, Fan, CPr, F_C
I2P	Configurable digital input polarity	CL+OP
I2F	Digital input configuration	dor, EAL, bAL, PAL, dFr, AUS, ES, OnF
dId	Digital input alarm delay	0+255 min.
OTHER		
Adr	Serial address	0+247
Pbc	Kind of probe	PbC, ntc
rEL	Software release	---
Ptb	Map code	---
Prd	Probes display	Pb1+Pb3
Pr2	Access parameter list	---

Dixell Temperature Controller Programming Instructions Continued

SEQUENCE OF OPERATION

Digital Temperature Control Commands



Use of Leds

Each LED function is described in the following table.

LED	MODE	Function
	ON	The compressor is running
	FLASHING	- Programming Phase (flashing with LED) - Anti-short cycle delay enabled
	ON	The fan is running
	FLASHING	Programming Phase (flashing with LED)
	ON	The defrost is enabled

KEY COMBINATIONS:

- + To lock & unlock the keyboard.
- + To enter the programming mode.
- + To exit the programming mode.

HOW TO SEE THE MINIMUM TEMPERATURE:



1. Press and release the key.
2. The "Lo" message will be displayed followed by the minimum temperature recorded.
3. By pressing the key or waiting for 5s the normal display will be restored.

HOW TO SEE THE MAXIMUM TEMPERATURE:



1. Press and release the key .
2. The "Hi" message will be displayed followed by the maximum temperature recorded.
3. By pressing the key or waiting for 5s the normal display will be restored.

HOW TO RESET THE MAXIMUM AND MINIMUM TEMPERATURE RECORDED:

To reset the stored temperature, when maximum or minimum temperature is displayed:

1. Press SET key until "rST" label starts blinking.

HOW TO SEE AND MODIFY THE SET POINT:



1. Push and immediately release the **SET** key: the display will show the Set point value;
2. The **SET LED** start blinking;
3. To change the Set value push the or arrows within 10 seconds.
4. To memorize the new set point value push the SET key again or wait 10 seconds.

Alarm Signals

Message	Cause	Outputs
"P1"	Thermostat probe failure	Alarm output ON; Compressor output according to parameters "CO" and "COF"
"P2"	Evaporator probe failure	Alarm output ON; Other outputs unchanged
"P3"	Display probe failure	Alarm output ON; Other outputs unchanged
"HA"	Maximum temperature alarm	Alarm output ON; Other outputs unchanged
"LA"	Minimum temperature alarm	Alarm output ON; Other outputs unchanged
"EE"	Data or memory failure	Alarm output ON; Other outputs unchanged
"dA"	Door switch alarm	Alarm output ON; Other outputs unchanged
"EAL"	External alarm	Alarm output ON; Other outputs unchanged
"bAL"	Serious external alarm	Alarm output ON; Other outputs OFF
"PAL"	Pressure switch alarm	Alarm output ON; Other outputs OFF

 **Dixell Temperature Controller Programming Instructions Continued ...****SEQUENCE OF OPERATION****TO START A MANUAL DEFROST:**

1. Push the **Defrost** key for more than 2 seconds and a manual defrost will start.

**HOW TO LOCK THE KEYBOARD:**

1. Keep the **▲** and **▼** keys pressed together for more than 3 seconds the **▲** and **▼** keys.
2. The "POF" message will be displayed and the keyboard is locked. At this point it is only possible the viewing of the set point or the MAXIMUM o MINIMUM temperature stored and to switch ON and OFF the light, The auxiliary output and the instrument.

**TO UNLOCK THE KEYBOARD**

Keep the **▲** and **▼** keys pressed together for more than 3 seconds.

ON/OFF FUNCTION:

By pushing the **ON/OFF** key, the instrument shows "OFF" for 5 seconds and the ON/OFF LED switch ON.
During the OFF status, all the relays are switched OFF and the regulations are stopped;
N.B. During the OFF status the Light button is active.

HOT KEY

To Download or Program Control With Hot Key.

1. Turn control off (follow directions above)
2. Insert Hot Key in 5 pin receptacle (located on the bottom of the control)
3. Turn control back on. This will now be done automatically the DoI message will blink.

At the end of the data transfer phase the instrument will display one of these messages.

1. "End" Right programming - the instrument will then begin to operate with the new parameters.
2. "Err" for failed programming - In this case, turn control off and then back on again.
4. Turn control back off and remove Hot Key.
5. Turn control back on for correct operation.

► **Optional 800 Watt Electric Heating Pan for TAC-48 and TAC-48GS Units**
RETROFIT INSTRUCTIONS

REQUIRED PARTS (Kit):

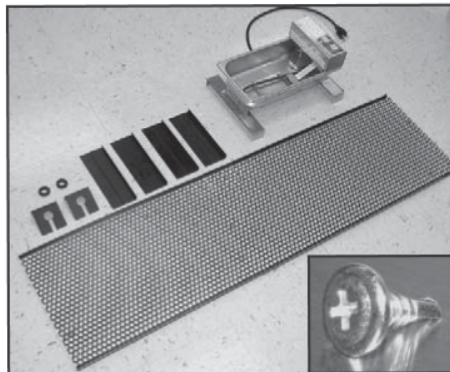
Kit #884703

- 1 - 800 Watt Heating Pan
- 1 - Rear Grill
- 24 - Pan Head Phillips Screws
- 4 - Rear Grill Brackets
- 2 - Power Cord Grommets
- 2 - Power Cord Brackets

REQUIRED TOOLS:

- Drill
- Phillips head drill bit
- Knife
- Tin snips

**ANY QUESTIONS CONTACT
THE SERVICE DEPARTMENT
AT 1-800-325-6152.**



Retrofit Kit



NOTICE:

The electric heated pan is shipped with packing material under the water level gauge. Please remove this packing material before installation begins. Failure to do so will result in equipment damage.

WARNING:

Disconnect power supply to unit before proceeding with retrofit instructions.

Step 1

Remove wicking kit from condensate pan at the rear and bottom portion of the unit. Drain water from existing pan. (See image 1).

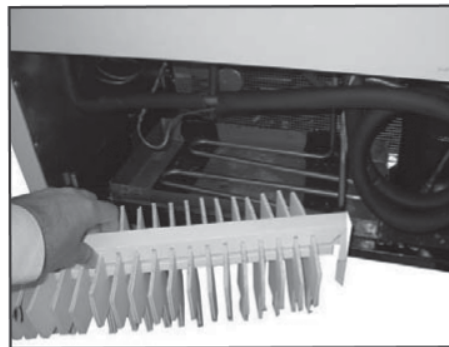


Image 1

Step 2

Set new heating pan into condensate pan. Make sure the new heating pan is level.

Step 3

The drain tube should be cut so it will not come in contact with heated pan or element. (See image 2).



Image 2

Step 4

Install 4 rear grill brackets. Each bracket needs to be mounted 1/8" inside the rear of the cabinet. (See image 4). Center the two side brackets and anchor them each with 2 pan head Phillips screws. Center each of the top two grill brackets and anchor them each with two pan head screws. (See image 3).

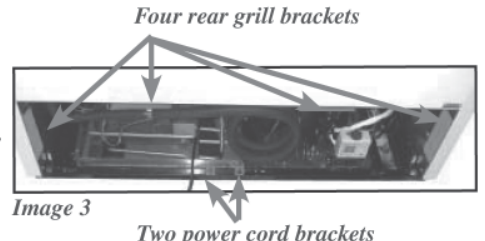


Image 3

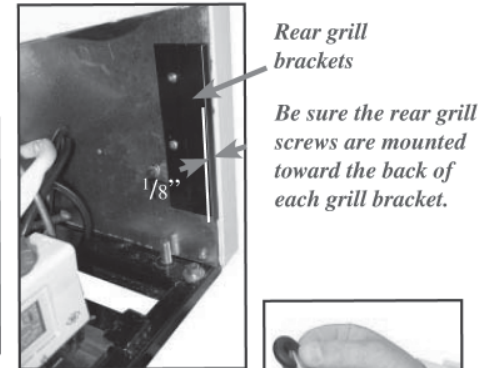


Image 4



Image 5



Image 6



Image 7

Step 5

Take the two grommets and cut one side of the grommets with scissors or a similar type of cutting utensil. Then put the grommet around the True cabinet power cord and the other grommet around the new heater pan power cord. Then insert these grommets into the hole of each of the power cord brackets (See images 5-7).

Step 6

Screw the two power cord brackets onto the frame rail facing out the rear of the cabinet.

► Optional 800 Watt Electric Heating Pan for TAC-48 and TAC-48GS Units Continued**RETROFIT INSTRUCTIONS****Step 7**

Hold the rear grill up to the rear of the cabinet and mark the areas that need to be notched making room for the power cords coming out the back of the cabinet. Cut the marked areas on the rear grill with tin snips. Be careful for sharp edges. (See image 8).

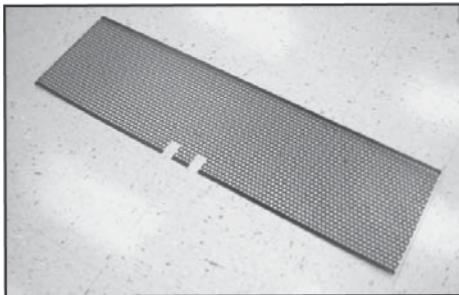


Image 8 (Rear grill with notches cut out for power cords.)

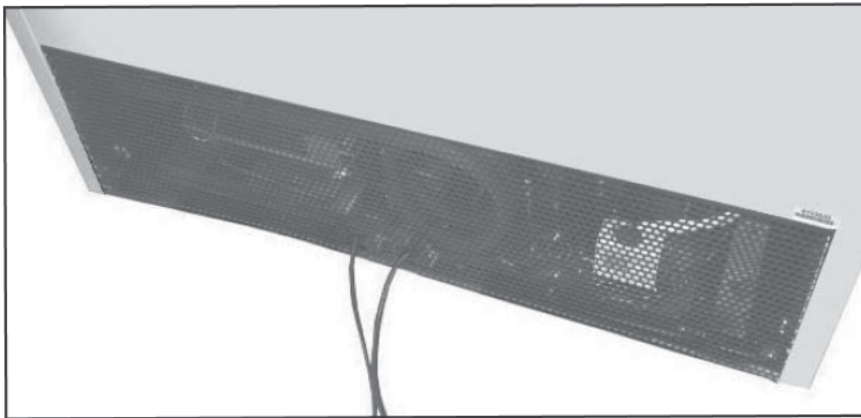


Image 9 (Final result: Rear grill in place with cabinet power cord and electric heating pan power cord running out the bottom of the grill.)

NOTICE:

New electric heating pan is 115 volts and should have a separate circuit and not wired into existing cabinet wiring.

► TAC Pump Installation for TAC-48 and TAC-48GS Models
INSTALLATION INSTRUCTIONS

REQUIRED PARTS (Kit):

- Kit #884726
- 1 - 1/18 hp pump
 - Foam Tape
 - 25' Foot of 1/2" ID Tube

REQUIRED TOOLS:

- Tape Measure
- Utility Knife

**ANY QUESTIONS CONTACT
 THE SERVICE DEPARTMENT
 AT 1-800-325-6152.**

WARNING:
*Disconnect power source to the unit
 before proceeding with installation.*

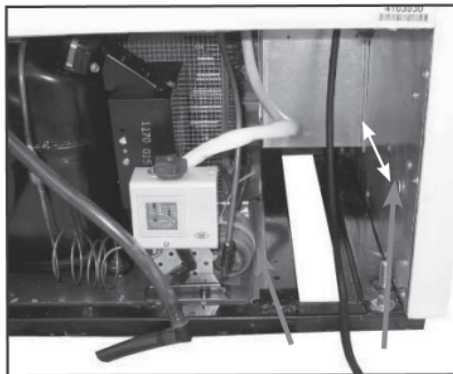


Image 1 (foam tape placement)

Step 1

Place foam tape onto the drier and 5 1/2" down from the bottom of the tank on the inside wall. Tape on the inside wall runs back to front of the cabinet. This tape will keep the pump from rattling against the wall and drier. (See image 1).

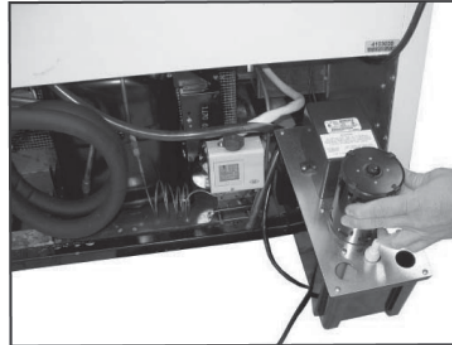


Image 2 (installing pump)

Step 2

Set new pump into place between the drier and the wall of the cabinet. Make sure the two holes on top of the pump are facing toward the rear of the cabinet. (See image 2).

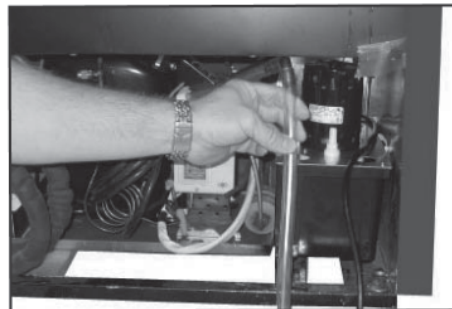


Image 3 (move drain tube over from condensing pan to new pump)

Step 3

Move the drain tube from the condensing pan over to the new pump. If drain tube is too long to put into pump, trim it with a utility knife. (See image 3).

Step 4

Insert the drain tube into the hole on the pump. Use the hole that is closest to the drain tube. (See image 4).

Step 5

Connect 25' foot pump drain hose to the white nozzle next to the pump motor. Next, run the 25' foot drain hose to the nearest drain. (See image 4).

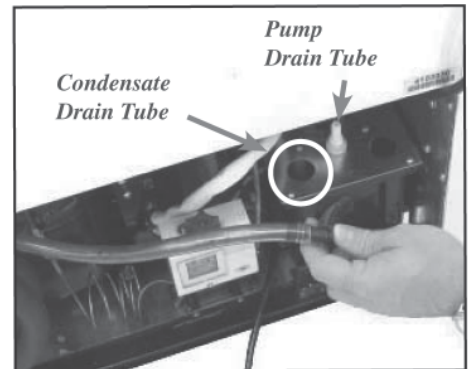


Image 4

IMPORTANT
*Pump should have separate
 circuit and not wired into
 existing cabinet wiring.*

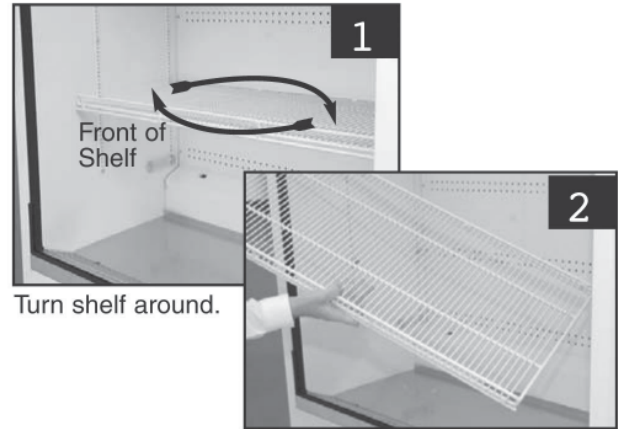
TAC Pricing Strip Installation
INSTALLATION INSTRUCTIONS

PRICING STRIP INSTALLATION:

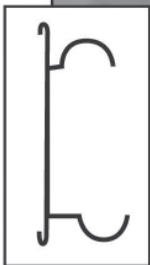
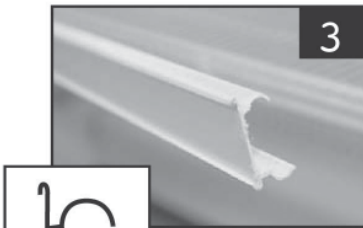
A. Take the shelf and turn it around. The back of the shelf should be facing out. (See image 1-2).

B. The pricing strip snaps onto the shelf with the larger opening of the pricing strip toward the bottom. (See image 3-4).

C. After pricing strip is installed, tags can be put into the front. (See image 5).



Turn shelf around.



Pricing strip end view



Pricing strip install.



Louver Retrofit Instructions for TAC Models
RETROFIT INSTRUCTIONS

KIT PARTS

- a • (2) - Louver clips
- b • (2) - Black Phillips head screws
- c • (4) - Hex head screws
- d • (1) - #32 drill bit
- e • (1) - Louver (grill)
- f • (2) - Paper templates

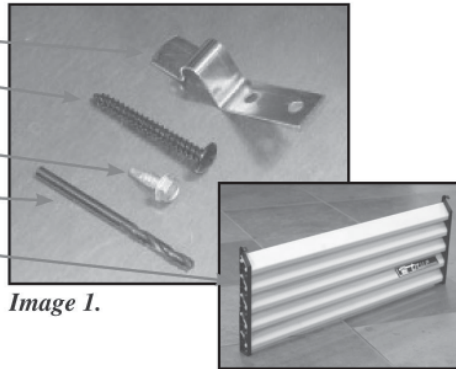


Image 1.

Note:

Check to make sure all parts listed are in the packaging. Any parts missing please contact us at 1-800-325-6152

Step 1

To remove existing louver back out the two black Phillips head screws that are on either side of the cabinet toward the bottom of the louver. (See Image 2)



Image 2.

Once the bottom two louver screws are removed pull the bottom of the louver out. The top of the louver will pivot letting the bottom swing out. (See image 3). Then to remove the louver, unhook the louver bracket from the spacer. (See images 4). Back out the screw holding the spacer. Keep spacer for reinstall.



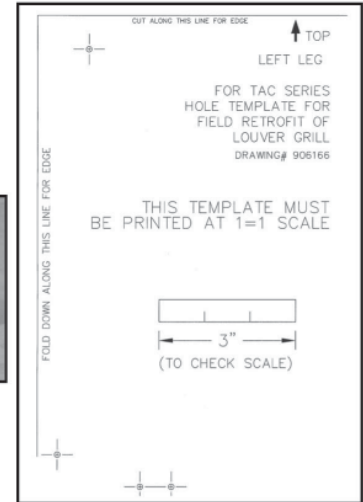
Image 3.

Step 2

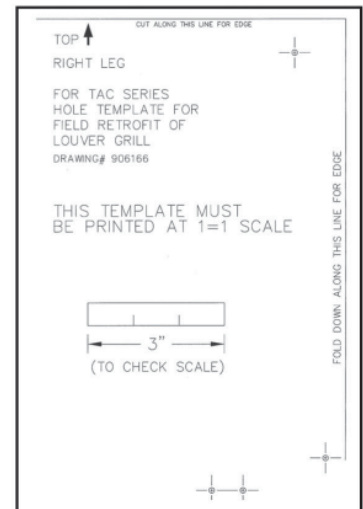
There are two paper templates that are in the retrofit kit. One template is for the left side of the cabinet and the other is for the right side of the cabinet. Each template has dotted lines that will need to be cut with scissors. Read directions on paper templates. Once the dotted lines have been cut, tape the left template within the left louver area. (See image 5 & 6). Then do the same to the right side of the louver area with the right template.



Image 4.



Left side (paper template)



Right side (paper template)

► Louver Retrofit Instructions for TAC Models**RETROFIT INSTRUCTIONS****Step 3**

Drill into the template locating the four proper holes with the #32 drill bit. (See image 7). Then do the same for the opposite side of the louver area. See image 6 for louver clip location. Fasten the two louver clips on either sides of the cabinet with the clip facing out toward the front of the unit.

Step 4

Reinstall the spacer/screw into the new location on either side of the unit. Reinsert the grill by hooking the louver brackets onto the newly located spacer/screw. Pivot the louver down toward the bottom of the cabinet until louver assembly snaps into the new louver clips on both sides of the cabinet.

Step 5

Anchor the louver with (b) two black Phillips head screws for the left and right side of the louvers. (See image 8).

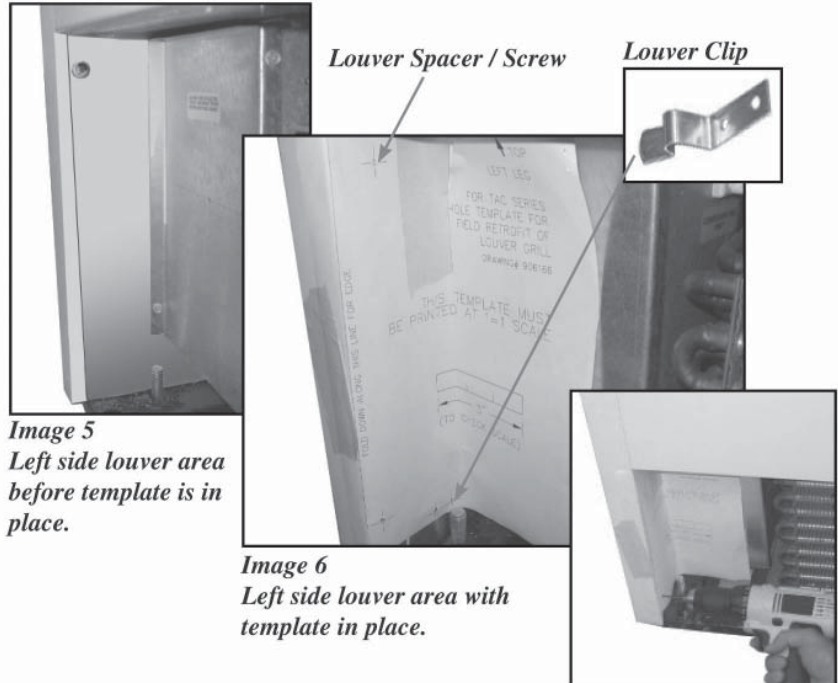


Image 5
Left side louver area before template is in place.

Image 6
Left side louver area with template in place.

Image 7
Drill the four holes specified on the paper template.



Image 8

Louver Retrofit Instructions for TAC-48GS models.

RETROFIT INSTRUCTIONS

KIT PARTS

- a • (2) - Louver clips
- b • (2) - Black Phillips head screws
- c • (4) - Hex head screws
- d • (1) - #32 drill bit
- e • (1) - Louver (grill)
- f • (2) - Paper templates

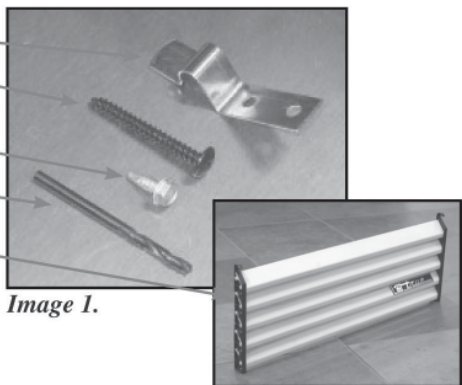


Image 1.

Note:

Check to make sure all parts listed are in the packaging. Any parts missing please contact us at 1-800-325-6152

Step 1

To remove existing louver back out the two black Phillips head screws that are on either side of the cabinet toward the bottom of the louver. (See Image 2)

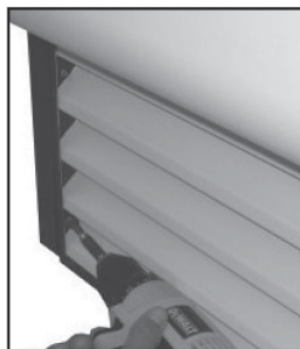


Image 2.

Once the bottom two louver screws are removed pull the bottom of the louver out. The top of the louver will pivot letting the bottom swing out. (See image 3). Then to remove the louver, unhook the louver bracket from the spacer. (See images 4). Back out the screw holding the spacer. Keep spacer for reinstall.



Image 3.

Step 2

There are two paper templates that are in the retrofit kit. One template is for the left side of the cabinet and the other is for the right side of the cabinet. Each template has dotted lines that will need to be cut with scissors. Read directions on paper templates. Once the dotted lines have been cut, tape the left template within the left louver area. (See image 5 & 6). Then do the same to the right side of the louver area with the right paper template.

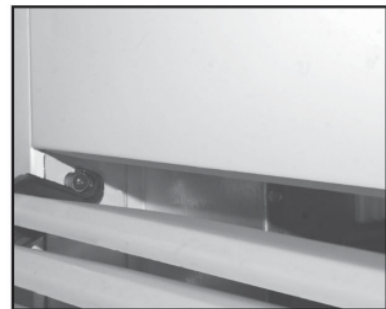
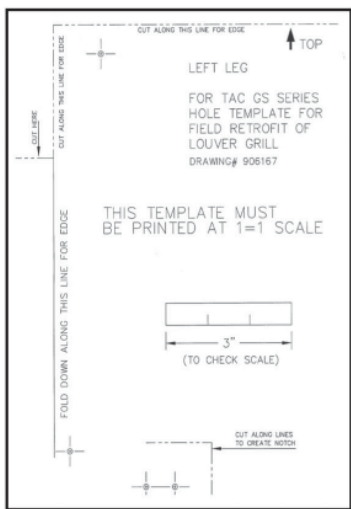
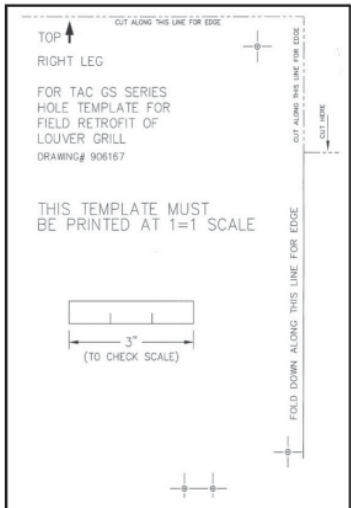


Image 4.



Left side (paper template)



Right side (paper template)

► Louver Retrofit Instructions for TAC-48GS Models Continued**RETROFIT INSTRUCTIONS****Step 3**

Drill into the template locating the four proper holes with the #32 drill bit. (See image 7). Then do the same for the right side of the louver area. See image 6 for louver clip location. Fasten the two louver clips on either sides of the cabinet with the clip facing out toward the front of the unit.

Step 4

Reinstall the spacer/screw into the new location on either side of the unit. Reinsert the grill by hooking the louver brackets onto the newly located spacer/screw. Pivot the louver down toward the bottom of the cabinet until louver assembly snaps into the new louver clips on both sides of the cabinet.

Step 5

Anchor the louver with (b) two black Phillips head screws for the left and right side of the louvers. (See image 8).

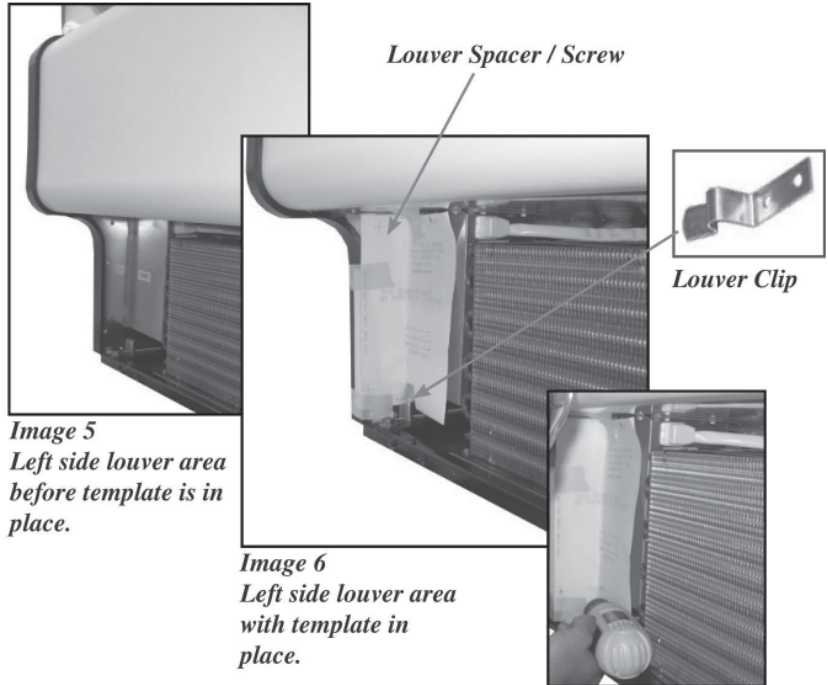


Image 5
Left side louver area before template is in place.

Image 6
Left side louver area with template in place.

Image 7
Drill the four holes specified on the paper template.

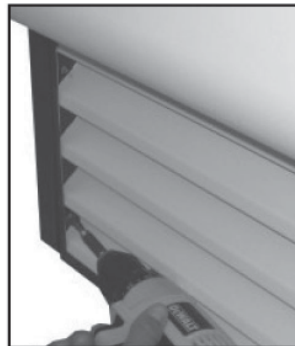


Image 8

UNDER COUNTER CABINETS

► Basic Under Counter Cooler Operation**SEQUENCE OF OPERATION**

Now that your equipment has been uncrated, the electrical supply has been verified, and the unit has been installed at its final location. You may plug in the cabinet.

After the cabinet is plugged in the evaporator fan(s), which are the interior fans will start. These fans may run all the time. However, it is possible that the evaporator fan(s) may cycle off and on with the temperature control.

The temperature control should be set between #4 or #5. If this is done the compressor will start. The compressor / condensing unit is turned on and off by the temperature control which is sensing evaporator coil temperature. This is very important to remember. We do not concern ourselves with interior air temperature we concern ourselves with product temperature and evaporator coil temperature. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. The compressor will run until the evaporator coil reaches the correct cut out temperature. The compressor will then shut off. The evaporator fans may also shut off at this point on some models. This will allow any ice or frost that has built up on the evaporator coil during the compressor run cycle to defrost during the compressor off cycle. When the evaporator coil temperature reaches the correct cut in temperature the cycle starts all over again.

► Basic Freezer Operation for Under Counter Models**SEQUENCE OF OPERATION**

Now that your equipment has been uncrated, the electrical supply has been verified, the unit has been installed at its final location, and the time clock has been set, you can plug in the unit.

Once the unit is plugged in the compressor should come on immediately. You should be able to here the compressor operating. The temperature control should be set to #4 or #5. If the compressor is not operating be sure that the unit is not in defrost. Locate the time clock. On the TWT-67/93 & TUC-67/93 models the time clock will be located by the condensing unit. Advance the time clock counter clock wise a quarter of a turn until you hear and feel the clock click. The compressor should then come on. The evaporator fans inside the cabinet will not come on until the fan delay defrost termination switch is satisfied. The evaporator fans will continue to run until the unit goes into defrost again.

The defrost cycle on all freezers is controlled by a time clock. On our under counter models the time clock may be located directly below the temperature control. You can advance the time clock but not adjust the length of defrost or add additional defrosts. During defrost the compressor and evaporator fans will shut off. The evaporator coil heater will come on and remain on until either a heater termination switch is satisfied or the defrost duration time (20 minutes) is satisfied. At this time the unit will go back into the freeze cycle. The compressor will start up and the evaporator fans will not come on until the delay/defrost termination switch is satisfied.

▶ Drawer Removal Instructions

OPERATION INSTRUCTIONS

REQUIRED TOOLS:

- 1/4" Nut driver
- #2 Phillips screwdriver

INSTALLATION

REMEMBER TO REMOVE POWER!

————— **STEP 1** —————
 Remove drawer

————— **STEP 2** —————
 Behind the drawer front panel there are hex-head screws. These screws can be removed to take the drawer front panel off. (See images 1 & 2).

Image 2

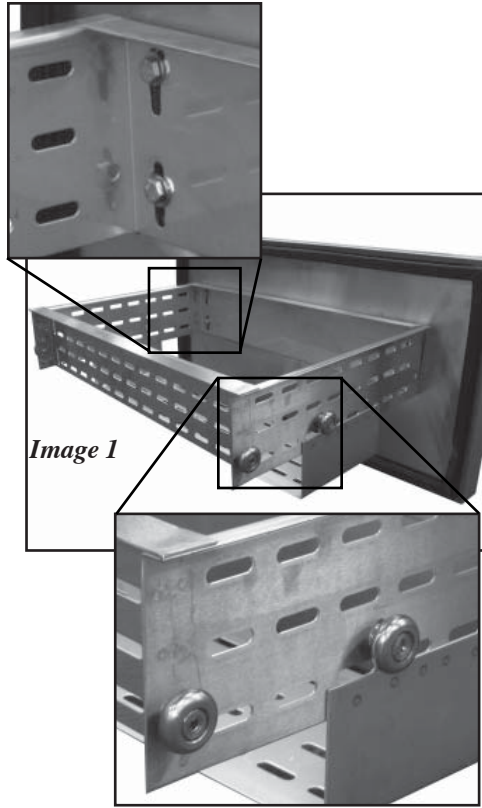


Image 1

Image 3

————— **STEP 3** —————
 The drawer has rollers on each side. These rollers can be unscrewed from the sides of the drawer. (See image 3).

————— **STEP 4** —————
 Inside the unit there are drawer slides from which the drawer was removed. These drawer slides are easily removed from the cabinet. (See images 4, 5, & 6).



Image 4



Image 5



Image 6



Image 7

————— **STEP 5** —————
 The rollers inside the unit can also be removed if necessary. (See images 6 & 7).

————— **STEP 6** —————
 See images 8 and 9 for drawer slide detail.

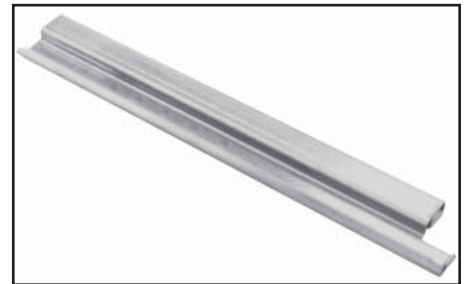


Image 8



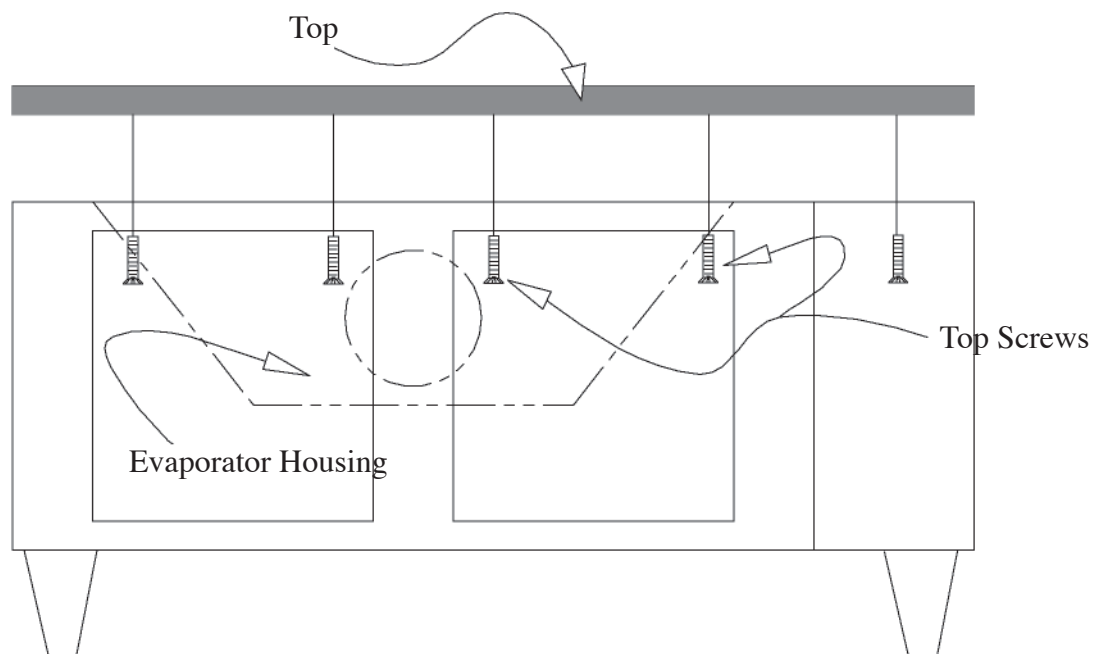
Image 9

► Top Removal for TSSU, TWT, TUC Models**INSTALLATION INSTRUCTIONS**

1. Disconnect power from cabinet.
2. Unscrew the top door hinges from underside of the counter top and remove the door (2).
3. Locate and remove two 3" screws in the black plastic trim in the top of the door or drawer opening. This will have to be done for each door or drawer opening.
4. Cut the black silicone seal on the outside of the cabinet that seals the counter top to the cabinet. Cut any white silicone seal on the inside of the cabinet.
5. Lift up on the front of the counter top to about 45° angle and push then push the top towards the rear of the cabinet and remove the top. The counter top slips into a groove on the rear of the cabinet.
6. Clean all the excess silicone from the inside and outside of the cabinet.
7. To reinstall, place a bead of black silicone on the outside edge of the cabinet.
8. Place the backside of the counter top on the cabinet in its groove, maintaining the cabinet top at a 45° angle at all times. Be sure to square the cabinet up on each side before putting the top down.
9. Reinstall all the screws through the top of the door opening. If you are installing a new counter top you will have to drill a 8/32" hole into the top. Use the existing holes in the horizontal cabinet support as your guide.
10. Silicone the inside of the cabinet with white silicone if you need to.
11. Reinstall the doors.

