

# CATALOGUE

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Item		Model	KF-70DW	KFR-70DW	KF-120DW/S	KFR-120DW/S
Cooling Capacity		Btu	24000	24000	41000	41000
Heating Capacity		Btu	/	25600	/	44300
Power supply			220V~50Hz		3N~50Hz 380V	
Power cable capacity		A	30	30	20	20
Cooling	Power input	W	2580	2700	4300	4300
	Running current	A	12.0	12.6	9.2	9.2
	EER	W/W	2.71	2.59	2.79	2.79
Heating	Power input	W	/	2400	/	4200
	Running current	A	/	11.5	/	9.0
	COP	W/W	/	3.12	/	3.09
Indoor Unit	Colour		White	White	White	White
	Control method		Remote controller	Remote controller	Remote controller	Remote controller
	Air volume(H)	m <sup>3</sup> /h	1700	1700	2000	2000
	Fan speed(H/M/S)	rmp	1000/900/800	1000/900/800	1000/900/800	1000/900/800
	Fan motor output power x qty	W	60X1	60X1	80X1	80X1
	Subsidiary electric heating	W	/	/	/	/
	Noise level	dB(A)	≤50	≤50	≤52	≤52
	Size of draining hose	mm	φ25	φ25	φ25	φ25
	Dimension	mm	1300X670X250	1300X670X250	1680X670X250	1680X670X250
	Weight	kg	40	40	42	42
Out- door Unit	Colour		White	White	White	White
	Throttle device		Capiuary throttle	Capiuary throttle	Capiuary throttle	Capiuary throttle
	Compressor type		Rotary	Rotary	Scroll compressor	Scroll compressor
	Compressor model		PH420/SHV33	PH420/SHV33	VR57KF-TFP-542	VR57KF-TFP-542
	Power input	W	2380	2380	4300	4300
	Starting current	A	60	60	64	64
	Running capacitor	μ F	50/50	50/50	40	40
	Fan speed	rpm	830	830	880	880
	Fan motor output power x qty	W	70X1	70X1	200X1	200X1
	Defrosting method		/	Sensor defrost	/	Sensor defrost
	Noise level	dB(A)	≤60	≤60	≤64	≤64
	Dimension	mm	920X375X730	920X375X730	1000X410X960	1000X410X960
Weight	kg	59	61	93	93	
Refrig- erant	Type		R22	R22	R22	R22
	Refrigerant charged	g	2200	2200	3800	3800
Conne- cting piping	Liquid pipe	mm	φ9.52	φ9.52	φ9.52	φ9.52
	Gas pipe	mm	φ15.88	φ15.88	φ19.05	φ19.05
	Standard length	m	4	4	5	5
	Max.length	m	15	15	20	20
	Max.altitude difference	m	7	7	10	10

① Rated cooling capacity under below conditions:

Indoor temp:27℃DB, 19℃WB; Outdoor temp:35℃DB, 24℃WB.High speed; 4-meter connecting pipe.

② Rated heating capacity under below conditions:

Indoor temp:20℃DB;Outdoor temp:7℃DB, 6℃WB.High speed; 4-meter connecting pipe.

③ We get the noise under heating mode meantime.The fan runs at high speed.

④ Technical data is determined by the label data .

Item		Model	KF-140DW/S	KFR-140DW/S
Cooling Capacity		Btu	14000	14000
Heating Capacity		Btu	/	15000
Power supply			3N~50Hz 380V	
Power cable capacity		A	20	20
Cooling	Power input	W	4800	4800
	Running current	A	9.9	9.9
	EER	W/W	2.92	2.92
Heating	Power input	W	/	4200
	Running current	A	/	10.0
	COP	W/W	/	3.06
Indoor Unit	Colour		White	White
	Control method		Remote controller	Remote controller
	Air volume(H)	m <sup>3</sup> /h	2000	2000
	Fan speed(H/M/S)	rmp	1000/900/800	1000/900/800
	Fan motor output power x qty	W	80X1	80X1
	Subsidiary electric heating	W	/	/
	Noise level	dB(A)	≤54	≤54
	Size of draining hose	mm	φ 25	φ 25
	Dimension	mm	1680X670X250	1680X670X250
	Weight	kg	42	42
Out -door Unit	Colour		White	White
	Throttle device		Capiuary throttle	Capiuary throttle
	Compressor type		Scroll compressor	Scroll compressor
	Compressor model		VR57KF-TFP-542	VR57KF-TFP-542
	Power input	W	4600	4600
	Starting current	A	60	60
	Running capacitor	μ F	/	/
	Fan speed	rpm	800	800
	Fan motor output power x qty	W	70X2	70X2
	Defrosting method		/	Sensor defrost
	Noise level	dB(A)	≤65	≤65
	Dimension	mm	980X370X1325	980X370X1325
	Weight	kg	122	122
Refrig-erant	Type		R22	R22
	Refrigerant charged	g	4000	4000
Conne-cting piping	Liquid pipe	mm	φ 9.52	φ 9.52
	Gas pipe	mm	φ 19.05	φ 19.05
	Standard length	m	5	5
	Max.length	m	20	20
	Max.altitude difference	m	10	10

① Rated cooling capacity under below conditions:

Indoor temp:27℃DB, 19℃WB; Outdoor temp:35℃DB, 24℃WB.High speed; 4 -meter connecting pipe.

② Rated heating capacity under below conditions:

Indoor temp:20℃DB;Outdoor temp:7℃DB, 6℃WB.High speed; 4 -meter connecting pipe.

③ We get the noise under heating mode meantime.The fan runs at high speed.

④ Technical data is determined by the label data .

