

# Underbar Equipment Glass / Mug Chillers Service Manual

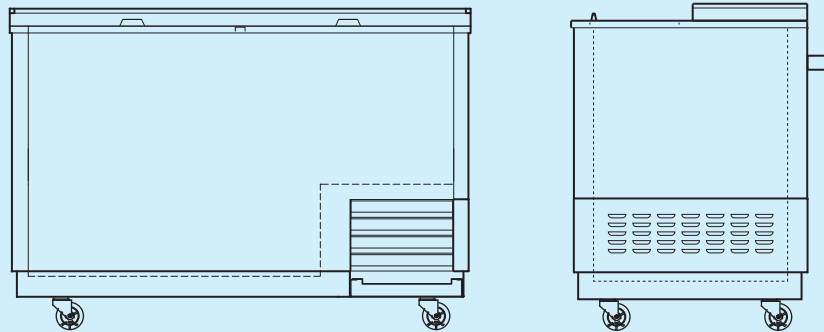
Please read this manual completely before attempting to install or operate this equipment!

## ***Glass / Mug Chillers***

TBC-24SD/SB-GF

TBC-36SD/SB-GF

TBC-50SD/SB-GF



# **TABLE OF CONTENTS**

---

## **1. FEATURE CHART**

- 1-1. TBC-24SD/SB-GF
- 1-2. TBC-36SD/SB-GF
- 1-3. TBC-50SD/SB-GF

## **2. WIRING DIAGRAM**

- 1-1. TBC-24SD/SB-GF
- 1-2. TBC-36SD/SB-GF, TBC-50SD/SB-GF

## **3. PART DETAILS**

- 3-1. EVAPORATOR FAN MOTOR [TBC-24,36SD/SB-GF]
- 3-2. CONDENSER FAN MOTOR
- 3-3. DUCT
- 3-4. DUCT (A)
- 3-5. EVAPORATOR COIL
- 3-6. CONDENSER COIL
- 3-7. SHELF
- 3-8. EVAPORATOR FAN MOTOR [TBC-50SD/SB-GF]
- 3-9. COUNTERTOP

## **4. MAIN COMPONENTS**

- 4-1. COMPRESSOR
- 4-2. COMPRESSOR RELAY, OVERLOAD
- 4-3. COMPRESSOR CAPACITOR
- 4-4. CONDENSER FAN MOTOR
- 4-5. EVAPORATOR FAN MOTOR
- 4-6. SWITCH

## **5. TEMPERATURE CONTROL INSTRUCTION**

- 5-1. HOW TO USE THE TEMPERATURE CONTROLLER
- 5-2. FUNCTION TABLE

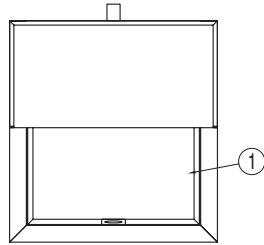
## **6. SPARE PARTS LIST**

## **7. REPLACEMENT OF MAIN COMPONENTS**

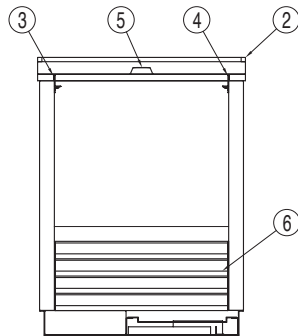
- 7-1. REPLACING THE EVAPORATOR COIL
- 7-2. ACCESSING THE CONDENSER COMPARTMENT

# 1. FEATURE CHART

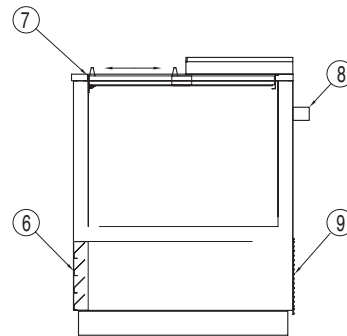
## 1-1. TBC-24SD/SB-GF



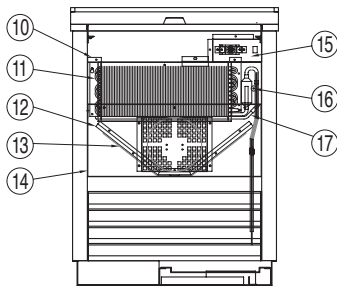
TOP VIEW



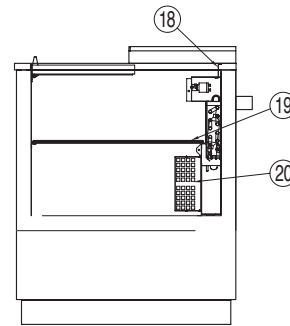
FRONT VIEW



SIDE VIEW



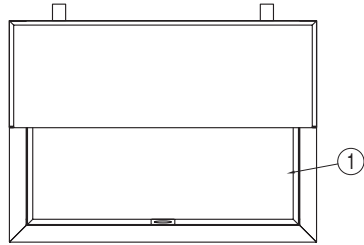
FRONT INSIDE VIEW



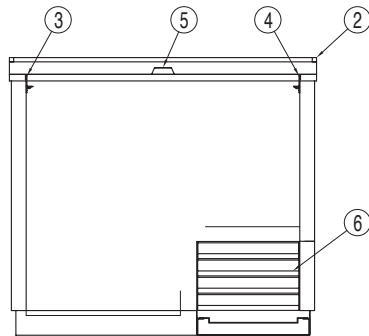
SIDE INSIDE VIEW

- |                  |                               |
|------------------|-------------------------------|
| 1 LID            | 11 EVAPORATOR COIL            |
| 2 COUNTERTOP     | 12 EVAPORATOR DRAIN PAN       |
| 3 LID RAIL LEFT  | 13 DRAIN PAN HEATER           |
| 4 LID RAIL RIGHT | 14 DUCT (B)                   |
| 5 LID HANDLE     | 15 TEMPERATURE CONTROLLER BOX |
| 6 GRILL ASSEMBLY | 16 LEAK TEST COVER            |
| 7 LID RAIL FRONT | 17 DEFROST HEATER             |
| 8 CUSHION SPACER | 18 DOOR STOPPER               |
| 9 WIRE GRILL     | 19 SHELF                      |
| 10 DUCT (A)      | 20 EVAPORATOR FAN COVER       |

