BALLU

SPLIT TYPE INVERTER AIR CONDITIONER

SERVICE MANUAL

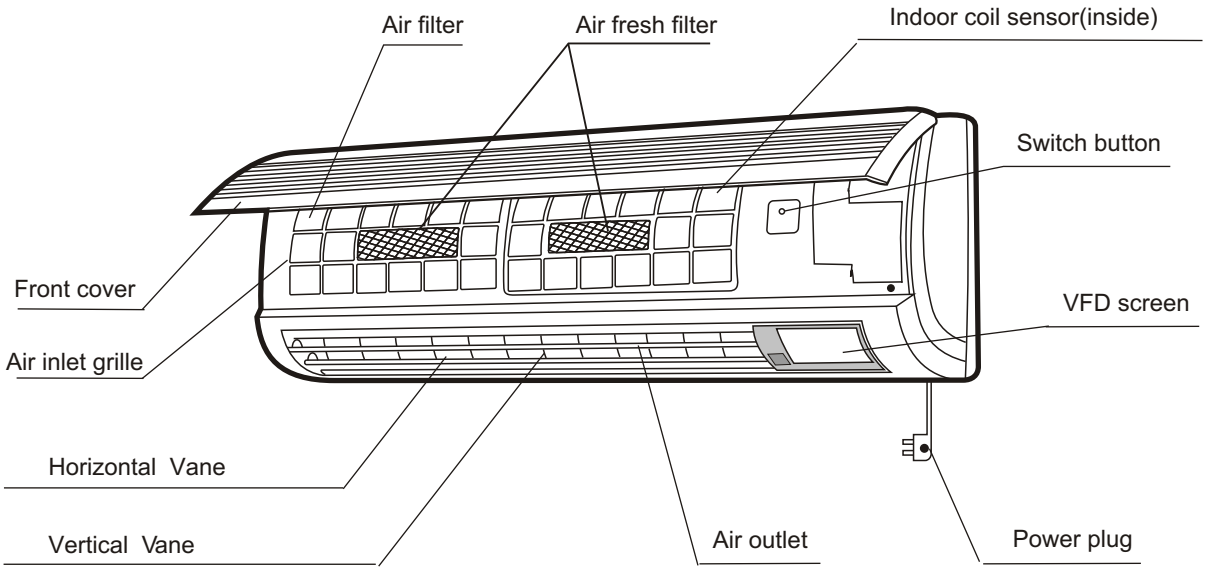
KFR-3601GW/BPE
KFR-4001GW/BPE
KFR-3502GW/BPE

CONTENTS

1. PART NAMES AND FUNCTIONS

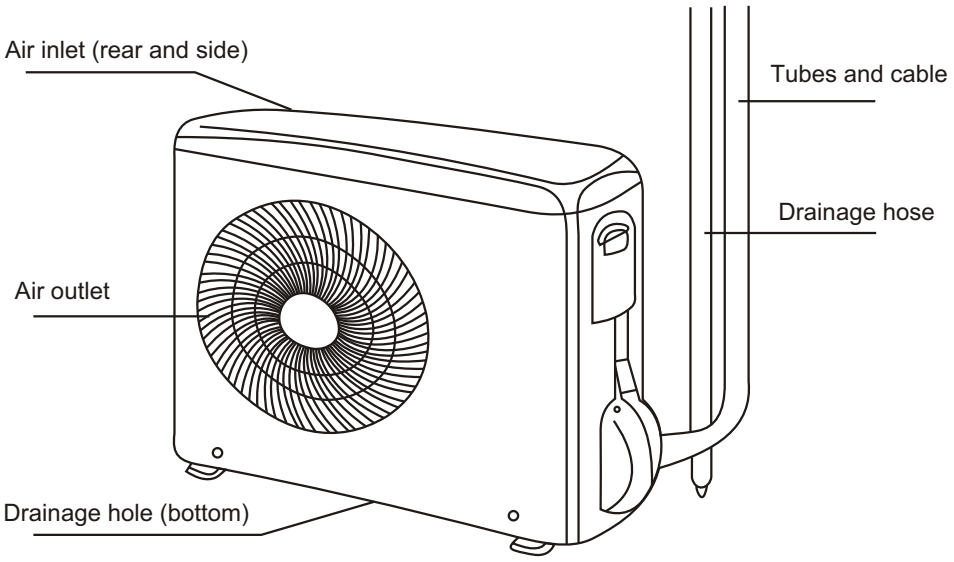
KFR-3601G/BPE
KFR-4001G/BPE

● **INDOOR UNIT**



KFR-3601W/BPE
KFR-4001W/BPE

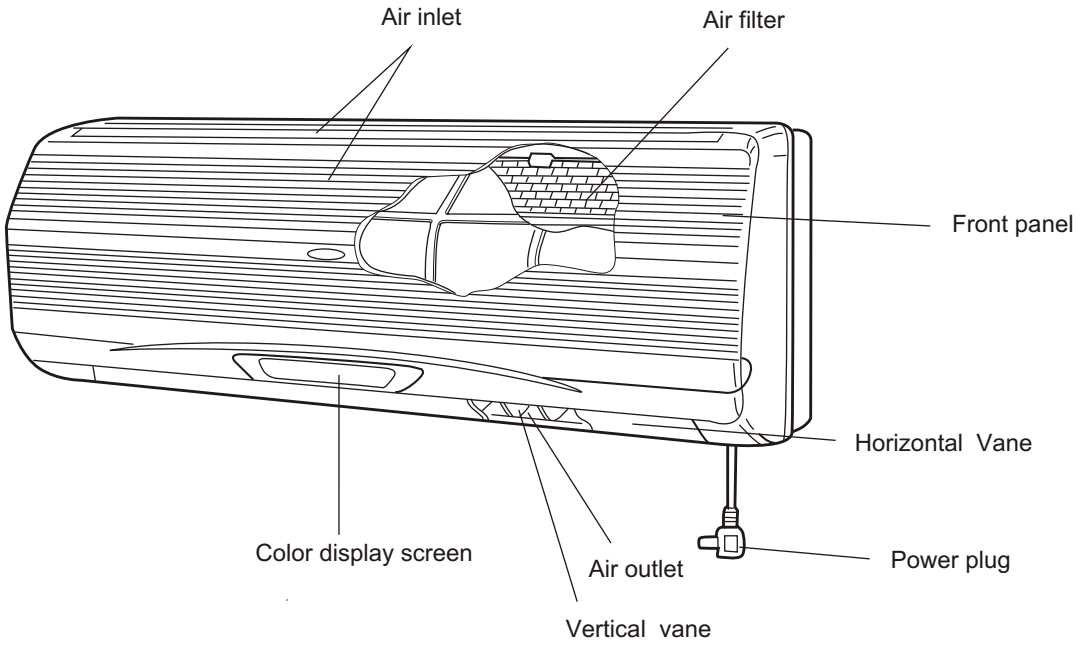
● **OUTDOOR UNIT**



1. PART NAMES AND FUNCTIONS

KFR-3502G/BPE

● **INDOOR UNIT**



KFR-3502G/BPE

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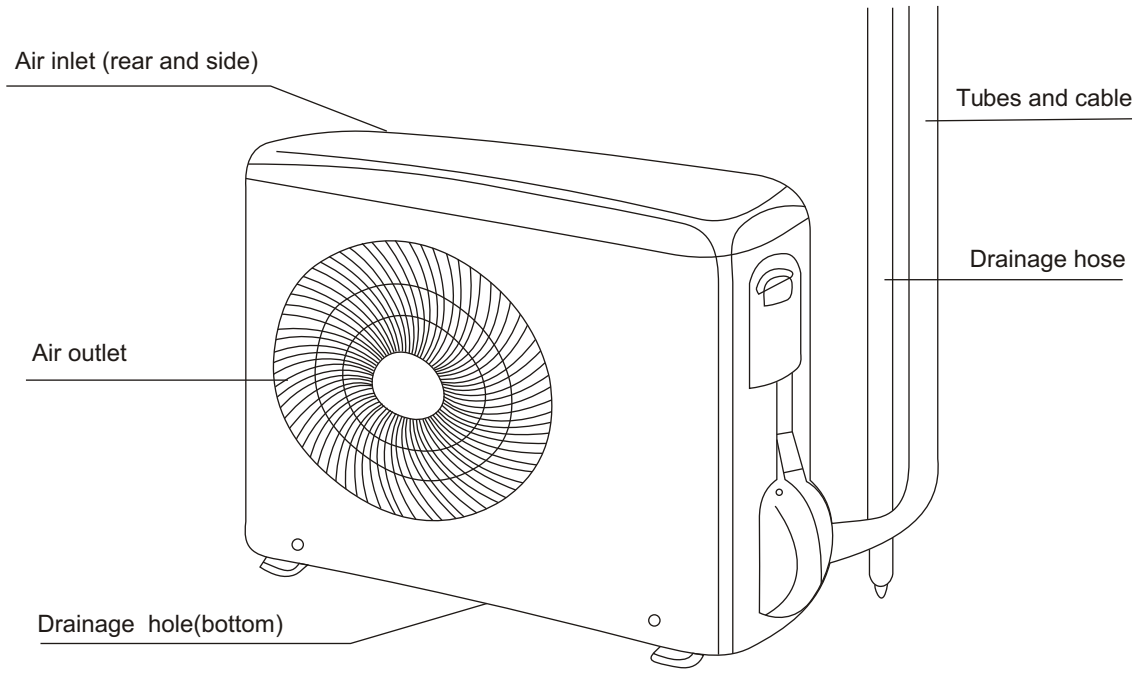
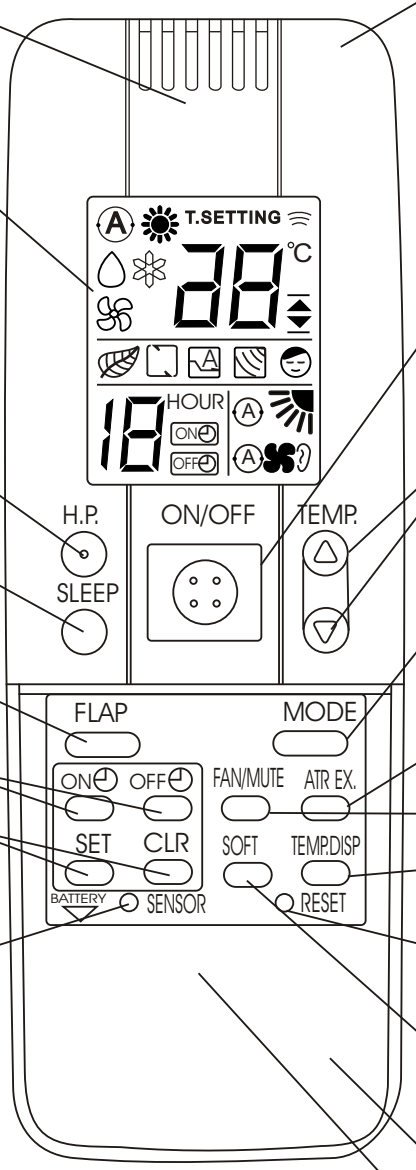


1. PART NAMES AND FUNCTIONS

KFR-3601G/BPE
KFR-4001G/BPE

● **REMOTE CONTROL UNIT**



Sensor
Testing the ambient temperature of the remote control unit

LCD
Displaying the running condition.

Hi-power running button

Sleep button
Press the button, the appliance enter sleep mode.

Flap
Up-down adjustment

Timer on/off button
Setting the time of appliance on/off.

Set/cancel timer button
Set or cancel the time of appliance on/off.

A/C sensor button
Press the button if the remote control unit is liable to be affected by the heat resource, such as electric blanket, radiator or sunlight, this will use the sensor of indoor unit, the symbol will appear on the LCD.

Transmitter
Transmitting signals to the indoor unit, the symbol ⌔ will appear on the top of LCD.

On/Off button
Press the button to run, press again to cease.

Temperature setting button
Press the button marked "▲ "or "▼" to increase or decrease the temperature.

Mode selection button
Auto → heating → dehumidification
↑ ↓
Fan ← cooling

Air exchange button
When this function works, the air can be keep fresh.

Fan speed selection button

Temperature displaying button
setting the temperature in the screen of indoor unit

Reset button
Press the button after batteries are loaded and indication appears on LCD.

Duel energy-saving
This function can be used for Restricting the max. electric current by control software.

Sliding cover

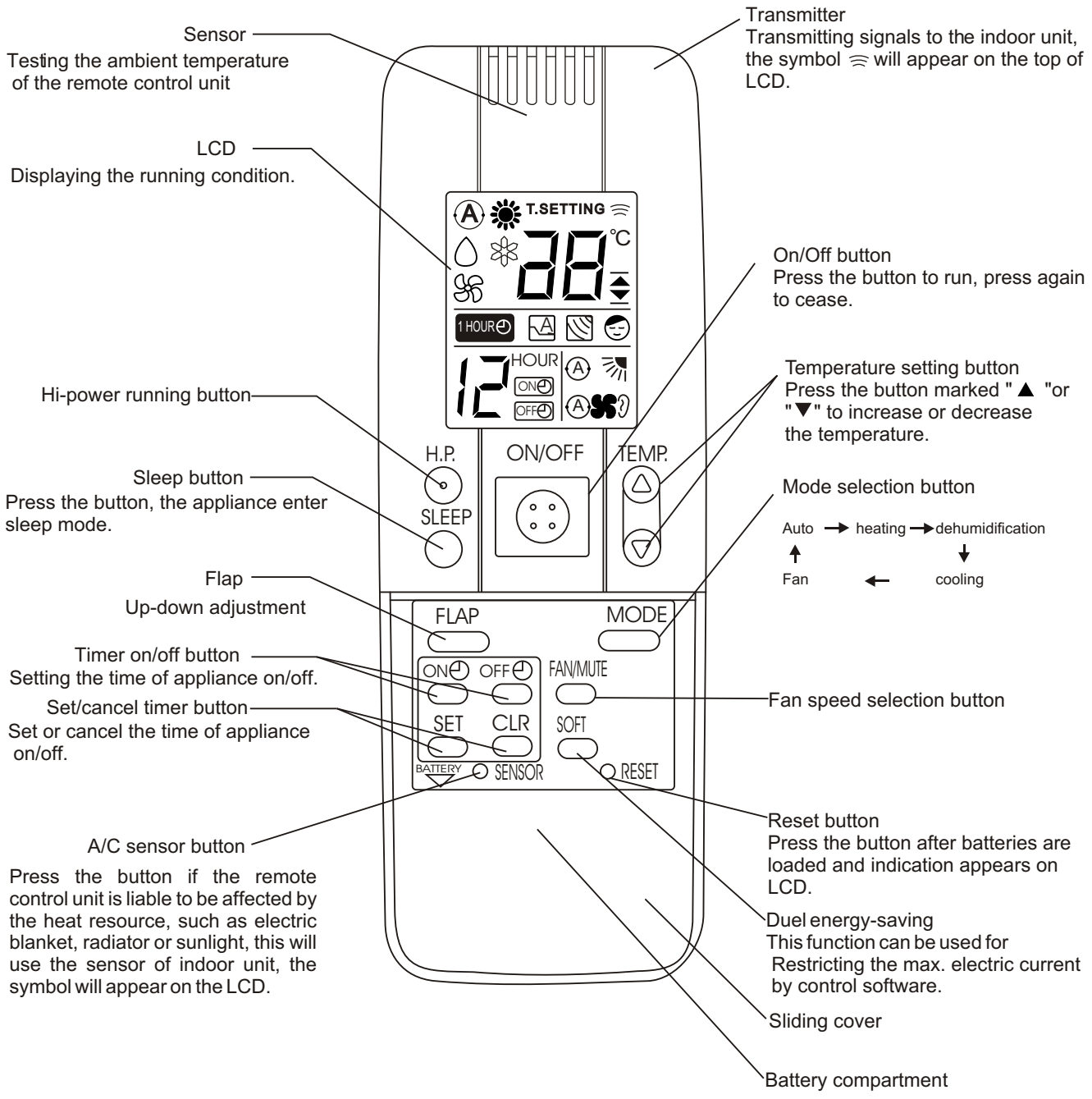
Battery compartment

REMARK: The remote controller transmits signal to indoor unit at 3 minutes intervals. If the indoor unit has not received the signal for more than 10 minutes due to remote controller missing or other reason, the sensor on indoor unit will be used for detecting indoor temperature automatically. Here, ambient temperature of remote controller is likely to slightly different from that detecting by the indoor unit, temperature will be compensated automatically. When the remote controller is missing or the batteries are exhausted, please use the temporary switch.

1. PART NAMES AND FUNCTIONS

KFR-3502G/BPE

● **REMOTE CONTROL UNIT**



REMARK: The remote controller transmits signal to indoor unit at 3 minutes intervals. If the indoor unit has not received the signal for more than 10 minutes due to remote controller missing or other reason, the sensor on indoor unit will be used for detecting indoor temperature automatically. Here, ambient temperature of remote controller is likely to slightly different from that detecting by the indoor unit, temperature will be compensated automatically. When the remote controller is missing or the batteries are exhausted, please use the temporary switch.