# Technical specifications

R407C

Item		Model	KF-70DW	KFR-70DW	KF-120DW/S	KFR-120DW/S	
Cooling Capacity		Btu	24000	24000	41000	41000	
Heating Capacity		Btu	/	25600	/	44300	
Power supply			220V~50Hz		3N~50Hz	380V	
Power cable capacity		A	30	30	20	20	
Cooling	Power input	W	2720	2720	5150	5150	
	Running current	A	13.2	13.2	8.8	8.8	
	EER	W/W	2.57	2.57	2.33	2.33	
Heating	Power input	W	/	2480	/	5100	
	Running current	A	/	12.2	/	8.8	
	COP	W/W	/	3.02	/	2.55	
Indoor	Colour		White	White	White	White	
	Control method		Remote controller	Remote controller	Remote controller	Remote controller	
	Air volume(H)	m <sup>3</sup> /h	1700	1700	2000	2000	
	Fan speed(H/M/S)	rmp	1000/900/800	1000/900/800	1000/900/800	1000/900/800	
	Fan motor output power x qty	W	60X1	60X1	80X1	80X1	
Unit	Subsidiary electric heating	W	/	/	/	/	
	Noise level	dB(A)	≤50	≤50	≤52	≤52	
	Size of draining hose	mm	φ 25	φ 25	φ 25	φ 25	
	Dimension	mm	1300X670X250	1300X670X250	1680X670X250	1680X670X250	
	Weight	kg	40	40	42	42	
Out-door	Colour		White	White	White	White	
	Throttle device		Capiuary throttle	Capiuary throttle	Capiuary throttle	Capiuary throttle	
	Compressor type		Rotary	Rotary	Scroll compressor	Scroll compressor	
	Compressor model		PG420/CHV33	PG420/CHV33	C-SBN353H8A	C-SBN353H8A	
	Power input	W	2550	2550	4950	4950	
	Starting current	A	60	60	50	50	
	Running capacitor	μ F	50	50	/	/	
	Unit	Fan speed	rpm	830	830	880	880
		Fan motor output power x qty	W	70X1	70X1	200X1	200X1
		Defrosting method		/	Sensor defrost	/	Sensor defrost
		Noise level	dB(A)	≤60	≤60	≤64	≤64
		Dimension	mm	920X375X730	920X375X730	1000X410X960	1000X410X960
Weight	kg	59	61	93	93		
Refrigerant	Type		R407C	R407C	R407C	R407C	
	Refrigerant charged	g	2230	2230	3400	3400	
Connecting piping	Liquid pipe	mm	φ 9.52	φ 9.52	φ 9.52	φ 9.52	
	Gas pipe	mm	φ 15.88	φ 15.88	φ 19.05	φ 19.05	
	Standard length	m	4	4	5	5	
	Max.length	m	15	15	20	20	
	Max.altitude difference	m	7	7	10	10	

- ① Rated cooling capacity under below conditions:  
Indoor temp:27℃DB, 19℃WB; Outdoor temp:35℃DB, 24℃WB.High speed; 4-meter connecting pipe.
- ② Rated heating capacity under below conditions:  
Indoor temp:20℃DB;Outdoor temp:7℃DB, 6℃WB.High speed; 4-meter connecting pipe.
- ③ We get the noise under heating mode meantime.The fan runs at high speed.
- ④ Technical data is determined by the label data .



Item		Model	KF-140DW/S	KFR-140DW/S
Cooling Capacity		Btu	48000	48000
Heating Capacity		btu	/	51000
Power supply			3N~50Hz 380V	
Power cable capacity		A	20	20
Cooling	Power input	W	5300	5300
	Running current	A	9.1	9.1
	EER	W/W	2.64	2.64
Heating	Power input	W	/	5200
	Running current	A	/	8.9
	COP	W/W	/	2.88
Indoor Unit	Colour		White	White
	Control method		Remote controller	Remote controller
	Air volume(H)	m <sup>3</sup> /h	2000	2000
	Fan speed(H/M/S)	rmp	1000/900/800	1000/900/800
	Fan motor output power x qty	W	80X1	80X1
	Subsidiary electric heating	W	/	/
	Noise level	dB(A)	≤54	≤54
	Size of draining hose	mm	φ 25	φ 25
	Dimension	mm	1680X670X250	1680X670X250
Weight	kg	42	42	
Out-door Unit	Colour		White	White
	Throttle device		Capiuary throttle	Capiuary throttle
	Compressor type		Scroll compressor	Scroll compressor
	Compressor model		C-SBN373H8A	C-SBN373H8A
	Power input	W	5150	5150
	Starting current	A	50	50
	Running capacitor	μ F	/	/
	Fan speed	rpm	800	800
	Fan motor output power x qty	W	70X2	70X2
	Defrosting method		/	Sensor defrost
	Noise level	dB(A)	≤65	≤65
	Dimension	mm	980X370X1325	980X370X1325
	Weight	kg	122	122
Refrigerant	Type		R407C	R407C
	Refrigerant charged	g	3600	3600
Connecting piping	Liquid pipe	mm	φ 9.52	φ 9.52
	Gas pipe	mm	φ 19.05	φ 19.05
	Standard length	m	5	5
	Max.length	m	20	20
	Max.altitude difference	m	10	10

① Rated cooling capacity under below conditions:

Indoor temp:27℃DB, 19℃WB; Outdoor temp:35℃DB, 24℃WB.High speed; 4 -meter connecting pipe.

② Rated heating capacity under below conditions:

Indoor temp:20℃DB;Outdoor temp:7℃DB, 6℃WB.High speed; 4 -meter connecting pipe.