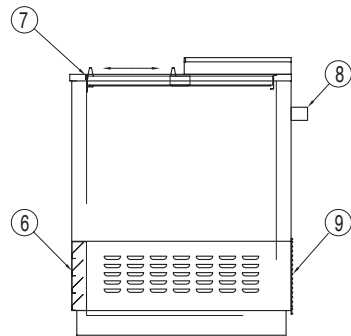
1-2. TBC-36SD/SB-GF



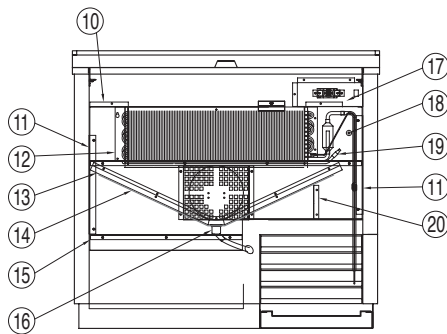
TOP VIEW



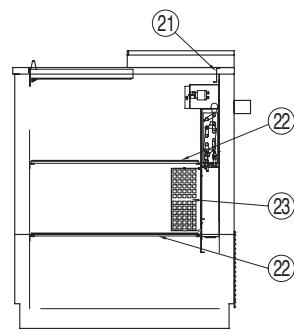
FRONT VIEW



SIDE VIEW



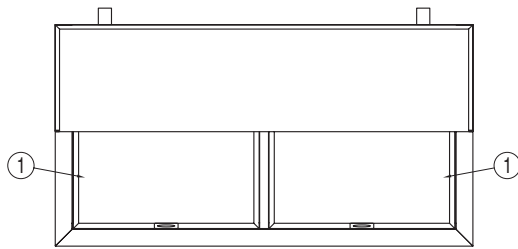
FRONT INSIDE VIEW



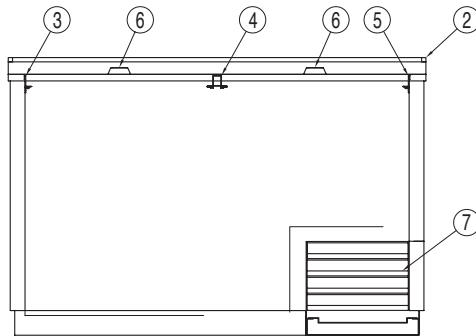
SIDE INSIDE VIEW

- |                    |                                  |
|--------------------|----------------------------------|
| 1 LID              | 13 EVAPORATOR DRAIN PAN          |
| 2 COUNTERTOP       | 14 DRAIN PAN HEATER              |
| 3 LID RAIL LEFT    | 15 SHELF RAIL                    |
| 4 LID RAIL RIGHT   | 16 EVAPORATOR DRAIN ELBOW & HOSE |
| 5 LID HANDLE       | 17 TEMPERATURE CONTROLLER BOX    |
| 6 GRILL ASSEMBLY   | 18 LEAK TEST COVER               |
| 7 LID RAIL FRONT   | 19 DEFROST HEATER                |
| 8 CUSHION SPACER   | 20 AIR GUIDE                     |
| 9 WIRE GRILL       | 21 DOOR STOPPER                  |
| 10 DUCT            | 22 SHELF                         |
| 11 DUCT BRACKET    | 23 EVAPORATOR FAN COVER          |
| 12 EVAPORATOR COIL |                                  |