The following steps help to install a new counter top.

1. Follow step #8, you will need to pre-drill a 8/32" hole to install the 3" screws through the door/drawer opening.
2. Lay the cabinet on its back, place a 5/8" shim on the outside edge of the cabinet. Place the doors into position with the outside edge of the door aligned with the edge of the cabinet.
3. Push the mounting plate on the KEIL hinge until it's parallel with the front of the cabinet and mark the center of the hinge holes. Drill a hole with a #7 or .201 drill bit. Install the door on the cabinet, be sure to place the black plastic spacer between the hinge bracket and the counter top and run the screws into the new holes and then remove the shims.
4. Check the operation of the door (s)



▶ TPP Countertop Replacement Instructions**INSTALLATION INSTRUCTIONS**

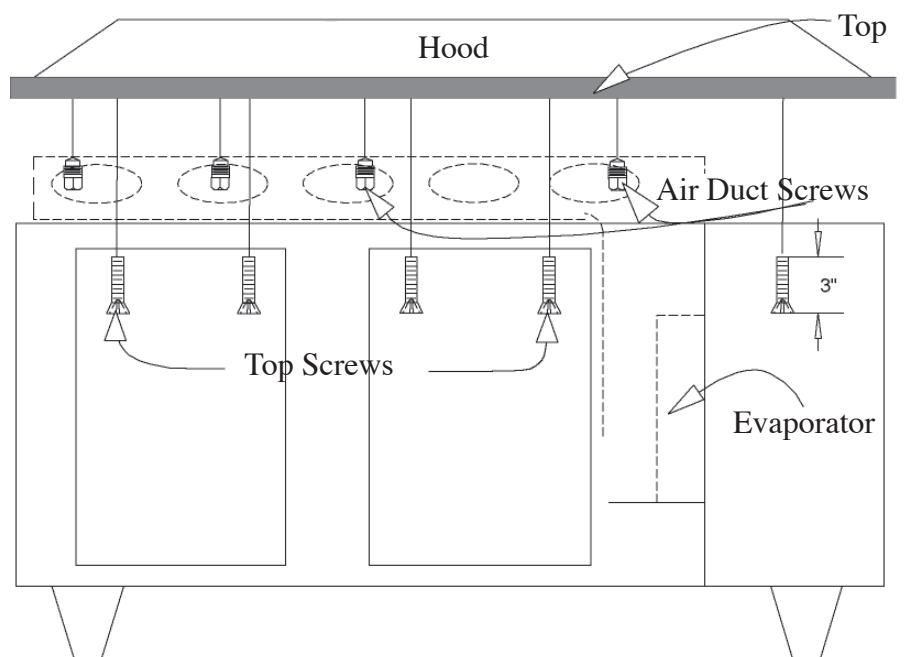
1. Unscrew top door hinges from underside of counter top and remove doors.
2. Remove the front louvered grill. Remove the screw from the L-bracket that connects the counter top to the cabinet.
3. Locate and remove two 3" screws in the black plastic trim in the top of the door or drawer opening. This will have to be done for each door or drawer opening.
4. Remove screws from the following parts inside of cabinet.
 - A. Air-duct, which extends from evaporator housing to far left end of cabinet. (After all screws are removed lower duct into cabinet floor).
 - B. Fan area housing (after air duct is lowered, screws connecting this housing to the counter top will be exposed, remove these screws)
5. Cut the black silicone seal on the outside of the cabinet that seals the counter top to the cabinet.

Note: There may also be a silicone seal that runs from front to back above the condensing unit section on the left inside edge.

6. Cut any white silicone seal on the inside of the cabinet.
7. Lift up on the front of the counter top to about a 45° angle and push then push the top towards the rear of the cabinet and remove the top. The counter top slips into a groove on the rear of the cabinet.
8. Clean all the excess silicone from the inside and outside of the cabinet.
9. To reinstall, place a bead of black silicone on the outside edge as well as from the front to back between the cabinet end and the evaporator section on the cabinet.
10. Place the backside of the counter top on the cabinet in its groove, maintaining the cabinet top at a 45° angle at all times. Be sure to square the cabinet up on each side before putting the top down.
11. Reinstall all the screws through the top of the door opening. If you are installing a new counter top you will have to drill a 8/32" hole into the top. Use the existing holes in the horizontal cabinet support as your guide. Holes in the top should align with the holes in the frame. Reinstall the L-bracket
12. Reinstall the screws into the interior parts, first the pan area housing and then the air duct.
13. Silicone the inside of the cabinet with white silicone.

The following steps help to install the new counter top.

1. Follow step #11, you will have to pre-drill 8/32" hole to install the 3" screws through the door / drawer opening.
2. Lay the cabinet on its back, place doors into position. Mark the holes for hinges. Pre-drill these holes with a 8/32" drill bit. Mount doors.

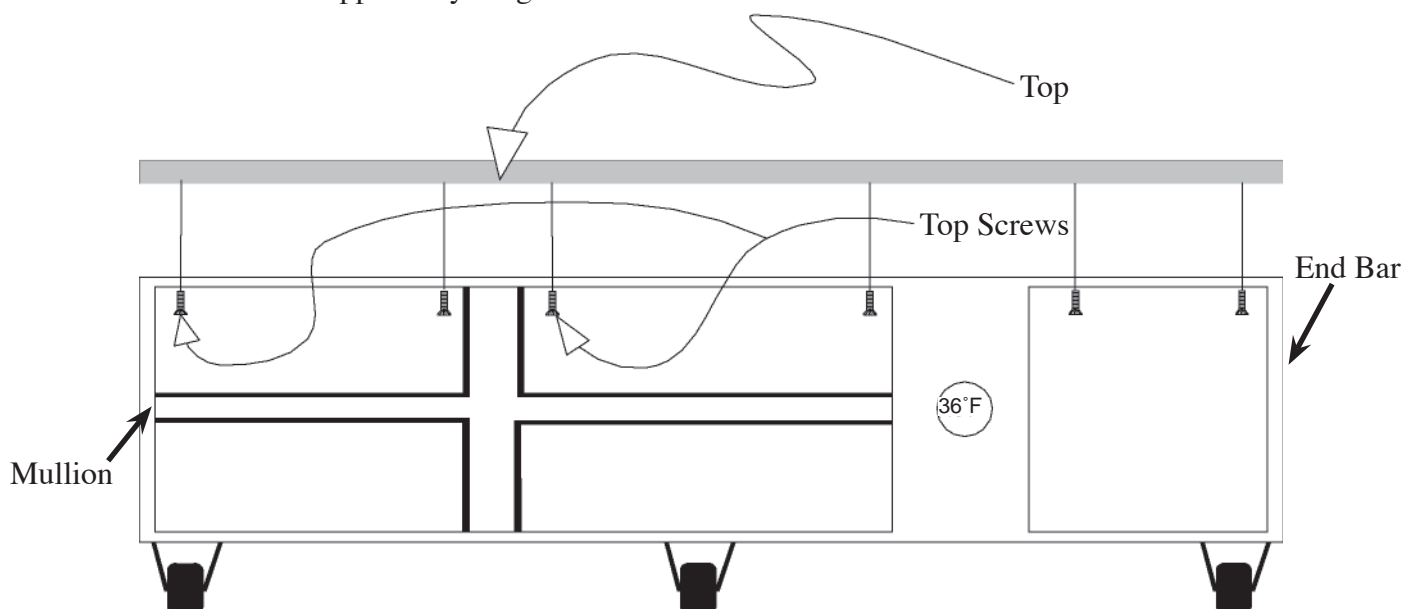


▶ Top Removal for TRCB Units**INSTALLATION INSTRUCTIONS**

1. Disconnect the power to the unit.
2. Remove drawers.
3. Remove the grill in front of the condensing unit.
4. Locate & remove 3" inch screws in the black plastic trim in the top of the drawer opening. This will have to be done for each drawer opening. You may have to remove the horizontal mullion assembly. To do this, starting at one side of the mullion cover pry it open and pull it forward, until the mullion cover is removed exposing the foam insulation. Remove the insulation. Then remove the screws that hold the back of the mullion in place.
5. Cut the black silicone seal around the counter top. There is also a seal that runs from front to back just above the condensing unit on the left inside edge.
6. Look inside the cabinet and cut any of the white silicone seal that may be sealing the top to the inside of the cabinet.
7. Lift the front edge of the cabinet up about 10° to 15°. Push the counter top toward the back of the cabinet to detach it.
8. To reinstall, remove all the existing silicone on the face of the cabinet. Place a bead of black silicone on the outside edge of the cabinet as well as the vertical strip that runs between the end of the cabinet and the left edge of the condensing unit section.
9. Reinstall all the screws through the top.
10. Silicone the inside of the cabinet.
11. Reinstall the mullion assembly's if they were removed.
12. Install the drawers and check their operation.

The following steps help install a new counter-top.

1. Follow step #9. You will have to pre-drill a 8/32" hole into the top for the screws. Use the existing holes in the horizontal cabinet support as your guide.



▶ TRCB-52/82 Digital Temperature Control Replacement.

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS:

- 1/4" Nut driver
- #2 Phillips screwdriver

INSTALLATION

REMEMBER TO REMOVE POWER!

STEP 1

Remove drawer assemblies.

STEP 2

Remove 1/4" screws securing evaporator cover. (See image 1).



Image 1

STEP 3

Locate probe on right hand side of evaporator. (See image 2).



Image 2

STEP 4

Remove 1/4" inch screw holding probe to wall. (See image 3).



Image 3

STEP 5

Remove right hand side panel.

STEP 6

Pull probe through cut outs on side wall and through "P" clips. (See image 4).



Image 4

STEP 7

Remove power supply wires from stay-con wire nut. (See image 5).

STEP 8

Pull power supply wires through cut out.



Image 5

STEP 9

Remove backing bracket from back side of thermometer face. (See image 6).



Image 6

STEP 10

Pull thermometer face through panel. (See image 7).



Image 7

STEP 11

Install in reverse order and plug unit into power source.

► **TRCB-79/110 Digital Temperature Display Replacement.**
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS:

- 1/4" Nut driver
- #2 Phillips screwdriver
- 1/4" Flat screwdriver

INSTALLATION

REMEMBER TO REMOVE POWER!

————— STEP 1 —————
Remove drawer assemblies.

————— STEP 2 —————
Remove the (4) drawer glides.

————— STEP 3 —————
Remove front of mullion assembly by pulling from the back side of mullion down and forward. (See image 1).



Image 1

————— STEP 4 —————
Remove the (4) Phillips screws holding the back assembly to the cabinet. (See image 2).



Image 2

————— STEP 5 —————
Remove the Phillips screws holding the drawer rail assembly. (See image 3).



Image 3

————— STEP 6 —————
Pull rail assembly out.

————— STEP 7 —————
Remove the 1/4" hex screws holding the evaporator cover on. (See image 4).



Image 4

————— STEP 8 —————
Swing the cover to the rear of cabinet.

————— STEP 9 —————
Remove 1/4" screw and "P" clip holding probe. (See image 5).



Image 5

————— STEP 10 —————
Remove front louver grill by removing (4) screws on grill. (See image 6).



Image 6

————— STEP 11 —————
Remove (2) 1/4" screws on right-hand side of thermometer panel.



Image 7

————— STEP 12 —————
Remove (2) Phillips screw on left side of thermometer panel.



Image 7

▶ TRCB-79/110 Digital Temperature Display Replacement Continued**INSTALLATION INSTRUCTIONS****STEP 13**

Disconnect power supply wires to thermometer on inside of cooler.
(See image 8)

*Image 8***STEP 16**

Pull thermometer and wires through the thermometer panel.
(See image 11).

*Image 11***STEP 14**

Pull power supply wires and probe through cabinet hole. (See image 9).

*Image 9***STEP 17**

Install in reverse order and plug unit into power source.

STEP 15

Remove thumb nut and bracket on back side of thermometer
(See image 10)

*Image 10*

► **TWT, TUC, TSSU, and TPP Perimeter Heater Replacement**
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Phillips Head Screwdriver
- Pop Rivet Tool
- Drill
- #30 Drill Bit

NOTE:
 There can be no ice on the face of the cabinet prior to this repair.

————— **STEP 1** —————
 Disconnect power cord, unload contents of cabinet and lay cabinet on its back.

————— **STEP 2** —————
 Remove doors by removing upper door hinges.

————— **STEP 3** —————
 Drill out pop-rivet in the top right hand corner.

————— **STEP 4** —————
 Lift plastic trim and slide upper stainless strip out.

————— **STEP 5** —————
 Drill out pop-rivet in the bottom right corner and move vertical stainless strip up.

————— **STEP 6** —————
 Lift plastic trim and slide bottom stainless strip out.

————— **STEP 7** —————
 Remove bottom 3 screws on each side of mullion, remove stainless steel strip by lifting plastic trim and slide out the bottom.

————— **STEP 8** —————
 Remove evaporator cover to access wiring connection of the heater wires.

————— **STEP 9** —————
 Disconnect wires and remove defective heater(s) from cabinet (pay close attention to how wiring is attached around the perimeter and the mullion(s)).

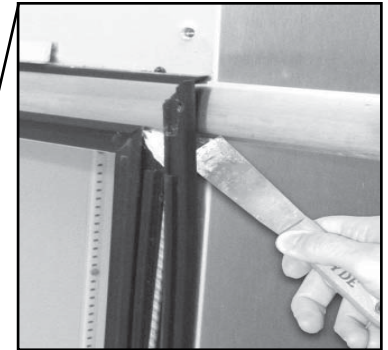
————— **STEP 10** —————
 Reinstall heater in the same manner.

NOTE: The splice in the heater wire is to be just below the plastic trim inside the acrylic tubing. Failure to do this could result in the heater failing prematurely.

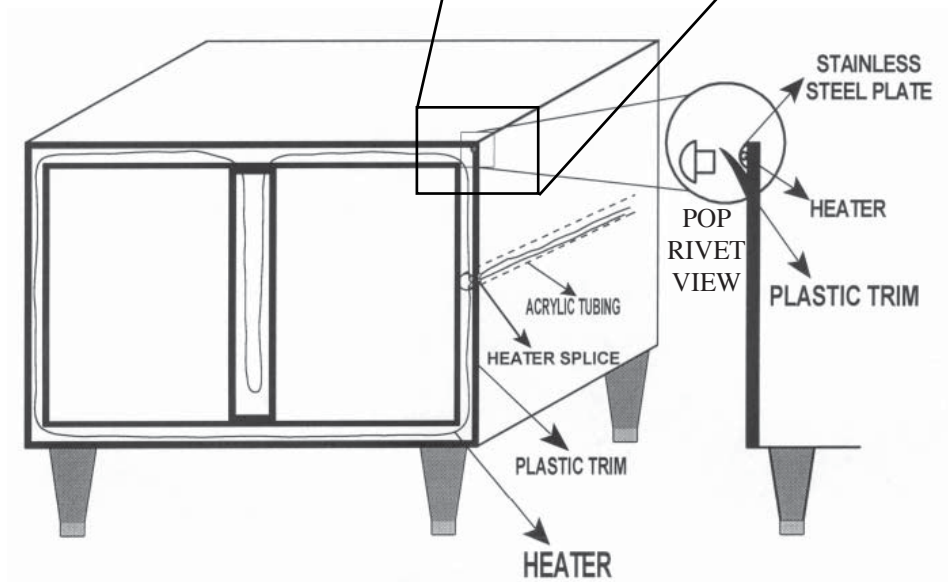
————— **STEP 11** —————
 Insert heater wire through acrylic tubing in to the cabinet and reconnect with wire nuts.

————— **STEP 12** —————
 Reinstall the stainless steel plates and pop-rivet corners.

————— **STEP 13** —————
 Stand unit upright and let stand 2 to 4 hours before plugging it in.



Close up (photo)



▶ Installing the Crumb Catcher / Accessory for the TSSU Series

INSTALLATION INSTRUCTIONS

**CRUMB CATCHER
 INSTALLATION**

This instruction is *True's* recommended procedure for installing the crumb catcher option.

REQUIRED TOOLS

- Pencil or Marker
- Phillips Screwdriver
- Adhesive Tape or Equivalent
- Power Drill and 1/4" drill bit

TEMPLATE

STEP 2
 Place the crumb tray on the cabinet counter-top so that it is equally positioned at each end.

STEP 3
 Use adhesive tape to temporarily hold the crumb tray in position while you mark with a pencil the hole location on the stainless steel counter-top.

**ANCHORING THE CRUMB
 CATCHER**

STEP 5
 Remove any small burrs from around the holes that have been drilled.

STEP 6
 The plastic inserts are now ready to be installed. Push the plastic insert into one of the 1/4" diameter holes

STEP 7
 With all the plastic inserts installed, place the crumb catcher on the counter-top and fasten using the screws provided.

STEP 8
 Place the 3/4" thick cutting board provided with this kit on the cabinet counter-top

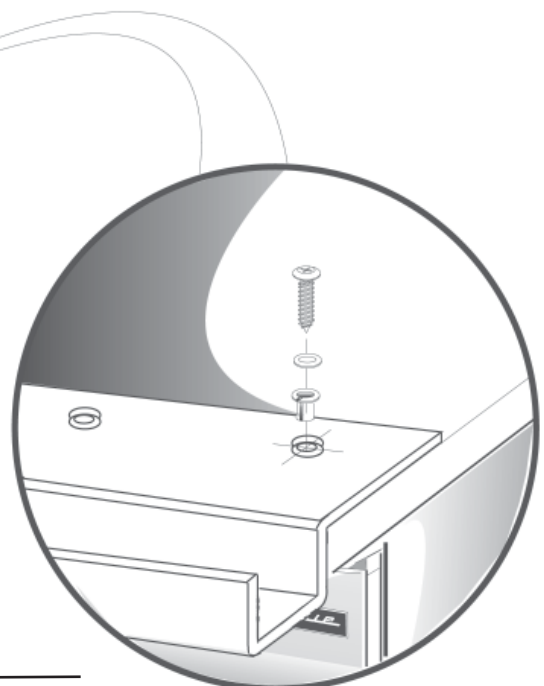
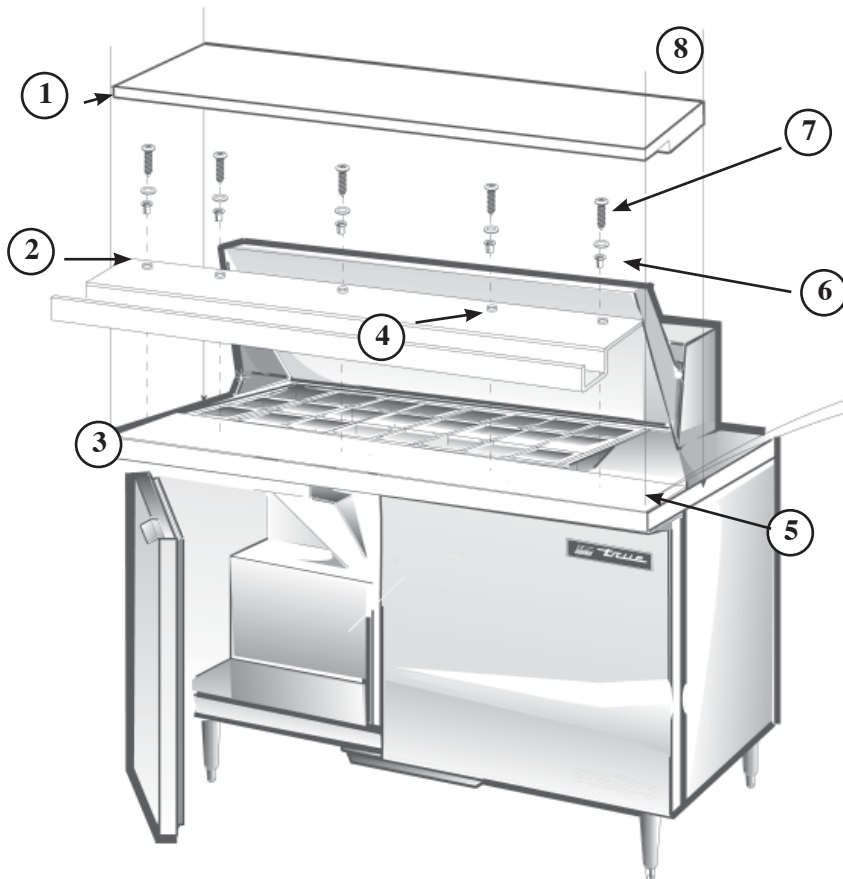


Figure 1

INSTALLATION INSTRUCTION

STEP 1
 Remove the white plastic cutting board provided with the cabinet from the counter-top.

STEP 4
 Remove the crumb tray and drill each hole using the 1/4" diameter drill bit. Be careful not to allow the drill to wander and scar the counter-top.

► Field Installing the TSSU Series 19" Cutting Board**RETROFIT INSTRUCTIONS**

This instruction is *True's* recommended procedure for installing the 19" cutting board option.

REQUIRED TOOLS

- Pencil or Marker
- Flathead Screwdriver
- Adhesive Tape or Equivalent
- Power Drill
- Adjustable Wrench

LOCATION

Align the pre-drilled cutting board holes with the locating pins positioned on the stainless working surface.

SURFACE PREPARATION**STEP 1**

Tape off both sides of work surface so that errant drilling will not mark the side of the cabinet.

STEP 2

Place the anchor bracket over the top of the cutting board edge, pulling forward until bracket backstop is seated firmly against the cutting board edge. Use bracket screw holes as a template for drilling.

STEP 3

Pencil mark drill hole. Using the #2 or 15/64 bit provided, drill through the metal thickness, stop, and pull out.

STEP 4

Assemble riv-nut tool provided and lubricate, (WD-40, etc.), the threads. Ensure that the flange of the riv-nut seats against the knurled edge.

STEP 5

Insert allen wrench into top of crimping tool and place entire riv-nut assembly into recently drilled holes.

STEP 6

Secure crimping tool with a wrench and turn allen wrench in a clockwise rotation until resistance is felt. (overtightening will strip riv-nut)

STEP 7

When minor resistance is felt, riv-nut has expanded to fill the drill hole. Remove tape from sides. Repeat steps 2 through 7 for each of the four anchor positions, and replace anchor bracket. Use a slotted screwdriver to tighten thumb screws.

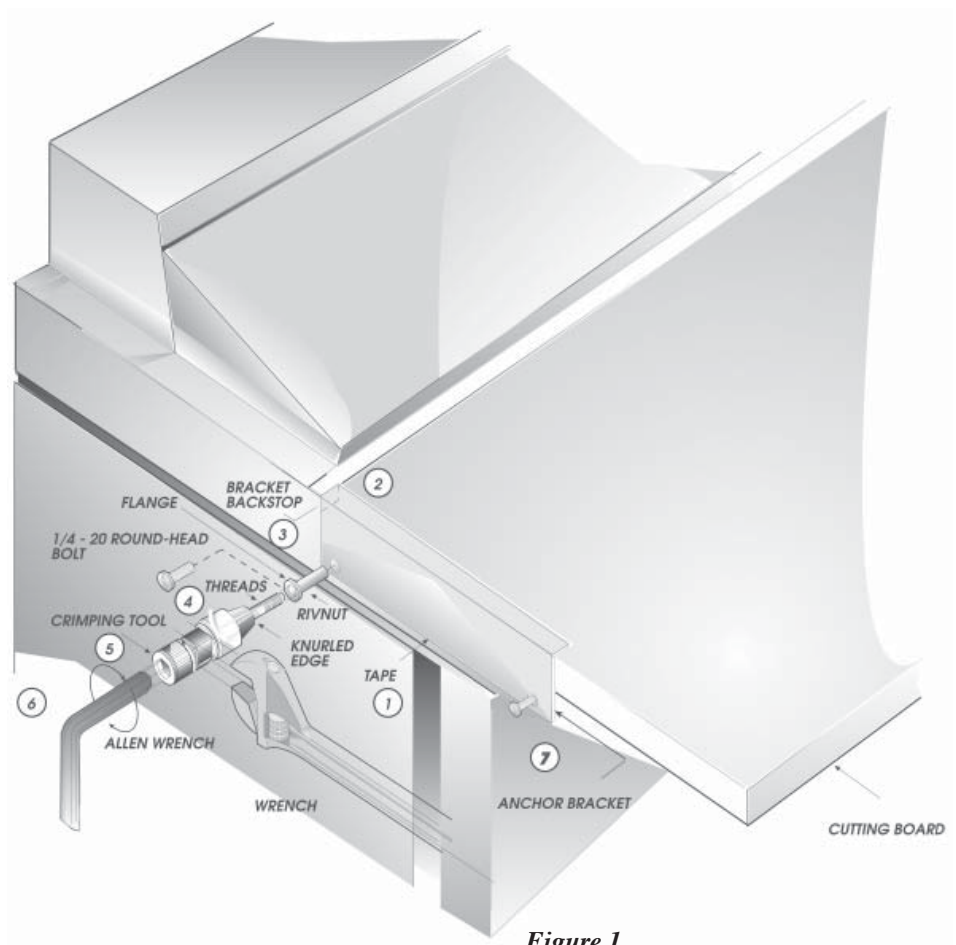


Figure 1

▶ Anchoring the TSSU Hood Cover**INSTALLATION INSTRUCTIONS**

This is True's recommended procedure for installing the fasteners required to connect the sandwich salad hood cover to the hood. See callout #1 on the illustration.

ASSEMBLY**STEP 1**

Locate the hood cover, (packaged within the cardboard container on top of the salad sandwich unit), and position under the hood.

STEP 2

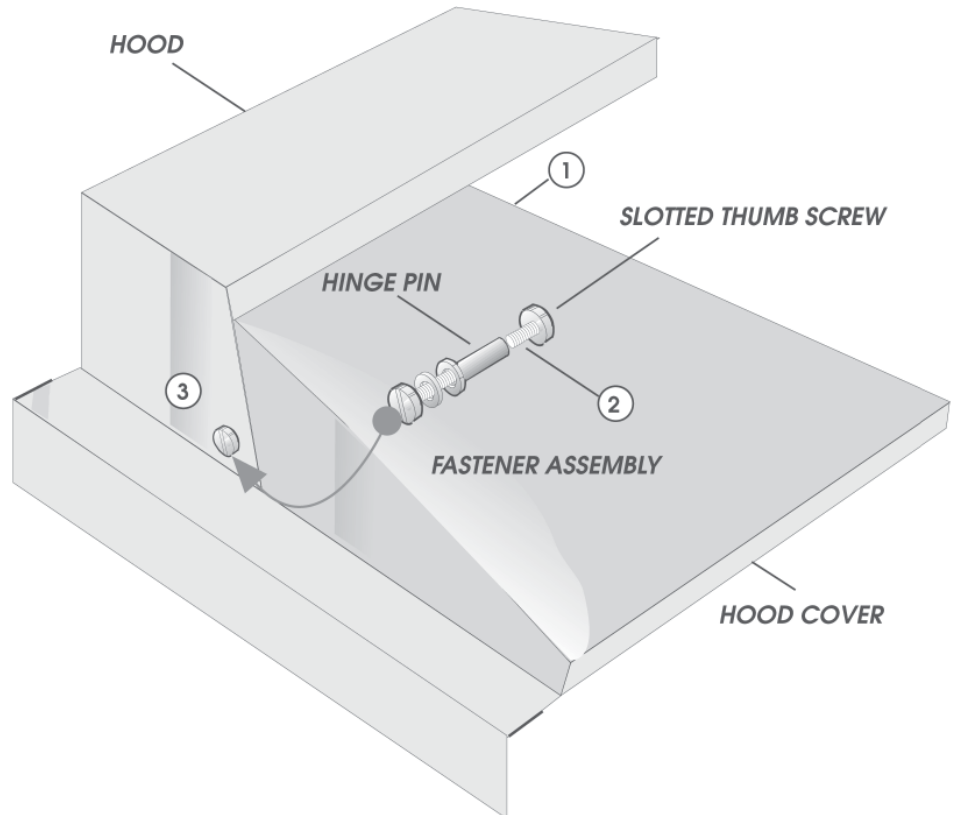
Remove the slotted thumb screw from hood by backing out the factory installed, slotted thumb screw. See diagram of slotted screw and callout #2

STEP 3

Place hood cover into final position, (beneath hood), align hood hinge pin with anchor hole on hood cover and re-attach fastener by replacing thumb screw into hinge pin.

STEP 4

Repeat procedure for both ends of hood.



► Overshelf Option - TSSU, TWT, TUC**INSTALLATION INSTRUCTIONS**

Congratulations on your purchase of an accessory that has been designed to efficiently assist your food preparation. The following instruction has been written to assist you in your overshelf installation.

KIT CONTENTS

- Shelf, 1 ea.
- Shelf supports, 2 ea. (60" models offer 3 ea.)
- 1/4-20x1" Hex Head Bolt, 4 ea.
- 1/4-20x1-1/2" Hex Head Bolt, 4 ea. (60" models offer 6 ea.)
- 1/4" Flat Washer, 4 ea. (60" models offer 6 ea.)

REQUIRED TOOLS

- 7/16 Wrench

INSTALLATION**STEP 1**

Place one flat washer on each of the 1/4-20x 1-1/2" hex head bolts and insert one of these assemblies into each mounting hole, located on the longer section of the square shelf support.

STEP 2

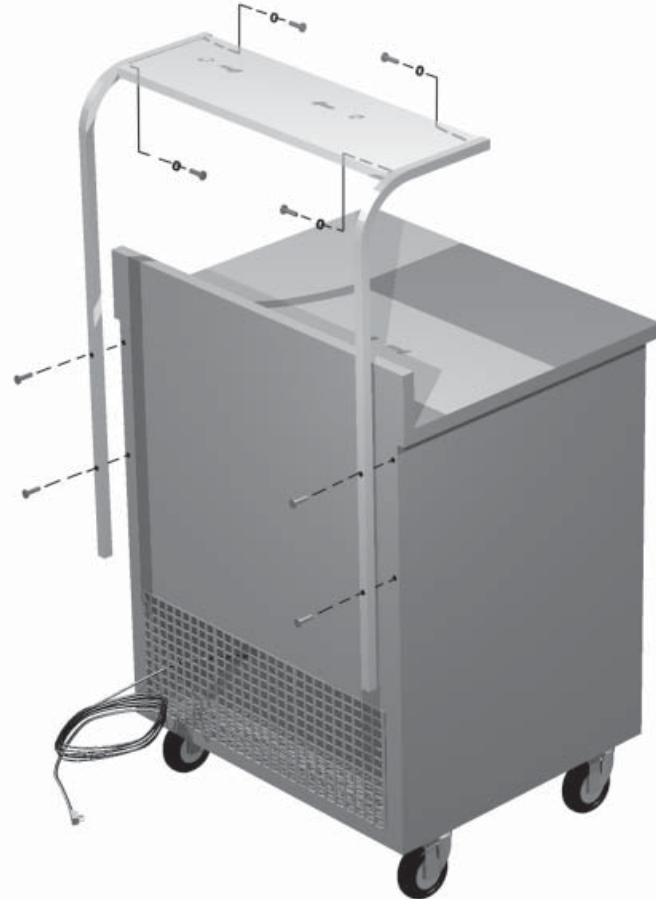
Hold the shelf support next to the threaded holes that are located along the edge on the back of the cabinet, (60" models have a third shelf support that is located near the center of the cabinet back).

STEP 3

Carefully thread the 1/4-20 x 1-1/2" bolts into these threaded holes until the supports make contact with the cabinet and the bolts are hand tight.

STEP 4

Repeat steps 2 and 3 to install the second shelf support, (for 60" models, repeat steps 2 and 3 for the third support).

**STEP 5**

Hold the shelf up between the two mounted shelf supports and thread one 1/4-20x1" hex head bolt into each of the two threaded holes that are located on the inside surface of each shelf support, (for the 48" and 60" models, have someone help hold the shelf in position). Thread each bolt until the shelf is drawn against the shelf support and the bolt is hand tight.

STEP 6

Adjust the shelf assembly so that the shelf supports are vertical and the shelf is flat.

STEP 7

Firmly tighten each bolt using the 7/16 wrench.

CAUTION

Do not place more than 100 lbs. of weight upon the overshelf, and never stand on the overshelf.

► **Single Utility Shelf Installation for TSSU units.**

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

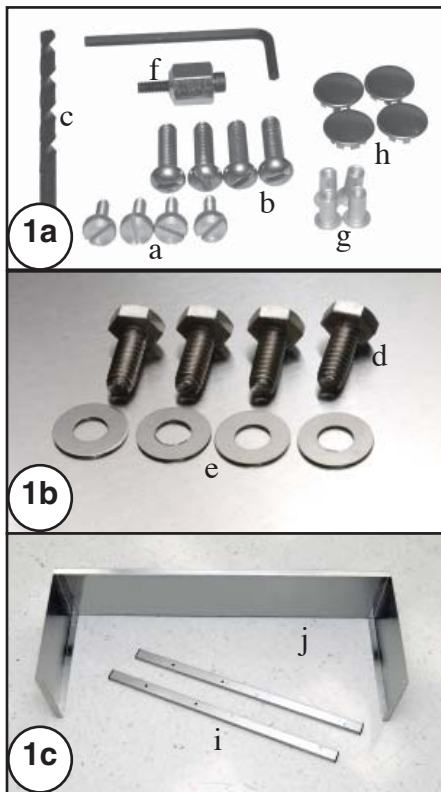
- Flat head screw driver
- Drill
- Adjustable wrench
- 1 1/2" wide tape

SINGLE UTILITY SHELF KIT

- a. (4) Slotted thumb screws
- b. (4) 1/4"-20-1" slotted round head screws
- c. Drill bit
- d. (4) 1/4"-20-1/2" hex head bolts
- e. (4) 1/4" washer
- f. Riv-nut tool (Allen wrench)
- g. (4) 8/32 Riv-nuts
- h. (4) Caps
- i. (2) Rear rails
- j. (1) Single utility shelf

STEP 1

Make sure contents listed above (Single Utility Shelf Kit) have been sent in the package. (See images 1a-1c).



Single Utility Shelf Kit Contents

STEP 2

Line up holes on the rails to the holes on the back of the single utility shelf. Make sure the outer edge of the single utility shelf is flush with the rear rails. Thread four 1/4"-20-1/2" hex head bolts with four 1/4" washer through the single utility shelf to the rear rails. Use a 7/16" socket or wrench to securely tighten the single utility shelf and rear rails together. (See image 2).