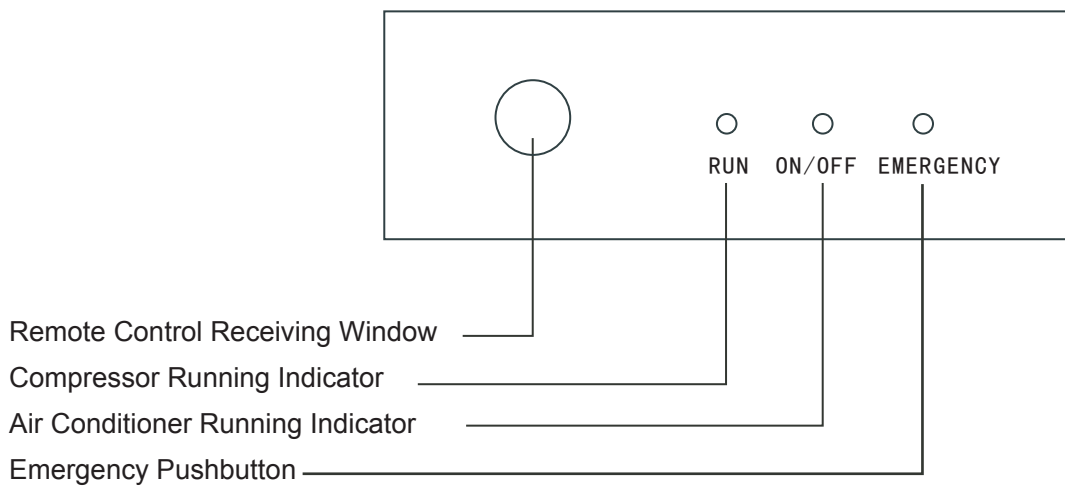
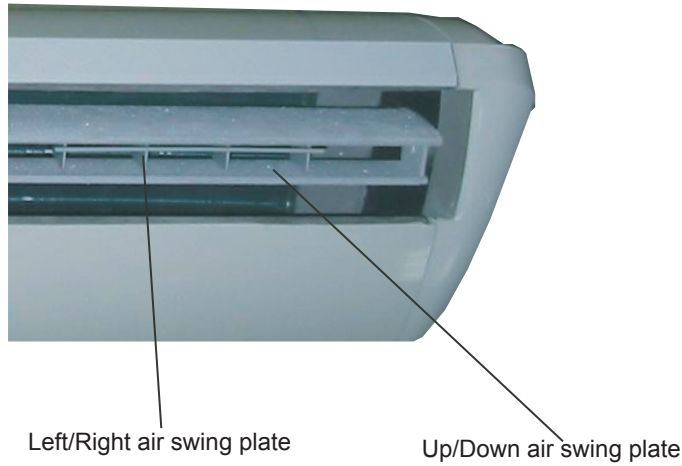
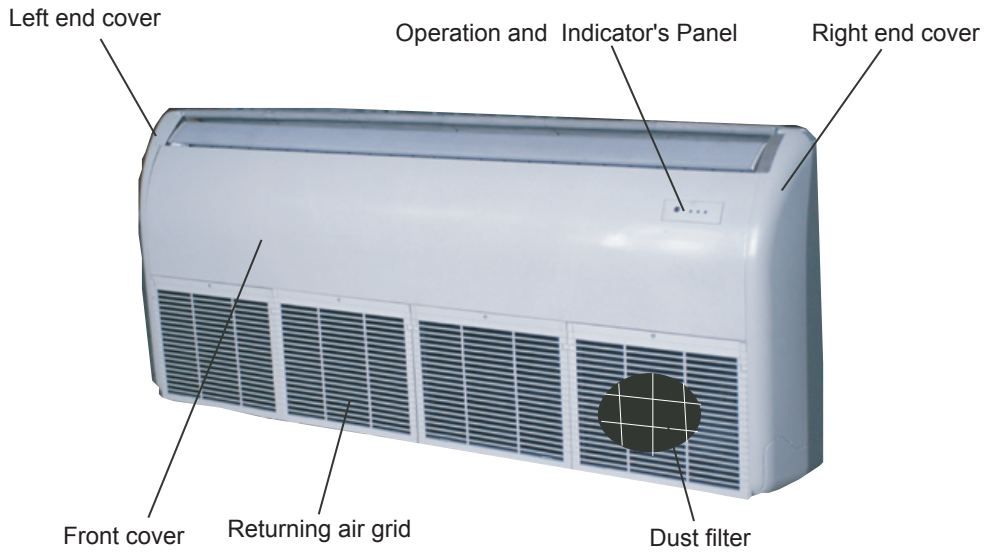
③ We get the noise under heating mode meantime.The fan runs at high speed.

④ Technical data is determined by the label data .

