■ MODEL : BASF1/BASF2/BASF3(FREEZER) BASR1/BASR2/BASR3(REFRIGERATOR)
BAGR24/BAGR48/BAGR72 (MERCHANDISERS)

A. COMMERCIAL FREEZER, REFRIGERATOR GENERAL

1. SPECIFICATION

1) GENERAL - COMMERCIAL FREEZERS AND REFRIGERATORS

PRODUCT		SOLID DOOR FREEZER			SOLID DOOR REFRIGERATOR		
MODEL		BASF1	BASF2	BASF3	BASR1	BASR2	BASR3
Capacity (Cu,Ft)		23	49	72	23	49	72
Net Capacity (Cu,Ft)		20.8	45.2	66.3	20.8	45.2	66.3
Exterior Dimension (Including casters) (in)	(W)	27.4	55.1	78	27.4	55.1	78
	(D)	31.3					
	(H)	83.9					
Interior Dimension (Including casters) (in)	(W)	23.6	51.4	74.2	23.6	51.4	74.2
	(D)	25					
	(H)	60.8					
Net Weight (lbs)		295	499	622	288	475	609
Door Type		Swing 1EA	Swing 2EA	Swing 3EA	Swing 1EA	Swing 2EA	Swing 3EA
Door Material		Stainless steel (STS)					
Shelves		4EA	8EA	12EA	4EA	8EA	12EA
Power Voltage		AC 115V/60Hz		AC 115V /208-230V 60Hz	AC 115V/60Hz		
Plug in - Installation		NEMA 5-15P		NEMA 14-20P	NEMA 5-15P		
Amps		8.5A	9.5A	9.0A	7.5A	7.5A	10.0A
Compressor		1/2HP	3/4HP	1.1HP	1/3HP	1/3HP	1/2HP
Refrigerant		R-404A (12.0 oz)	R-404A (22.2 oz)	R-404A (23.6 oz)	R-134A (7.4 oz)	R-134A (9.5 oz)	R-134A (14.1 oz)
Range of Temperature		Below 0 °F			32 ~ 40 °F		
Door auto-close equipment		Auto-close for Spring					
Door stop equipment		120° Stop					
Air suction equipment		Air damper					
Caster		4in × 4EA					
Condensing unit		Sliding Type					

◈ Above specifications are subjected to change without prior notice for quality improvement.

◈ The nameplate(includes Serial Number) is located on the upper left of the cabint interior.

2) MAIN COMPONENTS - COMMERCIAL FREEZERS AND REFRIGERATORS

PRODUCT	SOLID DOOR FREEZER			SOLID DOOR REFRIGERATOR		
MODEL	BASF1	BASF2	BASF3	BASR1	BASR2	BASR3
Compressor (Manufacture)	CAE2420Z(A) (Tecumseh-France)	CAJ2432Z(A) (Tecumseh-France)	CAJ2446Z(H) (Tecumseh-France)	SK1A1C-L2W (Samsung-Korea)		CAJ4476Y(A) (Tecumseh-France)
Compressor Capacity(kcal/h)	LBP 571	LBP 808	LBP 1219	LBP 303		LBP 1586
Type of Compressor motor	CSIR	CSR	CSR	CSR		CSIR
Compressor O.L.P	MST16AHN	GA3PJU00	MST00AHN	4TM795TFBZZ-53		GA3SJU81
Compressor Relay	3ARR12KPF*483	3ARR3*5R*	3ARR3*3A*	J531Q34E220M350-3		3ARR18A100B
Starting Capacitor	315㎌/160V	315㎌/160V	88㎌/160V	125㎌/125V		250㎌/160V
Running Capacitor	-	30㎌/400V	15㎌/160V	12㎌/250V		-
Type of Evaporator	Cu pipe + Al fin + Blue color coating					
Evaporator pipe Dimensions	3/8"					
Cooling Fan Motor	IS3225LTSA, 120V/60Hz					
Type of Condenser	Cu pipe + Al fin					
Evaporator pipe Dimensions	3/8"					
Condenser Fan Motor	MA7425W1, 120V/60Hz					
Drier	OD 1", XH-9, 1.06oz					
Temperature Control	Thermistor					
Running Indication	Digital Display					
Interior Temp. Indication	Digital Display					
Interior Lamp	25W × 1EA		25W × 2EA	25W × 1EA		25W × 2EA
Defrost for evaporator	Heated defrost (Control of thermistor)			Off cycle		
Defrost sheath heater	450W	670W	944W	-	-	-
Defrost pan heater	60W	90W	128W	-	-	-
Drain heater	9W			-	-	-
Door switch	SP201R-7DR, AC125V					
Power switch	SL112A, AC125V/12A					

3) GENERAL - MERCHANDISERS

PRODUCT		MERCHANDISERS		
MODEL		BAGR24	BAGR48	BAGR72
Capacity (Cu,Ft)		26	48	70
Net Capacity (Cu,Ft)		23.9	47.3	66.3
Exterior Dimension (Including casters) (in)	(W)	28.4	53.2	78
	(D)	31.3	29.9	31.3
	(H)	78.7	78.7	83.9
Interior Dimension (Including casters) (in)	(W)	25	50	74.2
	(D)	27	25.5	25
	(H)	62.5	61.4	60.8
Net Weight (lbs)		287	474	716
Door Type		Swing 1EA	Sliding 2EA	Swing 3EA
Door Material		Glass + Al		
Shelves		4EA	8EA	12EA
Power Voltage		AC 115V/60Hz		
Plug in - Installation		NEMA 5-15P		
Amps		3.9A	10.0A	11.9A
Compressor		1/4 HP	1/2 HP	1/2 HP
Refrigerant		R-134A (10.6 oz)	R-134A (16.2 oz)	R-134A (17.6 oz)
Range of Temperature		32 ~ 40°F		
Door auto-close equipment		Auto-close for Spring		
Door stop equipment		120° Stop	-	120° Stop
Air suction equipment		Air damper		
Caster		Adjust foot 4EA	Adjust foot 6EA	Adjust foot 6EA
Condensing unit		Sliding Type		
Door switch		-	-	-
Power(or Lamp) switch		SL112A, AC125V/12A		

◈ Above specifications are subjected to change without prior notice for quality improvement.

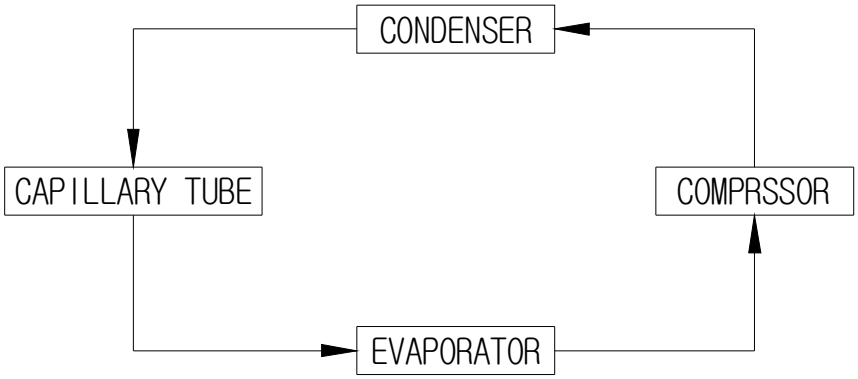
◈ The nameplate(includes Serial Number) is located on the upper left of the cabint interior.

4) MAIN COMPONENTS - MERCHANDISERS

PRODUCT	MERCHANDISERS		
MODEL	BAGR24	BAGR48	BAGR72
Compressor (Manufacture)	SK182C-L2U (SAMSUNG)	CAJ4476Y(A) (Tecumseh-France)	CAJ4476Y(A) (Tecumseh-France)
Compressor Capacity(kcal/h)	LBP 256	LBP 1946	HBP 1946
Type of Compressor motor	RSCR	CSIR	CSIR
Compressor O.L.P	4TM444NHBYY	CRA38014	CRA38014
Compressor Relay	J531Q32E4R7M1802	GE3ARR3	3ARR3*2M*
Starting Capacitor	-	250㎌/160V	250㎌/160V
Running Capacitor	12㎌/250V	-	-
Type of Evaporator	Cu pipe + Al fin		
Evaporator pipe Dimensions	1/2"		
Cooling Fan Motor	IS3225LTSA, 120V/60Hz		
Type of Condenser	Cu pipe + Al fin		
Evaporator pipe Dimensions	3/8"		
Condenser Fan Motor	MA7425W1, 120V/60Hz		
Drier	OD 1", XH-9, 1.06oz		
Temperature Control	Thermostat GNF-250L	Thermostat (GNF-240L)	Thermostat (GNF-246L)
Running Indication	-		
Interior Temp. Indication	-		
Interior Lamp	17W/32W (Fluorescent lamp)	32W × 1EA (Fluorescent lamp)	32W × 2EA (Fluorescent lamp)
Ad. Panel Fluorescent Lamp	32W × 1EA	32W × 1EA	32W × 1EA
Ballast	32W(Double)×1EA / 17W×1EA	32W(Double)×1EA	32W(Double)×2EA
Ballast Name (Manufacture)	B232I120RH-A (ADVANCE)	B232I120RH-A (ADVANCE)	DY232 IS120 (DOYOUNG)
Defrost for evaporator	Off cycle		
Defrost sheath heater	-	-	-
Defrost pan heater	-	-	-
Drain heater	-	-	-

2. REFRIGERATION CYCLE

Mechanical refrigeration is accomplished by continuously circulating, evaporating, and condensing a fixed supply of refrigerant in a closed system. Evaporation occurs at alow temperature and pressure while condensation occurs at high temperature and pressure. Thus it is possible to transfer heat fom an area of low temperature(i.e., refrigerated compartment) to an area of high temperature(i.e., surrounding of refrigerator).



THE BASE REFIGERATION CYCLE

Beginning the cycle at the evaporator inlet the low pressure liquid expands, absorbs heat (so refrigerator inner-cabinet is cooled), and evaporates, changing to alow pressure gas at the evaporator outlet.

The compressor pumps this gas from the evaporator, increases its pressure, and discharges the high pressured- temperature gas to the conenser.

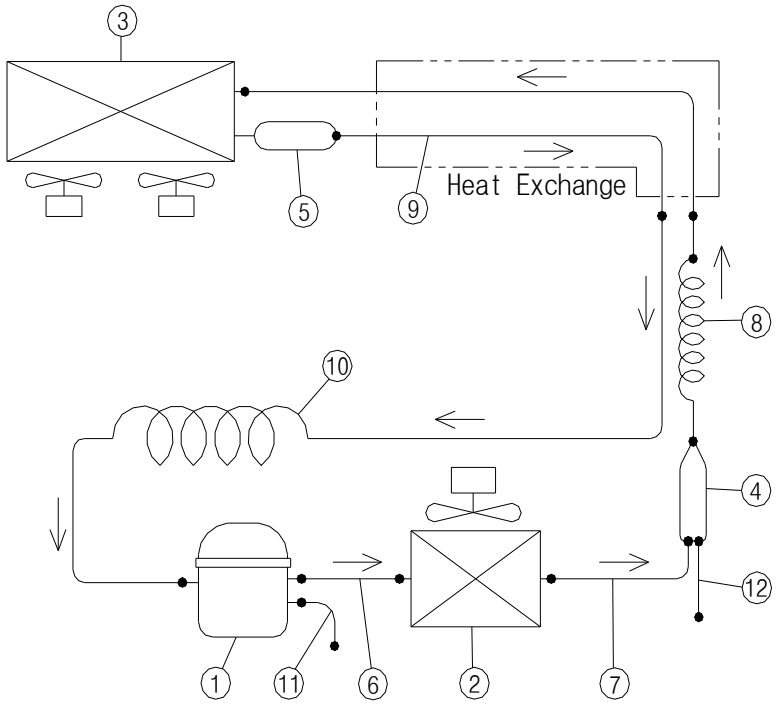
The condenser lets high pressured- temperature gas emit the heat(so surrounding of the condenser is warmed) in order to make it condense.

The capillary tube prevents high pressured- temperature gas from entering the evaporator in order to lower the pressure in the evaporator and control the flow of refrigerant into the evaporator automatically.

Eventually the desired air temperature in regrigerator inner-cabinet is reached, the thermostat (temperature controller) will break the electrical circuit to the compressor motor and stop the compressor.

As the temperature of the air rises, the thermostat(or controller) remakes the electrical circuit. The compressor starts, and cycle continues.

The schematic refrigeration(or freezing) cycle of F23/F49/F72/R23/R49/R72/GR26/GR48/GR70 is like below.



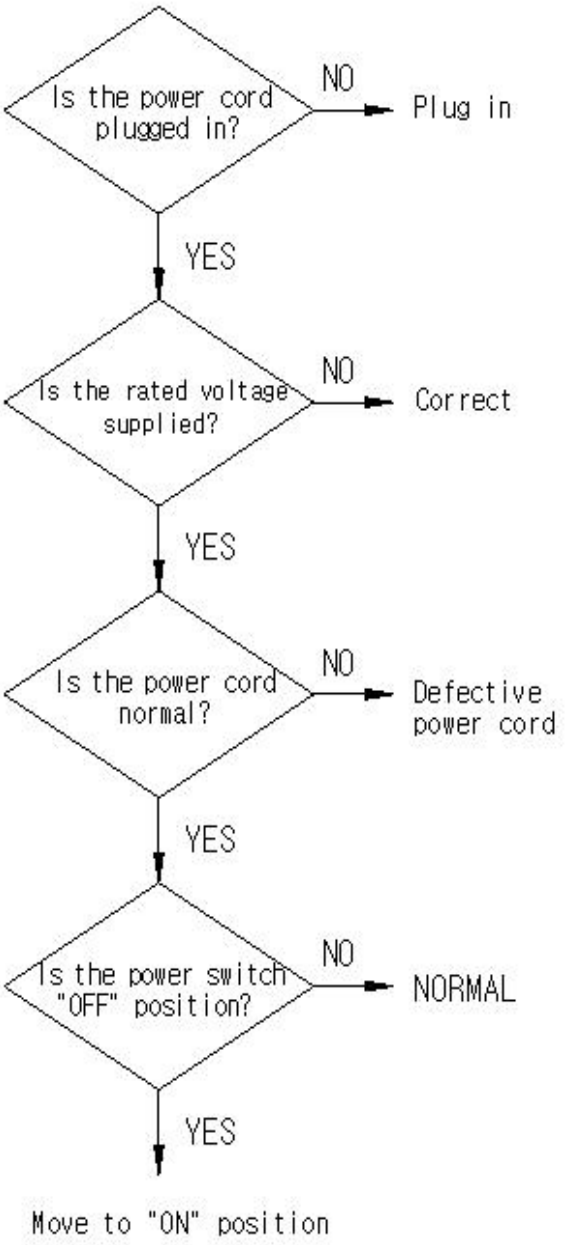
MODEL	COMPRESSOR
BASF1	CAE2420Z(A)
BASF2	CAJ2432Z(A)
BASF3	CAJ2446Z(H)
R1/R2	SK1A1C-L2W
BASR3	CAJ4461Y(A)
BAGR24	SK182C-L2U
BASG48	CAJ4476Y(A)
BAGR72	CAJ4476Y(A)

No.	Part Name	Description	Remark
1	COMPRESSOR		
2	CONDENSER	C1220TS-O,H	
3	EVAPORATOR	C1220TS-O,H	
4	DRIER	C1220T-H	
5	ACCUMULATOR	C1220T-1/4H	
6	DISCHARGE PIPE	C1220T-O	
7	DRIER CONNECT PIPE	C1220T-O	
8	CAPILLARY TUBE	C1220T-H	
9	SUCTION PIPE (INNER-CABINET)	C1220T-O	
10	SUCTION PIPE (COMPRESSOR)	C1220T-O	
11	CHARGE PIPE (COMPRESSOR)	C1220T-O	
12	CHARGE PIPE (DRIER)	C1220T-O	

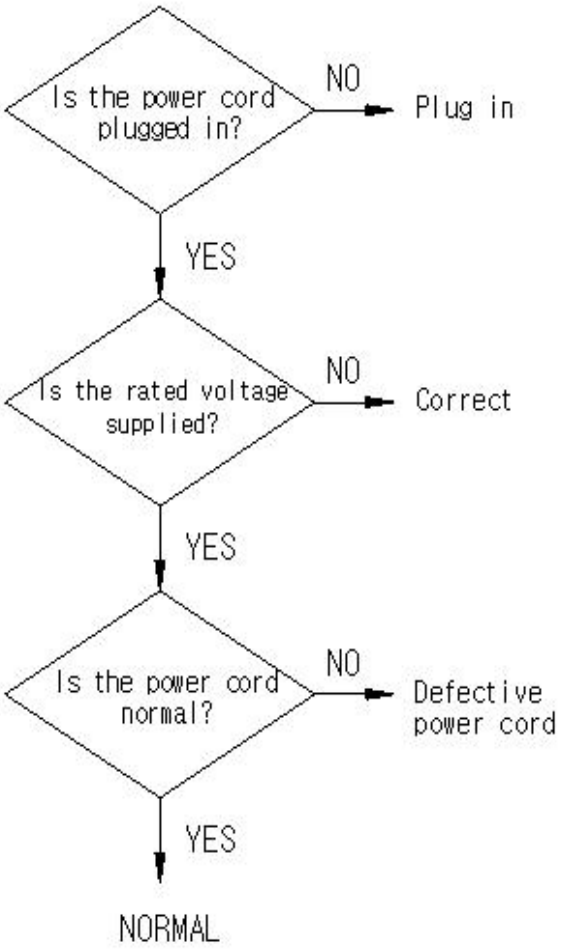
3. TROUBLESHOOTING

1) CHECKING THE POWER SUPPLY

① BASF1 / BASF2 / BASF3
BASR1 / BASR2 / BASR3

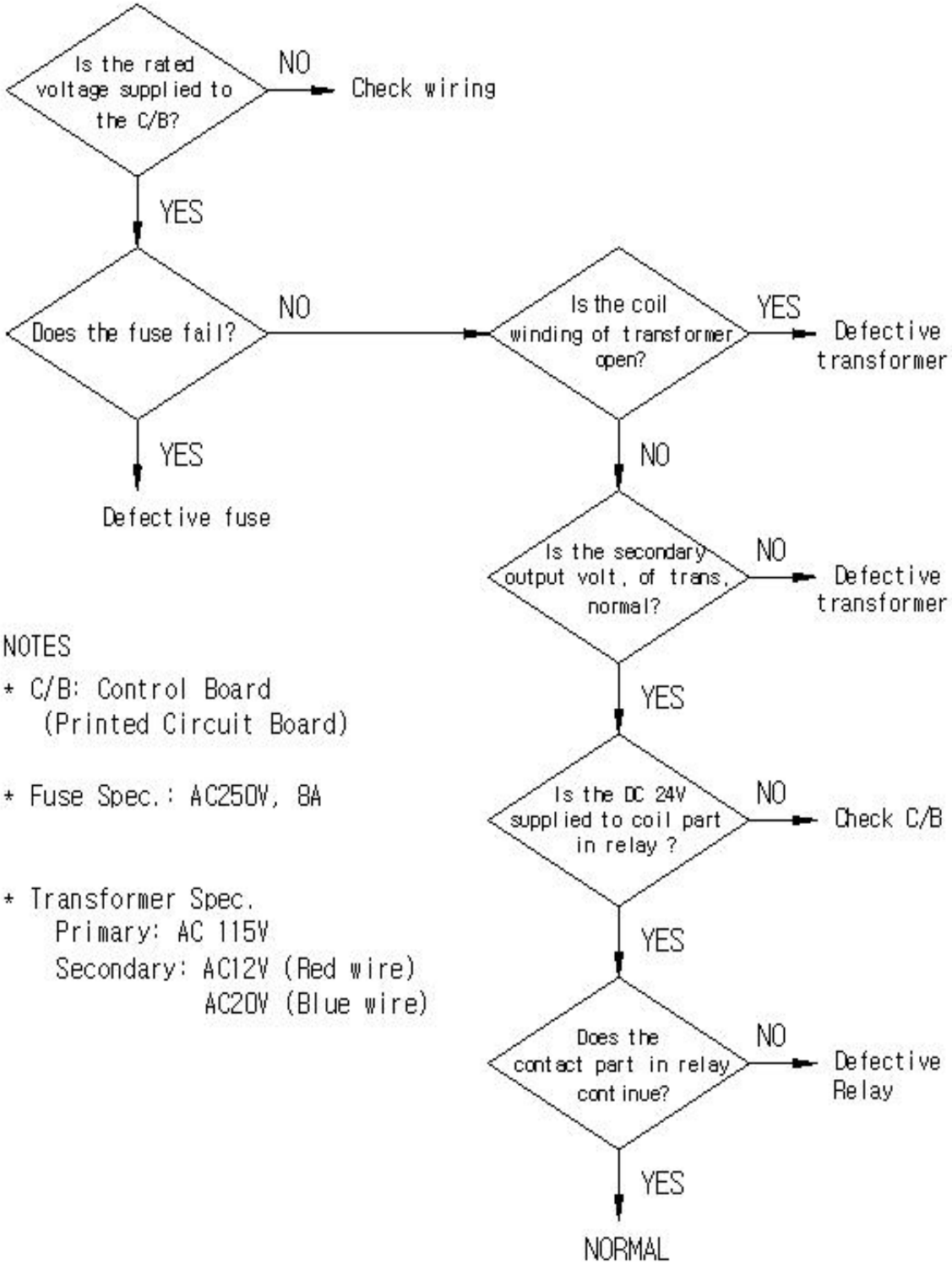


② BAGR24 / BAGR48 / BAGR72



2) CHECKING THE POWER SUPPLY OF CONTROL BOARD

① BASF1 / BASF2 / BASF3 / BASR1 / BASR2 / BASR3



NOTES

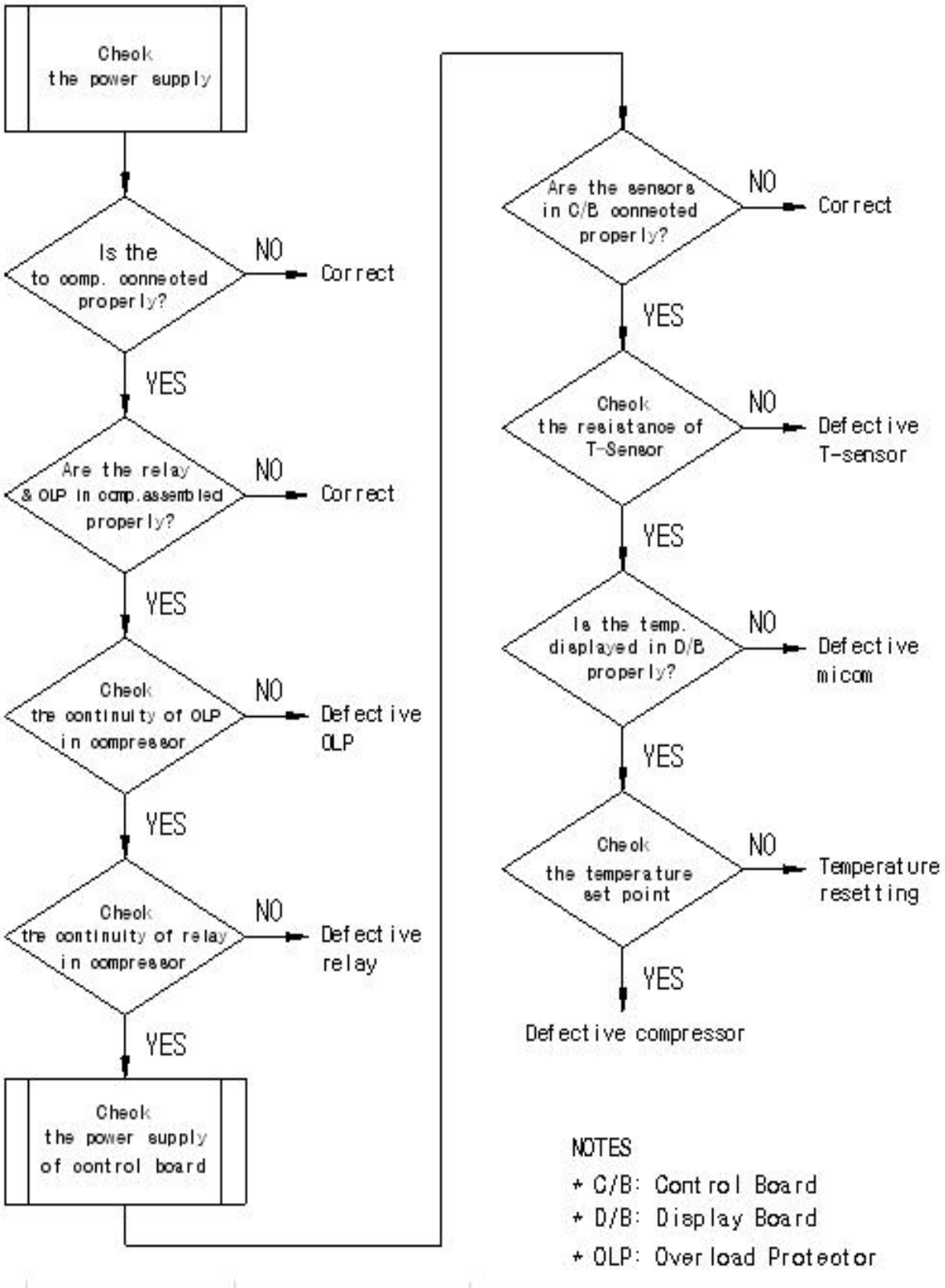
* C/B: Control Board
  (Printed Circuit Board)

* Fuse Spec.: AC250V, 8A

* Transformer Spec.
  Primary: AC 115V
  Secondary: AC12V (Red wire)
  AC20V (Blue wire)

3) CHECKING THE CONTROL PART OF REFRIGERATION CYCLE

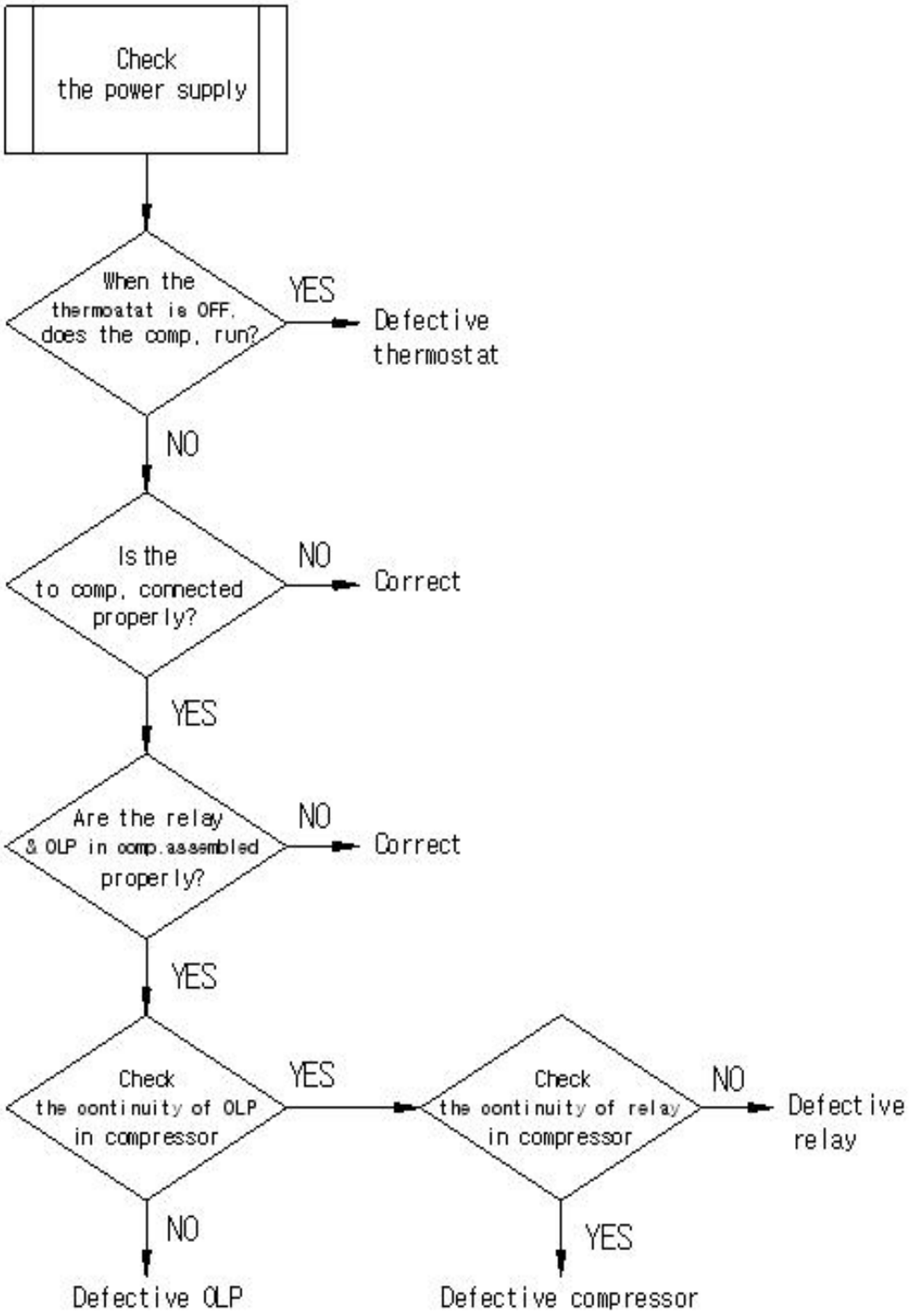
① BASF1 / BASF2 / BASF3 / BASR1 / BASR2 / BASR3



NOTES

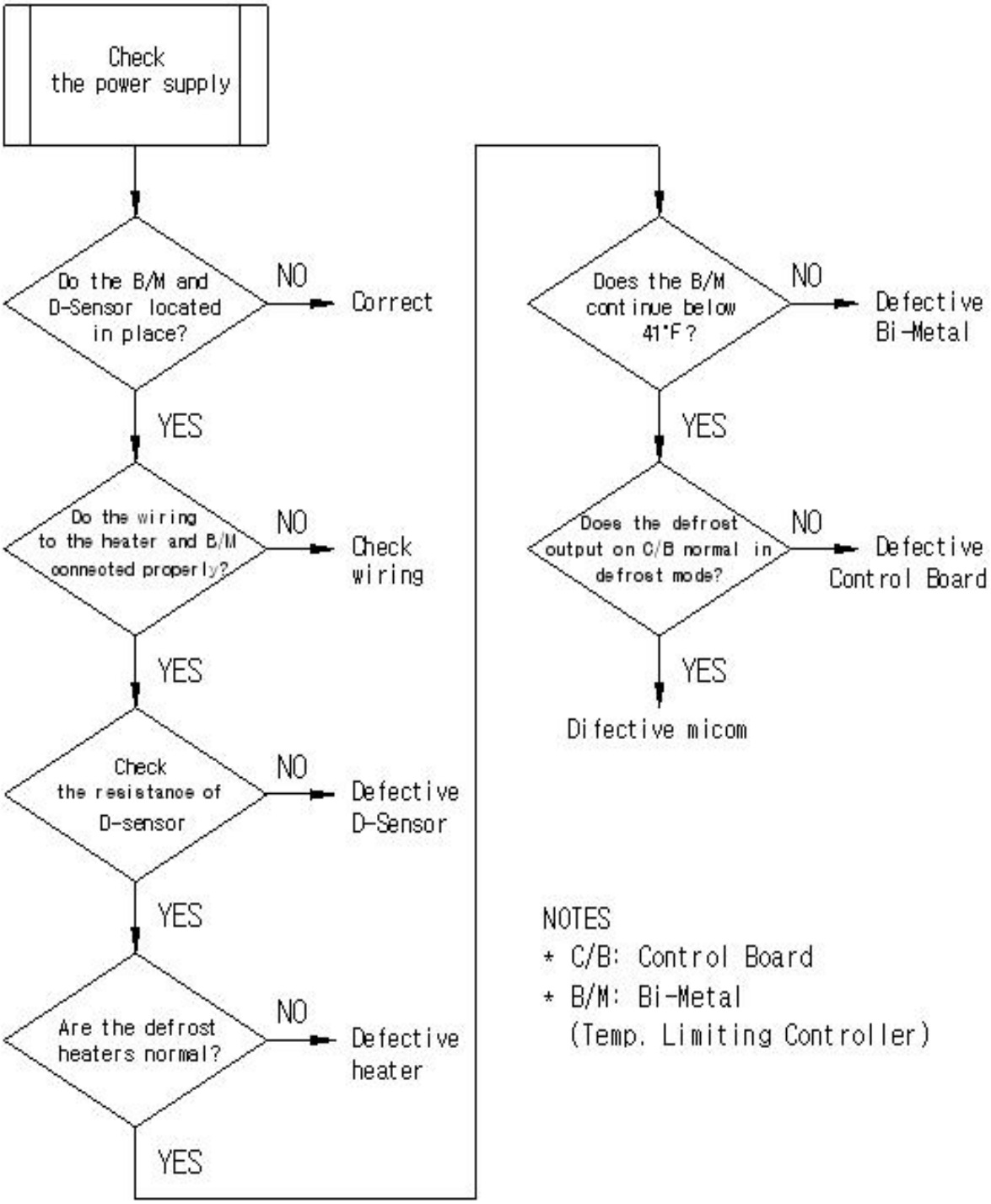
* C/B: Control Board
* D/B: Display Board
* OLP: Overload Protector

② BAGR24 / BAGR48 / BAGR72



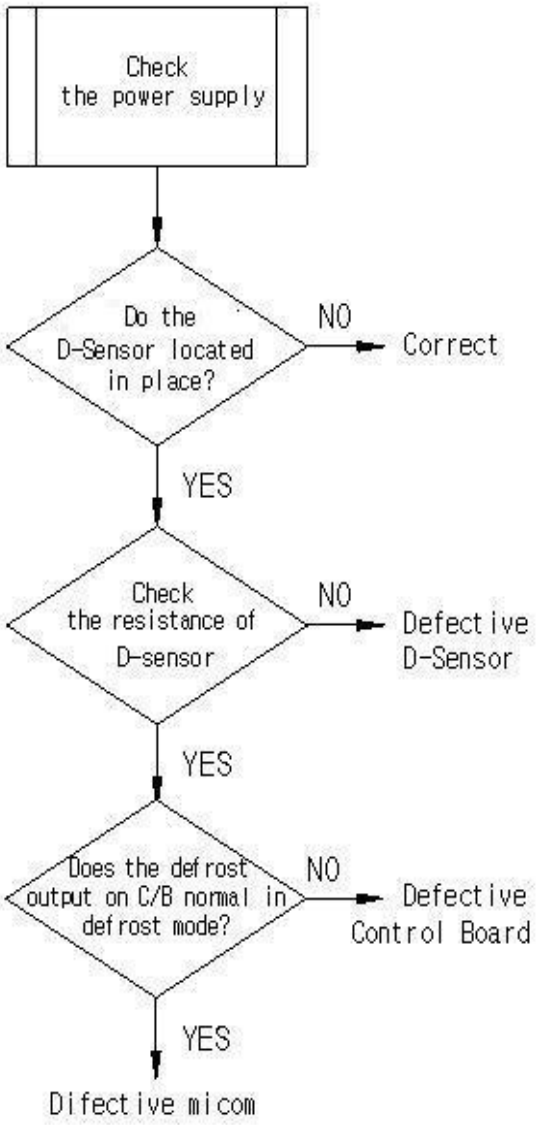
4) CHECKING THE DEFROST PART

① BASF1 / BASF2 / BASF3



NOTES
* C/B: Control Board
* B/M: Bi-Metal
  (Temp. Limiting Controller)