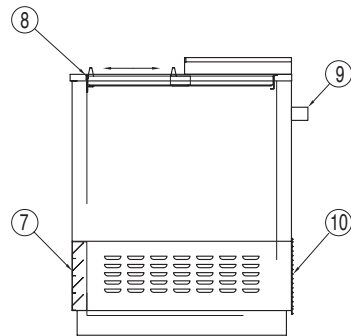
**1-3. TBC-50SD/SB-GF**



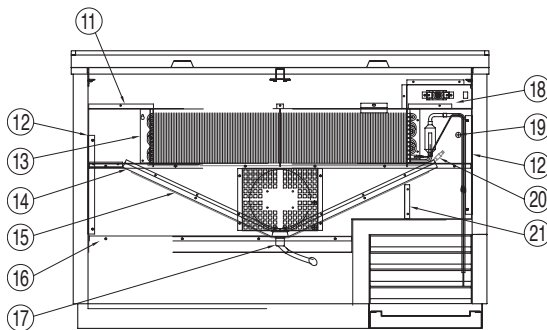
TOP VIEW



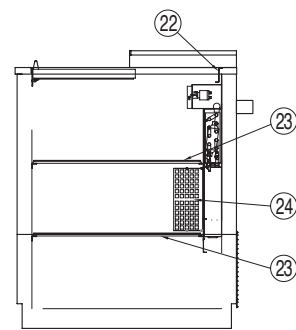
FRONT VIEW



SIDE VIEW



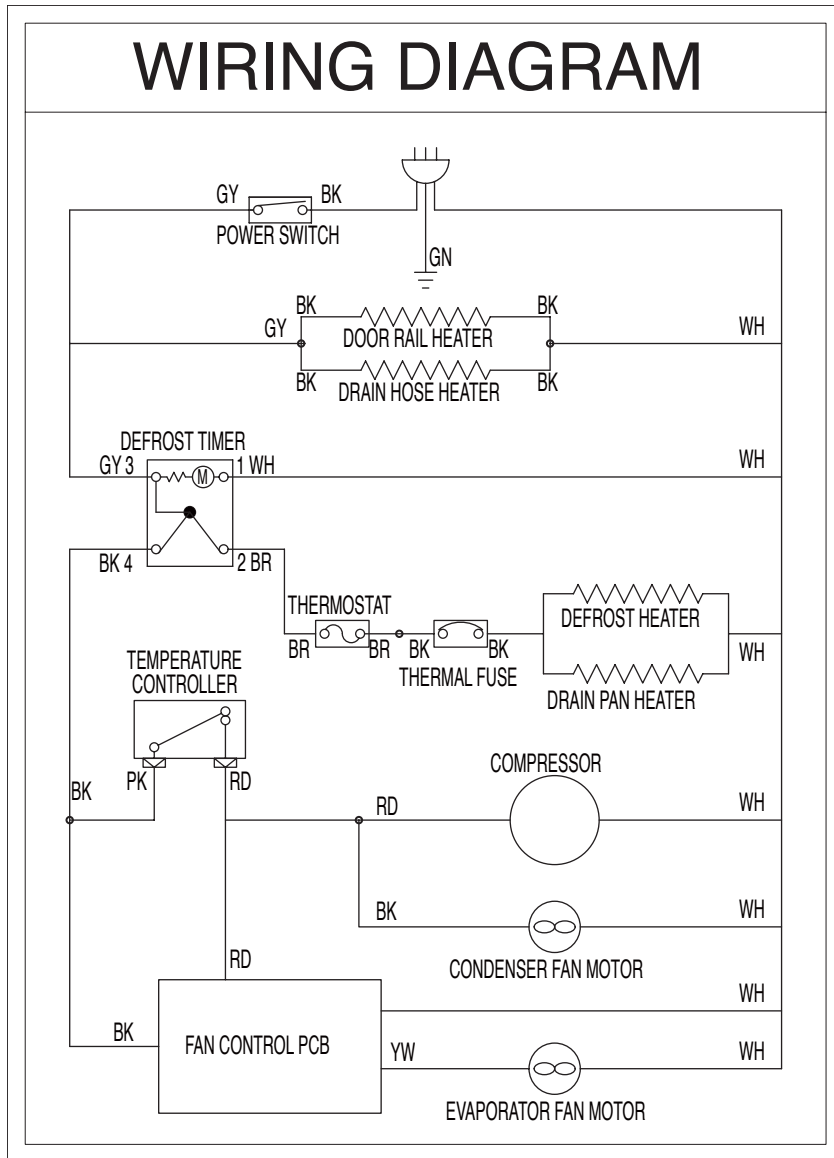
FRONT INSIDE VIEW



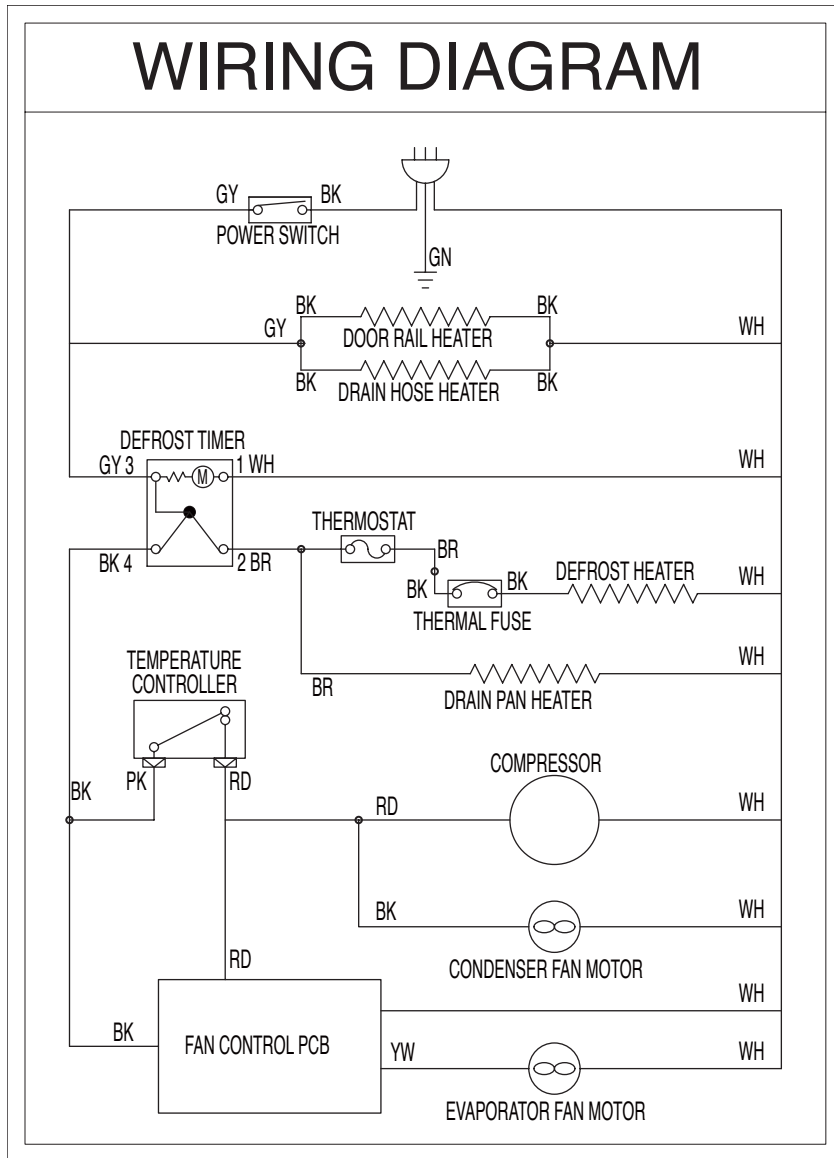
SIDE INSIDE VIEW

- |                   |                                  |
|-------------------|----------------------------------|
| 1 LID             | 13 EVAPORATOR COIL               |
| 2 COUNTERTOP      | 14 EVAPORATOR DRAIN PAN          |
| 3 LID RAIL LEFT   | 15 DRAIN PAN HEATER              |
| 4 LID RAIL MIDDLE | 16 SHELF RAIL                    |
| 5 LID RAIL RIGHT  | 17 EVAPORATOR DRAIN ELBOW & HOSE |
| 6 LID HANDLE      | 18 TEMPERATURE CONTROLLER BOX    |
| 7 GRILL ASSEMBLY  | 19 LEAK TEST CAP                 |
| 8 LID RAIL FRONT  | 20 DEFROST HEATER                |
| 9 CUSHION SPACER  | 21 AIR GUIDE                     |
| 10 WIRE GRILL     | 22 DOOR STOPPER                  |
| 11 DUCT           | 23 SHELF                         |
| 12 DUCT BRACKET   | 24 EVAPORATOR FAN COVER          |

# 2. WIRING DIAGRAM



[TBC-24SD/SB-GF]

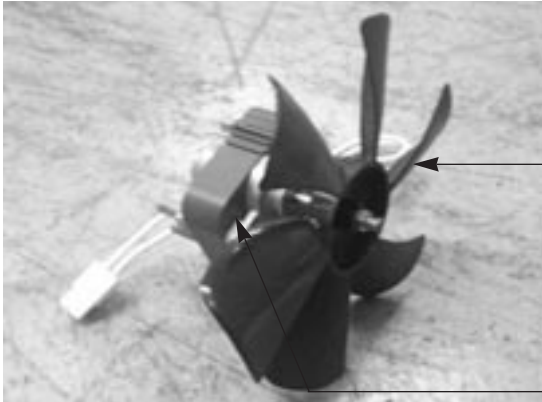


[TBC-36SD/SB-GF]

[TBC-50SD/SB-GF]