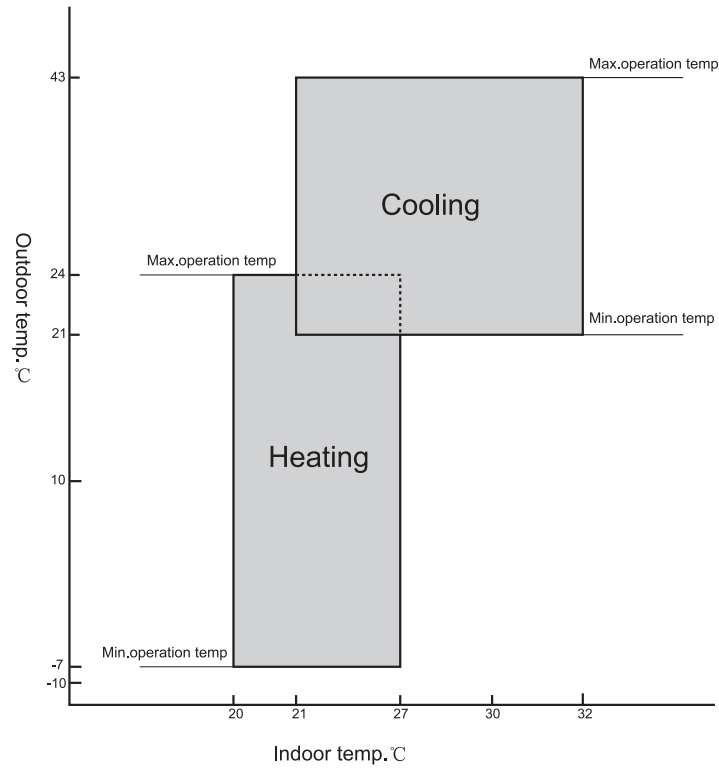
# Main parts list

models name of parts	24000Btu	41000Btu	48000Btu
Indoor unit			
Fan motor	YSK120-60-4C 220V 50Hz	YSK120-80-4C 220V 50Hz	YSK120-80-4C 220V 50Hz
Step motor	35BYJ46 12VDC	35BYJ46 12VDC	35BYJ46 12VDC
Fan capacitor	CBB61 2.5/3.0 $\mu$ F/450V	CBB61 4 $\mu$ F/450V	CBB61 4 $\mu$ F/450V
Indoor temp. sensor Evaporator temp.sensor	R25=5.0K $\Omega$ B25/50=3470K	R25=5.0K $\Omega$ B25/50=3470K	R25=5.0K $\Omega$ B25/50=3470K
Fuse	AC250V 5A	AC250V 5A	AC250V 5A
Transformer	DB-25-A INPUT:AC220V/50Hz OUTPUT:14.5V/9VA	DB-25-A INPUT:AC220V/50Hz OUTPUT:14.5V/9VA	DB-25-A INPUT:AC220V/50Hz OUTPUT:14.5V/9VA
Outdoor unit			
Fan motor	YDK120/30-6T 220V 50Hz	YDK140-200/6A 220V 50Hz	YDK120/30-6D 220V 50Hz
Fan capacitor	CBB61 4 $\mu$ F/450V	CBB61 10 $\mu$ F/450V	CBB61 4 $\mu$ F/450V
Evaporator temp.sensor	R25=5.0K $\Omega$ B25/50=3470K	R25=5.0K $\Omega$ B25/50=3470K	R25=5.0K $\Omega$ B25/50=3470K
Compressor relay	JQX-116F-2 COIL 12VDC 25A	/	/
Contactors	/	GC3-12/22(CJX1-12/22) 220V 50Hz 12A	GC3-12/22(CJX1-12/22) 220V 50Hz 12A
R22			
Compressor	PH420/SHV33	VR57KF-TFP	VR57KF-TFP
4-way valve	DHF-9	DHF-20	DHF-20
R capacitor	CBB65 50/50 $\mu$ F/450V	/	/
R407C			
Compressor	PG420/CHV33	C-SBN353H8A	C-SBN373H8A
4-way valve	DHF-9	DHF-20	DHF-20
R capacitor	CBB65 50/50 $\mu$ F/450V	/	/
R410A			
Compressor	PA290	/	/
4-way valve	DHF-9	/	/
R capacitor	CBB65 50 $\mu$ F/450V	/	/

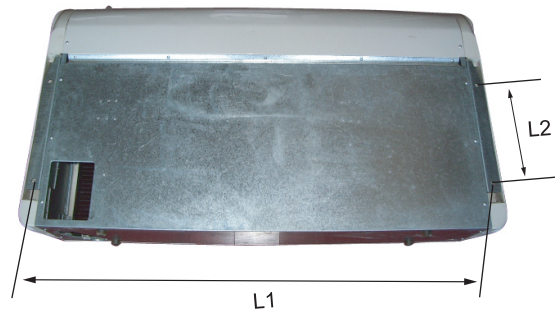
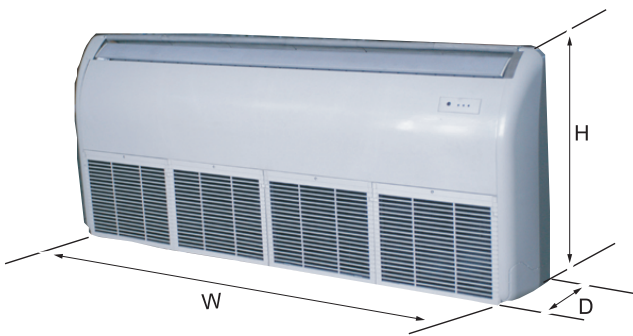
# Indoor unit



# Working range



# Indoor unit

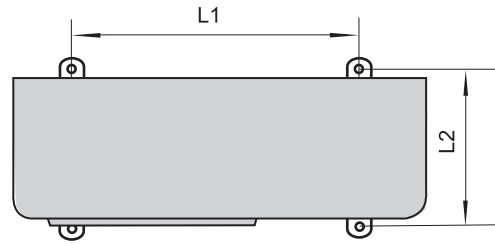
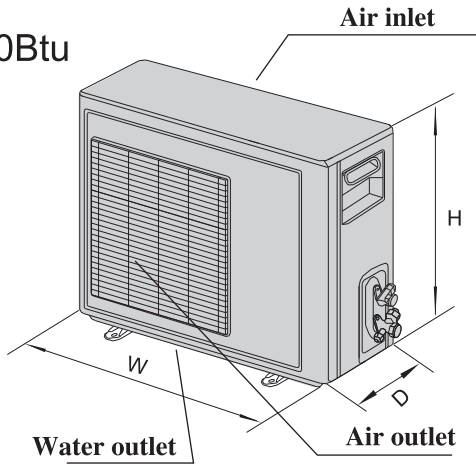