② BASR1 / BASR2 / BASR3

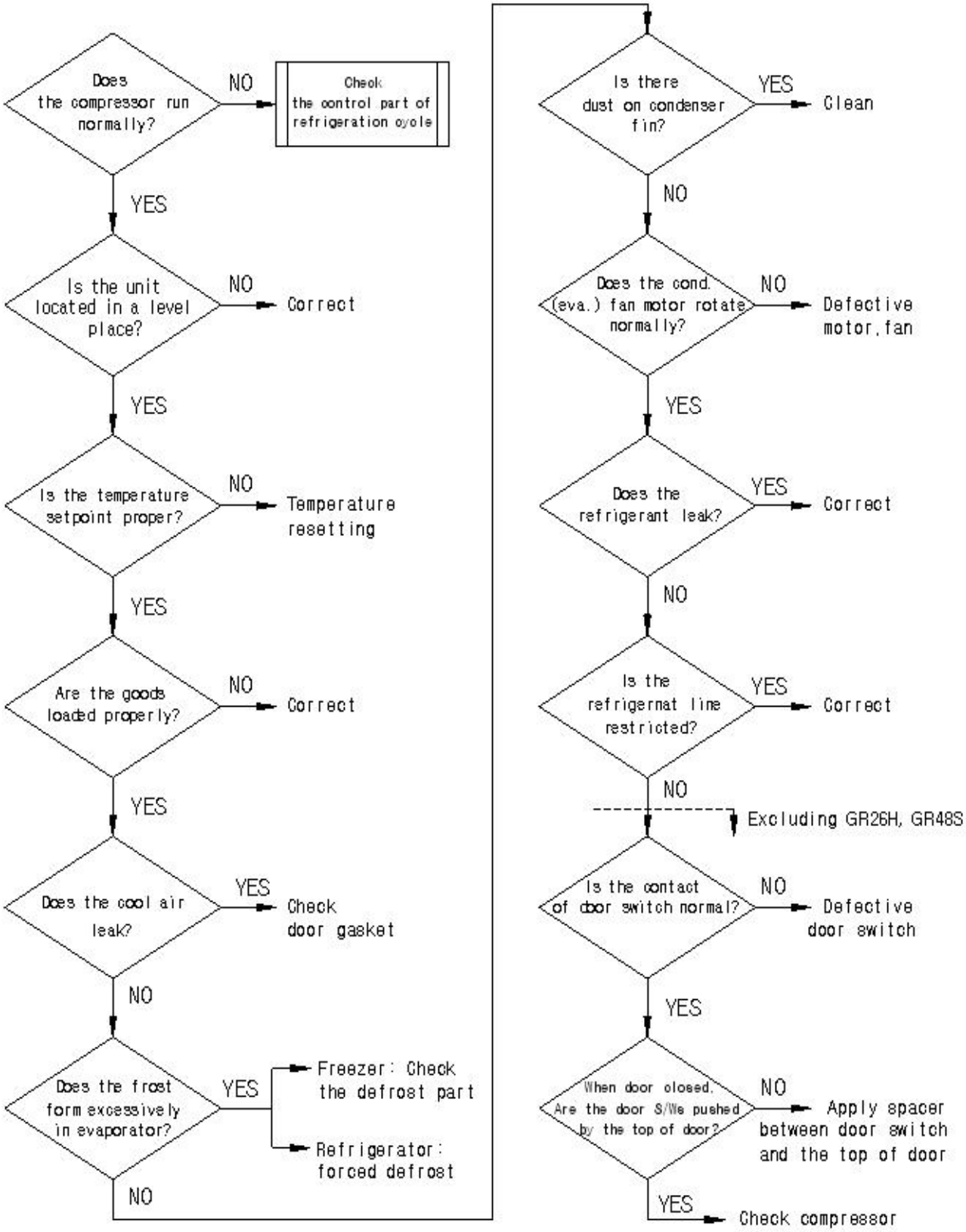


NOTES

* C/B: Control Board

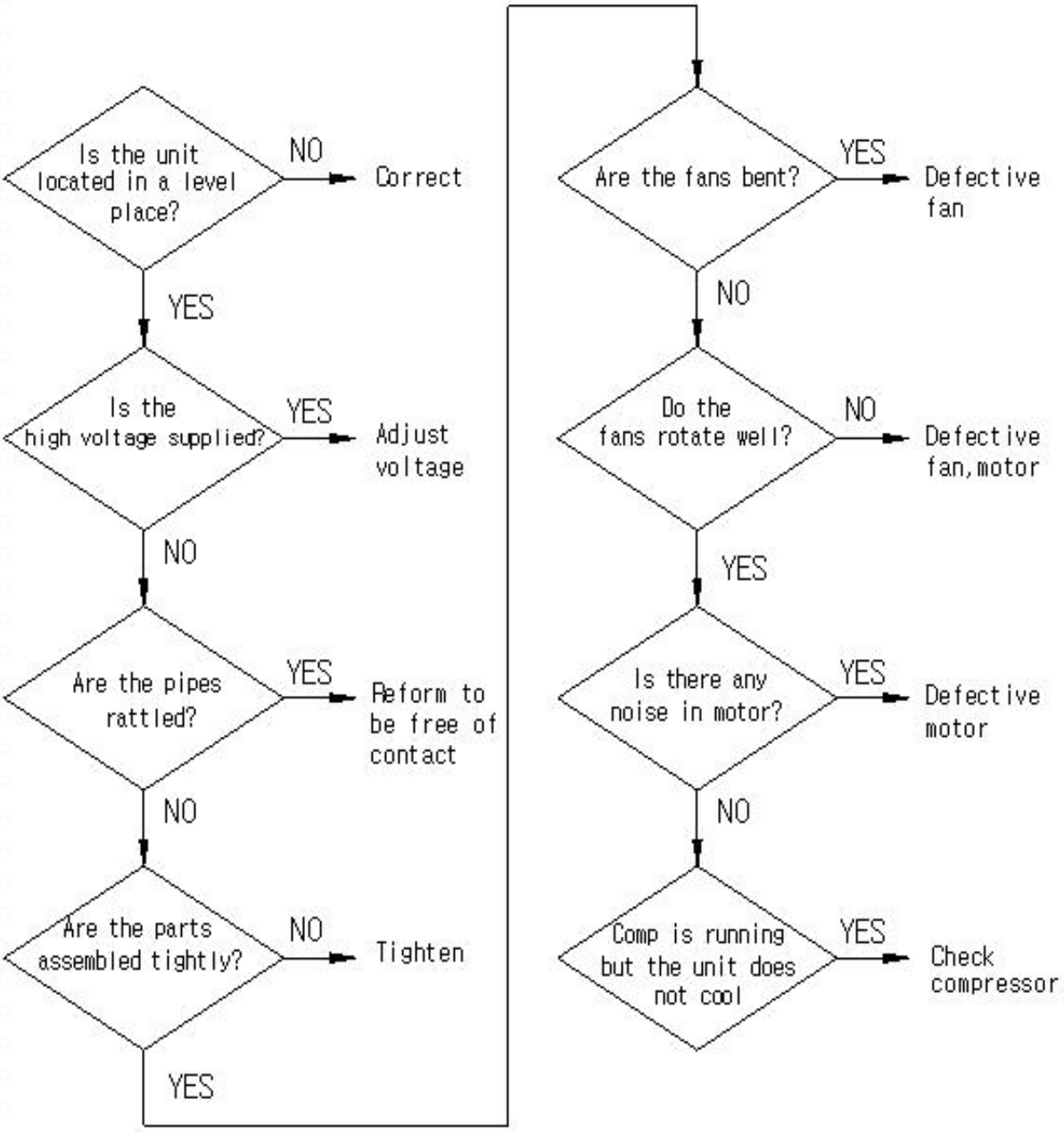
5) WHEN THE UNIT DOES NOT COOL

① All Models



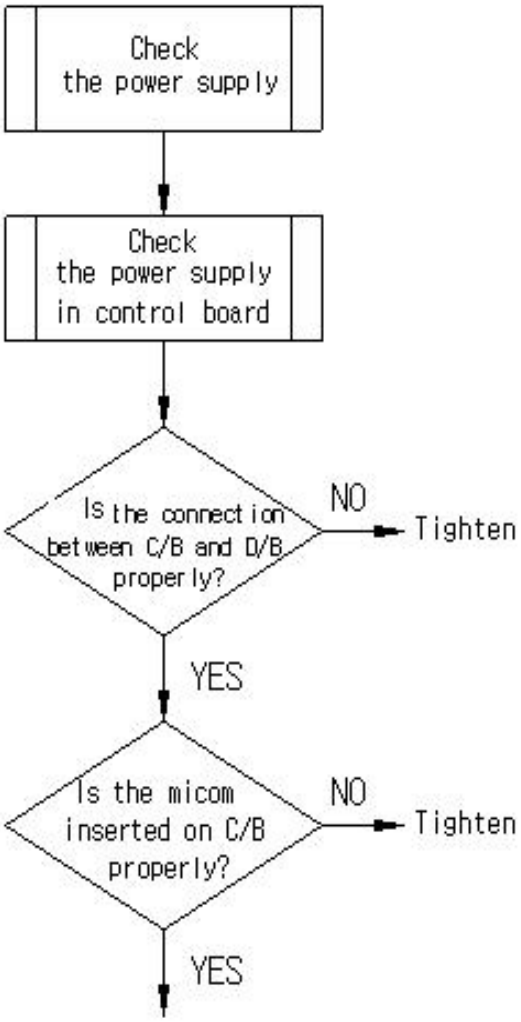
6) WHEN THERE IS A ABNORMAL NOISE

① All Models



7) WHEN THE TEMPERATURE DOES NOT DISPLAY

① BASF1 / BASF2 / BASF3 / BASR1 / BASR2 / BASR3

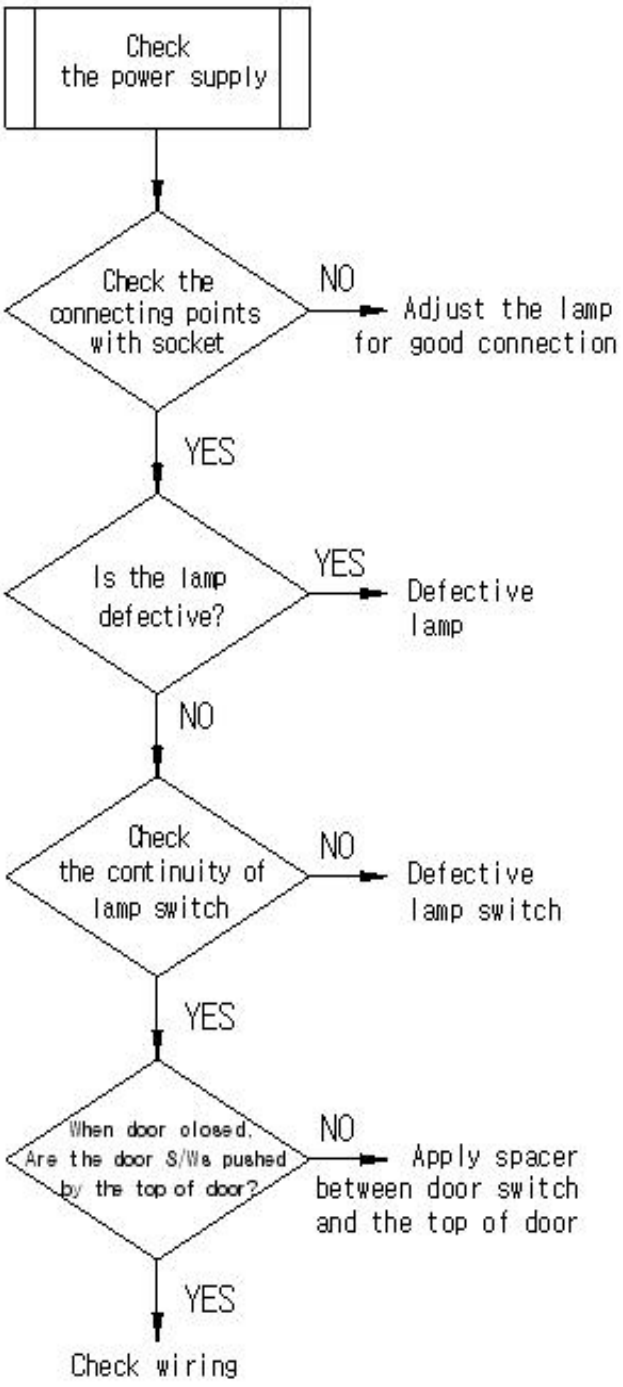


NOTES

* C/B: Control Board
* D/B: Display Board

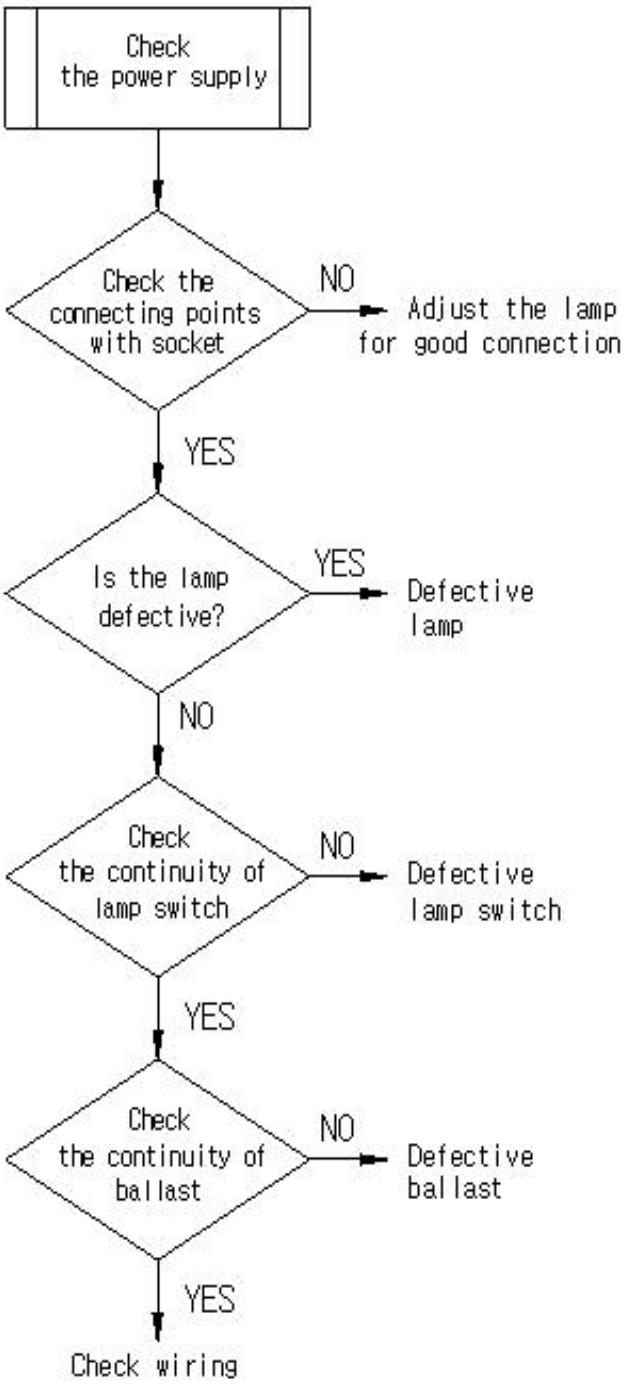
8) WHEN THE LAMP DOES NOT LIGHT

① BASF1 / BASF2 / BASF3
BASR1 / BASR2 / BASR3



* Incandescence Lamp : 40W

② BAGR24 / BAGR48 / BAGR72

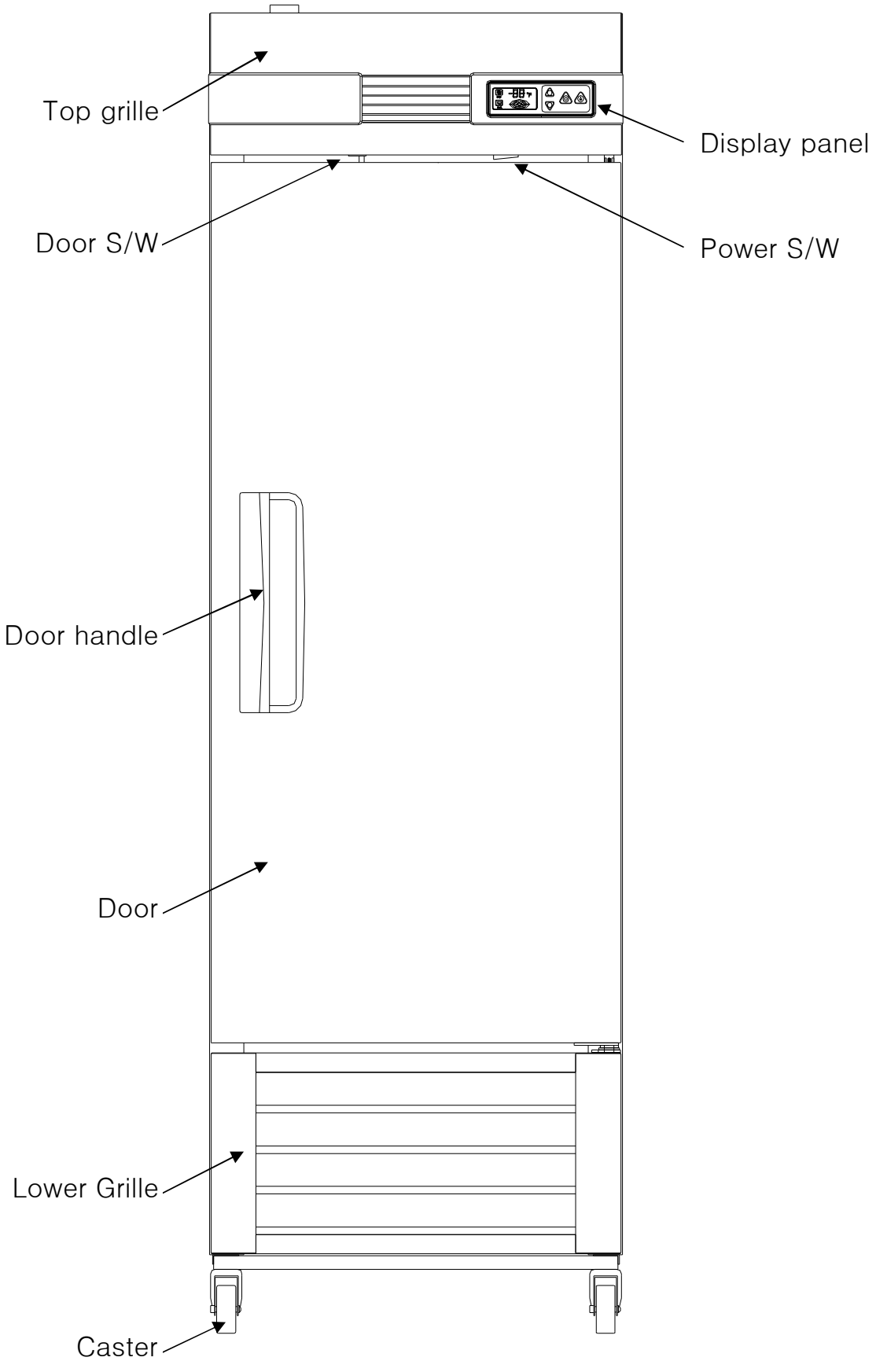


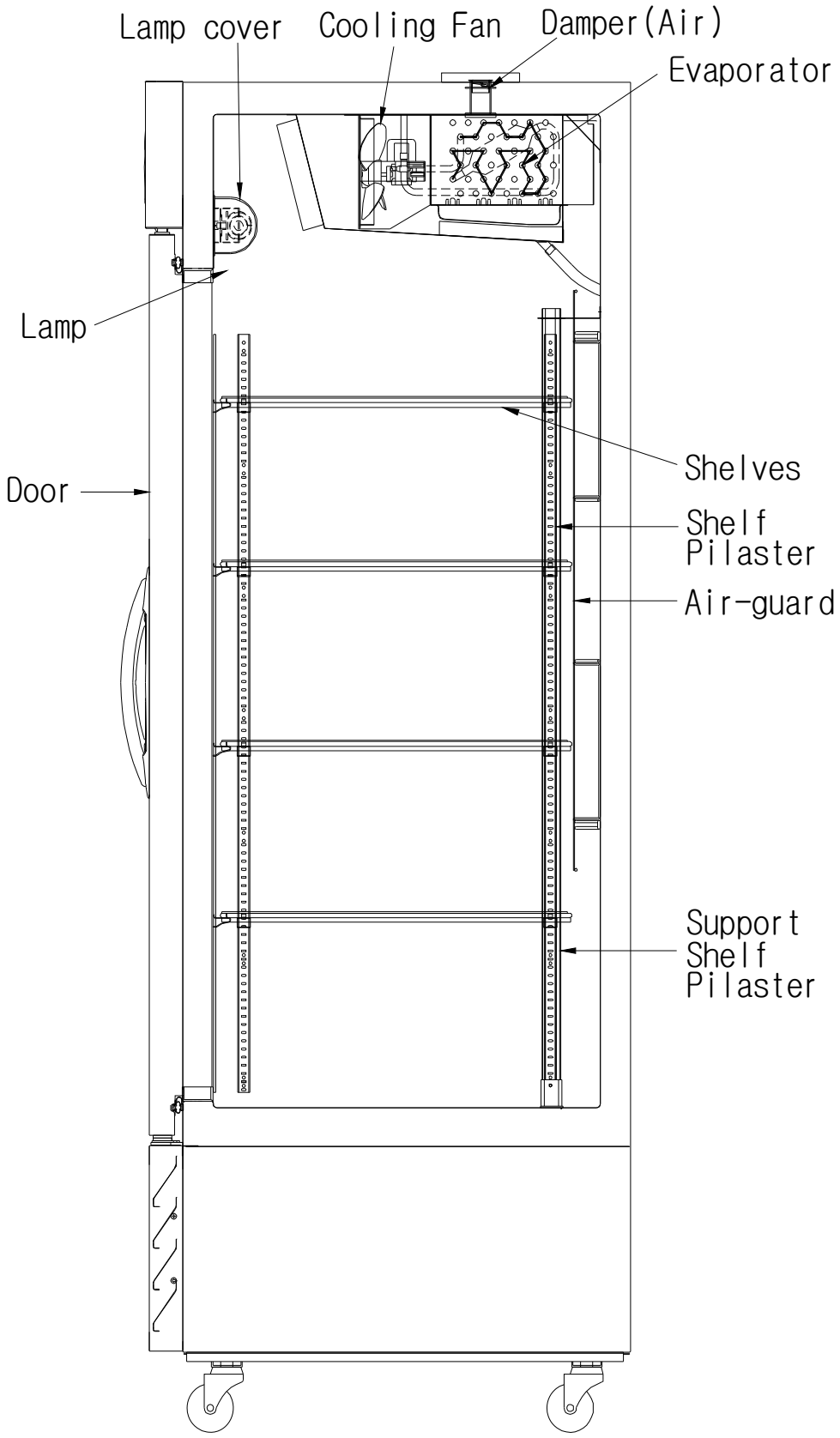
* Fluorescent Lamp: 32W

Temperature (°F)	Resistance (kΩ)	
	T-sensor (±6.5%)	D-sensor (±5.5%)
-5	23.04	79.17
0	19.76	68.92
10	14.65	52.61
23	10.10	37.55
32	7.88	30.00
41	6.20	24.13
50	7.91	19.53
60	3.82	15.56
70	3.00	12.48

4. FEATURE CHART

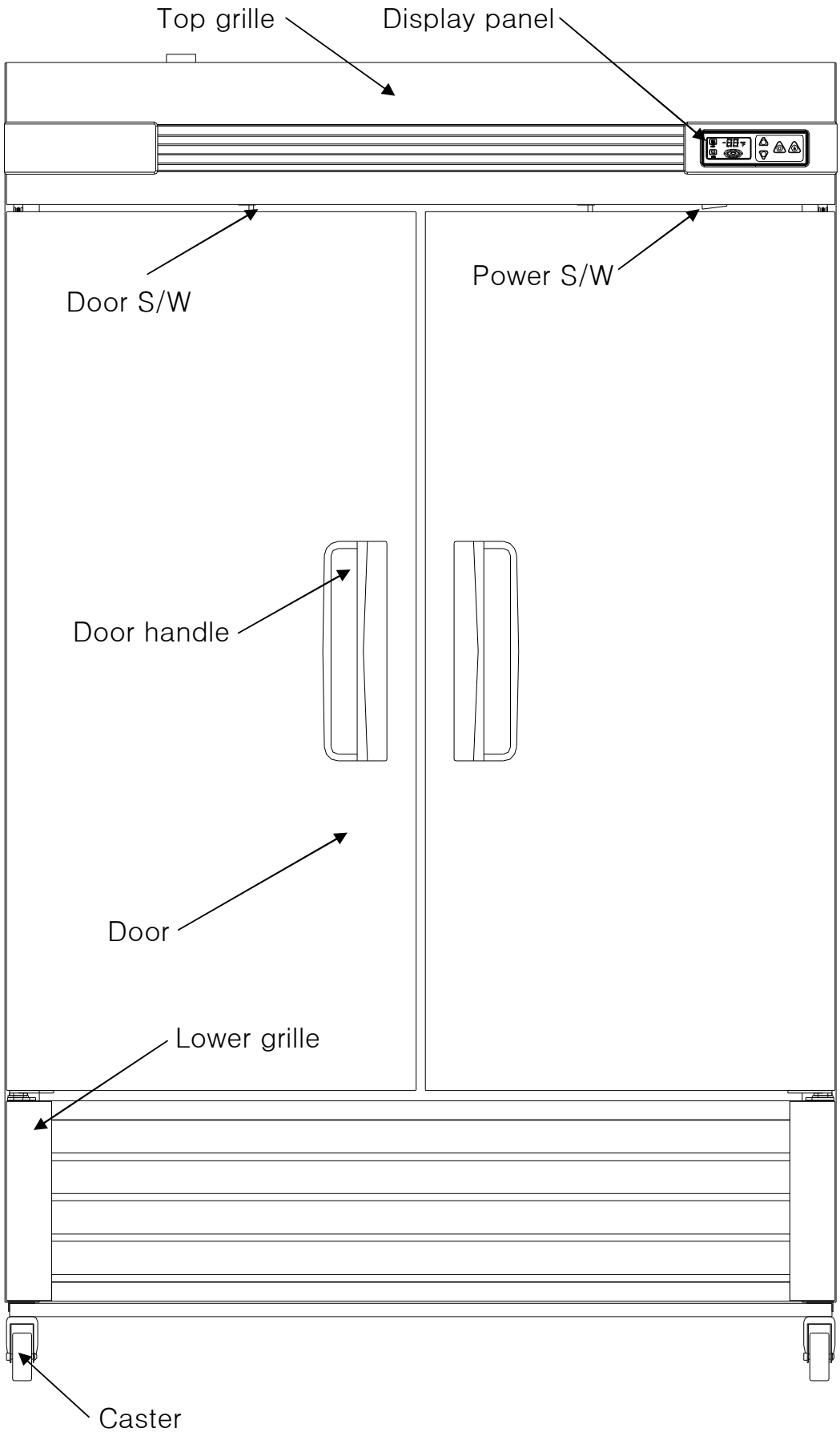
1) BASF1/BASR1 (1 Door)



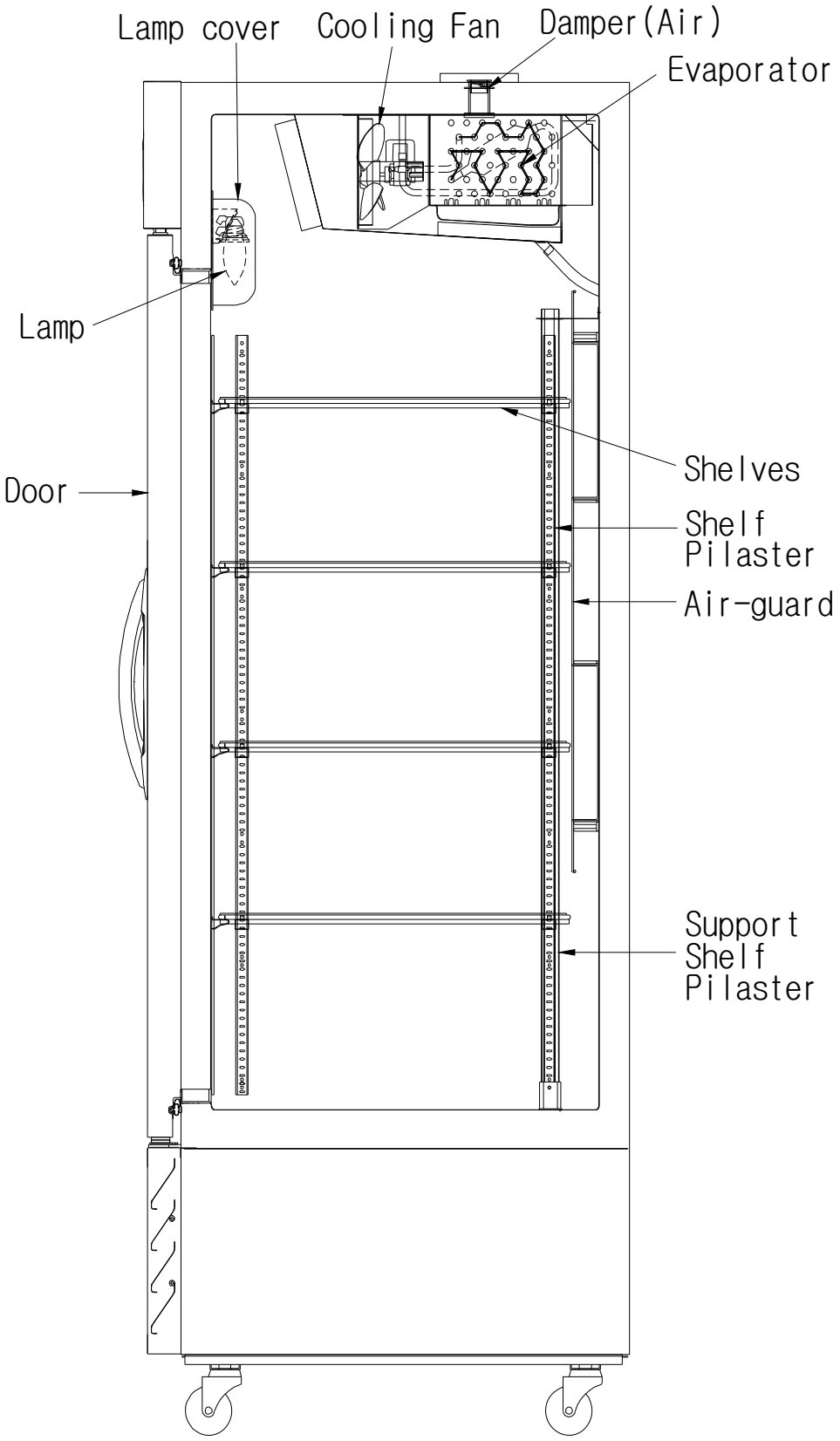

Lamp cover
Cooling Fan
Damper(Air)
Evaporator
Lamp
Door
Shelves
Shelf
Pilaster
Air-guard
Support
Shelf
Pilaster

(SIDE)

2) BASF49/BASR49 (2 Door)

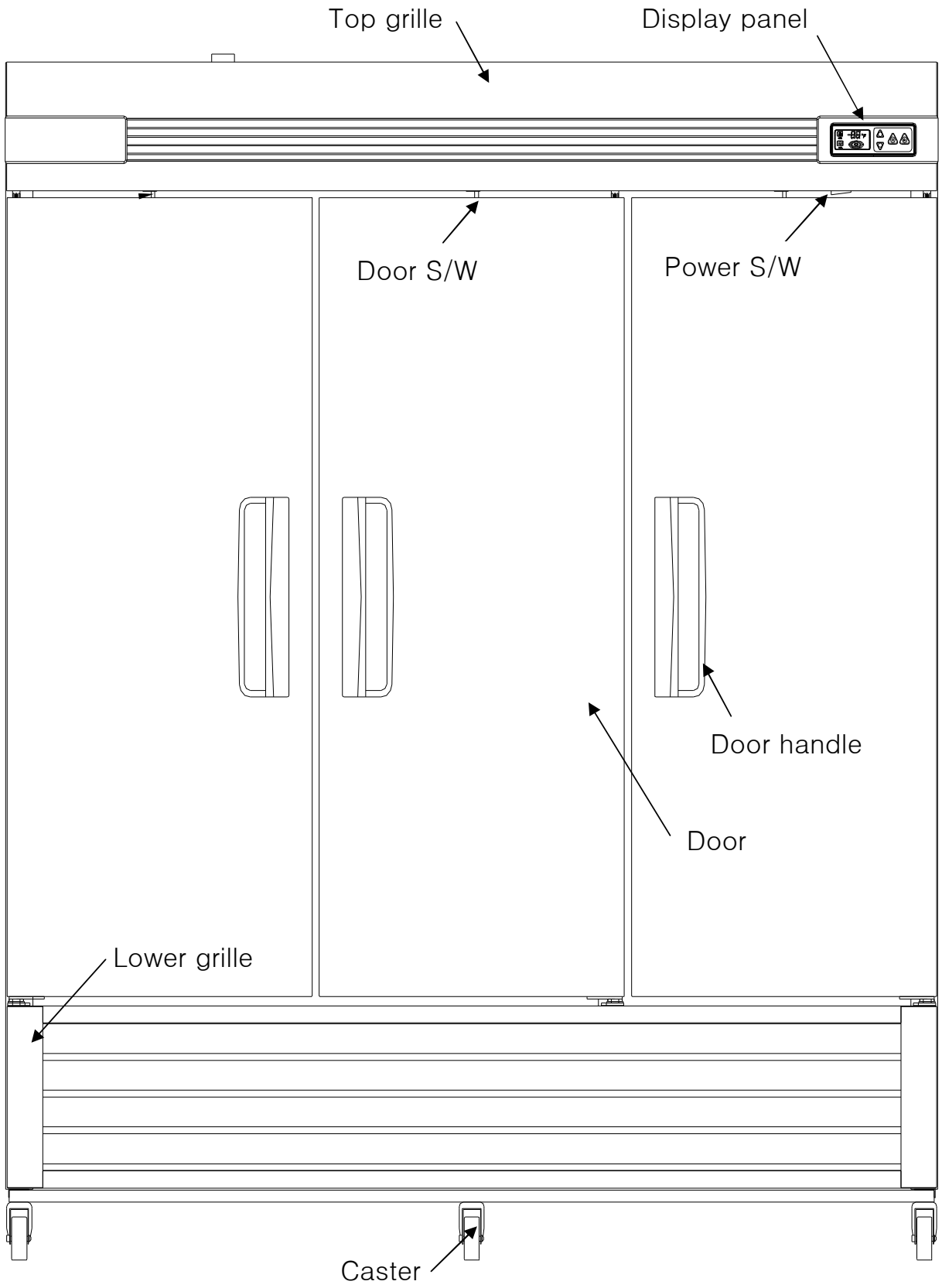


(FRONT)

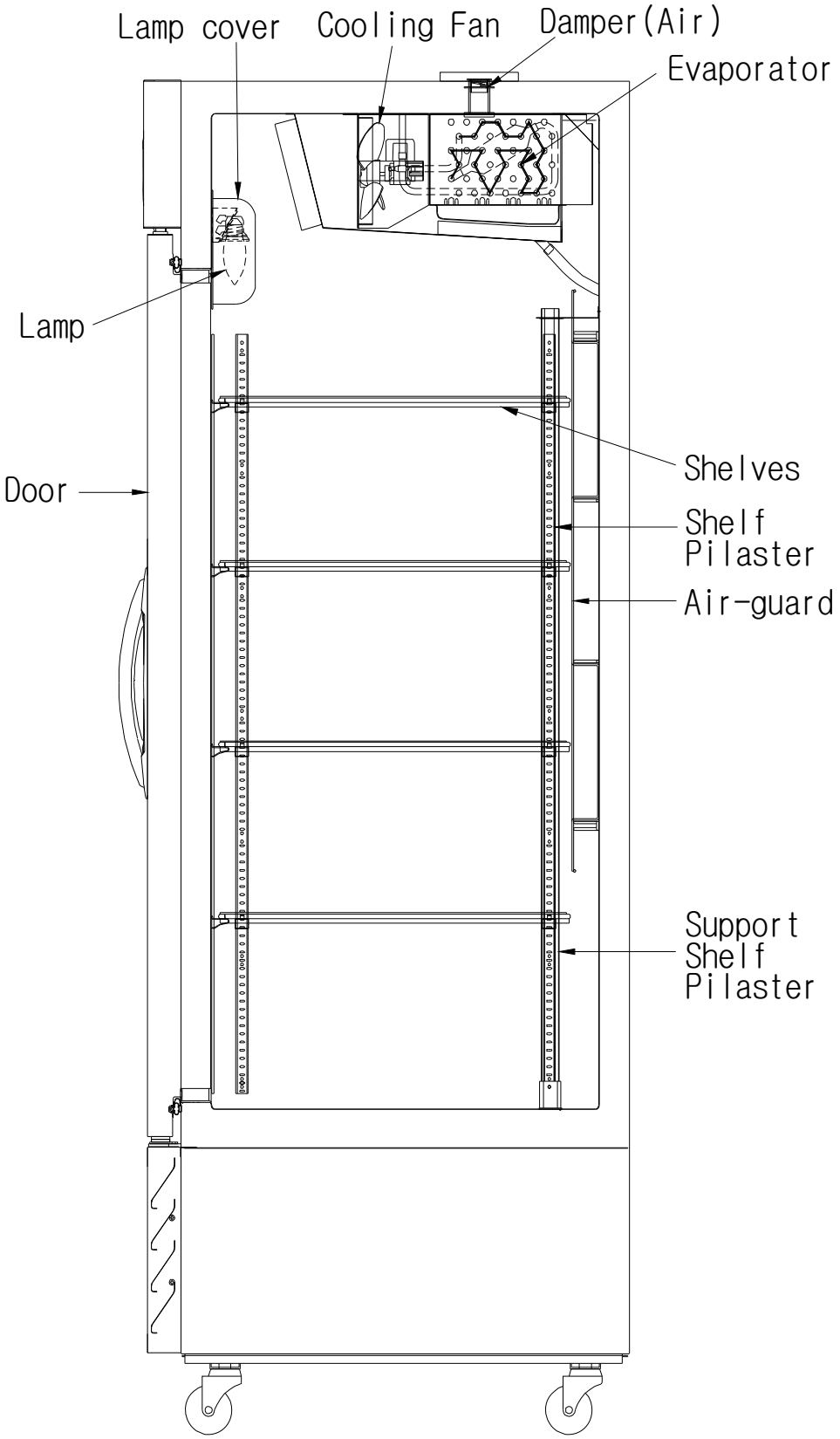

Lamp cover
Cooling Fan
Damper(Air)
Evaporator
Lamp
Door
Shelves
Shelf
Pilaster
Air-guard
Support
Shelf
Pilaster

(SIDE)

3) BASF3/BASR3 (3 Door)

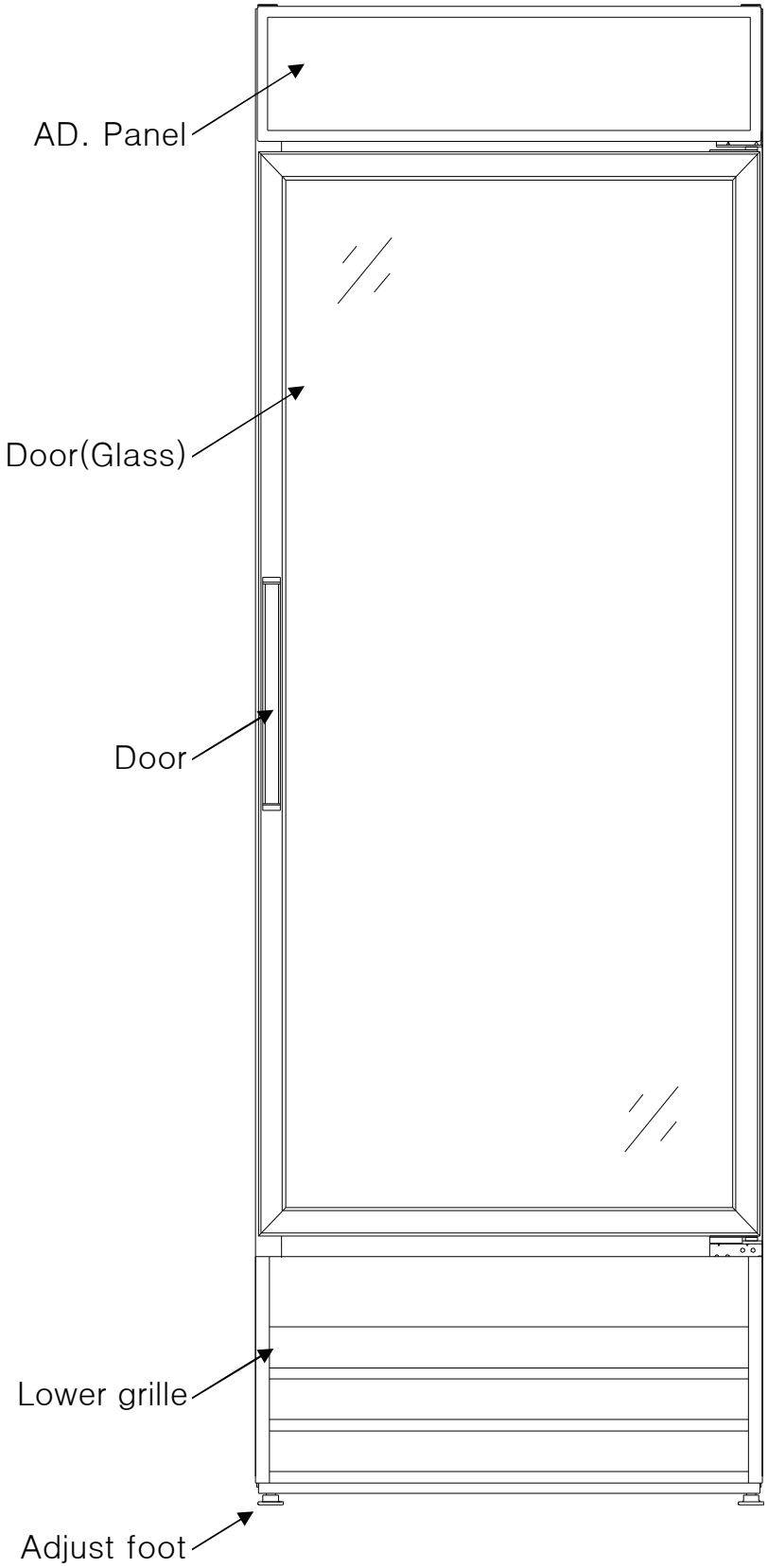


(FRONT)