2.SPECIFICATION

Model				KFR-3601GW/BPE		KFR-4001GW/BPE	
Function				Cooling	Heating	Cooling	Heating
Power supply				a.c 220V~ 50Hz		a.c 220V~ 50Hz	
Capacity	Capacity		KW	3.6	5.0	4.0	6.0
	Dehumidification		ℓ/h	1.5		1.8	
	Air flow		m^3/h	540	650	630	680
Electrical data	Power outlet		A	16	16	16	16
	Running current		A	6.35	7.8	8.0	11.5
	Power input		W	1.34	1.58	1.54	2.14
	Auxiliary heater		A(KW)	-----	-----	-----	-----
	Power factor		%	90	90	90	90
	Starting current		A	17		17	
	Compressor motor current		A	6.2		6.2	
	Fan motor current		A	0.2		0.2	
Coefficient of performance(C.O.P)				2.68	3.16	2.6	2.8
Compressor	Model			SGZ20EG2UY		SGZ20EG2UY	
	Output		W	1100		1100	
	Winding resistance (at20°C)		Ω	1.05		1.05	
Indoor fan motor	Model			YYW16-4-411		YYW16-4-411	
	Winding resistance (at20°C)		Ω	340 (main)		340 (main)	
				395(assisitant)		395(assisitant)	
Outdoor fan motor	Model			UE6T-C41A4		UE6T-C41A4	
	Winding resistance (at20°C)		Ω	151.4		151.4	
Dimensions	Indoor unit	Width	mm	860		860	
		Height	mm	**285**		**285**	
		Depth	mm	**235**		**235**	
	Outdoor unit	Width	mm	**800**		**800**	
		Height	mm	**555**		**555**	
		Depth	mm	**260**		**260**	
Weight	Indoor unit		kg	**11.5**		**11.5**	
	Outdoor unit		kg	**39.0**		**39.0**	
Special remarks	Air direction			**6**		**6**	
	Sound lever (Hi)	Indoor unit	dB	**39**	**40**	**42**	**43**
		Outdoor unit	dB	**48**	**49**	**48**	**49**
	Fan speed (Hi)	Indoor unit	rpm	**1100**	**1200**	**1220**	**1250**
		Outdoor unit	rpm	**680**		**680**	
	Fan speed regulator	Indoor unit		**4**		**4**	
		Outdoor unit		**3**		**3**	
	Refrigerant filling capacity(R-22)		kg	**1.10**		**1.18**	
	Thermitstor	RT1(at25°C)	kΩ	**58**		**58**	
		RT2(at25°C)	kΩ	**5.3**		**5.3**	
		RT3(at25°C)	kΩ	**5**		**5**	

NOTE :Test conditions

Cooling : Idoor DB27°C/ WB19°C , Outdoor DB35°C/ WB24°C

Heating: Indoor DB20°C/ WB15°C , Outdoor DB7°C / WB 6°C

2.SPECIFICATION

Model				KFR-3502GW/BPE	
Function				Cooling	Heating
Power supply				a.c220 50Hz	
Capacity	Capacity		KW	3.5	4.8
	Dehumidification		ℓ/h	1.8	——
	Air flow		m^3/h	540	640
Electrical data	Power outlet		A	16	
	Running current		A	6.5	10.0
	Power input		W	7.8	12.0
	Auxiliary heater		A(KW)	——	
	Power factor		%	90	90
	Starting current		A	20	
	Compressor motor current		A	7.2	
	Fan motor current		A	0.2	
Coefficient of performance(C.O.P)				2.7	3.0
Compressor	Model			SHV130FGEC	
	Output		W	650	
	Winding resistance (at20°C)		Ω	0.87	
Indoor fan motor	Model			YZW16W-4-411	
	Winding resistance (at20°C)		Ω	KFR-3601GW/BPE	
Outdoor fan motor	Model			UE6T-C41A4	
	Winding resistance (at20°C)		Ω	151.4	
Dimensions	Indoor unit	Width	mm	285	
		Height	mm	220	
		Depth	mm	805	
	Outdoor unit	Width	mm	316	
		Height	mm	555	
		Depth	mm	867	
Weight	Indoor unit		kg	9.5	
	Outdoor unit		kg	39	
Special remarks	Air direction			6	6
	Sound lever (Hi)	Indoor unit	dB	39/30	39/33
		Outdoor unit	dB	48/41	48/41
	Fan speed (Hi)	Indoor unit	rpm	1180	1230
		Outdoor unit	rpm	750	750
	Fan speed regulator	Indoor unit		4	4
		Outdoor unit		3	3
	Refrigerant filling capacity(R-22)		kg	1.15	
	Thermitstor	RT1(at25°C)	kΩ	58	
		RT2(at25°C)	kΩ	5.3	
		RT3(at25°C)	kΩ	5	

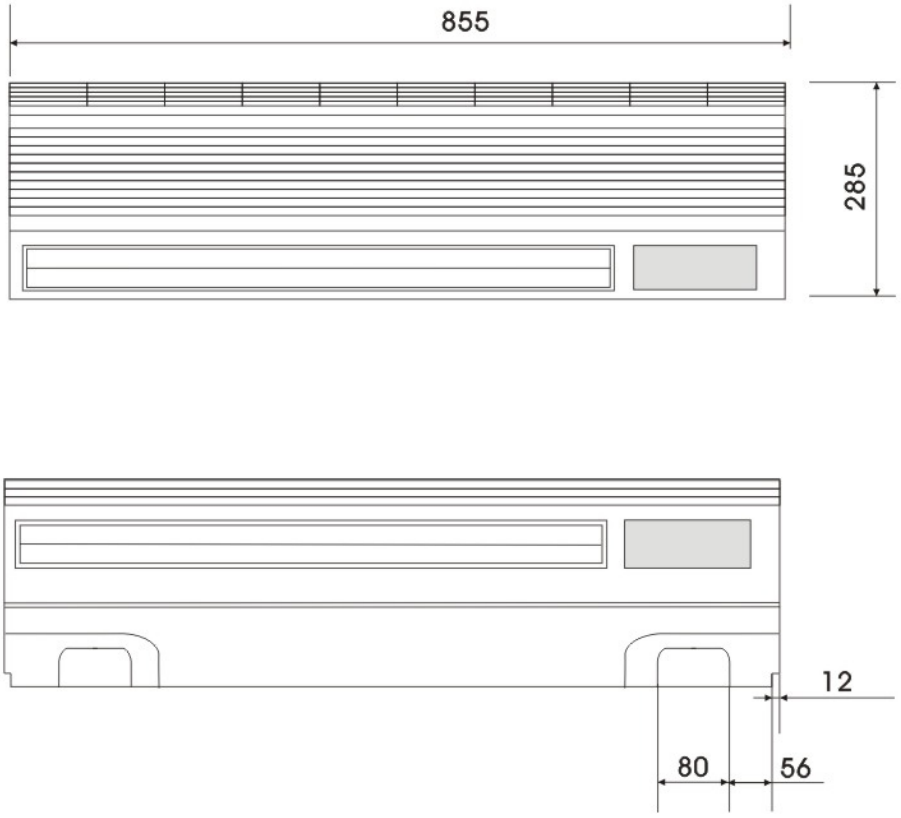
NOTE :Test conditions

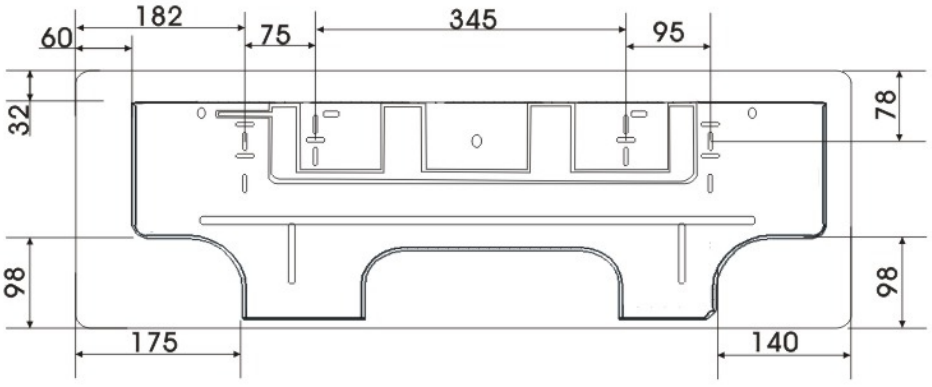
Cooling : Idoor DB27°C/ WB19°C Outdoor DB35°C/ WB24°C

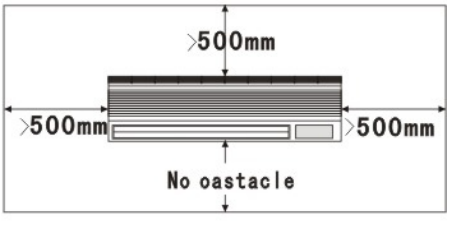
Heating: Indoor DB20°C/ WB15°C Outdoor DB7°C/ WB 6°C