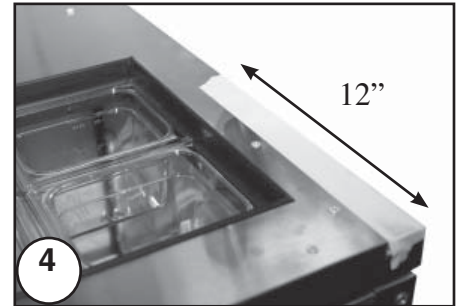
STEP 3

To take off the hood from the top of the unit back out six slotted thumb screws (three on each side). Remove hood from top of unit. Make sure the six slotted thumb screws are put in a safe place. These six screws will be reused to put the hood back onto the unit. (See image 3).



STEP 4

Apply the 1 1/2" tape on the top rear corners of the unit. The tape should come out 12" from the rear corners to the front of the unit. (See image 4).



NOTE:

To keep from scratching top of unit apply 1-1/2" tape on the top of the unit described in STEP 4.

STEP 5

Gently rest the single utility shelf onto the two pieces of tape with the rear rails on the back of the unit. Line up the rear rail holes with the riv-nut holes on the back of the unit.

NOTE:

Make sure the sides of the single utility shelf and rear rails line up flush with the ends of the unit.

Use a marking utensil and mark the four holes on the tape from the single utility shelf. Then carefully set the single utility shelf off to the side. (See image 5).

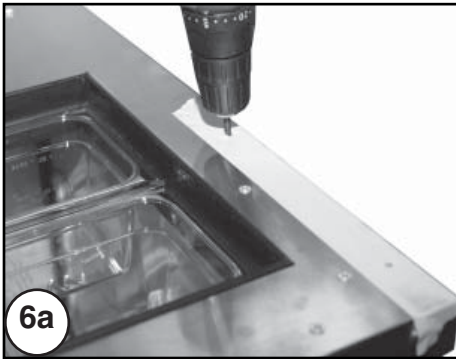


► **Single Utility Shelf Installation for TSSU units Continued**

INSTALLATION INSTRUCTIONS

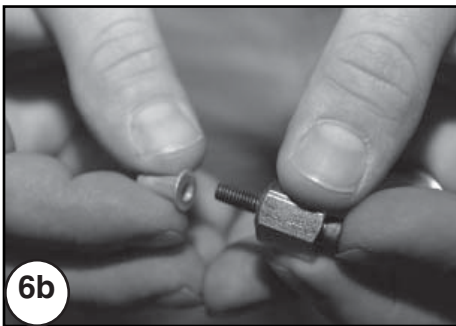
STEP 6

With the drill bit provided in the kit, drill the four holes marked on the tape. (See image 6a). Then remove the tape and install four riv-nuts with the riv-nut tools provided along with an adjustable wrench. (See image 6b-6d).



6a

Drill four holes through tape (two on each side of unit).



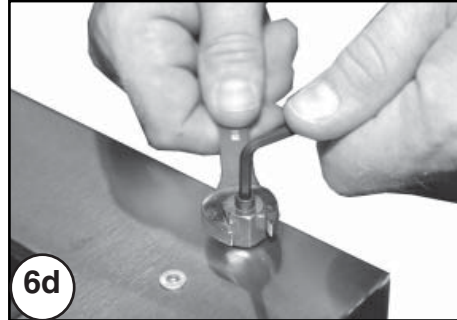
6b

Place rivet tool into riv-nut.



6c

Put riv-nut into drilled hole.

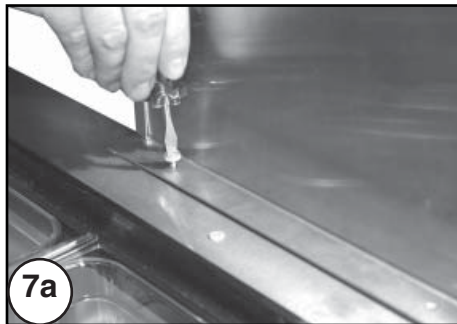


6d

Put riv-nut into drilled hole.

STEP 7

Once the rivets are installed place the single overshelf back onto the unit and line up the four new riv-nuts with the holes on the single utility shelf. Anchor the single utility shelf onto the top of the unit with four slotted thumb screws. Then anchor the rear rails with four 1/4"-20-1" slotted round head screws. After the rear rails have been anchored four caps need to be inserted into these holes. (See images 7a-7c).



7a

Tighten slotted thumb screws with a flat head screw driver.



7b

Tighten screws with a flat head screw driver

STEP 8

Install the hood that was taken off on STEP 3. Reuse the six slotted thumb screws when the hood was initially extracted from the top of the unit. (See image 8).



7c

Insert caps to rear rails.



8

Tighten slotted thumb screws with a flat head screw driver.

► **Double Utility Shelf Installation for TSSU Units.**

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

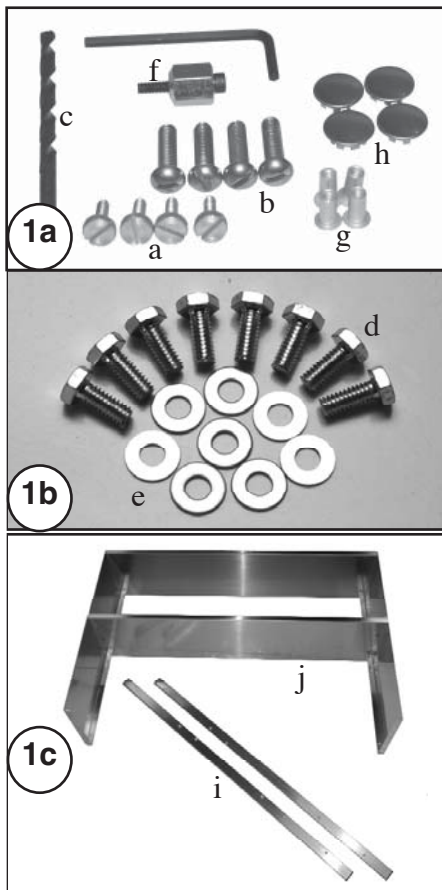
- Flat head screw driver
- Drill
- Adjustable wrench
- 1 1/2" wide tape

DOUBLE UTILITY SHELF KIT

- a. (4) Slotted thumb screws
- b. (4) 1/4"-20-1" slotted round head screws
- c. Drill bit
- d. (8) 1/4"-20-1/2" hex head bolts
- e. (8) 1/4" washer
- f. Riv-nut tool (Allen wrench)
- g. (4) 8/32 Riv-nuts
- h. (4) Caps
- i. (2) Rear rails
- j. (1) Double utility shelf

STEP 1

Make sure contents listed above (Double Utility Shelf Kit) have been sent in the package. (See images 1a-1c).



Double Utility Shelf Kit Contents

STEP 2

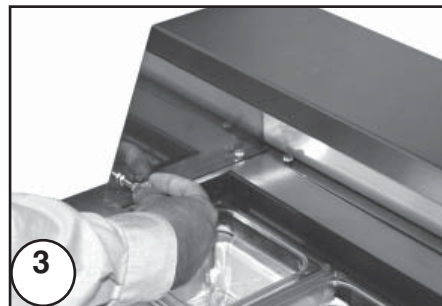
Line up holes on the rails to the holes on the back of the double utility shelf. Make sure the outer edge of the double utility shelf is flush with the rear rails. Thread eight 1/4"-20-1/2" hex head bolts with eight 1/4" washer through the double utility shelf to the rear rails. Use a 7/16" socket or wrench to securely tighten the double utility shelf and rear rails together. (See image 2).



Rail and double utility shelf assembly.

STEP 3

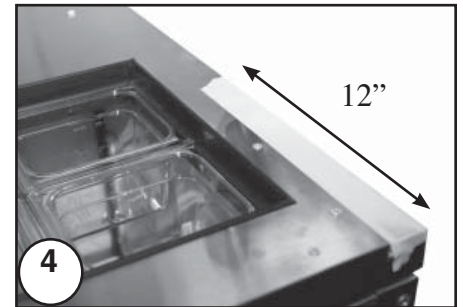
To take off the hood from the top of the unit back out six slotted thumb screws (three on each side). Remove the hood from the top of the unit. Make sure the six slotted thumb screws are put in a safe place. These six screws will be reused to put the hood back onto the unit. (See image 3).



3

STEP 4

Apply the 1 1/2" tape on the top rear corners of the unit. The tape should come out 12" from the rear corners to the front of the unit. (See image 4).



4

NOTE:

To keep from scratching top of unit apply 1-1/2" tape on the top of the unit described in STEP 4.

STEP 5

Gently rest the double utility shelf onto the two pieces of tape with the rear rails on the back of the unit. Line up the rear rail holes with the riv-nut holes on the back of the unit.

NOTE:

Make sure the sides of the double utility shelf and rear rails line up flush with the ends of the unit.

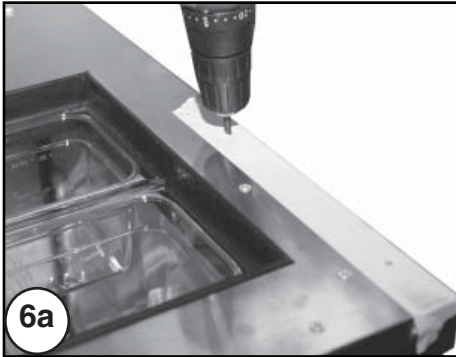
Use a marking utensil and mark the four holes on the tape from the double utility shelf. Then carefully set the double utility shelf off to the side. (See image 5).



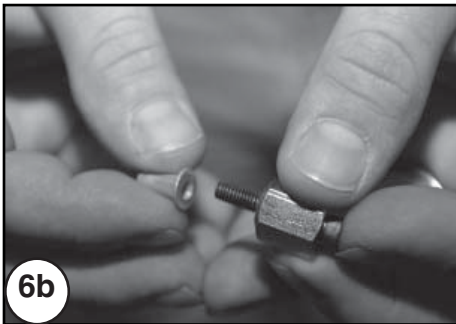
5

▶ Double Utility Shelf Installation for TSSU Units Continued**INSTALLATION INSTRUCTIONS****STEP 6**

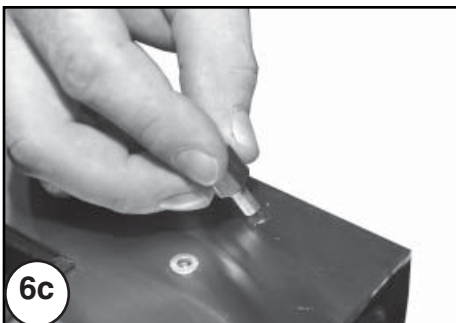
With the drill bit provided in the kit, drill the four holes marked on the tape. (See image 6a). Then remove the tape and install four riv-nuts with the riv-nut tools provided along with an adjustable wrench. (See image 6b-6d).



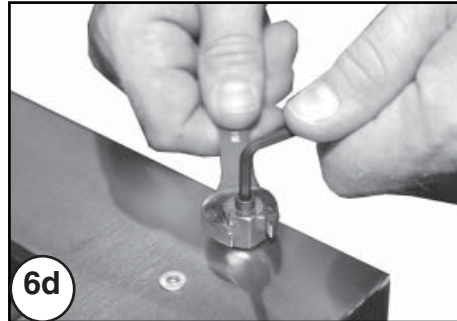
Drill four holes through tape (two on each side of unit).



Place rivet tool into riv-nut.



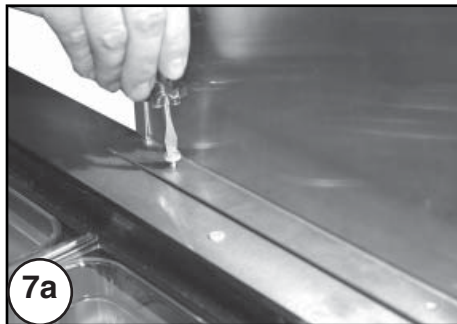
Put riv-nut into drilled hole.



Tighten rivet with Allen wrench at the same time holding the riv-nut tool with a adjustable wrench.

STEP 7

Once the rivets are installed place the double overshelf back onto the unit and line up the four new riv-nuts with the holes on the double utility shelf. Anchor the double utility shelf onto the top of the unit with four slotted thumb screws. Then anchor the rear rails with four 1/4"-20-1" slotted round head screws. After the rear rails have been anchored four caps need to be inserted into these holes. (See images 7a-7c).



Tighten slotted thumb screws with a flat head screw driver.



Tighten screws with a flat head screw driver.

STEP 8

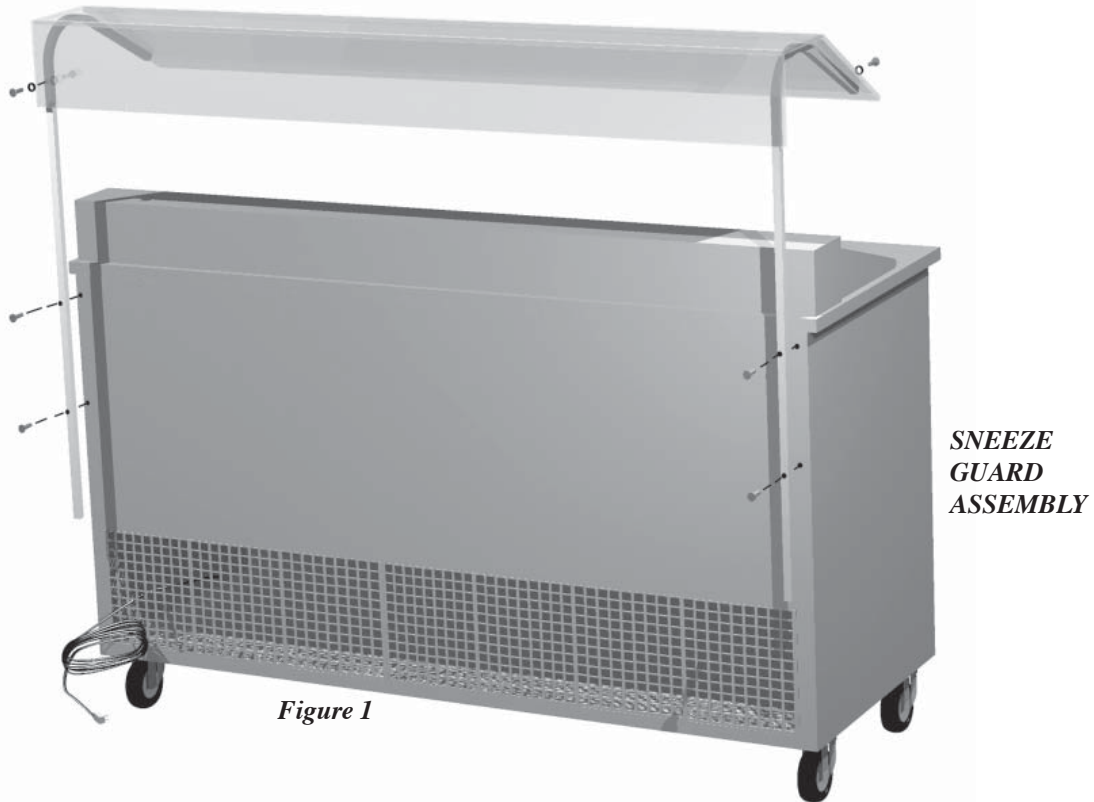
Install the hood that was taken off on STEP 3. Reuse the six slotted thumb screws when the hood was initially extracted from the top of the unit. (See image 8).



Insert caps to rear rails.



Tighten slotted thumb screws with a flat head screw driver.

► Sneezeguard Option - TSSU**INSTALLATION INSTRUCTIONS***Figure 1***SNEEZE
GUARD
ASSEMBLY****KIT CONTENTS**

- Clear Plastic Shield, 1 ea.
- Supports, 2 ea.
- 1/4-20 x 1-1/2" Hex Head Bolt, 4 ea.
- 1/4" Flat Washer, 4 ea.
- #8-32 Knurled Waferhead Screw, 4 ea.

REQUIRED TOOLS

- 7/16 Wrench

INSTALLATION**STEP 1**

Place one flat washer on each of the 1/4-20" hex head bolts.

STEP 2

Insert one 1/4-20 x 1-1/2" bolt into each of the two holes on the support component and position the support next to the two threaded inserts that are mounted to the outer edge on the back of the TSSU cabinet.

STEP 3

Screw the bolts into the threaded inserts until they are hand tight.

STEP 4

Repeat steps 2 and 3 for the remaining support components which will be mounted to the other end of the cabinet back.

STEP 5

Remove the protective covering from the clear plastic shield so that it rests on top of the two support components. Be careful not to scratch the plastic shield.

STEP 6

Secure the clear plastic shield to the supports by installing the four #8-32 knurled waferhead screws into the threaded inserts that are located; one on the top, and one on the rear surface of each support component. Hand tighten these four screws.

STEP 7

Adjust the two support components so that they are positioned straight up, and tighten the four 1/4-20 x 1-1/2" hex head bolts until the support components are held firmly in position.

CLEANING AND CARE

The support components are made of stainless steel and may be cleaned with any food service stainless steel cleaner.
The clear plastic shield should be cleaned only with mild soap, warm water and a soft cloth.

▶ TPP Service Shelf Installation

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

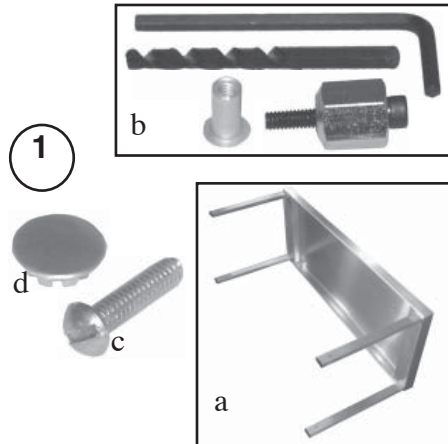
- Flat head screw driver
- Drill
- Adjustable wrench
- 1 1/2" wide tape
- Level

TPP SERVICE SHELF KIT

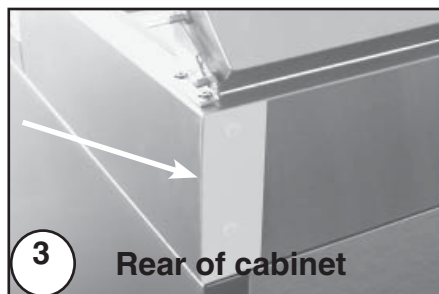
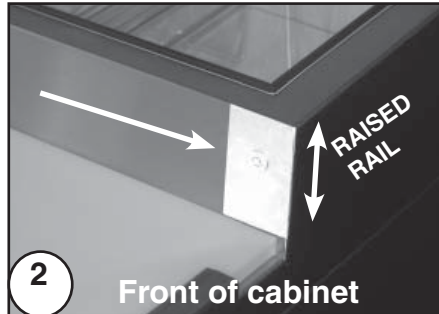
- a. (1) Service Shelf
- b. (1) 874644 Riv-nut tool kit which includes: 1)Q drill bit, 12)830913 1/4"-20 riv-nuts, 1)830337 1/4"-20 riv-nut tool.
- c. (6) 1/4"-20 x 1" SLTD RND HD screws part no. 832219.
- d. (6) 1/2" chrome caps to cover screws once installed.

STEP 1

Make sure contents listed above (TPP Service Shelf Kit) have been sent in the package. (See images 1).



before marking the mounting (riv-nut) holes with a marker on the 1 1/2" tape. (See image 4)



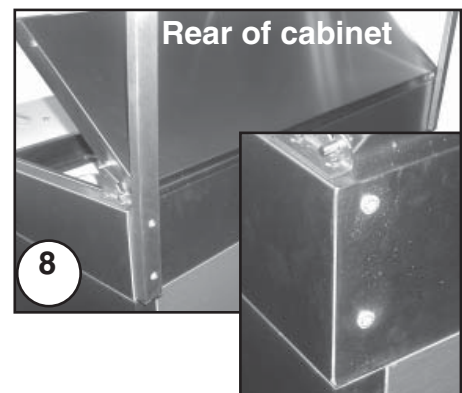
STEP 4

With a marking utensil (Marker) mark spots in the holes of the service shelf legs onto the tape. (See images 5-6).



STEP 5

Use the riv-nut tool kit provided to install the riv-nuts. A drill is required for riv-nut installation. See other side for riv-nut installation. (See images 7-8).



STEP 2

For riv-nut placement for the front of the unit apply 1 1/2" wide tape to the area on the unit that the service shelf leg is to be mounted against. (See image 2). Also apply tape to the rear of the unit where the rear legs will be mounted against. (See image 3).

STEP 3

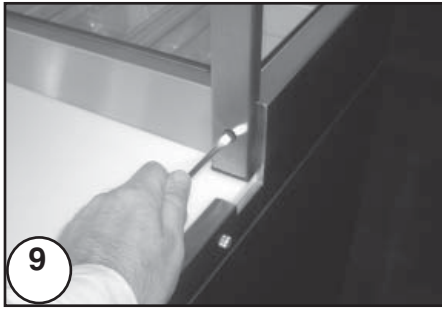
Place the service shelving on the cabinet. Be sure that legs are flush with the side of the raised rail. (See image 2). Make sure the shelf is level

▶ **TPP Service Shelf Installation Continued**

INSTALLATION INSTRUCTIONS

STEP 6

Use six (6) 832219 1/4" -20-1" slotted round head screws to mount the service shelf to the unit. (See image 9).



Final Result (Service Shelf Installed)

RIV-NUT INSTALLATION

STEP 1

On cabinet, drill hole for riv-nut. (See image 1)

STEP 2

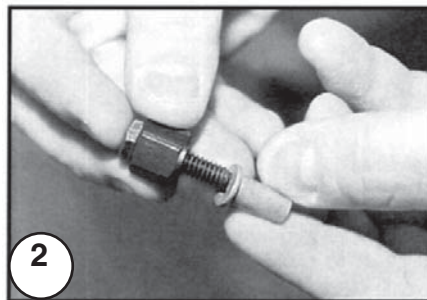
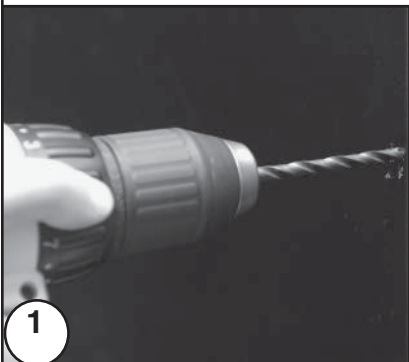
Place riv-nut tool into rivet. (See image 2)

STEP 3

Insert rivet and riv-nut tool into drilled hole. (See image 3).

STEP 4

Tighten rivet with Allen wrench at the same time holding the riv-nut tool with a adjustable wrench. (See image 4).



▶ Installing the TPP Series Service Shelf (prior to NSF-7 recessed pan design)

INSTALLTION INSTRUCTIONS

REQUIRED TOOLS

- Pencil or Marker
- Slotted Screwdriver
- Center Punch
- Adhesive Tape or Equivalent
- Power Drill With 11/32" Bit
- Adjustable Wrench
- Pilot hole drill bit

STEP 1

SURFACE PREPARATION -

Mask off the mounting surface of your Pizza Prep or Sandwich/Salad unit with adhesive tape. (this will prevent scaring on the cabinet surface.)

STEP 2

Remove service shelf from box and place 3" from the rear of the cabinet (for sandwich/salad units) and 3 3/4" from the front (for pizza prep units) riv-nut will strip out.

STEP 3

- Using the predrilled holes of the service shelf as a template, place a pencil mark in each of the mounting holes.
- Remove the service shelf.
- Lightly punch a starter mark and drill a pilot hole in each of the two mounting areas. (be careful not to drill beyond an inch and three quarters.
- Using a 11/32" drill bit, complete the hole.

STEP 4

- Thread the 1/4 - 20 riv-nut on the pull-up stud of the riv-nut tool until tight and insert into drilled hole.
- Place hex wrench in the socket of the jackscrew and hold stationary.

CAUTION

Do not turn hex wrench or riv-nut will strip out.

STEP 5

- Turn hex nut in a counterclockwise direction, two full turns, with a wrench while holding tool at right angles to the work area.
- Break nut loose with a clockwise movement, and remove both wrenches from the tool.
- Remove riv-nut tool from the riv-nut by revolving entire tool in counterclockwise direction.

STEP 6

FINAL POSITIONING -

- Remove masking tape, and replace shelf. Seal bracket if required.
- Align mounting holes of shelf with riv-nut holes and screw 1/4 - 20 round head bolts into threaded riv-nuts.

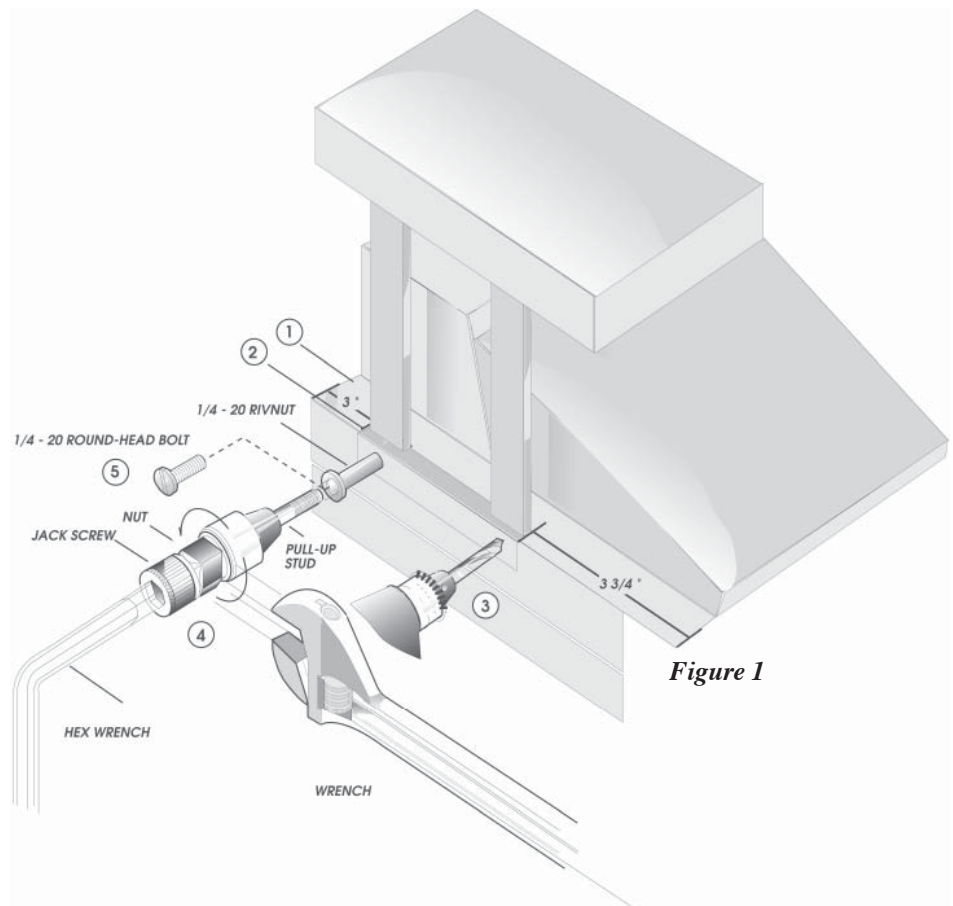


Figure 1

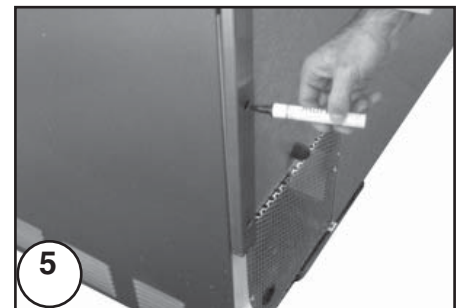
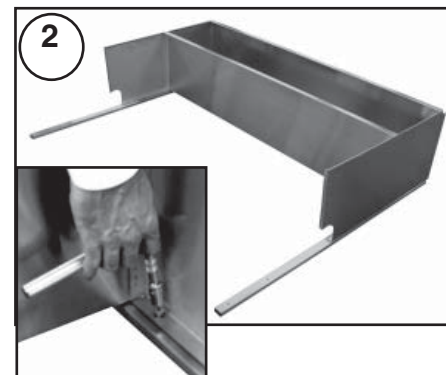
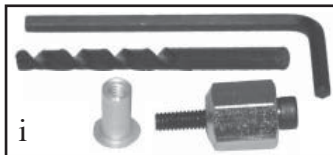
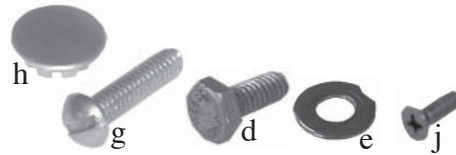
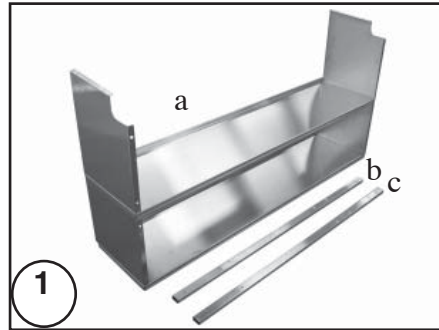
▶ TPP Double Utility Shelf Installation
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS

- Flat head screw driver
- Drill
- Adjustable wrench
- 1 1/2" wide tape

TPP DOUBLE UTILITY SHELF KIT

- a. (1) Double Utility Shelf
- b. (1) 48" Shelf Support Bar Left 906319
- c. (1) 48" Shelf Support Bar Right 906320
- d. (4) 1/4"-20 x 5/8" Hex Head to attach support bar to shelf. 832291
- e. (4) 1/4"-20 18-8 flat washer between to attach shelf support bar to shelf. 830617
- f. (1) 1/4" 20 riv-nut tool kit 874644 (to be used to attach shelf support bar to rear of cabinet. Includes: (1) 830337 1/4"-20 riv-nut tool, (1) Q drill bit, (12) 830913 Riv-nuts.
- g. (4) 1/4"20 x 1" slotted round head screw. 832219
- h. (4) Caps to cover screws rear of cabinet. 811269
- i. (1) 8/32" riv-nut tool kit 874642 (to be used to attach shelf to counter-top. Includes: (1) 811308 #2 drill bit, (12) 830909 Riv-nuts, (1) 830335 8/32" riv-nut tool.
- j. (4) 8-32 x 1/2" Phillips head screw for mounting shelf to counter-top. 830597



STEP 1

Make sure contents listed above (TPP Double Utility Shelf Kit) have been sent in the package. (See image 1).

STEP 2

Some assembly of the double utility shelf is required before installation can begin. Locate the double utility shelf and the two supports that attach the shelf to the TPP unit. Use a wrench and four (d) 1/4"-20 x 5/8" #832291 hex head bolts and four (e) 1/4"-20 18-8 #830617 flat washers to anchor the two legs to the double utility shelf. (See image 2).

STEP 3

Remove the TPP lids from the top of the unit.

STEP 4

Apply 1 1/2" wide tape to the areas that will need riv-nuts installed. (See images 3-4).

STEP 5

Place the assembled double utility shelf onto the TPP unit. Once the shelving is in place mark the holes with a marker onto the 1 1/2" wide tape. (See image 5-6).

▶ **TPP Double Utility Shelf Instructions Continued**

INSTALLATION INSTRUCTIONS

STEP 6

Once all eight holes have been marked remove the double utility shelf and place it to the side.

STEP 7

Each of the four holes on the BACK of the TPP unit will need to be drilled and riv-nuts installed. Use the riv-nut kit (f) 1/4" 20 part # 874644. Please use riv-nut installation instructions at the bottom of this page.

STEP 8

The four holes marked on TOP of the TPP unit will need to be drilled and riv-nuts installed. Use the riv-nut kit (j) 8/32" part # 874642. Please use riv-nut installation instructions at the bottom of this page.

STEP 9

After all riv-nuts have been installed place the double utility shelf on the TPP unit.

STEP 10

With a flat head screw driver anchor the two rear supports to the back of the unit with (g) four 1/4"-20-1" #832219 slotted round head screws and washers.

STEP 11

Locate the (4) 8/32" 20-1" #830597 flat head (flush mount) Phillips screws and anchor the shelving to the top of the TPP unit with a Phillips screw driver.



Final Result (Double Utility Shelf Installed)

RIV-NUT INSTALLATION

STEP 1

On cabinet, drill hole for riv-nut. (See image 1)

STEP 2

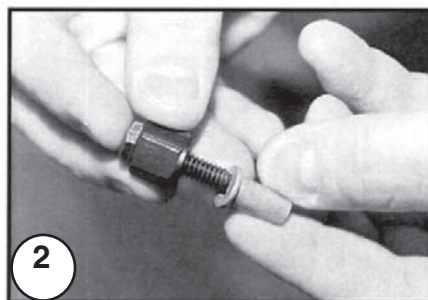
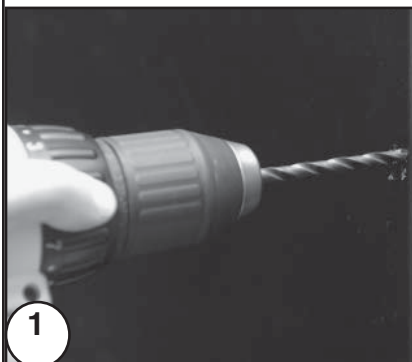
Place riv-nut tool into rivet. (See image 2)

STEP 3

Insert rivet and riv-nut tool into drilled hole. (See image 3).

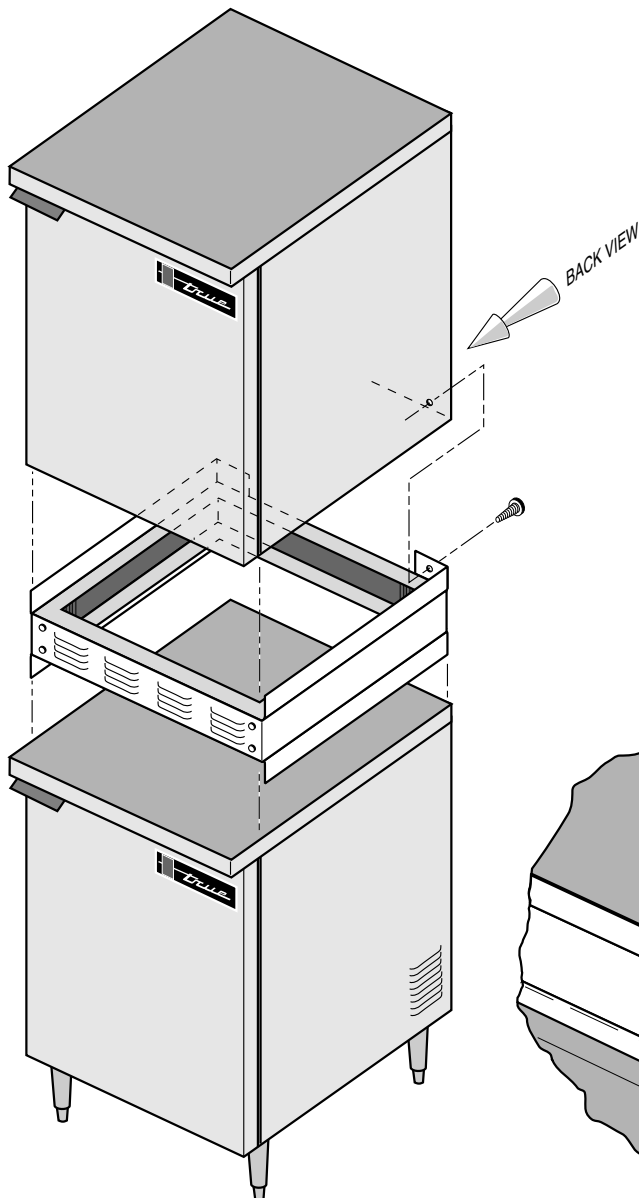
STEP 4

Tighten rivet with Allen wrench at the same time holding the riv-nut tool with a adjustable wrench. (See image 4).