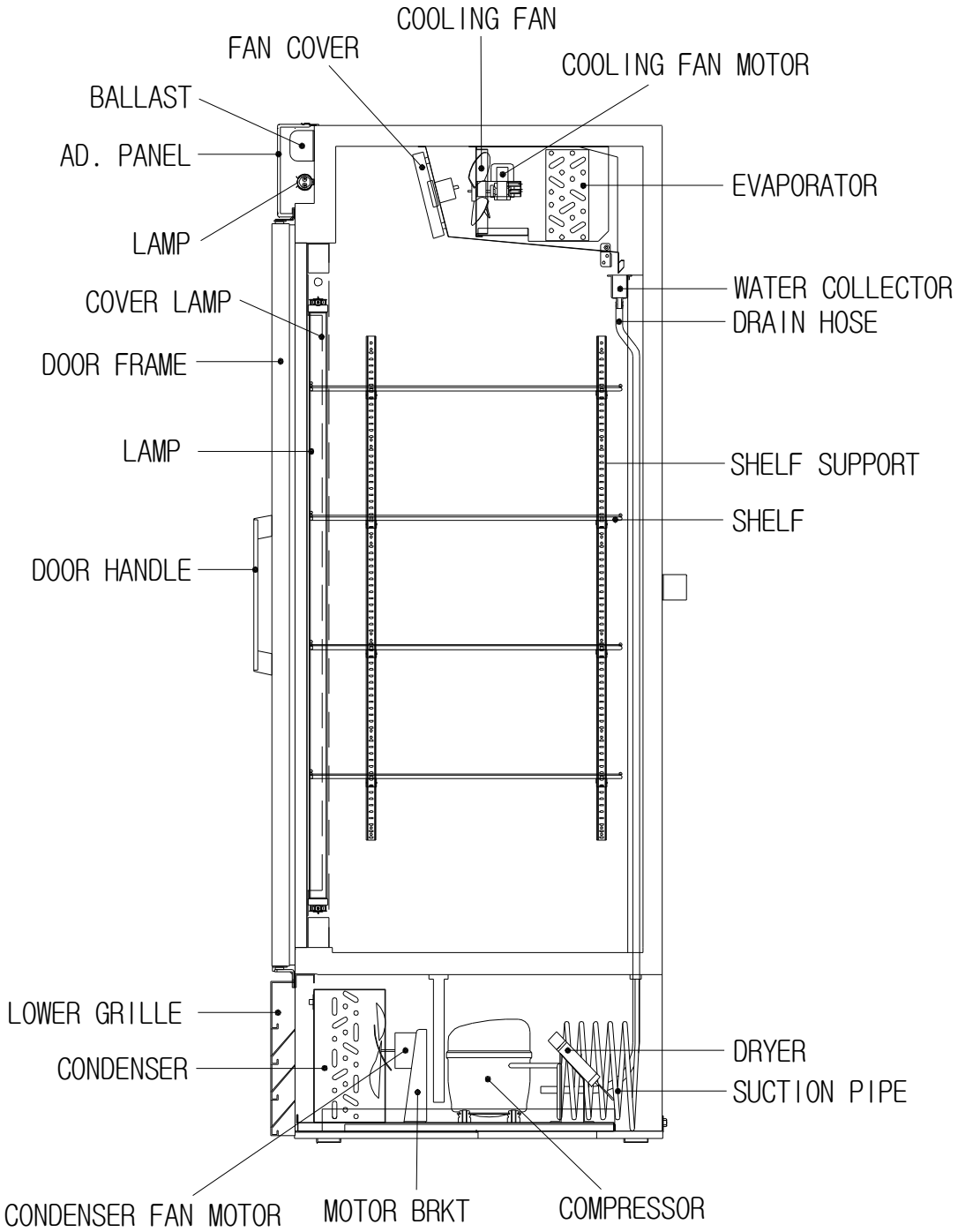

Lamp cover
Cooling Fan
Damper(Air)
Evaporator
Lamp
Door
Shelves
Shelf
Pilaster
Air-guard
Support
Shelf
Pilaster

(SIDE)

4) BAGR24 (Glass 1 Door)

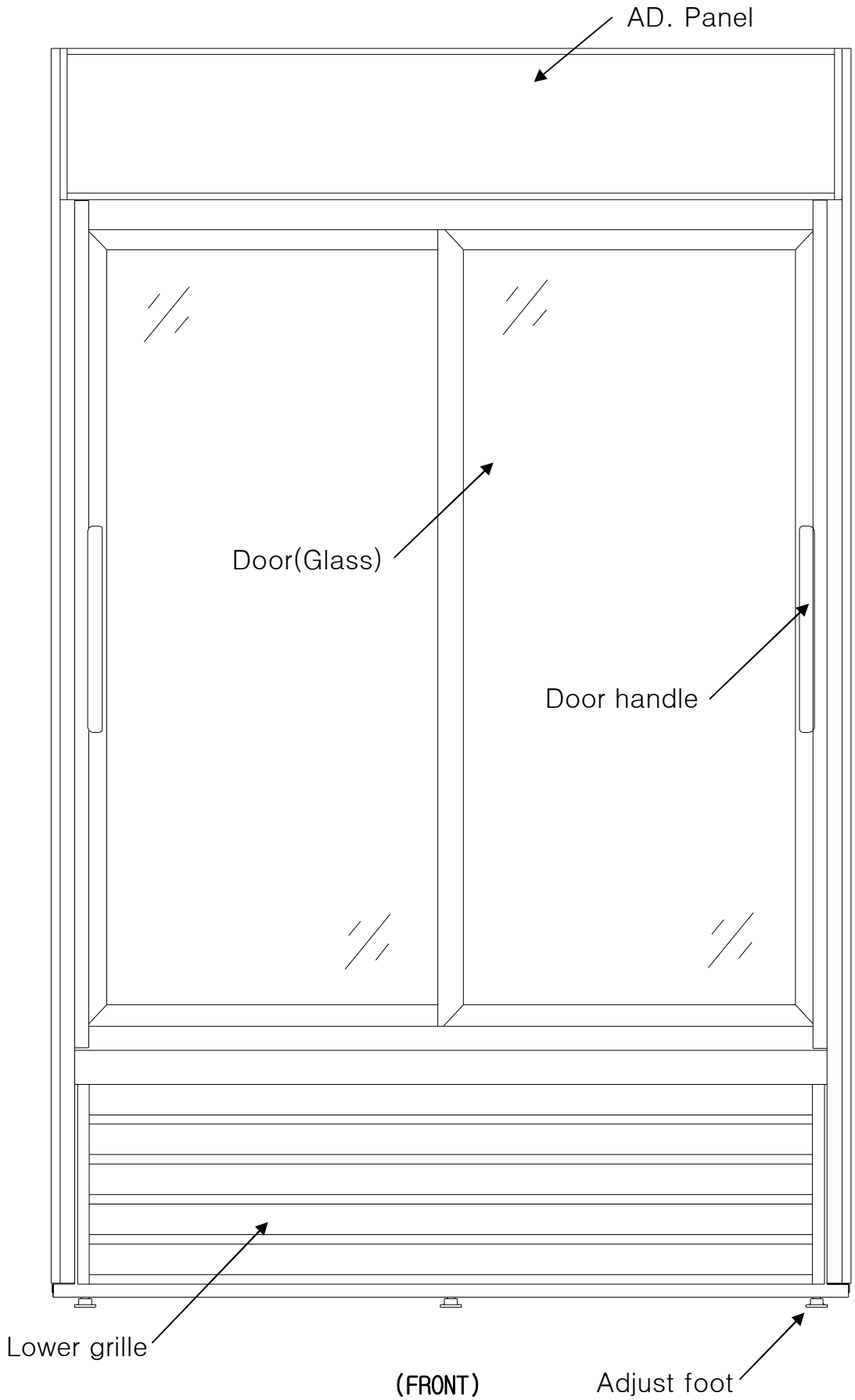


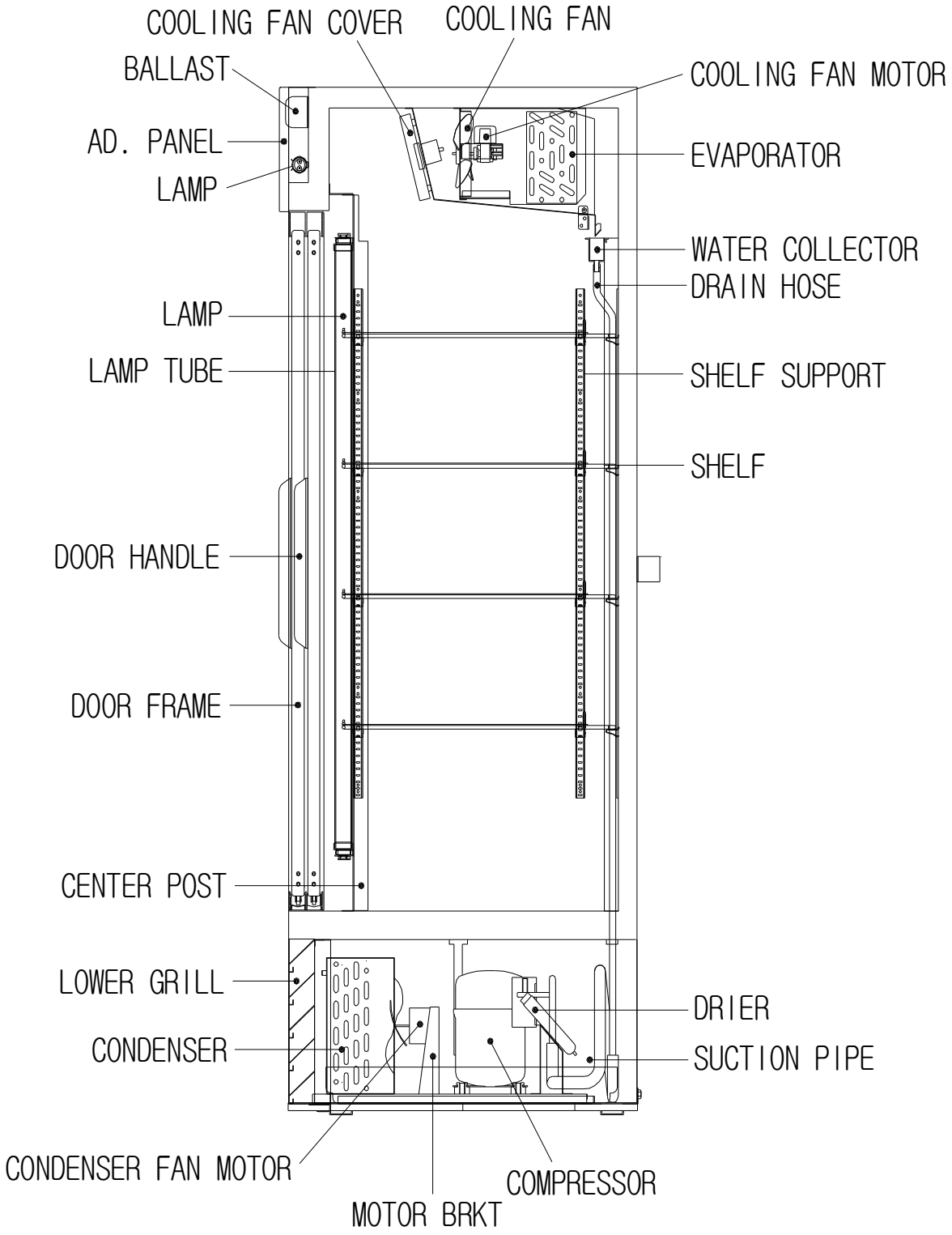
(FRONT)


COOLING FAN
FAN COVER
COOLING FAN MOTOR
BALLAST
AD. PANEL
EVAPORATOR
LAMP
WATER COLLECTOR
COVER LAMP
DRAIN HOSE
DOOR FRAME
LAMP
SHELF SUPPORT
SHELF
DOOR HANDLE
LOWER GRILLE
DRYER
CONDENSER
SUCTION PIPE
CONDENSER FAN MOTOR
MOTOR BRKT
COMPRESSOR

(SIDE)

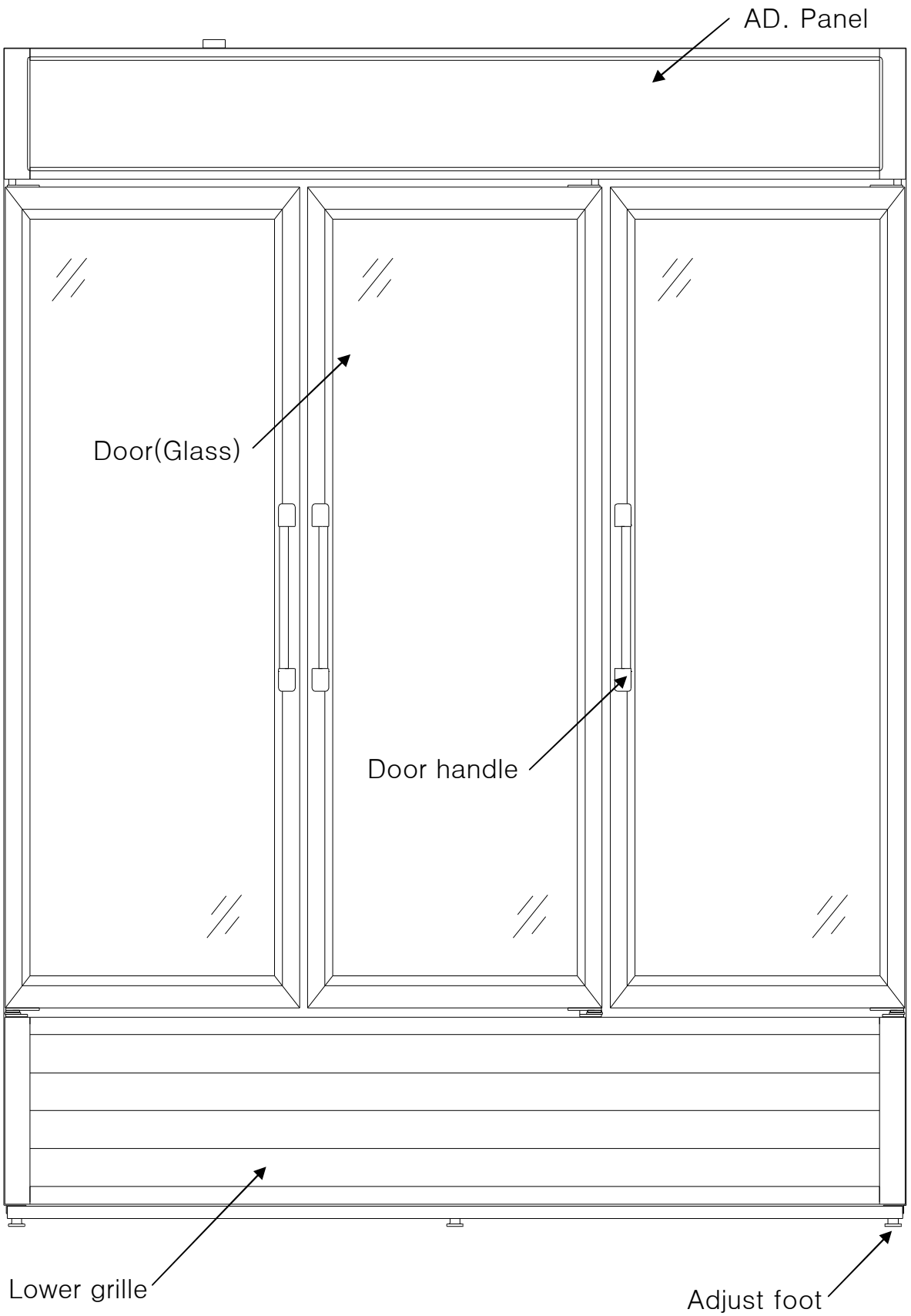
5) BAGR48 (Glass 2 Door)



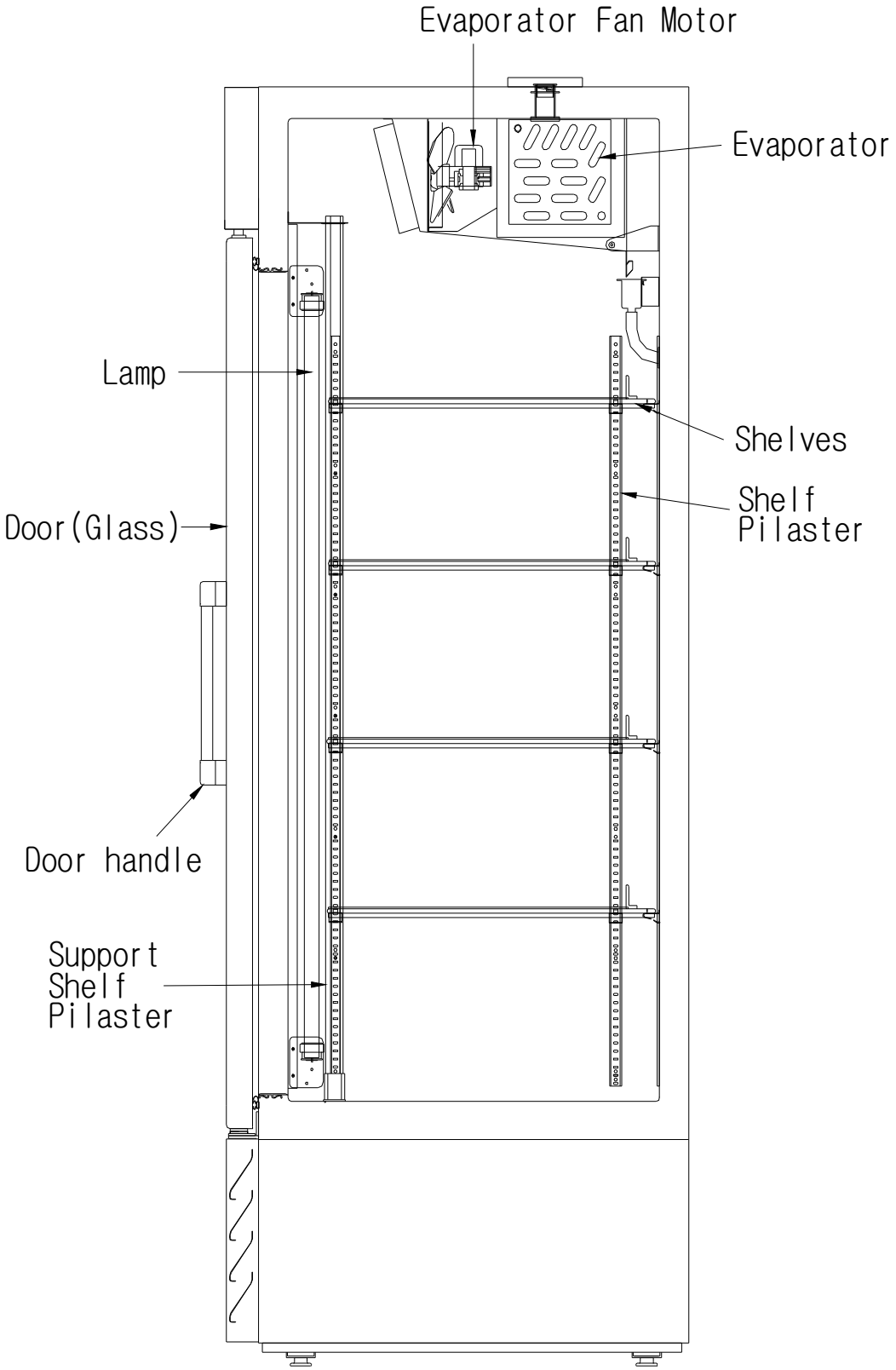

COOLING FAN COVER
COOLING FAN
BALLAST
COOLING FAN MOTOR
AD. PANEL
EVAPORATOR
LAMP
WATER COLLECTOR
DRAIN HOSE
LAMP
LAMP TUBE
SHELF SUPPORT
SHELF
DOOR HANDLE
DOOR FRAME
CENTER POST
LOWER GRILL
DRIER
CONDENSER
SUCTION PIPE
CONDENSER FAN MOTOR
COMPRESSOR
MOTOR BRKT

(SIDE)

6) BAGR72 (Glass 3 Door)



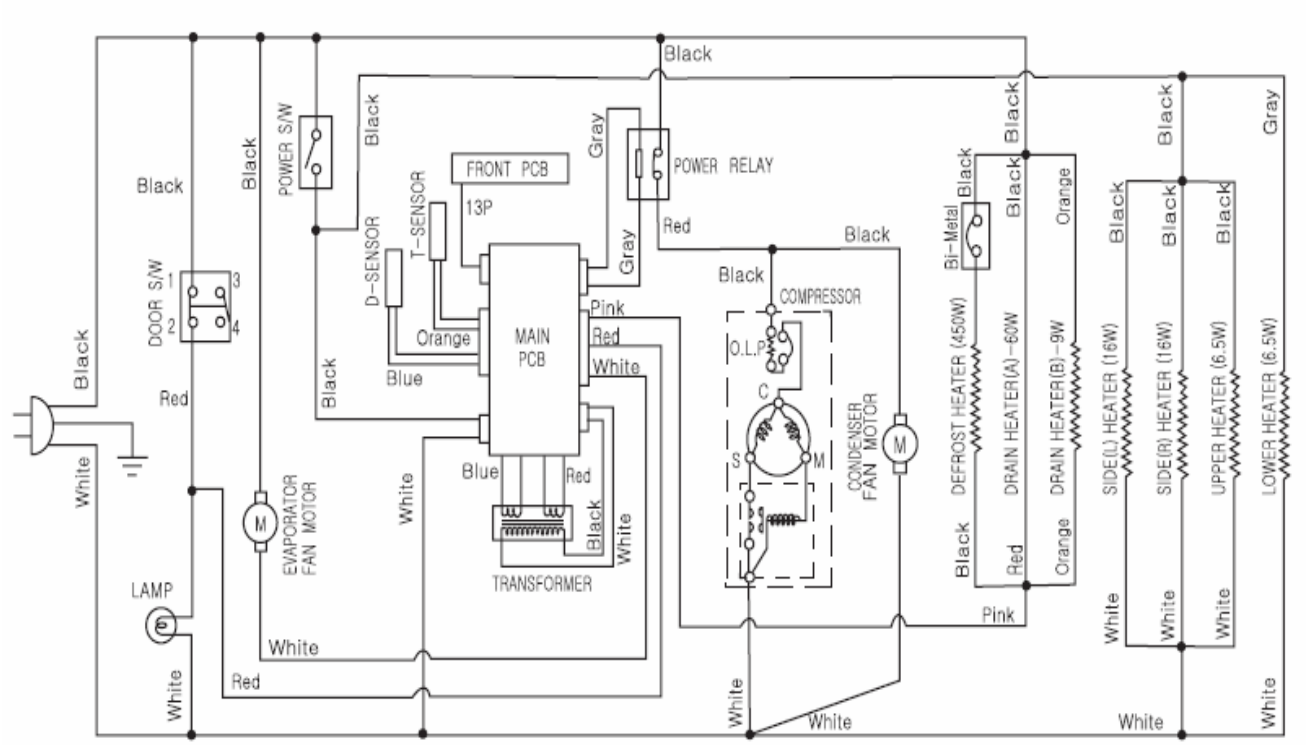
(FRONT)


Evaporator Fan Motor
Evaporator
Lamp
Shelves
Shelf
Pilaster
Door(Glass)
Door handle
Support
Shelf
Pilaster

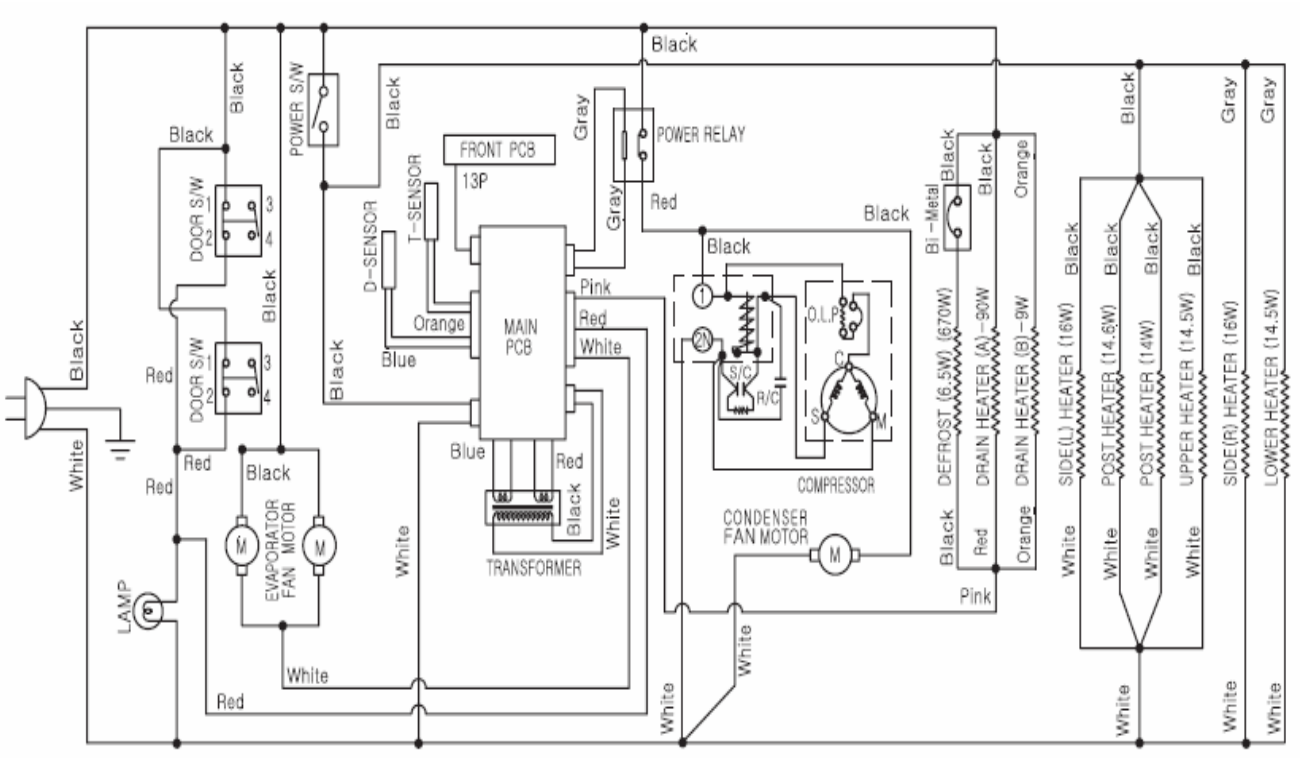
(SIDE)