# 3. PART DETAILS

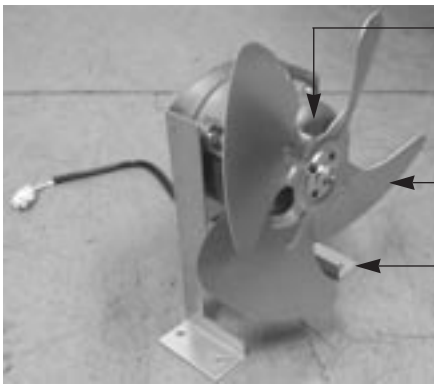
## 3-1. EVAPORATOR FAN MOTOR



EVAPORATOR FAN BLADE

EVAPORATOR FAN MOTOR

## 3-2. CONDENSER FAN MOTOR

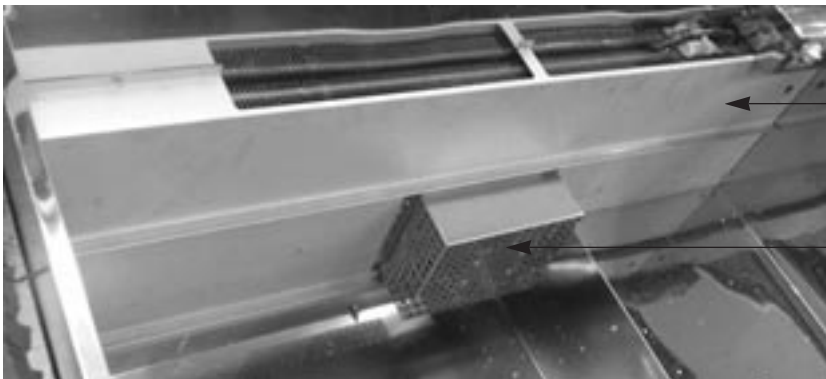


CONDENSER FAN MOTOR

CONDENSER FAN BLADE

BRACKET

## 3-3. DUCT



DUCT

EVAPORATOR FAN MOTOR COVER



3-4. DUCT (A)

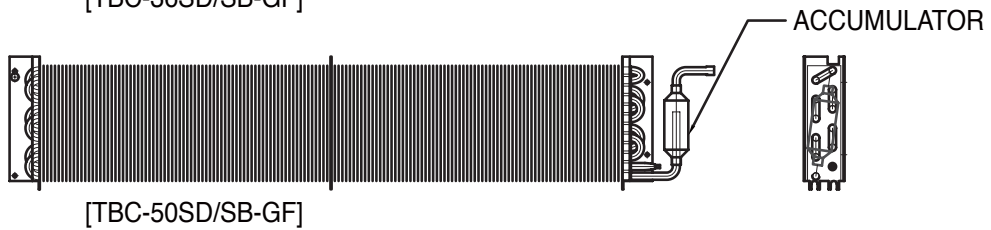
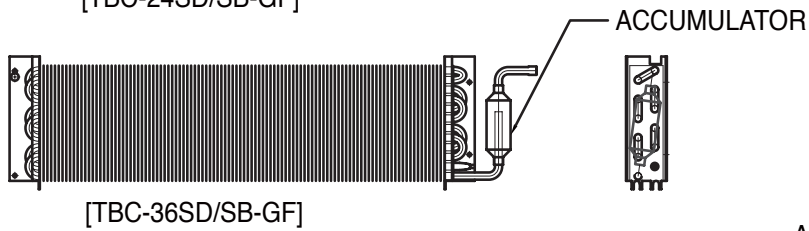
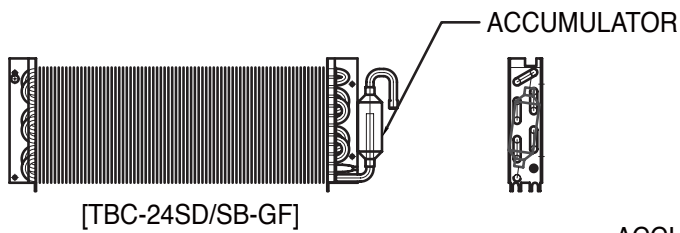


DUCT (A)

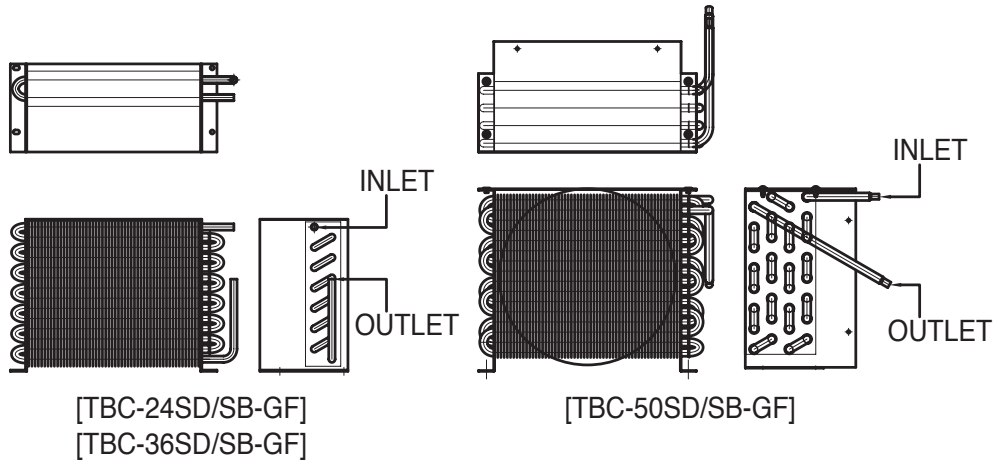
WATER GUIDE

[TBC-24SD/SB-GF]