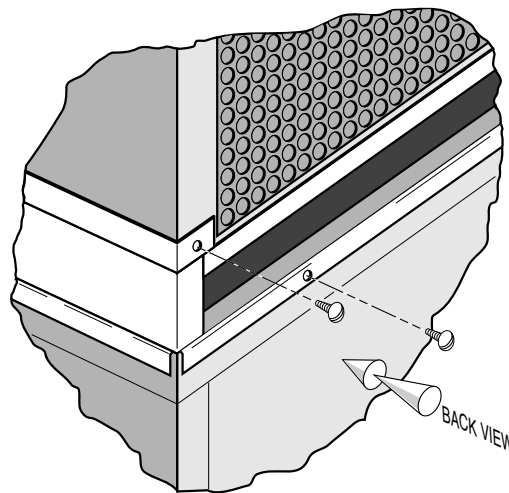


▶ Stacking Collar Installation Instructions for TUC-27 units.**INSTALLATION INSTRUCTIONS**

Congratulations on your purchase of **True's** Stacking Collar unit for TUC-27. The following instruction has been written to assist you in installing your unit.



- 1.** Place the stacking collar on the top of the lower TUC-27. The grill on the collar should be facing toward the front.
- 2.** Drill two $\frac{7}{64}$ " diameter pilot holes in the rear edge of the countertop on the lower TUC-27 and install the mounting screws which will secure the collar to the countertop.
- 3.** Lay the upper TUC-27 on its back and remove the 6" legs and the four leg mounting plates. You may want to save the legs, mounting plates and mounting screws for future use.
- 4.** Carefully lift the upper TUC-27 up and place it on top of the stacking collar. This procedure requires assistance.



- 5.** Position the upper TUC-27 so that the rear of the cabinet is snug against the back of the collar.
- 6.** Drill two $\frac{7}{64}$ " diameter pilot holes in the upper TUC-27 and install the mounting screws. These screws will secure the upper TUC-27 to the stacking collar.



► *Optional 800 Watt Electric Heating Pan for TAC-48 Units*

UNDER COUNTER

TD, TBB, TDD, T-GC Models

► **Basic Under Counter Cooler Operation**

SEQUENCE OF OPERATION

Now that your equipment has been uncrated, the electrical supply has been verified, and the unit has been installed at its final location. You may plug in the cabinet.

After the cabinet is plugged in the evaporator fan(s), which are the interior fans will start. These fans may run all the time. However, it is possible that the evaporator fan(s) may cycle off and on with the temperature control.

The temperature control should be set between #4 or #5. If this is done the compressor will start. The compressor / condensing unit is turned on and off by the temperature control which is sensing evaporator coil temperature. This is very important to remember. We do not concern ourselves with interior air temperature we concern ourselves with product temperature and evaporator coil temperature. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. The compressor will run until the evaporator coil reaches the correct cut out temperature. The compressor will then shut off. The evaporator fans may also shut off at this point on some models. This will allow any ice or frost that has built up on the evaporator coil during the compressor run cycle to defrost during the compressor off cycle. When the evaporator coil temperature reaches the correct cut in temperature the cycle starts all over again.

► **Basic Freezer Operation for Glass Chiller Models**

SEQUENCE OF OPERATION

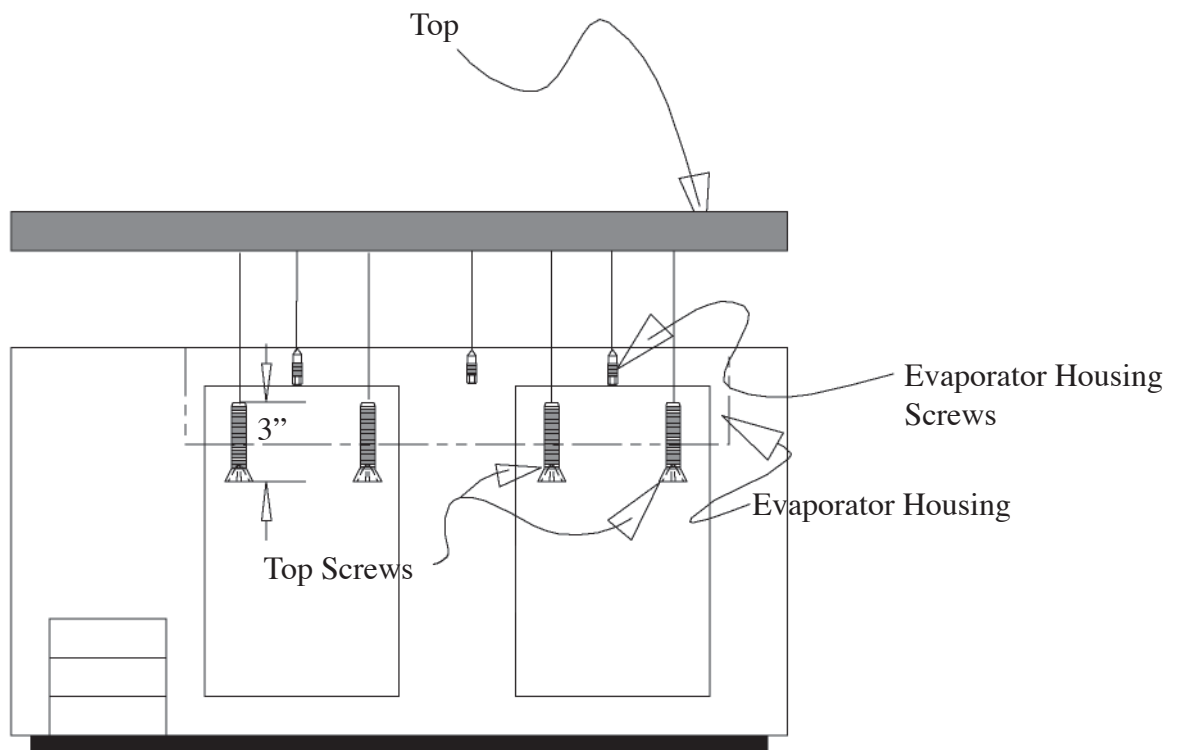
Now that your equipment has been uncrated, the electrical supply has been verified, the unit has been installed at it's final location, and the time clock has been set, you can plug in the unit.

Once the unit is plugged in the compressor should come on immediately. You should be able to here the compressor operating. The temperature control should be set to #4 or #5. If the compressor is not operating be sure that the unit is not in defrost. Locate the time clock. Advance the time clock counter clock wise a quarter of a turn until you hear and feel the clock click. The compressor should then come on. The evaporator fans inside the cabinet will not come on until the fan delay defrost termination switch is satisfied. The evaporator fans will continue to run until the unit goes into defrost again.

The defrost cycle on all freezers is controlled by a time clock. On our under counter models the time clock may be located directly below the temperature control. You can advance the time clock but not adjust the length of defrost or add additional defrosts. During defrost the compressor and evaporator fans will shut off. The evaporator coil heater will come on and remain on until the heater termination switch is satisfied. The unit will remain in defrost for the duration of time (20 minutes). At this time the unit will go back into the freeze cycle. The compressor will start up.

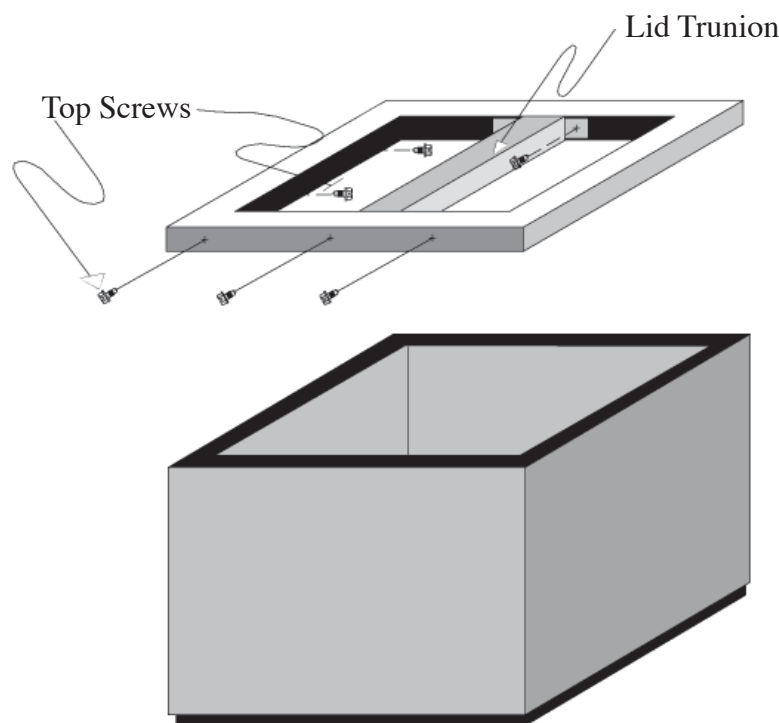
▶ Top Removal for TBB & TDD Units**INSTALLATION INSTRUCTIONS****TOP REMOVAL FOR TBB & TDD UNITS**

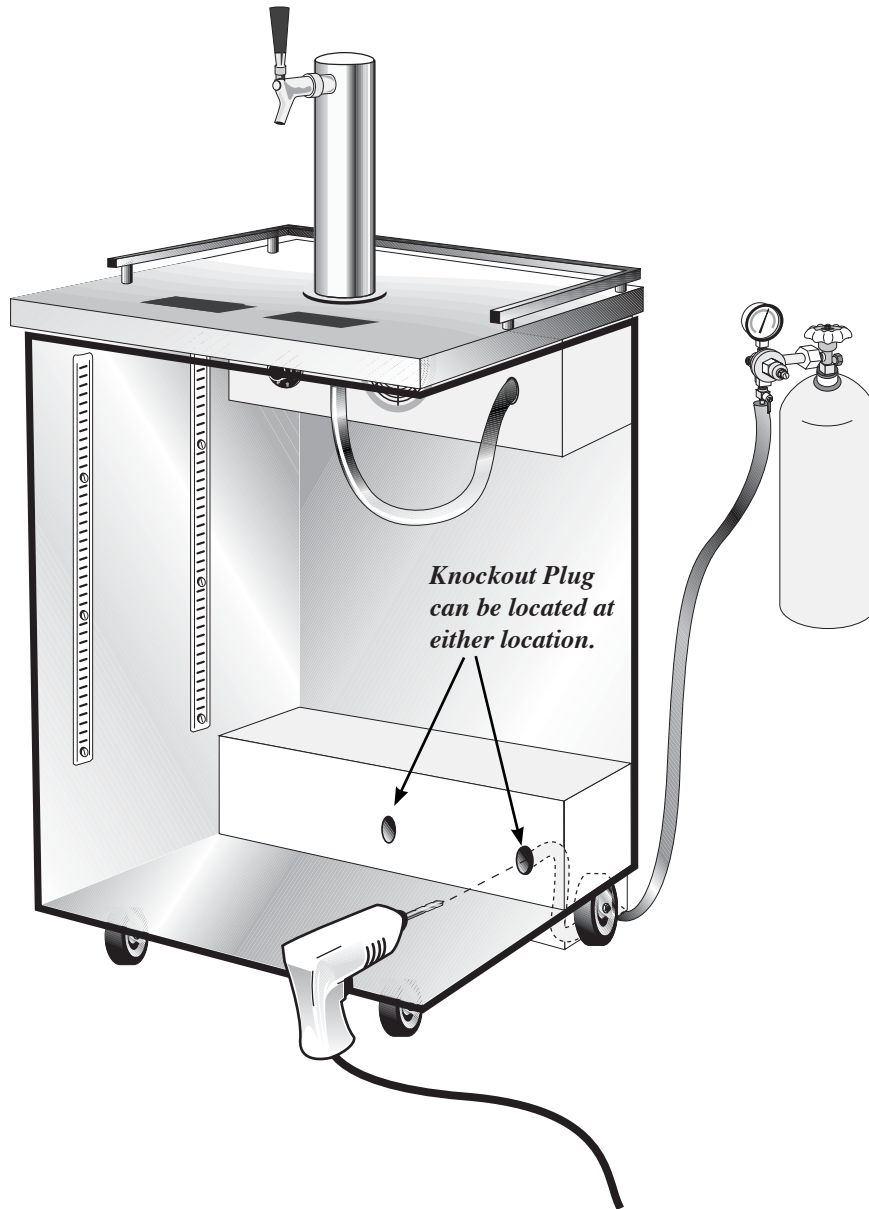
1. Disconnect the power to the unit.
2. Locate and remove screws on the inside of the cabinet going through the evaporator housing and into the bottom of the counter top.
3. Locate and remove the screws securing the line set cover to the top located to the left of the evaporator housing.
4. Remove the two screws inside the door jamb going through the jamb into the bottom of the top. There will be two screws in each door on multiple door units.
5. Cut the silicone seal that runs along both ends and along the back of the unit. Silicone seal is wrapped around the front wall of multiple door units.
6. To remove top lift front up approximately 2-3 inches and push backward to unlock lip in back of top.
7. To reinstall top, carefully align the groove in the back with lip on cooler base. Slide forward, reinstall all screws and re-silicone around cabinet edge.



▶ Top Removal For TD & T-GC Units**RETROFIT INSTRUCTIONS****TOP REMOVAL FOR TD & T-GC UNITS**

1. Turn unit off and remove lids.
2. Remove screws along back of cabinet top.
3. Remove screws on each side, going through lid slide rails, inside cooler.
4. Remove screws along front of top under inside ledge, also remove the two screws holding center trunion on units with more than one door.
5. Lift top to approximately 45 degrees while pushing top forward at same time. Top will lift off lip in front. **T-50-GC has heater wire looped through center trunion. Please be careful when removing top. Before reinstalling, inspect heater wire to make sure it is not damaged.**
6. To reinstall top, while holding top at 45 degree angle hook top on lip at front of cabinet and lay down while pushing backwards on top, when laid completely down press firmly on top to provide a good seal.
7. Reinstall all screws along inside of cabinet and along back of top on outside of cabinet.
8. Reinstall doors and turn unit on.



▶ **TDD-1 CO₂ Knock - out****INSTALLATION INSTRUCTIONS**

This instruction is True's recommended procedure for installing a remote CO₂ container.

REQUIRED TOOLS

- Pliers
- Power Drill
- Silicone Sealer
- Drill bit, 1/2"

STEP 1

Remove black knockout plug with a pair of pliers.

NOTE:

Knockout plug for CO₂ line can be locate in two different areas. View diagram above to locate these two areas.

STEP 2

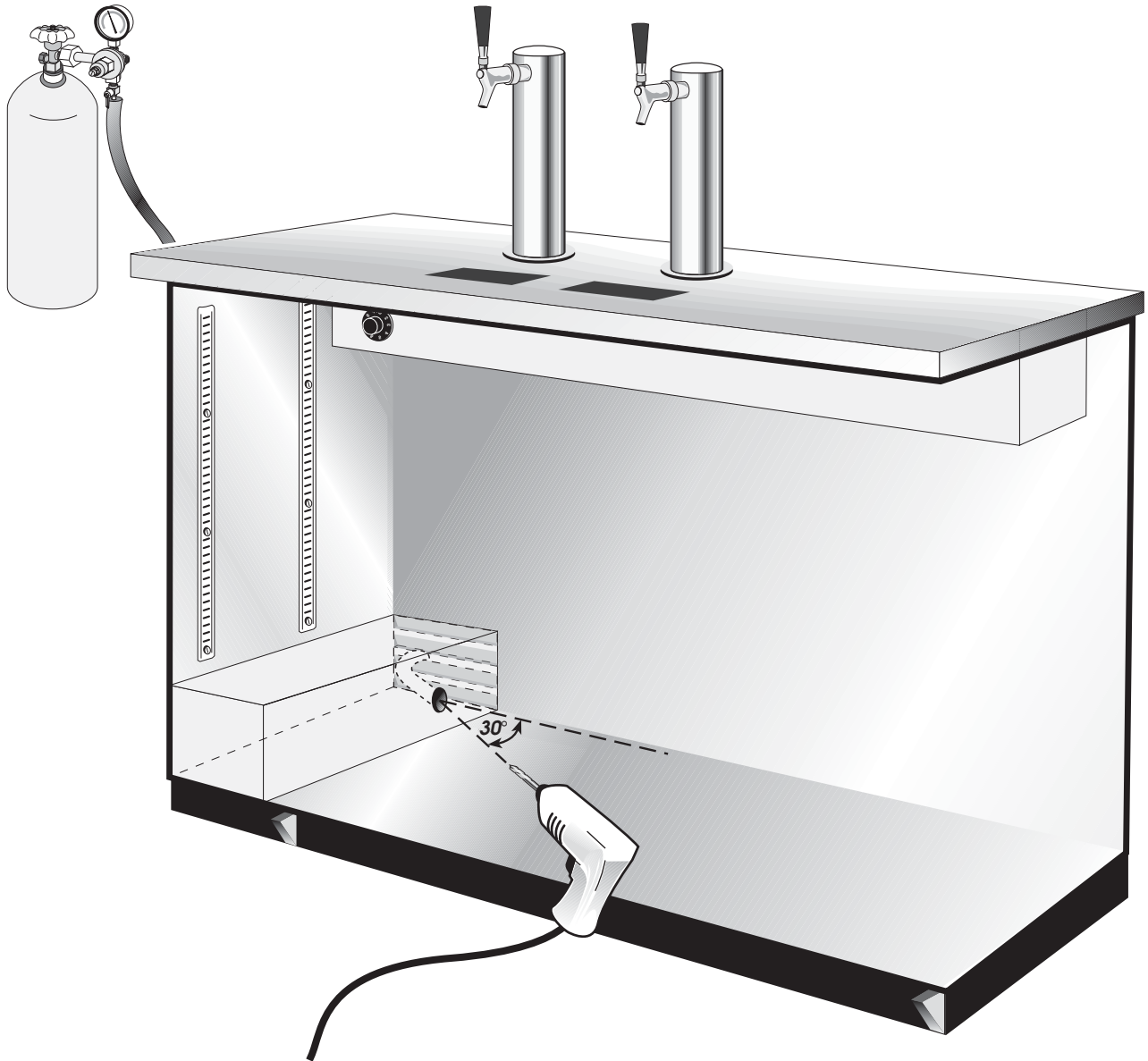
Use drill and bit to bore hole straight back through wall into compressor compartment.

STEP 3

Snake CO₂ line through hole down and around exiting behind rear castor underneath rear grill.

STEP 4

Seal hole around CO₂ line with silicone sealer to prevent cold air leakage.

► TDD-2, 3, 4 (and Club Top Models) CO₂ Knock - out
INSTALLATION INSTRUCTIONS

This instruction is *True's* recommended procedure for installing a remote CO₂ container.

REQUIRED TOOLS

- Pliers
- Power Drill
- Silicone sealer
- Drill bit, 1/2"

STEP 1

Remove black knockout plug with a pair of pliers.

STEP 2

Use drill to bore hole through insulation while holding tool at a 30° angle, this should line up with a pre-punched hole in the compressor compartment.

STEP 3

Snake CO₂ line through knockout hole and newly drilled hole and route through rear grill louvers.

STEP 4

Seal hole around CO₂ line with silicone sealer to prevent cold air leakage.

▶ Draft Beer Problems / Changing CO₂ Cylinder**RETROFIT INSTRUCTIONS**

Flat Beer - Description: Foamy head disappears quickly. Beer lacks usual zestful brewery fresh flavor.

- CO₂ turned off when not in use.
- Contaminated air source (associated with compressed air).
- Greasy glasses.
- Not enough pressure.
- Pressure shut off during night.
- Loose tap or vent connection.
- Sluggish pressure regulator.
- Obstruction in lines.

False Head - Description: Large soap-like bubbles, head dissolves very quickly.

- Dry glasses.
- Improper pour.
- Pressure required does not correspond to beer temperature.
- Coils or direct draw beer lines warmer than beer in keg.
- Small lines into large faucet shanks.
- Beer drawn improperly.

Wild Beer - Description: Beer, when drawn, is all foam and not enough liquid beer.

- Beer drawn improperly.
- Faucet in bad or worn condition.
- Kinks, dents, twists or other obstructions in line.
- Traps in beer lines.
- Beer too warm in kegs or lines.
- Too much pressure.
- Creeping gauge causing too much pressure.

Cloudy Beer - Description: Beer in the glass appears hazy. Not clear.

- Dirty glass or faucet.
- Beer over chilled.
- Beer temperature variance in keg (Beer may have warmed up at sometime).
- Hot spots in beer lines.
- Cutting beer through faucet.
- Beer line in poor condition.
- Dirty lines.
- Beer that has been frozen.

Bad Taste

- Dirty faucet.
- Old or dirty beer lines.
- Failure to flush beer lines with water after each empty keg.
- Unsanitary conditions at bar.
- Foul air or dirt in lines.
- Oily air; greasy kitchen air.
- Temperature of package too warm.
- Dirty glasses

CHANGING CO₂ GAS CYLINDER

Follow these instructions at ALL times when you replace a CO₂ gas cylinder:

1. Close cylinder at "A".
2. Remove tap "D" from barrel. Pull pressure release ring on body of tap to release pressure remaining in line. (do not close "C")
3. Remove or loosen regulator key "B" by turning counter clockwise.
4. Remove regulator from used cylinder at "E".
5. Remove dust cap from new gas cylinder at "E" and clear dust from outlet by opening and closing valve "A" quickly using appropriate wrench.
6. Attach regulator to new cylinder at "E". (use new fiber/plastic washer, if required).
7. Open valve "A" all the way.
8. Close valve "C".
9. Adjust regulator key "B" by turning clockwise to set pressure. (check setting by opening "C" and pulling and releasing the ring "F" on the pressure release valve on the body of the tap)
10. Tap barrel at "D" with valve "C" open.

NOTE

**Don't lay CO₂ cylinders flat.
Don't drop CO₂ cylinders.**

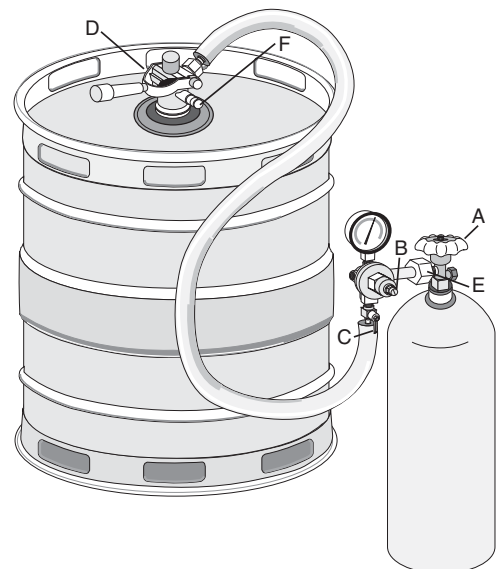
It requires 1/2 pound CO₂ to dispense 1/2 barrel of beer at 38°F with 15 pounds pressure on barrel.

PRESSURE ADJUSTMENT ON CO₂ REGULATOR**Increasing Pressure**

1. Close regulator shut-off "C".
2. Turn regulator key "B" clockwise and make setting.
3. Tap gauge for accurate reading.
4. Open regulator shut-off "C" and draw beer.

Decreasing Pressure

1. Close regulator shut-off "C".
2. Untap barrel at "D" and to bleed line, activate tap handle. Leave in open position.
3. Slowly open regulator shut-off "C" and simultaneously turn regulator key counter-clockwise to zero reading.
4. Close regulator shut-off "C" and set pressure by turning regulator key clockwise. Check setting by opening and closing valve "C".
5. Close tap head "D". (put in "OFF" position)
6. Tap barrel at "D" and open regulator shut-off "C".



Cleaning Instructions for Draft Towers

CLEANING INSTRUCTIONS

CLEANING BAR SYSTEM

Draught dispensers, regardless of design, must be cleaned at least every two weeks. Flushing your draught dispenser with water only is not enough.

Note: Use cleaners approved by your beer supplier and follow their instructions. If you are using the cleaning kit purchased from True follow these instructions:

Exactness of cleanliness should be constantly maintained in your dispenser so that your draught beer will be at its best when served. Although the beer in the barrel is in excellent condition, it can become less satisfying as it is drawn through the beer line and faucet if they are not kept clean.

Prepare Solution:

- Add 1/2 ounce (19 grams) of line cleaning powder to each quart of water, cold or warm.

Cleaning:

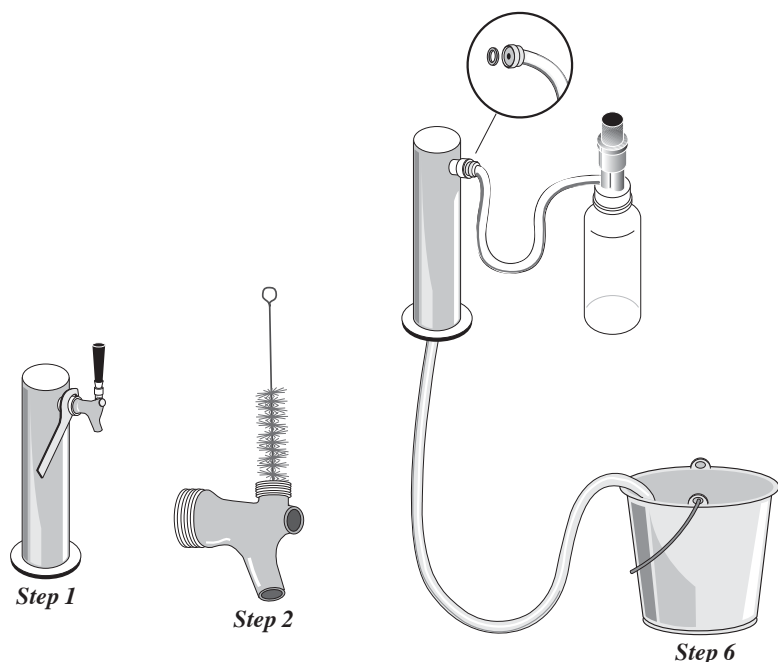
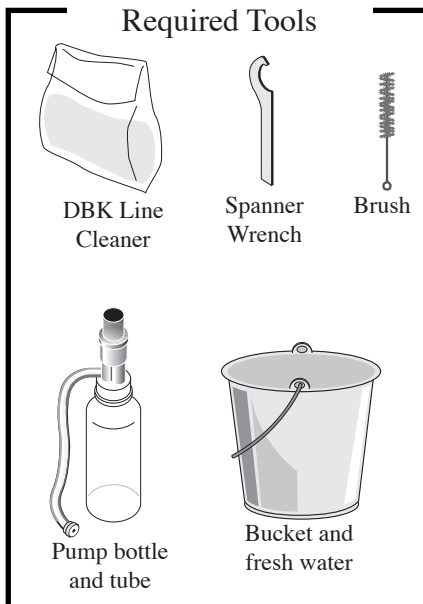
1. Disconnect tap from barrel. Remove beer faucet with spanner wrench unscrew handle and remove valve assembly (fig. 1).
2. Put tap and faucet parts in a bucket with cleaning solution to soak.
3. Use small brush to clean beer faucet parts (fig. 2).
4. Rinse parts Thoroughly.

5. Fill pump bottle with DBK solution.
6. Attach hose from pump bottle to beer column tap outlet (be sure rubber gasket is in place to prevent leakage) - allow tap to drain in bucket (fig. 3).
7. Pump solution (2-3 times from bottle through the line until it starts to flow out the beer line. Wait 10 minutes while cleaning solution works on the lines.
8. Pump excess solution through lines.
9. Rinse bucket, pump bottle and hose thoroughly with clean cool water.
10. Fill pump bottle with clean cool water and pump through lines until water runs clear.
11. When crystal clear water comes through, you're ready to assemble and reattach faucet and re-tap the barrel.
12. Draw the water from the beer line; now you're ready to serve brewery fresh, golden beer.

NOTE

Keeping your dispenser and all its parts clean and odor free will help you to serve beautiful foam topped glasses of delicious satisfying draught beer.

Beer Tap Cleaning Kit Required Tools



► **TD-Series and Glass Chillers**

INSTALLATION INSTRUCTIONS

Replacement of Lid Rails, Lid Rail Trunions and Lid Gaskets

Required Tools

- Phillips Head Screwdriver
- Putty Knife
- 1/4" Nut Driver
- Pop Rivet Gun
- Duct Tape
- #29 Drill Bit

NOTE:

For easier installation of new lid rails and lid trunions, it's best to remove the top from the cabinet

NOTE:

When changing out lid rails or lid trunions of a T-50-GC, the trunion has a mullion heater looped through it.

STEP 1

Disconnect electrical power to cabinet.

STEP 2

Remove top from cabinet (See Top Removal instructions for TD & T-GC on page 30).

STEP 3

Once top is removed, turn top upside down and remove galvanized air deflector. This will expose the hidden screws holding trunions and lid rails to top and any tape on the back side of the lid rails. This will need to be cut or removed.

STEP 4

Remove old lid rails and lid trunions. Note how the lid rails have a slot in the top edge of the stainless steel top. Once you have new lid rails in place, you will need to re-tape to secure them until top is re-installed on cabinet. Install new lid trunions and any lid gaskets that may need replacing.

STEP 5

Re-install air deflector to top.

STEP 6

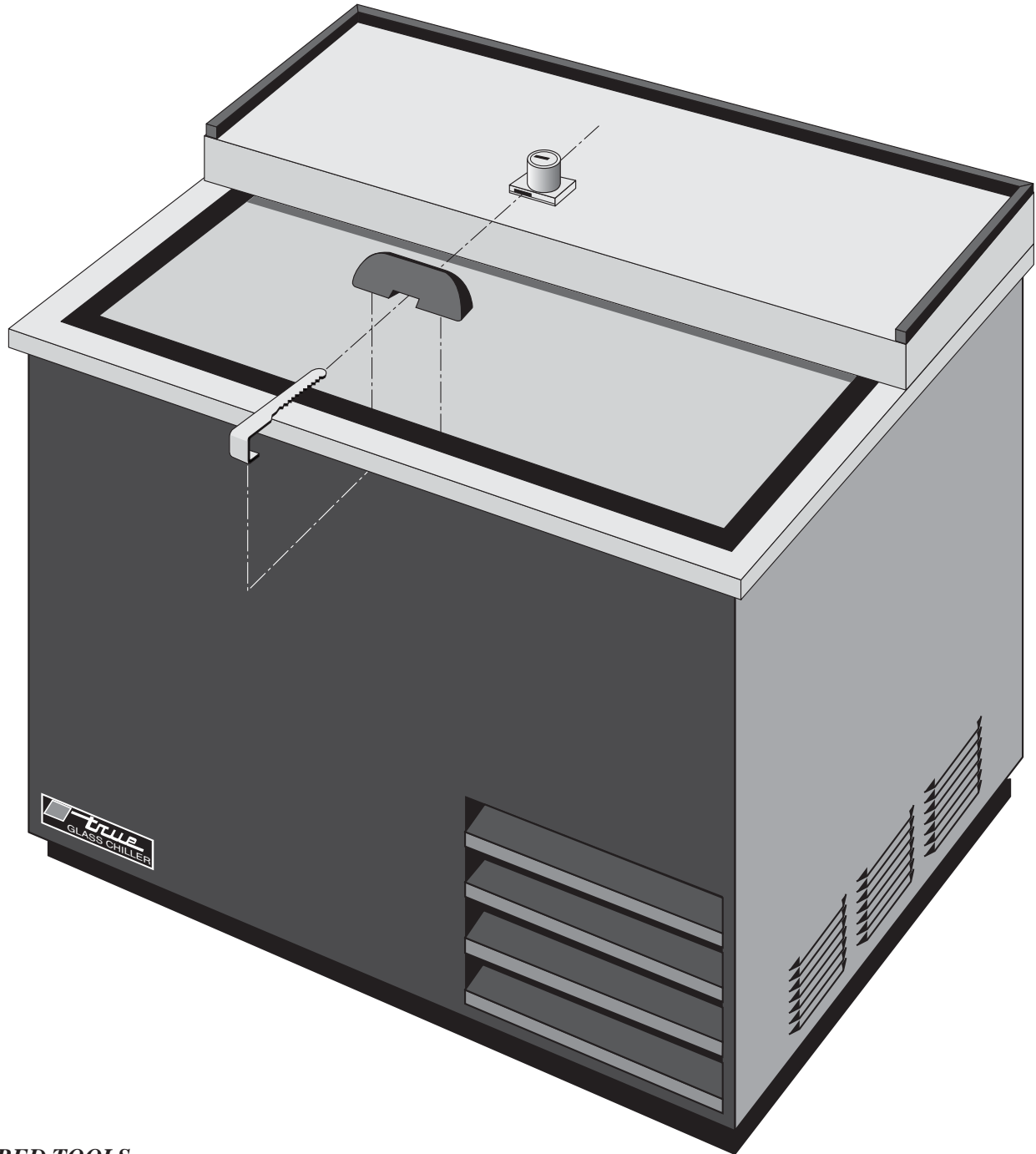
Re-install top to cabinet (See Top Removal instructions for procedure).

STEP 7

Once top has been installed, you will need to install the new lid rail covers. These will insert into the lid rails (sides only) and trunions. You will need to use your drill motor and a #29 drill bit, drill 2 holes about 12" apart in each lid rail to install the 1/8" aluminum rivets (2 each) in each lid rail cover.

NOTE:

Be sure to use only aluminum rivets as steel may rust.

► Lock Installation - TD Models**INSTALLATION INSTRUCTIONS****REQUIRED TOOLS**

- Phillips screwdriver

STEP 1

Remove original lid handle and replace with notched handle provided.

STEP 2

Close lid completely. Slide ratchet bar through notched handle so the bar wraps around front rail assembly.

STEP 3

Slide locking cylinder on ratchet bar until snug against handle. Lid is now in locked position.

► Horizontal Bottle Cooler Bin Divider Installation**INSTALLATION INSTRUCTIONS****HORIZONTAL BOTTLE COOLER
BIN DIVIDER INSTALLATION:**

Horizontal bottle coolers are shipped with bin dividers in place. If it is necessary to adjust spacing the following procedure is recommended.

Step 1

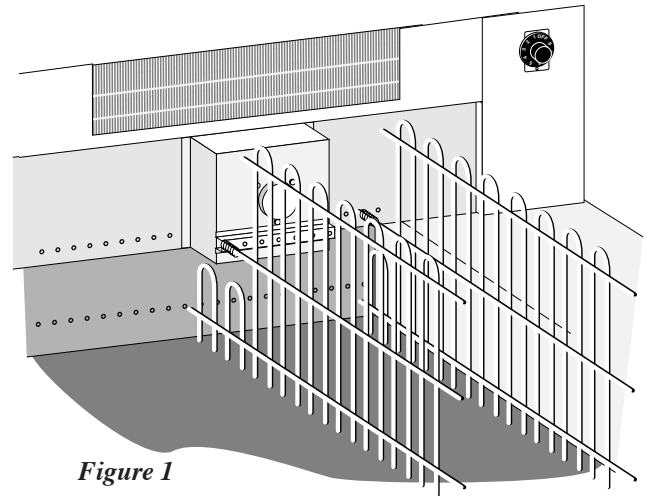
A. Dividers are spring loaded - push divider towards rear of the cooler to release from front grommets holes.

B. Lineup divider front pegs with desired holes and punch through interior tape lining of both top and bottom holes - bottom peg first (front holes are taped over to improve insulation values).

Remove divider from the front holes and line up regular and spring loaded rear pegs with holes in line with those desired in front. Insert as far as possible and maneuver front pegs in place.

NOTE:

Divider positioned in front of mechanical box requires specific notch cut out. (See figure 1).