5. WIRING DIAGRAMS

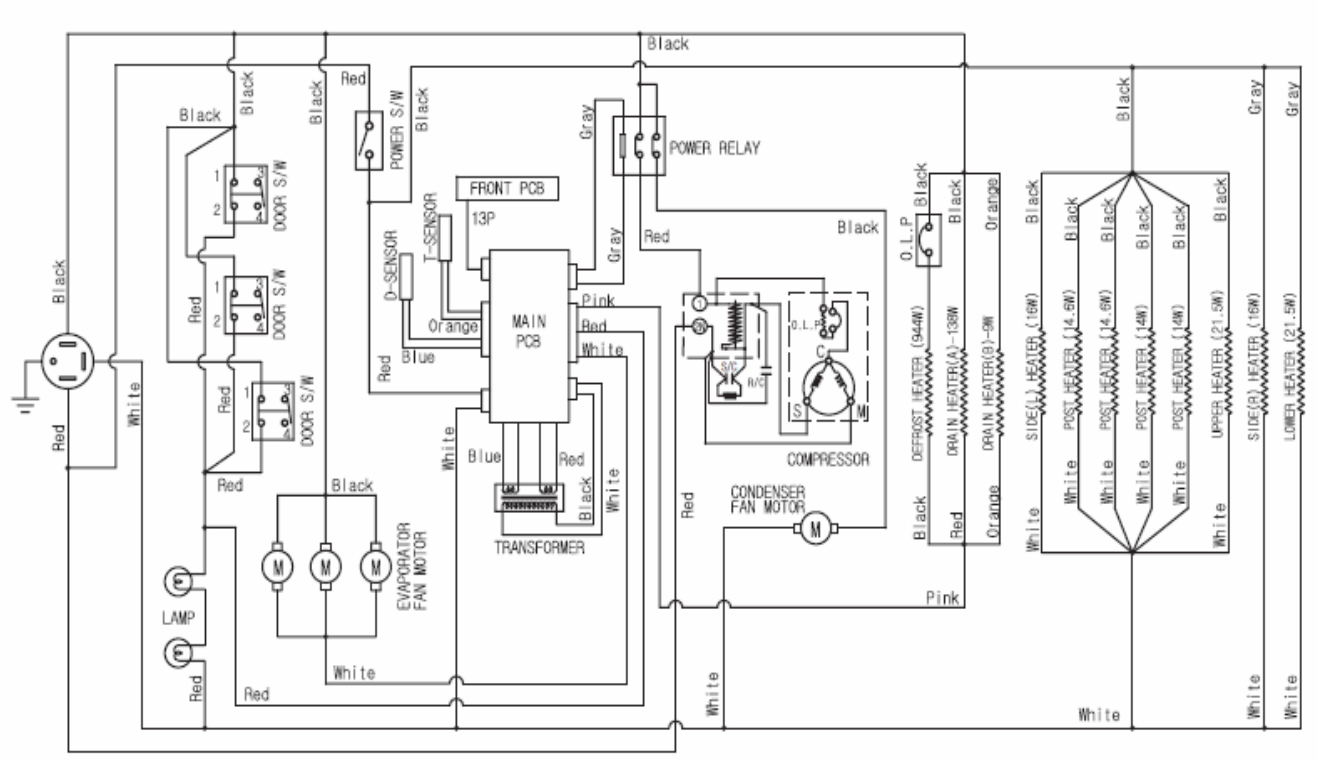
1) BASF1



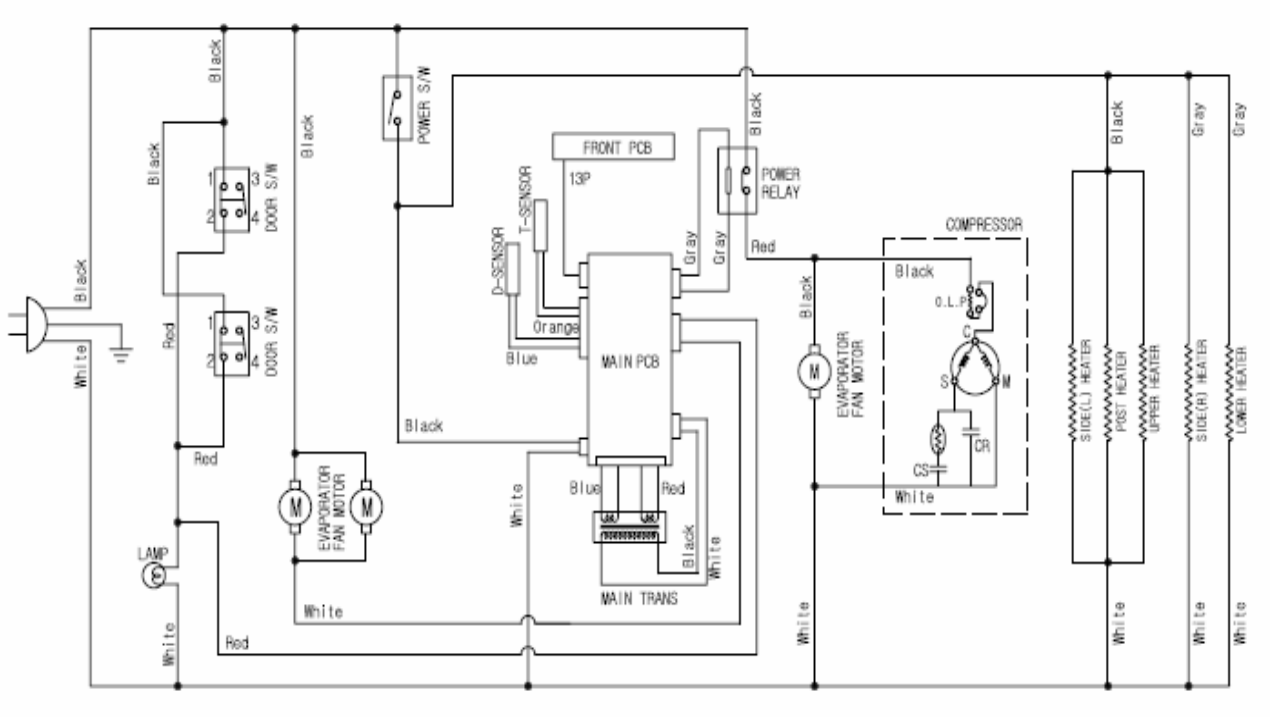
2) BASF2



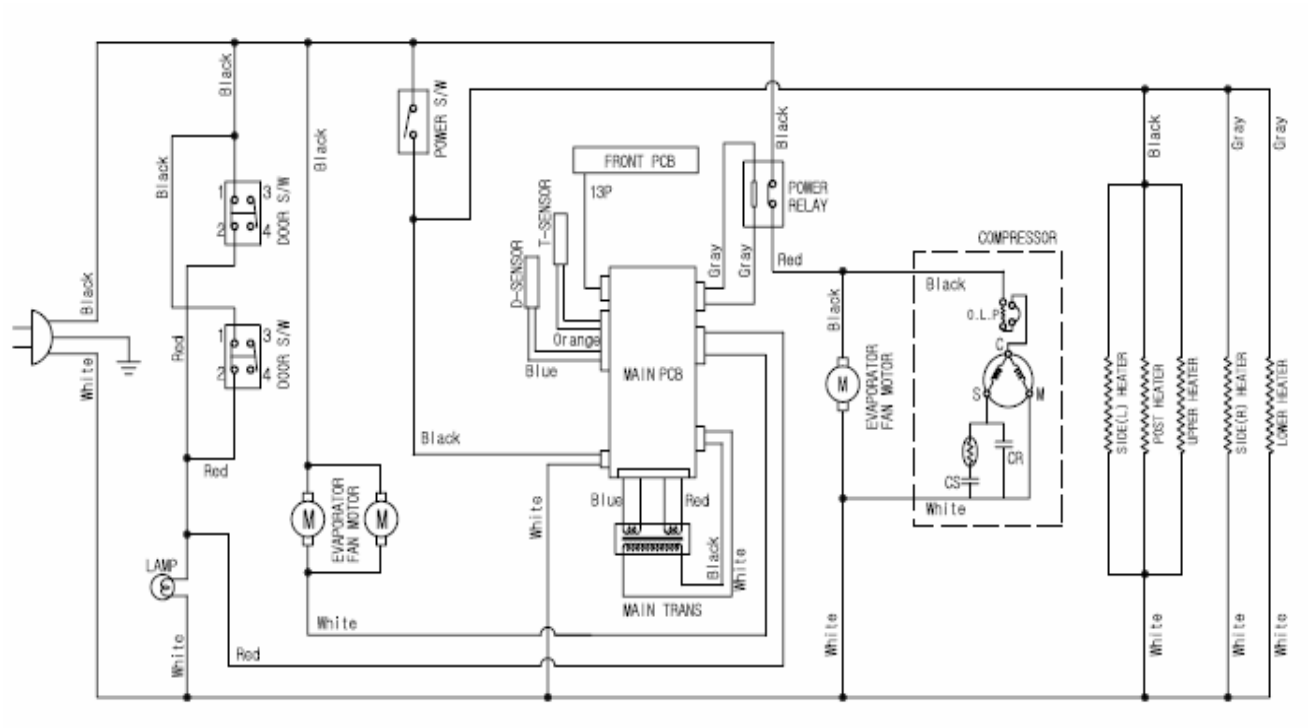
3) BASF3



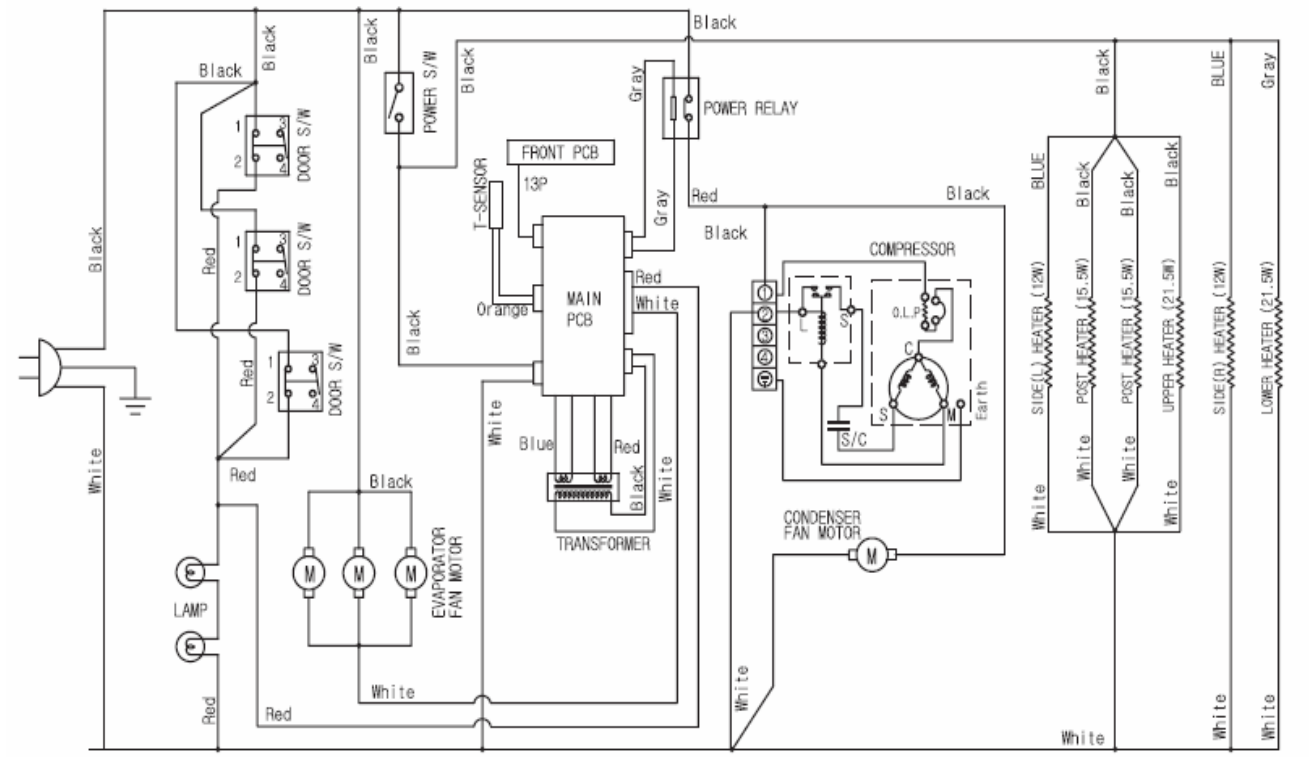
4) BASR1



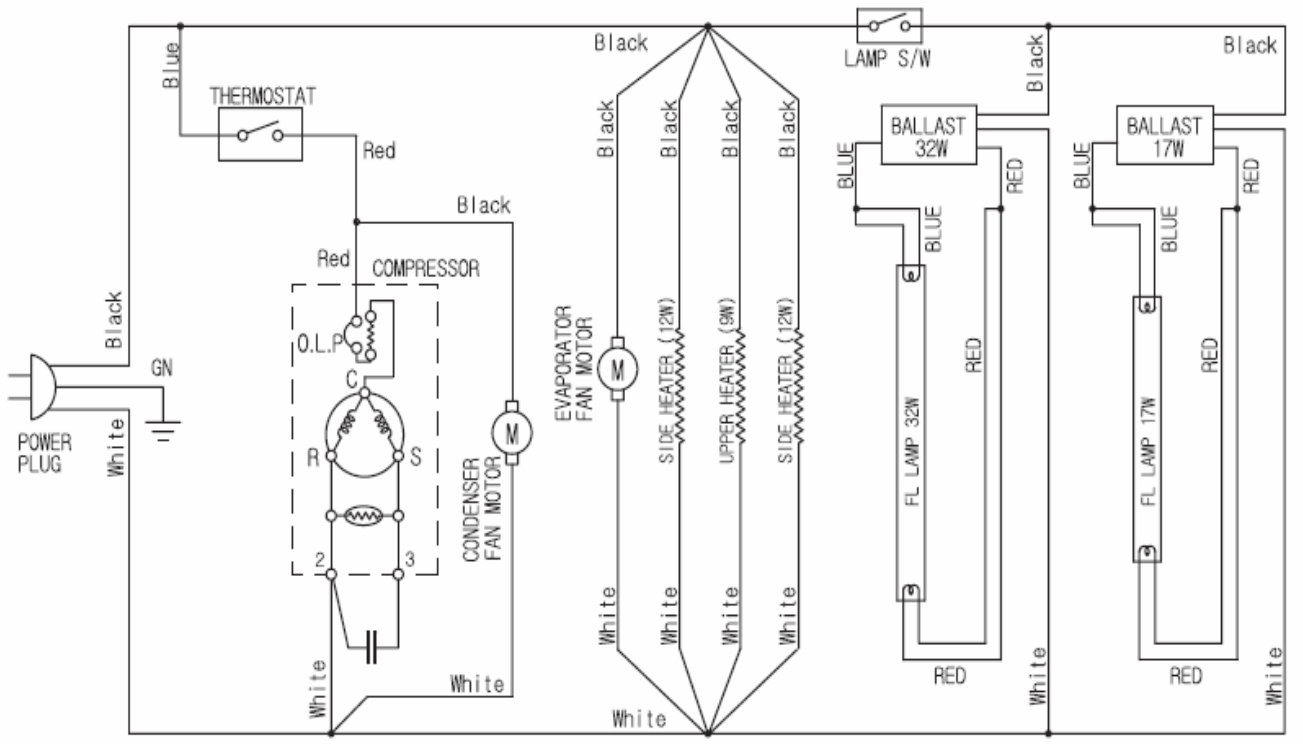
5) BASR2



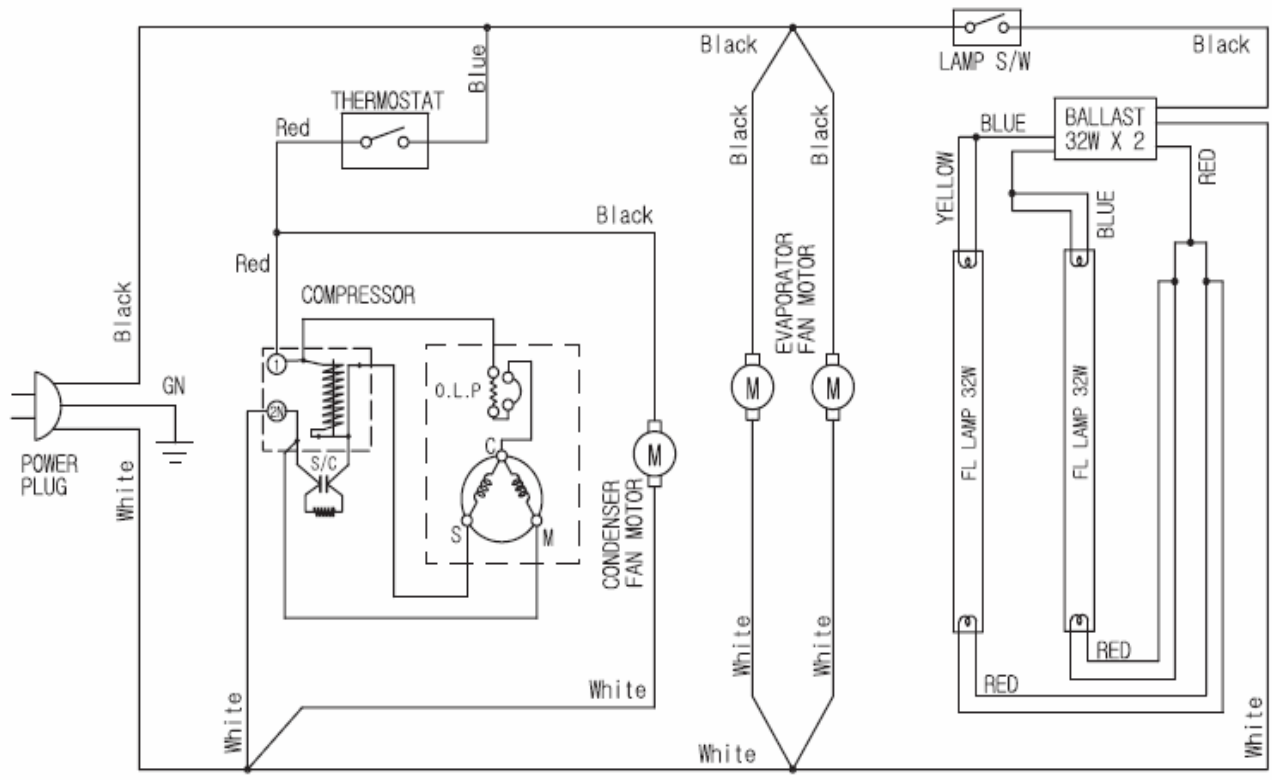
6) BASR3

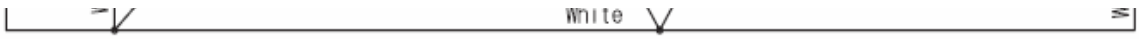


7) BAGR24

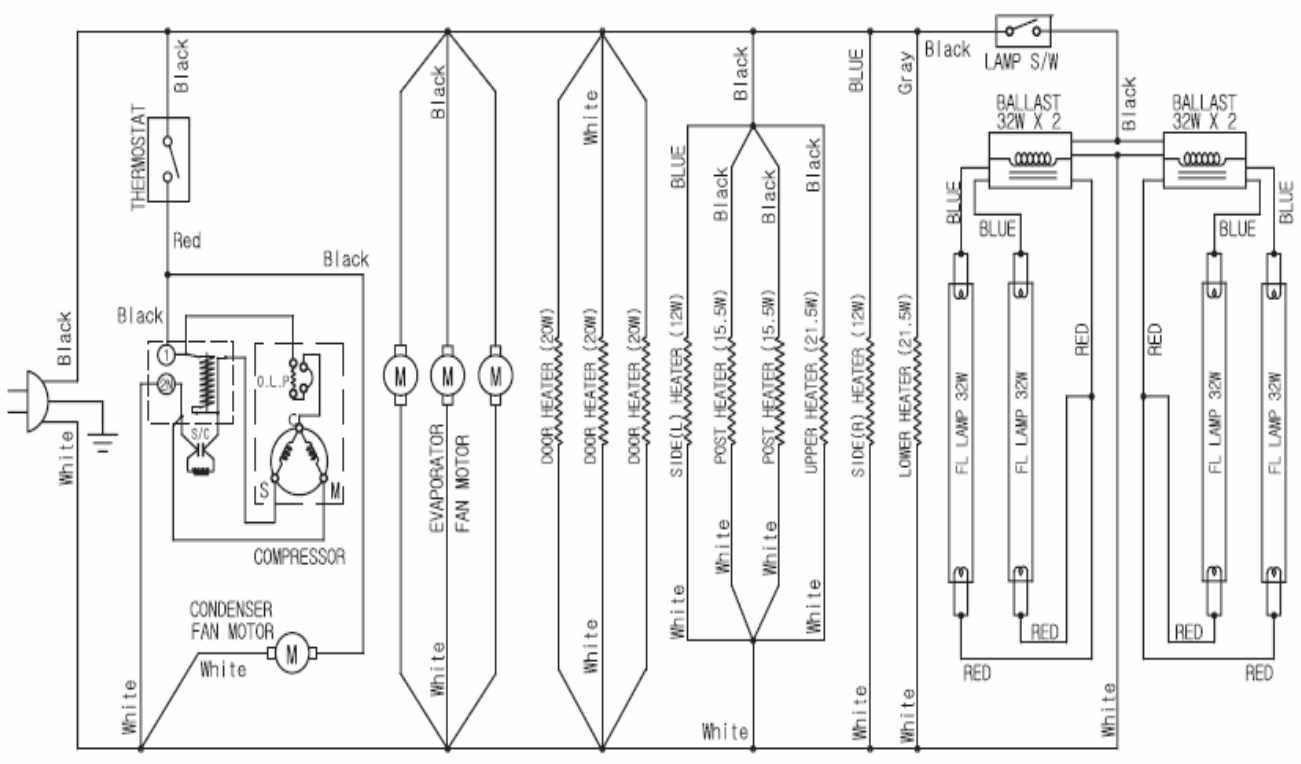


8) BAGR48



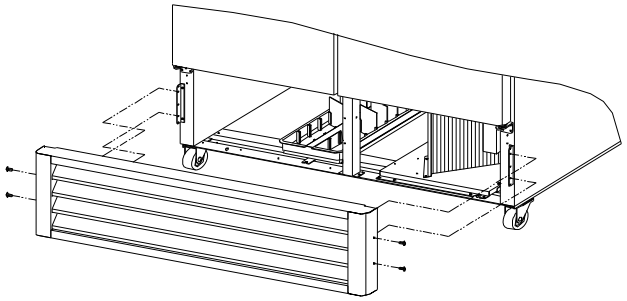

White

9) BAGR72

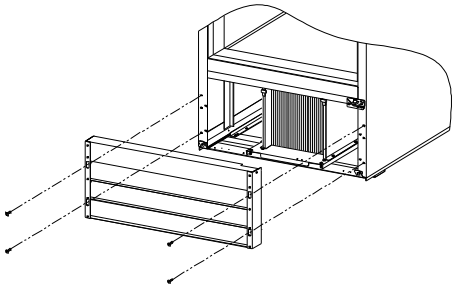

Black
THERMOSTAT
Red
Black
Black
White
S/C
O.L.P
S
M
COMPRESSOR
CONDENSER
FAN MOTOR
White
White
Black
EVAPORATOR
FAN MOTOR
White
White
DOOR HEATER (20W)
DOOR HEATER (20W)
DOOR HEATER (20W)
White
White
BLUE
SIDE(L) HEATER (12W)
POST HEATER (15.5W)
POST HEATER (15.5W)
UPPER HEATER (21.5W)
Black
Black
Black
Black
White
White
White
BLUE
SIDE(R) HEATER (12W)
White
Gray
LOWER HEATER (21.5W)
White
Black
LAMP S/W
BALLAST
32W X 2
BALLAST
32W X 2
Black
BLUE
BLUE
BLUE
BLUE
FL LAMP 32W
FL LAMP 32W
FL LAMP 32W
FL LAMP 32W
RED
RED
RED
RED
RED
RED
RED
RED
White

6. REPLACEMENT OF COMPONENTS

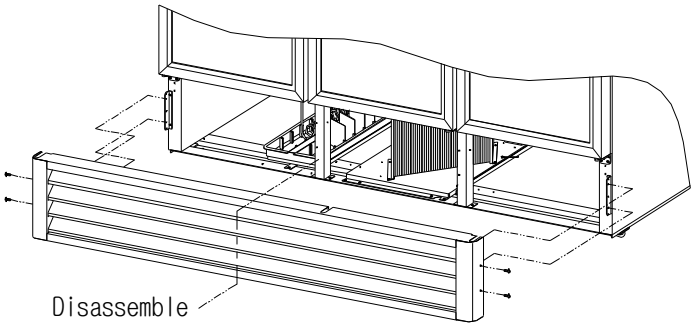
1) CONDENSING UNIT



(SF1/SF2/SF3/SR1/SR2/SR3)



(GR24/GR48)

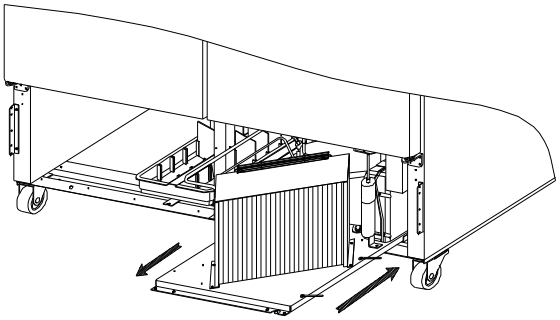


(GR72)

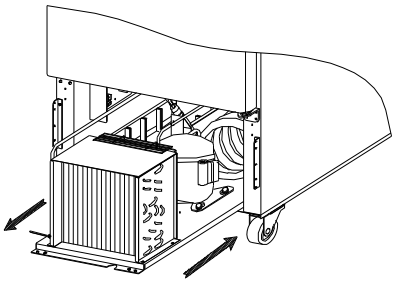
a) Unplug the power cord before service.

b) Remove screw securing the lower grille.

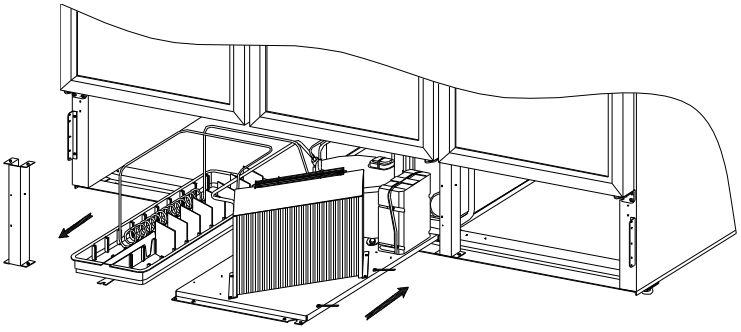
* Remove screw securing the reinforce angle.(GR72)



(SF2/SF3/SR2/SR3/GR48)



(SF1/SR1/GR24)



c) Separate the compressor harness out of the terminal block.

d) Remove screws securing the unit base plate and pull out condensing unit with care.

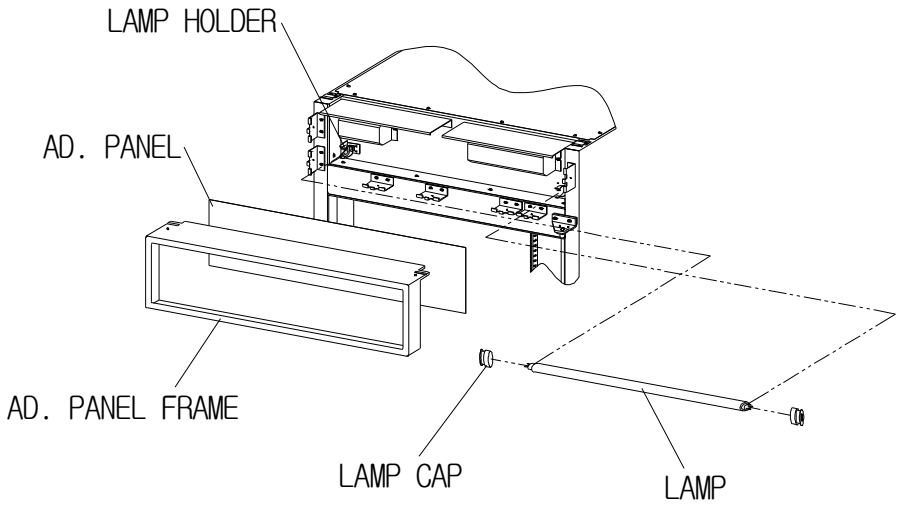
e) Replace the necessary com-

(GR72) ponent.

※ CAUTION

1. Please pull out or push in the unit base plate carefully to prevent capillary tube, pipes and wires from demaging.
2. It is recommend to arrange wires after you push in the unit base plate.

2-1) LAMP (BAGR24)



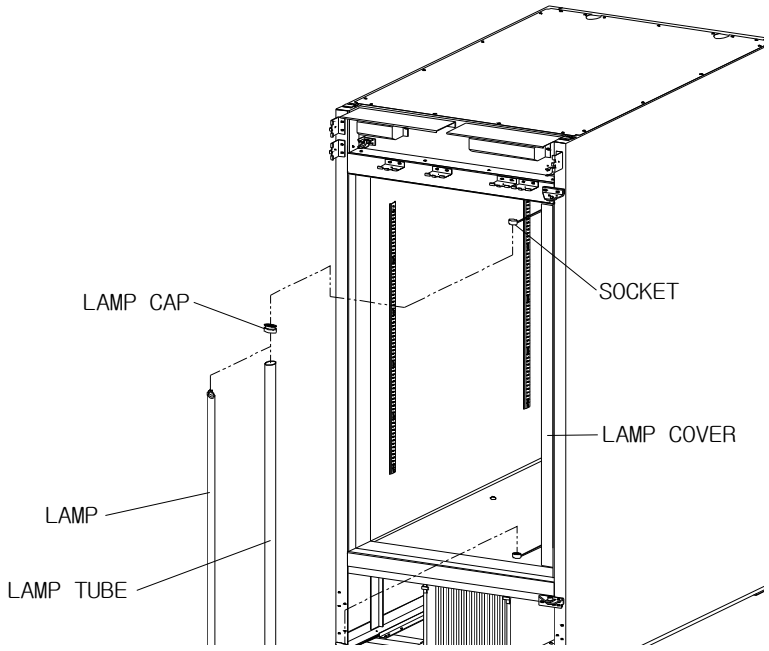
a) Unplug the power cord before service.

b) Remove screw securing the Ad. Panel Frame and pull out the Ad. Panel Frame with care.

c) Separate the Ad. Panel.

d) Separate the Lamp from the Lamp Holder.

e) Separate the Lamp Cap and replace the Lamp with care.

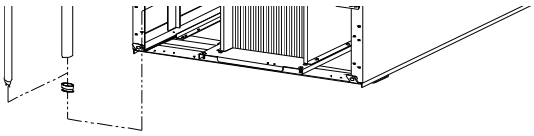


a) Unplug the power cord before service.

b) Separate the Lamp from the Lamp Holder.

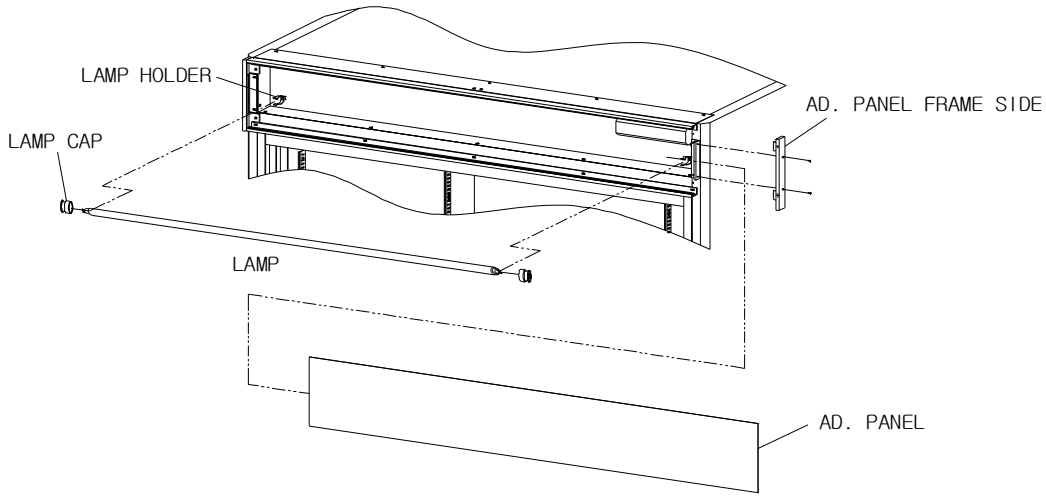
c) Separate the Lamp Socket and the Cap Lamp.

d) Replace the Lamp with care.



♠ Lamp Description : AC115V, F17T8/TL950

2-2) LAMP (BAGR48)



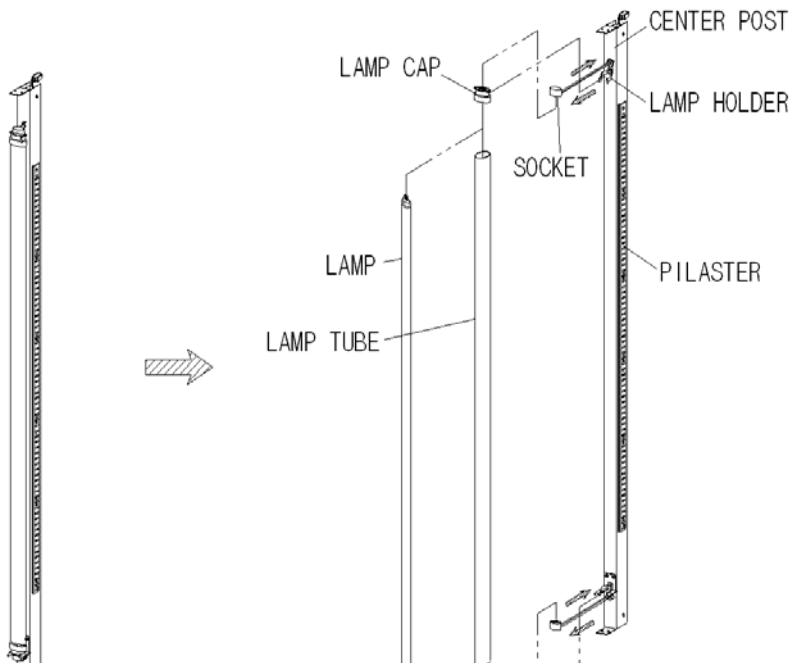
a) Unplug the power cord before service.

b) Remove screw securing the Ad. Panel Side.

c) Separate the Ad. Panel.

d) Separate the Lamp from the Lamp Holder.

e) Separate the Lamp Cap and replace the Lamp with care.

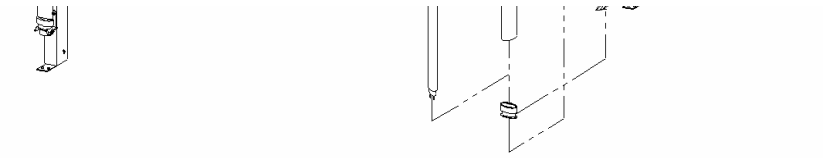


a) Unplug the power cord before service.

b) Separate the Lamp from the Lamp Holder.

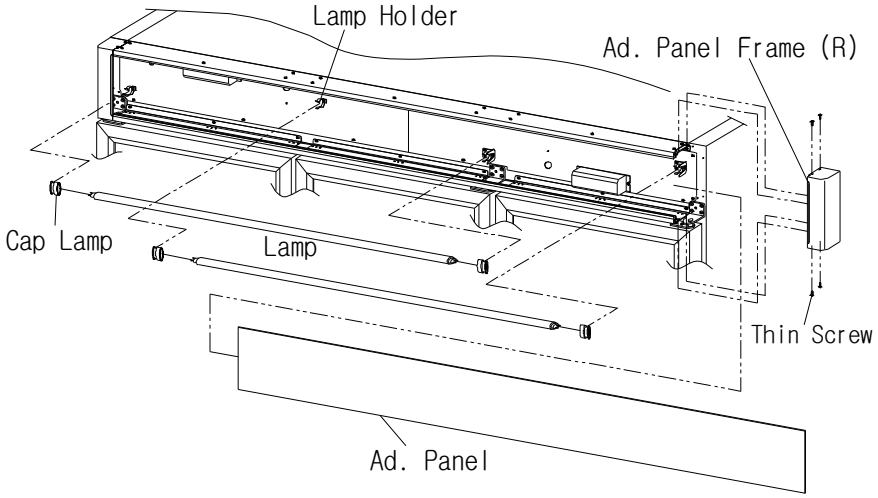
c) Separate the Lamp Socket and the Lamp Cap.

d) Replace the Lamp with care.



♠ Lamp Description : AC115V, FHF32SSEX-D-5

2-3) LAMP (BAGR72)



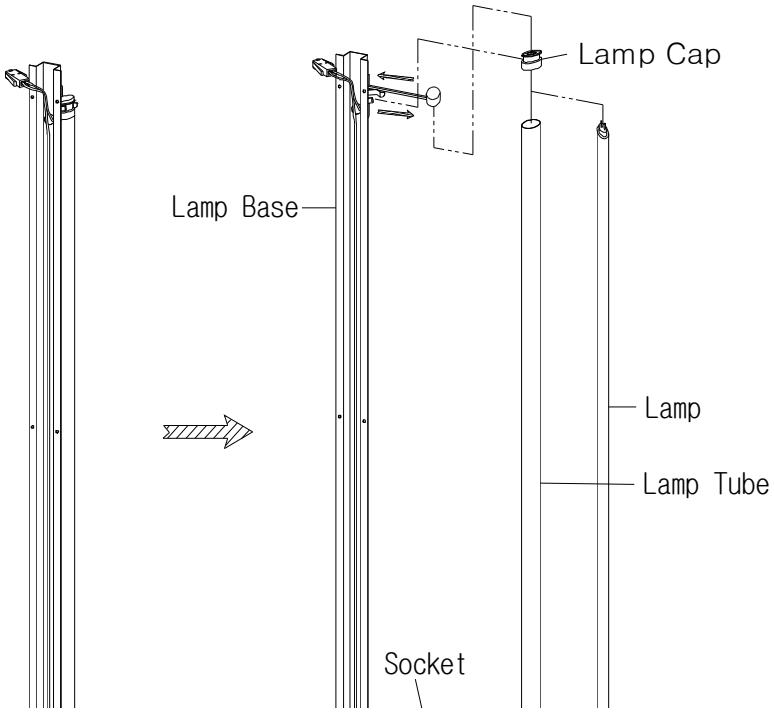
a) Unplug the power cord before service.

b) Remove screw securing the Ad. Panel Frame (R).

c) Separate the Ad. Panel.

d) Separate the Lamp from the Lamp Holder.

e) Separate the Cap Lamp and replace the Lamp with care.

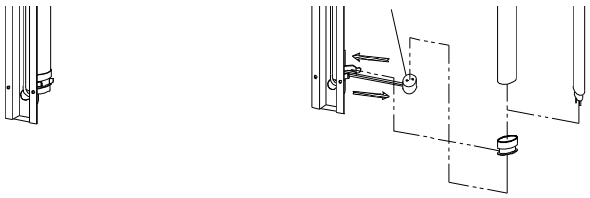


a) Unplug the power cord before service.

b) Separate the Lamp from the Lamp Holder.

c) Separate the Lamp Socket and the Lamp Cap.

d) Replace the Lamp with care.



♠ Lamp Description : AC115V, 32W, F32T8/TL860

■ MODEL : BASF1/BASF2/BASF3 (FREEZER) BASR1/BASR2/BASR3 (REFRIGERATOR)
BAGR24/BAGR48/BAGR72(MERCHANDISERS)

B. OPERATION AND ELECTRONIC CONTROLLER FUNCTION

1. OPERATION FOR BASF1/BASF2/BASF3, BASR1/BASR2/BASR3

1) BASIC OPERATION

① Plug in the power cord and turn on the power switch located on the bottom of the top grille right side.

[The unit should be plugged into a 115V±10%, 60Hz (BASF1, BASF2, BASR1, BASR2, BASR3 models)

[The unit should be plugged into a 115V/208~230V, 60Hz (BASF3 model)]

② Display panel will be lightened for 2 seconds with buzzer then displays cabinet interior temperature (T-sensor) and running conditions.

* Freezer : If cabinet interior temperature is higher than 14°F compressor will run without delay, and lower than 14°F, compressor will run after 3 minutes.

* Refrigerator : If cabinet interior temperature is higher than 50°F compressor will run without delay, and lower than 50°F, compressor will run after 3 minutes.

③ The default OPERATING TEMPERATURE SETTING

* Freezer : Temperature set point (setting mode sign [st]) is -5°F
Temperature differential set point (setting mode sign [di]) is 8°F.
(Operating Temperature : -14°F ~ -4°F)
Range of adjustable set point: -22°F ~ 8°F

* Refrigerator : Temperature set point (setting mode sign [st]) is 36°F
Temperature differential set point (setting mode sign [di]) is 8°F.
(Operating Temperature : 34°F ~ 44°F)
Range of adjustable set point: 25°F ~ 50°F

④ Defrost frequency

* Freezer : It is controlled by MICOM and the default defrost frequency is 6 hours.

* Refrigerator : It is controlled by MICOM and the default defrost frequency is 12 hours.

⑤ The light inside the cabinet comes on when the door is opened.

The cabinet interior cooling fan has 3 seconds delay when the door is closed.

When COMP is OFF, Eva FAN repeats ON and OFF every 2 min.

When door is opened during Eva FAN OFF, Evan FAN resets to 2min ON.

(Running after 3 seconds is not applied)

When door is opened during Eva FAN ON, Eva FAN resets to 2min ON

(Running after 3 seconds is not applied)

⑥ If door is opened, door open warnign sign (LED) will turn on.

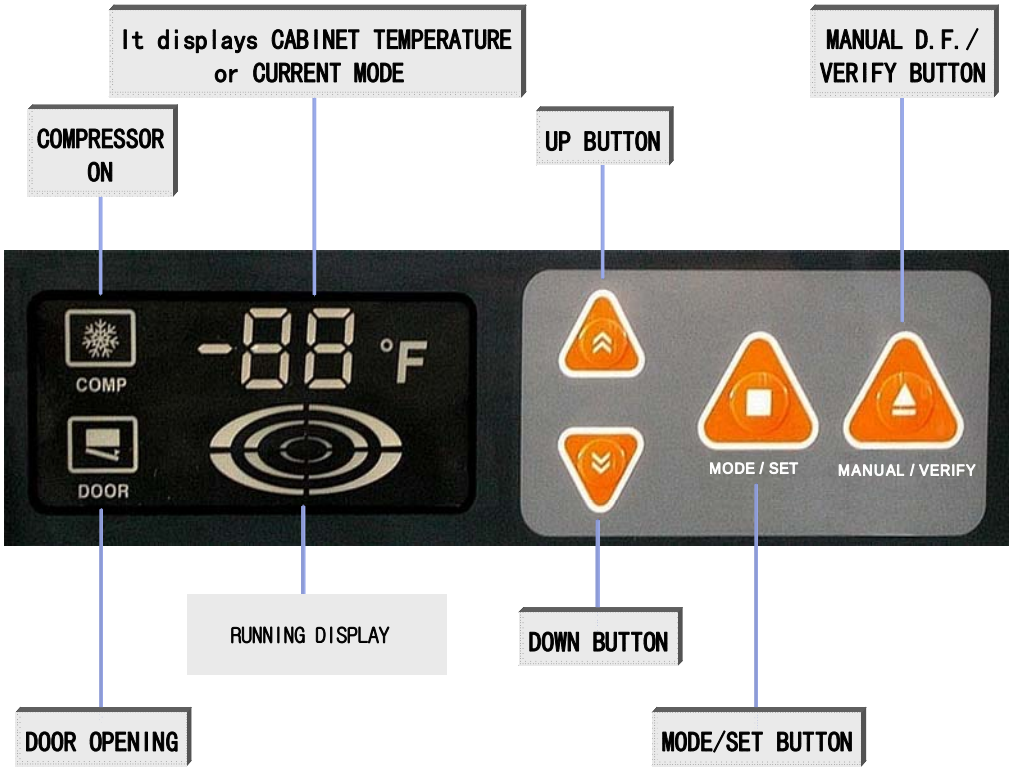
If door is opened more than 30 seconds, the sound alarm beeps 3times,
if open more than 60 seconds, the sound alarm beeps 5 times and if open more than 5 minutes,
the sound alarm will beep continuously.

⑦ Cabinet interior temperature

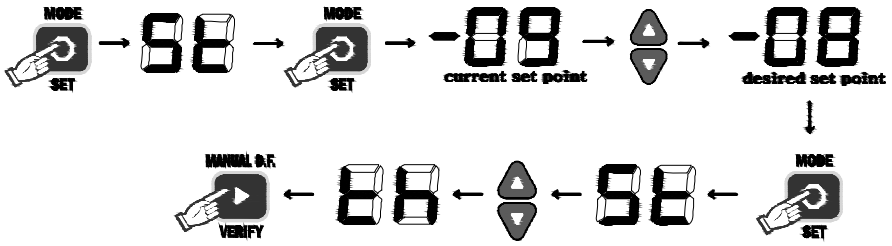
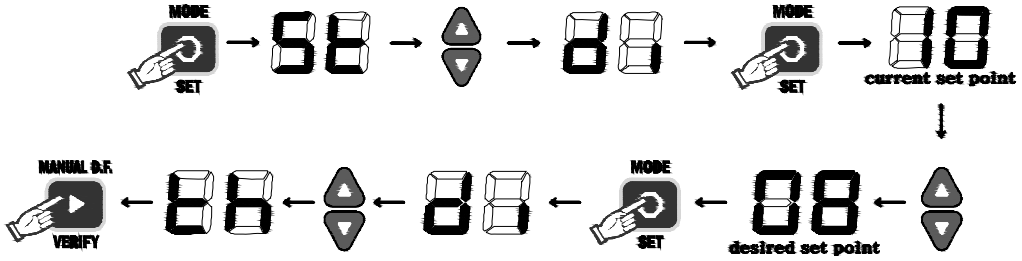
* Freezer : If it is higher than 14°F(BASF1, BASF2, BASF3), the panel displays [Hi] and lower than -50°F(BASF1, BASF2, BASF3), the panel displays [Lo].

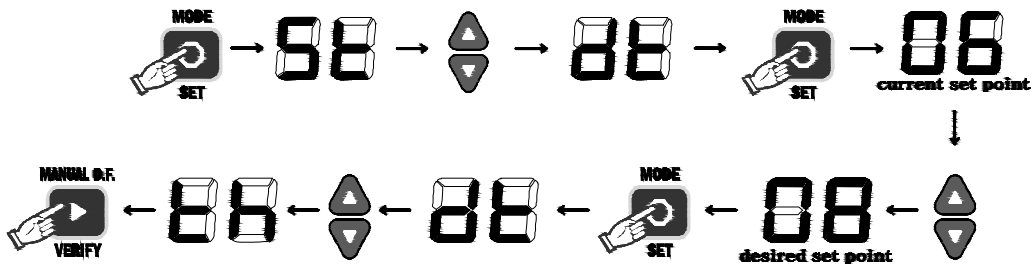
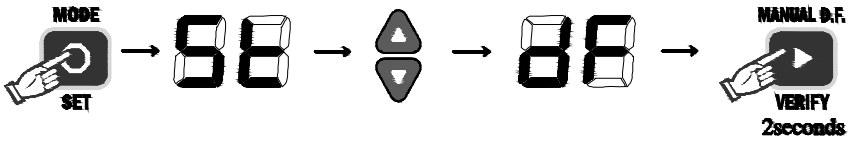
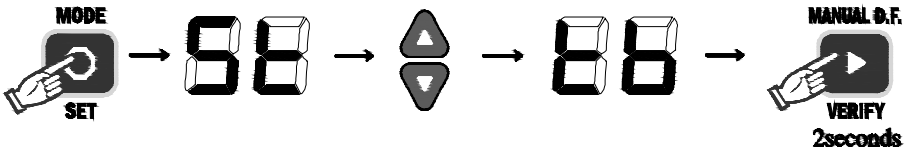
* Refrigerator : If it is higher than 68°F(BASF1, BASF2, BASF3), the panel displays [Hi] and lower than 14°F(BASF1, BASF2, BASF3), the panel displays [Lo].

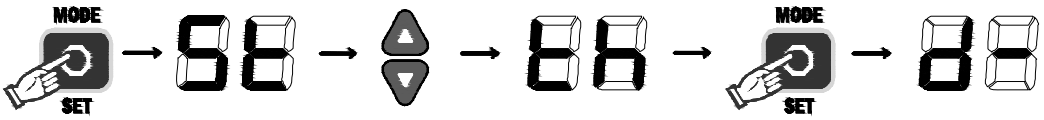
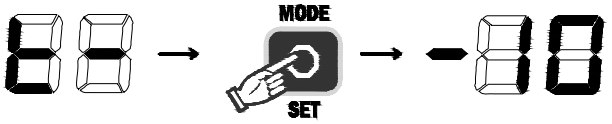
2) ELECTRONIC CONTROLLER SETTING MODE



Display	Description
St	Temperature Setting Mode
di	Temperature Differential Setting Mode
th	Cabinet Temperature Verification Mode
dt	Defrost Frequency Setting Mode
tb	Rapid Freeze Mode
dF	Forced Defrost Mode

No	Setting Mode	Mode Sign	How to Setting
1	Temperature Setting Mode	"St"	1. To enter this mode, press [MODE/SET] and [UP or DOWN] simultaneously until [St] is displayed. 2. Then press [MODE/SET] to see current temperature set point. 3. To change the set point, press [UP or DOWN] until the desired value is displayed. 4. At the end of the sequence, press [MODE/SET] to set the value. 5. To display the cabinet temperature again, press [UP or DOWN] until [th] is displayed and then press [VERIFY].  6. Range of adjustable set point : -22°F to 8°F (Freezer) Range of adjustable set point : 25°F to 50°F (Refrigerator)
2	Temperature Differential Setting Mode	"di"	1. To enter this mode, press [MODE/SET] and [UP or DOWN] simultaneously until [di] is displayed. 2. Then press [MODE/SET] to see current temperature differential. 3. To change the set point, press [UP or DOWN] until the desired value is displayed. 4. At the end of the sequence, press [MODE/SET] to set the value. 5. To display the cabinet temperature again, press [UP or DOWN] until [th] is displayed and then press [VERIFY].  6. Range of adjustable set point : 4°F to 16°F (Freezer) Range of adjustable set point : 6°F to 16°F (Refrigerator) (The Unit of Setting : 2°F)

No	Setting Mode	Mode Sign	How to Setting
3	Defrost Frequency Setting Mode	"dt"	1. To enter this mode, press [MODE/SET] and [UP or DOWN] simultaneously until [dt] is displayed. 2. Then press [MODE/SET] to see current defrost frequency. 3. To change the defrost frequency, press [UP or DOWN] until the desired value is displayed. 4. At the end of the sequence, press [MODE/SET] to set the value.
			5. To display the cabinet temperature again, press [UP or DOWN] until [th] is displayed and then press [VERIFY].  6. Range of adjustable defrost frequency : 4Hr to 12Hr (The Unit of frequency : 2Hr)
4	Forced Defrost Mode	"dF"	1. To enter this mode, press [MODE/SET] and [UP or DOWN] simultaneously until [dF] is displayed. 2. Then press [MANUAL DF] more than 2 seconds to start forced defrost.  3. During defrosting, [dF] is displayed instead of the cabinet temperature.
5	Cancelation of Forced Defrost Mode	Flash "dF"	1. During forced defrost, press [MANUAL DF] more than 2 seconds to stop forced defrost.  2. The [dF] will be flash 5 times and then return to normal display mode.
6	Rapid Freeze Mode (Freezer)	"tb"	1. To enter this mode, press [MODE/SET] and [UP or DOWN] simultaneously until [tb] is displayed. 2. Then press [MODE/SET] more than 2 seconds to start rapid freeze mode.  3. During rapid freeze, [tb] is displayed instead of the cabinet temperature.