Dimension	24000Btu	41000/48000Btu
W	1300	1680
H	670	670
D	240	240
L1	1190	1570
L2	280	280

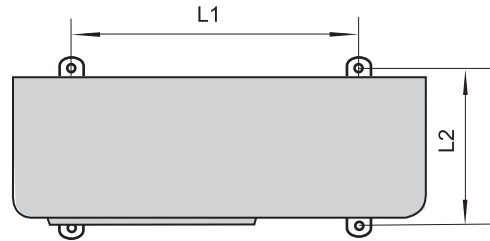
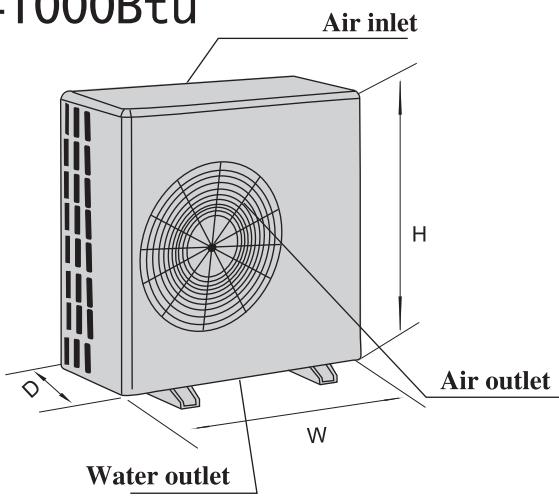
# Outdoor unit



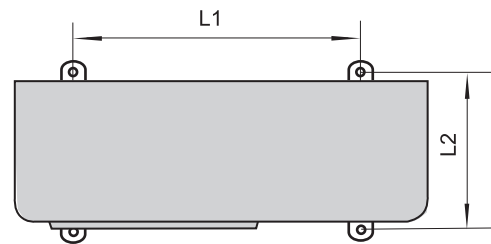
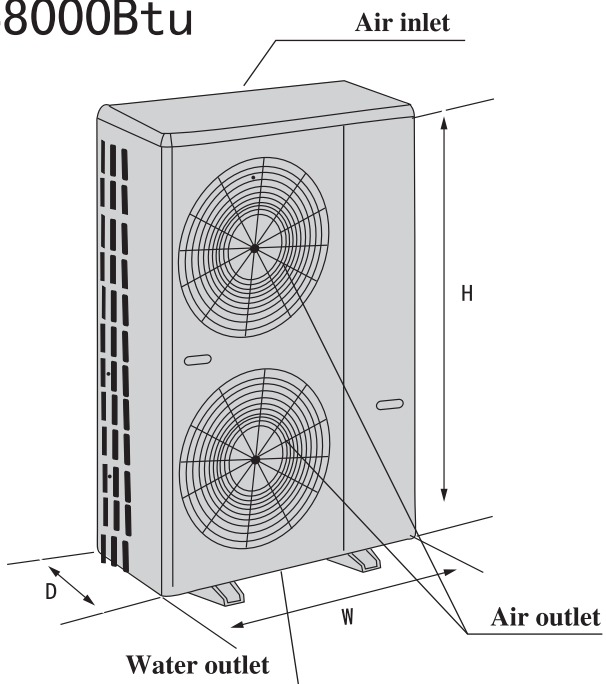
24000Btu