3.OUTLINES AND DIMENSIONS

KFR-3601G/BPE
KFR-4001G/BPE

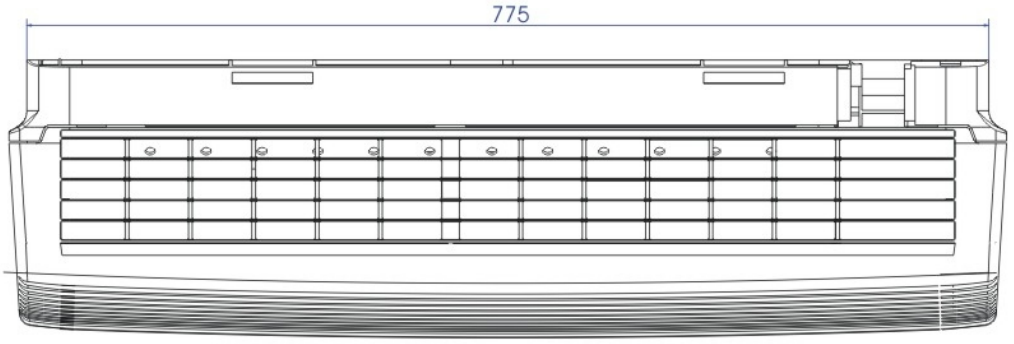


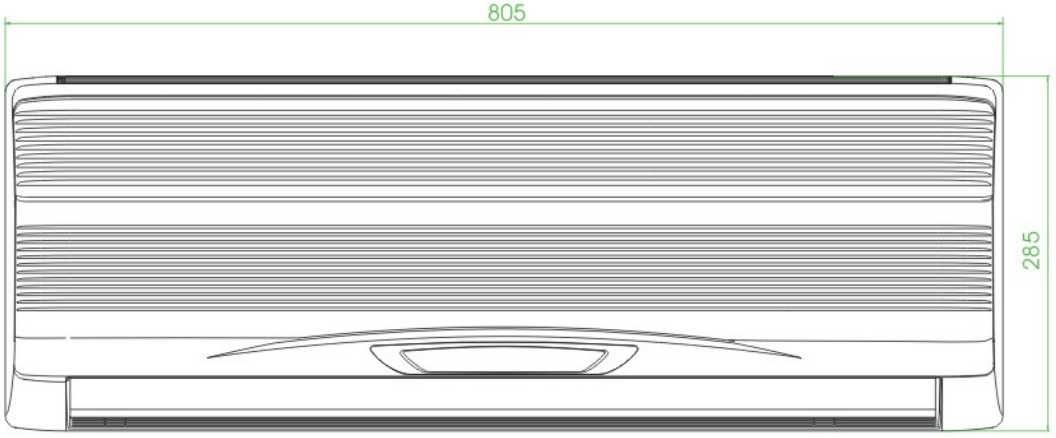


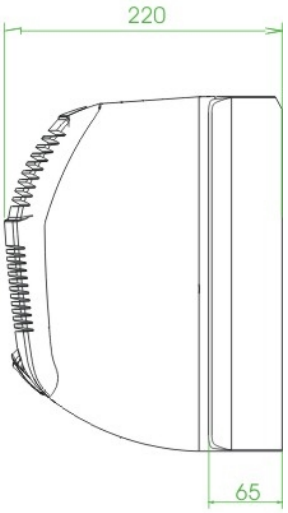


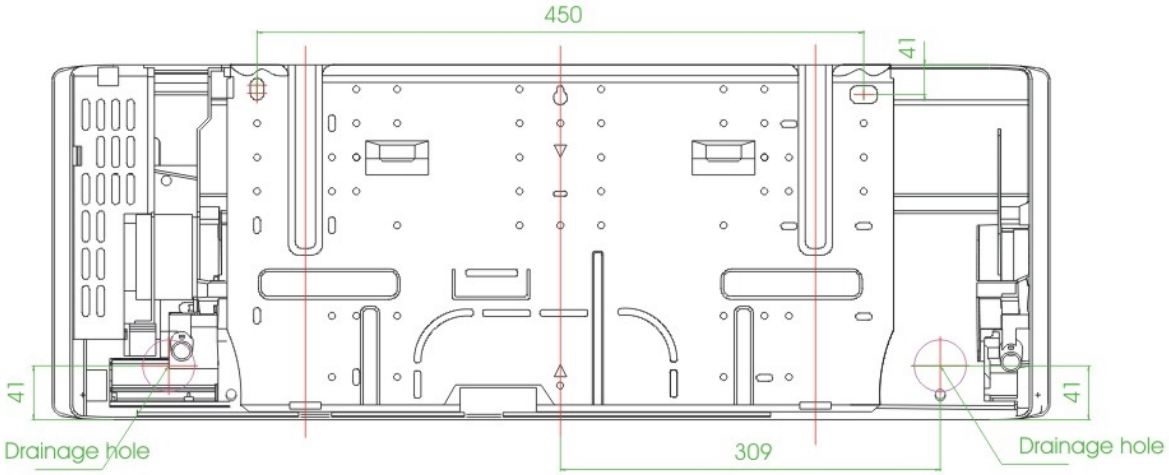
3.OUTLINES AND DIMENSIONS

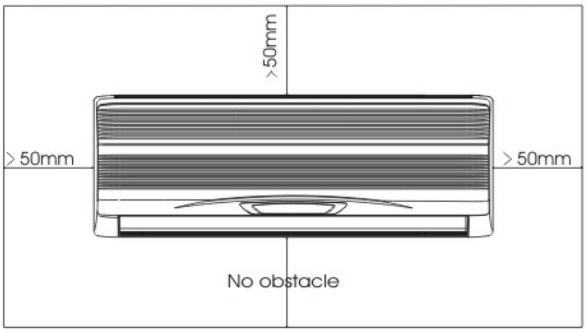
KFR-3502G/BPE





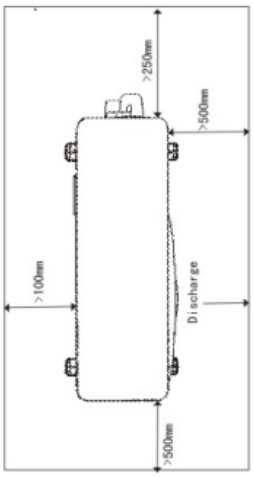


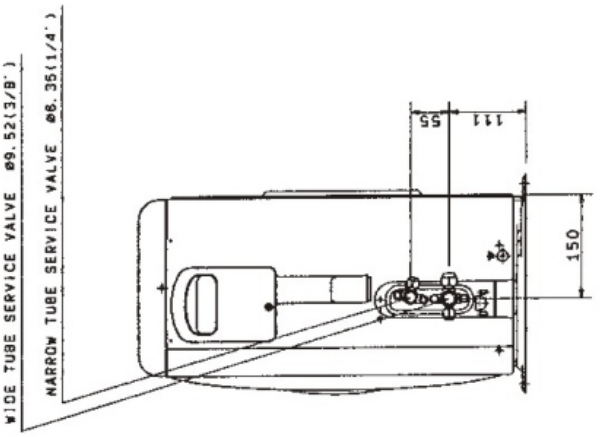


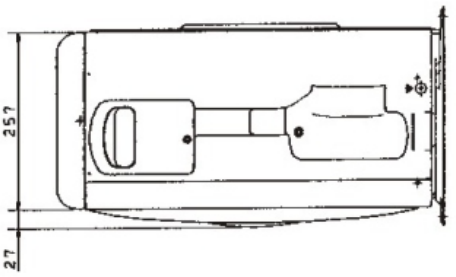


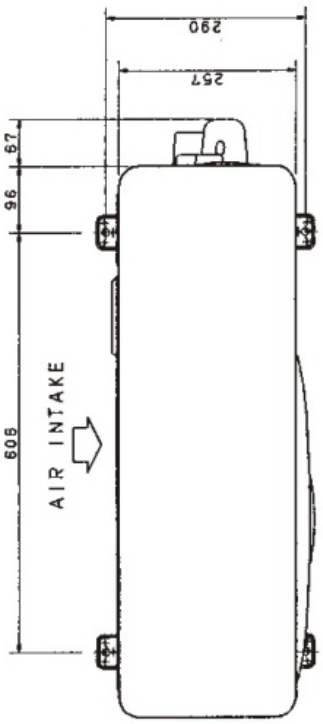
3.OUTLINES AND DIMENSIONS

KFR-3601W/BPE KFR-4001W/BPE KFR-3502W/BPE

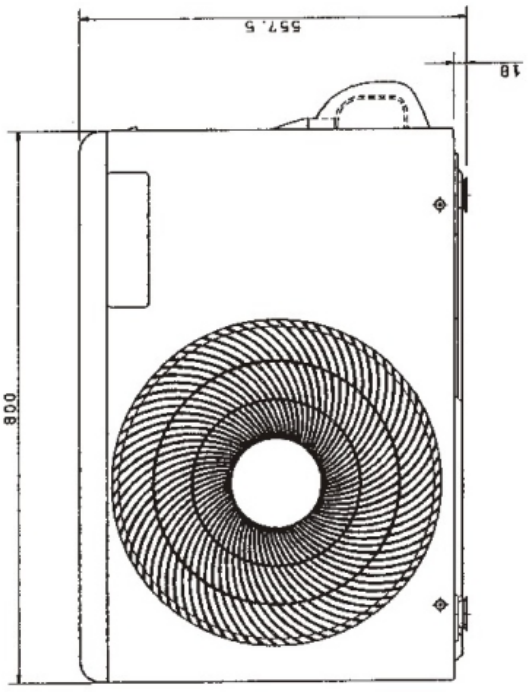








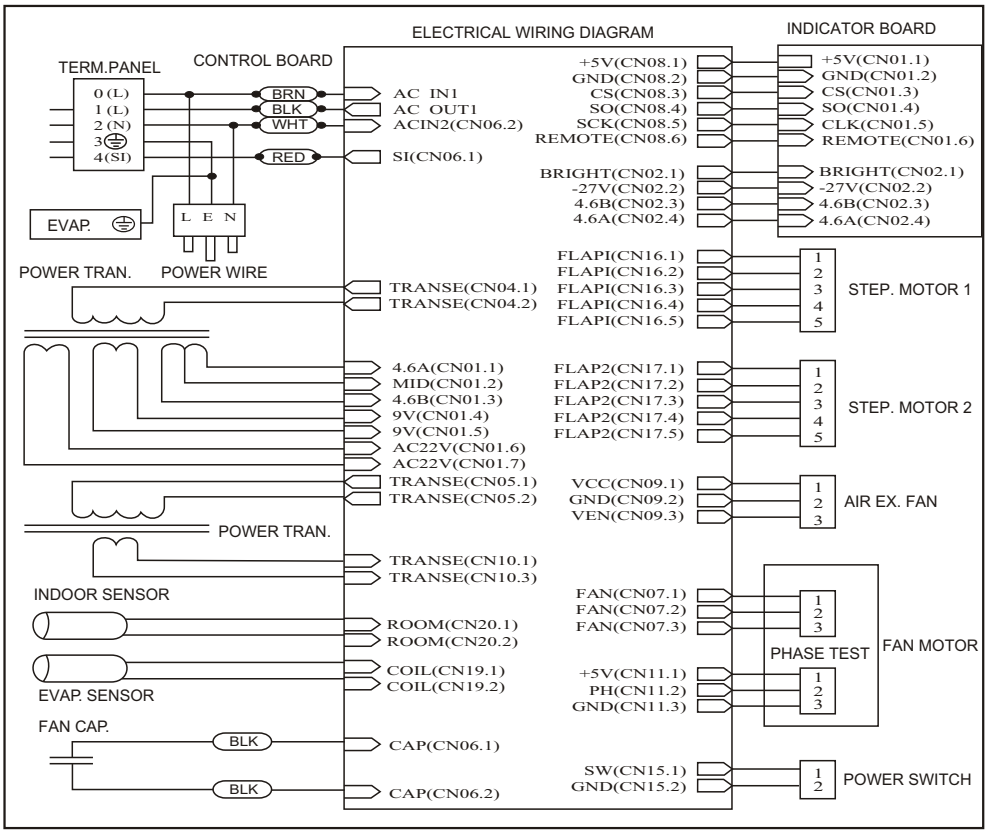
AIR DISCHARGE

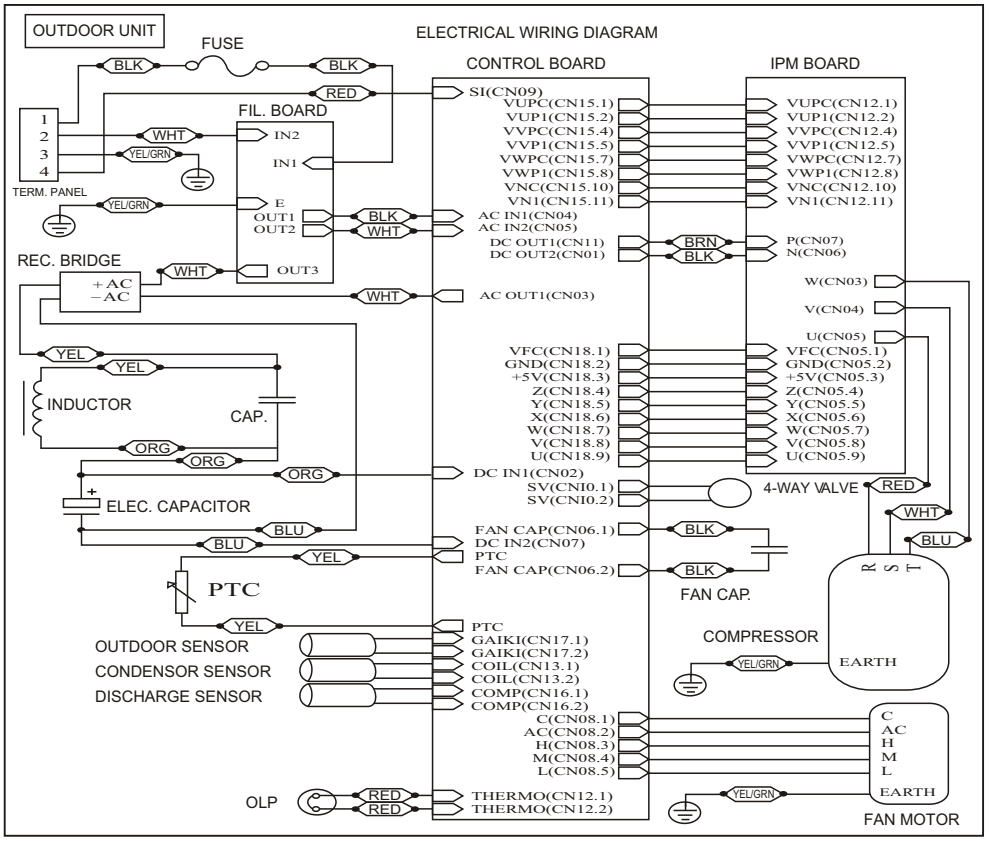


4.WIRING DIAGRAM

KFR-3601GW/BPE
KFR-4001GW/BPE

ELECTRICAL WIRING DIAGRAM

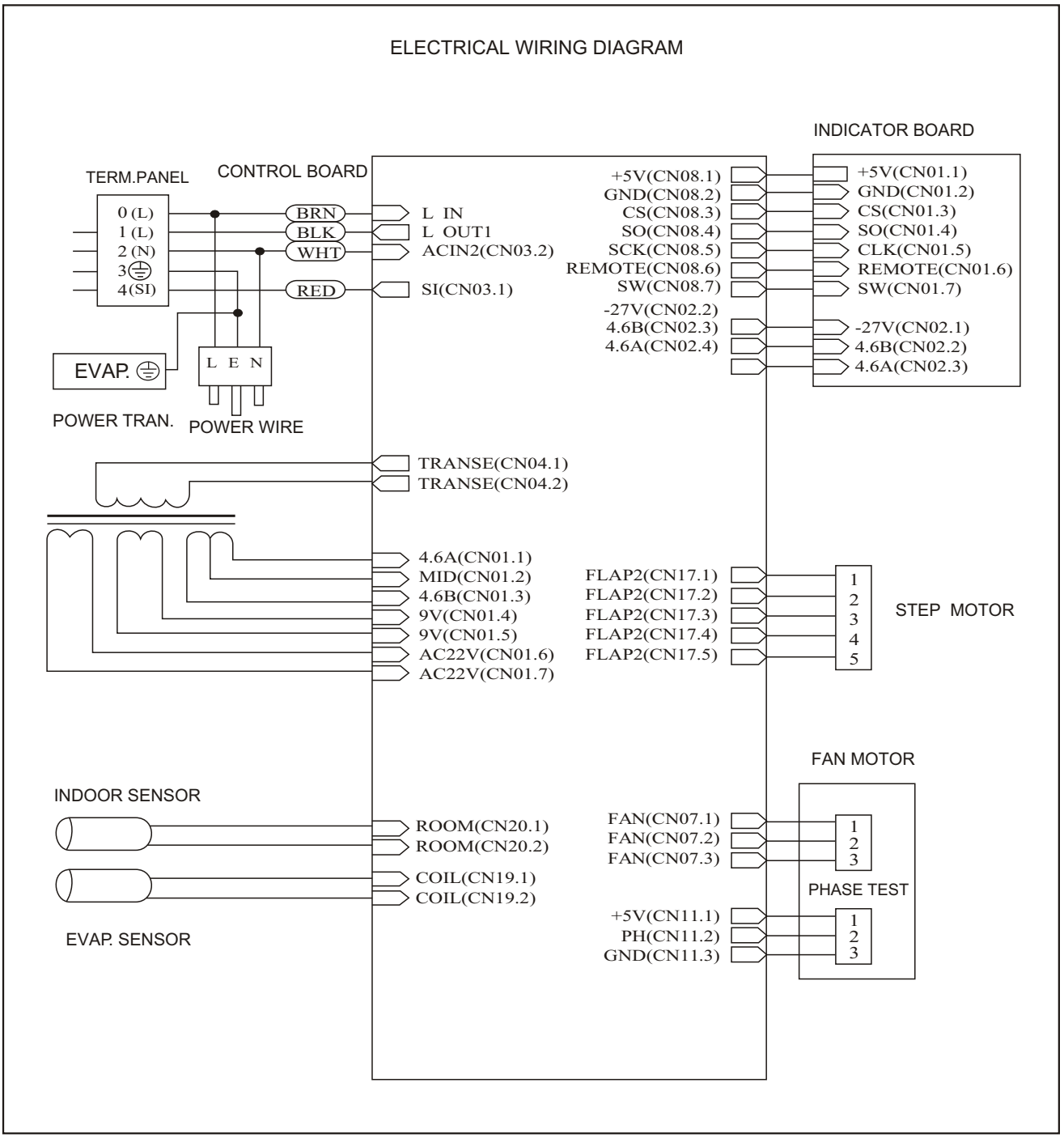




4.WIRING DIAGRAM

KFR-3502G/BPE

ELECTRICAL WIRING DIAGRAM



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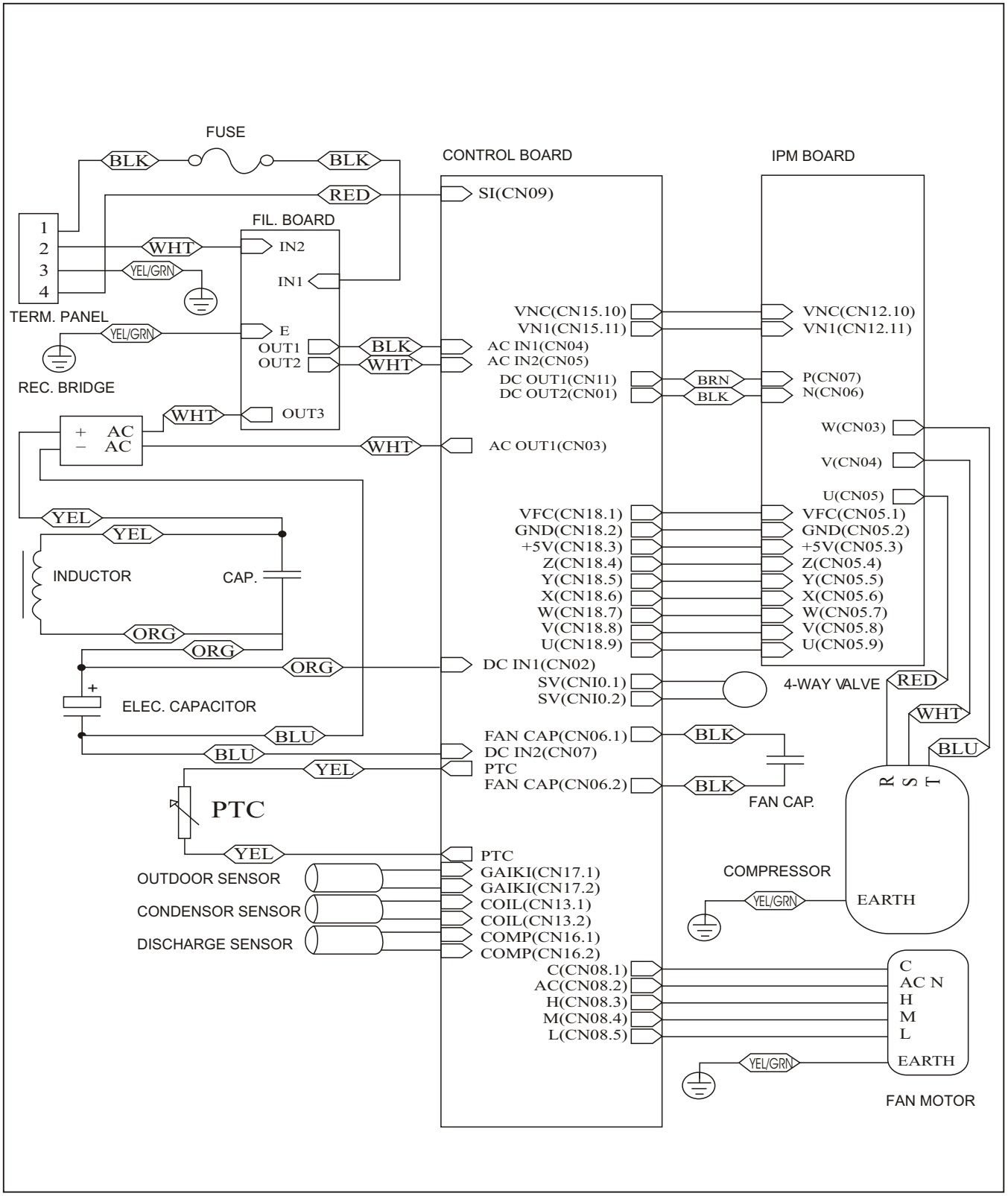
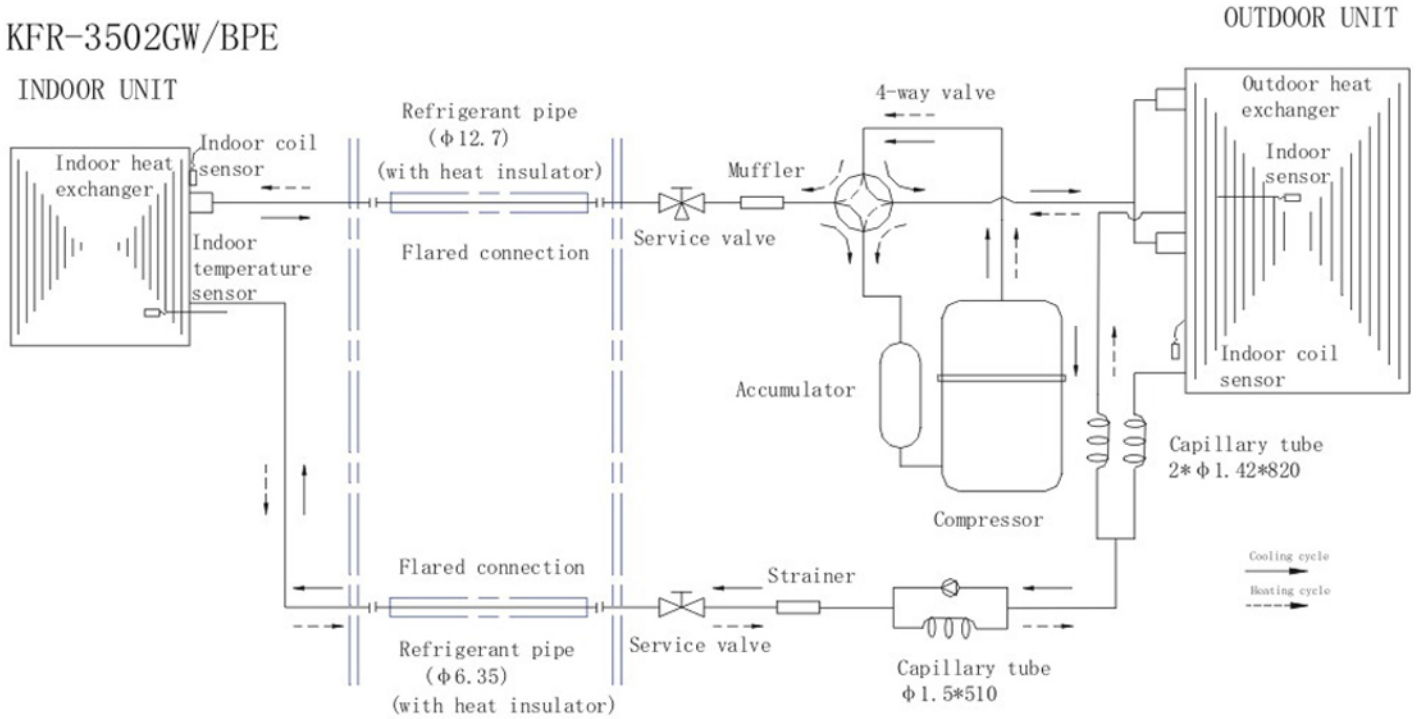
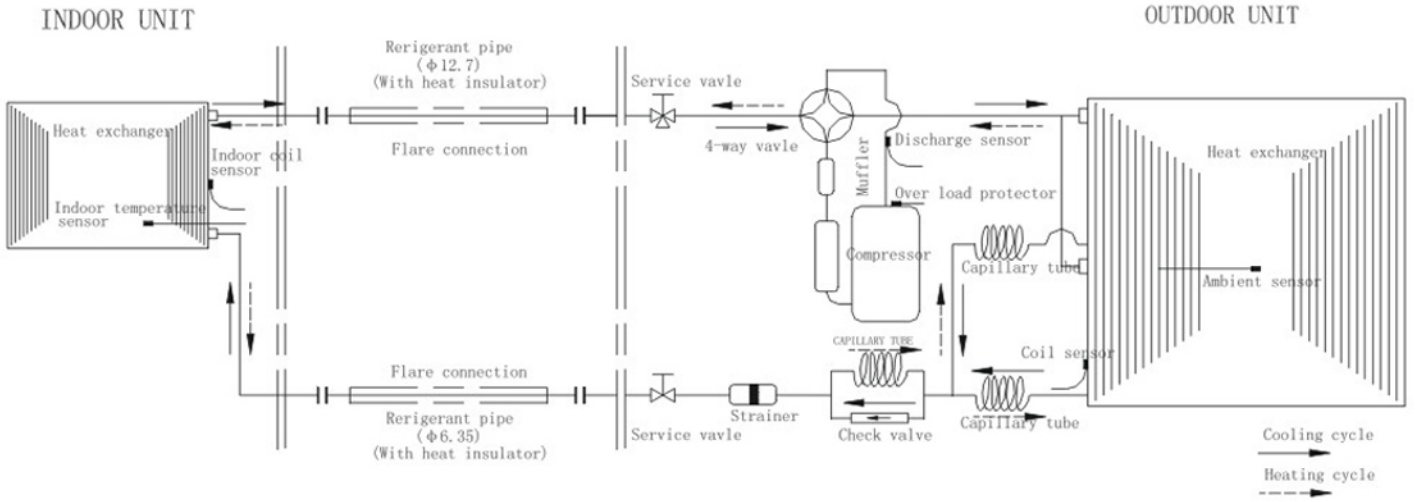


5.REFRIGERANT SYSTEM DIAGRAM

KFR-3502GW/BPE



KFR-3601GW/BPE KFR-4001GW/BPE

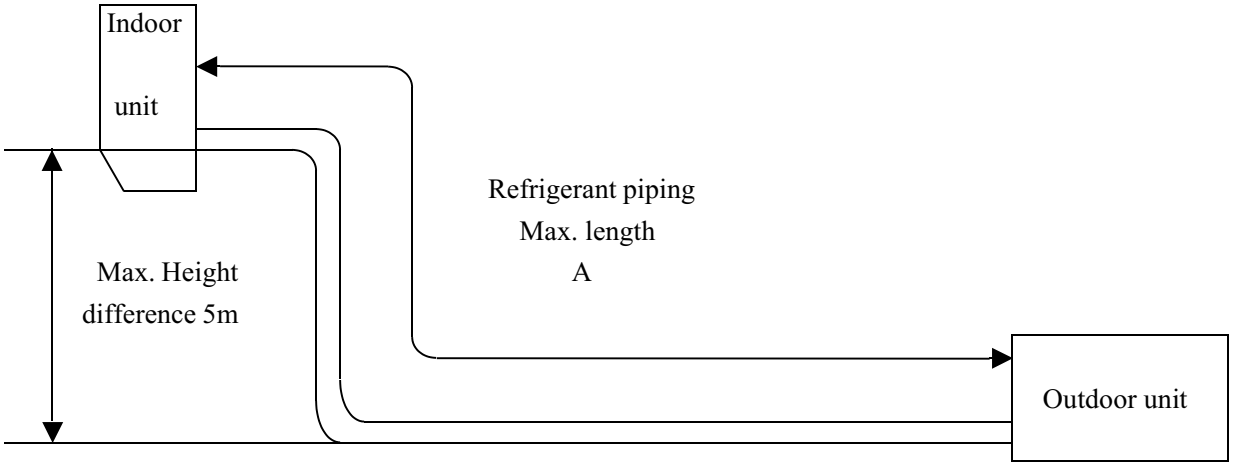


5.REFRIGERANT SYSTEM DIAGRAM

MAX. REFRIGERANT PIPING LENGTH

Modles	Refrigerant Piping Max. Length : m A	Piping size O.D : mm		Length of connecting pipe : m	
		Gas	Liquid	Indoor unit	Outdoor unit
KFR-3502GW/BPE	15	12.7	6.35		
KFR-3601GW/BPE	15	12.7	6.35		
KFR-4001GW/BPE	15	12.7	6.35		

MAX. HEIGHT DIFFERENCE



ADDITIONAL; REFRIGERANT CHARGE(R-22 : g)

Modles	Outdoor unit precharged (up to 7m)	Refrigerant piping length (one way)		
		7m	10m	15m
KFR-3502GW/BPE	1150	0	75	200
KFR-3601GW/BPE	1100	0	75	200
KFR-4001GW/BPE	1180	0	75	200

5.REFRIGERANT SYSTEM DIAGRAM

EVACUATION PROCEDURES

Connect the refrigerant pipes (both the liquid and gas pipes) between the indoor and the outdoor units.

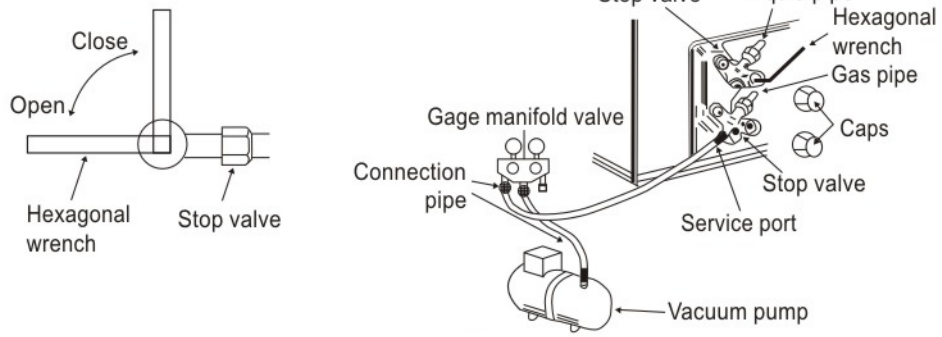
Remove the service port cap of the stop valve on the side of the outdoor unit gas pipe. (The stop valve will not work in its initial state fresh out of the factory (totally closed with cap on).