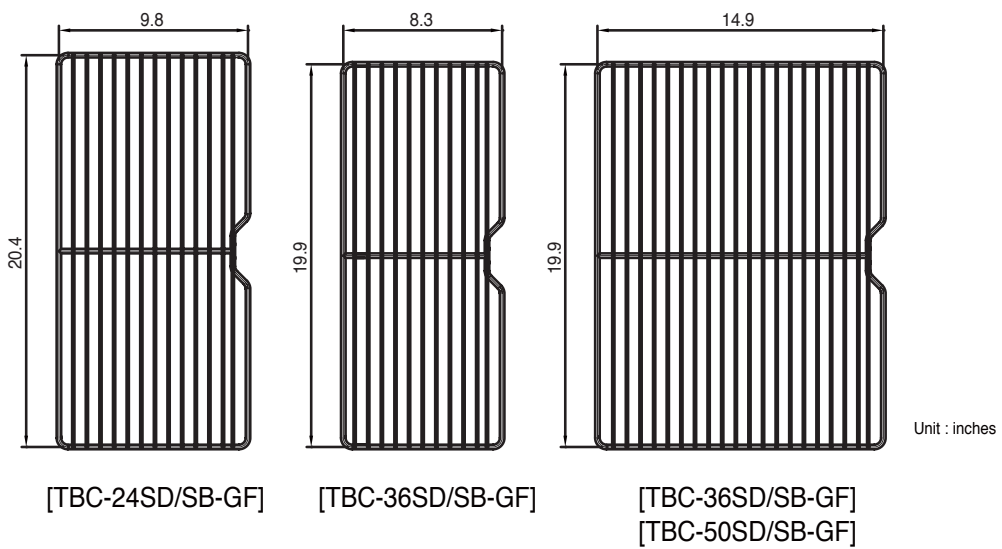
3-5. EVAPORATOR COIL



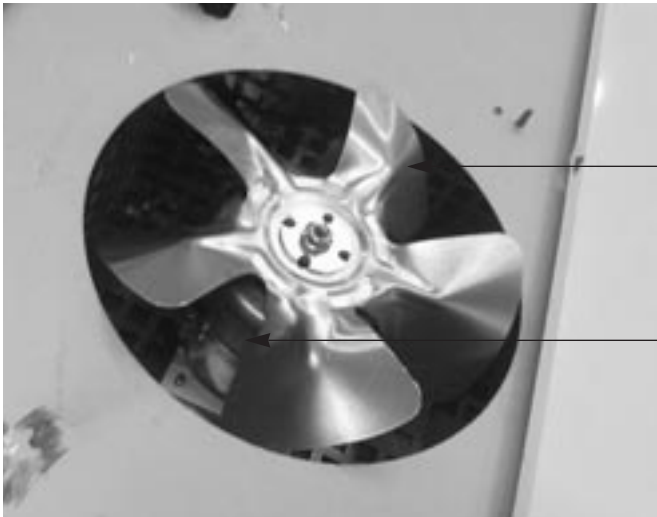
3-6. CONDENSER COIL



3-7. SHELF



**3-8. EVAPORATOR FAN MOTOR**

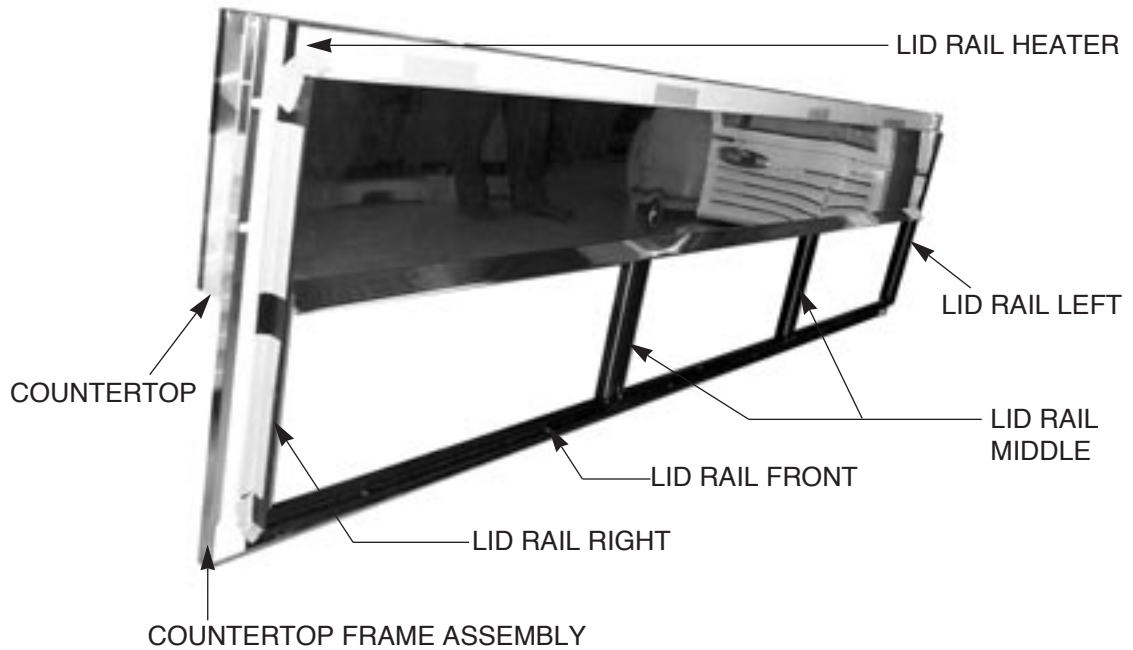


EVAPORATOR FAN BLADE

EVAPORATOR FAN MOTOR

[TBC-50SD/SB-GF]

**3-9. COUNTERTOP**



LID RAIL HEATER

LID RAIL LEFT

LID RAIL MIDDLE

LID RAIL FRONT

LID RAIL RIGHT

COUNTERTOP FRAME ASSEMBLY

COUNTERTOP

# 4. MAIN COMPONENTS

## 4-1. COMPRESSOR

MODEL	PART NAME	PART NO.	HORSE POWER	CAPACITY	TYPE OF MOTOR	INPUT	MAKER
TBC-24-GF TBC-36-GF	MK183D-L2UB	30289R0100		1,024BTU/h (258kcal/h)	RSCR	-	SAMSUNG
TBC-50-GF	CAE2420Z	30200R1100		2,268BTU/h (572kcal/h)	CSIR	-	TECUMSEH

## 4-2. COMPRESSOR RELAY, OVERLOAD

MODEL	RELAY	PART NO.	OVERLOAD	PART NO.	MAKER	NOTE
TBC-24-GF TBC-36-GF	J535Q32E6R8MD2	Comp.Assembly Comp.Assembly	SMP445PHB-01	Comp.Assembly Comp.Assembly	- -	- -
TBC-50-GF	3ARR12KP*483	Comp.Assembly	MRT16AHKE	Comp.Assembly	-	-

## 4-3. COMPRESSOR CAPACITOR

MODEL	STARTING	PART NO.	RUNNING	PART NO.	MAKER	NOTE
TBC-24-GF TBC-36-GF	-	-	250VAC-12 $\mu$ F	Comp. Assembly	-	-
TBC-50-GF	315 $\mu$ F/160V	Comp. Assembly	-	-	-	-

## 4-4. CONDENSER FAN MOTOR

MODEL	PART NAME	PART NO.	POLE	INPUT	TYPE	BLADE (NUMBER)	MAKER
TBC-24-GF TBC-36-GF TBC-50-GF	IS4420DWSG-1	3963220410	4P	47W	Shaded Pole Induction	AL 4	SUNGSHIN