DELI MODELS

► **TCGR Deli Cases with a Forced Air Evaporator Coil**

SEQUENCE OF OPERATION

Now that your equipment has been uncrated, the **electrical supply has been verified**, and the unit has been installed at its final location. You may plug in the cabinet.

After the cabinet is plugged in the evaporator fans (interior fans) will start. These evaporator fans will run all the time, they will not cycle off like a residential refrigerator. This is done to give an even and consistent product temperature throughout the interior of the cabinet. The refrigerated bakery cabinet is designed to maintain a product temperature between 38-40°F. The cold deli cabinet is designed to maintain a product temperature between 36-38°F.

If the light switch is in the on position the lights will also come on. (The light switch turns on and off all lights).

The temperature control should be set between #5. If this is done the compressor will start. The compressor / condensing unit is turned on and off by the temperature control which is sensing evaporator coil temperature on most models. **This is very important to remember.** We do not concern ourselves with interior air temperature we concern ourselves with product temperature and evaporator coil temperature. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. The compressor will run until the evaporator coil reaches the correct cut out temperature. The compressor will then shut off. The evaporator fans will continue to run circulating air through the evaporator coil. This will allow any ice or frost that has built up on the evaporator coil during the compressor run cycle to defrost during the compressor off cycle. When the evaporator coil temperature reaches the correct cut in temperature the cycle starts all over again.

▶ *TSID/TDBD/TCGG Deli Cases with a Static Evaporator Coil*

SEQUENCE OF OPERATION

Now that your equipment has been uncrated, the **electrical supply has been verified**, the unit has been installed at it's final location. You may plug in the cabinet.

After the cabinet is plugged in the compressor will start. There are no evaporator fans in the cabinet to circulate the cool air. This is done to prevent the product from drying out. The cabinet is designed to maintain the product temperature between 38-40°F.

If the light switch is in the on position the lights will also come on. (The light switch turns on and off all the lights).

The temperature control should be set at #3. If this is done, the compressor will start. The compressor/condensing unit is turned on and off by the temperature control which is sensing either evaporator coil temperature or air sensing. This is very important to remember. The only time we concern ourselves about air temperature is if the cabinet is designed with an air-sensing probe and we are checking its calibration. We generally concern ourselves with product or coil temperature. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. The compressor will run until the evaporator coil reaches the correct cut out temperature. The compressor will then shut off. The cold air will continue to fall from the evaporator on to the product in the cabinet. During this time, any ice or frost that has built up on the evaporator coil during the compressor run cycle will defrost during the compressor off cycle. When the evaporator coil temperature reaches the correct cut in temperature the cycle starts all over again. Additionally, the cabinet has a time clock that will shut off the compressor every 8 hours (unless otherwise adjusted) from 45-60 minutes to further assist in the removal of any ice or frost build up on the evaporator coil. At the end of this time, should the coil temperature reach the cut in temperature, the compressor would start cooling repeating the cycle all over again. The time clock will be located near the condensing unit.

► **TSID & TDBD Defrost Timer Operation Instructions (Grasslin Timer)**

OPERATION INSTRUCTIONS

RECOMMENDED DEFROST SETTINGS:

True Manufacturing has factory set your defrost time clock to a recommended time and duration defrost scenario. All TSID and TDBD will require routine defrost. Your True equipment has been designed for three defrost periods (6:00 a.m., 2:00 p.m. and 10:00 p.m.). If you decide to deviate from these defrost time settings please follow the procedures for adjustment below.

NOTE:

Defrost timer will need to be set at current time of day before plugging unit into power supply. The defrost times have been set from the factory. If you want to change defrost times please read through the defrost timer instructions.

REQUIRED TOOLS:

- Phillips Screwdriver
- 1/4" Nut Driver or Socket

TSID and TDBD Models:

On TDBD units the defrost timer is located in the lower left-hand corner behind the louvered grill. On TSID the defrost timer is located behind the front grill on the lower right-hand side. On both units take off louvered grill assembly by removing two (2) lower corner screws. The grill will hinge out and unhook from the top. (See images 1 - 4).

**SETTING THE TIMER:
(UNPLUG UNIT FROM POWER SUPPLY!)**

DO NOT SET THE TIME BY ROTATING THE "OUTER" DIAL.

Turn the minute hand clockwise until the time of day on the outer dial is aligned with the triangle marker on the inner dial (two o'clock position).

**Adjusting The Defrost Timer:
(time initiated, time terminated)**

Your True equipment contains a defrost system that is time initiated and time terminated. While True requires a minimum 3 defrost

periods not to exceed 60 minutes the procedure on this page should be followed to customize your specific needs.

Notice:

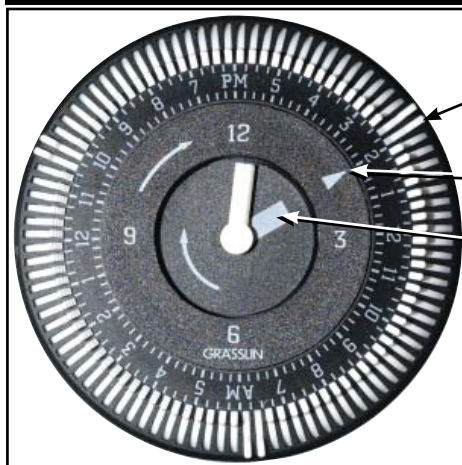
If timer is not set for a minimum of 3 defrost per day for 60 minutes each, the coil may develop excessive frost. This may lead to system failure and product loss, which is not covered under warranty.

The following procedure may be followed to customize your needs.

High usage, high temperature, and high humidity may require 4 defrost settings per day.

WARNING:

Always follow the manufacturer's recommended settings when programming the amount and duration of the defrost cycles.



Defrost Timer Image

STEP 1

The white tabs located on the outmost area of the time clock have been factory set for (6:00 a.m., 2:00 p.m., and 10:00 p.m.). Each tab represents 15 minutes of defrost time. Notice that at each defrost time four white tabs are set for 15 minutes each for a total of 60 minutes of defrost.

STEP 2

In order to program the time to begin the defrost cycle, flip the white tabs out to set the defrost time. To eliminate a defrost time flip the white

tabs back toward the center of the Defrost Timer.



Image 1 (Removing two (2) lower screws).

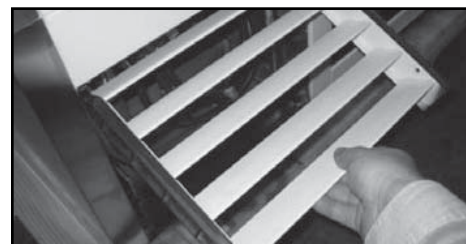


Image 2 (Louvered grill hinges out then un-hooks for removal).

Outer most dial. White tabs represent 15 minutes of defrost time.
Time of day.
Inner most dial.



Image 3 (Defrost timer on TSID and TDBD-36/48 models).



Image 4 (Defrost timer on TSID and TDBD-36/48 models).

► **TCGG Defrost Timer Operation Instructions (Grasslin Timer)**

OPERATION INSTRUCTIONS

RECOMMENDED DEFROST SETTINGS:

True Manufacturing has factory set your defrost time clock to a recommended time and duration defrost scenario. All TCGR models will require routine defrost. Your True equipment has been designed for three defrost periods (6:00 a.m., 2:00 p.m. and 10:00 p.m.). If you decide to deviate from these defrost time settings please follow the procedures for adjustment below.

NOTE:
Defrost timer will need to be set at current time of day before plugging unit into power supply. The defrost times have been set from the factory. If you want to change defrost times please read through the defrost timer instructions.

REQUIRED TOOLS:

- Phillips Screwdriver
- 1/4" Nut Driver or Socket

TCGG Models:

On TCGG units the defrost timer is located in the lower left-hand corner behind the rear louvered grill. Take off louvered grill assembly by removing two (2) lower corner screws. The grill will hinge out and unhook from the top. (See images 1 - 2).

**SETTING THE TIMER:
(UNPLUG UNIT FROM POWER SUPPLY!)**

DO NOT SET THE TIME BY ROTATING THE "OUTER" DIAL.

Turn the minute hand clockwise until the time of day on the outer dial is aligned with the triangle marker on the inner dial (two o'clock position).

**Adjusting The Defrost Timer:
(time initiated, time terminated)**

Your True equipment contains a defrost system that is time initiated and time terminated. While True requires a minimum 3 defrost periods not to exceed 60 minutes the procedure on this page should be

followed to customize your specific needs.

Notice:

If timer is not set for a minimum of 3 defrost per day for 60 minutes each, the coil may develop excessive frost. This may lead to system failure and product loss, which is not covered under warranty.

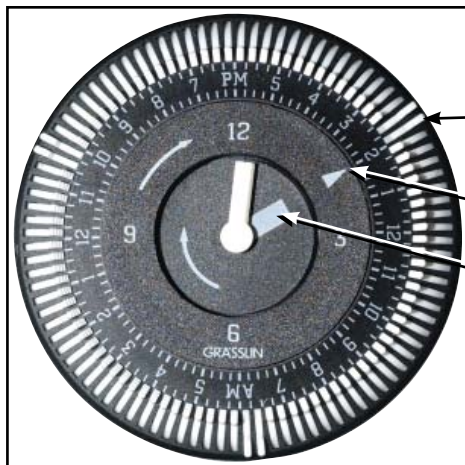
The following procedure may be followed to customize your needs.

High usage, high temperature, and high humidity may require 4 defrost settings per day.

WARNING:
Always follow the manufacturer's recommended settings when programming the amount and duration of the defrost cycles.



Image 1 (Removing two (2) lower screws then louvered grill hinges out then unhooks for removal).



Defrost Timer Image

STEP 1

The white tabs located on the outmost area of the time clock have been factory set for (6:00 a.m., 2:00 p.m., and 10:00 p.m.). Each tab represents 15 minutes of defrost time. Notice that at each defrost time four white tabs are set for 15 minutes each for a total of 60 minutes of defrost.

STEP 2

In order to program the time to begin the defrost cycle, flip the white tabs out to set the defrost time. To eliminate a defrost time flip the white tabs back toward the center of the Defrost Timer.

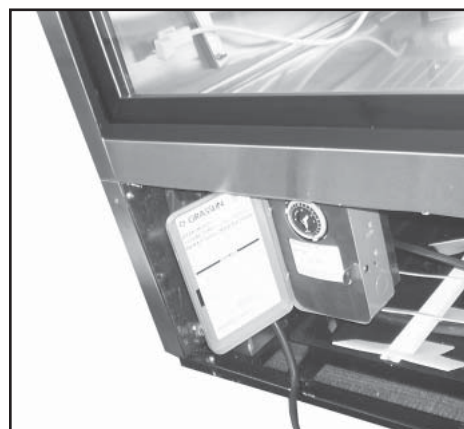
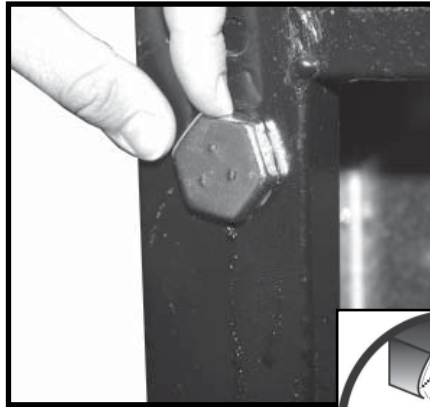
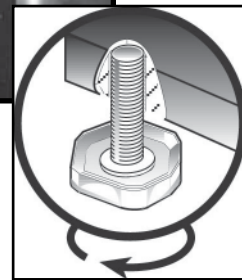
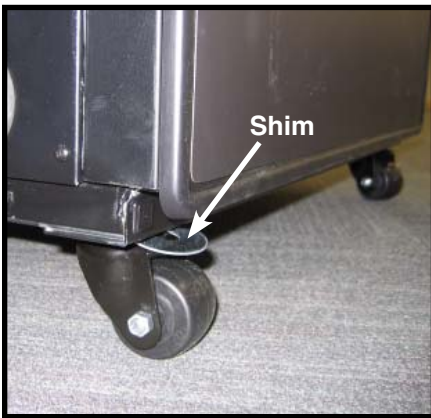


Image 2

► Leveling Curved Glass Models**ADJUSTMENT INSTRUCTIONS***Image 1**Image 3**Image 4**Image 2****Curved Glass Bakery Unit
Leveling With Castors:*****STEP 1**

Back out the castor with a wrench (True can provide a wrench for specific castors). (See *image 1*).

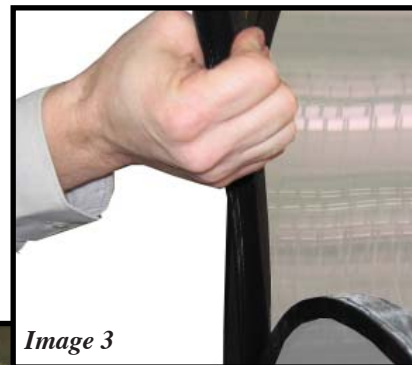
STEP 2

Apply shims to the top of the castor to achieve leveling. (See *image 2*).

***Curved Glass Bakery Unit
Leveling With Leg Levelers:*****STEP 1**

If the cabinet is not level use an open end wrench and turn adjustable tips on legs until cooler is level. (See *image 3-4*).

► Curved Glass Adjustment Procedure 1
ADJUSTMENT INSTRUCTIONS



Bakery Glass Seal Adjustment Instructions:

WARNING:
 Make sure cabinet is level front to back and side to side.

STEP 1

Inspect the front curved glass for proper seal. If there are any gaps between the front curved glass and the sides of the unit follow these easy procedures. (See image 1).

STEP 2

Open the front curved glass. Pull off the gasket on the side of the

unit and squeeze the edges of the gasket together. The gasket has metal inside to hold the shape of the gasket. If needed apply foam tape to any areas along the edge of the unit between the gasket and curved end. (See image 2).

STEP 3

Before reinstall the side gasket on top of the foam tape make sure to squeeze the gasket together again. (See image 3). Do not push the gasket all the way down onto the side of the unit.

STEP 4

When closing the curved glass door let the door close on it's own. Under it's own weight the door will create a closed seal on the sides of the unit. If there are any gaps left on the sides of the unit, apply pressure on the sides of the curved glass door creating a closed seal with the sides of the unit. (See image 4).

WARNING:
 Do not apply pressure directly on the gasket. Only apply pressure on the curved glass when closed.

► **Curved Glass Adjustment Procedure 2**
ADJUSTMENT INSTRUCTIONS



Image 1



Image 4



Image 2



Image 3

Bakery Glass Curved Glass Adjustment Instructions:

————— STEP 1 —————
 Inspect the front curved glass for proper seal. If there are any gaps between the front curved glass and the sides of the unit or the top counter follow these easy procedures. (See image 1).

————— STEP 2 —————
 Remove the front side formica and then slide the front formica off the front of the unit. (See image 1).

————— STEP 3 —————
 There are screws (number of screws depending on the length of the unit) along the front of the unit that need to be loosened with an allen wrench. (See image 2 & 3).

————— STEP 4 —————
 Then once the screws in front of the unit are loose the curved glass can be maneuvered for proper alignment. (See image 4).

————— STEP 5 —————
 When alignment has been achieved anchor down the screws on the front of the unit. (See image 4).

WARNING:
When anchoring the front screws with an allen wrench remember to only lightly tighten the screws. Starting in the center and working out gradually tightening the screws. Failure to do so may damage the front curved glass.

***REMOTE
CABINET
INFORMATION***

▶ Remote Cabinet Information**INSTALLATION INSTRUCTIONS**

REMOTE CABINET INFORMATION

- The installation of the remote cabinet should be done by a qualified licensed refrigeration company familiar with all local and state codes pertaining to the installation of remote refrigeration equipment.
- True does not recommend the use of multiple cabinets on one condensing unit.
- All True manufactured remote cabinets are designed to operate on R-404A refrigerant unless otherwise specified.
- The cabinets are built standard with a pump down solenoid valve, thermostatic expansion valve, and a heated condensate pan. Note: All TAC model cabinets would require an external floor drain.
- Legs or leveling screws are standard on all remote cabinet. Castors do not meet UL requirements
- All of the cabinets require a separate independent power supply that needs to be hard wired in the field. Please consult the cabinet spec sheets for the proper voltage.
- If the remote condensing unit is supplied by True, the electrical needed for it would be 208-230/60/1. As with the cabinet the condensing unit will be built to operate on R-404A refrigerant unless otherwise specified.
- There is no need to run control wiring from the cabinet to the condensing unit.
- If the condensing unit is being supplied by someone other than True, exact BTU requirements can be obtained by contacting the Technical Service Department at 800-325-6152

► **Basic Remote Equipment Operation (Cooler)**

SEQUENCE OF OPERATION

Now that your equipment has been uncrated, the **electrical supply has been verified**, and the unit has been installed at its final location. You will need to field install the wiring to the cabinet. Note: all remote cabinets will need to be hard wired to meet UL requirements.

On a cooler after the cabinet is wired up and the power is turned on the evaporator fans (interior fans) will start immediately. These fans will run all the time, they will not cycle off like a residential refrigerator. (This is done to give an even and consistent product temperature throughout the interior of the cabinet. If the light switch is in the on position the lights will also come on. (The light switch turns on & off all lights). The remote cabinet comes standard with a solenoid valve and a thermostatic expansion valve. With the temperature control set at between #4 or #5 this will open up the solenoid valve. This in turn will allow the operating pressures to rise, closing a low pressure switch. When the low pressure switch closes, it will start the compressor and the cabinet will begin to cool. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the evaporator coil temperature. Once the evaporator coil reaches the correct cut out temperature the temperature control will open, closing the solenoid valve. With the solenoid valve closed the compressor will continue to run until the pressure reaches the pressure control cut out setting. At this point the compressor will stop. The compressor will not come on again until the temperature inside the cabinet warms up, closing the temperature control and starting the process all over again.

True recommends on remote units the use of both a high and low pressure control. This can be easily achieved by using a dual pressure control. The high side acts as a safety and the low side is used to turn the compressor on and off. The use of a low ambient control (headmaster) to provide a constant pressure in the refrigeration system in all types of weather conditions is also suggested. In outdoor installations, it is recommended that you also use some type of crackcase heater in conjunction with some type of housing to protect the condensing unit. Besides the above mentioned items the condensing unit should be made up of the basic refrigeration components (compressor, condenser, condenser fan motor, liquid line drier and sight glass) as well as a receiver capable of storing between 80-90% of the refrigeration systems charge. **It is important that a qualified person be working on this type of equipment following good refrigeration practices.**

Units that are purchased as self contained can not be remoted.

► Basic Remote Equipment Operation (Freezer)**SEQUENCE OF OPERATION**

On freezers, just like with the cooler, once the cabinet is wired up and the power is turned on the lights will come on. The remote cabinet comes standard with a solenoid valve and a thermostatic expansion valve. With the temperature control set at between #4 or #5 this will open up the solenoid valve. This in turn will allow the operating pressures to rise, closing a low pressure switch. When the low pressure switch closes, it will start the compressor and the cabinet will begin to cool. The compressor will run which is removing heat from the product inside of the cabinet. As the product temperature drops so does the cabinet air temperature. The evaporator fans inside the cabinet will not come on until the evaporator coil temperature comes down to approximately 15°F. The evaporator fans will continue to run until the unit goes into defrost or on some upright models the temperature control is satisfied. Once the air sensing temperature control is satisfied it will open, closing the solenoid valve. With the solenoid valve closed the compressor will continue to run until the pressure reaches the pressure control cut out setting. At this point the compressor will stop. The compressor will not come on again until the temperature inside the cabinet warms up, closing the temperature control and starting the process all over again.

If the fans are cycling off on the temperature control once the cabinet temperature goes up, the evaporator fans will come back on along with the compressor and the cooling process will start all over again or until the cabinet goes into defrost.

The defrost cycle on all freezers is controlled by a time clock. The time clock can be located under the cabinet or on top of the cabinet. The clock is adjustable. This means that you can increase the duration of the defrost as well as add an additional defrost setting. When the cabinet goes into defrost the solenoid valve will open up and the unit will pump down. This will in turn shut the compressor and the evaporator fans off. The evaporator coil heater will come on and remain on until either a heater termination switch is satisfied (approximately 55°F) and or the defrost duration (time) is satisfied. At this time the unit will go back into the freeze cycle opening the solenoid valve allowing the low side pressure to rise. The compressor will start up and the evaporator fans will not come on until the coil temp reaches approximately 25°F.

True recommends on remote units the use of both a high and low pressure control. This can easily be achieved by using a dual pressure control. The high side acts as a safety and the low side is used to turn the compressor on and off. The use of a low ambient control (headmaster) to provide a constant pressure in the refrigeration system in all types of weather conditions is also suggested. In outdoor installations, it is recommended that you also use some type of crackcase heater in conjunction with some type of housing to protect the condensing unit. Besides the above mentioned items the condensing unit should be made up of the basic refrigeration components (compressor, condenser, condenser fan motor, liquid line drier and sight glass) as well as a receiver capable of storing between 80-90% of the refrigeration systems charge. It is important that a qualified person be working on this type of equipment following good refrigeration practices.

***TEMPERATURE
CONTROL
SECTION***

► Temperature Control Instructions

OPERATION INSTRUCTIONS

The following is a list of temperature controls that can be used in each model but they are not necessarily the temperature controls that were built in the units from the factory.

Temperature Control Part Number	°F Cut In	°F Cut Out	Old Temperature Control Part Number	Equipment Used In
800345	-2.5	-15.5		GDM 10F/12F/23F/49F/72F/T-72FG
800358	-8.5	-14.5	800312	All Freezers
800366	35	15.5	800303	TBB/TD/TDD/TSSU/TRCB
800368	40	26		GDM-9/10/12/23/41/47/49/69/72/TCGR-77/TUC-44,60, 67/TWT-44, T-23F/T-49F/TS-23F/TS-49F
800369	-2.5	-12.5		THF
800370	-8.5	-18.5		
800371	42	24	800395 High Altitude	GDM & T High Altitude
800382	37	18	800313	GDM-5/TBB-1/TDD-1/TPP/TSSU/TWT/TUC
800383	.5	-5.5	800357/800399	GDM-5PT/T-19, 23, 35, 49-FZ/TS-19FZ
800384	25	19		GDIM/TD Low Temp
800385	43	34		White Wine
800386	42	19		G4SM/GDM-14RF/23/26/33C/35SL-RF/41SL-60/41C-48
800387	39	21	800335	Floral Case
800393	40	19	800306	G4SM/ALL-G/GEM/ALL-T/TGU/TM/TR/TS/TAC-48, 72/TCGR-50
822213	37	21.5		TMC-DS
822214	32	18	800320	TDBD/TSID 48 & 96 Deli Cases
822223	26	9	800340	TCGG
831931	-2	-9		TMW-36
831932 (GE Control)	40	19	800393	GDM-33, 33CPT, 33CPT-52, 33CPT-54, 33SL, 35, 35PT, 35RF, 35RL, 35W-RF, 37, 37HL, 41, 41C, 41CPT-48, 41SL, 43, 45, 45HL, 47, 47PT, 47RL, 49RL, 49W-RL, 57, 61, 61HL, 69, 69HL, 72, 72RL
831987	56	49		Red Wine/Chocolate

NOTE: DANFOSS TEMPERATURE CONTROLS USED ON UNITS

CABINETS USING LARGER THAN A 1/3 H.P. COMPRESSOR WILL NEED TO USE A TEMPERATURE RELAY.

THE GE CONTROL (831932) DOES NOT REQUIRE A RELAY

► **How to check the cut-in and cut-out operation of a temperature control**

OPERATION INSTRUCTIONS

REQUIRED TOOLS

- 1/4" Nut Driver or Socket
- Digital Thermometer of Equivalent
- Multi-Meter (Optional)

STEP 1

Disconnect the power to the cabinet.

STEP 2

Locate the temperature control and note its setting. The temperature control should be set at mid-range, about 5.

NOTE:

If the control was set to high (colder) this could be why the product is freezing. Reset the control and check the cabinet operation in 24-48 hours. You may have to use your multi-meter to check and see if the control has power and is closing.

STEP 3

Remove the four 1/4" hex head screws that secure the fan guard in place. This will expose the evaporator motor fan blade. Keep in mind that there might be more than one evaporator fan motor.

STEP 4

Remove the nut that holds the fan blade in place. See figure 2.

STEP 5

Remove the fan blade. See figure 3

STEP 6

Insert your digital thermometer into the evaporator coil as close to the temperature control copper tube as possible. This would be to the right side of the opening. See figure 4.



Figure 1



Figure 2



Figure 3

► How to check the cut-in and cut-out operation of a temperature control continued**OPERATION INSTRUCTIONS****STEP 7**

Plug the unit in. The compressor should come on. The evaporator temperature will come down very fast allowing you to see approximately what temperature the control opened up and the compressor shut off. This is your cut-out point. Check this against the spec's for the control to determine if the operation is where it should be.

NOTE:

This process should not take more than 10 minutes. If it does, there might be a problem with the refrigeration system.

STEP 8

Open up the cabinet door (s) to allow the warm air to come into the cabinet. This will warm up your evaporator coil and close the temperature control, turning the compressor on. This is your cut-in point. Check this against the spec's for the control to determine if the operation is where it should be.

**THE TEMPERATURES THAT YOU READ
COULD BE $\pm 2^{\circ}$ F.****STEP 9**

Based on your findings you may have to replace or adjust the control. Repeat Steps 7 and 8 several times to verify the operation after you have made the necessary repairs.

STEP 10

Remove the power cord. Starting with Step 5 and working backwards place the fan blade and fan guard in place and put the unit back together.

STEP 11

Plug the unit back in.

Most of the cooler temperature controls are coil sensing constant cut-in controls.



Figure 4

New GE Temperature Control Adjustments

OPERATION INSTRUCTIONS

Required Tools:

- Jewelers Screw Driver (Small Screw Driver)

GE Control Instructions

This scale may be used as a guide for measuring degrees of rotation required for altitude correction. The arrows indicate direction of screw rotation.

Turn calibration screw counter clockwise to obtain colder operating temperatures.



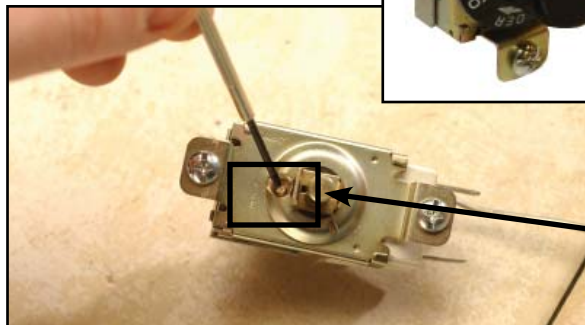
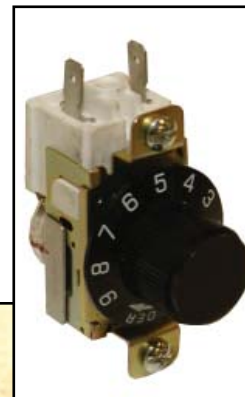
Note:

Only adjust the screw (small flathead) on the face of the control (next to the cam). Follow the Altitude Correction Table below.

<u>Altitude Correction Table:</u>	
<u>Calibration Screw Adjusts</u>	
<u>Both Cut-in and Cut-out</u>	
<u>Altitude (Feet)</u>	<u>Clockwise Turns</u>
2000	7/60
3000	11/60
4000	15/60
5000	19/60
6000	23/60
7000	27/60
8000	30/60
9000	34/60
10,000	37/60

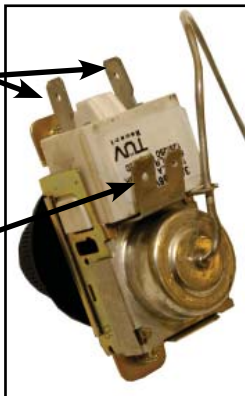
Note:

Each 1/4 turn of the calibration screw is equal to approximately 2 degrees F. Do not make more than 3/4 turn. After making adjustment measure temperature during three cycles before adjusting again.



Compressor Terminals

Ground Terminal



Rear of temperature control.

Calibration screw

To adjust the temperature control take the control knob off to view the cut-in screw. (See Photo Above)

Danfoss Temperature Control Adjustment for High Altitude Applications
INSTALLATION INSTRUCTIONS

Tools Required:

- Allen Wrench (5/64")
- Torx Screw (T-7)

Terms:

Cut-out - Temperature sensed by the controller that shuts the compressor off.

Cut-in - Temperature sensed by the controller that turns the compressor on.

Instructions:

————— STEP 1 —————
Unplug cooler

————— STEP 2 —————
Remove the screws that secure the temperature control to the inset box at the lower left side of the cabinet (when facing the front of the cabinet).

————— STEP 3 —————
To make these adjustments it may be necessary to remove the temperature control from the housing.

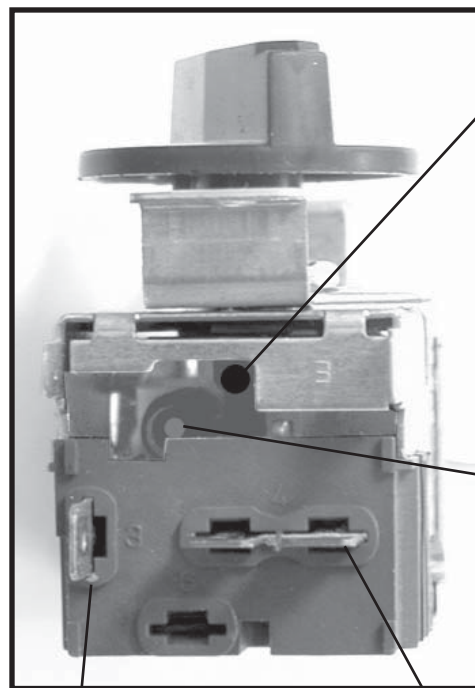
NOTE:
You may have to remove the wires attached to the control. Take note as to which wire is on which spade terminal.

————— STEP 4 —————
Pull out gently from cabinet.

NOTE:
Mechanical temperature controllers are affected when functioning at high altitude. The cut-in and cut-out temperatures will be colder than when the controller functions closer to sea level.

————— STEP 5 —————
For high elevation installations, it may be necessary to "warm-up" the set points. To make the adjustment, insert the appropriate tool in each adjustment screw and turn 1/4 of a revolution clockwise (to the right). This procedure will adjust both the cut-in and cut-out about 2°F warmer.

————— STEP 6 —————
Make sure to reconnect the wires to the proper spade terminal when reinstalling.



Compressor Connection

Compressor Connection (double terminal)

► Temperature Control Altitude Adjustment
INSTALLATION INSTRUCTIONS

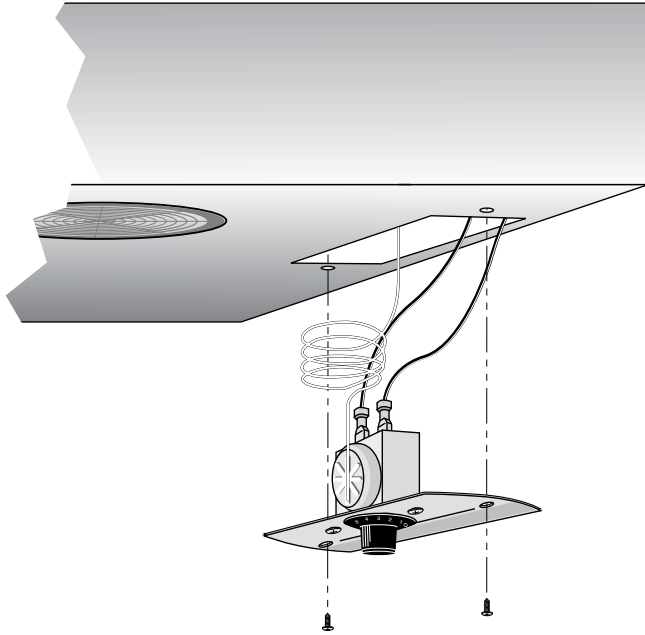
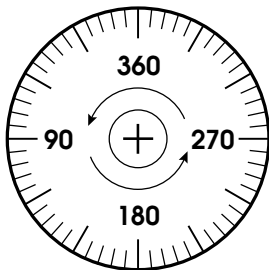


CHART	
Height	CCW Adjustment (based on 360°/complete turn)
2000'	42°
3000'	78°
4000'	114°
5000'	150°
6000'	186°
7000'	222°
8000'	258°
9000'	294°
10,000'	330°

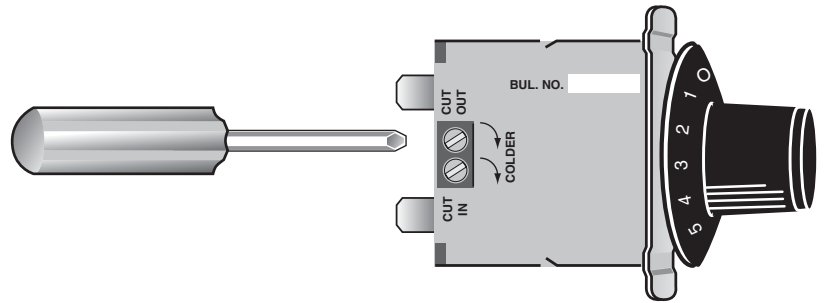


This scale may be used as a guide for measuring degrees of rotation required for altitude correction. The arrows indicate direction of screw rotation.

REQUIRED TOOLS

- Phillips Head Screwdriver
- Hex Head Driver
- Jewelers Screwdriver

IMPORTANT
 Upright models ordered with "High Altitude" temperature controls are pre-calibrated and do not require adjustment.



_____ STEP 1 _____

Unplug the cooler.

_____ STEP 2 _____

Turn the temperature control to the "9" position.

_____ STEP 3 _____

Remove the screws that secure the mounting plate to the evaporator top. ("A") See figure 1.

_____ STEP 4 _____

Pull control down gently from housing.

_____ STEP 5 _____

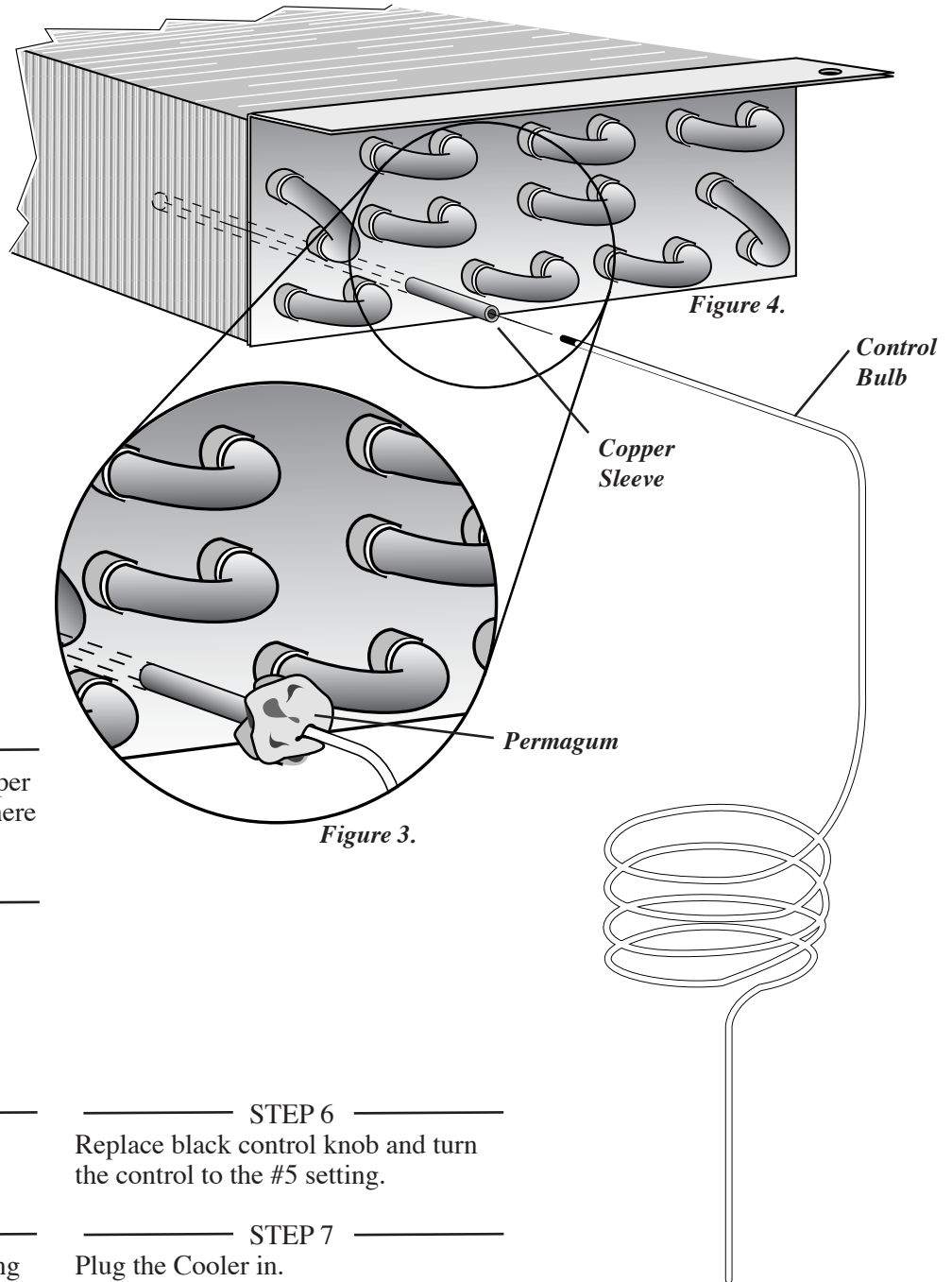
Turn screws counterclockwise (CCW) See Chart and figure 2.