Connect the gage manifold valve and the vacuum pump to the service port of the stop valve on the gas pipe side of the outdoor unit.

Run the vacuum pump for more than 15 minutes and at this time confirm that the pressure gage indicates -0.1 Mpa (-76 cmHg).

Check the vacuum with the gage manifold valve, then close the gage manifold valve, and stop the vacuum pump.

Leave it as is for one or two minutes .Make sure the pointer of the gage manifold valve remains in the. same position.



Remove the gage manifold valve quickly from the service port of the stop valve.

After refrigerant pipes are connected and evacuated, fully open all stop valves on gas and liquid pipe sides.
Operating without fully opening lowers the performance and causes trouble.

Pipe length:
7m maximum
No gas charge is needed.

Pipe length exceeding 7m
Charge the prescribed amount of gas.

Tighten the cap to the service port to obtain the initial status.

Retighten the cap.

Leak test

6. PERFORMANCE DATA

COOLING CAPACITY

model	Indoor Intake Air (WB°C)	Outdoor intake air DB°C											
		20		25		30		35		40		45	
		CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC
KFR-3601GW/BPE (220V/50Hz)	16	3787	1425	3671	1439	3420	1498	3123	1501	2855	1564	2649	1637
	18	4117	1459	3876	1445	3775	1525	3475	1527	3244	1637	2879	1643
	20	4301	1436	4160	1434	3947	1499	3644	1501	3367	1583	2958	1599
	22	4492	1405	4326	1432	4223	1488	3930	1495	3632	1584	3235	1613
KFR-3502GW/BPE (220V/50Hz)	16	3622	1296	3425	1409	3308	1512	3000	1520	2775	1598	2473	1590
	18	3665	1295	3330	1176	3380	1350	3068	1359	2789	1434	2433	1430
	20	3811	1296	3792	1406	3633	1542	3417	1528	3128	1584	2792	1606
	22	3908	1293	3941	1420	3882	1518	3600	1530	3370	1623	2973	1617

HEATING CAPACITY

model	Indoor Intake Air (DB°C)	Outdoor intake air WB°C													
		-15		-10		-5		0		5		10		15	
		CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC
KFR-3601 GW/BPE (220)	15	3452	1759	3871	1746	4242	1781	4792	1805	5362	1802	5209	1498	5619	1492
	20	3341	1896	3694	1871	4027	1815	4447	1787	4908	1776	4857	1499	5230	1495
	25	3257	1776	3465	1781	3697	1774	4198	1838	4576	1800	4488	1494	4844	1511
KFR-3502 GW/BPE	15	3462	1754	4075	1739	4627	1788	4780	1644	5133	1582	5123	1457	5017	1385
	20	3362	1751	3861	1781	4285	1761	4545	1765	5022	1663	5092	1579	5113	1390
	25	3265	1743	3638	1793	3963	1744	4296	1777	4706	1684	4934	1625	4991	1453

Note CA: Capacity(W)

PA: Power consumption(Kw)

7.CONTROL MODE

1. Automatic

1.1 When the air conditioner is switched on and the remote controller is set to Auto mode, the air conditioner will select running modes automatically according to the difference between the room temperature and the setting temperature.

1.2 The running mode will be set when the machine is first switched on. Once set, the running mode cannot be changed within 30 minutes.

1.3 If the difference between the room temperature and the setting temperature exceeds 3 degrees, change the running mode immediately.

1.4 If the machine is turned off and restarted using the remote controller, the above conditions are still good.

1.5 If the machine is powered off and restarted, the running mode must be re-selected.

1.6 The running frequency will be determined by the temperature difference.

2. Cooling

2.1 In the cooling mode, the preset temperature is determined by the remote controller. The temperature range is 16°C—30°C.

2.2 The compressor will start immediately when the machine is first powered on; it will take at least 3min for the compressor to restart if the machine is restarted.

2.3 The fan speed changes in auto mode.

	$T_{setting}$- T_{indoor}	Fan speed		$T_{setting}$- T_{indoor}	Fan speed
Temperature difference ↑	0°C	Low	Temperature difference ↓	0°C	Low
	1°C	Mid		1°C	Mid
	2°C	Mid		2°C	Mid
	3°C	Mid		3°C	Mid
	4°C	Mid		4°C	High
	⩾5°C	High		⩾5°C	High

2.4 Outdoor fan speed

$T_{outdoor}$ ⩾ 28°C High

$T_{outdoor}$ < 28°C Determined by the outdoor coil tube temperature $T_{outdoor\ coil\ tube}$, when

$T_{outdoor\ coil\ tube}$ ⩾ 40°C High

35°C⩽ $T_{outdoor\ coil\ tube}$ < 40°C Mid

$T_{outdoor\ coil\ tube}$ < 35°C Low

2.5 The four-way valve is off.

Dehumidification

1.1 In the dehumidification mode, the temperature is determined by the remote controller. The temperature range is 16°C—30°C. The controller will determine the running mode according to the indoor and outdoor temperature difference.

1.2 When the room temperature is 2°Chigher than the preset temperature, cooling run will be started. When the temperature difference between the indoor and outdoor is lower than or equal to 2◦C the drying mode will be started. When running in the drying mode, the compressor will alternate between the low and high frequencies.

7.CONTROL MODE

1.1 In this mode, the outdoor fan will work as follows:

Outdoor temperature ⩾28°C	High
Outdoor temperature ＜28°C and condenser temperature ⩾ 40°C	High
Outdoor temperature ＜28°C and 40°C ＞ condenser temperature ⩾ 35°C	Mid
Outdoor temperature ＜28°C	Low

Heating

1.1 In the heating mode, the set temperature is determined by the remote controller. The temperature range is 16°C—30°C.

1.2 The compressor will start immediately when the machine is switched on; it will take at least 3min for the compressor to restart if the machine is restarted.

1.3 If the compressor is started, it must run at least 5min.

1.4 When the air conditioner is switched off, the compressor will stop and the outdoor four-way valve will be delayed off. The remaining heat will be discharged by the indoor unit before it stops.

1.5 Cold air prevention. When the air conditioner is started, the indoor unit will not run immediately. It will not start until the indoor heat exchanger is warmed up.

1.6 During operation, when the preset temperature is met, the indoor compressor will stop to cause the indoor fan to stop. So when the compressor restarts, the cold air prevention will still be working.

1.7 In this mode, the outdoor fan will work as follows:

Outdoor temperature ＞ 24°C:	Low
15°C ⩾ outdoor temperature ⩾ 10°C:	Mid
Outdoor temperature ＜ 10°C:	High

1.8 The four-way valve is in conducting state.

2. Defrosting

2.1 The defrosting is done through changing the flow direction of refrigerant inside of the four-way valve.

2.2 Defrosting conditions:

Continuous heating run for more than 30min

During single machine operation, $T_{outdoor} - T_{outdoor\ coil}$ ⩾ 7°C and lasts 5 minutes

2.3 Defrosting process:

Compressor and outdoor fan motor off → four-way valve off→ compressor on → defrosting conditions met → compressor off → four-way valve on → compressor on → outdoor fan on → end

3. Ventilation(Fan mode)

During fan operation, only the indoor fan and the flap are running in the setting mode. If the fan speed is set to Auto, it will enter in low-speed run.

7.CONTROL MODE

1. Energy-saving

4.1 Press the SOFT button on the remote controller to activate the energy-saving function. Now the energy-saving symbol appears on the screen. Press the button again to cancel this function, the corresponding symbol will go off.

4.2 During energy-saving mode, the electric current will be limited to 60% of the rating level through adjusting the compressor revolving frequency and limiting the maximum current.

4.3 This mode cannot be cancelled by the switching-on and off operations. When the machine is turned off, the energy-saving symbol will remain on.

2. Sleeping

5.1 During heating or cooling mode, press the SLEEP button on the remote controller, the sleeping mode can be set or cancelled and the sleeping symbol on the screen will light up or go off accordingly.

5.2 Heating: After this function is enabled, the setting temperature will fall down 3 degrees within an hour. Two hours later, the temperature will fall down another 4 degrees, and the machine will be turned off after running for another 5 hours.

5.3 Cooling: After this function is started, the setting temperature will rise 1 degree within an hour, and the machine will be turned off automatically after another 7 hours.

5.4 The default mode is sleeping off. The sleeping function will be cancelled after the machine is switched off.

3. High-power

In this mode, the indoor fan speed will go into high level. The compressor runs at the max permissible frequency, which will be displayed on the screen. The original running mode will be automatically resumed after running for 15 minutes.

4. Temporary switch

7.1 If the remote controller is missing, press the temporary switch and the system starts in the automatic mode, press the switch again to stop the system. Automatic mode follows:

A indoor temperature $>26°C$ cooling mode temperature setting $26°C$

B indoor temperature $>23°C$ heating mode temperature setting $26°C$

C $23°C$ indoor temperature $\geqslant 26°C$ fan mode

Indoor fan speed is automatic in automatic mode.

7.2 Hold down the temporary switch for 5 seconds or longer and the system is forced to run in the cooling mode regardless of indoor temperature.

NOTE:

Operating frequency and rated values of the compressor:

Item	KFR-3601GW/BPE		KFR-4001GW/BPE		KFR-3502GW/BPE	
Hz / Mode	Frequency range	Rated frequency	Frequency range	Rated frequency	Frequency range	Rated frequency
Cooling	30-110	84	30-110	94	15-110	82
Heating	30-137	96	30-137	112	15-137	92

Other functions

1. Flap control

1.1 Press the FLAP button on the remote controller continuously, the flap will alternate within the following eight positions: Auto, fixed (including the six positions of the flap from top to 1,2,3,4,5,6) and swing.

1.2 Auto: During the heating mode, the flap is set at position 5; during the cooling and dehumidification mode, the flap is at position 2; during the fan mode, it is at position 2.

1.3 Fixed: The position of the flap is fixed at a certain position by the remote controller.

1.4 Scanning: During cooling and fan mode, the flap sways among positions 1—4; during heating mode, the flap sways between positions 3—6.

1.5 The default mode is Auto.

1.6 When first turned on or turned off, the flap will turn to the furthermost positions to ensure well closing of the flap. When started, the flap will turn to the furthermost positions. After the grille is completely closed, it will turn to the setting position.

2. Man-machine communication

2.1 The indoor controller has two temperature sensors to detect the room temperature: one in the controller and the other at the air inlet of indoor unit. The default airflow setting depends on that detected by the remote controller. The remote controller detects room temperature once every 20 seconds and transmits signals once every 3 minutes or when the detected temperature is not the same. If the indoor controller cannot receive signals for more than 10 minutes, it will automatically start the temperature sensor at the air inlet of indoor unit. Meanwhile, the man-machine communication symbol on the screen will go off.

2.2 The man-machine communication mode cannot be cancelled by the switching-on and off operations. When the machine is switched off, the man-machine communication symbol will remain on.

2.3 When the machine is turned on, the man-machine communication symbol will appear. When the air conditioner is started by the switch button of indoor unit, the man-machine communication symbol will go off.

3. Timing on and off

3.1 Timing On: when the timing-on function is set by the remote controller, the timing-on function of the air conditioner is activated and the timer symbol lights up. When the setting time arrives, the machine starts with the setting mode after a signal from the remote controller is received. If no signal is received at the setting time, the machine will run by automatic settings. At the same time, the man-machine communication symbol goes off.

3.2 Timing Off: when the timing-off function is set by the remote controller, the timing-off function of the air conditioner is activated and the timer symbol lights up. When the setting time arrives, the machine shuts off after a signal from the remote controller is received. If no signal is received at the setting time, the machine will automatically shut off. At the same time, the man-machine communication symbol goes off.

3.3 The timing mode cannot be cancelled by the switching-on and off operations. When the machine is switched off, the timer symbol remains on.

8. TROUBLESHOOTING

1. Trouble code display

When the controller creates protection, press the sensor button, the trouble codes will be displayed at the place for the indoor temperature on the VFD of the indoor unit. Once a trouble code appears due to the trouble of the air conditioner, it can not be cleared unless the machine is powered off.

Trouble Code Table (★means the light diode lights up; ☆ means the diode goes off)

Content of trouble	Indoor display code	Outdoor unit display		
		LED02	LED03	LED04
Indoor sensor trouble	1			
Evaporator sensor trouble	2			
Evaporator freezing	3			
Over hot of indoor heatexchanger	4			
Communication trouble	5			
Fan motor trouble	6			
Air outlet sensor trouble	10			
Lightness sensor trouble	11			
Indoor unit E^2PROM trouble	13			
Outdoor sensor trouble	21	★		
Condenser sensor trouble	22		★	
Over hot of compressor	23	★	★	
Over current	26		★	★
Overload protection	27	★	★	★
Power voltage trouble	28	☆		
Momentary power failure	29		☆	
Overload of outdoor unit for cooling	30	☆	☆	
Defrosting	31			☆
IPM trouble	33	☆		☆
Data failure of outdoor E^2PROM	33		☆	☆

2. Trouble code display when frequency is restricted

when the protection function is in action, the compressor doesn't work, only its frequency is restricted, the LED of outdoor unit displays the work condition.

Serial number	Cause of frequency restriction	LED OF outdoor unit		
		LED02	LED03	LED04
1	In good condition	★		
2	Power voltage isn't in normal range		★	
3	Overload of outdoor unit	★	★	
4	Over current of outdoor unit			★
5	Exhaust over hot	★		★
6	Evaporator freezing		★	★
7	Setting frequency	★	★	★

3. The content of trouble code display

3.1 Abnormal sensor: when the sensor is short circuited or cut off, the compressor will stop, and the trouble code will be displayed.

3.2 Abnormal power module IPM: when the power module comes about such problems as overheat, over current, short circuit, the compressor will stops, and the trouble code will be displayed.

3.3 Temperature protection for the compressor exhaust

When the compressor exhaust temperature $< 90°C$, the compressor runs at the ascending frequency;

When the temperature $\geqslant 90°C$, the compressor runs at the limit to the frequency ascending;

When the temperature $\geqslant 106°C$, the compressor runs at the descending frequency;

When the temperature $> 117°C$, the compressor stops.

3.4 When the temperature protector at the top of the compressor functions, the compressor stops and the trouble code is displayed.

3.5 Total current overload protection

Cooling mode

Type	KFR-3601GW/BPE		KFR-4001GW/BPE		KFR-3502GW/BPE		Work condition of compressor
Item	Current	Voltage	Current	Voltage	Current	Voltage	
1.≤	6.8	1.86	8.5	2.32	6.8	1.86	Frequency up
2.≥	8.3	2.27	10.0	2.73	8.3	2.27	Frequency up restriction
3.≥	9.8	2.68	11.5	3.14	9.8	2.68	Frequency down
4.≥	12.0	3.28	15.0	4.10	12.0	3.28	Stop

Heating mode

Type	KFR-3601GW/BPE		KFR-4001GW/BPE		KFR-3502GW/BPE		Work condition of compressor
Item	Current	Voltage	Current	Voltage	Current	Voltage	
1.≤	8.5	2.32	13.0	3.56	8.5	2.32	Frequency up
2.≥	10.0	2.73	14.5	3.97	10.0	2.73	Frequency up restriction
3.≥	11.5	3.14	16.0	4.38	11.5	3.14	Frequency down
4.≥	14.0	3.83	17.0	4.65	14.0	3.83	Stop

3.6 Abnormal power supply voltage protection

When the supply voltage is above 260V or below 150V, the compressor stops, and the trouble code is displayed.

3.7 Overhot protection for the indoor heat exchanger

When the temperature of the indoor coil ⩾70°C, the compressor will stop;

When the temperature ⩾55°C, the outdoor flow speed will turn to the low speed, and the compressor runs at the descending frequency;

When the temperature ⩾52°C and <55°C, the compressor will prohibit the frequency from rising.

3.8 Anti-frost protection for the indoor heat exchanger

Refer to the cooling cycle.

3.9 Momentary interruption protection for power supply

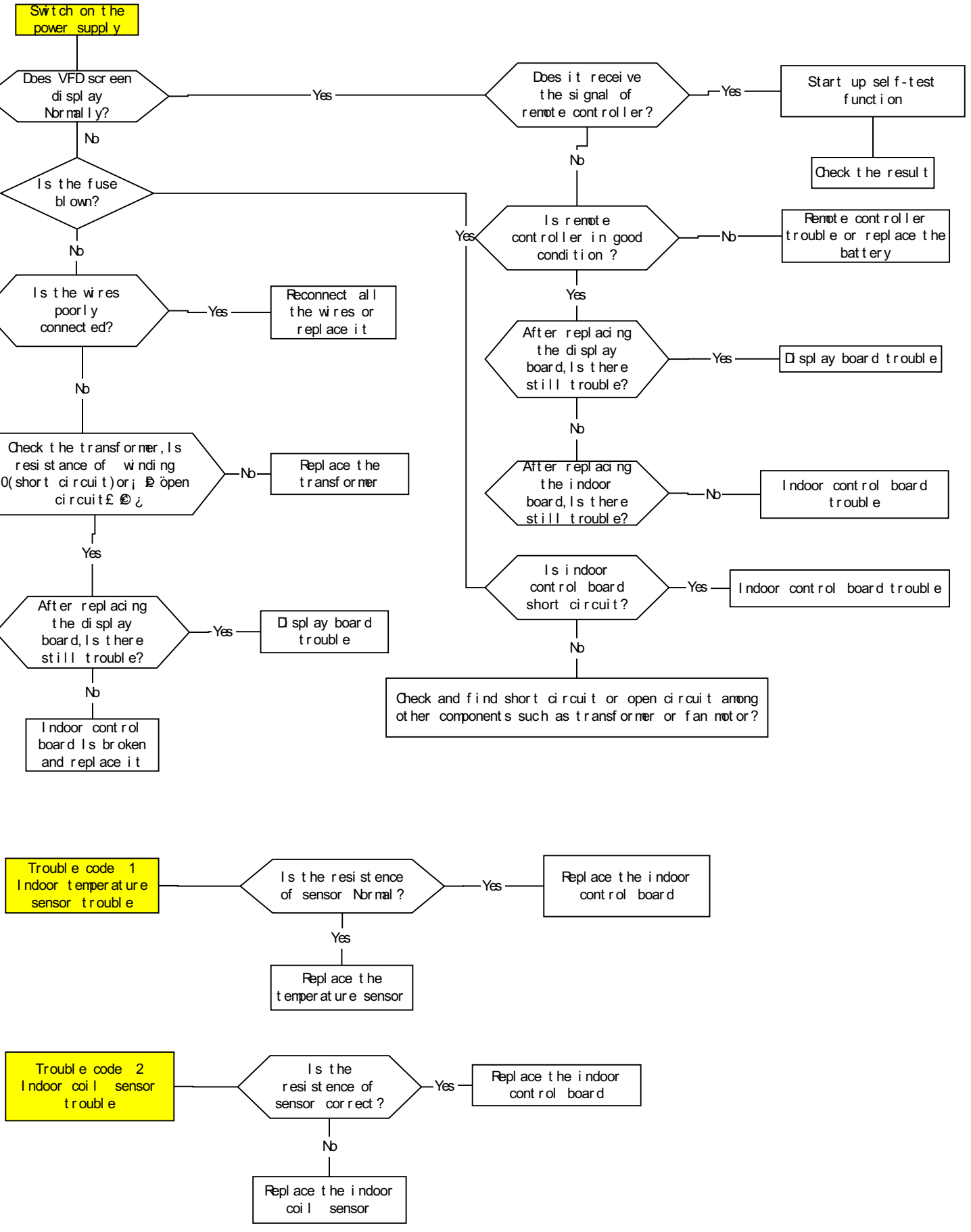
When the power supply lacks the cycle or is interrupted, the compressor stops running, and the trouble code is displayed.