## 4-5. EVAPORATOR FAN MOTOR

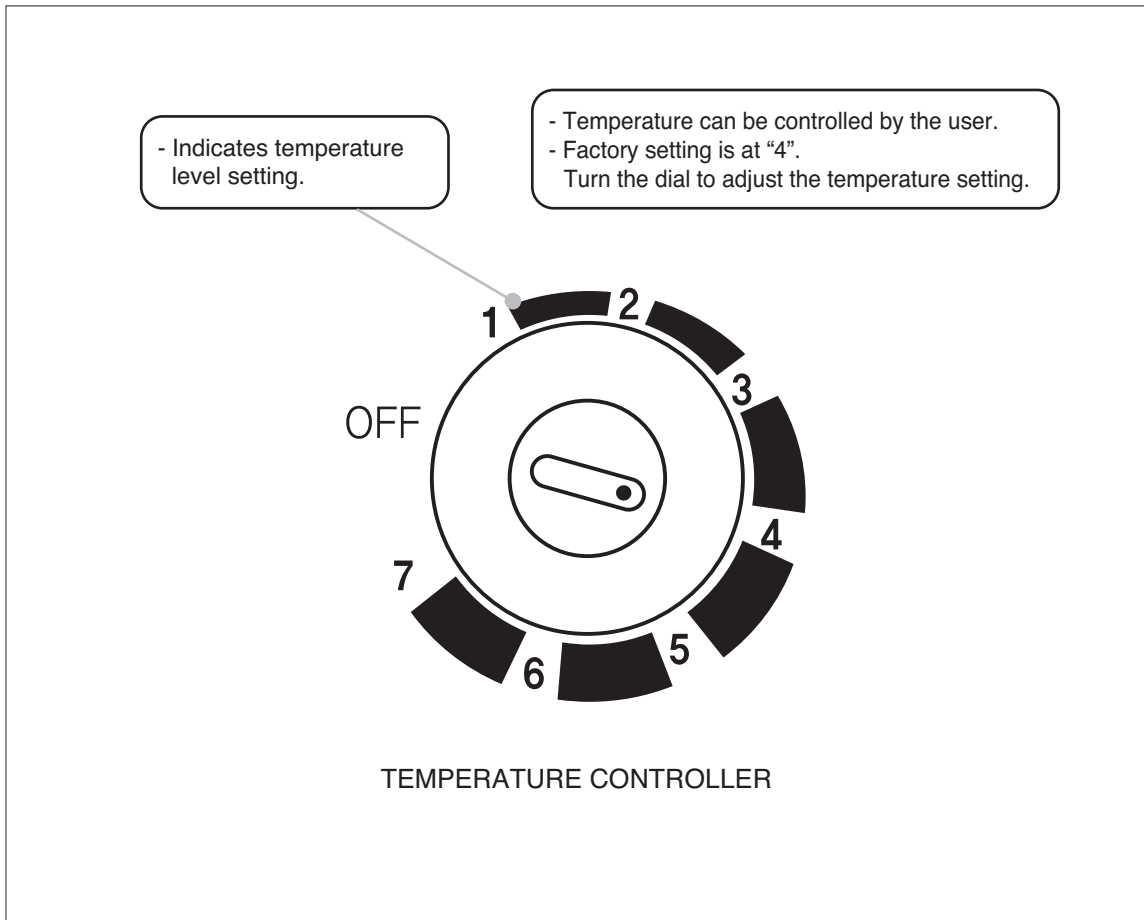
MODEL	PART NAME	PART NO.	POLE	INPUT	TYPE	BLADE (NUMBER)	MAKER
TBC-24-GF TBC-36-GF	DAI-6202DWSUA-1	3963339900	2P	22.5W	Shaded Pole Induction	NA-66 6	DAEYOUNG
TBC-50-GF	DAI-8154DWSUA	P0191Q0100	4P	27.1W	Shaded Pole Induction	AL 5	DAEYOUNG

## 4-6. SWITCH

MODEL	PART NAME	PART NO.	RATING	MAKER
TBC-24,36,50-GF	POWER SWITCH (ROCKER SWITCH)	30281Q0101	125V/15A	SKT
TBC-24,36,50-GF	TEMPERATURE CONTROLLER	30283M0900	GNA-106D-07B	SHINHAN

# 5. TEMPERATURE CONTROL INSTRUCTION

## 5-1. HOW TO USE THE TEMPERATURE CONTROLLER



## 5-2. FUNCTION TABLE

No	Function	Controlled Part	Description												
1	Temperature Control  Model: TBC-24,36,50-GF (GNA-106D-07B)	Compressor Cond. Fan Motor	1. The temperature can be adjusted by turning the dial. 2. Compressor is automatically turned on and off by the thermostat. ■ Cut in and out temperature chart. °F (at evaporator coil) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px dotted black;">No.</th> <th style="border-top: 1px solid black; border-bottom: 1px dotted black;">Cool</th> <th style="border-top: 1px solid black; border-bottom: 1px dotted black;">Normal</th> <th style="border-top: 1px solid black; border-bottom: 1px dotted black;">Cold</th> </tr> </thead> <tbody> <tr> <td><i>Cut In</i></td> <td>-</td> <td>4.1 +-1.5</td> <td>-</td> </tr> <tr> <td><i>Cut Out</i></td> <td>-</td> <td>-5.8 +-1.5</td> <td>-</td> </tr> </tbody> </table>	No.	Cool	Normal	Cold	<i>Cut In</i>	-	4.1 +-1.5	-	<i>Cut Out</i>	-	-5.8 +-1.5	-
No.	Cool	Normal	Cold												
<i>Cut In</i>	-	4.1 +-1.5	-												
<i>Cut Out</i>	-	-5.8 +-1.5	-												