_____ STEP 6 _____

Reassemble to cooler housing and return the temperature control to the "5" position.

► **Temperature Control Change-Out - GDM and T-Series**
INSTALLATION INSTRUCTIONS

Installing The New Control



REQUIRED TOOLS

- Permagum
- Phillips Head Screwdriver
- Hex Head Driver

_____ STEP 1 _____
 Insert the control bulb into the copper sleeve. Before insertion, be sure there are no kinks in line. (figure 2)

_____ STEP 2 _____

IMPORTANT!
 Seal the end of the sleeve with permagum to keep moisture out. (figure 3)

_____ STEP 3 _____
 Connect the two wires to the new temperature control.

_____ STEP 4 _____
 Fasten the control onto the mounting plate with two screws. Item A.

_____ STEP 5 _____
 Fasten the mounting plate to the cooler with two screws. Item B.

_____ STEP 6 _____
 Replace black control knob and turn the control to the #5 setting.

_____ STEP 7 _____
 Plug the Cooler in.

NOTE:
If it becomes necessary to remove the housing be sure to tape off any interior panel at risk of being scratched.

CAUTION
Wait at least 12 hours before re-adjusting control. This allows the Cooler to stabilize cycle.

► Temperature Control Change-Out - GDM
INSTALLATION INSTRUCTIONS

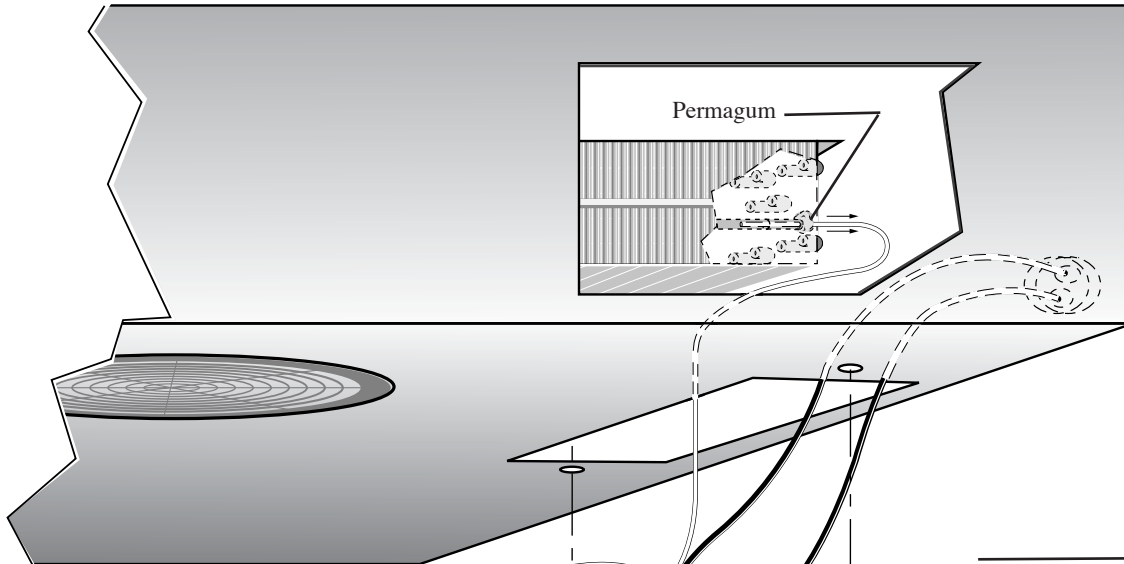


Figure 1.

REQUIRED TOOLS

- Phillips Head Screwdriver
- Hex Head Driver

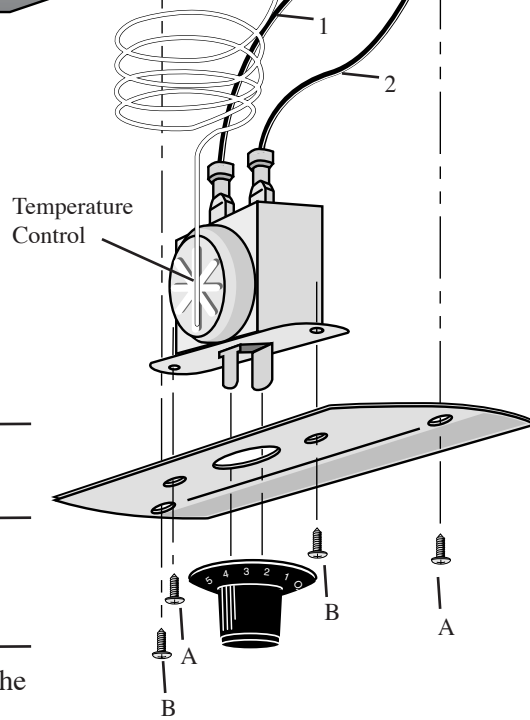
————— STEP 1 —————
 Unplug the cooler

————— STEP 2 —————
 Turn the temperature control to the "OFF" position ("0").

————— STEP 3 —————
 Remove the black control knob on the temperature control. (It pulls off.)

————— STEP 4 —————
 Remove the screws that secure the mounting plate to the evaporator top. Item "A".

————— STEP 5 —————
 Remove the two screws that hold the control to the mounting plate. Item "B".



NOTE:
If it becomes necessary to remove the housing be sure to tape off any interior panel at risk of being scratched.

————— STEP 6 —————
 Disconnect the two wires from the temperature control. Items 1 and 2.

————— STEP 7 —————
 Reach to the side of the evaporator coil and remove the permagum from around the control bulb. Completely remove the control bulb from the sleeve, and pull straight out after removing the permagum.

Danfoss Temperature Control Change Out.

Figure 9.

Connect one wire to terminal #3 and the other wire to terminal #4.

Note: Spare terminal #4 should be covered with insulated female connector sent with new control.

► **Temperature Control Replacement Continued**

INSTALLATION INSTRUCTIONS

STEP 8

Check Relay Operation:

A. Unplug the condensing unit from the compressor receptacle (located on the ballast box).

B. 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.

C. Plug voltmeter into compressor receptacle.

D. Plug cabinet into power source.

Securing Ballast Box:

A. Reinstall ballast box cover.

B. Anchor cover with two screws.

F. Check voltage at compressor receptacle. Voltage should equal voltage at wall outlet.

G. If voltage is correct, turn temperature control to "0", (zero).

H. Plug condensing unit cord back into the compressor receptacle.

STEP 9

Replacing Louvered Grill:

A. Reinstall grill by reversing earlier procedure.

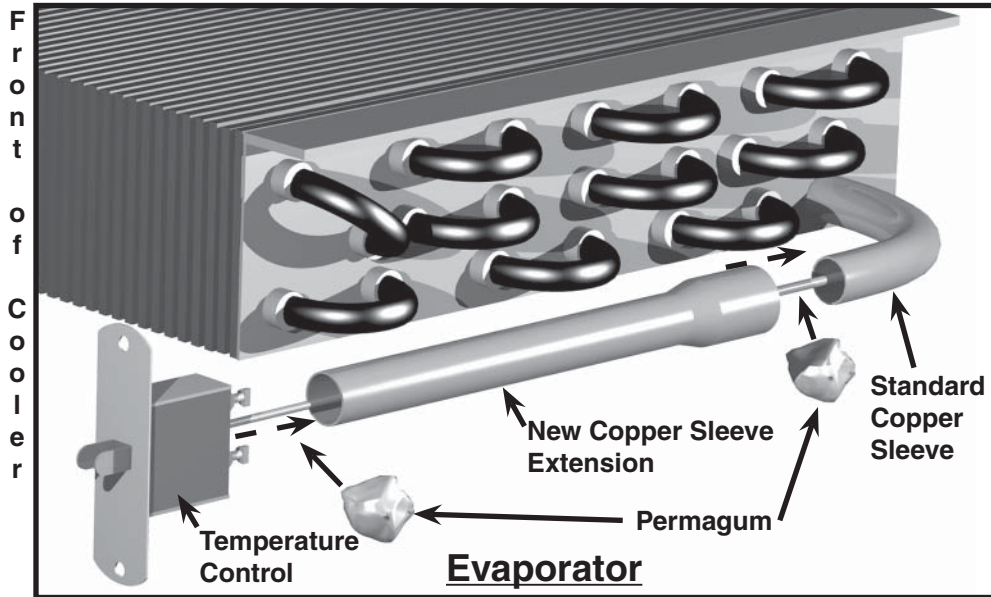
STEP 10

Re-connect Power Cord.

STEP 11

Return Temp Control to normal setting, and check cabinet operation.

► **Replacing Temperature Controls in GDM-7, GDM-10, and GDM-12 Models (Old Models)**
INSTALLATION INSTRUCTIONS



STEP 1
 Unplug Cooler and turn temperature control to "off" ("0") position.

STEP 2
 Pull off the black control knob from the control.

STEP 3
 Remove the mounting plate from the evaporator housing.

STEP 4
 Remove the temperature control from the plate and disconnect the 2 wires.

STEP 5
 Remove the lamp from the front of the cooler and remove the front panel.

STEP 6
 Reach in to the side of the evaporator coil and remove the permagum from around the control bulb. Then remove the old thermostat control bulb from the sleeve completely.

STEP 7
 Insert the new thermostat control bulb into the new copper sleeve extension until about 1/2 inch protrudes from the swaged end. Using a low temperature lubricant on the control bulb is advisable.

STEP 8
 Using the protruding end of the control bulb as a guide, insert it into the copper sleeve (elbow) in the rear of the evaporator. Then push the sleeve extension over the end of the elbow to lock the two tubes together.

STEP 9
 Gently push the control bulb through the joined sleeves in 1-2 inch increments until it reaches the end inside the evaporator, taking care not to kink the line.

STEP 10
 Seal both ends of the new control sleeve with permagum to keep moisture out.

STEP 11
 Remove the mounting plate from the evaporator housing. Connect the 2 wires to the new control, the control to the mounting plate, the plate to the cooler, and replace the control knob.

STEP 12
 Turn the control knob to the #5 setting.

STEP 13
 Reassemble front of cooler and plug it in.

► Temperature Control Replacement (for GDM & T-Series Freezer cabinets with larger than 1/3 H.P. Compressors) with Danfoss Control.
INSTALLATION INSTRUCTIONS

⚡ 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)
- Relay Shield (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

STEP 1

Removing Power:

A. Disconnect power to the unit.

STEP 2

(Slide Door)
Remove Louvered Grill:

A. To remove grill, loosen upper screw on each end of grill and remove lower screws. Gently swing grill forward and up.

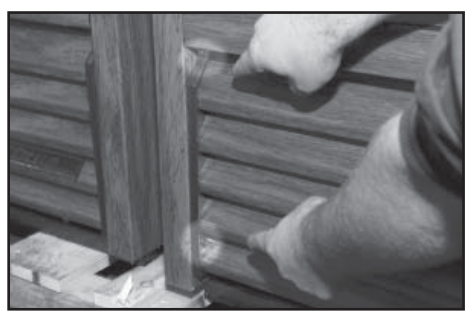


Figure 1. Removing louvered grill (slide door model)

A. Remove screws as indicated by arrows.

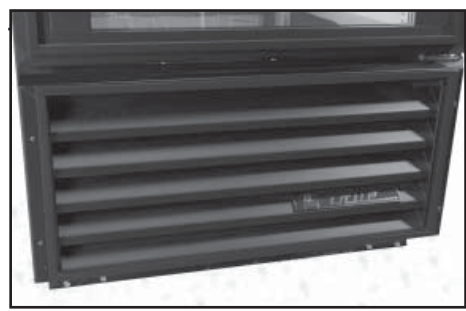


Figure 1A. Removing louvered grill (swing door model)

STEP 3

Accessing Wire Connections:

A. Remove ballast box cover by backing out two hex head screws. (See Figure 2).

NOTE: Wiring diagram is positioned on inside cover.

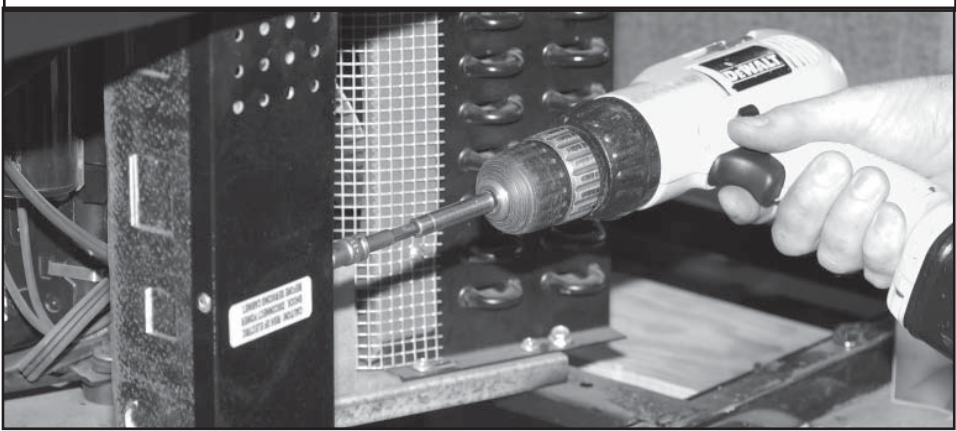


Figure 2. Removing ballast box cover

► **Temperature Control Replacement (for GDM & T-Series cabinets with larger than 1/3 H.P. Compressors) with Danfoss Control. Continued**

INSTALLATION INSTRUCTIONS

STEP 4

Relay Connection Mounting:

A. With slotted screw driver and plastic mallet or hammer, drive out knock out positioned on left side of ballast box.
(See Figure 3).

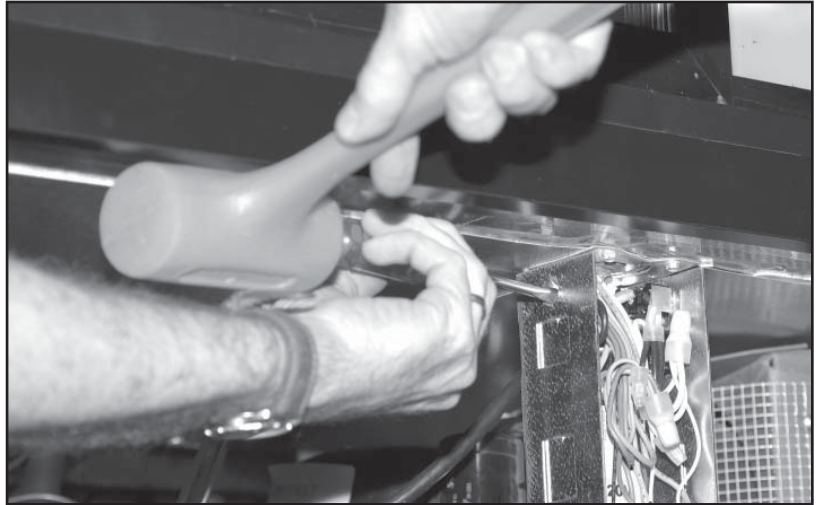


Figure 3. Driving out knockout

B. Install the supplied grommet* into the knockout hole.
(See Figure 4).

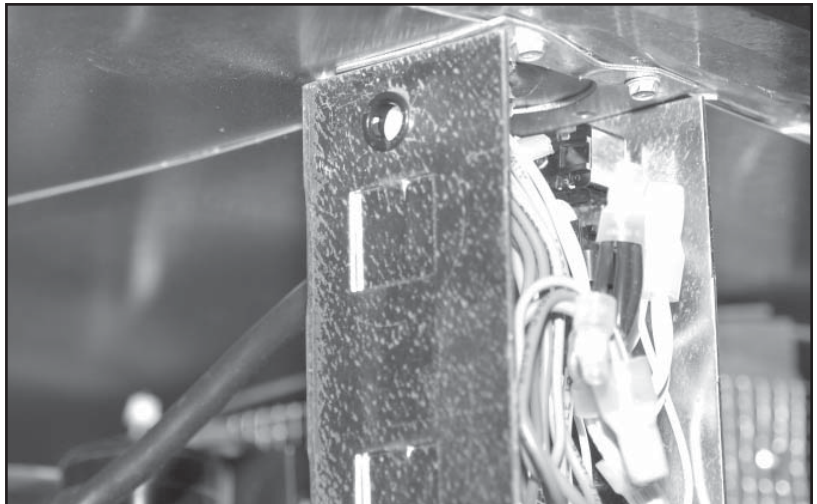
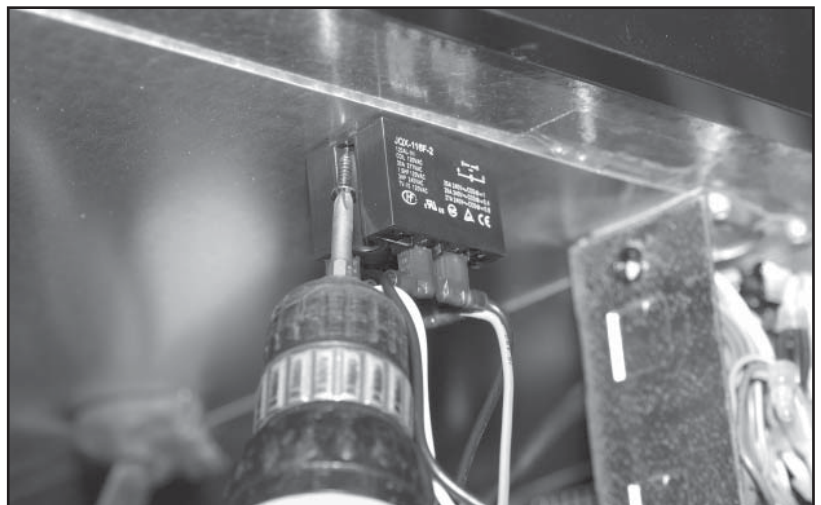


Figure 4. Installing the grommet

C. Mount relay to underside of unit on the left side of ballast box, and 3/4" back from the front edge of the underside.

NOTE: Mount relay next to the ballast box, so that when the relay shield is installed it covers the relay and all exposed wiring.

Relay should be anchored with two self-tapping screws, (supplied in kit), as pictured in Figure 5.



► Temperature Control Replacement (for GDM & T-Series cabinets with larger than 1/3 H.P. Compressors) with Danfoss Control. Continued**INSTALLATION INSTRUCTIONS****STEP 5****Relay Temperature Control Wiring:**

A. Connect the wires included in kit to the relay as follows:

1. Connect one black wire to one of the normally open contacts of the relay.
2. Connect the other black wire to the other normally open contact on the relay.
3. Connect the pink wire to one side of the relay coil.
4. Connect the white wire to the other side of the relay coil.

NOTE: Each relay has a wiring diagram on the side of it. (See Figure 6).

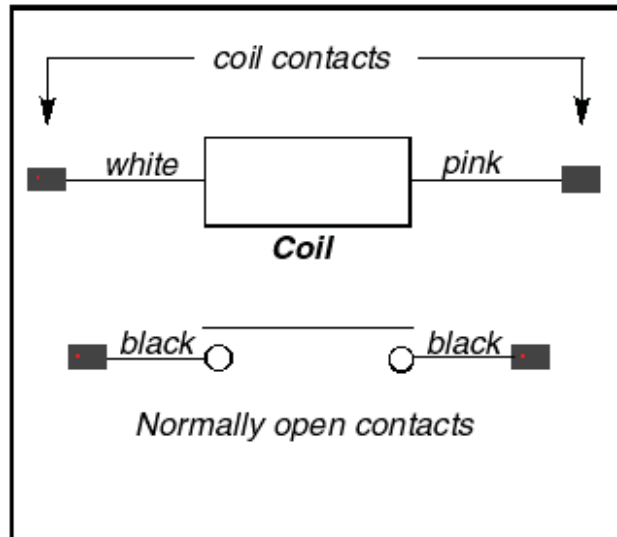


Figure 6. Relay Wiring Diagram

B. Feed wires into the ballast box through the knockout. (See Figure 7).

C. Using the Sta-Con connectors in the relay kit, make the following connections inside the ballast box:

1. Locate the pink wire coming from the temperature control and connecting to the black compressor receptacle wire. Cut this connection and connect this pink wire from the temp control to the pink wire going to the relay.
2. Connect one black wire on relay to the black wire cut from the compressor receptacle.
3. Connect the white wire coming from the relay to the white wire bundle that is connected to the white on the main power cord.
4. Connect one black wire to the black wire bundle that is connected to the outgoing terminal on the main power switch located on the ballast box.



Figure 7. Routing relay wires

► **Temperature Control Replacement (for GDM & T-Series cabinets with larger than 1/3 H.P. Compressors) with Danfoss Control. Continued**

INSTALLATION INSTRUCTIONS

STEP 6

Replace existing temperature control with new Danfoss control in repair kit: (See Figure 8).

A. Connect one pink wire from old control to double terminal #4 on new temperature control.

B. Place the plastic-coated spade clip on secondary #4 terminal.

C. Connect other pink wire from old control to terminal #3 on new Danfoss temperature control. (See Figure 8 & 9).

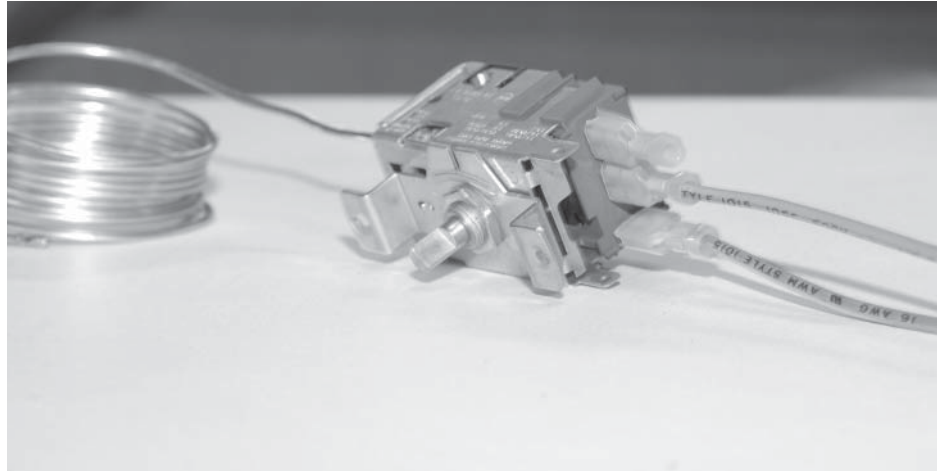


Figure 8. Temperature Control Leads

STEP 7

Anchor the Relay Shield: (See Figure 10).

A. Secure the new relay by attaching the relay shield.

B. Relay shield includes two self-tapping screws. When installing shield, place shield in position to cover relay and all exposed wiring.

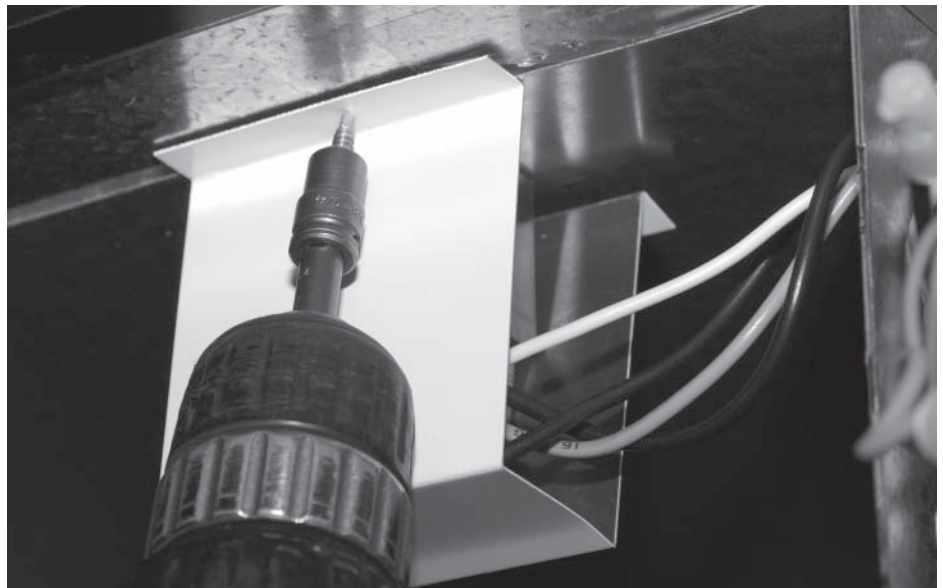


Figure 10. Anchoring Relay Shield

► **Temperature Control Replacement (for GDM & T-Series cabinets with larger than 1/3 H.P. Compressors) with Danfoss Control. Continued**

INSTALLATION INSTRUCTIONS

————— STEP 8 —————

Checking Relay Operation:

- A. Unplug the condensing unit from the compressor receptacle (located on the ballast box).
- B. 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.
- C. Plug voltmeter into compressor receptacle.
- D. Plug cabinet into power source.

Securing Ballast Box:

- A. Reinstall ballast box cover.
- B. Anchor cover with two screws.
- F. Check voltage at compressor receptacle. Voltage should equal voltage at wall outlet.
- G. If voltage is correct, turn temperature control to "0", (zero).
- H. Plug condensing unit cord back into the compressor receptacle.

————— STEP 9 —————

Replacing Louvered Grill:

- A. Reinstall grill by reversing earlier procedure.

————— STEP 10 —————

Re-connect Power Cord.

————— STEP 11 —————

Return Temp Control to normal setting, and check cabinet operation.

► **TMC-58 and TMC-58-DS Temperature Control Relay Kit**

INSTALLATION INSTRUCTIONS

**TMC-58 and TMC-58-DS
Temp Control Relay Kit
Part #883407
Installation Instructions and
Parts List**

PARTS REQUIRED FOR KIT:

- Temp control relay (1) (True Part #800182), with (1) Pink Wire (True Part #800705), (1) White Wire (True Part #800706) and (2) Black Wires (True Part #800720). All wires come with Sta-cons installed.
- Temperature control (1) (True Part #800382)
- Screws (2) (True Part #831511)
- Instructions (1)

**NOTICE:
FIRST, REMOVE POWER**

STEP 1

Remove the louvered grill (bottom rear of cabinet). Locate the electrical box, which is installed on the left hand wall of the compressor compartment, near the rear. (Compressor compartment is at the bottom of the cabinet). Remove the cover to the electrical box. (To give you more room to work, you can remove the support brace/braces, temporarily, on the rear of the compressor compartment).

STEP 2

Install temp control relay on the back wall, inside of the electrical box, using self-tapping screws (numbers on the relay need to be in the upright or readable position).

STEP 3

Locate the pink wire coming from the temperature control, which connects to the black compressor receptacle wire. Cut this wire and connect the pink wire from the temp control to the pink wire going to the relay coil.

STEP 4

Connect one black wire on relay (Normally open contact point), to the black wire cut from the compressor receptacle.

STEP 5

Connect the white wire (relay coil) coming from the relay, the white wire bundle that is connected to the white wire of the main power cord.

STEP 6

Connect one black wire (Normally open contact point) to the black wire bundle that is connected to the main power cord.

STEP 7

Replace electrical box cover, braces, and grill and connect power to cabinet.

Note: If you require additional assistance installing this kit, please contact True Technical Support at 1-(800)-325-6152.

► Danfoss Temperature Control Replacement for Refrigerators & Freezers
(For TPP, TUC, TWT, & TSSU Cabinets with larger than 1/3 H.P. compressors)
INSTALLATION INSTRUCTIONS



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 - Disconnect power to unit.

NOTE:

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

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 Housing Cover (TUC, TSSU, & TWT-72).

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 2. Removing evaporator lid.

► **Danfoss Temperature Control Replacement for Refrigerators & Freezers**
(For TPP, TUC, TWT, & TSSU Cabinets with larger than 1/3 H.P. compressors) CONTINUED
INSTALLATION INSTRUCTIONS

————— 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.

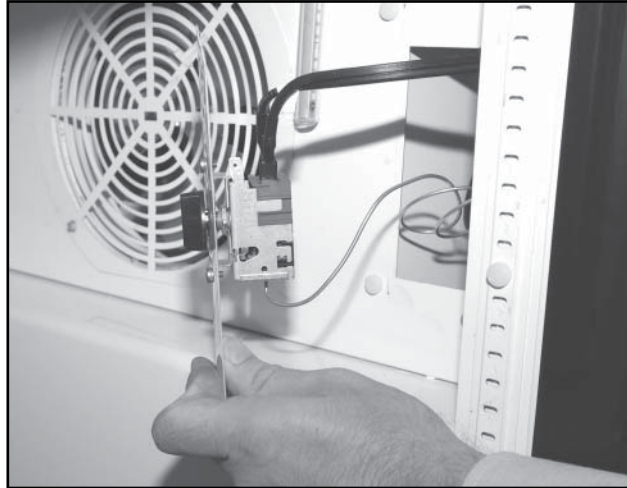


Figure 4 Removing temperature control plate (for TPP, Deep TWT, & Deep TUC cabinets).

► **Danfoss Temperature Control Replacement for Refrigerators & Freezers**
(For TPP, TUC, TWT, & TSSU Cabinets with larger than 1/3 H.P. compressors) **CONTINUED**

INSTALLATION INSTRUCTIONS

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).

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.

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

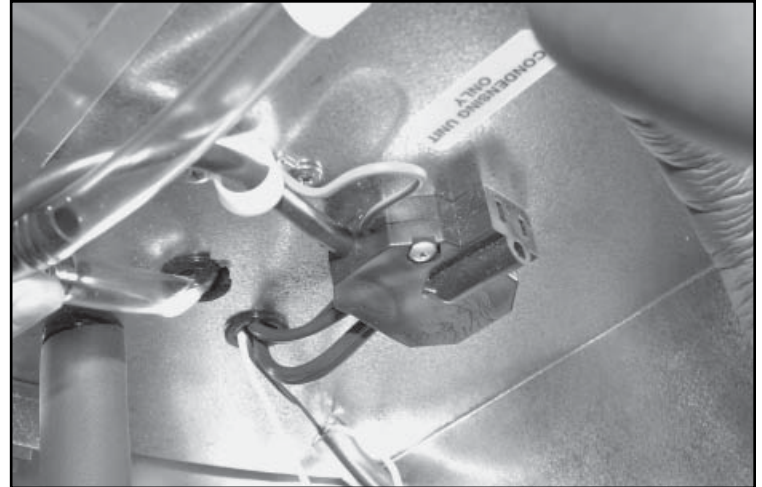


Figure 5



Figure 6

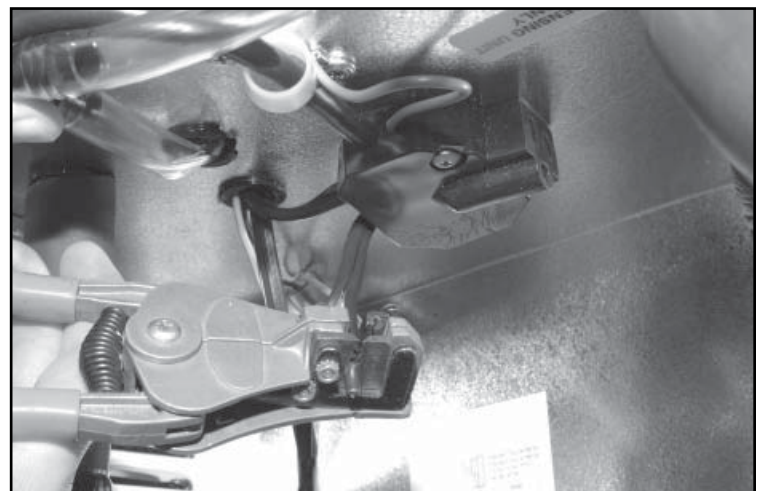


Figure 7

Danfoss Temperature Control Replacement for Refrigerators & Freezers
 (For TPP, TUC, TWT, & TSSU Cabinets with larger than 1/3 H.P. compressors) **CONTINUED**
INSTALLATION INSTRUCTIONS

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.

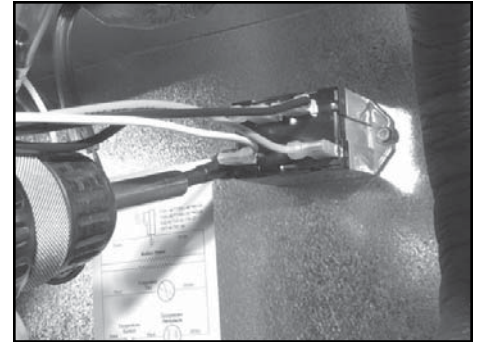


Figure 8.

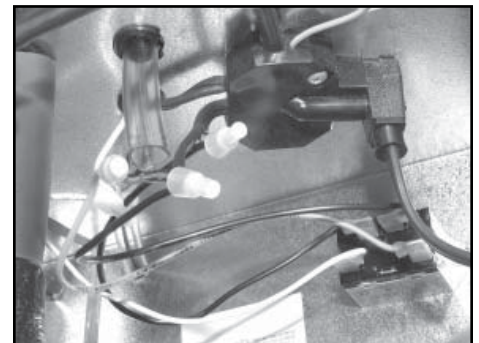


Figure 9.

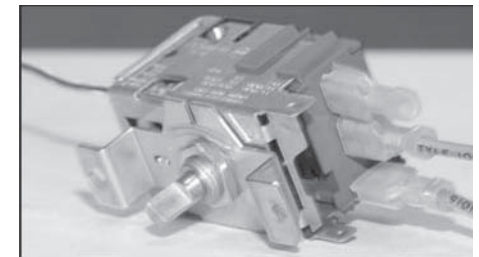


Figure 10. Danfoss temperature control wiring.

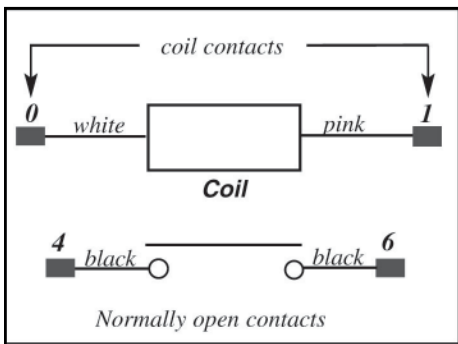


Figure 11. Relay Wiring Diagram for refrigerators.