41000Btu

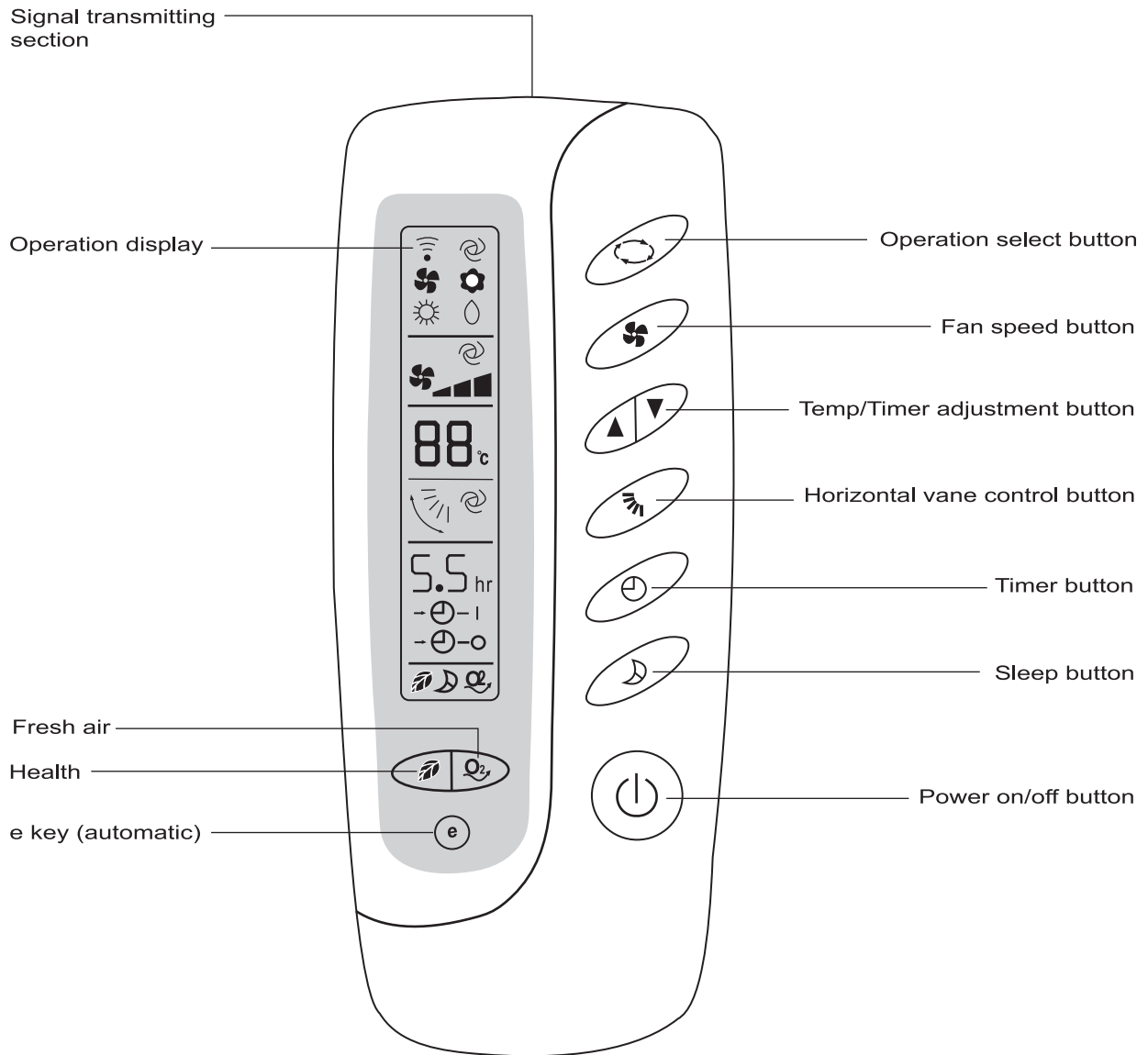


48000Btu



Dimension	24000Btu	41000Btu	48000Btu
W	860	980	980
H	730	1000	1325
D	310	410	370
L1	630	670	630
L2	340	380	380

# Remote controller

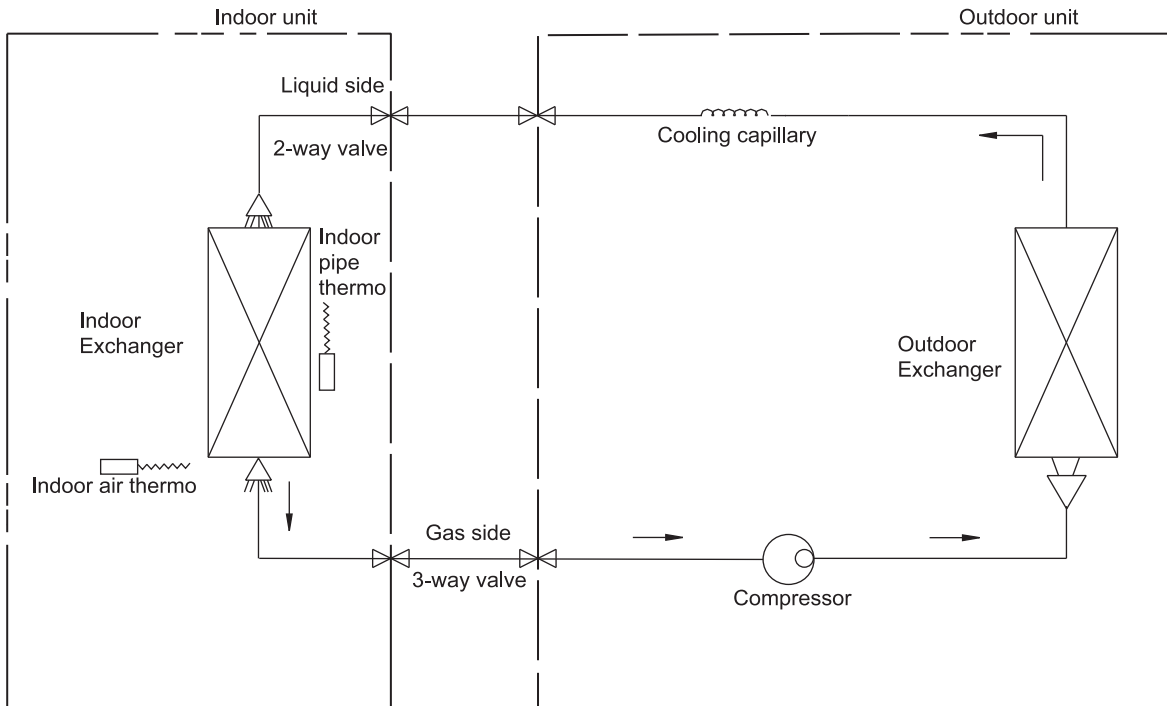


**Note:**Health button and fresh air button is optional,if air condition without these functions, these two button are invalid.