# 6. SPARE PARTS LIST

Part name	Code	Description	Model		
			24SD/SB-GF	36SD/SB-GF	50SD/SB-GF
<b>LID PARTS</b>					
LID	P0100B2800	EXCEPT LID HANDLE	1		
LID	P0100B2900	EXCEPT LID HANDLE		1	
LID	30200B6000	EXCEPT LID HANDLE			2
LID HANDLE	30226B0100	ABS BLACK COLOR	1	1	2
<b>COMPRESSOR COMPARTMENT</b>					
COMPRESSOR BASE	P0103B0200	SPG T2.0	1	1	1
COMPRESSOR	30289R0100	MK183D-L2UB(115V/60Hz)	1	1	
COMPRESSOR	30200R1100	CAE2420Z(115V/60Hz)			1
COMPRESSOR HARNESS ASSEMBLY	P0127C1200		1	1	
COMPRESSOR HARNESS ASSEMBLY	30227R0300				1
CONDENSER FAN MOTOR	3963220410	IS-4420DWSG-1	1	1	1
CONDENSER FAN BLADE	30218B0300	AL $\phi$ 200	1	1	1
CONDENSER FAN MOTOR BRACKET	30206P0500	SPG T2.0	1		
CONDENSER FAN MOTOR BRACKET	3020602202	SPG T2.0		1	1
CONDENSER COIL	30200F0807	CU, R7*C2	1	1	
CONDENSER COIL	30200B3500	CU, R8*C4			1
COMPRESSOR PULL-OUT	P0144B4800	CU, OD $\phi$ 6.35	1	1	
COMPRESSOR PULL-OUT	P0144B4600	CU, OD $\phi$ 6.35			1
CONNECTING PIPE(CONDENSER↔DRYER)	P0144B5200	CU, OD $\phi$ 7.94	1	1	
CONNECTING PIPE(CONDENSER↔DRYER)	30244B3401	CU, OD $\phi$ 7.94			1
COMPRESSOR DRYER	30268H0100	30g L155	1	1	1
SUCTION LINE	P0144B5100	CU, OD7.94, ID1.0, EPDM T13	1	1	
SUCTION LINE	P0144B4500	CU, OD7.94, ID1.2, EPDM T13			1
POWER CORD	30213A1014	KKP-30	1	1	1
GRILL ASSEMBLY	30200B4400	STAINLESS STEEL	1	1	1
GRILL ASSEMBLY	30200B4410	BLACK PAINTING	1	1	1
WIRE GRILL	P0114B3200	BLACK PAINTING	1		
WIRE GRILL	P0114B3300	BLACK PAINTING		1	1
<b>REFRIGERATION COMPARTMENT</b>					
EVAPORATOR COIL	P0170B0300	CU, R6 * C2	1		
EVAPORATOR COIL	P0170B0200	CU, R6 * C2		1	
EVAPORATOR COIL	P0170B0100	CU, R6 * C2			1
DUCT (A)	P0169B0800	STAINLESS STEEL	1		
DUCT (B)	P0169B0900	STAINLESS STEEL	1		
DUCT	P0169B0700	STAINLESS STEEL		1	
DUCT	P0169B0600	STAINLESS STEEL			1
WATER GUIDE	P0125B0700	WHITE PAINTING	1		
WATER GUIDE	P0125B0600	WHITE PAINTING		1	
WATER GUIDE	P0125B0500	WHITE PAINTING			1
DRAIN PAN	P0111B0300	WHITE PAINTING	1		
DRAIN PAN	P0111B0200	WHITE PAINTING		1	
DRAIN PAN	P0111B0100	WHITE PAINTING			1

## SPARE PARTS LIST

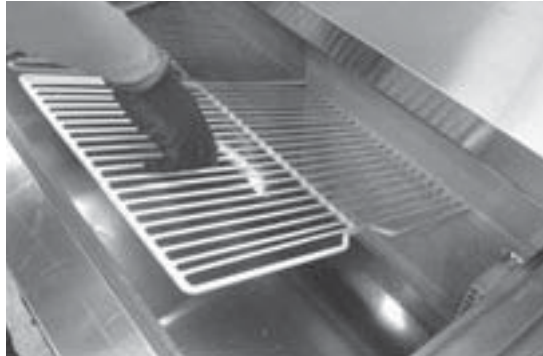
Part name	Code	Description	Model		
			24SD/SB-GF	36SD/SB-GF	50SD/SB-GF
EVAPORATOR DRAIN ELBOW	30225L0100	NA-6		1	1
EVAPORATOR DRAIN ELBOW CAP	30209L0200	NA-6		1	1
EVAPORATOR DRAIN HOSE	30232A0200	PVC, L=160mm		1	1
EVAPORATOR FAN MOTOR	P0191A0100	DAI-6202DWSUA-1	1	1	
EVAPORATOR FAN MOTOR	P0191Q0100	8154DWSUA			1
EVAPORATOR FAN BLADE	30218F0110	6, $\phi$ 150	1	1	
EVAPORATOR FAN BLADE	30218U0100	5, $\phi$ 170			1
EVAPORATOR FAN MOTOR BRACKET	P0106B0200	WHITE PAINTING			1
TEMPERATURE CONTROL BOX	P0145B0800	STAINLESS STEEL	1		
TEMPERATURE CONTROL BOX	P0145B0600	STAINLESS STEEL		1	1
TEMPERATURE CONTROL(THERMOSTAT)	30283M0900	GNA-106D-07B	1	1	1
POWER SWITCH	30281Q0101	125V/15A	1	1	1
TEMPERATURE CONTROL KNOB	30234A1000	HIPS WHITE COLOR	1	1	1
SHELF RAIL (A)	P0187B0700	STAINLESS STEEL			2
SHELF RAIL (B)	P0187B0710	STAINLESS STEEL			2
SHELF RAIL (C)	P0187B0720	STAINLESS STEEL		2	
SHELF RAIL (D)	P0187B0730	STAINLESS STEEL		2	
SHELF RAIL (E)	P0187B0740	STAINLESS STEEL	1		
<b>COUNTERTOP PARTS</b>					
COUNTERTOP(URETHANE FOAM INSIDE)	P0100B0400	STAINLESS STEEL	1		
COUNTERTOP(URETHANE FOAM INSIDE)	P0100B0500	STAINLESS STEEL		1	
COUNTERTOP(URETHANE FOAM INSIDE)	30200B2900	STAINLESS STEEL			1
COUNTERTOP FRAME ASSEMBLY	P0122B0700	STAINLESS STEEL	1		
COUNTERTOP FRAME ASSEMBLY	P0122B0800	STAINLESS STEEL		1	
COUNTERTOP FRAME ASSEMBLY	30222B1500	STAINLESS STEEL			1
LID RAIL LEFT	P0187B0640	ABS BLACK COLOR	1	1	1
LID RAIL RIGHT	P0187B0650	ABS BLACK COLOR	1	1	1
LID RAIL FRONT	P0187B0630	ABS BLACK COLOR	1		
LID RAIL FRONT	P0187B0620	ABS BLACK COLOR		1	
LID RAIL FRONT	P0187B0610	ABS BLACK COLOR			1
LID RAIL MIDDLE	30287B0110	ABS BLACK COLOR			1
LID STOPPER	P0152B0100	STAINLESS STEEL	1		
LID STOPPER	P0152B0200	STAINLESS STEEL		1	
LID STOPPER	P0152B0300	STAINLESS STEEL			1
LID RAIL HEATER	P0128B0800	SILICON, 16.8W	1		
LID RAIL HEATER	P0128B0500	SILICON, 19.8W		1	
LID RAIL HEATER	P0128B0200	SILICON, 29.2W			1
<b>MISCELLANEOUS</b>					
SHELF	P0178B0500	PE COATING WHITE COLOR	2		
SHELF	P0178B0400	PE COATING WHITE COLOR		4	
SHELF	P0178B0300	PE COATING WHITE COLOR		1	5
CONDENSATE DRAIN PAN	30211B0100	HIPS BLACK COLOR	1	1	1

# 7. REPLACEMENT OF MAIN COMPONENTS

\* Turn the unit off before replacing any part.