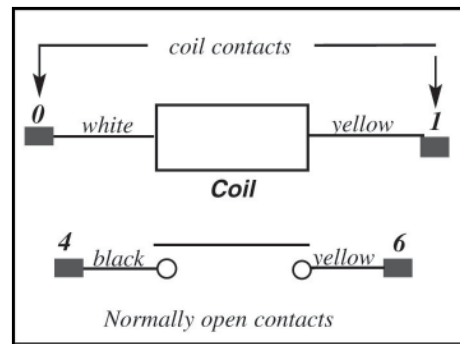


Figure 12. Relay Wiring Diagram for freezers.

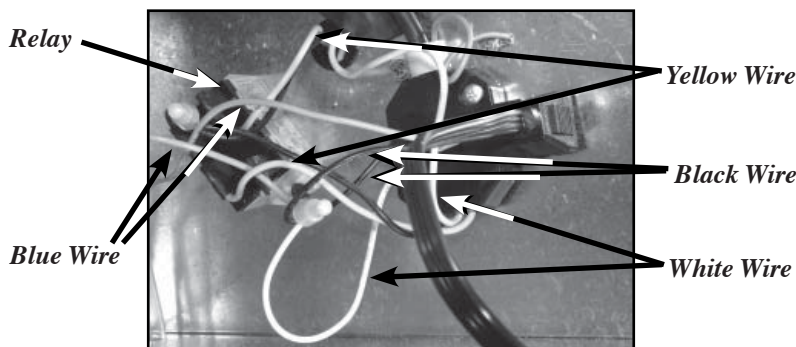


Figure 13. Freezer wiring.

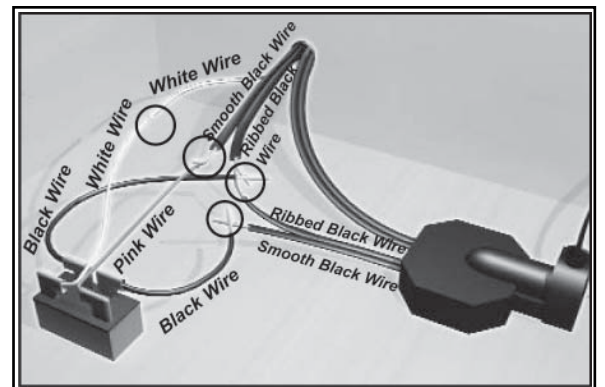


Figure 14. Relay wiring illustration for refrigerators.

► **Danfoss Temperature Control Replacement for Refrigerators & Freezers**
(For TPP, TUC, TWT, & TSSU Cabinets with larger than 1/3 H.P. compressors) CONTINUED

INSTALLATION INSTRUCTIONS**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.**

► Danfoss Temperature Control Replacement for TD-95-38 Units

INSTALLATION INSTRUCTIONS

⚡ 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)
 - Relay Shield (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 Number
883694 for the TD-95-38 models.

STEP 1

Removing Power:

A. Disconnect power to the unit and move bin dividers out of the way.

STEP 2

Removing Temperature Control Panel:

A. To remove temperature control panel use a 1/4" nut driver bit to remove 5 screws (See Figure 1). Figure 2 displays the backside of the temperature control panel.



Figure 1



Figure 2

Figure 1 & 2. Removing Temperature Control Cover (TD Models).

STEP 3

A. The temperature control can be released from the panel by using a phillips head screw driver (See Figure 3).

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.

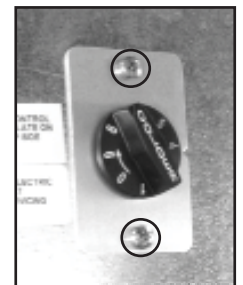


Figure 3. Removing temperature control.

► Danfoss Temperature Control Replacement for TD-95-38 Units Continued**INSTALLATION INSTRUCTIONS****STEP 4*****Installing and wiring relay:***

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).

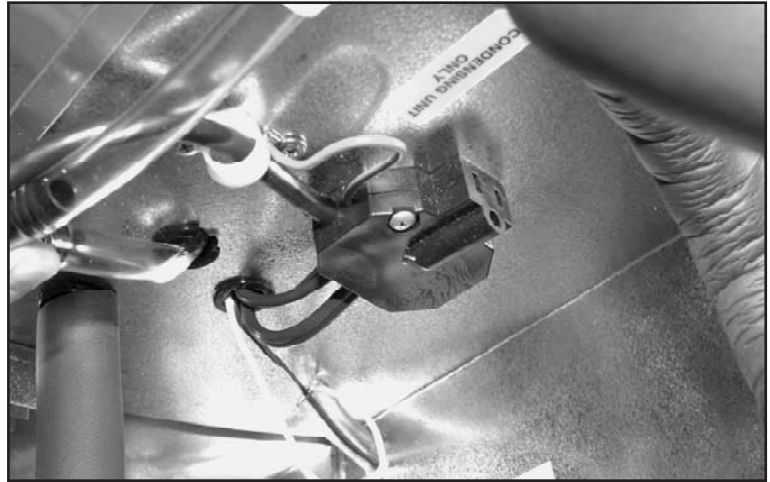


Figure 4

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.



Figure 5

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 5. This pair is located on the side of the receptacle opposite the mounting screw location.

D. Strip each wire approximately 1/2". (See figure 6).



Figure 6

► Danfoss Temperature Control Replacement for TD-95-38 Units Continued ...

INSTALLATION INSTRUCTIONS

E. Mount relay to back wall using provided self tapping screws. (See figure 7).

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 8 & 11 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.

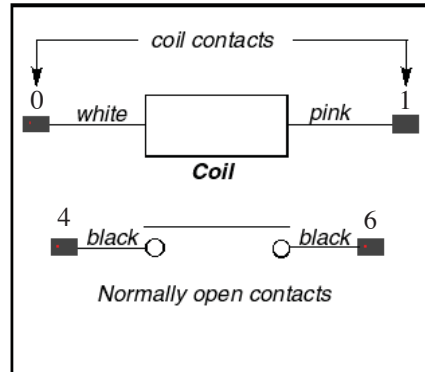


Figure 10. Relay wiring diagram for refrigerators.

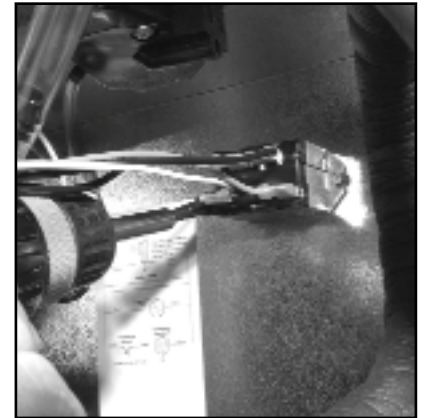


Figure 7

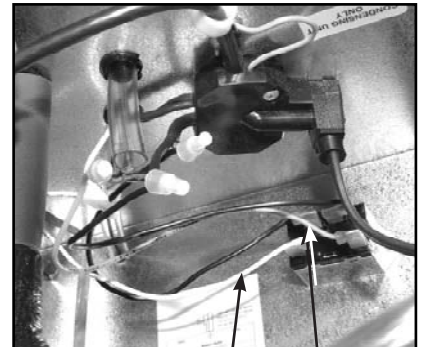


Figure 8

White Wire Pink Wire

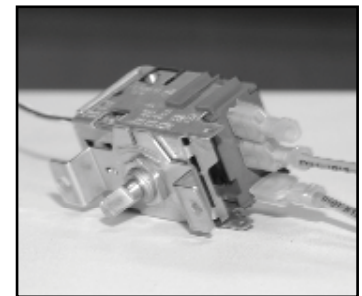


Figure 9

Danfoss temperature control wiring

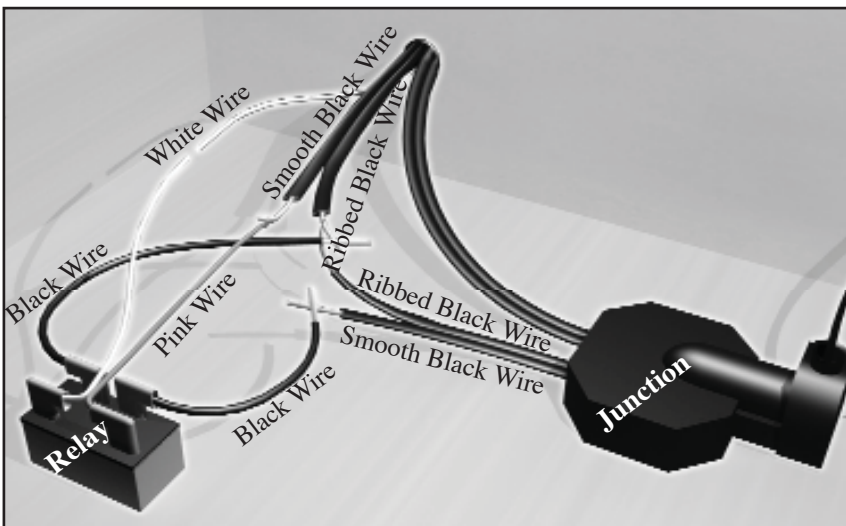


Figure 11. Relay wiring illustration for refrigerators.

► Danfoss Temperature Control Replacement for TD-95-38 Units Continued

INSTALLATION INSTRUCTIONS

STEP 5

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 9).

STEP 6

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 7

Reinstall rear grill and all other components.

STEP 8

Re-connect Power Cord.

STEP 9

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

Danfoss Temperature Control Replacement for TBB-3G, TBB-4PT, TBB-GAL-3G, TDD-3G, TDD-4G Models.

INSTALLATION INSTRUCTIONS

STEP 2

Removing temperature control housing (for TDD models only):

A. To remove temperature control housing use a 1/4" nut driver bit to back-out screws. A top cover will need to be removed before the cover containing the temperature control (See Figure 1a & 1b). Figure 2 displays the backside of the temperature control panel.



Figure 1a



Figure 1b



Figure 2

Figure 1. Removing Temperature Control Cover (TDD Models).

STEP 3

A. The temperature control can be released from the panel by using a phillips head screw driver (See Figure 3).

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.

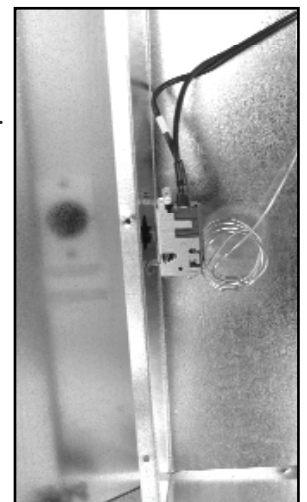


Figure 3.

STEP 1

Removing Power:

A. Disconnect power to the unit.

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)
- Relay Shield (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 Number

883772 for the TBB-3G, TBB-4PT, TBB-GAL-3G, TDD-3G, TDD-4G models

► Danfoss Temperature Control Replacement for TBB-3G, TBB-4PT, TBB-GAL-3G, TDD-3G, TDD-4G Models. Continued**INSTALLATION INSTRUCTIONS****STEP 4*****Installing and wiring relay:***

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 4

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.



Figure 5

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 5. 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 6).

► Danfoss Temperature Control Replacement for TBB-3G, TBB-4PT, TBB-GAL-3G, TDD-3G, TDD-4G Models. Continued

INSTALLATION INSTRUCTIONS

E. Mount relay to back wall using provided self tapping screws. (See figure 7).

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 8 & 11 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.

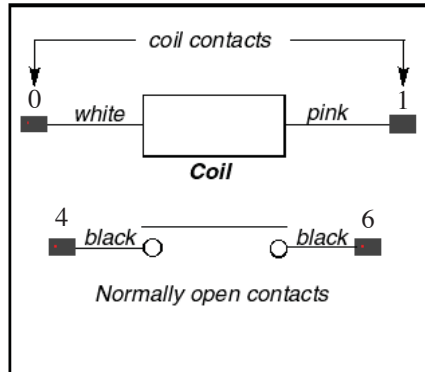


Figure 10. Relay wiring diagram for refrigerators.

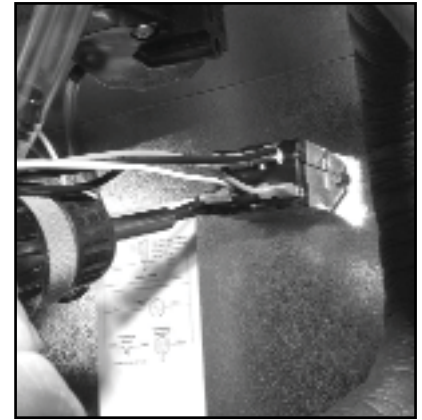


Figure 7

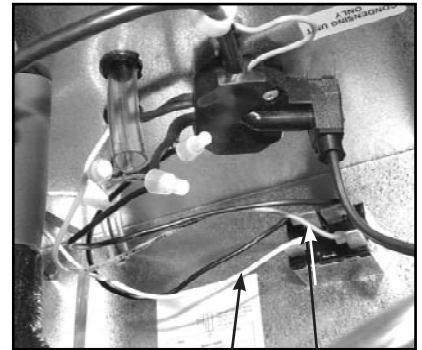


Figure 8

White Wire Pink Wire

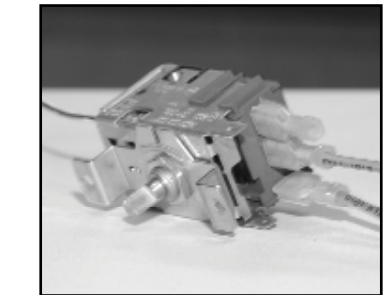


Figure 9

Danfoss temperature control wiring

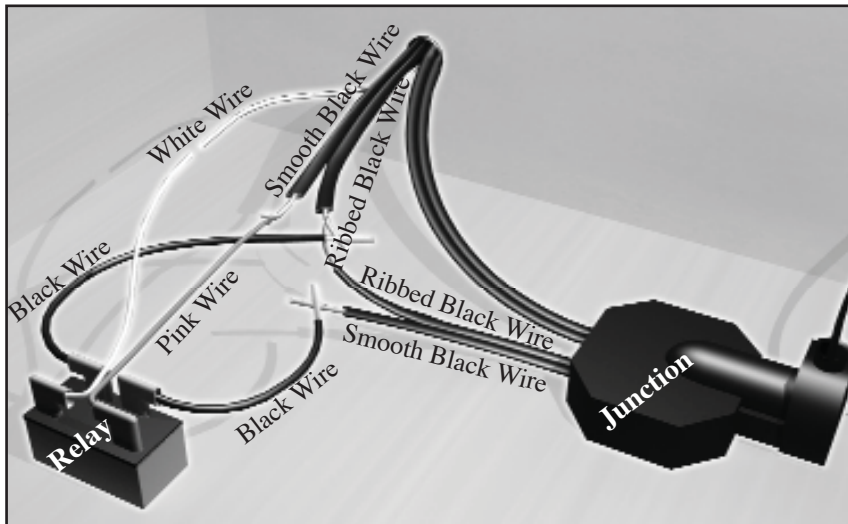


Figure 11. Relay wiring illustration for refrigerators.

► Danfoss Temperature Control Replacement for TBB-3G, TBB-4PT, TBB-GAL-3G, TDD-3G, TDD-4G Models. Continued

INSTALLATION INSTRUCTIONS

STEP 5

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 9).

STEP 6

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 7

Reinstall rear grill and all other components.

STEP 8

Re-connect Power Cord.

STEP 9

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

► Danfoss Temperature Control Replacement for TRCB-110 Units.

INSTALLATION INSTRUCTIONS

⚡ 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)
- Relay Shield (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 Number
883773 for the TRCB-110 model

STEP 2

Removing temperature control (for TRCB-110 only):

A. After locating the temperature control back-out the two screws holding it in place. (See Figure 1). Figure 2 displays the backside of the temperature control.



Figure 1



Figure 2

Figure 1. Removing Temperature Control.

STEP 3

A. The temperature control can be released from the panel by using a phillips head screw driver (See Figure 3).

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.

STEP 1

Removing Power:

A. Disconnect power to the unit. The temperature control is located behind the top left drawer. Remove this drawer.

► **Danfoss Temperature Control Replacement for TRCB-110 Units. Continued**
INSTALLATION INSTRUCTIONS

STEP 4

Installing and wiring relay:

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).



Removal of Side Grill

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 4. This pair is located on the side of the receptacle opposite the mounting screw location.

D. Strip each wire approximately 1/2". (See figure 5).



**Placement of Relay
(above compressor)**

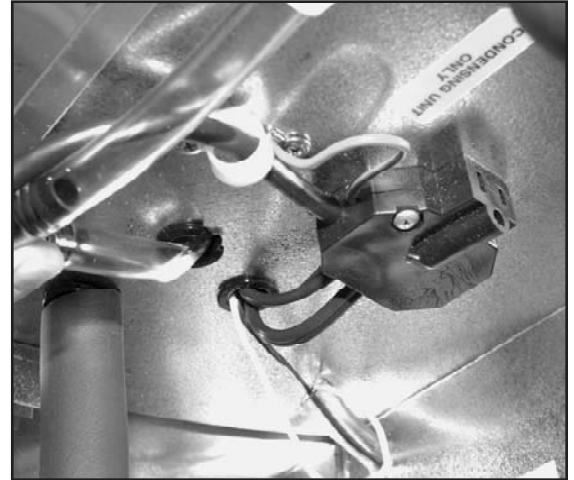


Figure 3



Figure 4



Figure 5

► **Danfoss Temperature Control Replacement for TRCB-110 Units. Continued**

INSTALLATION INSTRUCTIONS

E. Mount relay to back wall using provided self tapping screws.
 (See figure 6).

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 7 & 10 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.

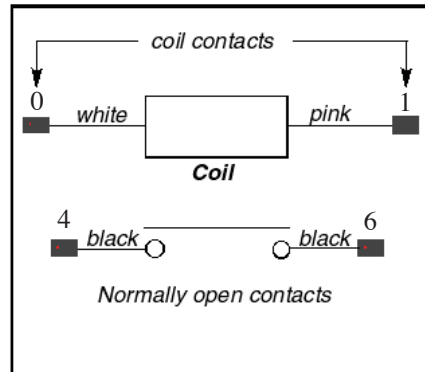


Figure 9. Relay wiring diagram for refrigerators.

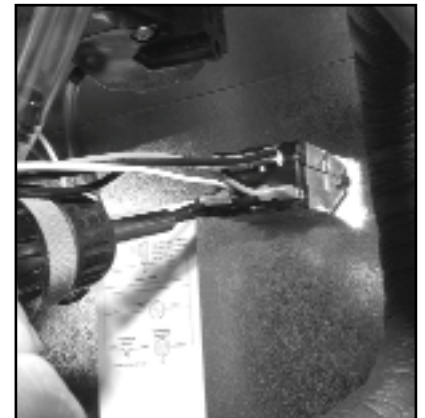


Figure 6

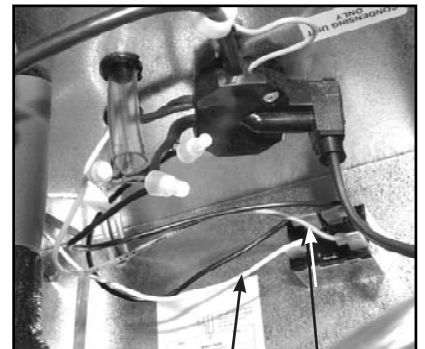


Figure 7

White Wire Pink Wire

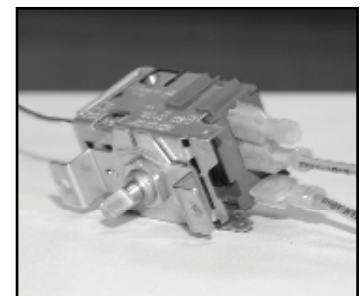


Figure 8

Danfoss temperature control wiring

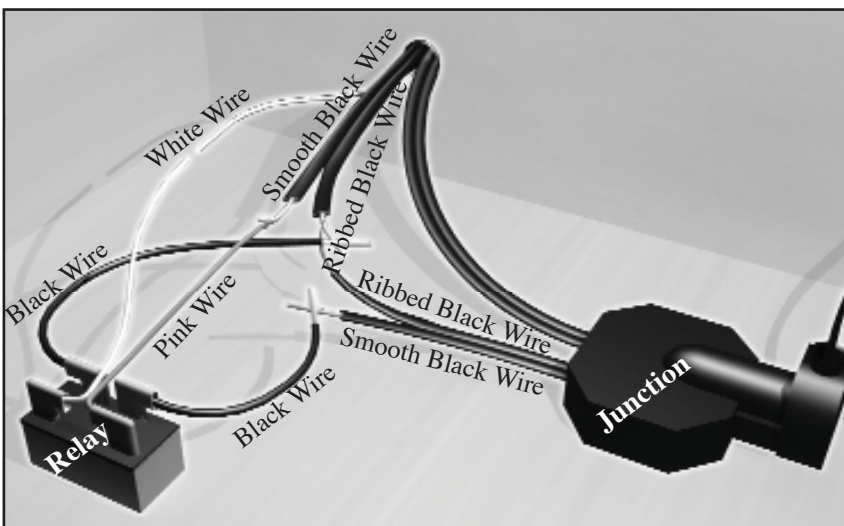


Figure 10. Relay wiring illustration for refrigerators.

► **Danfoss Temperature Control Replacement for TRCB-110 Units. Continued**

INSTALLATION INSTRUCTIONS

————— **STEP 5** —————

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 8).

————— **STEP 6** —————

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 7** —————

Reinstall rear grill and all other components.

————— **STEP 8** —————

Re-connect Power Cord.

————— **STEP 9** —————

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

▶ TDBD Temperature Control Relay Retrofit
RETROFIT INSTRUCTIONS

STEP 1

Disconnect the electrical power to the unit.

connector to the black wire from the receptacle.

STEP 2

Remove the louvered grill on the backside of the unit or the strait side.

STEP 9

Now you will need to pull a new wire from the main power lines black wire you will need to splice into this with the other black wires already attached to this line and hook the new wire to the #4 terminal on the new relay.

STEP 3

Remove the electrical box cover facing the outside wall. (See image 1).

STEP 10

You also need to pull a new wire from the main neutral wire bundle over to the #1 terminal on the new relay.

STEP 4

Also remove the three 1/4" hex head screws holding the panel for the condensing unit receptacle.

STEP 11

Now when the new temperature control closes it will send power to the coil on the relay and close the contacts on the relay sending power to the condensing unit.

STEP 5

Now mount the new relay close to the condensing unit receptacle.

NOTE: Check clearances before mounting.

STEP 6

Looking at the condensing unit receptacle you will see a pink wire attached to its black wire remove the pink wire.

STEP 7

Place a push on connector on the pink wire and attach it to the new relays #0 terminal.

STEP 8

The black wire on the receptacle will now get its power from the new relays #6 terminal by adding a push on

NOTES



LIGHTING

► **Electromagnetic Rapid Start, Instant Start Electronic, and Preheat Fluorescent Light Circuits**

INSTALLATION INSTRUCTIONS

WARNING:

A qualified service technician must be used to preform these tests using extreme care because of the risk of electrocution if tests are not preformed correctly.

There are different types of lighting systems being used in True cabinets, so there will be different types of troubleshooting techniques that need to be used. The one common aspect in all of the lighting circuits is that the bulbs being used must be the same as the bulbs that were originally installed in the cabinet.

To test ballast determine which lighting system you are working on and follow steps below.

Electromagnetic rapid start fluorescent light circuit – There are three different voltage tests.

Incoming or ballast supply voltage- Test at black and white wires going to ballast. You should read approximately 118 volts.

Filament voltage- Tested between red to red wires or blue to blue wires. Depending on which ballast you have you should get a reading between 2 and 5 volts with the bulbs out. Please call technical service with the ballast number to get the correct voltage reading.

High voltage- Test between either red wire and either blue wire. Again depending on which ballast you are checking the voltage can range between 205 and 310 volts with the bulbs out. Please call technical service with the ballast number for the correct voltage reading.

Instant start electronic fluorescent light circuit - (Note: A high impedance meter is required for testing this ballast.). There are two different voltages to test.

Incoming or ballast supply voltage - Test at the black and white wires going to the ballast. You should read approximately 118 volts.

High voltage - Test between the red wires and anyone of the blue wires with the bulbs out. You should read approximately 600 volts (+ or - 10%).

Preheat fluorescent light circuit – Test voltage between pins on each end of the lamp. You should get approximately 118 volts from one pin on one end to one pin on the other. You can also check for continuity between the other pins on either end to the starter base. (To do this test make sure there is no voltage to the circuit and remove the starter from the base.) If both are ok change the bulb first and then change the starter.

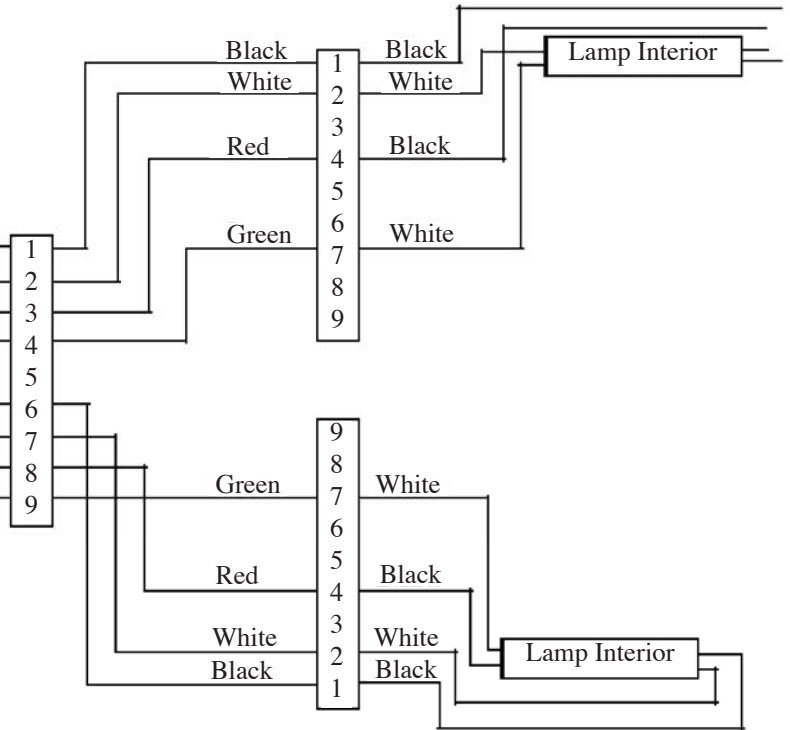
FOR ANY INFORMATION OR HELP DIAGNOSING BALLAST PROBLEMS PLEASE CALL.

TRUE MANUFACTURING TECHNICAL SERVICE
1-800-325-6152

GDM & T-Series Coolers IDL Connector
INSTALLATION INSTRUCTIONS

2 Door IDL Cooler Wiring
 and Y cord on 3 door cabinet

- Blue #1 on R.S. or 24K Ballast — 1
- Yellow #1 on R.S. or Red on 24K ballast — 2
- Blue #2 on R.S. or Blue #1 on 24K ballast — 3
- Yellow #2 on R.S. or Red on 24K ballast — 4
- Red #1 on R.S. or Blue #2 on 24K ballast — 6
- Yellow #2 on R.S. or Red on 24K ballast — 7
- Red #2 on R.S. or Blue #2 on 24K ballast — 8
- Yellow #1 on R.S. or Red on 24K ballast — 9

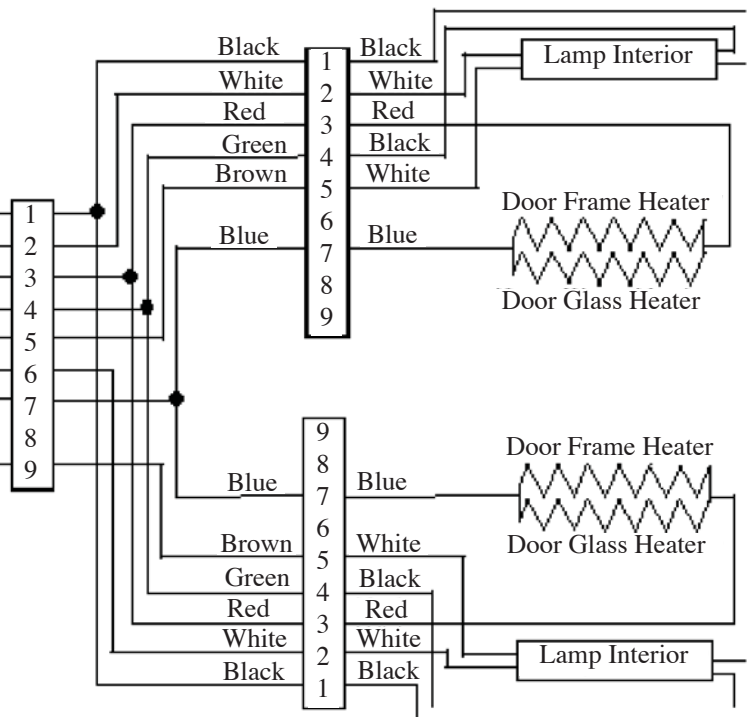


- Pin 1 - Pigtail black to door black (upper lamp holder)
- Pin 2 - Pigtail white to door white (lower lamp holder)
- Pin 3 - Pigtail red to door red (heaters)
- Pin 4 - Pigtail green to door black (upper lamp holder)
- Pin 5 - Pigtail brown to door white (lower lamp holder)
- Pin 7 - Pigtail blue to door blue (heaters)

- '1 '4 '7 Female plug for door cord.
- '2 '5 '8
- '3 +6 '9

2 Door IDL Freezer Wiring
 and Y cord on 3 door cabinet

- Yellow on VHO or Red on 24K ballast — 1
- Blue #1 on VHO or 24K ballast — 2
- Black from Org/Blk in harness — 3
- Yellow on VHO or Red on 24K ballast — 4
- Blue #2 on VHO or Blue #1 from 24K ballast — 5
- Red #2 on VHO or Blue #2 on 24K ballast — 6
- White from neutral bundle — 7
- Red #2 on VHO or Blue #2 on 24K ballast — 9



► IDL Lamp Replacement

INSTALLATION INSTRUCTIONS

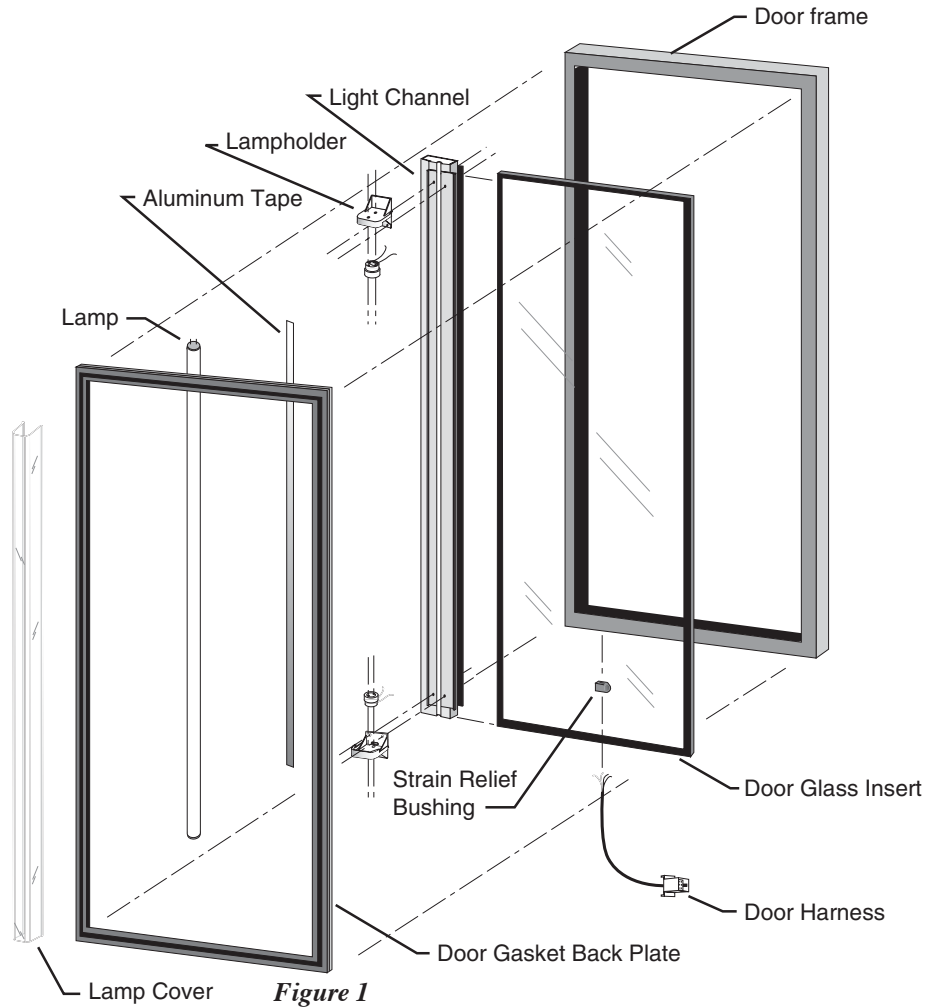


Figure 1

STEP 1
Unplug the cooler.

STEP 2
Remove lamp cover by squeezing it in the center, twist and pull outward.

STEP 3
The lamp can then be removed by pushing it up and then out. This will release the lamp from the lower lamp holder. At this point the lamp can be totally removed.

STEP 4
Install the new lamp by placing the lamp terminals in the upper lamp holder first.

STEP 5
Push up on the bulb to recess the upper holder.

STEP 6
With the upward pressure applied, line up the terminal on the lower end of the bulb with the lamp holder. Once aligned the lamp will snap into place.

STEP 7
Pull on bulb to make sure it is seated properly.

STEP 8
Replace lamp cover by squeezing and snapping into retainer on lamp assembly.

STEP 9
Plug in the cabinet.

STEP 10
If lamp does not illuminate another problem may exist.

► IDL Door-Wire Harness Replacement
INSTALLATION INSTRUCTIONS

REQUIRED TOOLS:

- Phillips Head Screwdriver
- Drill
- 3/64" Drill Bit or Cone Bit to make 5/8" hole.
- Wire Strippers
- Silicone

Step 1

Unplug the cooler. Remove the louvered grill, and the "P" clip holding the door cord to the cabinet. (See figure 1).

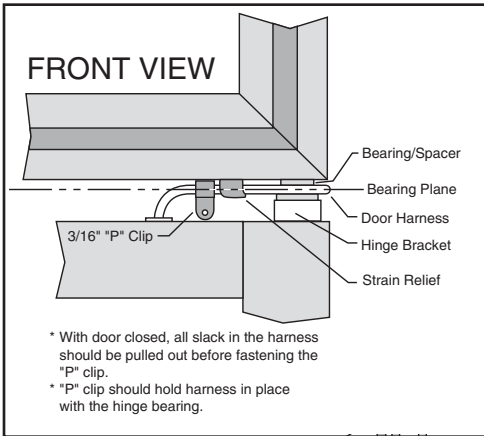


Figure 1.

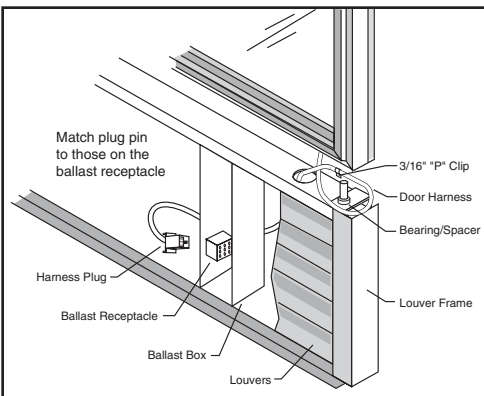


Figure 2.