No	Setting Mode	Mode Sign	How to Setting
7	Cancelation of Rapid Freeze Mode (Freezer)	Flash "tb"	1. During rapid freeze, press [MODE/SET] more than 2 seconds to stop rapid freeze.  2. The [tb] will be flash 5 times and then return to normal display mode.
8	Cabinet Temperature Verification Mode	"th"	1. To enter this mode, press [MODE/SET] and [UP or DOWN] simultaneously until [th] is displayed. 2. Then press [MODE/SET] to see F-sensor, D-sensor temperature in turn.
8	Cabinet Temperature Verification Mode	"th"	 3. To check only the F-sensor or D-sensor temperature, press [MODE/SET] again.  4. Press [VERIFY] to see current cabinet temperature. (return to normal display mode) 

3) NORMAL CONTROL PROCESS

No	FUNCTION	FUNCTION SPEC
1	Initial Operating	1. After Power ON, Display panel will be lightened for 2 seconds with buzzer then displays cabinet interior temperature. 2. If cabinet interior temperature is higher than 14°F, compressor will run without delay, and lower than 14°F, compressor will run after 3 minutes.
2	Normal Operating	1. Compressor and condenser fan motor is controlled by T-sensor and MICOM program. displays cabinet interior temperature. 2. Compressor ON/OFF Temperature Compressor ON : Temperature Setting Value + (Temperature Differential Setting Value/2) Compressor OFF : Temperature Setting Value - (Temperature Differential Setting Value/2) ex) st: -9°F, di: 10°F ⇒ Compressoer ON: -9+(10/2) = -4°F,Compressoer OFF: -9-(10/2) = -14°F

<table>
<tr><td></td><td></td><td>st: 39°F, di: 10°F ⇒ Compressoer ON: 39+(10/2) = 44°F,Compressoer OFF: 39-(10/2) = 34°F</td></tr>
<tr><td>No</td><td>FUNCTION</td><td>FUNCTION SPEC</td></tr>
<tr><td>3</td><td>Rapid Freeze (Freezer)</td><td>1. Compressor and cabinet interior cooling fan is running continuously for 120 minutes without control by sensor.
2. It is impossible to set the other modes during Rapid Freeze Mode. It is necessary to cancel the Rapid Freeze Mode before setting the other modes.
3. If Defrost Mode become in the Rapid Freeze Mode duration, Defrost Mode will start after the Rapid Freeze Mode finished.
4. Rapid Freeze Mode will be start after Defrost Mode finished not during Defrost Mode. [tb] is displayed from startng the Rapid Freeze Mode.</td></tr>
<tr><td rowspan="2">4</td><td>Defrost (Freezer)</td><td>1. Defrost process is like below
<table>
<tr><th>Process</th><th>Controlled Part</th><th>Description</th></tr>
<tr><td>Pre-Cool</td><td>Compressor On
Evaporator Fan On
Condenser Fan On
Defrost Heater Off</td><td>① It prevent exceed temperature rise during defrosting,
② Cycle is run continuously until current compressor cut-out temperature reach.
③ Maximum time: 30minutes</td></tr>
<tr><td>Defrost</td><td>Compressor Off
Evaporator Fan Off
Condenser Fan Off
Defrost Heater On</td><td>① Preprogrammed frequency interval
② If D-sensor is higher than 50°F, defrost heater off
③ Maximum time: 40minutes</td></tr>
<tr><td>Pause</td><td>Compressor Off
Evaporator Fan Off
Condenser Fan Off
Defrost Heater Off</td><td>① Time: 5minutes</td></tr>
<tr><td>Evaporator Fan Delay</td><td>Compressor On
Evaporator Fan Off
Condenser Fan On
Defrost Heater Off</td><td>① If D-sensor is lower than -4°F, Fan delay terminated
② Maximum time: 10minutes</td></tr>
</table></td></tr>
<tr><td>Defrost (Refrigerator)</td><td>1. Defrost cycle can be set up by button on control panel from 4h to 12hr. (measurement unit:2hr / default:6hr)
2. Defrost control change
1) Defrost start : according to the defrost cycle by set up.
2) Defrost end : Comp OFF (during MAX time), Eva fan ON, dF ON (on display screen)
3) Defrost ends regardless of time when the temp is higher than pre-set defrost end temp.
4) 'dF' is displayed on screen for 3min after defrost end.
- Defrost end time (MAX) : 30min
- Defrost end temp : 40°F</td></tr>
</table>

No	FUNCTION	FUNCTION SPEC
5	Default Setting (Freezer)	1. Temperature Setting : **-5°F**, Temperature Differential Setting : **8°F** 2. Operating Temperature : **-14°F**(compressor off) ~ **-4°F**(compressor on) 3. Defrost Frequency Setting : **6Hr**
	Default Setting (Refrigerator)	1. Temperature Setting : **36°F**, Temperature Differential Setting : **8°F** 2. Operating Temperature : **44°F**(compressor on) ~ **34°F**(compressor off) 3. Defrost Frequency Setting : **6Hr**
6	Setting Back UP	1. In case of unexpected power failure or power off, does not require resetting. 2. The setting is memorized.
7	Error Display	1. If cabinet interior temperature is higher than 14°F the panel displays **[Hi]**, and lower than -50°F the panel displays **[Lo]**. 2. Press [down] button 5 times with pressing and holding [up] button, the Error display mode is activated and it displays errors. 3. When there are more than 2 errors, the errors are displayed alternately. 4. If you press **[MODE/SET]** button, the error display mode will be finished

4) ERROR CODE

4-1) FreeZer

Error Code	Condition	Possible Cause	When error occurring, operation
C1	During normal mode (not defrost mode), D-sensor sensing is higher than 23°F and Compressor does not run for 60min after compressor off	● Ambinet Temperature too low (below -5°F) • T-sensor defective	1) Register "C1" 2) Compressor ON:20Minutes 3) Compressor OFF:5Minutes 4) Operate 2),3) three times 5) Operate Normal Mode
C2	Entering defrost mode, D-sensor sensing is higher than 50°F and T-sensor sensing is lower than 14°F	• D-sensor defective	1) Register "C2" 2) Operate Pre-Cool step : 30Minutes 3) Defrost Heater ON : 20Minutes 4) Operate the rest Defrost Mode
C3	After defrost mode elapsed for 40minutes, D-sensor sensing is lower than 23°F	• D-sensor defective • Defrost heater defective	1) Register "C3" 2) Operate the rest Defrost Mode

	10minutes, D-sensor sensing is lower than 23°F	• Defrost heater defective	2) Operate the Test Defrost Mode
C4	T-sensor sensing is more than 18°F higher than temperature set point for 4hours Additionnal Possible Cause: Too many hot goods loaded!!	• Refrigerant leak • Control board defective • Door not sealing • Not enough defrosts • Condenser dirty • Sensor defective	1) Register "C4" 2) Compressor ON:20Minutes 3) Compressor OFF:5Minutes 4) Operate 2),3) three times 5) Operate Normal Mode
C-	No error code	• N/A	N/A

4-2) Refrigerator

Error Code	Condition	Possible Cause	When error occurring
C1	During normal mode, T-sensor sensing lasts "Lo" status more than 60 minutes	• T-Sensor defective • Lead defective	1) Register "C1" 2) Compressor ON : 15 Minutes 3) Compressor OFF : 5 Minutes 4) Operate 2), 3) repeatedly until the error is clear 5) Operate Normal Mode 6) Defrost cycle is operated by D-sensor
C2	During normal mode, T-sensor sensing lasts "Hi" status more than 60 minutes	• Sensor housing defective (due to other substance) • Sensor internal defective	1) Register "C2" 2) Compressor OFF : 22 Minutes 3) Compressor ON : 15 Minutes 4) Operate 2), 3) repeatedly until the error is clear 5) Operate Normal Mode 6) Defrost cycle is operated by D-sensor
	After defrost mode elapsed		1) Register "C3"

C3	After defrost mode elapsed for 30 minutes, D-sensor sensing is lower than 32°F	• Not enough defrosts	1) Register "C3" 2) Error check 3) Main power reset
C4	T-Sensor sensing is more than 18°F higher than temperature set point for 4 hours and more	•Too many hot goods loaded • Refrigerant leak • Control board defective • Door not sealing • Not enough defrosts • Condenser dirty • Sensor defective	1) Register "C4" 2) Compressor OFF : 15 Minutes 3) Compressor ON : 5 Minutes 4) Operate 2), 3) repeatedly until the error is clear 5) Operate Normal Mode 6) Defrost cycle is operated by D-sensor
C5	D-Sensor Sensing is over 140°F or under -55.4°F for 1 minute	• D-Sensor defective • Lead defective	1) Register "C5" 2) Defrost end is operated by time (30 Minutes)

2. OPERATION FOR BAGR24, BAGR48, BAGR72 MODELS

1) BASIC OPERATION

① Plug in the power cord and turn on the lamp switch located on the left of the temperature controller.

[The unit should be plugged into a **115V±10%, 60Hz**]

③ The controller(Thermostat) has been preset "3" position at the factory

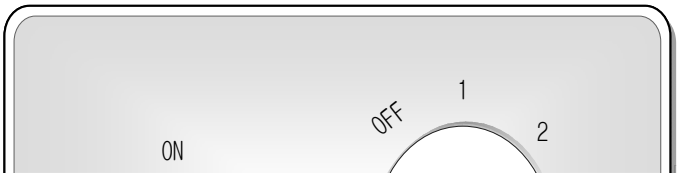
2) DEFROST

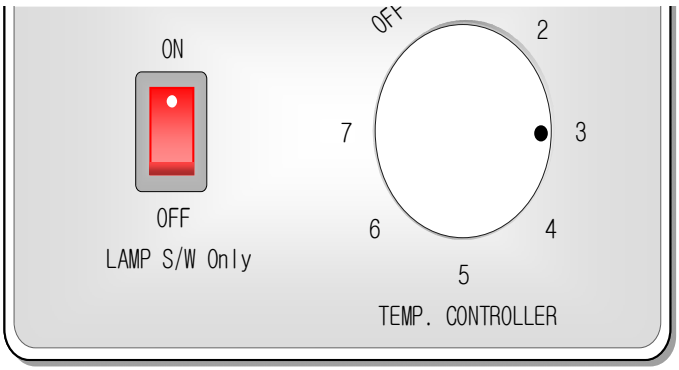
This unit uses an off cycle defrost. No needs any programming.

3) CONTROL TEMPERATURE

① The temperature controller is mounted on top of the cabinet interior.

② The controller has been preset "3" position at the factory to maintain the average cabinet temperature of 38°F

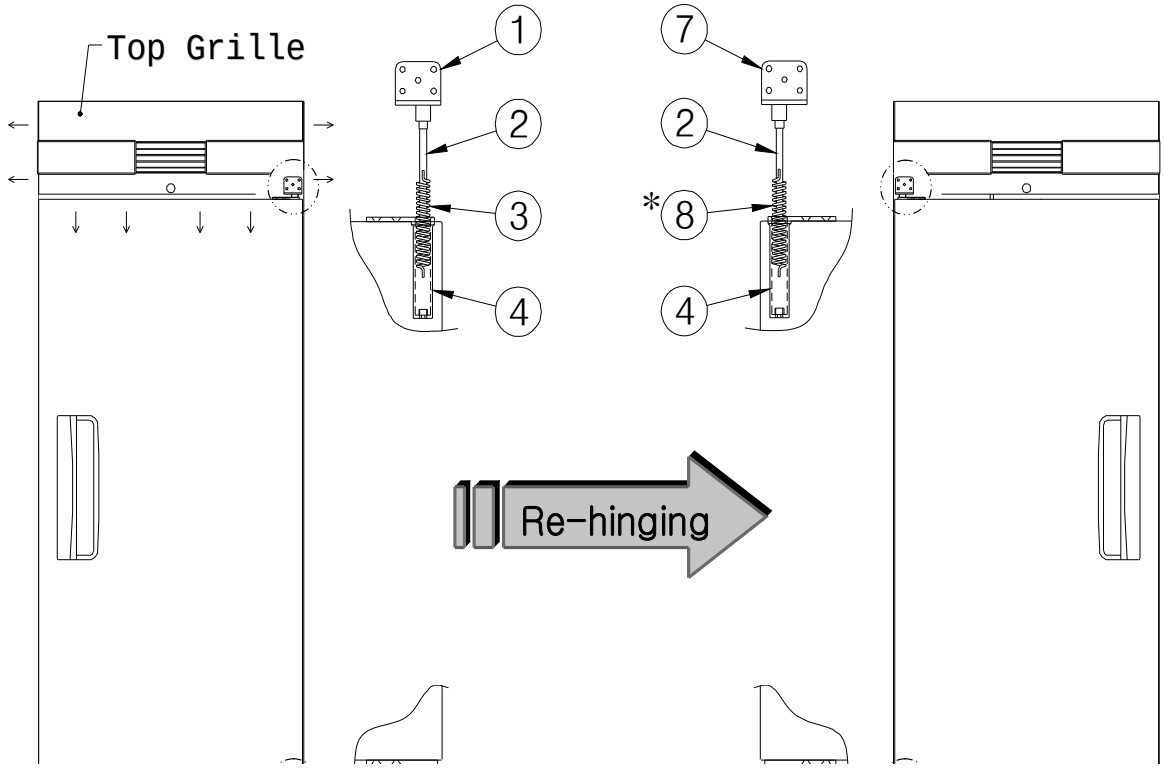




4) LAMP

① The light comes on when the lamp switch is on.

3. INSTRUCTION FOR RE-HINGING DOOR (BASF1/BASR1)



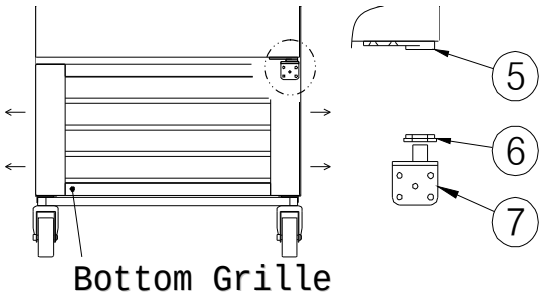


Figure 1.

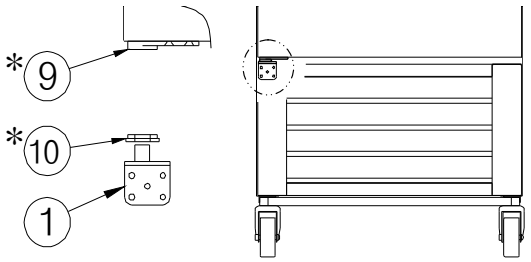


Figure 2.

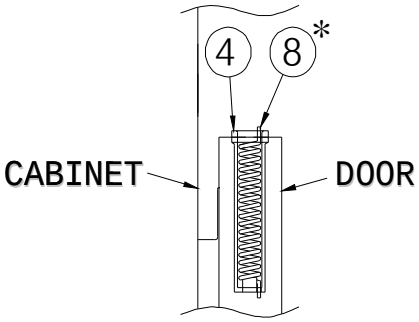


Figure 3.

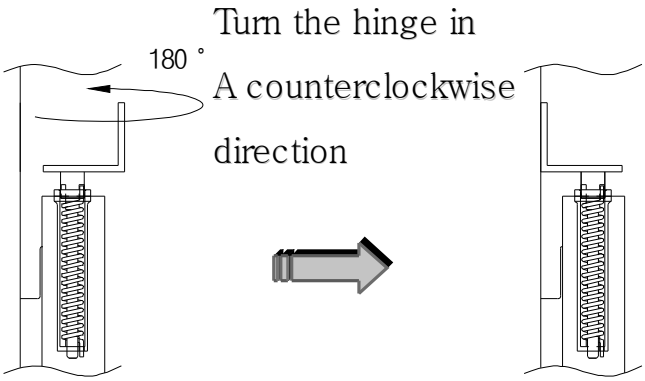


Figure 4.

▣ To change the door mounting from right hand to left hand hinges you will need the following;

▣ Medium to large size Phillips Screwdriver

146413 Door Hinge Kit - Lower Left

146442 Door Hinge Kit - Top Left

STEP1. Remove the door (Figure 1)

a) Remove the Top Grille (seven screws)

b) Remove the Lower Grille (four screws)

c) Remove the Top Hinge (#1) (four screws)

d) Lift and remove the Door

e) Remove the Bottom Hinge (#7) (four screws)

STEP2. Convert the Door

a) Replace the Spring Guide (#4) with Bushing (#9)-(SEE 146413 HINGE KIT)

b) Replace the Bushing (#5) with the Spring Guide (#4).

STEP3. Reinstall the Door (figure 2)

a) Install Bottom Left Hinge (#1) with Bushing (#10)-(SEE 146413 HINGE KIT)

b) Set Door in place on Bottom Hinge

c) Insert Spring (#8) (silver) into Spring Guide (#4) as shown in figure 3-(SEE 146442 HINGE KIT)

d) Install the Top Hinge (#7) as shown in figure 4-(SEE 146442 HINGE KIT)
(confirm that spring ends are engaged in the spring guide and hinge)

e) Replace the Top and Lower Grilles

Note:

The silver colored spring (#8) is for left hand hinged door and the yellow color spring (#3) is for right hand hinged doors.

The letter "L" is marked on the left hand bushings (#9 and 10)

■ MODEL : BASF1/BASF2/BASF3(FREEZER) BASR1/BASR2/BASR3(REFRIGERATOR)
BAGR24/BAGR48/BAGR72 (MERCHANDISERS)

A. COMMERCIAL FREEZER, REFRIGERATOR GENERAL

1. SPECIFICATION

1) GENERAL - COMMERCIAL FREEZERS AND REFRIGERATORS

PRODUCT		SOLID DOOR FREEZER			SOLID DOOR REFRIGERATOR		
MODEL		BASF1	BASF2	BASF3	BASR1	BASR2	BASR3
Capacity (Cu,Ft)		23	49	72	23	49	72
Net Capacity (Cu,Ft)		20.8	45.2	66.3	20.8	45.2	66.3
Exterior Dimension (Including casters) (in)	(W)	27.4	55.1	78	27.4	55.1	78
	(D)	31.3					
	(H)	83.9					
Interior Dimension (Including casters) (in)	(W)	23.6	51.4	74.2	23.6	51.4	74.2
	(D)	25					
	(H)	60.8					
Net Weight (lbs)		295	499	622	288	475	609
Door Type		Swing 1EA	Swing 2EA	Swing 3EA	Swing 1EA	Swing 2EA	Swing 3EA
Door Material		Stainless steel (STS)					
Shelves		4EA	8EA	12EA	4EA	8EA	12EA
Power Voltage		AC 115V/60Hz		AC 115V /208-230V 60Hz	AC 115V/60Hz		
Plug in - Installation		NEMA 5-15P		NEMA 14-20P	NEMA 5-15P		
Amps		8.5A	9.5A	9.0A	7.5A	7.5A	10.0A
Compressor		1/2HP	3/4HP	1.1HP	1/3HP	1/3HP	1/2HP
Refrigerant		R-404A (12.0 oz)	R-404A (22.2 oz)	R-404A (23.6 oz)	R-134A (7.4 oz)	R-134A (9.5 oz)	R-134A (14.1 oz)
Range of Temperature		Below 0 °F			32 ~ 40 °F		
Door auto-close equipment		Auto-close for Spring					
Door stop equipment		120° Stop					
Air suction equipment		Air damper					
Caster		4in × 4EA					
Condensing unit		Sliding Type					

◈ Above specifications are subjected to change without prior notice for quality improvement.

◈ The nameplate(includes Serial Number) is located on the upper left of the cabint interior.

2) MAIN COMPONENTS - COMMERCIAL FREEZERS AND REFRIGERATORS

PRODUCT	SOLID DOOR FREEZER			SOLID DOOR REFRIGERATOR		
MODEL	BASF1	BASF2	BASF3	BASR1	BASR2	BASR3
Compressor (Manufacture)	CAE2420Z(A) (Tecumseh-France)	CAJ2432Z(A) (Tecumseh-France)	CAJ2446Z(H) (Tecumseh-France)	SK1A1C-L2W (Samsung-Korea)		CAJ4476Y(A) (Tecumseh-France)
Compressor Capacity(kcal/h)	LBP 571	LBP 808	LBP 1219	LBP 303		LBP 1586
Type of Compressor motor	CSIR	CSR	CSR	CSR		CSIR
Compressor O.L.P	MST16AHN	GA3PJU00	MST00AHN	4TM795TFBZZ-53		GA3SJU81
Compressor Relay	3ARR12KPF*483	3ARR3*5R*	3ARR3*3A*	J531Q34E220M350-3		3ARR18A100B
Starting Capacitor	315㎌/160V	315㎌/160V	88㎌/160V	125㎌/125V		250㎌/160V
Running Capacitor	-	30㎌/400V	15㎌/160V	12㎌/250V		-
Type of Evaporator	Cu pipe + Al fin + Blue color coating					
Evaporator pipe Dimensions	3/8"					
Cooling Fan Motor	IS3225LTSA, 120V/60Hz					
Type of Condenser	Cu pipe + Al fin					
Evaporator pipe Dimensions	3/8"					
Condenser Fan Motor	MA7425W1, 120V/60Hz					
Drier	OD 1", XH-9, 1.06oz					
Temperature Control	Thermistor					
Running Indication	Digital Display					
Interior Temp. Indication	Digital Display					
Interior Lamp	25W × 1EA		25W × 2EA	25W × 1EA		25W × 2EA
Defrost for evaporator	Heated defrost (Control of thermistor)			Off cycle		
Defrost sheath heater	450W	670W	944W	-	-	-
Defrost pan heater	60W	90W	128W	-	-	-
Drain heater	9W			-	-	-
Door switch	SP201R-7DR, AC125V					
Power switch	SL112A, AC125V/12A					

3) GENERAL - MERCHANDISERS

PRODUCT		MERCHANDISERS		
MODEL		BAGR24	BAGR48	BAGR72
Capacity (Cu,Ft)		26	48	70
Net Capacity (Cu,Ft)		23.9	47.3	66.3
Exterior Dimension (Including casters) (in)	(W)	28.4	53.2	78
	(D)	31.3	29.9	31.3
	(H)	78.7	78.7	83.9
Interior Dimension (Including casters) (in)	(W)	25	50	74.2
	(D)	27	25.5	25
	(H)	62.5	61.4	60.8
Net Weight (lbs)		287	474	716
Door Type		Swing 1EA	Sliding 2EA	Swing 3EA
Door Material		Glass + Al		
Shelves		4EA	8EA	12EA
Power Voltage		AC 115V/60Hz		
Plug in - Installation		NEMA 5-15P		
Amps		3.9A	10.0A	11.9A
Compressor		1/4 HP	1/2 HP	1/2 HP
Refrigerant		R-134A (10.6 oz)	R-134A (16.2 oz)	R-134A (17.6 oz)
Range of Temperature		32 ~ 40°F		
Door auto-close equipment		Auto-close for Spring		
Door stop equipment		120° Stop	-	120° Stop
Air suction equipment		Air damper		
Caster		Adjust foot 4EA	Adjust foot 6EA	Adjust foot 6EA
Condensing unit		Sliding Type		
Door switch		-	-	-
Power(or Lamp) switch		SL112A, AC125V/12A		

◈ Above specifications are subjected to change without prior notice for quality improvement.

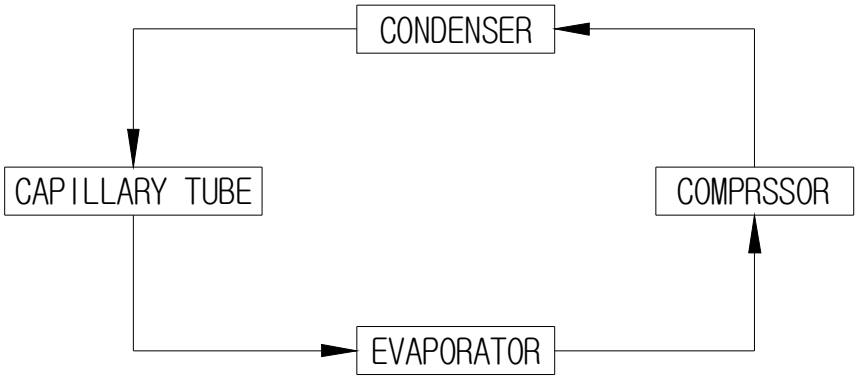
◈ The nameplate(includes Serial Number) is located on the upper left of the cabint interior.

4) MAIN COMPONENTS - MERCHANDISERS

PRODUCT	MERCHANDISERS		
MODEL	BAGR24	BAGR48	BAGR72
Compressor (Manufacture)	SK182C-L2U (SAMSUNG)	CAJ4476Y(A) (Tecumseh-France)	CAJ4476Y(A) (Tecumseh-France)
Compressor Capacity(kcal/h)	LBP 256	LBP 1946	HBP 1946
Type of Compressor motor	RSCR	CSIR	CSIR
Compressor O.L.P	4TM444NHBYY	CRA38014	CRA38014
Compressor Relay	J531Q32E4R7M1802	GE3ARR3	3ARR3*2M*
Starting Capacitor	-	250㎌/160V	250㎌/160V
Running Capacitor	12㎌/250V	-	-
Type of Evaporator	Cu pipe + Al fin		
Evaporator pipe Dimensions	1/2"		
Cooling Fan Motor	IS3225LTSA, 120V/60Hz		
Type of Condenser	Cu pipe + Al fin		
Evaporator pipe Dimensions	3/8"		
Condenser Fan Motor	MA7425W1, 120V/60Hz		
Drier	OD 1", XH-9, 1.06oz		
Temperature Control	Thermostat GNF-250L	Thermostat (GNF-240L)	Thermostat (GNF-246L)
Running Indication	-		
Interior Temp. Indication	-		
Interior Lamp	17W/32W (Fluorescent lamp)	32W × 1EA (Fluorescent lamp)	32W × 2EA (Fluorescent lamp)
Ad. Panel Fluorescent Lamp	32W × 1EA	32W × 1EA	32W × 1EA
Ballast	32W(Double)×1EA / 17W×1EA	32W(Double)×1EA	32W(Double)×2EA
Ballast Name (Manufacture)	B232I120RH-A (ADVANCE)	B232I120RH-A (ADVANCE)	DY232 IS120 (DOYOUNG)
Defrost for evaporator	Off cycle		
Defrost sheath heater	-	-	-
Defrost pan heater	-	-	-
Drain heater	-	-	-

2. REFRIGERATION CYCLE

Mechanical refrigeration is accomplished by continuously circulating, evaporating, and condensing a fixed supply of refrigerant in a closed system. Evaporation occurs at alow temperature and pressure while condensation occurs at high temperature and pressure. Thus it is possible to transfer heat fom an area of low temperature(i.e., refrigerated compartment) to an area of high temperature(i.e., surrounding of refrigerator).



THE BASE REFIGERATION CYCLE

Beginning the cycle at the evaporator inlet the low pressure liquid expands, absorbs heat (so refrigerator inner-cabinet is cooled), and evaporates, changing to alow pressure gas at the evaporator outlet.

The compressor pumps this gas from the evaporator, increases its pressure, and discharges the high pressured- temperature gas to the conenser.

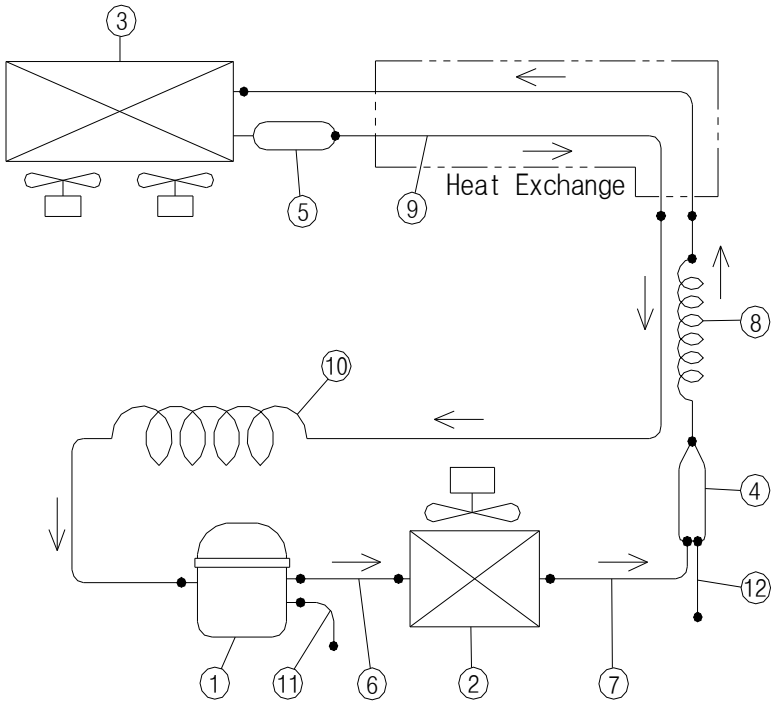
The condenser lets high pressured- temperature gas emit the heat(so surrounding of the condenser is warmed) in order to make it condense.

The capillary tube prevents high pressured- temperature gas from entering the evaporator in order to lower the pressure in the evaporator and control the flow of refrigerant into the evaporator automatically.

Eventually the desired air temperature in regrigerator inner-cabinet is reached, the thermostat (temperature controller) will break the electrical circuit to the compressor motor and stop the compressor.

As the temperature of the air rises, the thermostat(or controller) remakes the electrical circuit. The compressor starts, and cycle continues.

The schematic refrigeration(or freezing) cycle of F23/F49/F72/R23/R49/R72/GR26/GR48/GR70 is like below.



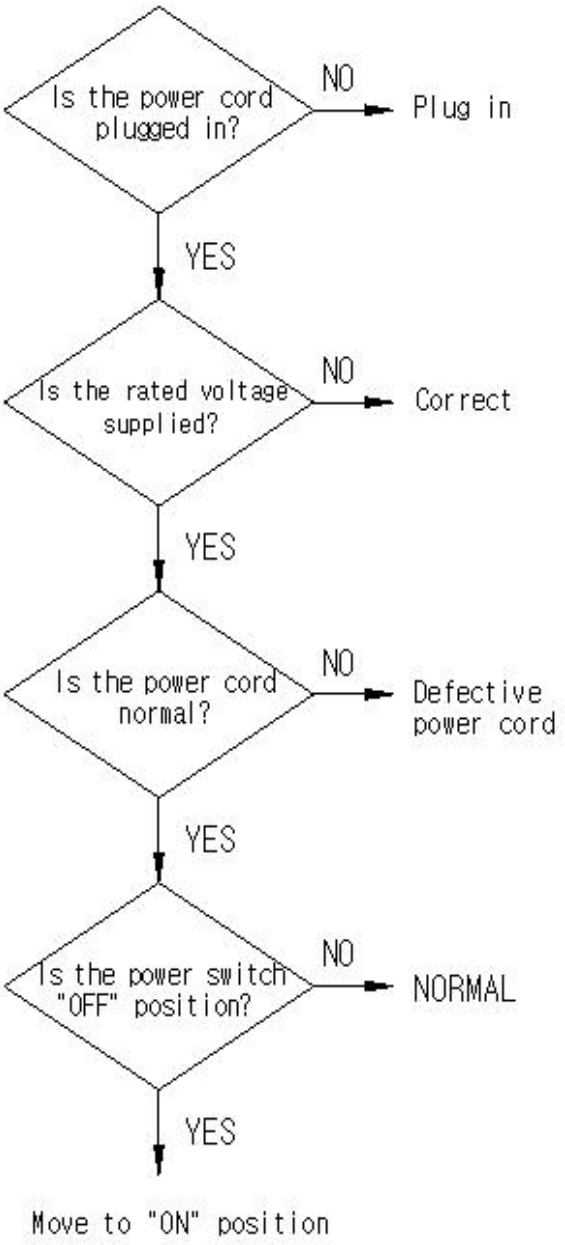
MODEL	COMPRESSOR
BASF1	CAE2420Z(A)
BASF2	CAJ2432Z(A)
BASF3	CAJ2446Z(H)
R1/R2	SK1A1C-L2W
BASR3	CAJ4461Y(A)
BAGR24	SK182C-L2U
BASG48	CAJ4476Y(A)
BAGR72	CAJ4476Y(A)

No.	Part Name	Description	Remark
1	COMPRESSOR		
2	CONDENSER	C1220TS-O,H	
3	EVAPORATOR	C1220TS-O,H	
4	DRIER	C1220T-H	
5	ACCUMULATOR	C1220T-1/4H	
6	DISCHARGE PIPE	C1220T-O	
7	DRIER CONNECT PIPE	C1220T-O	
8	CAPILLARY TUBE	C1220T-H	
9	SUCTION PIPE (INNER-CABINET)	C1220T-O	
10	SUCTION PIPE (COMPRESSOR)	C1220T-O	
11	CHARGE PIPE (COMPRESSOR)	C1220T-O	
12	CHARGE PIPE (DRIER)	C1220T-O	

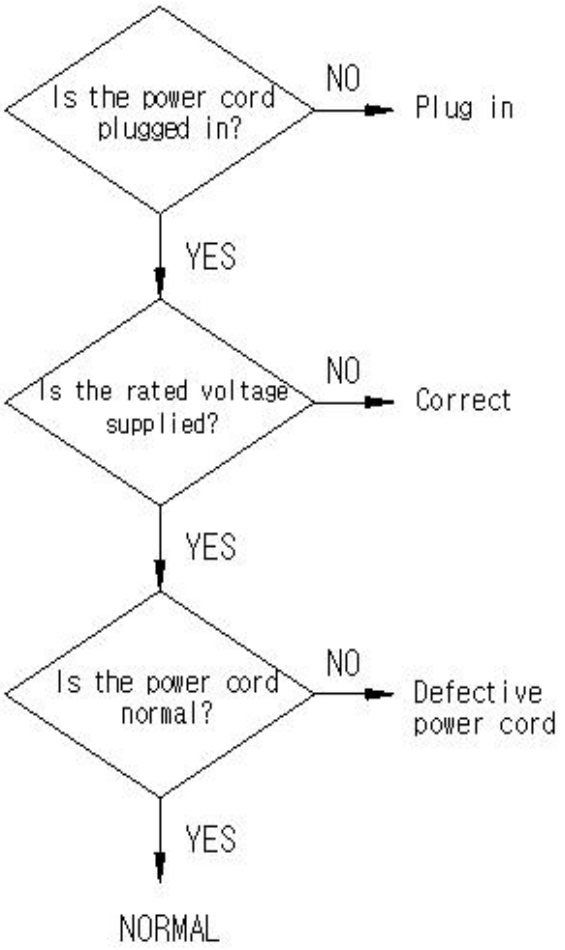
3. TROUBLESHOOTING

1) CHECKING THE POWER SUPPLY

① BASF1 / BASF2 / BASF3
BASR1 / BASR2 / BASR3

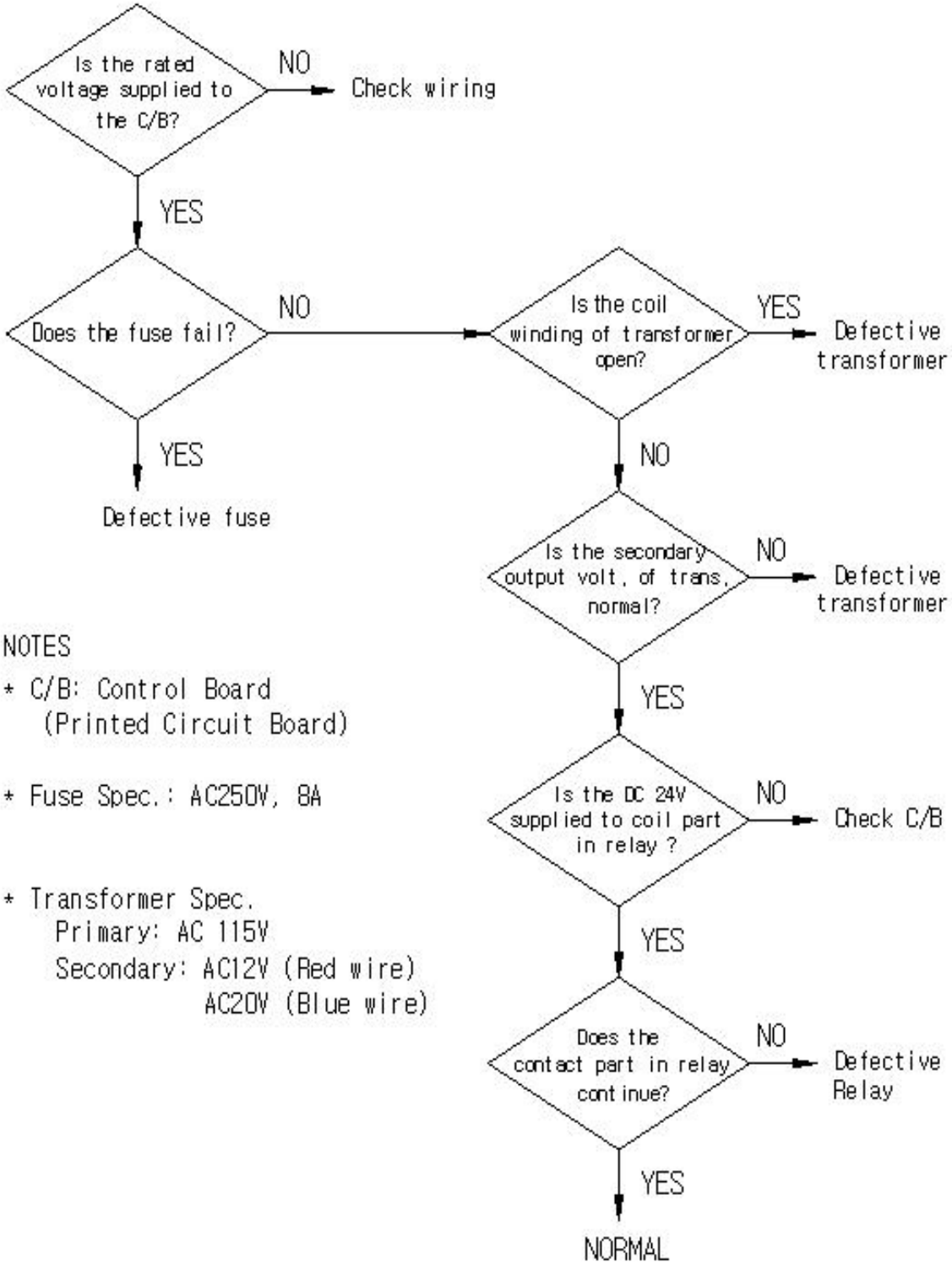


② BAGR24 / BAGR48 / BAGR72



2) CHECKING THE POWER SUPPLY OF CONTROL BOARD

① BASF1 / BASF2 / BASF3 / BASR1 / BASR2 / BASR3



NOTES

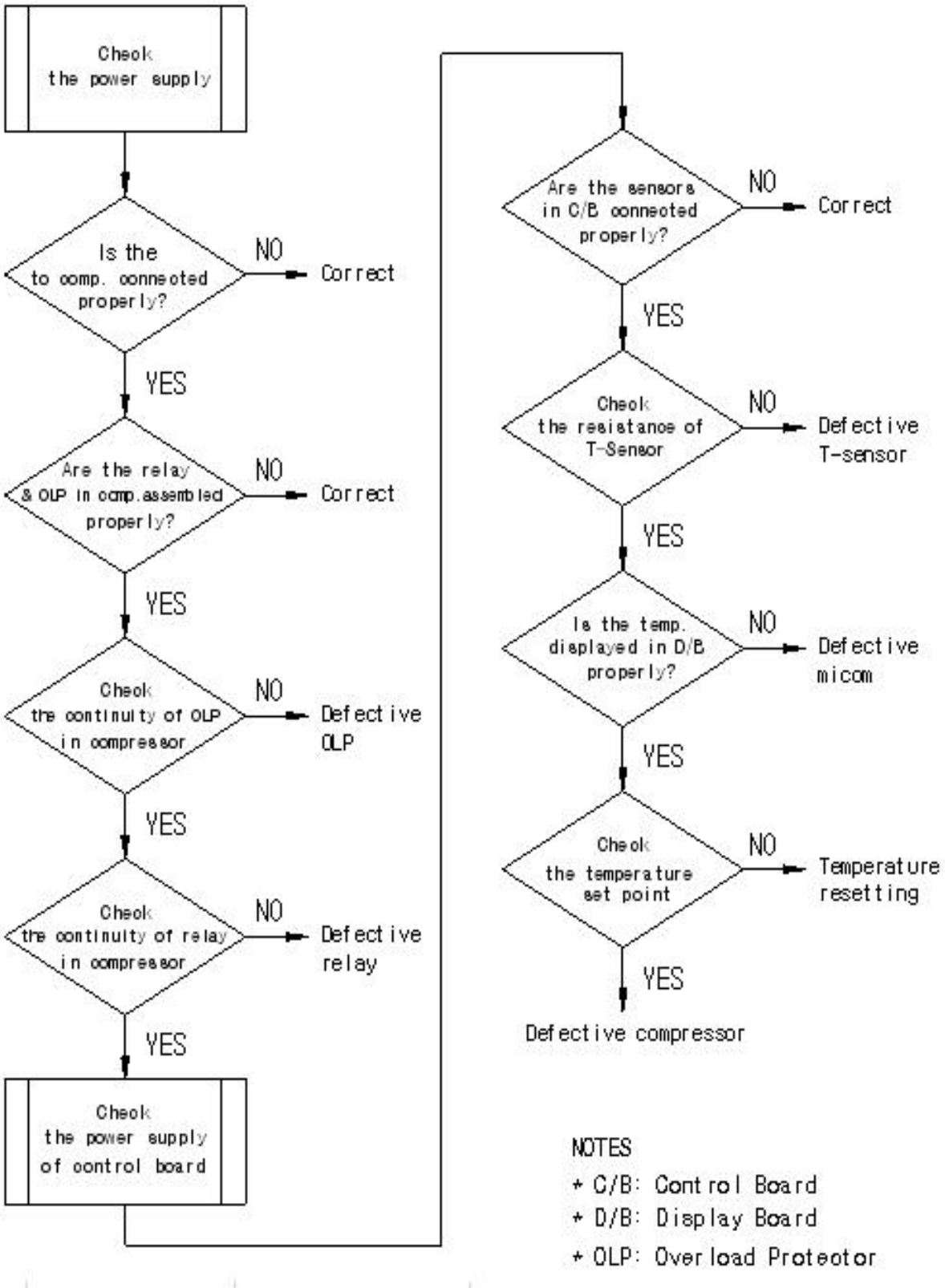
* C/B: Control Board
  (Printed Circuit Board)