## 7-1. REPLACING THE EVAPORATOR COIL

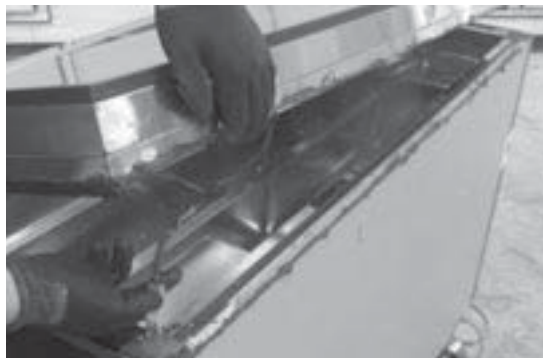
A. Remove all lids. Remove the shelves.



B. Cut the silicone line around the countertop frame with a knife.  
Remove all screws at the back of the countertop frame.



C. Remove all the screws from around the lid rail. To remove the countertop lift from the rear first, and unplug the connector housing of the lid rail heater. While standing in front of the freezer, pull the rear of the countertop up and back to separate it from the lower cabinet.

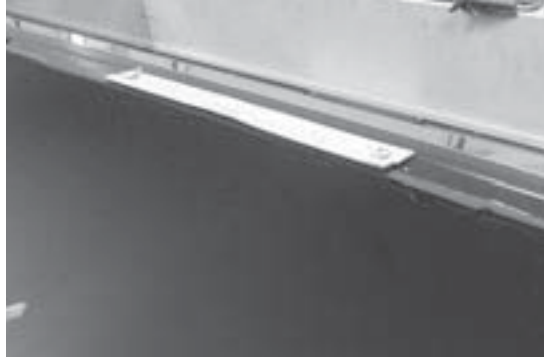




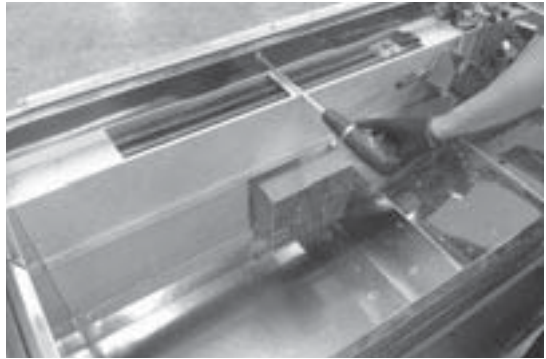
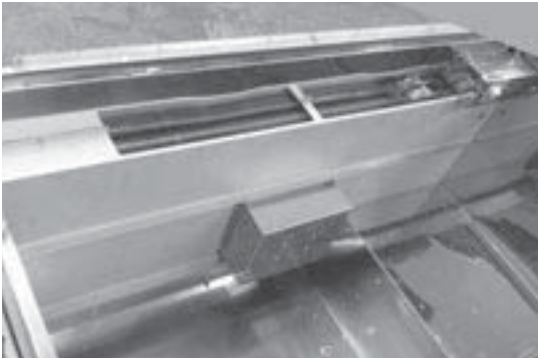
## REPLACEMENT OF MAIN COMPONENTS

---

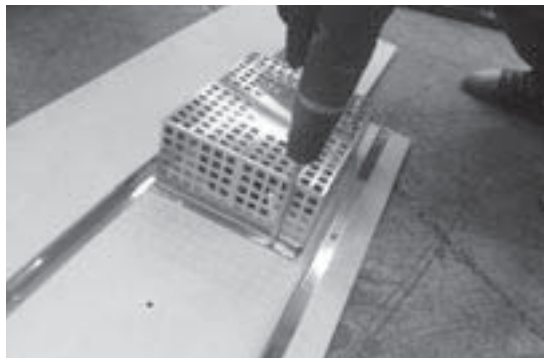
**D. Carefully remove the countertop and place it in a safe location.**



**E. Locate the duct and temperature controller box. If necessary, remove the temperature controller box.**



**F. Unplug the evaporator fan motor housing and place in a safe location.  
Remove the screws on the evaporator fan cover if necessary.**



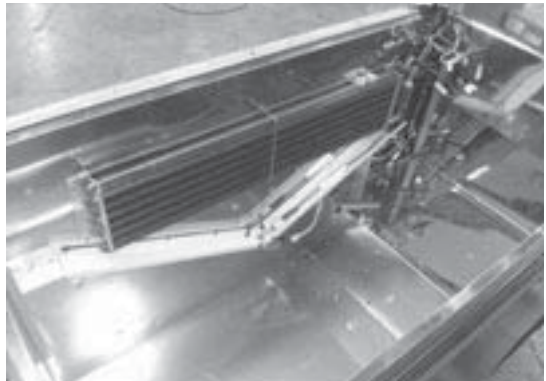
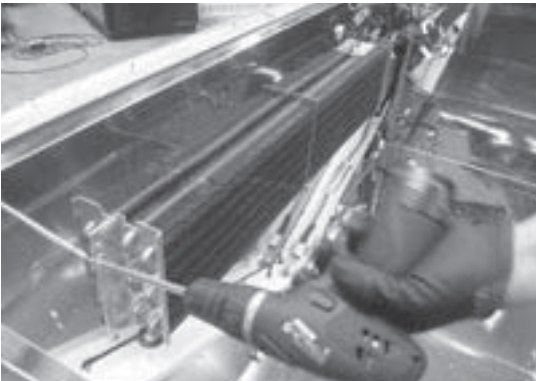
## REPLACEMENT OF MAIN COMPONENTS

---

**G. Unplug the housing for the defrost heater, the drain pan heater, and the drain hose heater.**



**H. Detach the thermal fuse (a kind of bi-metal) and the bi-metal by cutting the cable ties before removing the evaporator (or the defrost sheath heater) from the rear wall. To repair the drain pan heater, completely separate the drain pan sub-assembly first.**



## REPLACEMENT OF MAIN COMPONENTS

---

### 7-2. ACCESSING THE CONDENSER COMPARTMENT

- A. After removing the front grille assembly, unscrew the compressor base. Slowly pull out the compressor compartment. Compressor, condenser coil, condenser fan motor, etc. can then be replaced.