Step 2

Remove the lamp shield, and the lamp from the door. Then remove the door gasket from the lower half of the door and fold it over the top of the door. (See figure 3).



Figure 3.

Step 3

Remove the Phillips screws holding the lower black plastic gasket base in place. (See figure 4).



Figure 4.

Step 4

Remove the lower lamp holder from the filler piece. (See figure 5).



Figure 5.

Step 5

Using a channel locks or pliers grab and pull down on the plastic strain relief bushing in the underside of the doorframe. Remove the two halves of the bushing from the cord. Cut the Molex connector off of the end of the

cord. This should allow you to push the wires up into the doorframe from the under side of the door. The reason for this will be that you are going to be pulling the old door cord through the doorframe from the inside. (See figure 6).



Figure 6.

Step 6

Reach inside the corner of the door and pull the wires from the old door cord through from the inside. You may have to remove some of the foam insulation in this area. A straight bladed screwdriver will work fine to accomplish this. Using a piece of solder with a small hook at the end of it will also assist you in pulling out all wires. (See figure 7).

NOTE:

Should you not be able to pull all the wire through you may have to then move the glass to change out the door cord. See Glass Insert Instructions on how to perform this procedure.



Figure 7.

► IDL Door - Wire Harness Replacement Continued**INSTALLATION INSTRUCTIONS**

figure 8

Step 7

Using a 3/8" drill bit or a Cone type bit, in large the hole that the strain relief bushing fits into.

Step 8

Feed the wires from the new door cord in through the door so that you can connect all the wires. (See figure 9).

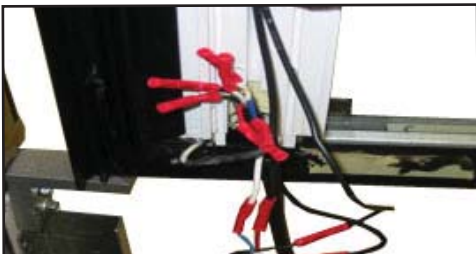


figure 9

Step 9

Connect all the wires accordingly. Gently pull the wire bundle down from under the door. This should aide in tucking the wires into place. You may need to assist in this.

Step 10

Install the new strain relief bushing around the wires and secure it into the underside of the door frame. A small needle nose vise grips may aide in this installation.

Step 11

Place some silicone in the opening around the wires where you might have removed some of the foam insulation. (See figure 10).



figure 10

Step 12

Reinstall the lower black gasket backing plate.

Step 13

Reinstall the lower lamp holder. (See figure 11).



figure 11

Step 14

Reinstall the gasket.

Step 15

Secure the "P" clip (see figure 1) back in place and plug in the Molex connection into the ballast box.

Step 16

Plug the cabinet back in and check the operation of the light. If the light is working fine, you should reset the time clock (freezers only) and then place the lower louvered grill back on the front of the cabinet. If not, check all the electrical connections and for voltage at the lamp holders

IF TECHNICAL ASSISTANCE IS NEEDED, PLEASE FEEL FREE TO CONTACT US AT 800-325-6152.

► TBB Light Receptacle and Door Cord Replacement

INSTALLATION INSTRUCTIONS

REQUIRED TOOLS:

- Phillips Head Screwdriver
- Drill
- 39/64" Drill Bit or Cone Bit to make 5/8" hole.
- Wire Strippers
- Yellow Wire Nuts
- 1/4" Nut Driver or Socket
- Silicone

Step 1
Unplug cabinet from outlet.

Step 2
Pull the cabinet forward, so you can gain better access to the ballast located behind the condensing unit.

Step 3
Remove the louvered grill over the condensing unit in the lower left hand corner.



Image 1

Step 4
Remove the two screws that hold the condensing unit to the cabinet as well as the 1/4" hex head screw that is on left side lower rail of the cabinet. This will allow you to pull the condensing unit forward.

NOTE: Be careful when pulling the condensing unit forward not to bend any of the refrigeration lines.
(See image 2).



Image 2

Step 5
With the condensing unit pulled forward, you should be able to see the ballast mounted on the right side wall as well as the clear plastic hoses that the wires run through for the receptacles. (See image 3). The hoses are down near the base of the cabinet. Do not disconnect any of the wires. (See image 4).



Image 3



Image 4

Step 6
You may need to remove the door from the cabinet to gain easier access to the receptacle on the rail of the cabinet. To do this, be sure that the door cord is removed from the cabinet. Remove the lower bolts on the bottom hinge and the door will then come off. Set the door to the side where it will not get broken. (See image 5).



Image 5

Step 7
Now you can remove the receptacle. To do this pry the receptacle out of the lower rail. (See images 6-7).



Image 6



Image 7

Step 8
Cut the receptacle from the wires and attach the leads from the new receptacle. You are going to use the existing wires to pull through new wires. Before doing this you should cut off the two green wires, they are not needed.

NOTE: If for some reason you can not do this. You can use a fish tape and feed the tape in from the backside of the cabinet coming forward. Then attach your wires from the front and pull them through to the back of the cabinet.
(See images 8-9).

► TBB Light Receptacle and Door Cord Replacement Continued**INSTALLATION INSTRUCTIONS**

Image 8

Should you have to replace the male door cord, please follow these additional steps.

Step 1

If you have not done so, please remove the door from the cabinet. This will make it easier to replace the door cord.



Image 1

Step 2

Remove the gasket from the lower rack and drape it over the top of the door.



Image 2

Step 3

Remove the Phillips screws holding the lamp holder in the lamp holder base.



Image 3

Step 10

You should now be able to plug in the male plug from the door and check the operation of the light. If the light is working fine you can now slide the condensing unit back in place, being sure to support the refrigeration lines, secure the condensing unit and place louvered grill back in place.

Step 4

Remove the lower black plastic gasket base by removing the Phillips screws in the base. (See image 4).



Image 4

Step 5

Using a channel locks or pliers grab and pull down on the plastic strain relief bushing in the underside of the doorframe. Remove the two halves of the bushing from the cord. Cut the Molex connector off of the end of the cord. This should allow you to push the wires up into the doorframe from the under side of the door. The reason for this will be that you are going to be pulling the old door cord through the doorframe from the inside. (See image 5).



Image 5

Step 6

Reach inside the corner of the door and pull wires from the old door cord through from the inside. You may have to remove some of the foam insulation in this area. A straight bladed screwdriver will work fine to accomplish this. Using a piece of solder with a small hook at the end of it will also assist you in pulling out all the wires.



Image 9

Step 9

Attach the corresponding wires from the receptacle to the ballast. (See image 10).



Image 10

► **Should you have to replace the male door cord please follow these steps Continued ...**

INSTALLATION INSTRUCTIONS

NOTE: Should you not be able to pull all the wires through you may have to then move the glass to change out the door cord. See Glass Insert Instructions on how to perform this procedure.

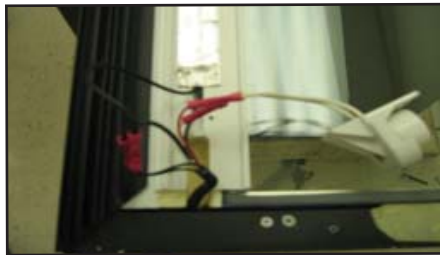


Image 6

Step 7

Using a 39/64" drill bit or a Cone type bit, enlarge the hole that the strain relief bushing fits into.

Step 8

Feed the wires from the new door cord in through the door so that you can connect all the wires.



Image 7

Step 9

Connect all the wires accordingly. Gently pull the wire bundle down from under the door. This should aide in tucking the wires into place. You may need to assist in this.

Step 10

Install the new strain relief bushing around the wires and secure it into the underside of the door frame. A small needle nose vise grips may aide in this installation.

Step 11

Place some silicone in the opening around the wires where you might have removed some of the foam insulation.



Image 8

Step 12

Reinstall the lower black gasket backing plate from Step 4.

Step 13

Reinstall the lower lamp holder from Step 3.



Image 9

Step 14

Reinstall the gasket from Step 2.



Image 10

Step 15

Install the lamp and lamp shield on the door. Plug the door into the receptacle to be sure that the light does in fact work correctly. If it does reinstall the door back on the cabinet. If the light does not work check the lamp holders for voltage and proceed from there.

IF TECHNICAL ASSISTANCE IS NEEDED, PLEASE FEEL FREE TO CONTACT US AT 800-325-6152.

NOTES

PREVENTATIVE MAINTENANCE

Please read these instructions. Failure to follow maintenance guidelines may cause a **non-warranted** cabinet repair service.

▶ *Monthly, Quarterly, and Yearly*

CABINET MAINTENANCE SCHEDULE

CABINET MAINTENANCE SCHEDULE

MONTHLY

1. Check product temperature.
2. Brush off condenser coil if needed.
3. Inspect lamps and lamp holder connections.

QUARTERLY

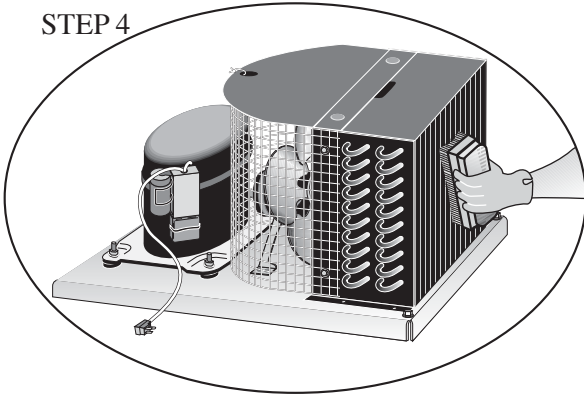
1. Check physical condition of condenser coil and evaporator coil (straighten fins if necessary).
2. Blow out condenser coil with compressed air if needed.
3. Brush off evaporator coil if needed.
4. Check physical condition of gaskets and also make sure they are sealing correctly.

YEARLY

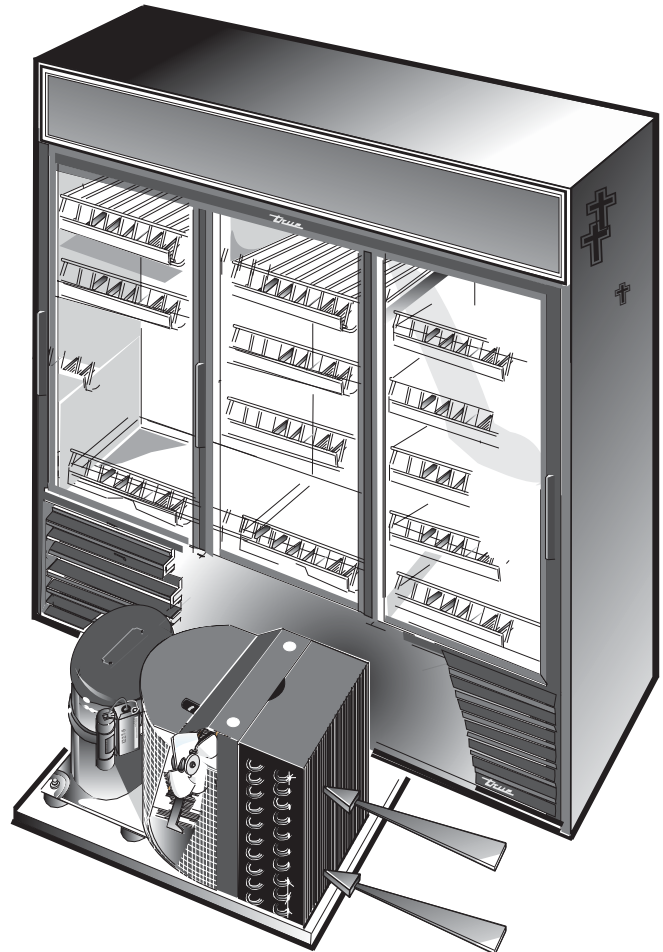
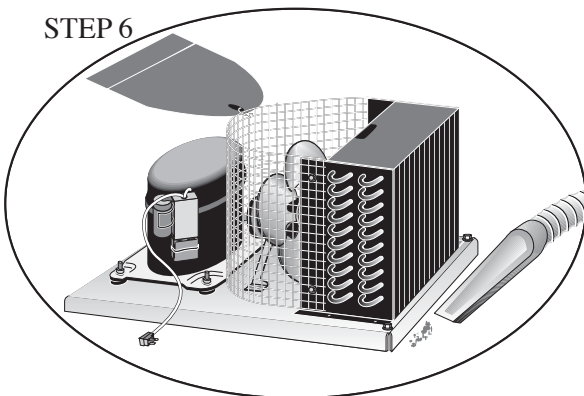
1. Check operation of all moving parts (fan motors, doors, & IDL door cords)
2. Check all electrical connections, make sure they are all tight and crimps in good condition.
3. Check rear condenser coil screen (clean if necessary).

► Condenser Cleaning**GENERAL MAINTENANCE**

STEP 4



STEP 6

**REQUIRED TOOLS**

- Phillips Screwdriver
- Stiff Bristle Brush
- Adjustable Wrench

STEP 1

Disconnect power to unit.

STEP 2

Take off lower grill assembly by removing four (4) corner screws.

STEP 3

Remove bolts anchoring compressor assembly to frame rails and carefully slide out. (tube connections are flexible)

STEP 4

Clean off accumulated dirt from condensing coil with a stiff bristle brush.

STEP 5

Lift cardboard cover above fan at plastic plugs and carefully clean condenser coil and fan blades.

STEP 6

After brushing condenser coil vacuum dirt from coil, and interior floor.

STEP 7

Replace cardboard cover. Carefully slide compressor assembly back into position and replace bolts. When reinstalling condensing unit be careful not to crimp or damage the tubing between the condensing unit and the cabinet.

STEP 8

Reinstall louver assembly onto unit with appropriate fastener and clips. Tighten all screws.

STEP 9

Connect unit to power and check to see if compressor is running.

NOTES

***EQUIPMENT
CARE AND
CLEANING***

Cleaning Your Cabinet

Cleaning Exterior, Vinyl Clad, Galvanized, and Aluminum interior of cabinet:

True recommends the use of soap and warm water to clean these parts of the cabinet.

Warning: Use of abrasive or chlorine based cleaners will damage your cabinet.

NOTE:

The use of stainless steel cleaners or other such solvents is not recommended on plastic parts. Warm soap and water will suffice.



▶ **NAFEM - North American Association of Food Equipment Manufacturers**

STAINLESS STEEL EQUIPMENT CARE AND CLEANING

STAINLESS STEEL EQUIPMENT CARE AND CLEANING

NAFEM

North American Association of Food
Equipment Manufacturers

So, what does all this mean?

At this very moment you're gritting your teeth and saying,

"Well, what am I supposed to do now? The only way to get that crusted lasagna off my stainless steel is to use some kind of scouring pad, and I certainly need to use a cleaner, and the water in this town is hard enough to cut diamonds."

Don't Despair!

Here are a few steps that can help prevent stainless steel rust.

1. Use the proper tools

When cleaning your stainless steel products, take care to use non-abrasive tools. Soft cloths and plastic scouring pads will not harm the steel's passive layer. Stainless steel pads can also be used but the scrubbing motion must be in the direction of the manufacturer's polishing marks. (Step 2 tells you how to find the polishing marks).

2. Clean with the polish lines

Some stainless steels come with visible polishing lines or "grain." When visible lines are present, you should always scrub in a motion that is parallel to them. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

3. Use alkaline, alkaline chlorinated or non-chloride containing cleaners

While many traditional cleaners are loaded with chlorides, the industry is providing an ever increasing choice of non-chloride cleaners. If you are not sure of your cleaner's chloride content contact your cleaner's supplier. If they tell you that your present cleaner contains chlorides, ask if they have an

alternative. They probably will. Also, avoid cleaners containing quaternary salts as they also can attack stainless steel and cause pitting and rusting.

4. Treat your water

Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. Salts in a properly maintained water softener are your friend. If you are not sure of the proper water treatment, call a treatment specialist.

5. Keep your food equipment clean

Use alkaline, alkaline chlorinated or non-chloride cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in your stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides has a similar effect.

DON'T USE

Steel Pads
Wire Brushes
Scrapper

▶ **NAFEM - North American Association of Food Equipment Manufacturers**

STAINLESS STEEL EQUIPMENT CARE AND CLEANING

6. Rinse, Rinse, Rinse

If chlorinated cleaners are used you must rinse, rinse, rinse and wipe dry immediately. The sooner you wipe off standing water, especially when it contains cleaning agents, the better. After wiping the equipment down, allow it to air dry for the oxygen helps maintain the stainless steels' passivity film.

7. Never use hydrochloric acid (muriatic acid) on stainless steel.

8. Regularly restore / passivate stainless steel.

Recommended cleaners for specific situations

Job	Cleaning Agent	Comments
Routine cleaning	Soap, ammonia, detergent Medallion	Apply with cloth or sponge
Fingerprints & smears	Arcal 20, Lac-O-Nu Ecoshine	Provides barrier film
Stubborn stains & discoloration	Cameo, Talc, Zud First Impression	Rub in direction of polish lines
Grease & fatty acids, blood, burnt-on foods	Easy-off, DeGrease It Oven Aid	Excellent removal on all finishes
Grease & oil	Any good commercial detergent	Apply with sponge or cloth
Restoration/ Passivation	Benefit, Super Sheen	

What does Corroded Stainless Steel Look Like?

Passive Film Breakdown

If the passive film of your stainless steel has been broken, your equipment will begin the long walk down the dark road of corrosion. At it's end; rust.

The first signs are on the microscopic level. If you were to look at them under a microscope or through a magnifying glass, you would see small pits and cracks staring back at you. Given time, these pits and cracks will grow and deepen while all the time exuding unsightly, red-orange rust.

More severe and visible cracking can also take place.

Contrary to popular belief, Stainless Steels ARE susceptible to rusting

Corrosion on metals is everywhere. We recognize it quickly on iron and steel as unsightly yellow / orange rust. Such metals are called "active" because they actively corrode in the natural environment.

Stainless steels are passive metals because they contain other metals, like chromium and nickel. 400 series stainless steels contain chromium while 300 series contain both chromium and nickel.

Metals are crystalline solids made up in atom arrangements like tinker toys. With 12-30% chromium, an invisible passive film covers the steels surface acting as a shield against corrosion. The metal becomes "passive" toward corrosion.

As long as the film is intact; not broken or contaminated, the metal is passive and stainless.

Enemies of Stainless Steel

There are three basic things which can break down your stainless steels passivity layer and allow corrosion to rear its ugly head.

1. Mechanical abrasion

2. Deposits & Water

3. Chlorides

Mechanical abrasion means those things that will scratch the surface. Steel pads, wire brushes, and scraper are prime examples.

Water comes out of our tap in varying degrees of hardness. Depending on what part of the country you live in, you may have hard or soft water. Hard water may leave spots. Also, when heated, hard water leaves deposits behind that if left to sit, will break down the passive layer and rust your stainless steel. Other deposits from food preparation and service must be properly removed.

Chlorides are found nearly everywhere. They are in water, food, and table salt. One of the worst perpetrator of chlorides can come from household and industrial cleaners.

Review

1. Stainless steels do rust when: Passivity (film-shield) breaks down by scrapes or scratches by deposits and chlorides.
2. Stainless steel rust starts with pits and cracks.
3. Use the proper tools. Do not use steel pads, wire brushes or scraper. (Step 1)
4. Use non-chlorinated cleaners at recommended concentrations. Use only chloride free cleaners. (Step 3)
5. Soften your water. Know the hardness of your water. Use filters and softeners whenever possible. (Step 4)
6. Wipe off cleaning agent(s) and standing water ASAP. Prolonged contact will cause eventual problems. (Step 6)

To learn more about chloride-stress corrosion and how to prevent it, contact the manufacturer of your equipment, your cleaning materials supplier or NAFEM.

NAFEM
North American Association of Food
Equipment Manufacturers
401 N. Michigan Avenue
Chicago, Illinois 60611-4267
(312.644.6610) E-mail: NAFEM@hq_sba.com

Developed for NAFEM by
an independent testing laboratory,
Packer Engineering of Naperville, Illinois

NOTES

WARRANTY

Please familiarize yourself with the warranty paper work sent with your unit. If warranty service is needed please provide the service company with the warranty claim form. Any licensed and certified service technician can perform warranty work on the True cabinet, but please have them call and verify warranty status before beginning work.



True Food Service Equipment, Inc.
2001 East Terra Lane
P.O. Box 970 • O'Fallon, MO 63366
636-240-2400 • 800-325-6152

USA & CANADA WARRANTY LABOR CLAIM

INSTRUCTIONS FOR COMPLETING FORM:

1. Model and serial numbers of all equipment involved must be supplied.
2. All claims must be submitted directly to TRUE at : True Food Service Equipment, Inc.
3. A Copy of the "Bill of Sale" is required. 2001 East Terra Lane
4. Must be submitted in legal form (print). P.O. Box 970 • O'Fallon, MO 63366
5. This form may be used as your original invoice.

WARRANTY SERVICE GUIDE

When submitting a bill for warranty work, the hours submitted must be within the guidelines listed below or authorization is required from TRUE. The time spent on the job should be multiplied by the straight time labor rate to determine the charge. TRUE reserves the right to pay no more than the average commercial hourly rates within the Distributor territory or region of the country. To prevent delays in processing claims, **a complete explanation of the diagnosis and the repair are required.** TRUE realizes that diagnostic and repair times may vary depending on the problem and model.

MULTIPLE REPAIRS DURING SAME SERVICE CALL

To diagnose and repair or replace more than one item, use up to the highest allowable time for the single repair, then add ½ hour for each additional repair.

REFRIGERANT ALLOWANCES

- No alternative blends are approved without written permission.
- New or reclaimed refrigerant (meets ARI Standard 700.88 Lab test).
- The recovery and reuse of refrigerant is covered by the \$25.00 reclaim charge.
- Only the weigh-in charge for the unit will be reimbursed.

NO CONSEQUENTIAL DAMAGES

TRUE is not responsible for economic loss; or special, indirect, or consequential damages, including, without limitation, of losses or damages arising from food or product spoilage claims as a result of refrigeration failure.



True Food Service Equipment, Inc.
 2001 East Terra Lane
 P.O. Box 970 • O'Fallon, MO 63366
 636-240-2400 • 800-325-6152

USA & CANADA WARRANTY LABOR CLAIM

Service's Invoice
 Number (if attached) _____

Date Failed	Date Form Completed	Date Repaired		
Important: Please Place Only One Cabinet Serial Number Per Warranty Claim Form.		Model No.	Serial No.	Install Date

DEALER / DISTRIBUTOR	SERVICE COMPANY	CUSTOMER
Company Name	Company Name	Company Name
Address	Address	Address
City, State, Zip	City, State, Zip	City, State, Zip
Area Code & Telephone No.	Area Code & Telephone No.	Area Code & Telephone No.

Reported Complaint _____
Service Performed (Symptoms and / or summary of diagnosis made is required. List hours and explanation for each repair made. Give exact location of any leaks.) _____

HOURS

SEE LABOR ALLOWANCE FOR TIME ALLOWED. PLEASE CALL FOR APPROVAL IF TIME IS GOING TO EXCEED HOURS ALLOWED. ALL WARRANTY CLAIMS MUST BE RECEIVED AT TRUE WITHIN 90 DAYS OF COMPLETION OF THE WORK.

(Submit in U.S. Dollars only)

Labor Rate Per Hour _____ Labor Hours _____ U. S. \$ _____

Travel Time _____ Total Hours _____ U. S. \$ _____

LABOR CHARGES

Type Of Refrigerant Used _____ Ounces Of Refrigerant Used _____ x Price Per Ounce _____ U. S. \$ _____

Miscellaneous Material Fee Maximum \$20.00 _____ U. S. \$ _____
 (Includes soldering supplies, vacuum pump, etc.)

LABOR CHARGES

Reclaim Fee Maximum \$25.00 Allowed _____ U. S. \$ _____

TAX (if applicable) _____% U. S. \$ _____

List All Warranty Parts Purchased
 PLEASE LIST ALL PART NUMBERS USED

ONLY OEM PARTS WILL BE CREDITED UNLESS PRIOR AUTHORIZATION IS GIVEN*

OLD COMPRESSOR MODEL & SERIAL NUMBER	NEW COMPRESSOR MODEL & SERIAL NUMBER
---	---

Signatures Required (or attach Service Agents original invoice with signatures.)

CUSTOMER SIGNATURE _____ SERVICE TECHNICIAN SIGNATURE _____

(Technician making refrigeration system repairs must be certified per EPA requirements)

Date Signed _____ Date Signed _____

*IF NON-OEM PARTS ARE USED WITHOUT PRIOR APPROVAL THIS MAY EFFECT FUTURE WARRANTY CLAIMS

GDM / T / TS / TSD / TM / TR / TA / TG / TAC Series Cabinets

UPRIGHT REFRIGERATORS AND FREEZERS

REFRIGERATION

- A. Diagnose and replace defective compressor (including starting components) evacuate, recharge and test Self-contained models 4 ½ hrs.
- B. Diagnose and replace defective compressor (including starting components) evacuate, recharge and test for GDM-72F / T-72F 5 ½ hrs.
- C. Diagnose and replace defective condensing unit, evacuate, recharge and test Self-contained models..... 4 hrs.
- D. Diagnose and replace defective condensing unit, evacuate, recharge and test for GDM-72F/T-72F 5 hrs.
- E. Diagnose and replace defective evaporator, evacuate, change drier, recharge and test Self-contained models 4 ½ hrs.
- F. Locate refrigeration leak, evacuate, change drier, recharge and test (**NOTE: The location of leak must be noted on the service invoice**) 4 hrs.
- G. Diagnose, replace/reroute defective capillary tube, condensing unit, evacuate, change drier, recharge and test (refrigeration lines in a channel or excisable) 5 hrs.*
- H. Diagnose, replace defective capillary tube, condensing unit, evacuate, change drier, recharge and test (refrigeration lines foamed in wall) 7 hrs.*
- I. Diagnose replace/reroute defective capillary tube, condensing unit, evacuate, change drier, recharge and test for GDM-72F/T-72F (refrigeration lines foamed in wall) 9 hrs.*
- K. Diagnose and repair or replace defective refrigeration parts, other than listed above, which require opening the refrigeration system, evacuate, change drier, recharge and test..... 4 hrs.

Multiple Refrigeration Service: Up to the highest rate for the part changed, plus 1 hour for each additional refrigeration part changed.

ELECTRICAL

- A. Diagnose and replace temperature control 2 hrs.
- B. Diagnose and replace evaporator coil heater..... 4 hrs.
- C. Diagnose and replace termination switch..... 3 hrs.
- D. Diagnose and replace drain line heater..... 3½ hrs.
- E. Diagnose and replace perimeter heater 4 hrs.
- F. Diagnose and replace time clock..... 1½ hrs.
- G. Diagnose and replace ballast, lamp holder, IDL door cord..... 2 hrs.*
- H. Diagnose and replace condenser fan motor..... 2 hr.
- I. Diagnose and replace condenser fan motor (GDM-72F) 2 hrs.
- J. Diagnose and replace evaporator fan motor 1½ hrs.
- K. Diagnose and replace evaporator fan motor (GDM-49F / GDM-72F) 2 hrs.

CABINET

- A. Diagnose and replace door(s) 1 hr.
- B. Diagnose and replace the door gasket..... 1 hr.
- C. Diagnose and replace the torsion spring 2 hrs.
- D. Diagnose and replace door cord (GDM / TSD Slide Door) 2 hrs.

****SHOULD YOUR REPAIR OR THE TIME TO PERFORM THE NECESSARY REPAIRS EXCEED THE ALLOWED AMOUNT PLEASE CONTACT THE TECHNICAL SERVICE DEPARTMENT OR WARRANTY DEPARTMENT WHILE DOING OR BEFORE DOING THE WARRANTY WORK FOR APPROVAL.***

FOR REPAIRS NOT NOTED, PLEASE CONTACT THE TECHNICAL SERVICE DEPARTMENT OR THE WARRANTY DEPARTMENT.

CUSTOMER RESPONSIBILITIES

- A. To verify the product's installation date for warranty process.
- B. To pay for normal operational maintenance, adjustments and cleaning.
- C. To pay for repairs caused by modifications made without TRUE's written approval.
- D. To pay for damage repairs resulting from electrical supply, water or drainage, flood, storm or other acts of God.
- E. To pay for premium labor rates, holidays, overtime, etc., unreasonable travel time, flat rate service call charges, mileage or miscellaneous tools and material charges not listed on payment schedule and additional labor charges resulting from inaccessibility of the refrigerator or freezer.

NO CONSEQUENTIAL DAMAGES

TRUE is not responsible for economic loss; or special, indirect, or consequential damages, including, without limitation, of losses or damages arising from food or product spoilage claims as a result of refrigeration failure.

TBB / TD / TDD / TMC / TPP / TRCB / TSSU / TUC / TWT Series Cabinets

REACH-IN REFRIGERATORS AND FREEZERS

REFRIGERATION

- A. Diagnose and replace defective compressor (including starting components) evacuate, recharge and test Self-contained models 4 ½ hrs.
- B. Diagnose and replace defective condensing unit, evacuate, recharge and test Self-contained models..... 4 hrs.
- C. Diagnose and replace defective evaporator, evacuate, change drier, recharge and test Self-contained models by removing the cabinet top 5 ½ hrs.
- D. Locate refrigeration leak, evacuate, change drier, recharge and test (**NOTE: The location of leak must be noted on the service invoice**) 4 hrs.
- E. Locate refrigeration leak, evacuate, change drier, recharge and test with top removal. (must detail location of leak) 5 hrs.
- F. Diagnose and replace defective capillary tube, evacuate, change drier, recharge and test. 5 hrs.
- G. Diagnose and repair or replace defective refrigeration parts, other than listed above, which require opening the refrigeration system, evacuate, change drier, recharge and test..... 4 hrs.

Multiple Refrigeration Service: Up to the highest rate for the part changed, plus 1½ hour for each additional refrigeration part changed.

ELECTRICAL

- A. Diagnose and replace temperature control 2 hrs.
- B. Diagnose and replace temperature control for TRCB 3 hrs.
- C. Diagnose and replace temperature control (TBB/TDD) 2 hrs.
- D. Diagnose and replace evaporator coil heater or termination switch 3 hrs.
- E. Diagnose and replace perimeter heater 4 hrs.
- F. Diagnose and replace time clock..... 1 ½ hrs.
- G. Diagnose and replace ballast, lamp holder 2 hrs.
- H. Diagnose and replace condenser fan motor 1 ½ hrs.
- I. Diagnose and replace evaporator fan motor 1 ½ hrs.
- J. Diagnose and replace evaporator fan motor for a drawer unit 2 hrs.

CABINET

- A. General cabinet repair 1 ½ hrs.
- B. Diagnose and replace door(s)..... 1 hr.
- C. Diagnose and replace the door gasket 1 hrs.
- D. Countertop removal 93" and larger (Added to Repair for 2 Men) 1 ½ hrs.

SHOULD YOUR REPAIR OR THE TIME TO PERFORM THE NECESSARY REPAIRS EXCEED THE ALLOWED AMOUNT PLEASE CONTACT THE TECHNICAL SERVICE DEPARTMENT OR WARRANTY DEPARTMENT WHILE DOING OR BEFORE DOING THE WARRANTY WORK FOR APPROVAL.

FOR REPAIRS NOT NOTED, PLEASE CONTACT THE TECHNICAL SERVICE DEPARTMENT OR THE WARRANTY DEPARTMENT.

CUSTOMER RESPONSIBILITIES

- A. To verify the product's installation date for warranty process.
- B. To pay for normal operational maintenance, adjustments and cleaning.
- C. To pay for repairs caused by modifications made without TRUE's written approval.
- D. To pay for damage repairs resulting from electrical supply, water or drainage, flood, storm or other acts of God.
- E. To pay for premium labor rates, holidays, overtime, etc., unreasonable travel time, flat rate service call charges, mileage or miscellaneous tools and material charges not listed on payment schedule and additional labor charges resulting from inaccessibility of the refrigerator or freezer.

NO CONSEQUENTIAL DAMAGES

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TDBD /TSID /TCGR /TCGD Series Cabinets

REACH-IN REFRIGERATORS AND FREEZERS

REFRIGERATION

- A. Diagnose and replace defective compressor (including starting components) evacuate, recharge and test Self-contained models 4 ½ hrs.
- B. Diagnose and replace defective condensing unit, evacuate, recharge and test Self-contained models..... 4 hrs.
- C. Diagnose and replace defective evaporator, evacuate, change drier, recharge and test Self-contained models ..4 ½ hrs.
- D. Diagnose and replace defective evaporator, evacuate, change drier, recharge and test for TDBD-96 models6 hrs.
- E. Locate refrigeration leak, evacuate, change drier, recharge and test (**NOTE: The location of leak must be noted on the service invoice**) 4 hrs.
- F. Diagnose and replace defective capillary tube, evacuate, change drier, recharge and test. Call*
- G. Diagnose and repair or replace defective refrigeration parts, other than listed above, which require opening the refrigeration system, evacuate, change drier, recharge and test..... 4 hrs.

Multiple Refrigeration Service: Up to the highest rate for the part changed, plus 1½ hour for each additional refrigeration part changed.

*** PLEASE CONTACT THE TECHNICAL SERVICE DEPARTMENT FOR RECOMMENDATIONS**

ELECTRICAL

- A. Diagnose and replace temperature control 2 ½ hrs.
- B. Diagnose and replace time clock..... 1 ½ hrs.
- C. Diagnose and replace ballast, lamp holder 1-2 hrs.
- D. Diagnose and replace condenser fan motor..... 1 ½ hrs.
- E. Diagnose and replace evaporator fan motor 1 ½ hrs.

CABINET

- A. General cabinet repair 1 ½ hrs.
- B. Diagnose and replace door(s)..... 1 hr.
- C. Diagnose and replace the door gasket 1 hrs.
- D. Diagnose and replace the door cord 1 hrs.

SHOULD YOUR REPAIR OR THE TIME TO PERFORM THE NECESSARY REPAIRS EXCEED THE ALLOWED AMOUNT PLEASE CONTACT THE TECHNICAL SERVICE DEPARTMENT OR WARRANTY FOR APPROVAL.

CUSTOMER RESPONSIBILITIES

- A. To verify the product's installation date for warranty process.
- B. To pay for normal operational maintenance, adjustments and cleaning.
- C. To pay for repairs caused by modifications made without TRUE's written approval.
- D. To pay for damage repairs resulting from electrical supply, water or drainage, flood, storm or other acts of God.
- E. To pay for premium labor rates, holidays, overtime, etc., unreasonable travel time, flat rate service call charges, mileage or miscellaneous tools and material charges not listed on payment schedule and additional labor charges resulting from inaccessibility of the refrigerator or freezer.

NO CONSEQUENTIAL DAMAGES

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CHECKLIST FOR WARRANTY COMPRESSOR REPLACEMENT

Parts Fax # 636/272-9471

Company Name _____ Phone # _____

Technician Name _____ Supervisor Name _____

Model # _____ Comp. Model # _____

Serial # _____ Comp. Serial # _____

Voltage _____ Voltage/Start Up _____

Amperage _____ Amperage/Start Up _____

Suction Pressure _____ Is Condenser Dirty _____

High Side Pressure _____

What Is Compressor Failure:

_____ Locked rotor. If locked rotor, list the LRA rating on compressor tag and the amp draw when compressor tries to start:

_____ TAG

_____ ACTUAL

_____ Bad Valves. Fill in pressure readings: Hi & Lo _____

_____ Shortened to ground

_____ Shortened windings

_____ Non. pumper

_____ Open windings

_____ Dirty Burnout

_____ Noisy

NOTES

NOTES



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