3.10 Start delay protection: When restarting the machine, the start is delayed for 3 minutes for protection.

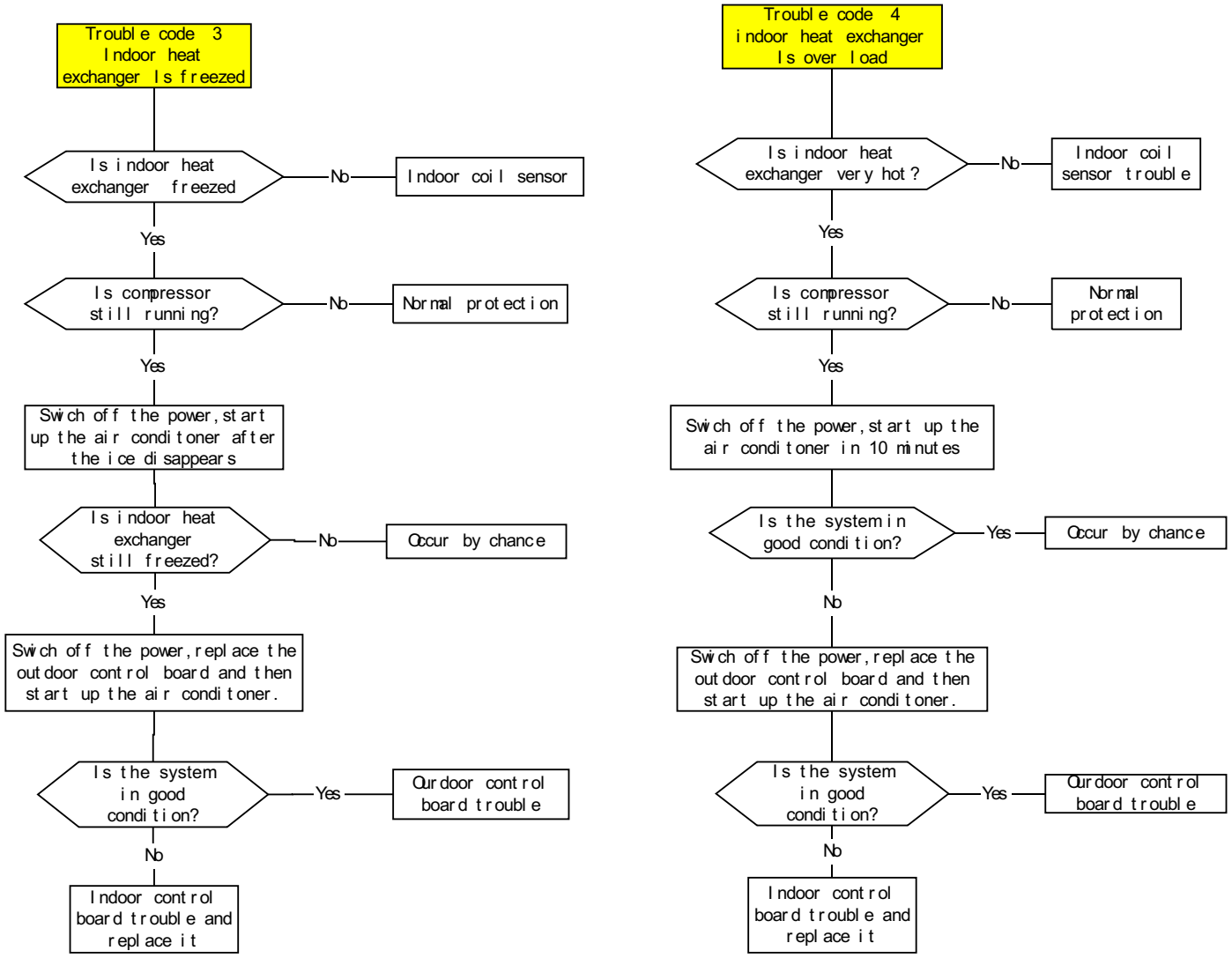
3.11 Communication trouble: when the outdoor unit is turned on, the indoor unit will shut down the indoor unit 3 minutes later if the indoor unit has not received an effective communication signal which returns from the outdoor unit. And at the same time the trouble code is displayed. After another 3 minutes, the outdoor will be powered on again. Once the communication returns to normal, the trouble code will be cleared.

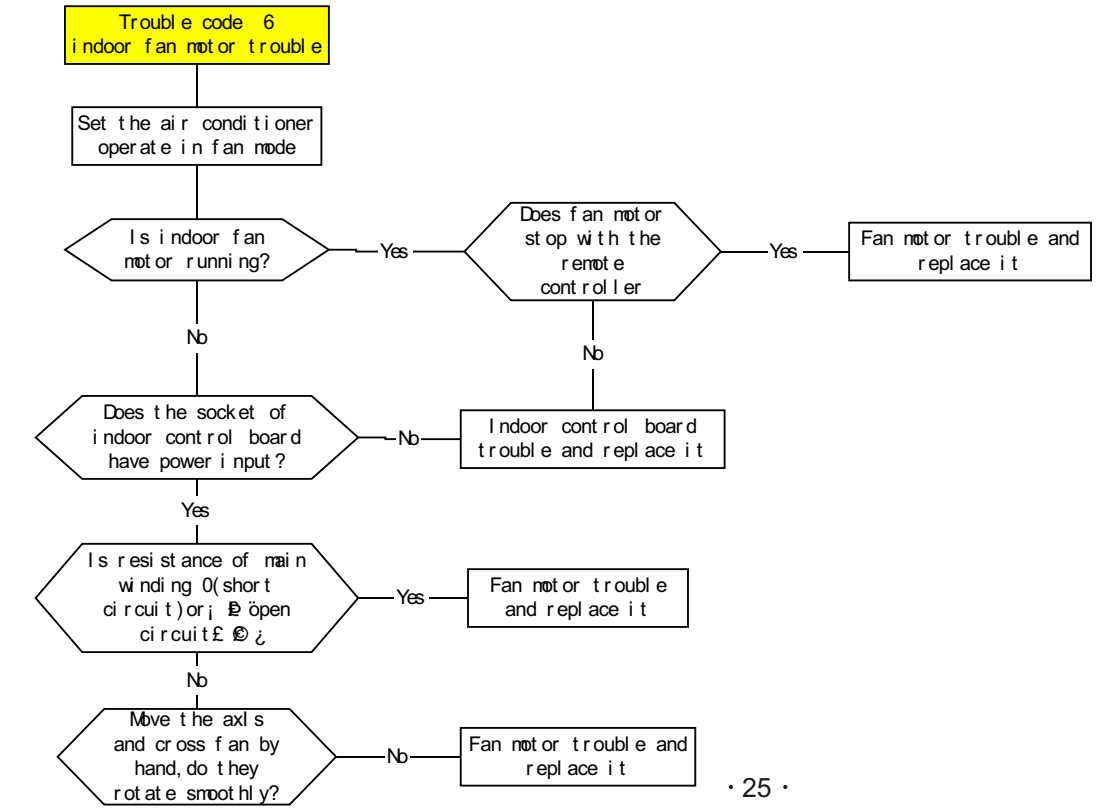
3.12 The trouble in the indoor fan motor: when the indoor micro-computer, depending on the position of the rotor of the indoor motor, determines the motor is in stoppage, lock or abnormal vibration state, the micro-computer will cut off the driving signal of the indoor fan. 3 minutes later, it is restarted. If the trouble occurs 4 times within 30 minutes, the air conditioner will stop, and the trouble code will be displayed. It can not be restarted unless being powered on again.