* Fuse Spec.: AC250V, 8A

* Transformer Spec.
  Primary: AC 115V
  Secondary: AC12V (Red wire)
  AC20V (Blue wire)

3) CHECKING THE CONTROL PART OF REFRIGERATION CYCLE

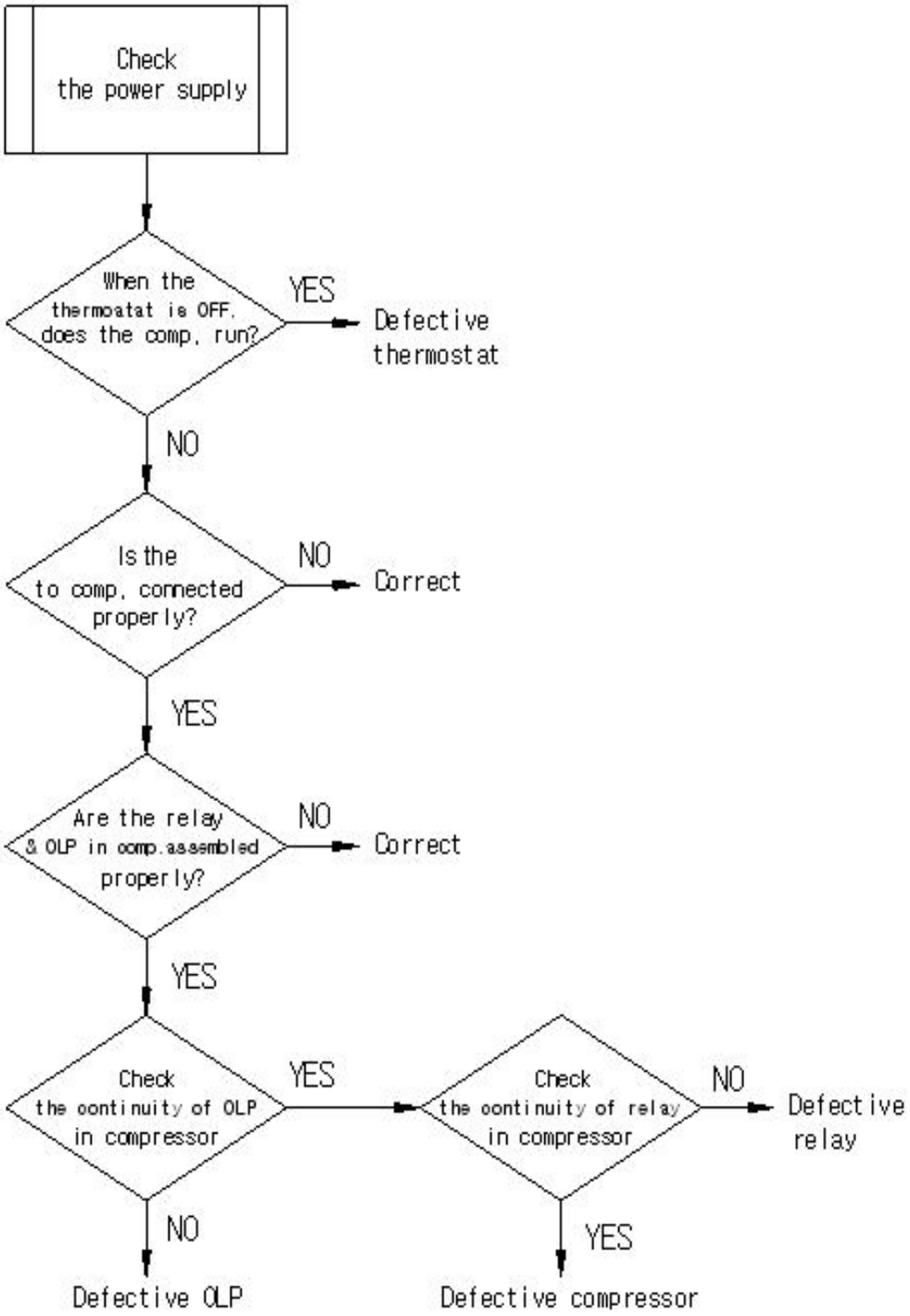
① BASF1 / BASF2 / BASF3 / BASR1 / BASR2 / BASR3



NOTES

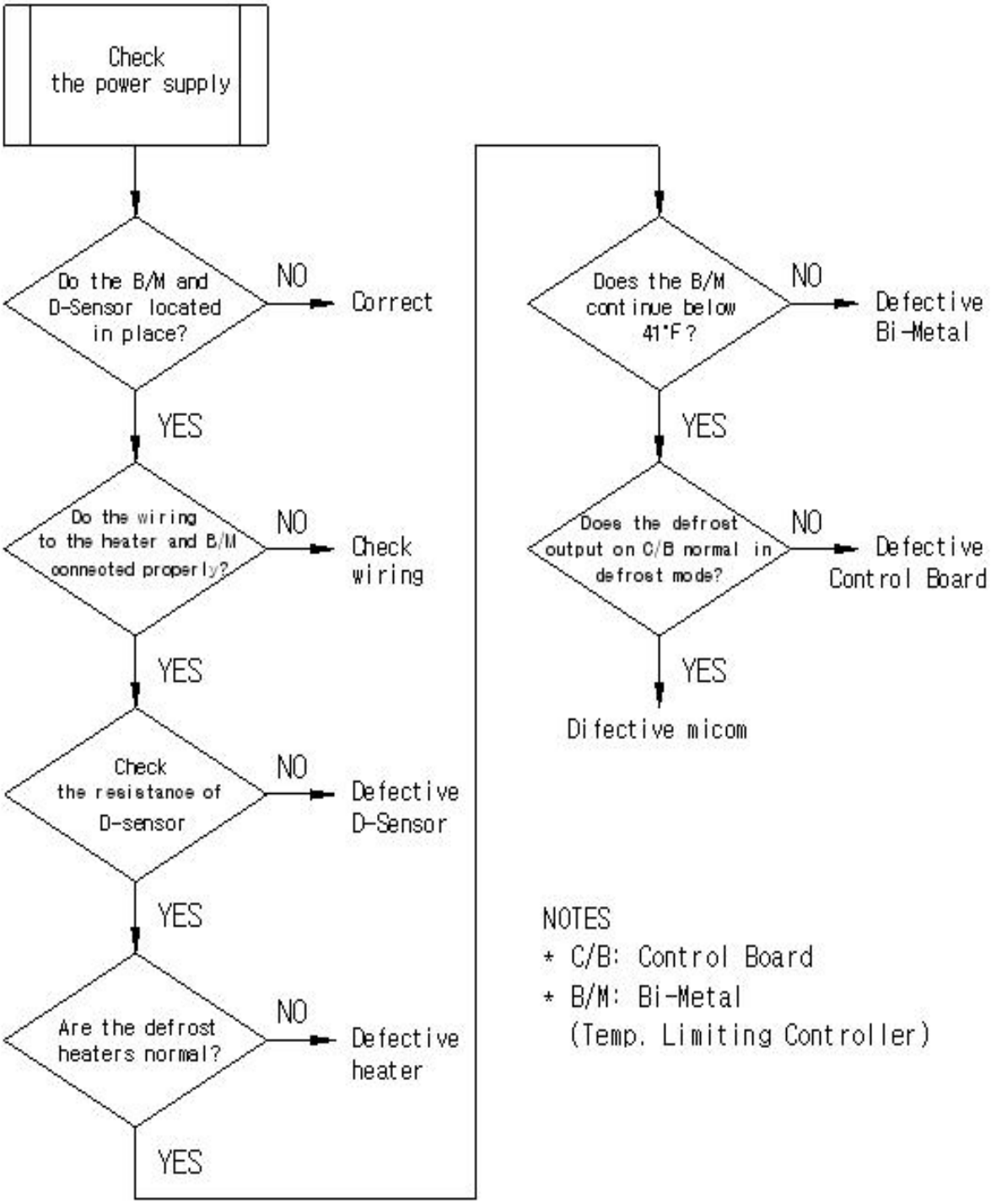
* C/B: Control Board
* D/B: Display Board
* OLP: Overload Protector

② BAGR24 / BAGR48 / BAGR72



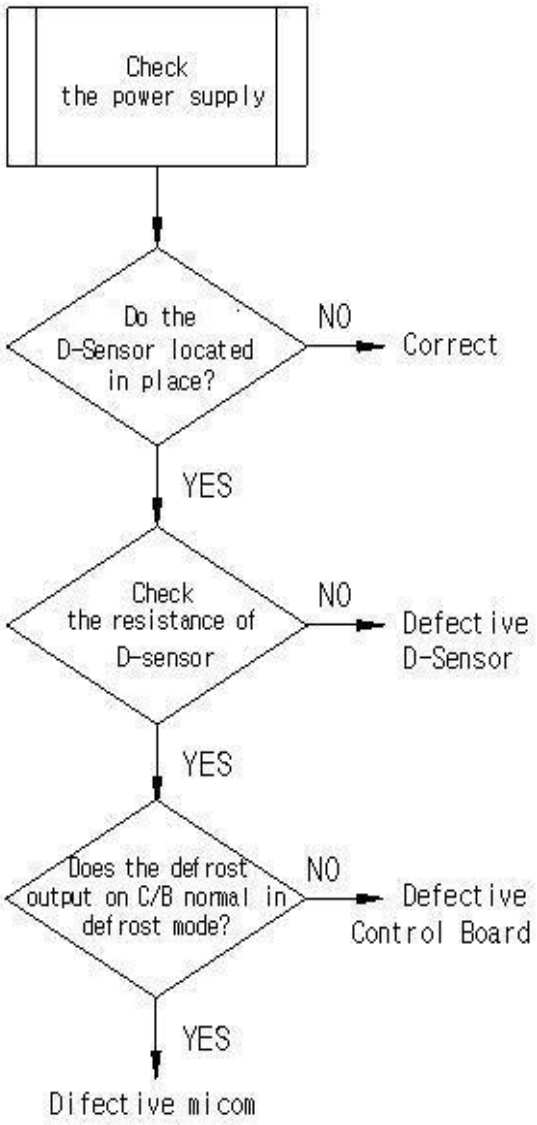
4) CHECKING THE DEFROST PART

① BASF1 / BASF2 / BASF3



NOTES
* C/B: Control Board
* B/M: Bi-Metal
  (Temp. Limiting Controller)

② BASR1 / BASR2 / BASR3

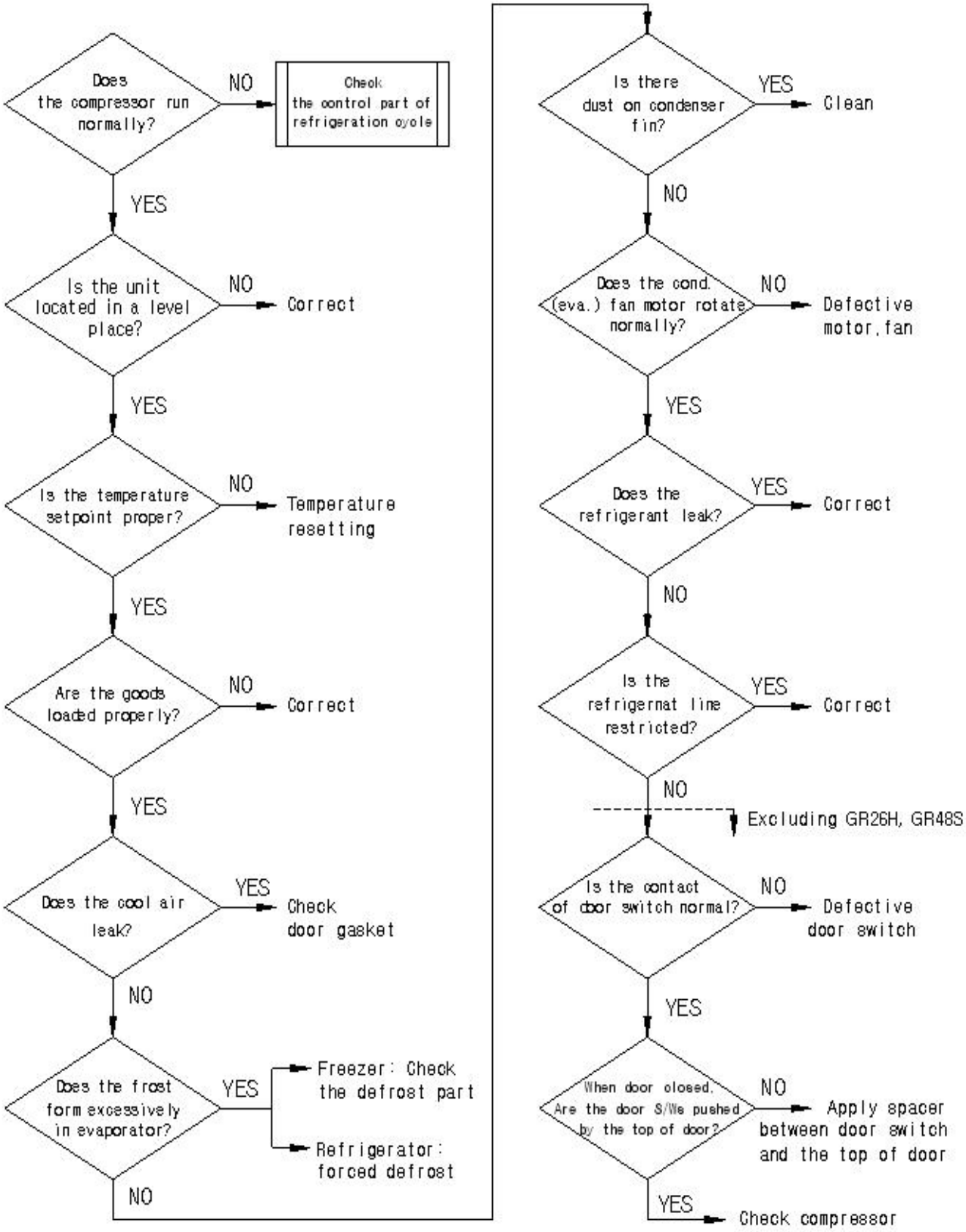


NOTES

* C/B: Control Board

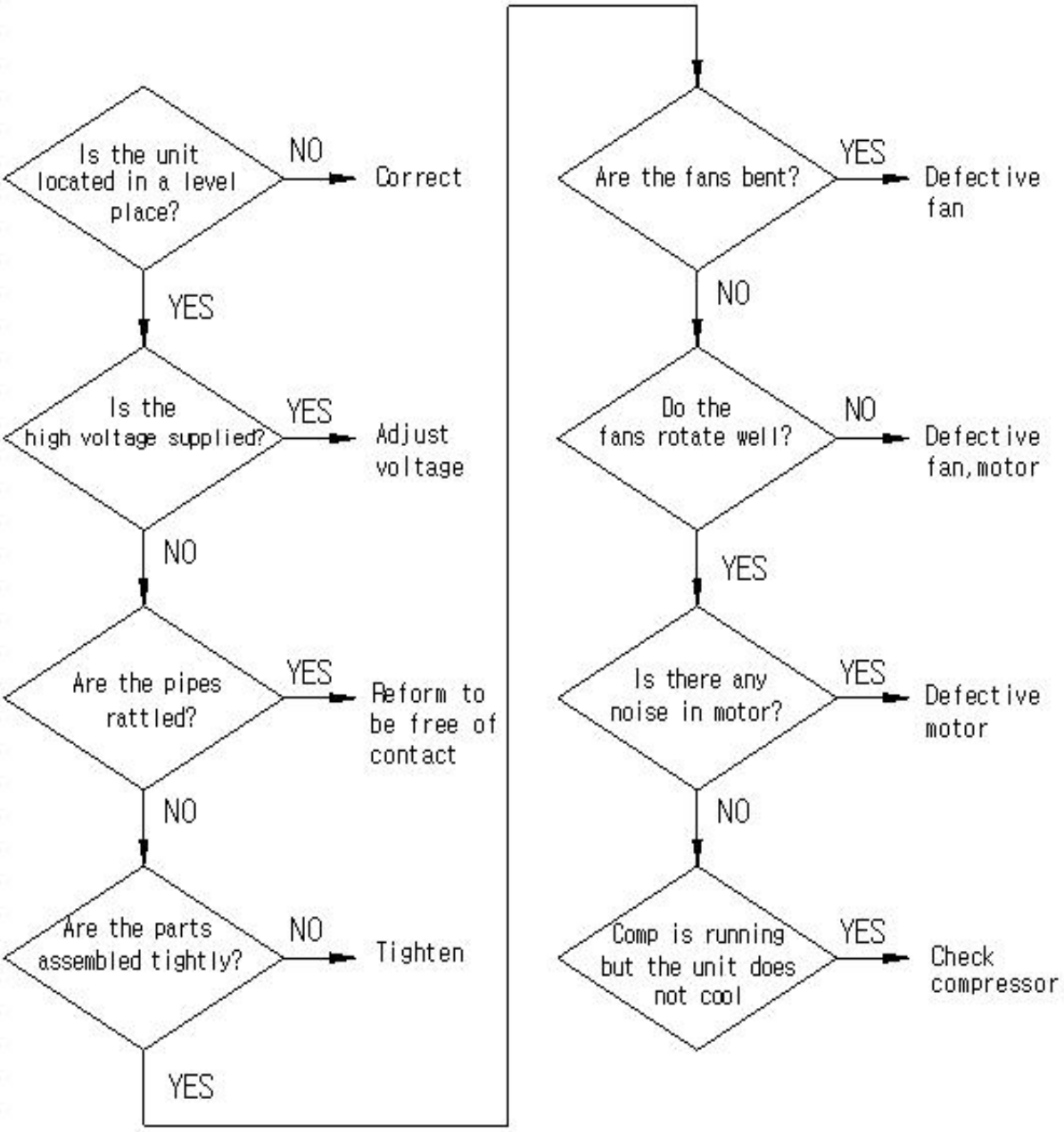
5) WHEN THE UNIT DOES NOT COOL

① All Models



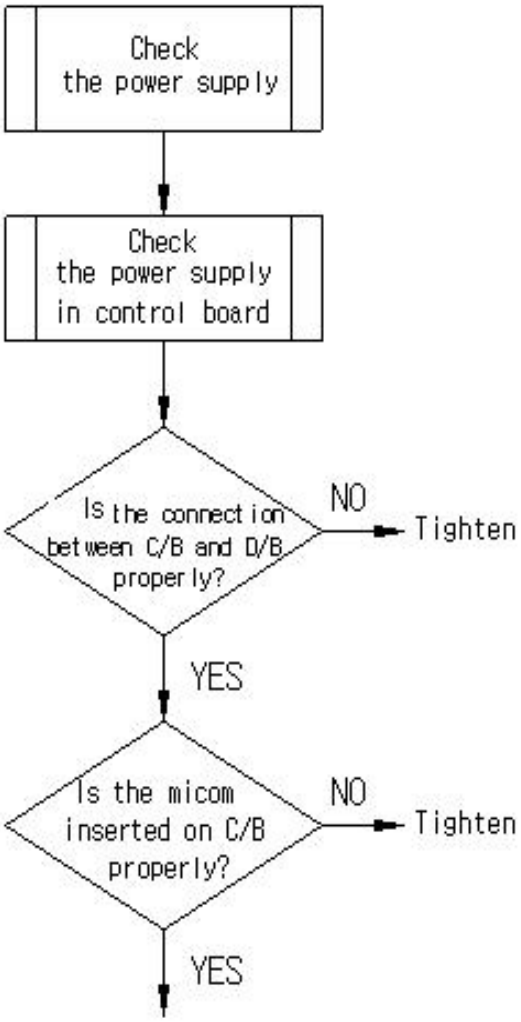
6) WHEN THERE IS A ABNORMAL NOISE

① All Models



7) WHEN THE TEMPERATURE DOES NOT DISPLAY

① BASF1 / BASF2 / BASF3 / BASR1 / BASR2 / BASR3

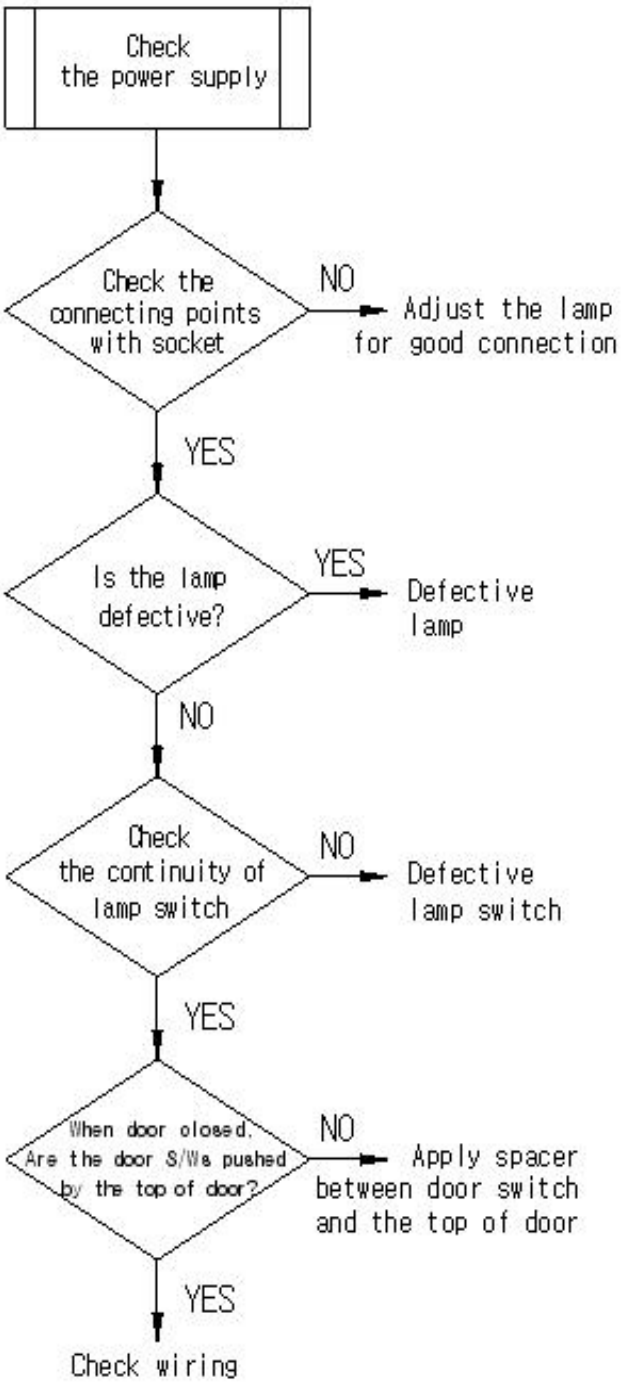


NOTES

* C/B: Control Board
* D/B: Display Board

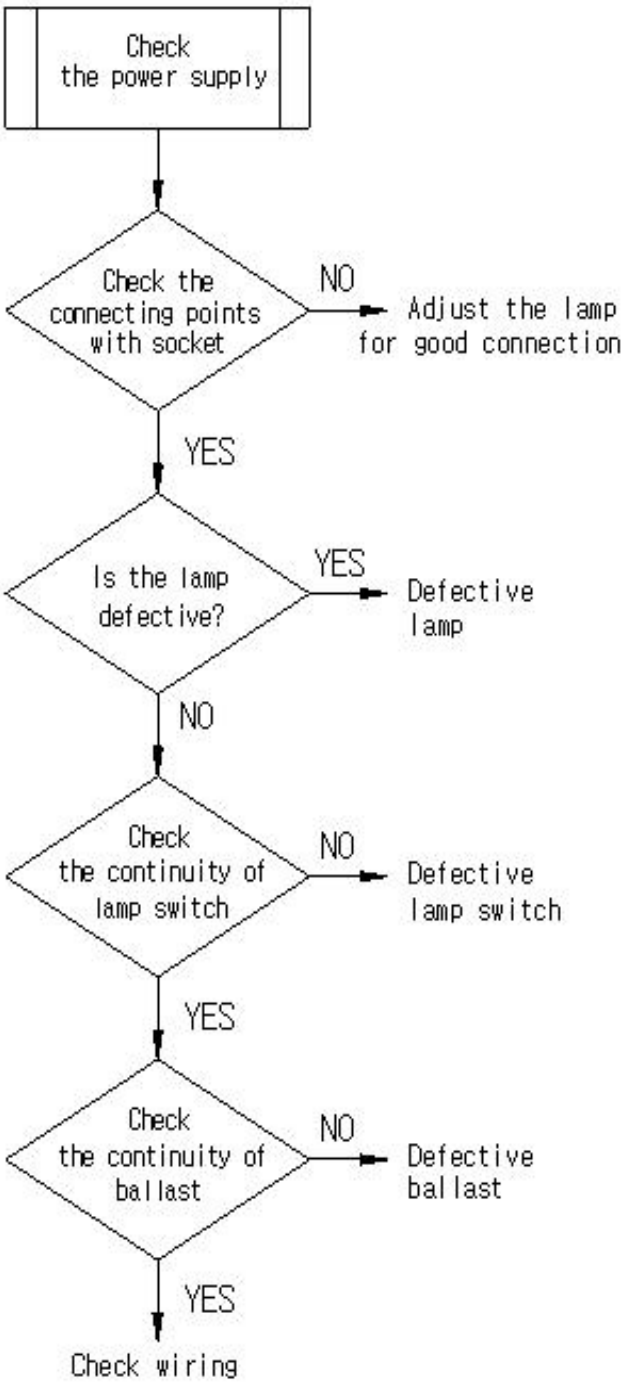
8) WHEN THE LAMP DOES NOT LIGHT

① BASF1 / BASF2 / BASF3
BASR1 / BASR2 / BASR3



* Incandescence Lamp : 40W

② BAGR24 / BAGR48 / BAGR72

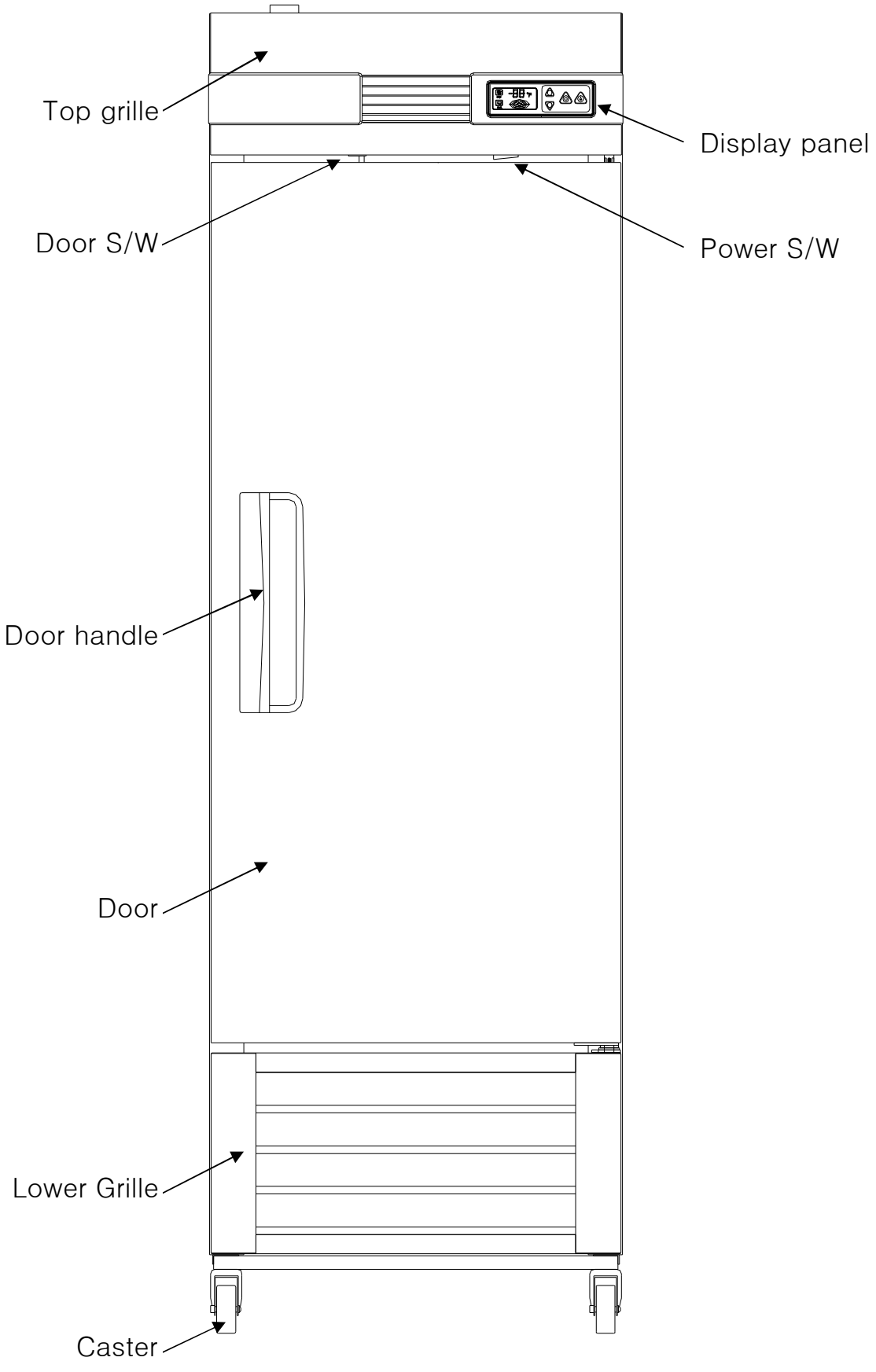


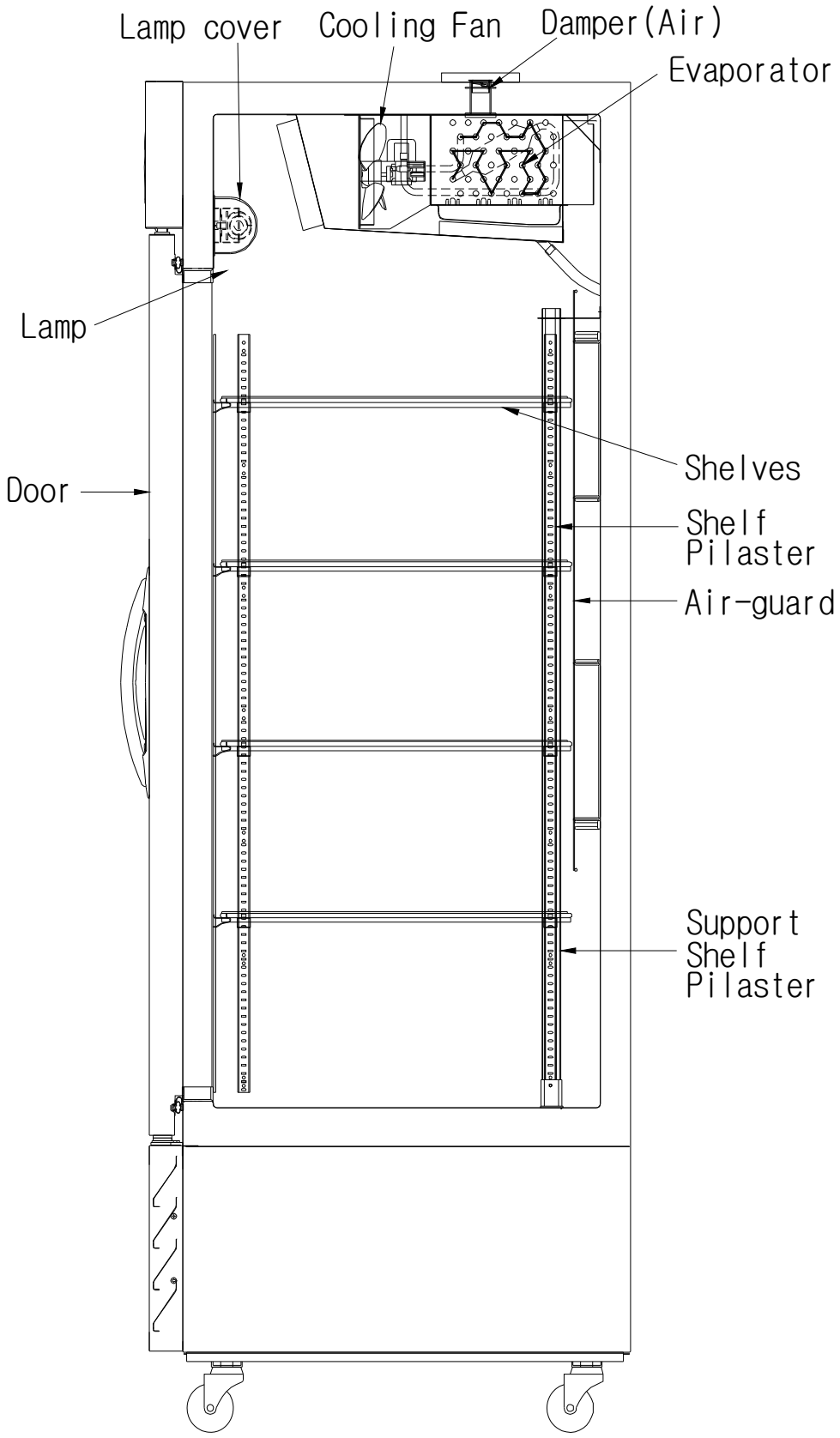
* Fluorescent Lamp: 32W

Temperature (°F)	Resistance (kΩ)	
	T-sensor (±6.5%)	D-sensor (±5.5%)
-5	23.04	79.17
0	19.76	68.92
10	14.65	52.61
23	10.10	37.55
32	7.88	30.00
41	6.20	24.13
50	7.91	19.53
60	3.82	15.56
70	3.00	12.48

4. FEATURE CHART

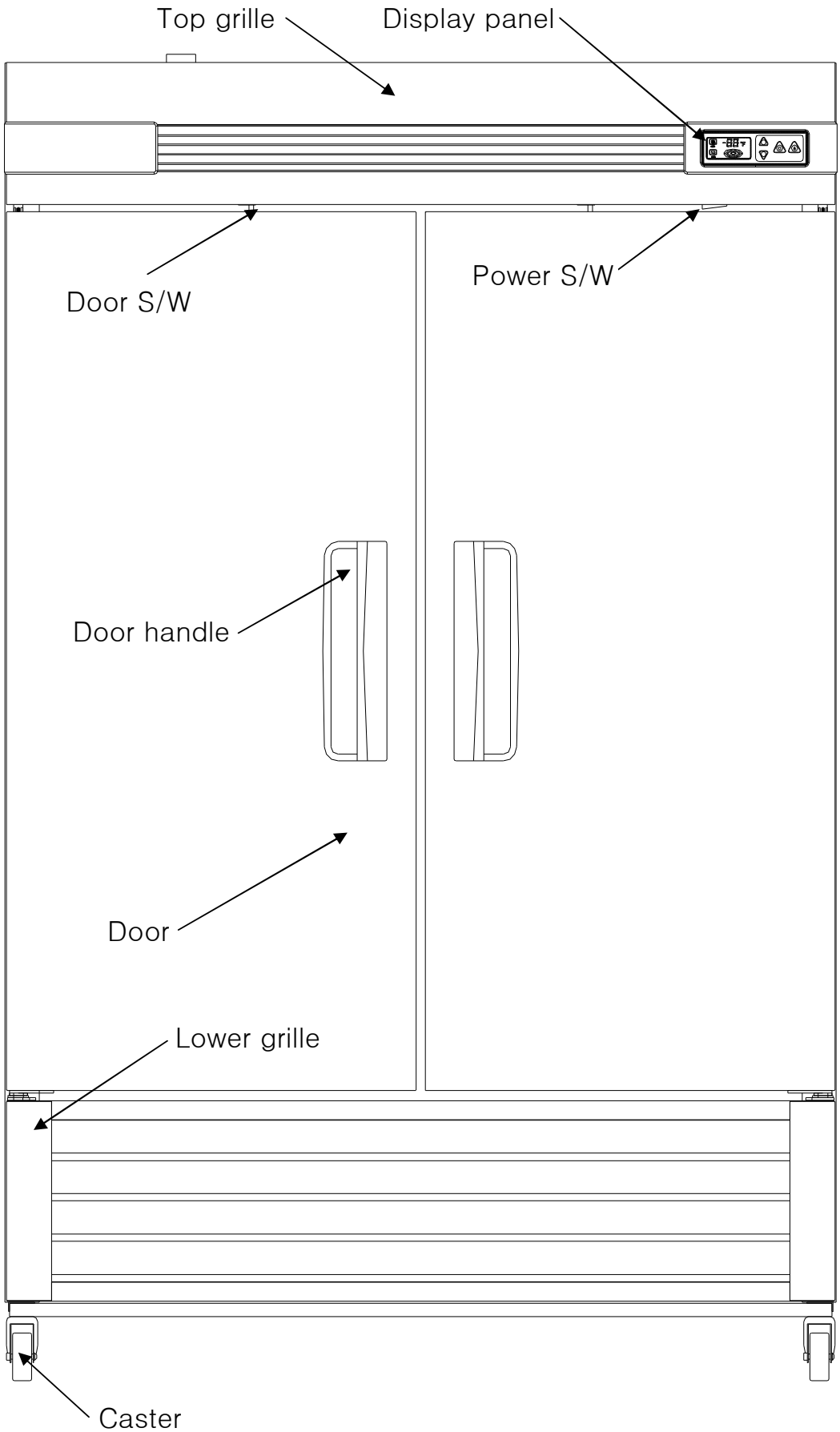
1) BASF1/BASR1 (1 Door)



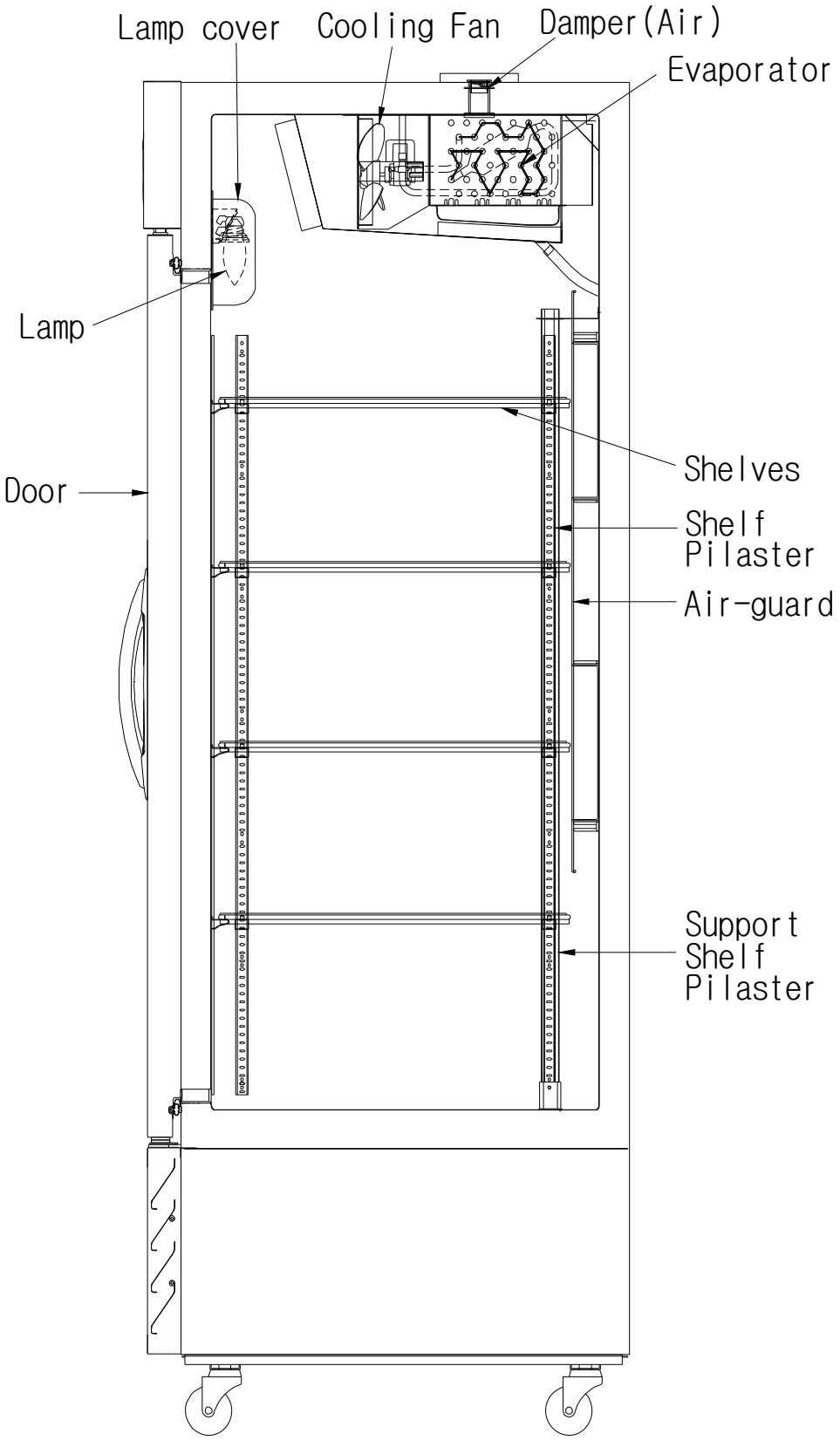

Lamp cover
Cooling Fan
Damper(Air)
Evaporator
Lamp
Door
Shelves
Shelf
Pilaster
Air-guard
Support
Shelf
Pilaster