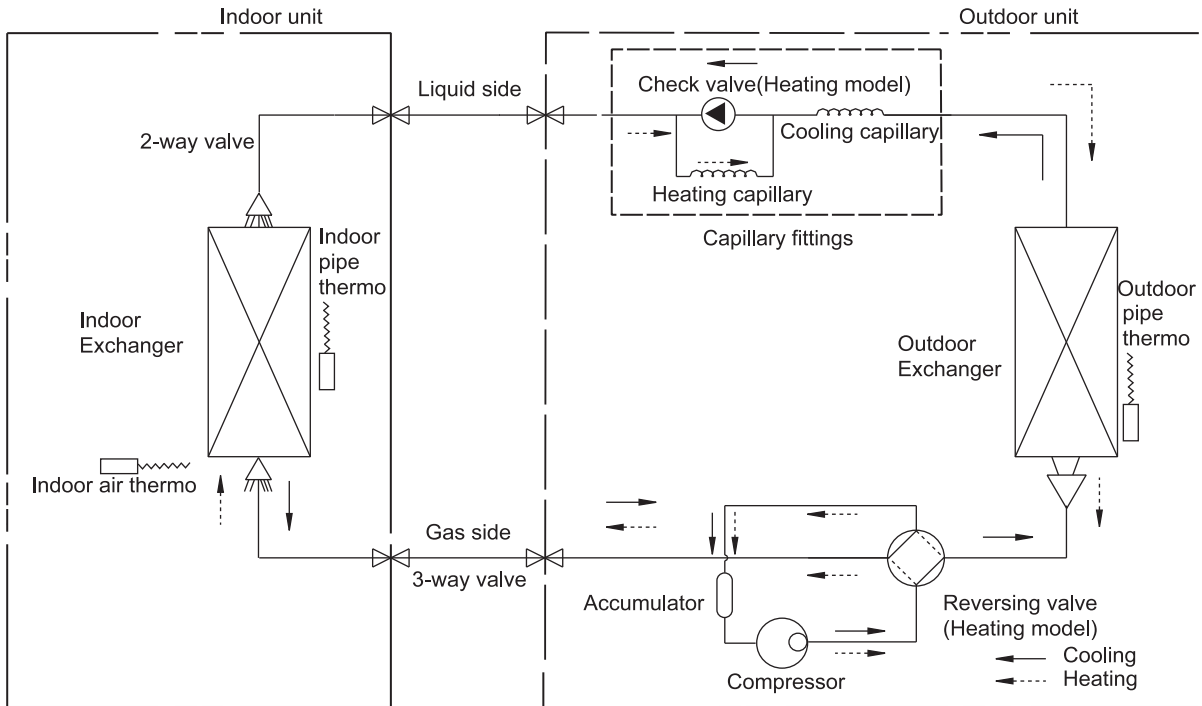
# Refrigeration cycle diagram



## COOLING ONLY MODELS



## COOLING AND HEATING MODELS



# System control elements

Attention: RT means room temperature; ST means setting temperature; IPT means indoor pipe temperature; EPT means extra-ventricular pipe temperature.

Operation modes selection: four operation modes involve AUTO, COOLING, DRY, HEATING (FAN). After pressing the mode button, the circular work describes as follow chart (cooling only unit)

AUTO → COOLING → DRY → HEATING(FAN) → AUTO

## 1、 Automatic operation

The range of setting and controlling temperature is 16~31°C. After entering the auto mode according to the room temperature on that time the unit will choose the mode of cooling, dry or heating (fan).

When  $RT > 25^{\circ}\text{C}$ , it starts cooling and its first setting temperature is 24°C.

When  $20^{\circ}\text{C} \leq RT \leq 25^{\circ}\text{C}$ , it starts drying without any setting temperature.

When  $RT < 20^{\circ}\text{C}$ , it starts heating (fan) and its first setting temperature is 21°C.

## 2、 Cooling operation

(1)、 The range of setting and controlling temperature is from 16~31°C. At that time the four-valve doesn't work all the time, furthermore, the compressor starts to work under the condition of three minutes self-protection.

A、 When  $RT \leq ST - 1^{\circ}\text{C}$ , the compressor and the outdoor motor stop operating at the same time while the indoor unit and the eliminating vane start to work on the base of setting estate.

B、 When  $ST - 1^{\circ}\text{C} < RT < ST + 1^{\circ}\text{C}$ , compressor, outdoor motor, indoor motor and eliminating vane start to operate on the base of original estate.

C、 When  $RT \geq ST + 1^{\circ}\text{C}$ , compressor, outdoor motor, indoor motor and eliminating vane start to work on the base of setting estate.

D、 Indoor unit control: the indoor unit changes into AUTO, LOW, MEDIUM, HIGH through setting remote controller.

E、 Eliminating vane control: the eliminating vane operation is set up by SWING button.

### (2)、 Anti-frost function:

Under the mode of cooling and dry, when  $IPT \leq 2^{\circ}\text{C}$ , indoor motor turns into high speed automatically. If  $IPT < -1^{\circ}\text{C}$  after compressor starts, compressor and outdoor motor will close up. When  $IPT \geq 6^{\circ}\text{C}$ , unit will resume cooling.

## 3、 Dry operation

A、 When entering the mode of dry, the setting temperature can't display.

B、 Indoor unite keeps low speed forever.

C、 The compressor and outdoor unit keep operating in 8 minutes, then, keep stopping in 3 minutes. When compressor is operating, indoor keeps working in low speed at the same time. When the compressor turns off, the indoor unit delays off in 10 seconds.

The four-valve keep stopping all the time, and the compressor starts to work under the condition of three minutes protection.



- (1)、When  $RT < 15^{\circ}\text{C}$ , dry mode cannot be in the estate of operation.
- (2)、The mode of controlling eliminating van is the same as the mode of cooling.

#### 4、Heating operation

A、The range of setting and controlling temperature is  $16\sim 31^{\circ}\text{C}$ .

B、Four valve keeps open.

(1)、When  $RT \leq ST - 1^{\circ}\text{C}$ , compressor, four-valve and outdoor motor start to operate and indoor unit also start work in the condition of resistance cooling.

(2)、When  $RT \leq ST + 1^{\circ}\text{C}$ , compressor, outdoor motor stop working, indoor unit start working according to 4(5) and the four-valve keep operating in original state.

(3)、When  $ST - 1^{\circ}\text{C} < RT < ST + 1^{\circ}\text{C}$ , compressor, outdoor motor and indoor unit keep operating in original state.