9.SERVICE FLOW CHART

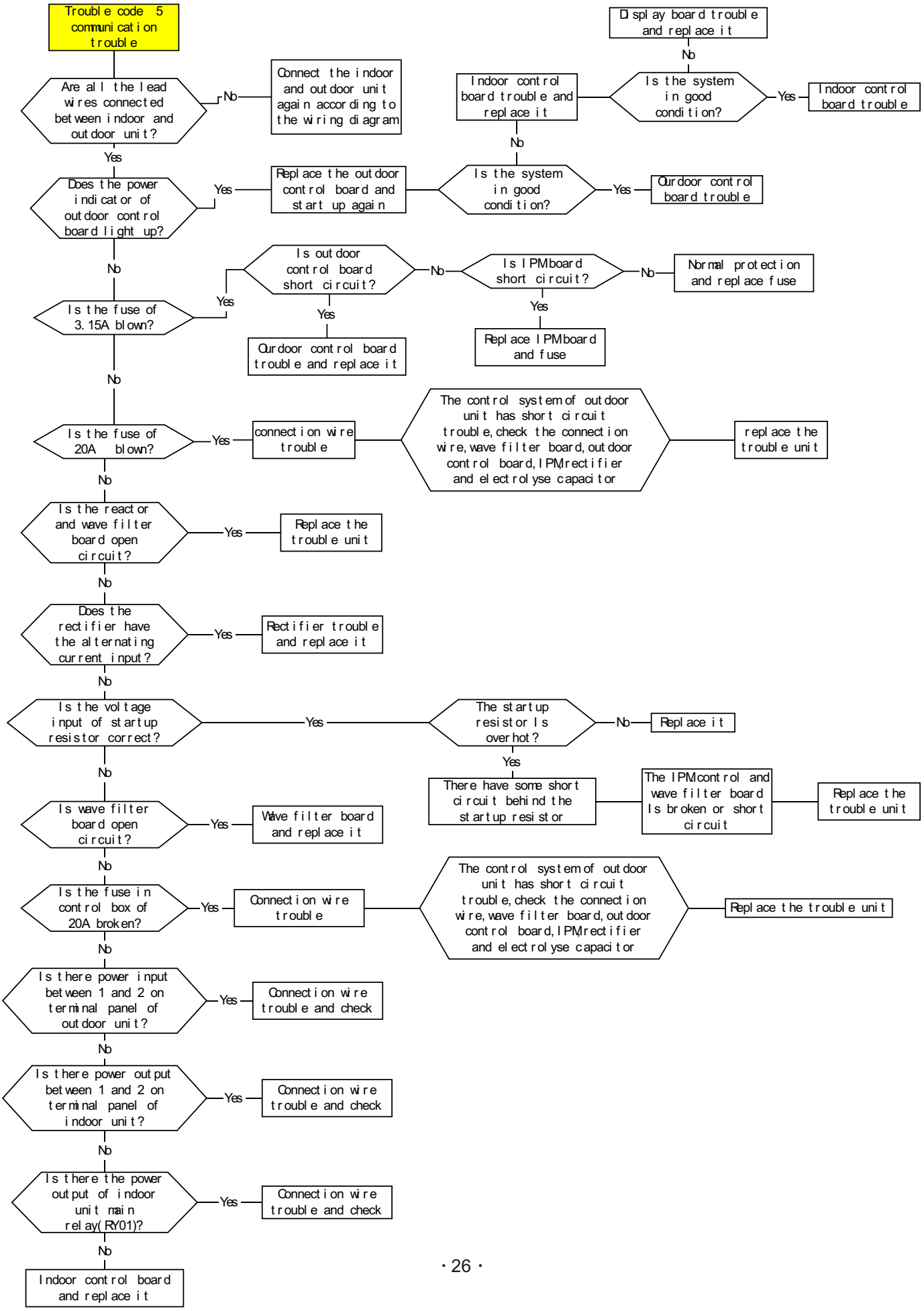


9.SERVICE FLOW CHART

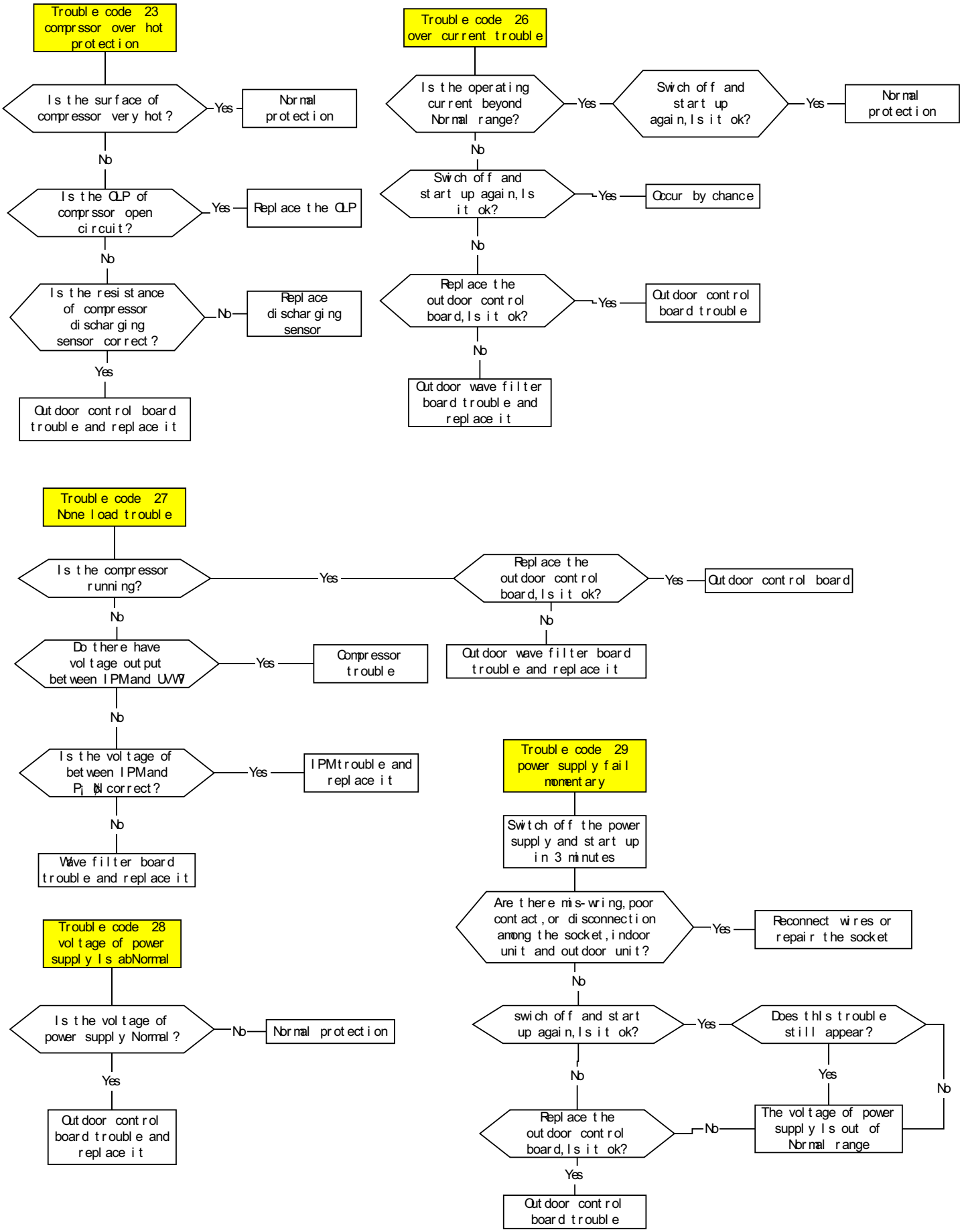




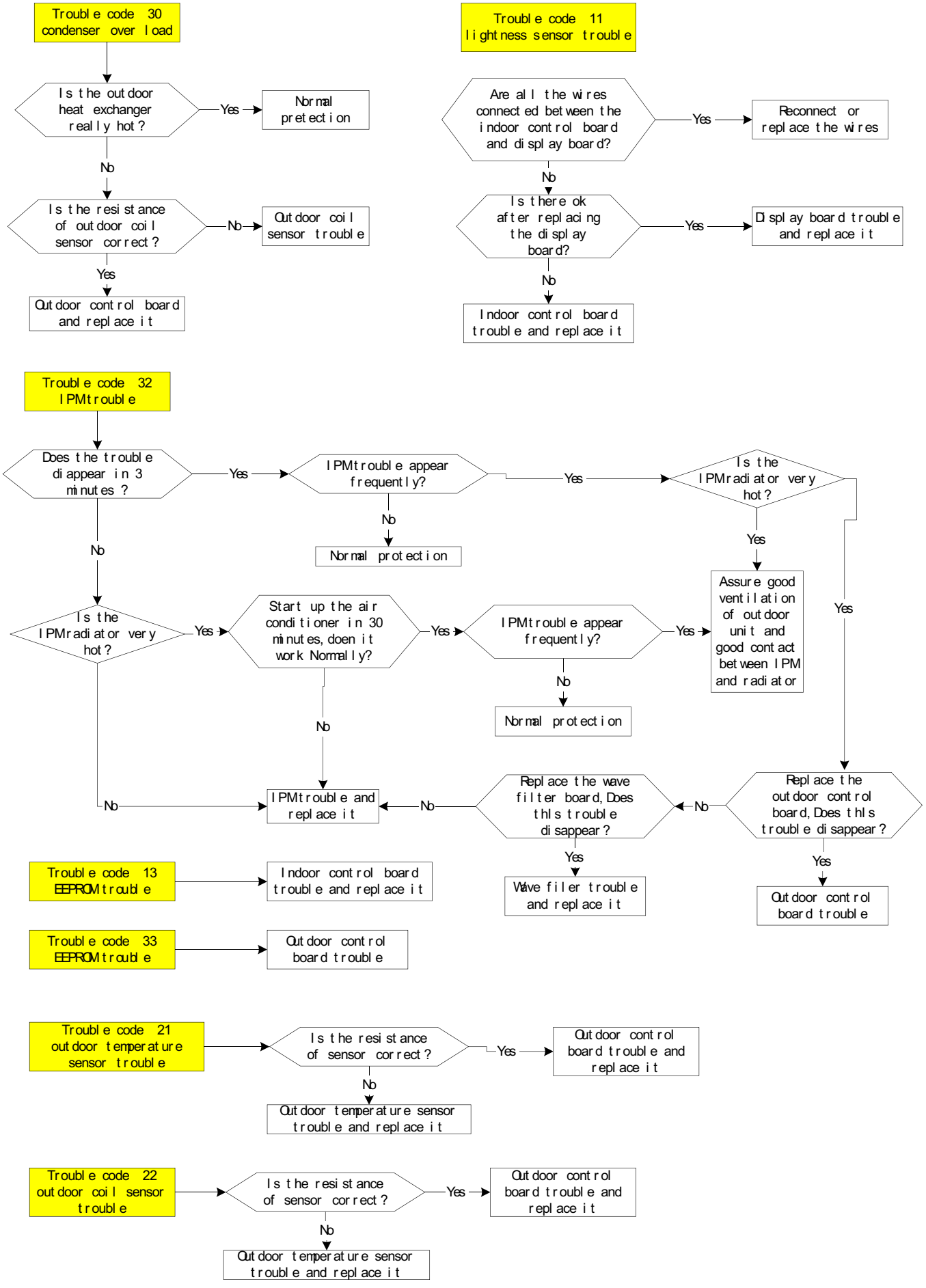
9.SERVICE FLOW CHART



9.SERVICE FLOW CHART



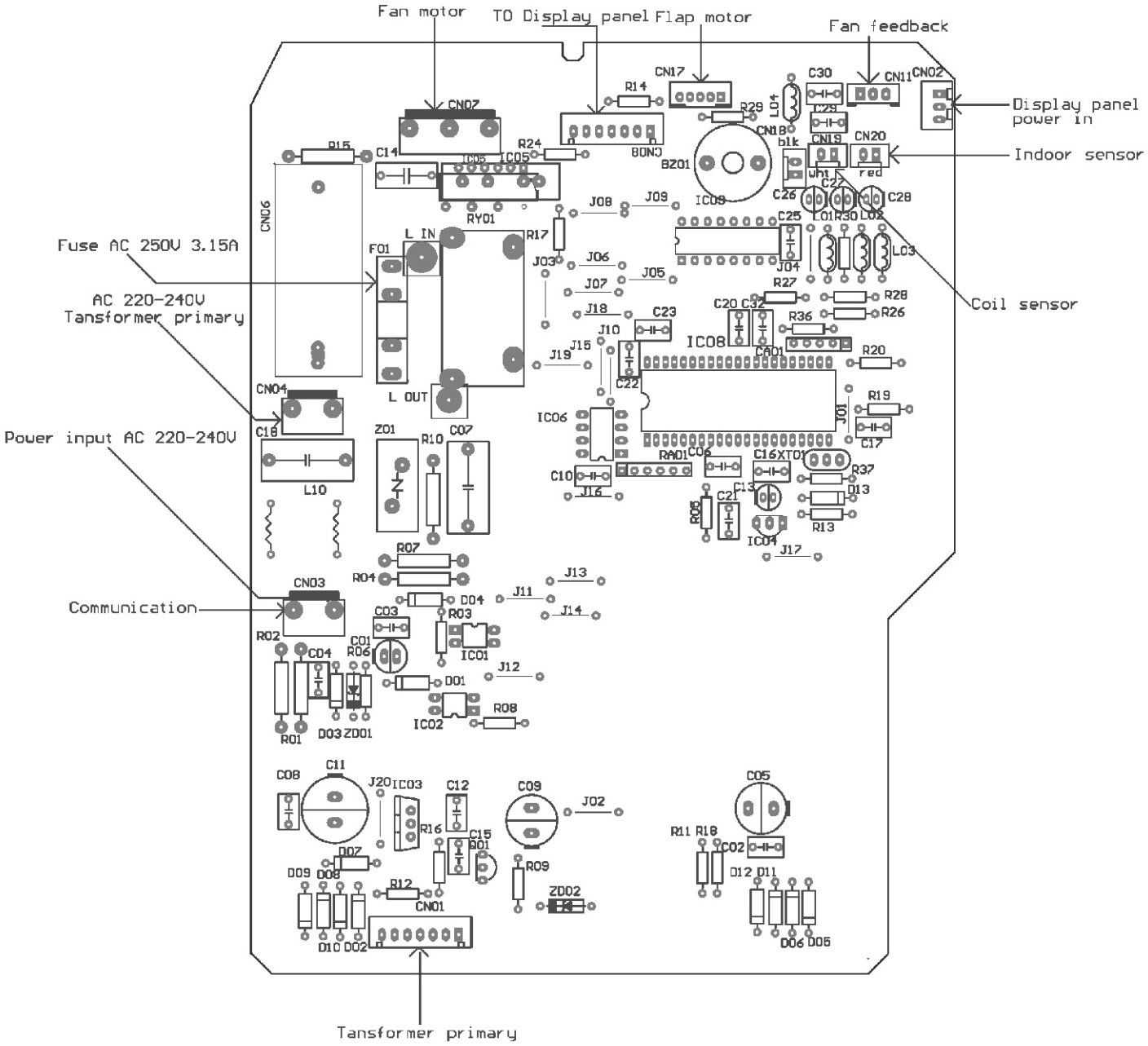
9.SERVICE FLOW CHART



9.SERVICE FLOW CHART

KFR-3502G/BPE

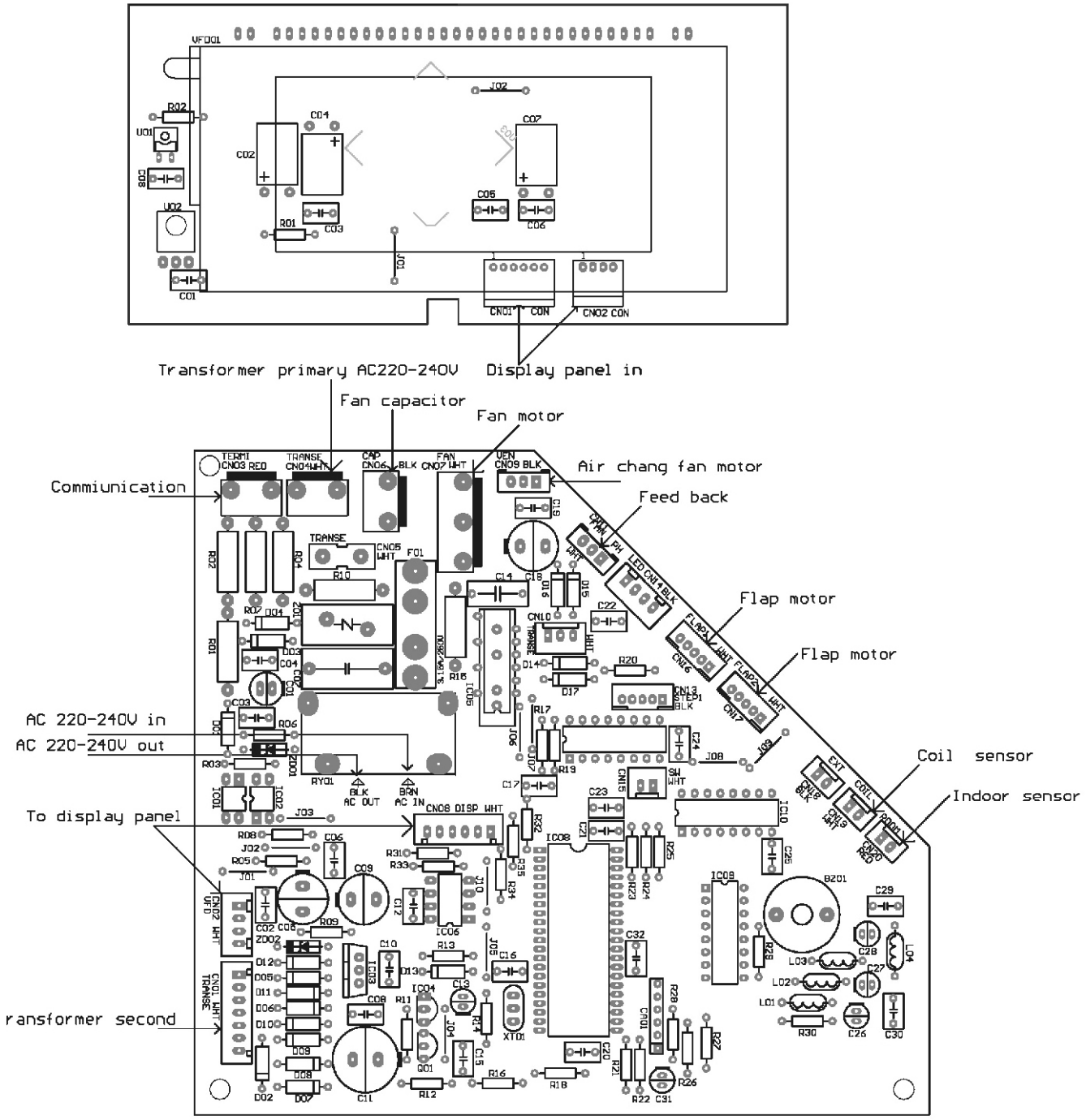
Indoor electric control P.C. Board



9.SERVICE FLOW CHART

KFR-3601G/BPE

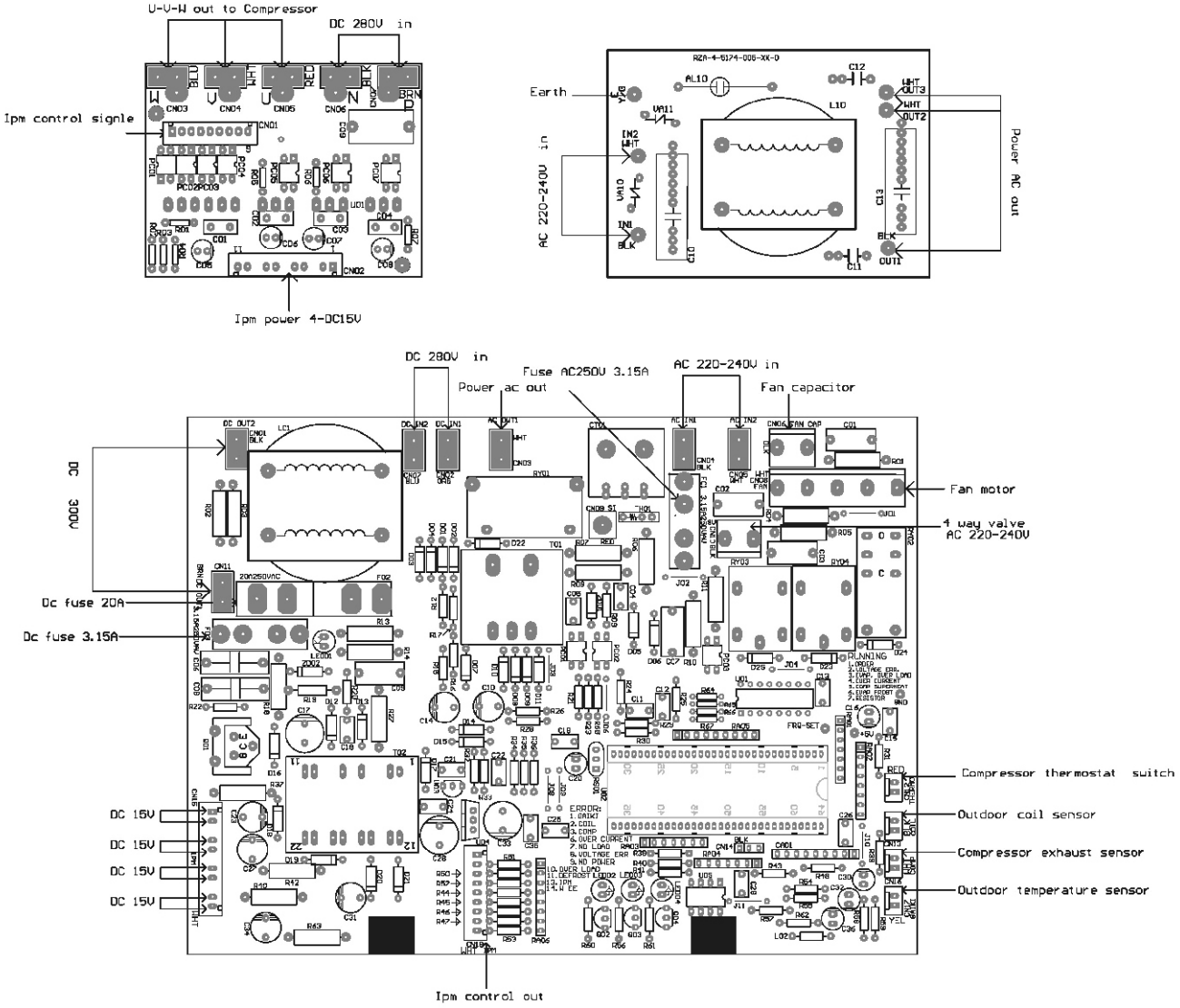
Indoor electric control P.C. Board



9.SERVICE FLOW CHART

KFR-3502W/BPE
KFR-3601W/BPE
KFR-4001W/BPE

Outdoor electric control P.C. Board



10.SENSOR PARAMETER

THE PARAMETER OF THE INDOOR SENSOR

T('c)	R(Ko)	V(v)	T('c)	R(Ko)	V(v)	T('c)	R(Ko)	V(v)
- 10	27. 68	0. 7258	7	11. 52	1. 4488	24	5. 226	2. 3675
- 9	26. 22	0. 76	8	10. 97	1. 4997	25	5	2. 4227
- 8	24. 85	0. 7953	9	10. 45	1. 5512	26	4. 785	2. 4776
- 7	23. 56	0. 8316	10	9. 963	1. 6027	27	4. 581	2. 5321
- 6	22. 34	0. 8691	11	9. 497	1. 6553	28	4. 387	2. 5861
- 5	21. 19	0. 9077	12	9. 056	1. 7083	29	4. 202	2. 6399
- 4	20. 11	0. 9472	13	8. 638	1. 7619	30	4. 025	2. 6934
- 3	19. 09	0. 9878	14	8. 241	1. 8159	31	3. 857	2. 7463
- 2	18. 12	1. 0298	15	7. 865	1. 8703	32	3. 697	2. 7986
- 1	17. 21	1. 0726	16	7. 508	1. 925	33	3. 545	2. 8502
0	16. 35	1. 1164	17	7. 169	1. 9799	34	3. 399	2. 9016
1	15. 54	1. 1611	18	6. 847	2. 0352	35	3. 26	2. 9523
2	14. 77	1. 207	19	6. 541	2. 0906	36	3. 128	3. 002
3	14. 05	1. 2533	20	6. 251	2. 1459	37	3. 002	3. 0512
4	13. 36	1. 3012	21	5. 975	2. 2014	38	2. 881	3. 0999
5	12. 72	1. 349	22	5. 712	2. 257	39	2. 766	3. 1476
6	12. 1	1. 3988	23	5. 463	2. 3123	40	2. 657	3. 1942

THE PARAMETER OF THE COIL AND OUTDOOR SENSOR

T('c)	R(Ko)	V(v)	T('c)	R(Ko)	V(v)	T('c)	R(Ko)	V(v)
- 20	39. 58	0. 5307	9	10. 1	1. 5878	38	3. 265	2. 9504
- 19	37. 58	0. 5558	10	9. 684	1. 6338	39	3. 151	2. 9932
- 18	35. 69	0. 5818	11	9. 284	1. 6805	40	3. 041	3. 0358
- 17	33. 91	0. 6087	12	8. 903	1. 7276	41	2. 936	3. 0775
- 16	32. 23	0. 6363	13	8. 54	1. 7749	42	2. 835	3. 1188
- 15	30. 65	0. 6648	14	8. 194	1. 8226	43	2. 739	3. 159
- 14	29. 15	0. 6942	15	7. 864	1. 8704	44	2. 646	3. 199
- 13	27. 74	0. 7244	16	7. 549	1. 9185	45	2. 556	3. 2387
- 12	26. 4	0. 7556	17	7. 249	1. 9667	46	2. 471	3. 2771
- 11	25. 14	0. 7875	18	6. 962	2. 0151	47	2. 388	3. 3155
- 10	23. 95	0. 8202	19	6. 688	2. 0636	48	2. 309	3. 3528
- 9	22. 82	0. 8539	20	6. 427	2. 112	49	2. 233	3. 3896
- 8	21. 75	0. 8885	21	6. 178	2. 1603	50	2. 159	3. 4262
- 7	20. 74	0. 9237	22	5. 939	2. 2089	51	2. 089	3. 4615
- 6	19. 79	0. 9596	23	5. 712	2. 257	52	2. 021	3. 4965
- 5	18. 88	0. 9966	24	5. 494	2. 3053	53	1. 956	3. 5306
- 4	18. 02	1. 0343	25	5. 286	2. 3533	54	1. 893	3. 5644
- 3	17. 2	1. 0731	26	5. 086	2. 4014	55	1. 832	3. 5977
- 2	16. 43	1. 1122	27	4. 896	2. 4489	56	1. 774	3. 6299
- 1	15. 7	1. 152	28	4. 714	2. 4963	57	1. 718	3. 6616
0	15	1. 1929	29	4. 539	2. 5436	58	1. 664	3. 6926
1	14. 34	1. 2342	30	4. 372	2. 5904	59	1. 612	3. 7231
2	13. 71	1. 2765	31	4. 212	2. 6369	60	1. 562	3. 7528
3	13. 11	1. 3195	32	4. 059	2. 683	61	1. 513	3. 7824
4	12. 55	1. 3623	33	3. 912	2. 7288	62	1. 467	3. 8106
5	12. 01	1. 4063	34	3. 772	2. 7738	63	1. 422	3. 8386
6	11. 5	1. 4506	35	3. 637	2. 8188	64	1. 379	3. 8658
7	11. 01	1. 4959	36	3. 508	2. 8631	65	1. 337	3. 8927
8	10. 55	1. 541	37	3. 384	2. 907			

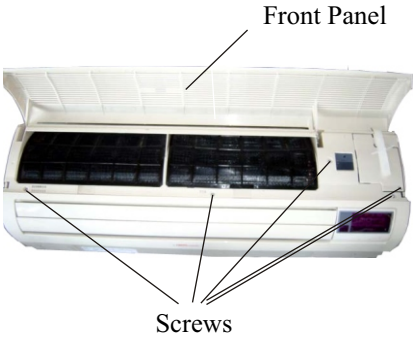
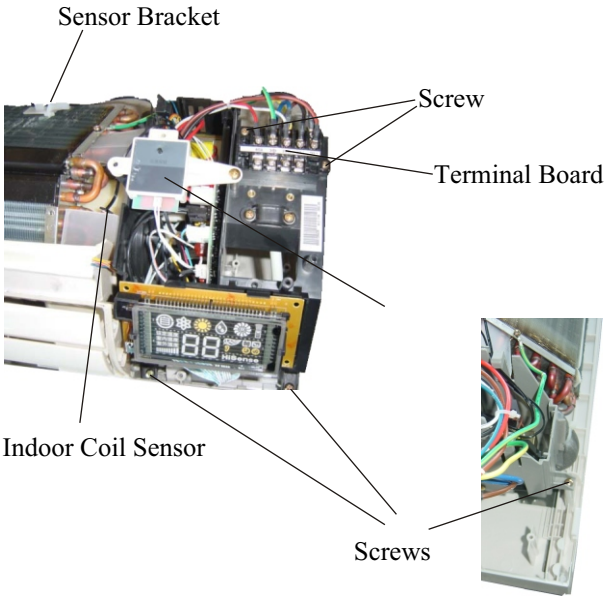
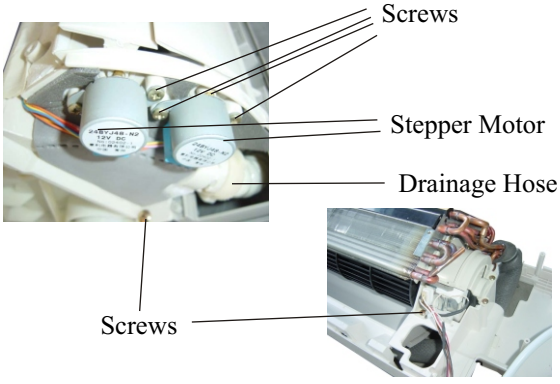
10.SENSOR PARAMETER