(SIDE)

2) BASF49/BASR49 (2 Door)

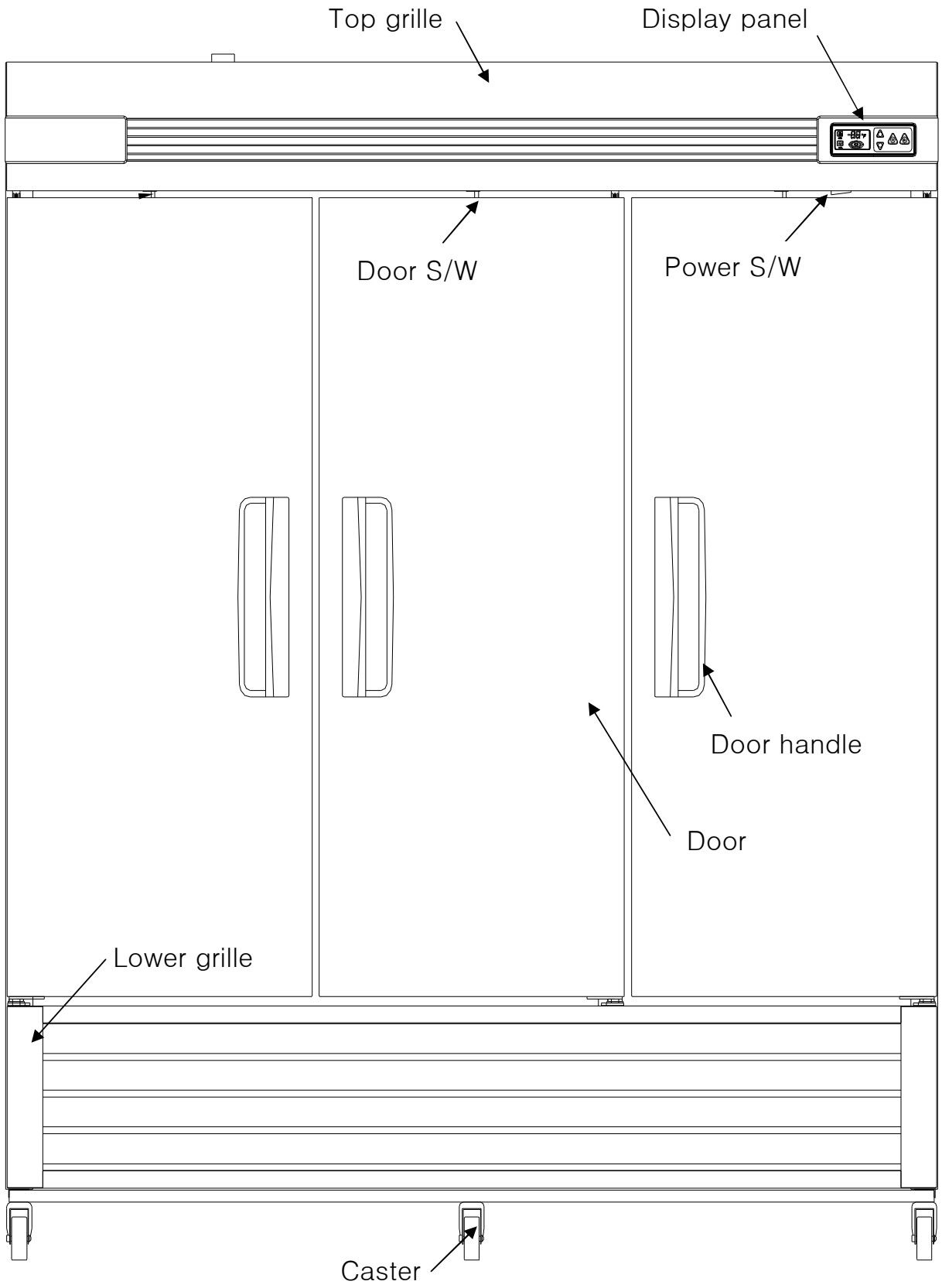


(FRONT)

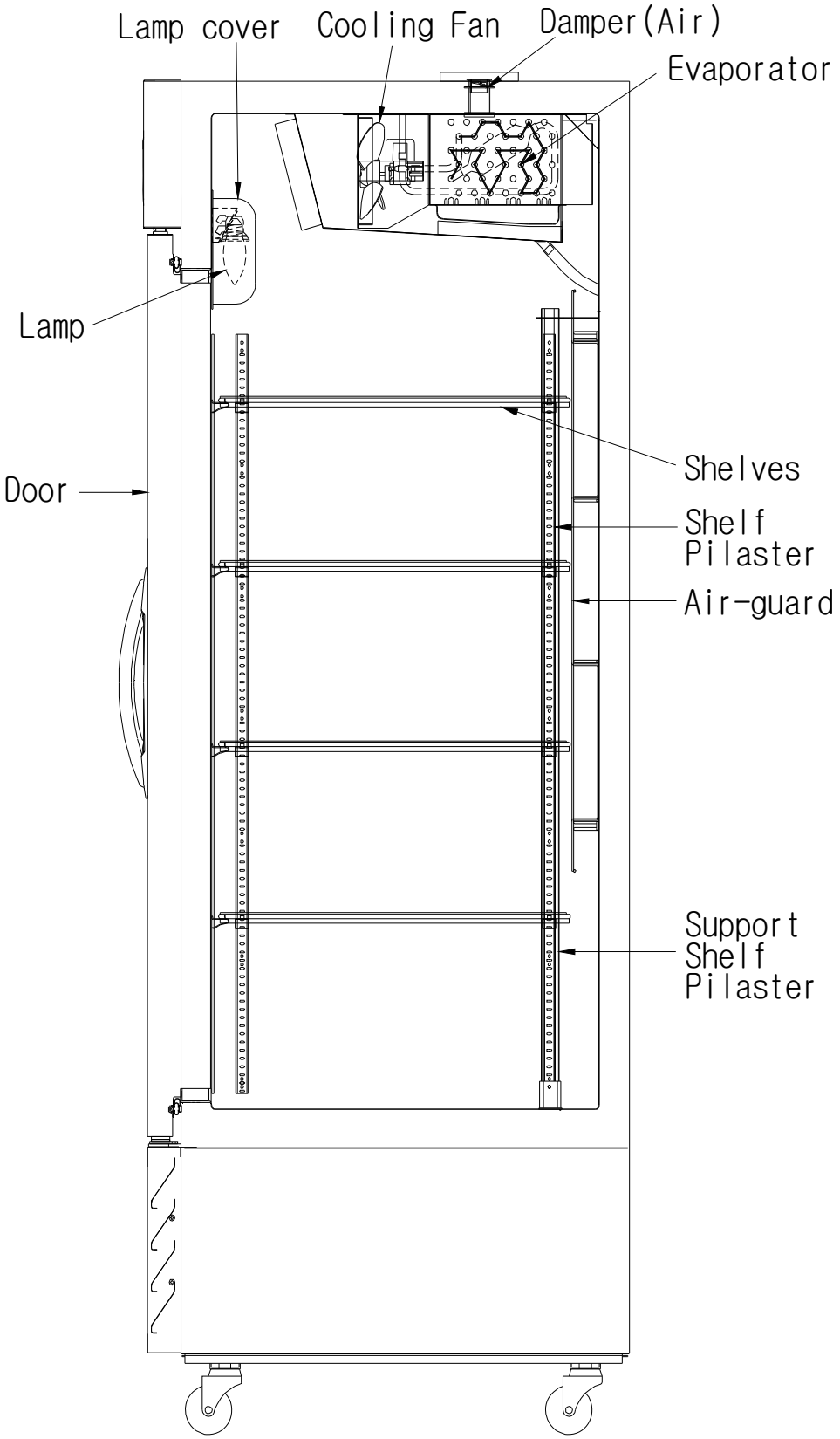

Lamp cover
Cooling Fan
Damper(Air)
Evaporator
Lamp
Door
Shelves
Shelf
Pilaster
Air-guard
Support
Shelf
Pilaster

(SIDE)

3) BASF3/BASR3 (3 Door)

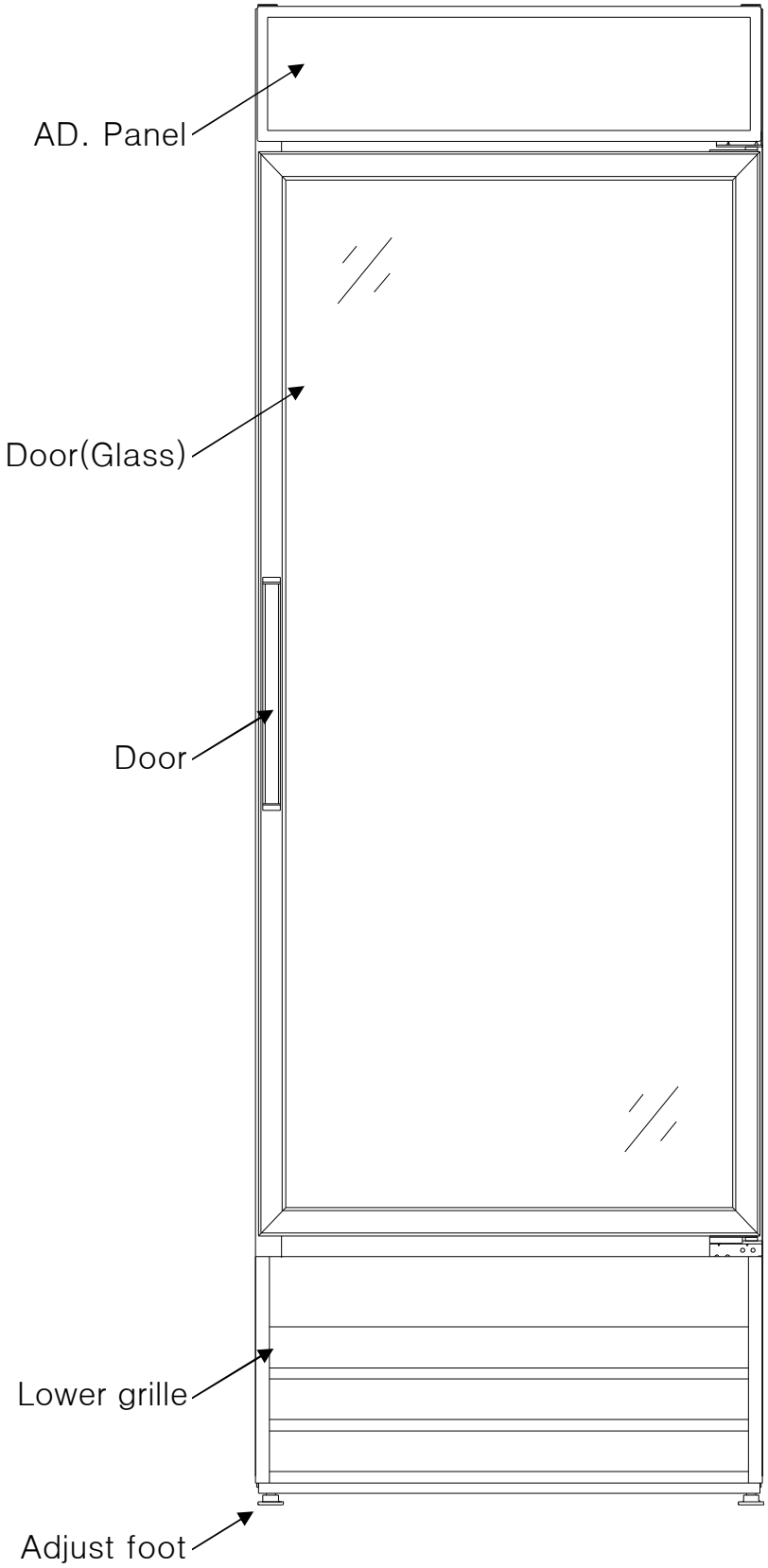


(FRONT)

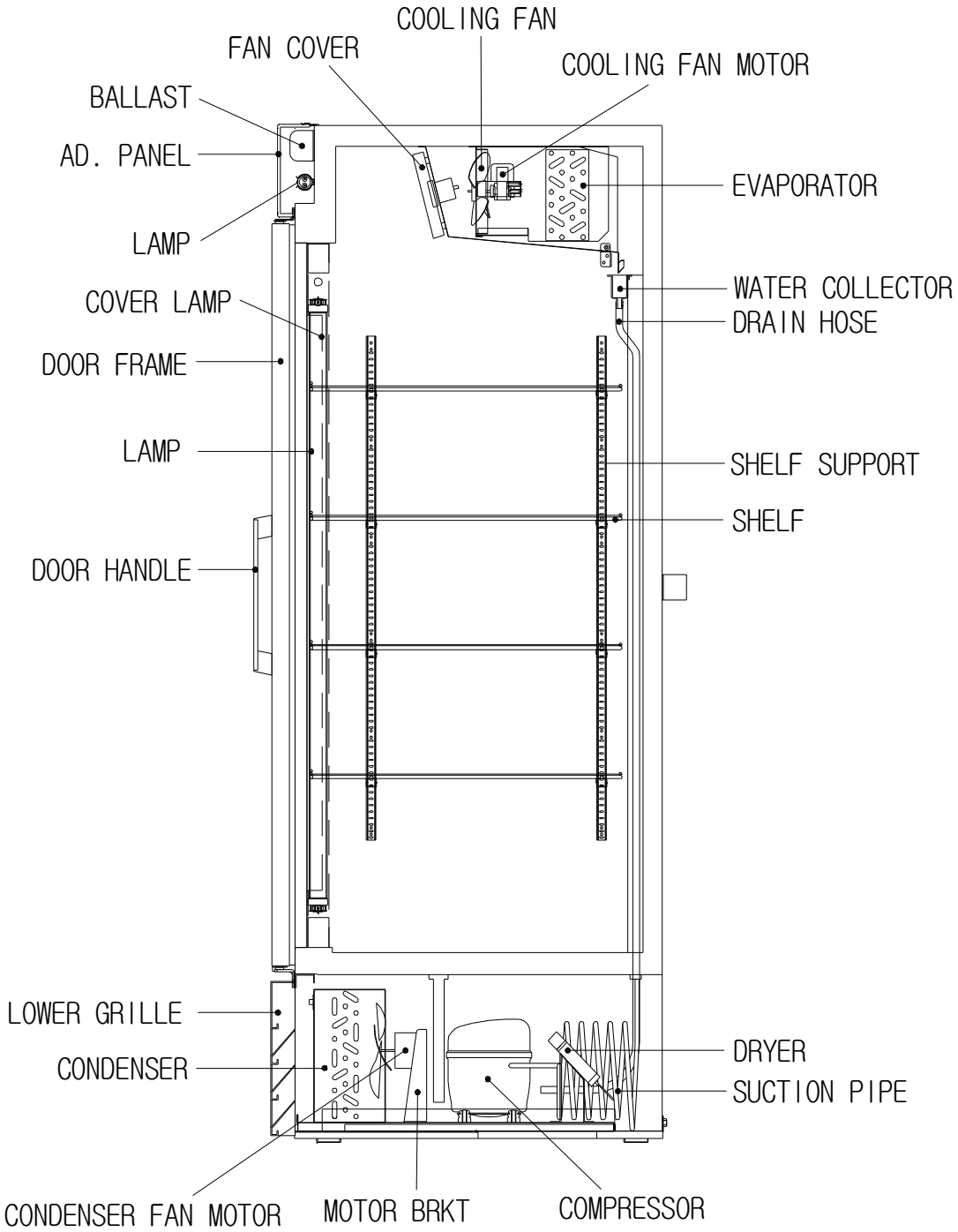

Lamp cover
Cooling Fan
Damper(Air)
Evaporator
Lamp
Door
Shelves
Shelf
Pilaster
Air-guard
Support
Shelf
Pilaster

(SIDE)

4) BAGR24 (Glass 1 Door)

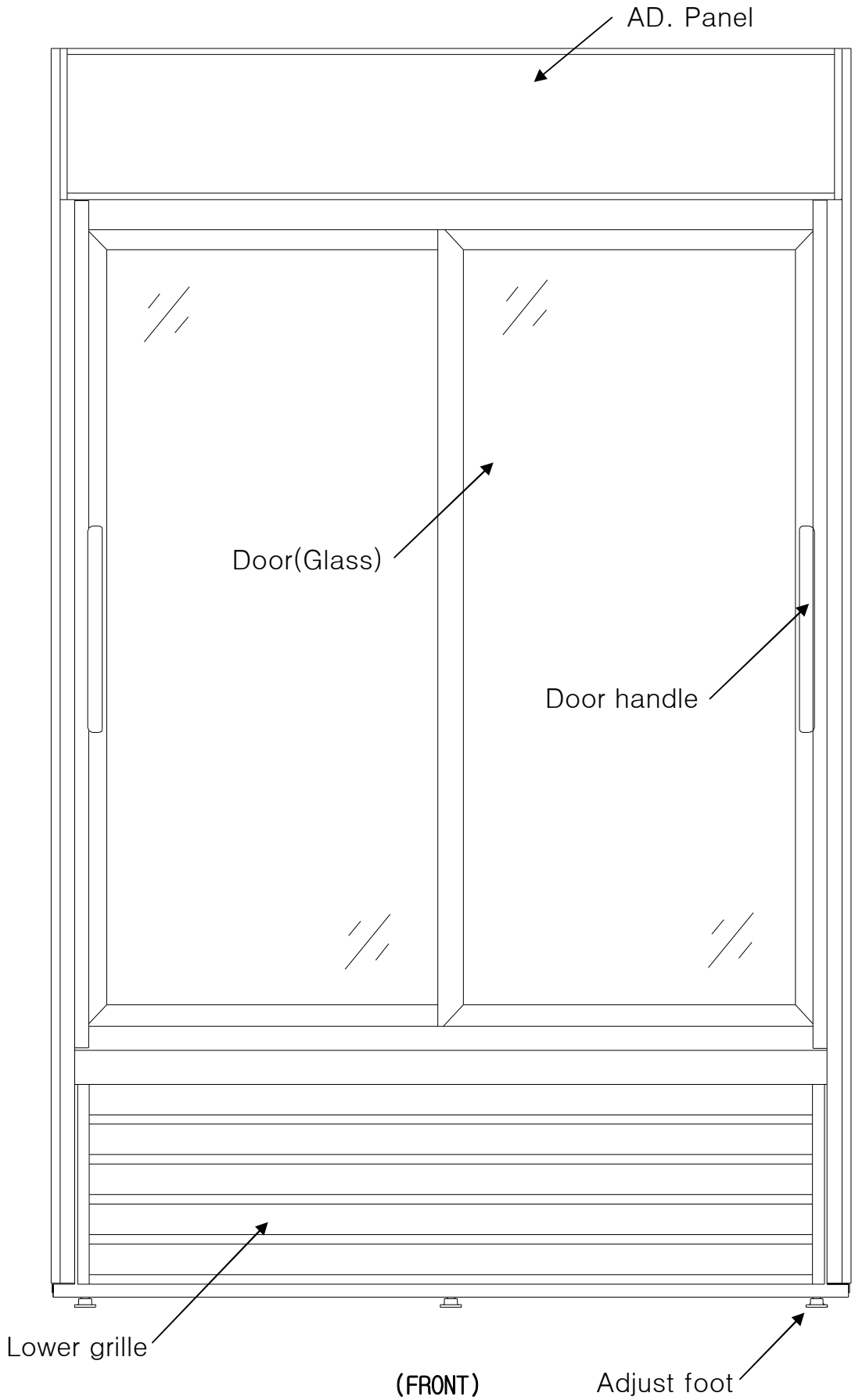


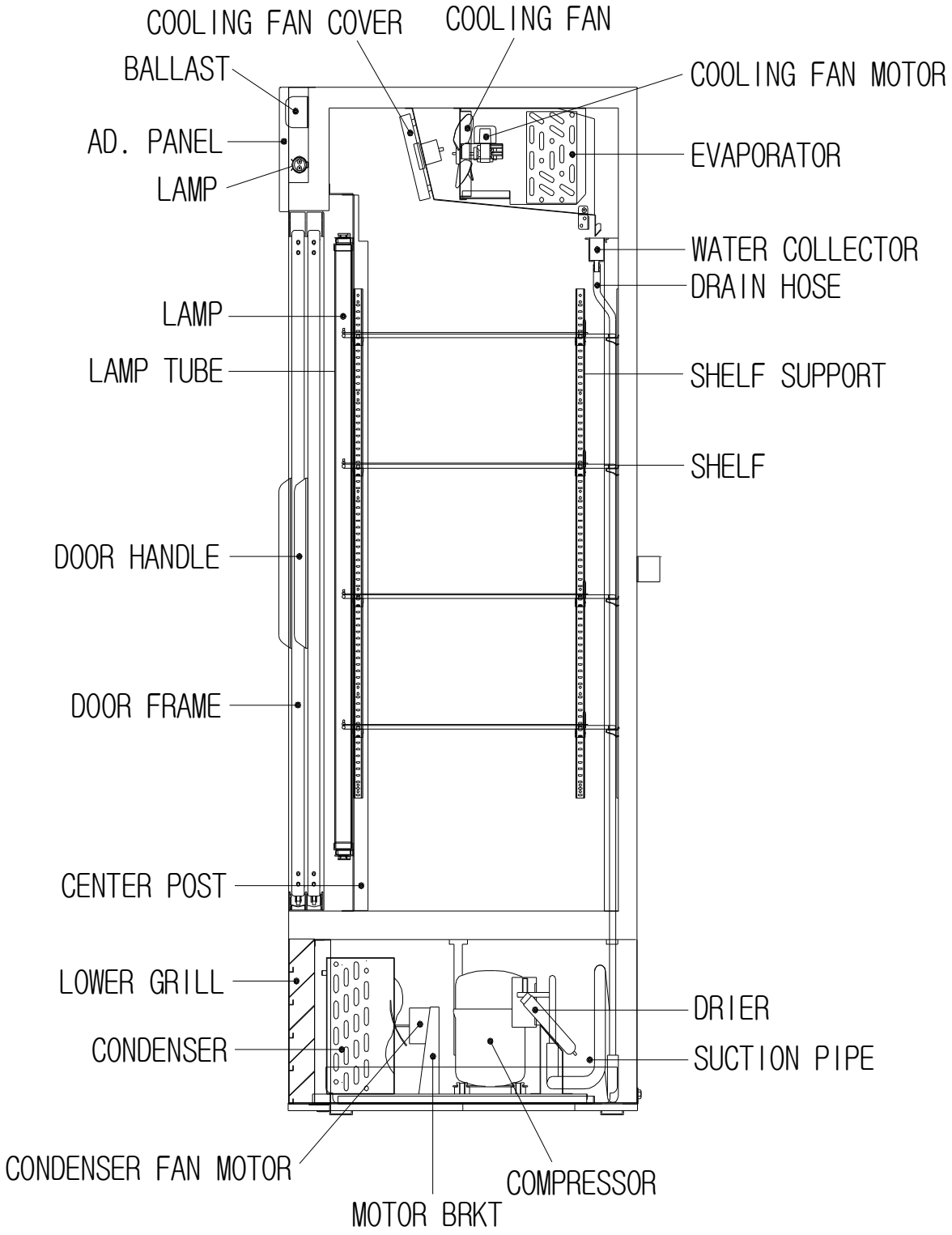
(FRONT)


COOLING FAN
FAN COVER
COOLING FAN MOTOR
BALLAST
AD. PANEL
EVAPORATOR
LAMP
WATER COLLECTOR
COVER LAMP
DRAIN HOSE
DOOR FRAME
LAMP
SHELF SUPPORT
SHELF
DOOR HANDLE
LOWER GRILLE
DRYER
CONDENSER
SUCTION PIPE
CONDENSER FAN MOTOR
MOTOR BRKT
COMPRESSOR

(SIDE)

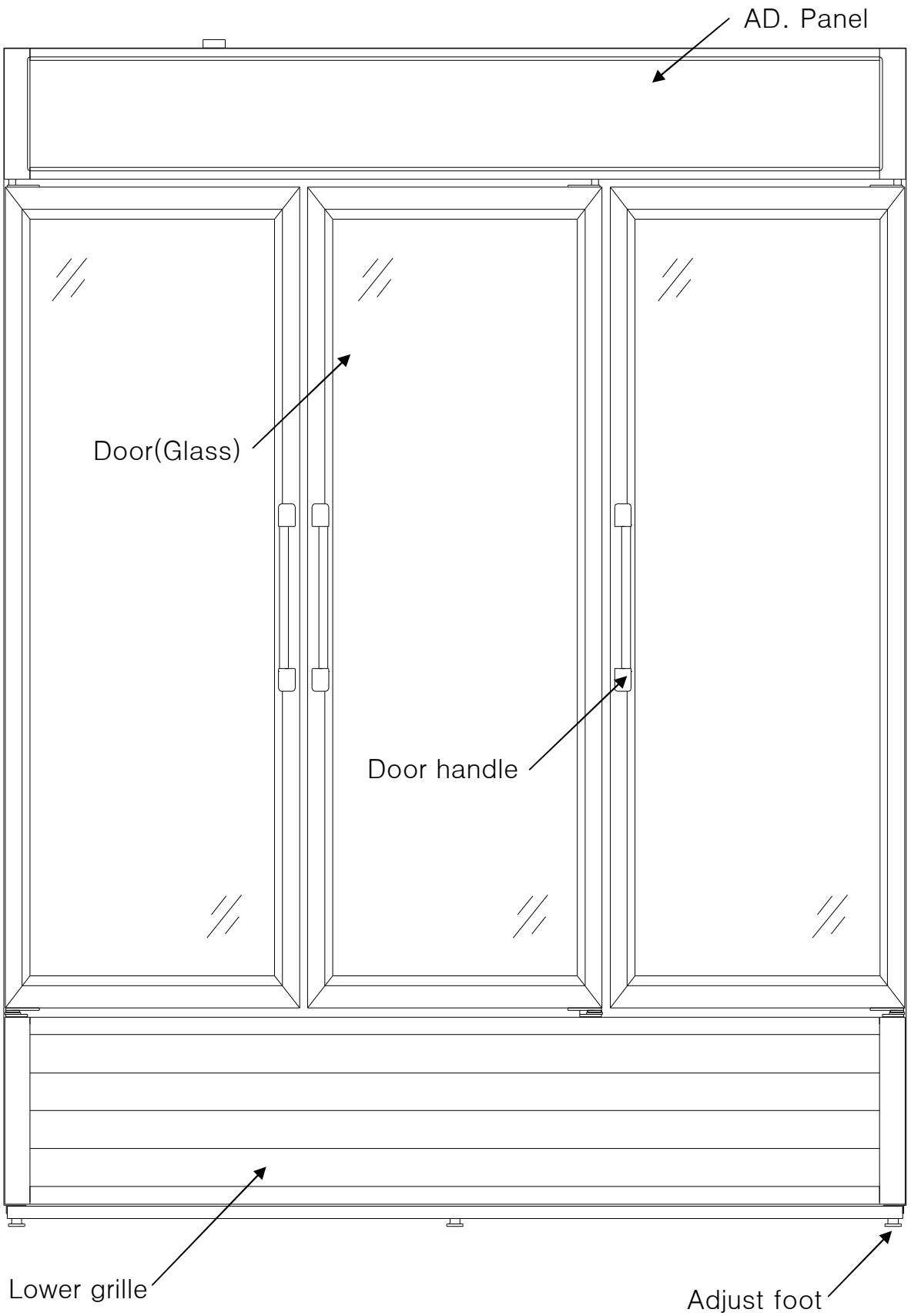
5) BAGR48 (Glass 2 Door)



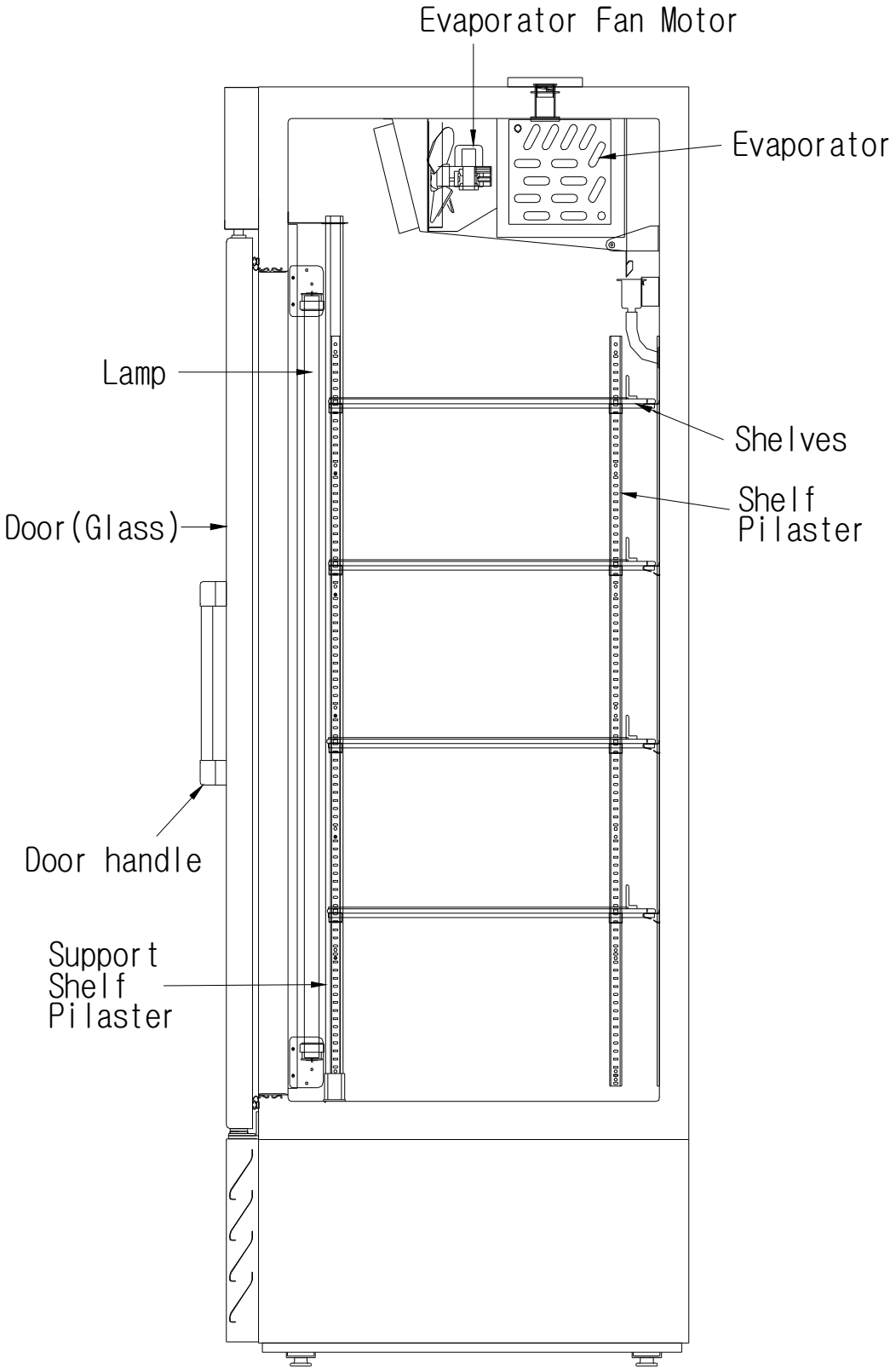

COOLING FAN COVER
COOLING FAN
BALLAST
COOLING FAN MOTOR
AD. PANEL
EVAPORATOR
LAMP
WATER COLLECTOR
DRAIN HOSE
LAMP
LAMP TUBE
SHELF SUPPORT
SHELF
DOOR HANDLE
DOOR FRAME
CENTER POST
LOWER GRILL
DRIER
CONDENSER
SUCTION PIPE
CONDENSER FAN MOTOR
COMPRESSOR
MOTOR BRKT

(SIDE)

6) BAGR72 (Glass 3 Door)



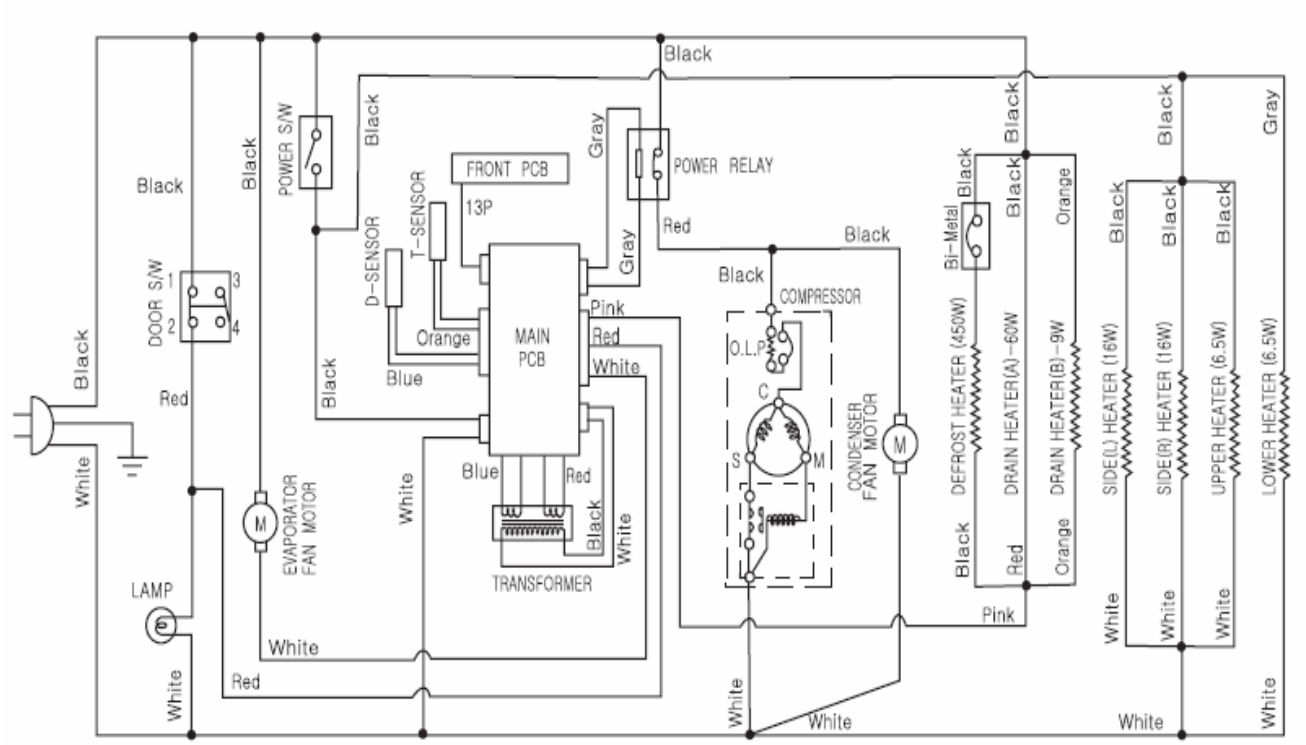
(FRONT)


Evaporator Fan Motor
Evaporator
Lamp
Shelves
Shelf
Pilaster
Door(Glass)
Door handle
Support
Shelf
Pilaster

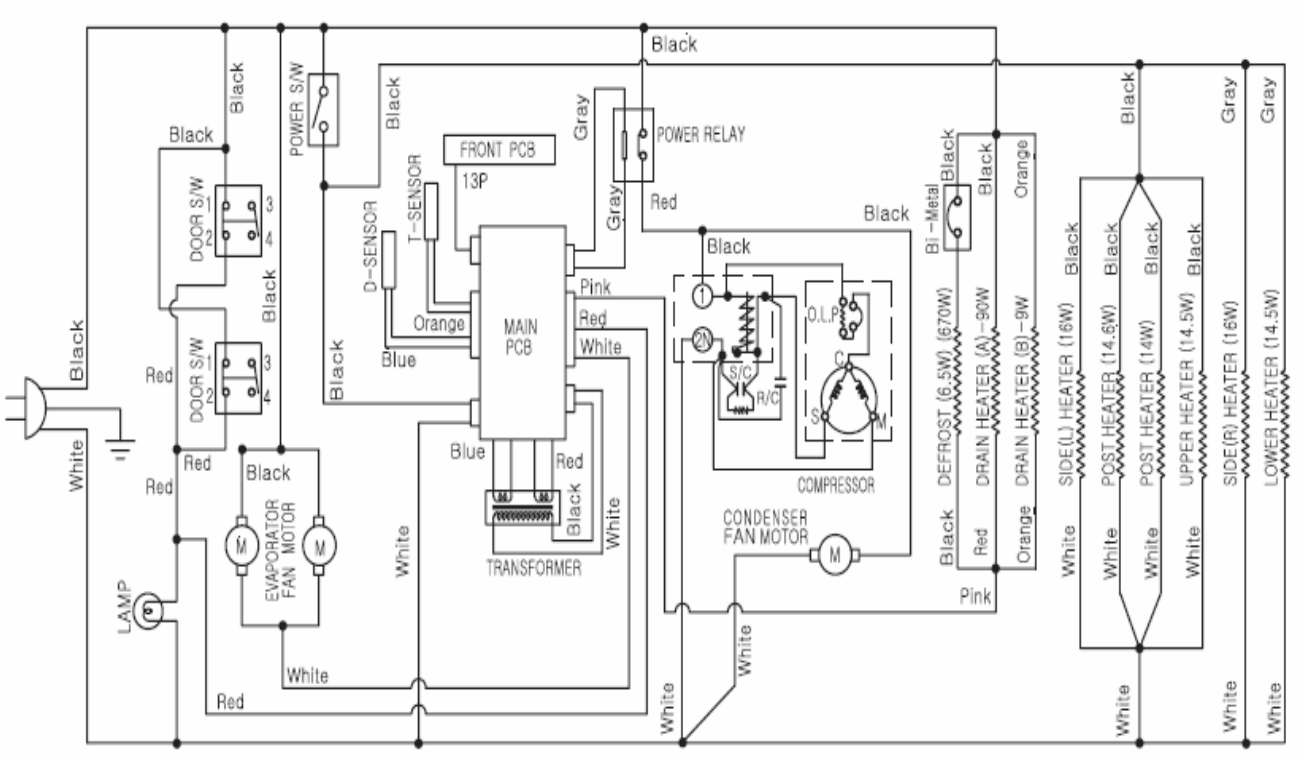
(SIDE)

5. WIRING DIAGRAMS

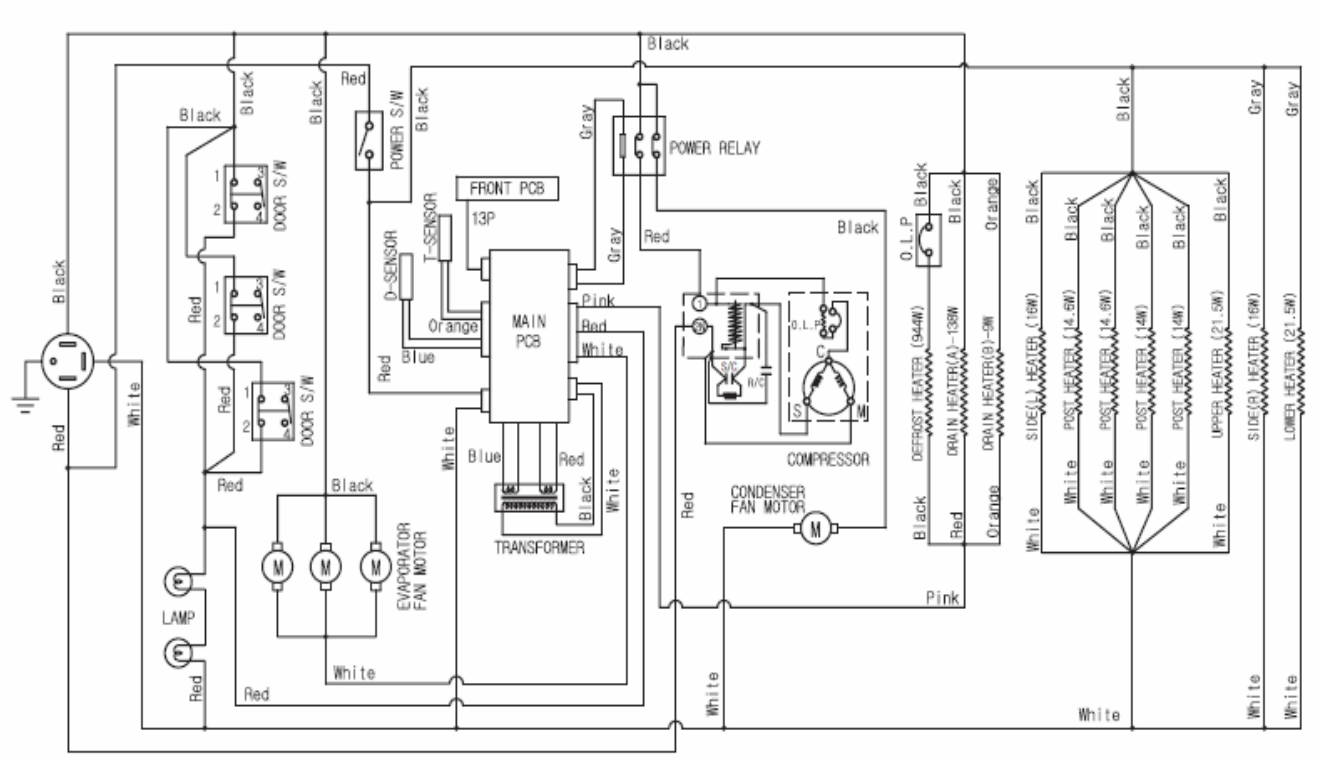
1) BASF1



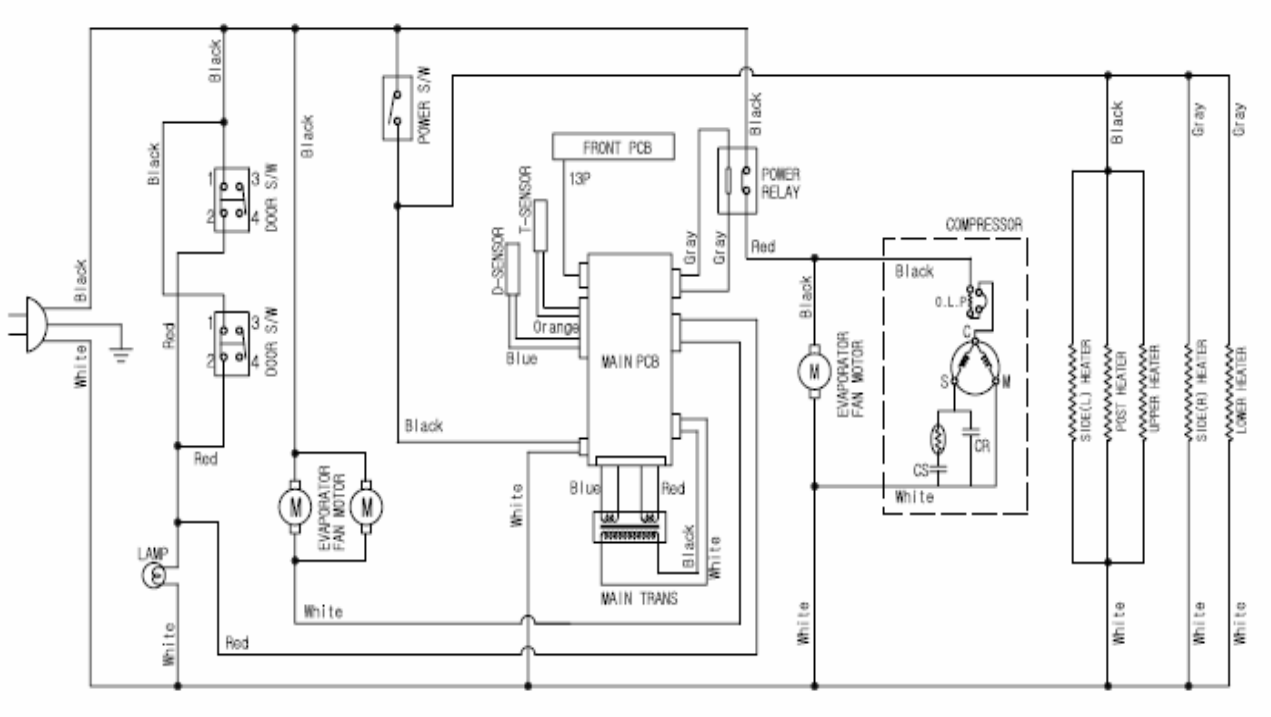
2) BASF2



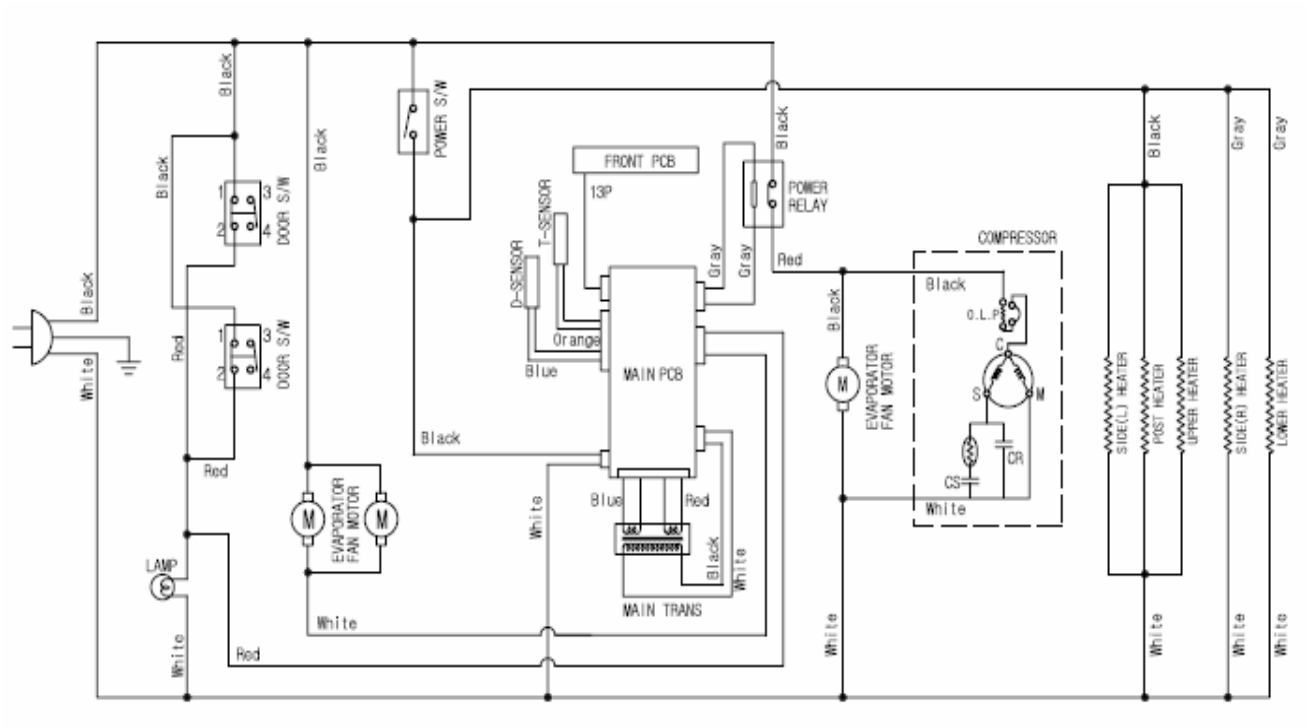
3) BASF3



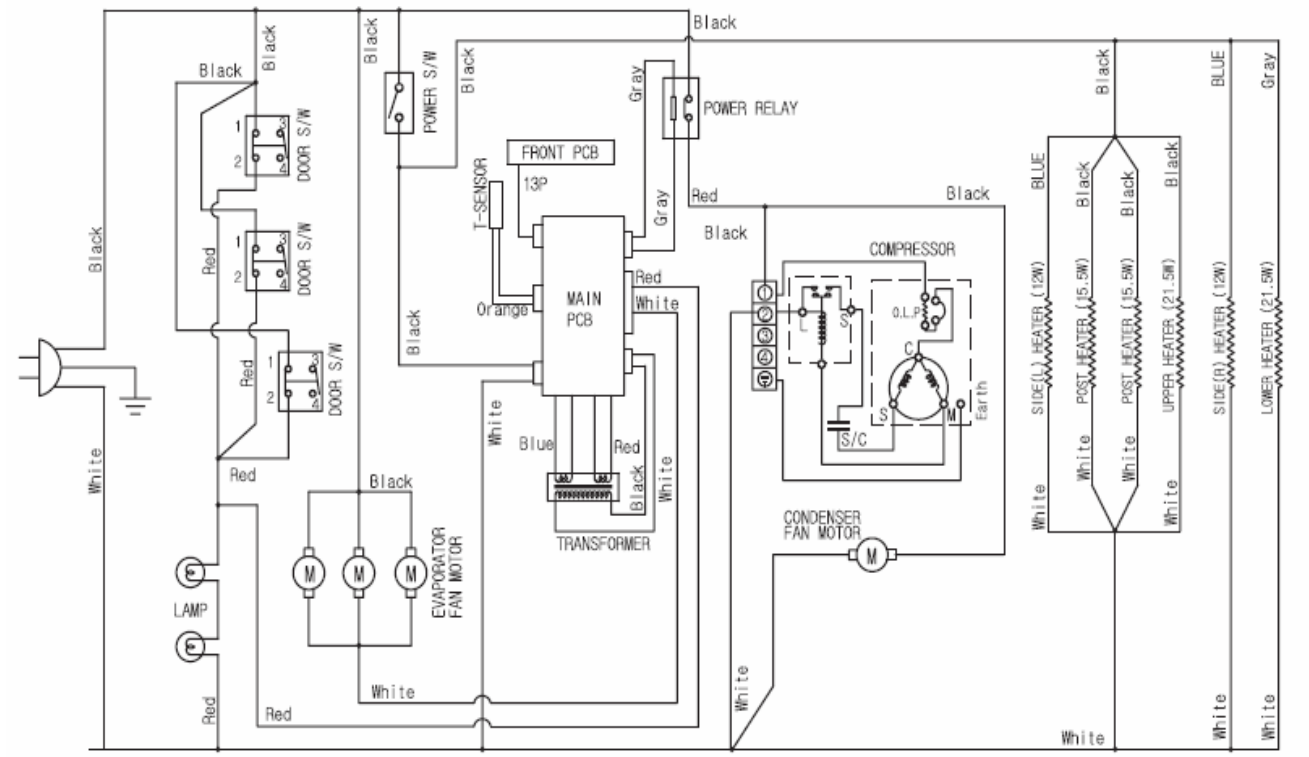
4) BASR1



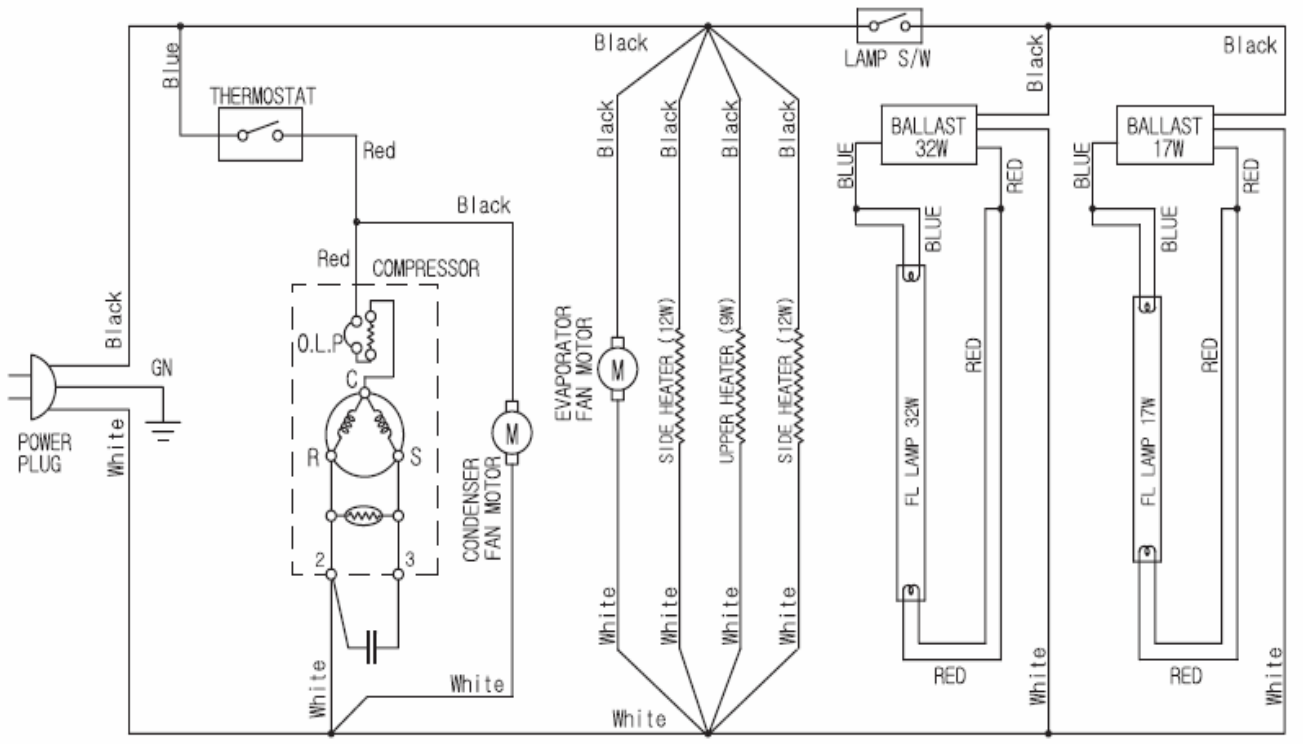
5) BASR2



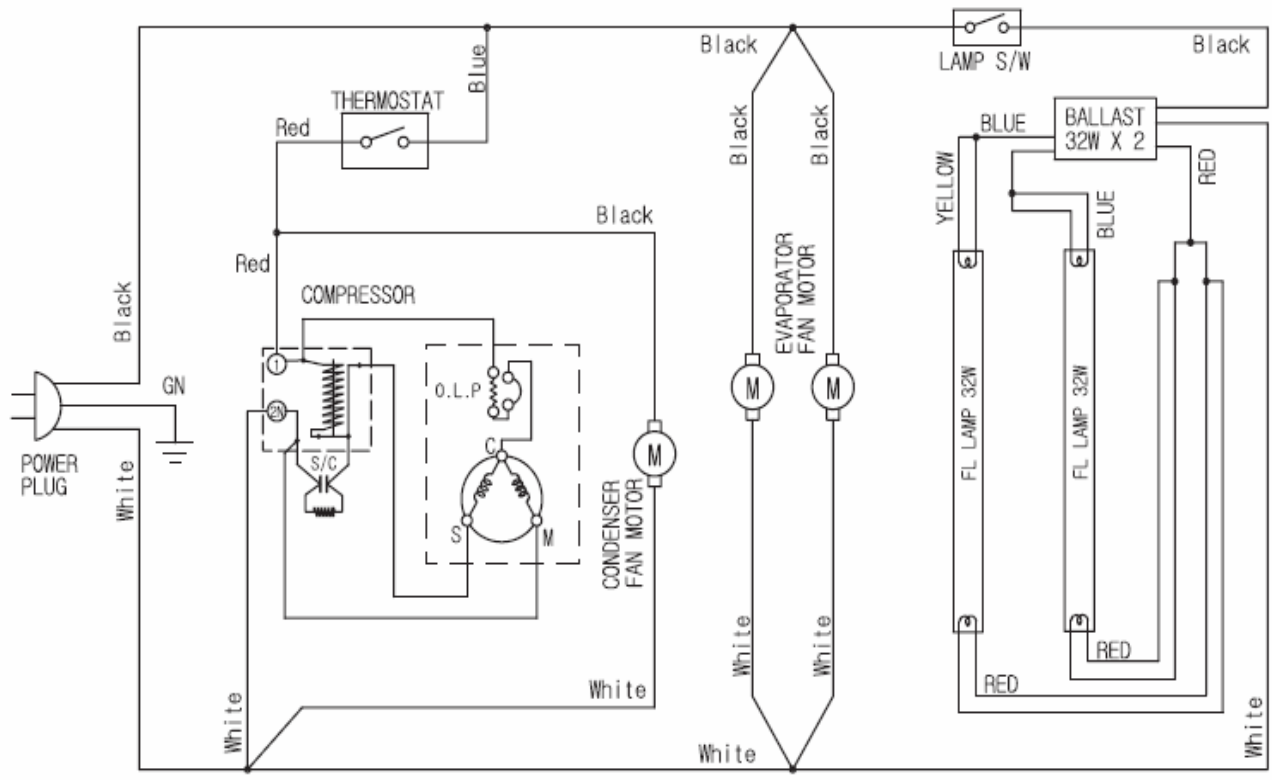
6) BASR3

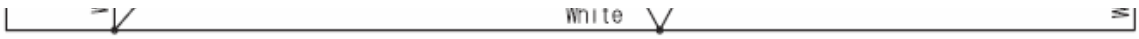


7) BAGR24

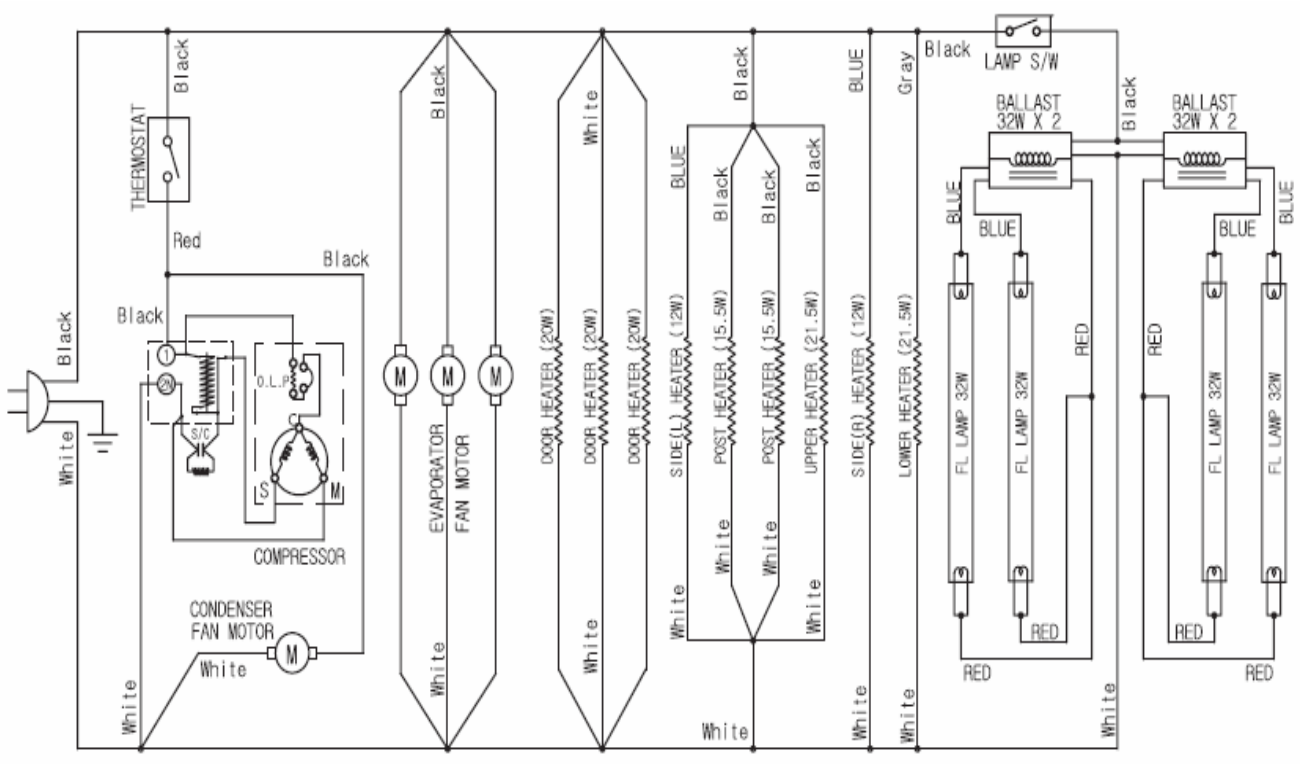


8) BAGR48



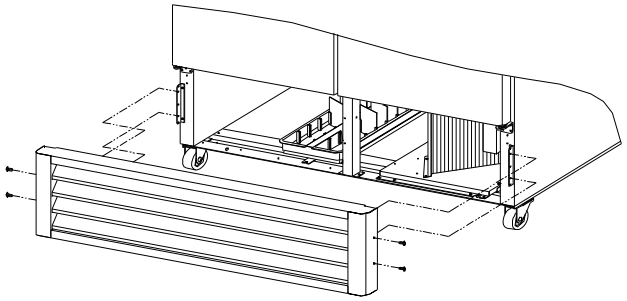

White

9) BAGR72

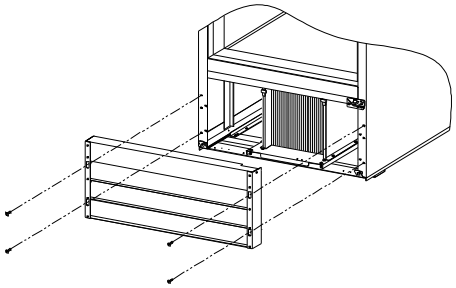

Black
THERMOSTAT
Red
Black
Black
White
S/C
O.L.P
S
M
COMPRESSOR
CONDENSER
FAN MOTOR
White
White
Black
EVAPORATOR
FAN MOTOR
White
White
DOOR HEATER (20W)
DOOR HEATER (20W)
DOOR HEATER (20W)
White
White
BLUE
SIDE(L) HEATER (12W)
POST HEATER (15.5W)
POST HEATER (15.5W)
UPPER HEATER (21.5W)
Black
Black
Black
Black
White
White
White
BLUE
SIDE(R) HEATER (12W)
White
Gray
LOWER HEATER (21.5W)
White
Black
LAMP S/W
BALLAST
32W X 2
BALLAST
32W X 2
Black
BLUE
BLUE
BLUE
BLUE
FL LAMP 32W
FL LAMP 32W
FL LAMP 32W
FL LAMP 32W
RED
RED
RED
RED
RED
RED
RED
RED
White

6. REPLACEMENT OF COMPONENTS

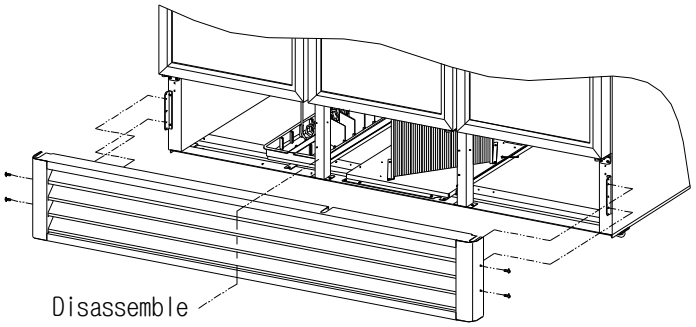
1) CONDENSING UNIT



(SF1/SF2/SF3/SR1/SR2/SR3)



(GR24/GR48)

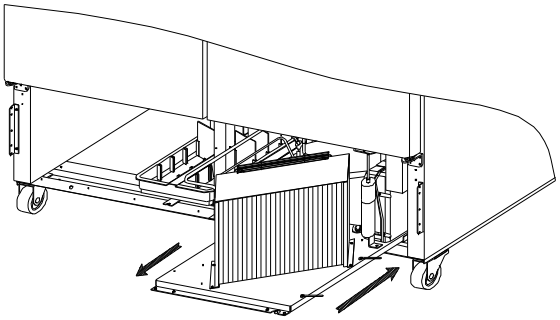


(GR72)

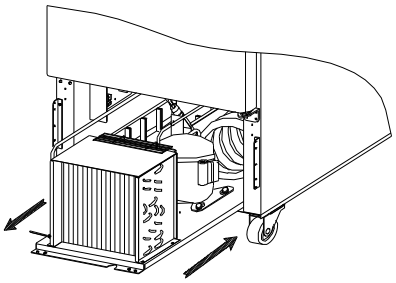
a) Unplug the power cord before service.

b) Remove screw securing the lower grille.

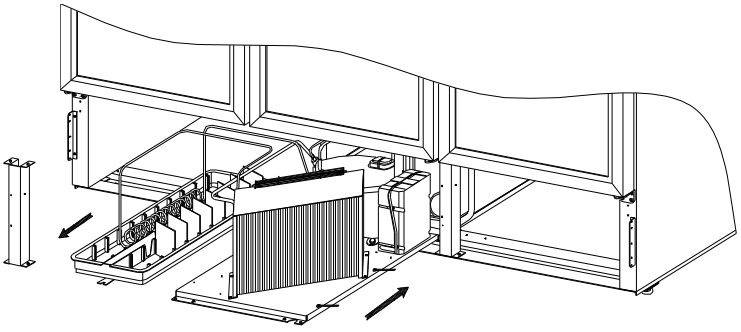
* Remove screw securing the reinforce angle.(GR72)



(SF2/SF3/SR2/SR3/GR48)



(SF1/SR1/GR24)



c) Separate the compressor harness out of the terminal block.

d) Remove screws securing the unit base plate and pull out condensing unit with care.

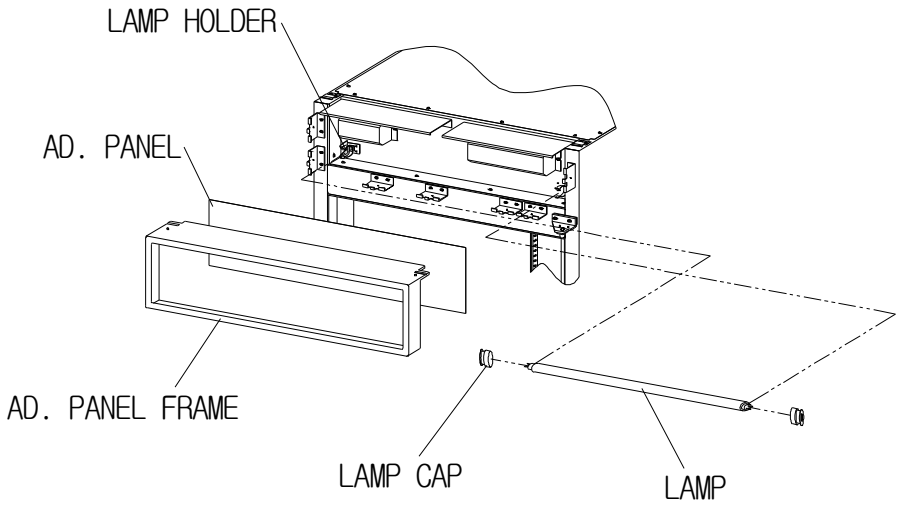
e) Replace the necessary com-

(GR72) ponent.

※ CAUTION

1. Please pull out or push in the unit base plate carefully to prevent capillary tube, pipes and wires from demaging.
2. It is recommend to arrange wires after you push in the unit base plate.

2-1) LAMP (BAGR24)



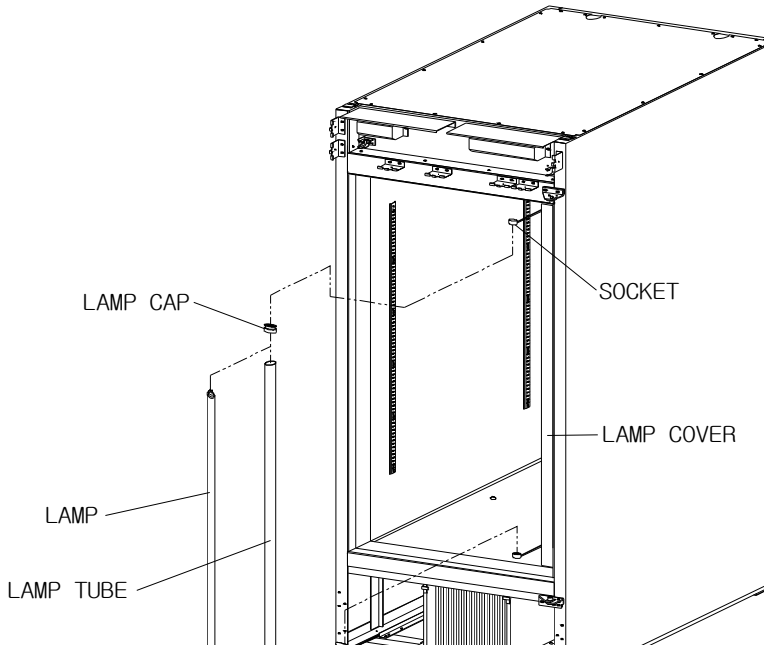
a) Unplug the power cord before service.

b) Remove screw securing the Ad. Panel Frame and pull out the Ad. Panel Frame with care.

c) Separate the Ad. Panel.

d) Separate the Lamp from the Lamp Holder.

e) Separate the Lamp Cap and replace the Lamp with care.

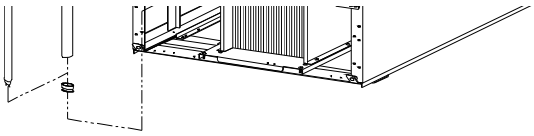


a) Unplug the power cord before service.

b) Separate the Lamp from the Lamp Holder.

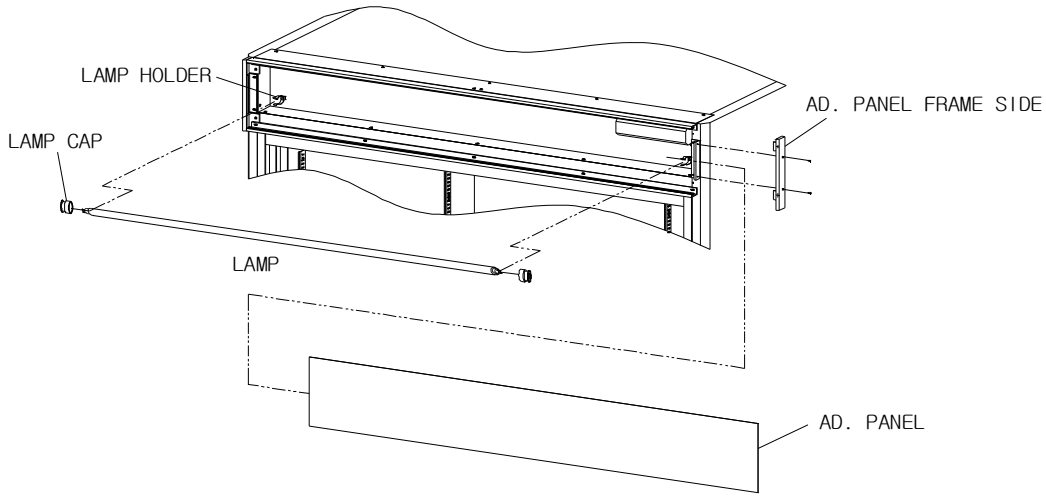
c) Separate the Lamp Socket and the Cap Lamp.

d) Replace the Lamp with care.



♠ Lamp Description : AC115V, F17T8/TL950

2-2) LAMP (BAGR48)



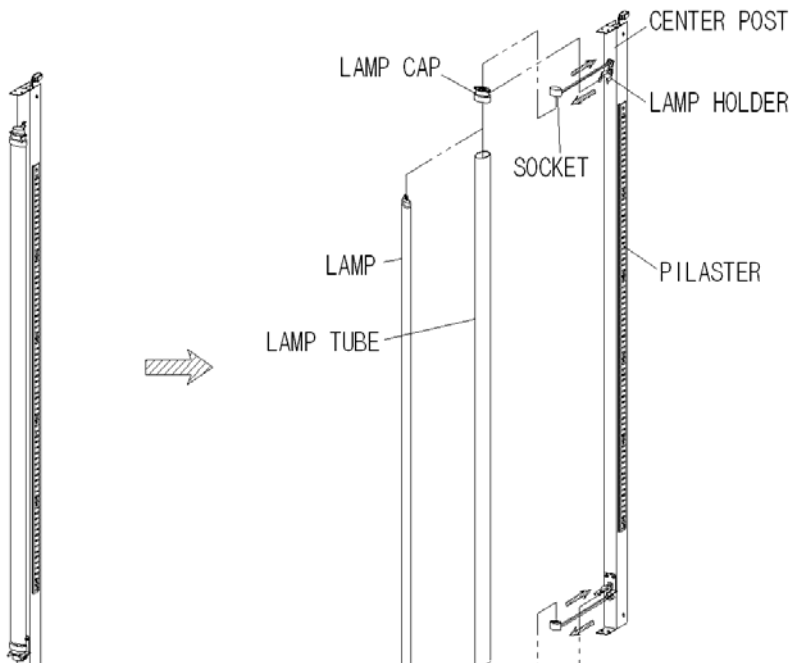
a) Unplug the power cord before service.

b) Remove screw securing the Ad. Panel Side.

c) Separate the Ad. Panel.

d) Separate the Lamp from the Lamp Holder.

e) Separate the Lamp Cap and replace the Lamp with care.

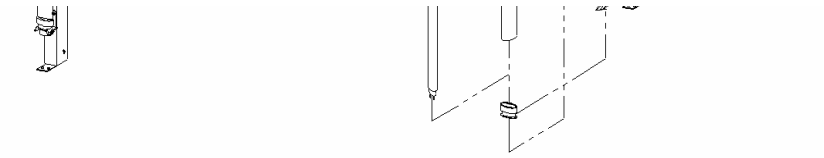


a) Unplug the power cord before service.

b) Separate the Lamp from the Lamp Holder.

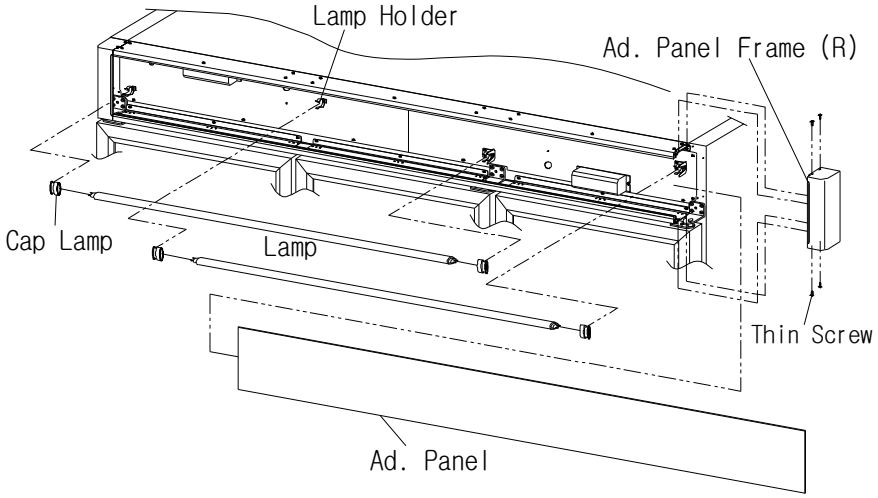
c) Separate the Lamp Socket and the Lamp Cap.

d) Replace the Lamp with care.



♠ Lamp Description : AC115V, FHF32SSEX-D-5

2-3) LAMP (BAGR72)



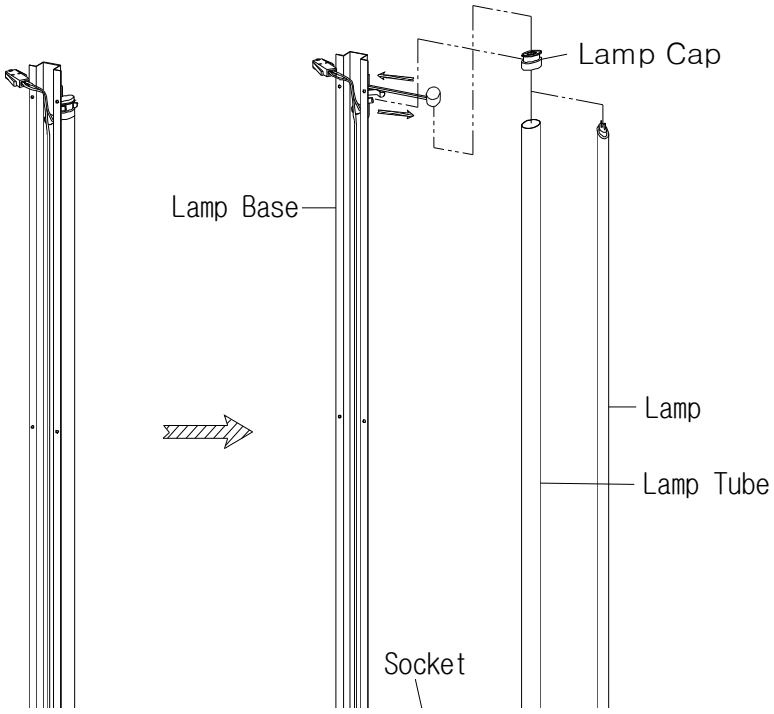
a) Unplug the power cord before service.

b) Remove screw securing the Ad. Panel Frame (R).

c) Separate the Ad. Panel.

d) Separate the Lamp from the Lamp Holder.

e) Separate the Cap Lamp and replace the Lamp with care.

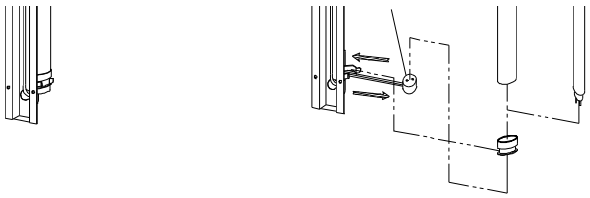


a) Unplug the power cord before service.

b) Separate the Lamp from the Lamp Holder.

c) Separate the Lamp Socket and the Lamp Cap.

d) Replace the Lamp with care.



♠ Lamp Description : AC115V, 32W, F32T8/TL860