THE PARAMETER OF THE DISCHARGE SENSOR

T('C)	R(O)	V(v)	T('C)	R(O)	V(v)	T('C)	R(O)	V(v)
- 10	313. 4	0. 3	31	44. 74	1. 545	71	9. 659	3. 372
- 9	297. 2	0. 315	32	42. 89	1. 59	72	9. 331	3. 409
- 8	281. 9	0. 331	33	41. 13	1. 636	73	9. 016	3. 446
- 7	267. 5	0. 348	34	39. 44	1. 682	74	8. 712	3. 483
- 6	253. 9	0. 365	35	37. 84	1. 729	75	8. 421	3. 519
- 5	241. 1	0. 383	36	36. 3	1. 776	76	8. 14	3. 554
- 4	229	0. 402	37	34. 84	1. 823	77	7. 869	3. 588
- 3	217. 6	0. 421	38	33. 44	1. 871	78	7. 609	3. 622
- 2	206. 8	0. 441	39	32. 11	1. 919	79	7. 359	3. 655
- 1	196. 6	0. 462	40	30. 83	1. 967	80	7. 118	3. 688
0	186. 9	0. 483	41	29. 61	2. 016	81	6. 885	3. 72
1	177. 8	0. 506	42	28. 45	2. 064	82	6. 662	3. 751
2	169. 2	0. 529	43	27. 34	2. 112	83	6. 446	3. 781
3	161	0. 552	44	26. 27	2. 161	84	6. 239	3. 811
4	153. 3	0. 577	45	25. 25	2. 21	85	6. 039	3. 84
5	146	0. 602	46	24. 28	2. 258	86	5. 846	3. 869
6	139	0. 629	47	23. 35	2. 307	87	5. 661	3. 897
7	132. 5	0. 656	48	22. 46	2. 355	88	5. 482	3. 924
8	126. 3	0. 684	49	21. 6	2. 404	89	5. 309	3. 951
9	120. 4	0. 712	50	20. 79	2. 452	90	5. 143	3. 977
10	114. 8	0. 742	51	20. 01	2. 499	91	4. 982	4. 003
11	109. 5	0. 772	52	19. 26	2. 547	92	4. 827	4. 028
12	104. 4	0. 804	53	18. 54	2. 595	93	4. 678	4. 052
13	99. 66	0. 836	54	17. 85	2. 642	94	4. 534	4. 076
14	95. 13	0. 869	55	17. 19	2. 689	95	4. 395	4. 099
15	90. 82	0. 902	56	16. 56	2. 735	96	4. 261	4. 122
16	86. 74	0. 937	57	15. 96	2. 781	97	4. 132	4. 144
17	82. 85	0. 972	58	15. 38	2. 826	98	4. 007	4. 165
18	79. 16	1. 008	59	14. 82	2. 872	99	3. 886	4. 187
19	75. 65	1. 045	60	14. 29	2. 916	100	3. 77	4. 207
20	72. 32	1. 083	61	13. 78	2. 96	101	3. 658	4. 227
21	69. 15	1. 122	62	13. 28	3. 005	102	3. 549	4. 246
22	66. 13	1. 161	63	12. 81	3. 048	103	3. 444	4. 265
23	63. 27	1. 201	64	12. 36	3. 09	104	3. 343	4. 284
24	60. 54	1. 242	65	11. 93	3. 132	105	3. 15	4. 32
25	57. 94	1. 283	66	11. 51	3. 174	106	3. 059	4. 337
26	55. 46	1. 325	67	11. 11	3. 214	107	2. 97	4. 354
27	53. 11	1. 368	68	10. 73	3. 254	108	2. 884	4. 37
28	50. 86	1. 411	69	10. 36	3. 294	109	2. 802	4. 386
29	48. 72	1. 455	70	10	3. 333	110	2. 721	4. 401
30	46. 68	1. 5						

11. DISASSEMBLY INSTRUCTIONS

• KFR-3601G/BPE KFR-4001G/BPE

OPERATION PROCEDURE	PHOTOS
1. Remove the grille 1) Open the front panel. 2) Take out the screws in the grille. 3) Hold the both sides of the grille, dragging towards oneself and then remove it.	
2. Remove the electrical control box 1) Remove the indoor coil sensor from the sensor bracket. 2) Remove the switching board. 3) Take out the screws of the terminal board then Remove the terminal board. 4) Disconnect all the circuitry of the printed circuit board. 5) Remove the printed circuit board and check-up it. 6) Disconnect the circuitry in the electrical control box. 7) Remove the printed circuit board. 8) Take out the screws of the electrical control box and remove the electrical control box.	
3. Remove the air outlet frame 1) Take out the screws of the stepper motor and disconnect the stepper motor and the air outlet frame. 2) Remove the stepper motor. 3) Disconnect the drainage hose and the air outlet frame. 4) Take out the screws of the air outlet frame. 5) Remove the air outlet frame.	

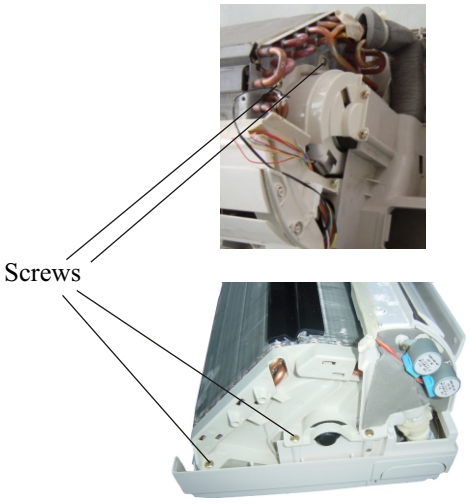
11. DISASSEMBLY INSTRUCTIONS

KFR-3601G/BPE KFR-4001G/BPE

4. Remove the evaporator

1) Disconnect the evaporator and the other parts then remove the screws of the evaporator.

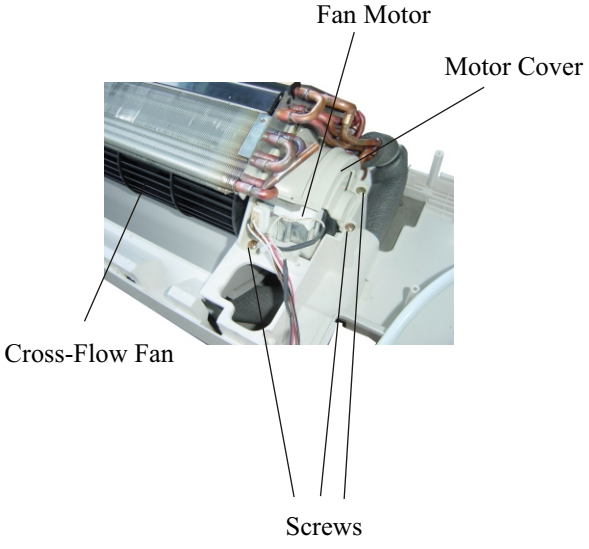
2) Remove the evaporator.



5. Remove the cross-flow fan and the fan motor

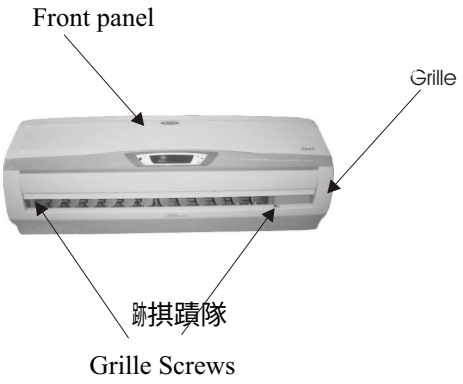
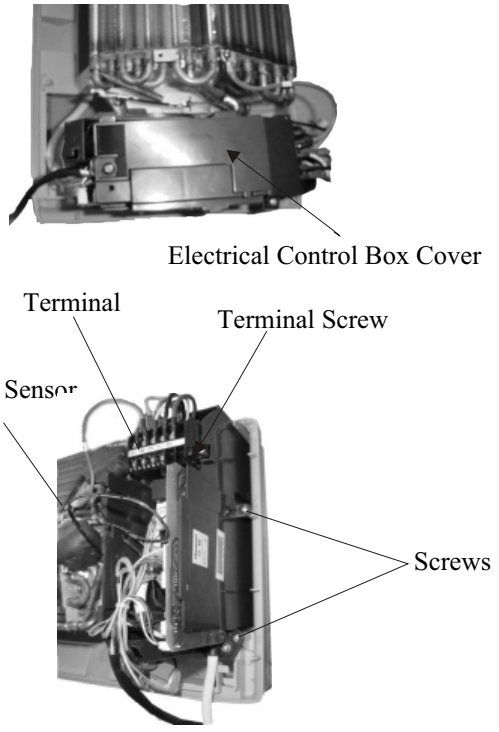
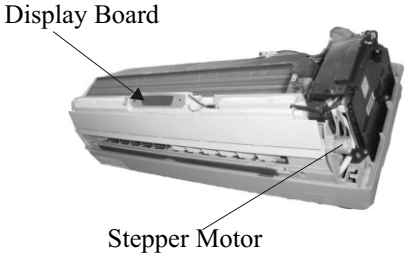
1) Take out the screws of the motor cover and remove the cover.

2) Remove the cross-flow fan and the fan motor.



11. DISASSEMBLY INSTRUCTIONS

• KFR-3502G/BPE

OPERATION PROCEDURE	PHOTOS
1. Remove the grille 1) Open the screw cover in the grille. 2) Take out the screws of the grille. 3) Hold the both sides of the front panel and drag it towards oneself, shown the switching board of the indoor unit. 4) Remove the grille.	
2. Remove the electrical control box 1) Remove the electrical control box cover. 2) Remove the indoor coil sensor from the sensor bracket. 3) Take out the screws of the terminal and remove the terminal board. 4) Disconnect all connectors on the printed circuit board. 5) Remove the printed circuit board and check-up it. 6) Disconnect the circuitry in the electrical control box. 7) Take out the screws of the electrical control box and remove the electrical control box.	
3. Remove the air outlet frame 1) Take out the screws of the stepper motor, disconnect the stepper motor and the air outlet frame. 2) Remove the stepper motor. 3) Disconnect the drainage hose and the air outlet frame. 4) Take out the screws of the air outlet frame. 5) Remove the air outlet frame.	

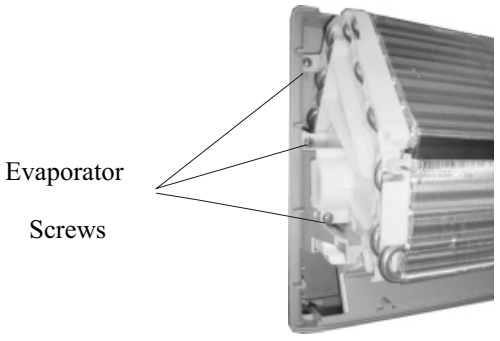
11. DISASSEMBLY INSTRUCTIONS

• KFR-3502G/BPE

4.Remove the evaporator

1) Disconnect the evaporator and the other parts, take out the screws of the evaporator.

2) Remove the evaporator.



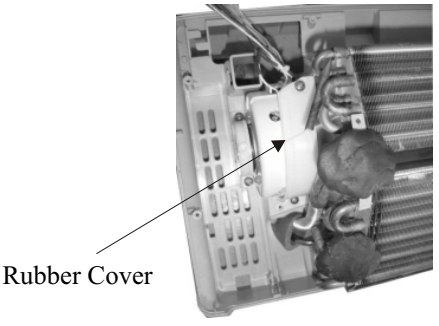
5. Remove the fan motor and the cross-flow fan

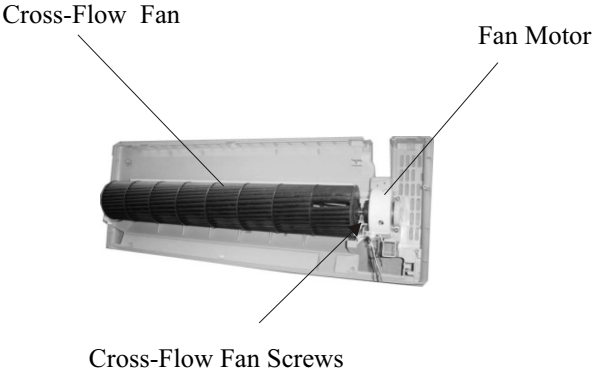
1) Take out the screw of the rubber cover and remove the rubber cover.

2) Remove the screw connecting the fan motor and the cross-flow fan.

3) Remove the fan motor and the bearing ass'y.

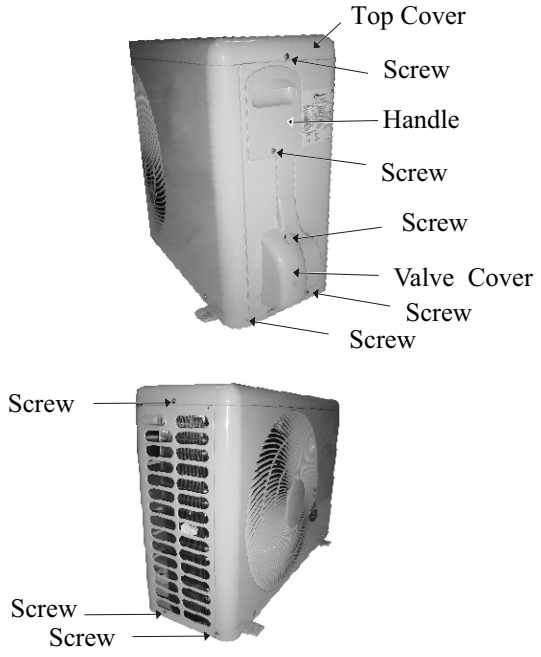
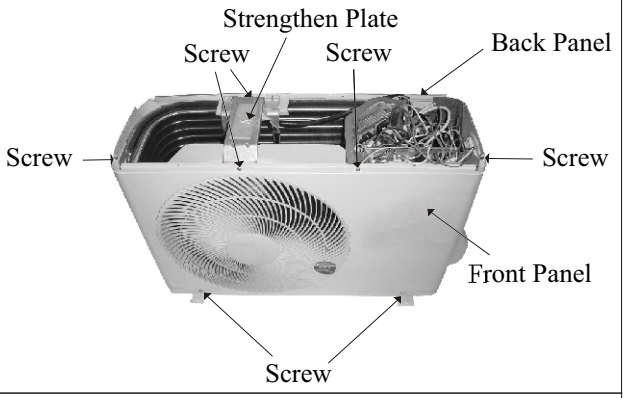
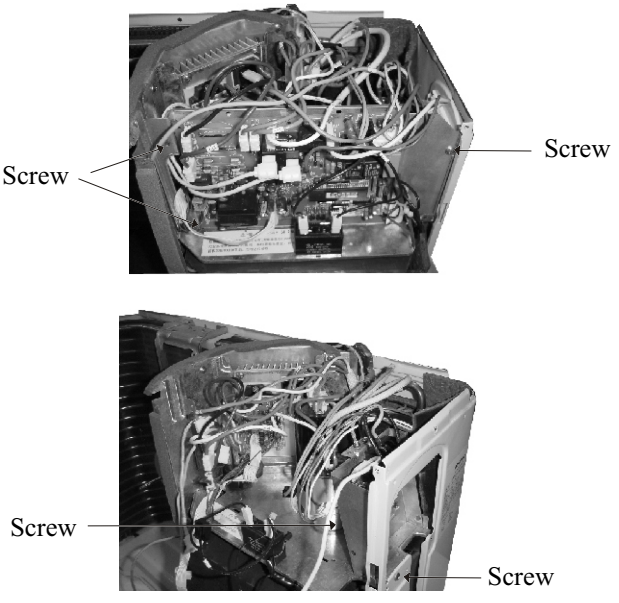
4) Remove the cross-flow fan.





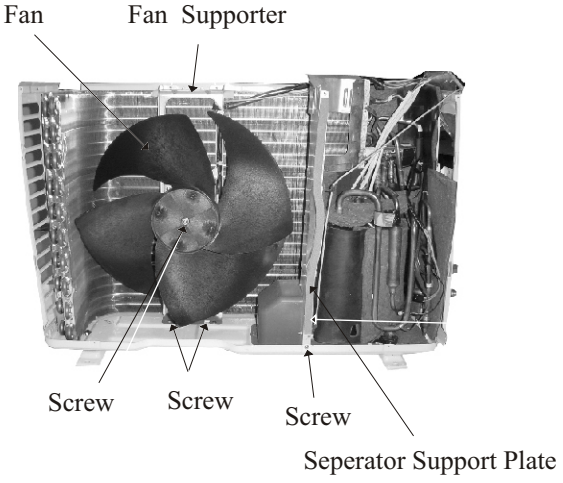
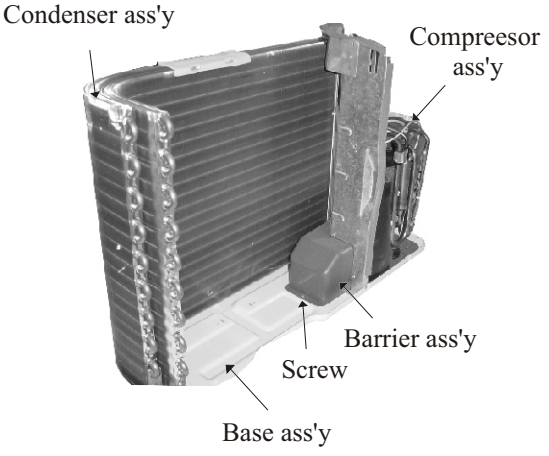
11. DISASSEMBLY INSTRUCTIONS

•KFR-3502W/BPE,KFR-3601W/BPE,KFR-4001W/BPE

OPERATION PROCEDURE	PHOTOS
1. Remove the top panel 1) Take out the screws of the top panel. 2) Remove the top panel.	
2. Remove the front panel 1) Take out the screws of the front panel. 2) Take out the screws of the strengthen plate and remove the strengthen plate. 3) Take out the screws of the electrical control box. 4) Remove the front panel.	
3. Remove the electrical control box 1) Take out the screws of the valve cover and remove the valve cover. 2) Take out the screws of the handle and remove the handle. 3) Disconnect the electrical control box and the other parts. 4) Take out the screws of the electrical control box. 5) Remove the electrical control box.	

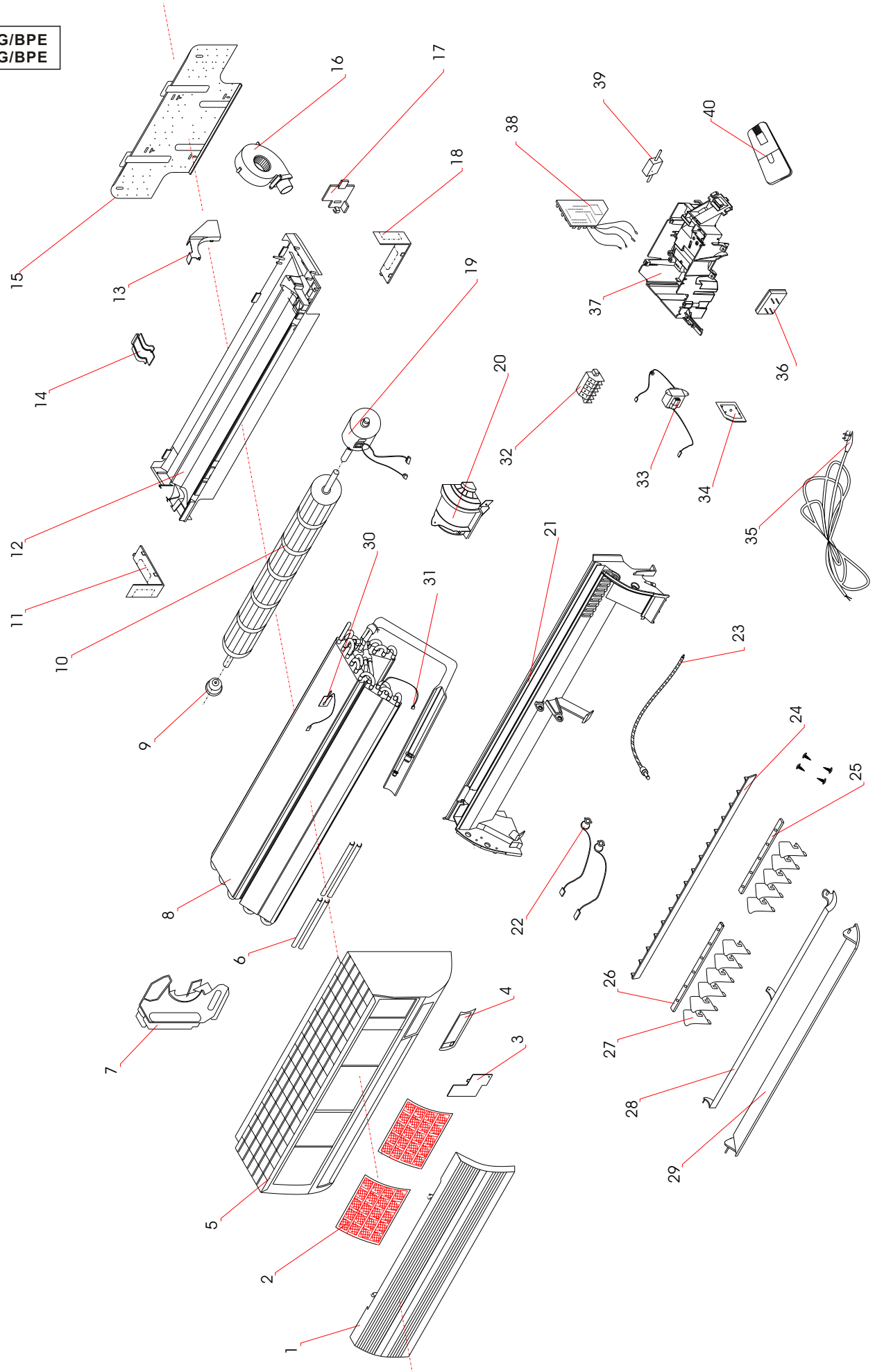
11. DISASSEMBLY INSTRUCTIONS

- **KFR-3502W/BPE,KFR-3601W/BPE,KFR-4001W/BPE**

4. Remove the back panel 1) Take out the screws of the back panel. 2) Remove the back panel.	
5.Remove the fan ,fan motor,fan supporter and the partition plate. 1) Take out the screws of the fan and remove the fan. 2) Take out the screws of the fan motor and remove the fan motor. 3) Take out the screws of the fan supporter and remove the fan supporter. 4) Take out the screws of the partition plate and remove the partition plate.	
6. Check-up the other parts of the outdoor units 1) Check-up the condenser ass'y. 2) Check-up the compreesor ass'y. 3) Check-up the barrier ass'y. 4) Check-up the base ass'y.	

12. PARTS LIST

KFR-3601G/BPE
KFR-4001G/BPE



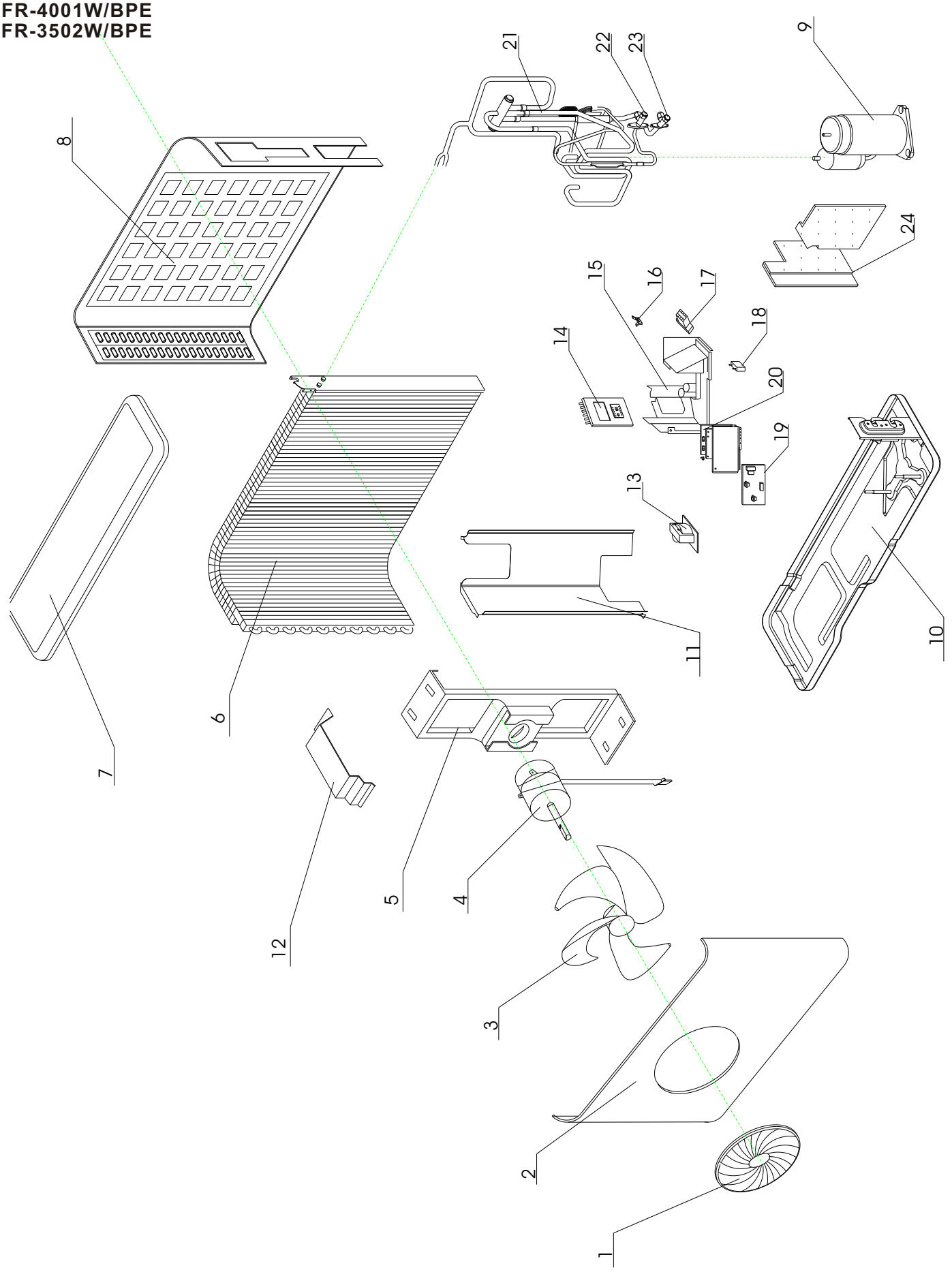
12. PARTS LIST

KFR-3601G/BP KFR-4001G/BP

Key NO.	Description	Quantity	Part NO.
1	Front Panel	1	RZA-2-1601-003-XX-0
2	Air Filter	2	RZA-0-2305-005-XX-0
3	Electrical Control Box cover	1	RZA-2-2369-006-XX-0
4	Display panel	1	RZA-0-2258-003-XX-
5	Grille	1	RZA-0-1501-004-XX-0
6	Water Plate	2	RZA-0-2326-102-XX-0
7	Evaporator Supporter	1	RZA-2-2219-014-XX-0
8	Evaporator Ass'y	1	RZA-0-0055-033-XX-0
9	Bearing Ass'y	1	RZA-0-2510-100-XX-0
10	Cross-Flow Fan Ass'y	1	RZA-0-2509-100-XX-0
11	Down Left Cover	1	RZA-2-2369-007-XX-0
12	Base Ass'y	1	RZA-0-2201-101-XX-0
13	Insulator Cover Ass'y	1	RZA-0-2209-016-XX-0
14	Mounting Plate		RZA-2-2478-100-XX-0
15	Installation Plate	1	RZA-2-2230-100-XX-0
16	Exchange Ass'y	1	RZA-0-2538-001-XX-0
17	Mounting Plate	1	RZA-2-2362-018-XX-0
18	Down Right Cover	1	RZA-2-2369-008-XX-0
19	Fan Motor	1	RZA-0-0000-046-XX-0
20	Motor Guard	1	RZA-0-2514-102-XX-0
21	Air Outlet Frame	1	RZA-0-1504-016-XX-0
22	Stepper Motor	2	RZA-0-0000-048-XX-0
23	Drainage Hose Ass'y	1	RZA-0-1303-100-XX-0
24	Vane Install Plate Ass'y	1	RZA-0-1514-011-XX-0
25	Short Vane Lever	1	RZA-2-1514-009-XX-0
26	Long Vane Lever	1	RZA-2-1514-013-XX-0
27	Vane	9	RZA-2-1519-003-XX-0
28	Down Flap	1	RZA-2-1523-005-XX-0
29	Up Flap	1	RZA-2-1523-004-XX-0
30	Sensor Bracket	1	852-2-5303-215-01-0
31	Indoor Coil Sensor	1	RZA-0-5259-051-XX-0
32	Terminal	1	RZA-0-5706-025-XX-0
33	Power Transformer	1	RZA-0-5263-022-XX-0
34	Transformer Fixing Plate	1	RZA-2-2222-008-XX-0
35	Power Cable	1	RZA-0-5250-035-XX-A
36	Display board	1	RZA-0-5172-146-XX-A
37	Electrical Control Box	1	RZA-0-5301-020-XX-0
38	Control Board	1	RZA-0-5172-145-XX-0
39	Switching Ass'y	1	RZA-0-5152-023-XX-A
40	Remote Controller	1	RZA-0-0054-044-XX-D

12. PARTS LIST

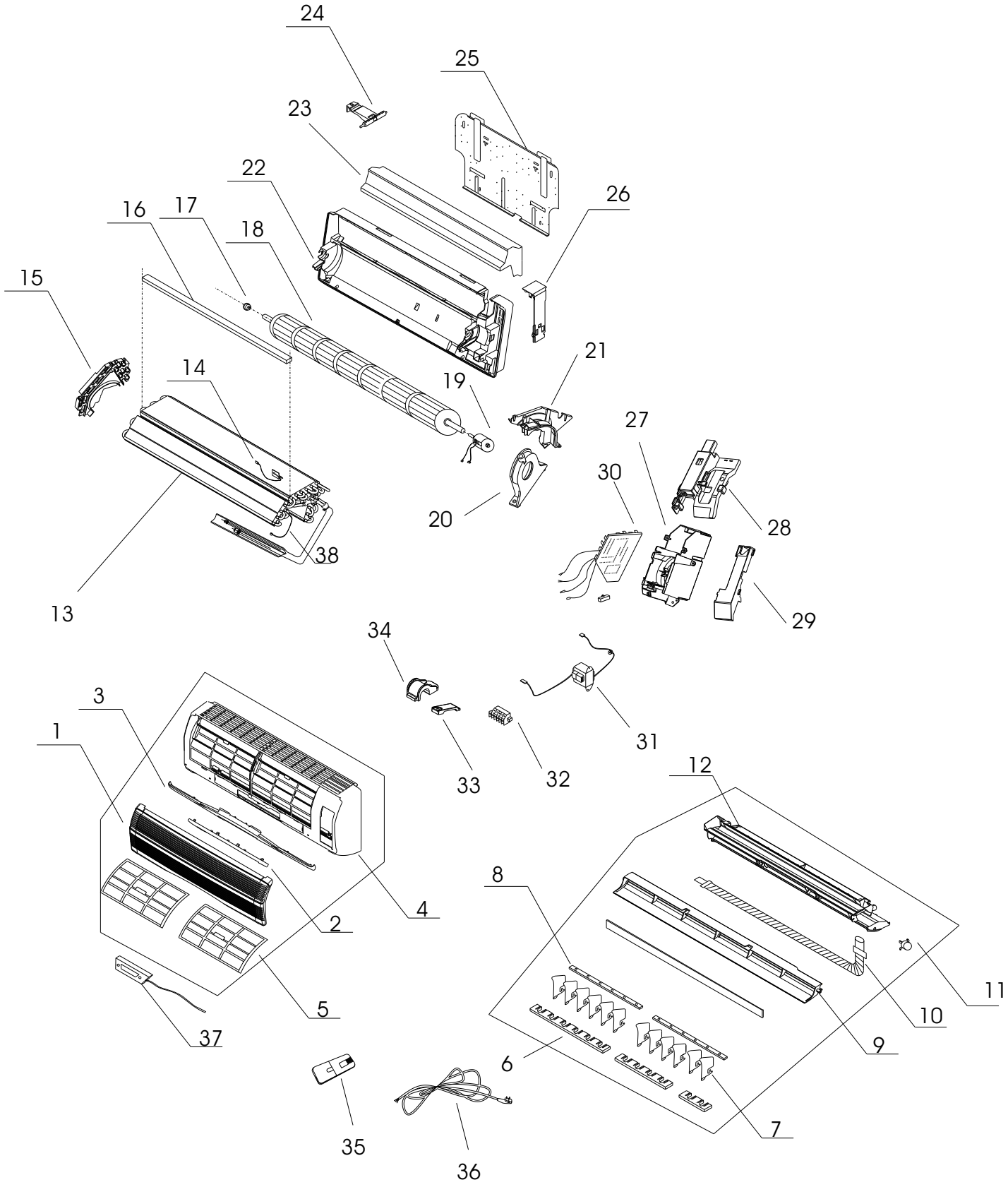
KFR-3601W/BPE
KFR-4001W/BPE
KFR-3502W/BPE



12. PARTS LIST

			KFR-3502W/BPE	KFR-3601W/BPE	KFR-4001W/BPE
Key NO.	Description	Part NO.	Q'ty	Q'ty	Q'ty
1	Fan Guard Ass'y	852-2-1321-156-01-0	1	1	1
2	Cabinet Ass'y	852-2-1112-241-01-0	1	1	1
3	Propeller Fan Ass'y	852-2-2502-136-01-0	1	1	1
4	Fan Motor	RZA-0-0000-031-XX-0	1	1	1
5	Mounting Plate Ass'y	852-2-2354-205-01-0	1	1	1
6	Condenser Ass'y	852-0-4102-076-00-0	1	1	1
7	Top Panel Ass'y	852-0-2309-152-00-0	1	1	1
8	Back Panel Ass'y	852-2-1120-247-01-0	1	1	1
9	Compressor Ass'y	RZA-0-4526-055-XX-0	1		
9	Compressor Ass'y	RZA-0-4526-050-XX-0		1	1
10	Bottom Plate Ass'y	RZA-0-2202-019-XX-0	1	1	1
11	Partition Plate Ass'y	852-0-2209-234-00-1	1	1	1
12	Strengthen Plate	852-2-2208-201-01-0	1	1	1
13	Inductance	RZA-0-2649-022-XX-0	1	1	1
14	IPM Board	RZA-0-5172-158-XX-0	1	1	1
15	Terminal Board	RZA-0-5306-026-XX-0	1	1	1
16	Fuse	4-2349-562-38-0	1	1	1
17	Angle Terminal Board	RZA-0-5306-026-XX-0	1	1	1
18	Fixed Capacitor	4-2239-561-61-2	1	1	1
19	Printed Electrical Board Ass'y	RZA-0-5172-253-XX-0	1		
19	Printed Electrical Board Ass'y	RZA-0-5172-147-XX-3		1	1
20	Printed Electrical Board Ass'y	RZA-0-5172-119-XX-0	1	1	1
21	Solenoid Valve Ass'y	RZA-0-4525-031-XX-0	1	1	1
22	1/4 Valve Ass'y	852-0-4515-250-00-0	1	1	1
23	1/2 Valve Assy	852-0-4501-878-00-0	1	1	1
24	Noise Defending Cover	852-2-2476-308-00-2	1	1	1

12. PARTS LIST



12. PARTS LIST

KFR-3502G/BPE

Key No.	Description	Part No.	Q'ty
1	Front Panel	RZA-2-1601-006-XX-0	1
2	Display Frame	RZA-2-2306-005-XX-0	1
3	ornament grille	RZA-2-1501-010-XX-0	1
4	Grille	RZA-2-1501-009-XX-0	1
5	Air Filter	RZA-0-2305-007-XX-0	2
6	Vane Plate	RZA-2-2478-102-XX-0	3
7	Vane	RZA-2-1523-015-XX-0	12
8	Vane Lever	RZA-2-1514-027-XX-0	2
9	Flap	RZA-2-1523-013-XX-0	1
10	Drainage Hose Ass'y	852-0-1303-221-XX-0	1
11	Stepper Motor	529-0-0000-062-0A-0	1
12	Air Outlet Frame	RZA-2-1504-022-XX-0	1
13	Evaporator Ass'y	RZA-0-4116-064-XX-0	1
14	Indoor Temperature Sensor	RZA-0-5259-051-XX-1	1
15	Evaporator Supporter	RZA-2-2219-019-XX-0	1
16	Water Plate	RZA-2-2326-105-XX-0	1
17	Bearing Housing Ass'y	RZA-0-2510-128-00-1	1
18	Cross-Flow Fan Ass'y	RZA-0-2509-104-XX-0	1
19	Fan Motor	RZA-0-0000-055-XX-0	1
20	Motor Supporter	RZA-2-1514-020-XX-0	1
21	Motor Cover	RZA-2-2514-104-XX-0	1
22	Base Ass'y	RZA-2-2201-104-XX-0	1
23	Base Foam	RZA-2-2405-022-XX-0	1
24	Mounting Plate	RZA-2-2487-005-XX-0	1
25	Installation Plate	RZA-2-2230-102-XX-0	1
26	Mounting Plate	RZA-2-2362-020-XX-0	1
27	Electrical Control Box	RZA-2-5301-028-XX-0	1
28	Electrical Control Box cover	RZA-2-2369-013-XX-0	1
29	Electrical Control Box cover	RZA-2-2369-014-XX-0	1
30	PCB	RZA-0-5177-014-XX-0	1
31	Power Transformer	RZA-0-5263-022-XX-0	1
32	Terminal	RZA-0-5306-041-XX-0	1
33	Connection Cable Clip	RZA-0-5304-017-XX-0	1
34	Power Cable Clip	RZA-0-5304-016-XX-0	1
35	Remote Controller	RZA-0-0054-054-XX-0	1
36	Power Wire	RZA-0-5150-035-XX-0	1
37	Display Ass'y	RZA-0-5172-219-XX-0	1
38	Indoor Coil Sensor	RZA-0-5259-050-XX-0	1