(4)、Resistance cooling

In the process of the temperature rising for the inner pipe, the indoor unit's operation

state is decided by the temperature of inner pipe in order to avoid cool making people feeling uncomfortable. When  $RT \geq 20^{\circ}\text{C}$ , please set up the fan speed operation(no this condition over 24000btu); when  $RT < 20^{\circ}\text{C}$ , unit operates as follow that:

A、When  $IPT < 22^{\circ}\text{C}$ , indoor unit cannot work.

B、When  $22^{\circ}\text{C} \leq IPT \leq 28^{\circ}\text{C}$ , compressor operates in 2 minutes, indoor unit start operating in low speed.

C、When  $28^{\circ}\text{C} \leq IPT \leq 35^{\circ}\text{C}$ , indoor unit is set up in low and medium fan.

D、When  $IPT > 35^{\circ}\text{C}$ , indoor unit operates through setting fan speed.

E、Once complete setting, fan speed cannot decrease.

(5)、Afterheat function

In the process of heating, under the circumstances of close compressor, indoor unit's operation state is decided by temperature of inner pipe in order to make use of afterheat in the inner pipe.

a. When compressor stops,  $IPT < 35^{\circ}\text{C}$  turns into low speed operation state.

b. When compressor stops 1 minute or  $IPT \leq 26^{\circ}\text{C}$ , indoor unit stops operating.

(6)、Heating burthen protection

In the process of the temperature rising for the inner pipe, when  $IPT \geq 50^{\circ}\text{C}$ , fan speed rises up to high to prevent heating burthen

NO.	Setting fan speed or Auto fan speed	Fan speed anti-over load
1	H	H
2	M	H
3	L	H

If IPT begin to decrease, when  $IPT \leq 45^{\circ}\text{C}$ , indoor unit resume normal fan speed; if

IPT continue rising, when  $IPT > 52^{\circ}\text{C}$ , close the outdoor unit. After above-mentioned

A、 If temperature of inner pipe begin to decrease, when  $IPT \leq 48^{\circ}\text{C}$ , outdoor resume operation.

B、 If temperature of inner pipe rises, when  $IPT > 62^{\circ}\text{C}$ , compressor running 4 minutes later, the compressor not running, the signal indicator is blinking 4 times every 8 seconds. When  $IPT \leq 42^{\circ}\text{C}$  and compressor for 3 minutes delaying condition has disappeared, heating will resume normal operation.

(7)、 Defrost operation

Outdoor sensor defrosts.

Start conditions (all must be satisfied):

A、 Compressor start to work in 20 minutes later.

B、 Accumulative working time for compressor need 50 minutes.

C、  $EPT < -5^{\circ}\text{C}$

Period of defrosting: when beginning to defrost, indoor unit compressor and outdoor motor keep static firstly, 50 seconds later, four-valve closes up; 10 seconds later again, compressor start to work and defrost.

End conditions (one of them need satisfying):

A、 Defrosting need 8 minutes.

B、  $EPT > 10^{\circ}\text{C}$ .

After the end of defrosting, compressor stops and outdoor motor starts; 50 seconds later, four valve starts; 10 seconds later again, compressor also starts and the air-conditioner resumes heating operation normally.

## 5、 Air-flow operation

Outdoor unit cannot operate in the state of air-flow. Indoor unit can operate according to the remote setting.

## 6、 Drain automatically

Under the mode of cooling and dry, pump keeps operation with compressor at the same time.

Under heating mode, the pump don't start to operate, but when defrosting, pump and compressor must be set at the same time, then 5 minutes later they will close.

The pump doesn't need start in mode of air-flow.

## 7、 Sleeping function

After we set up sleeping function, fan will turn into low speed state.

(1)、 Under the cooling mode, after setting up sleeping for 1 hour while temperature setting is also risen by  $1^{\circ}\text{C}$ . Furthermore, 2 hours later please set up  $1^{\circ}\text{C}$  higher again.

(2)、 Under the heating mode, after setting up sleeping for 1 hour while temperature setting is also decreased by  $1^{\circ}\text{C}$ . Furthermore, 2 hours later please set up  $2^{\circ}\text{C}$  lower again.

(3)、 In 8 hours later the sleeping function will cancel by itself, then it will enter the original operation state.

## 8、 Abnormal system checking

After compressor keeps operating for 5 minutes, if  $|RT - IPT| \leq 3^{\circ}\text{C}$  and last for 5 minutes, compressor and outdoor motor will stop working. 3 minutes later, they will resume to operate again. If above mentioned condition turns up again, it's wrong with the system. The signal indicator will be blinking 3 times every 8 seconds.

## 9、 Timer

### (1)、 Timer on

Time on is set by clock whose LCD displayed in remote controller.

The unit begins to work on setting time. Before timer on reaches, if the unit turns on in hand, timer on function will be canceled. Under the operation state, if choose the timer on function, the unit will stop working firstly, then start at the time setting again. If under the state of close, the unit will starts automatically on setting time.

### (2)、 Timer off

Time off is set by clock whose LCD displayed in remote controller.

The unit stops working on setting time. Before timer off reaches, if the unit turns off in hand, timer off function will be canceled. Under the close state, if choose the timer off function, the function have no effect on the unit. If under the state of operation, the unit will turn off automatically on setting time.

## 10、 Protection for sensor malfunction

### (1)、 Indoor temp sensor suffers from malfunction

After we connect electric resource but no turning on unit, the signal indicator is blinking 1 time every 8 seconds.

### (2)、 Inner pipe suffers from malfunction

After we connect electric resource but no turning on unit, the signal indicator is blinking 2 times every 8 seconds.

## 11、 Delaying operation protection for compressor

Making this function aims at protecting compressor.

(1)、 The close state changing to operation state for compressor in any condition except defrosting needs 3 minutes delaying to restart again.

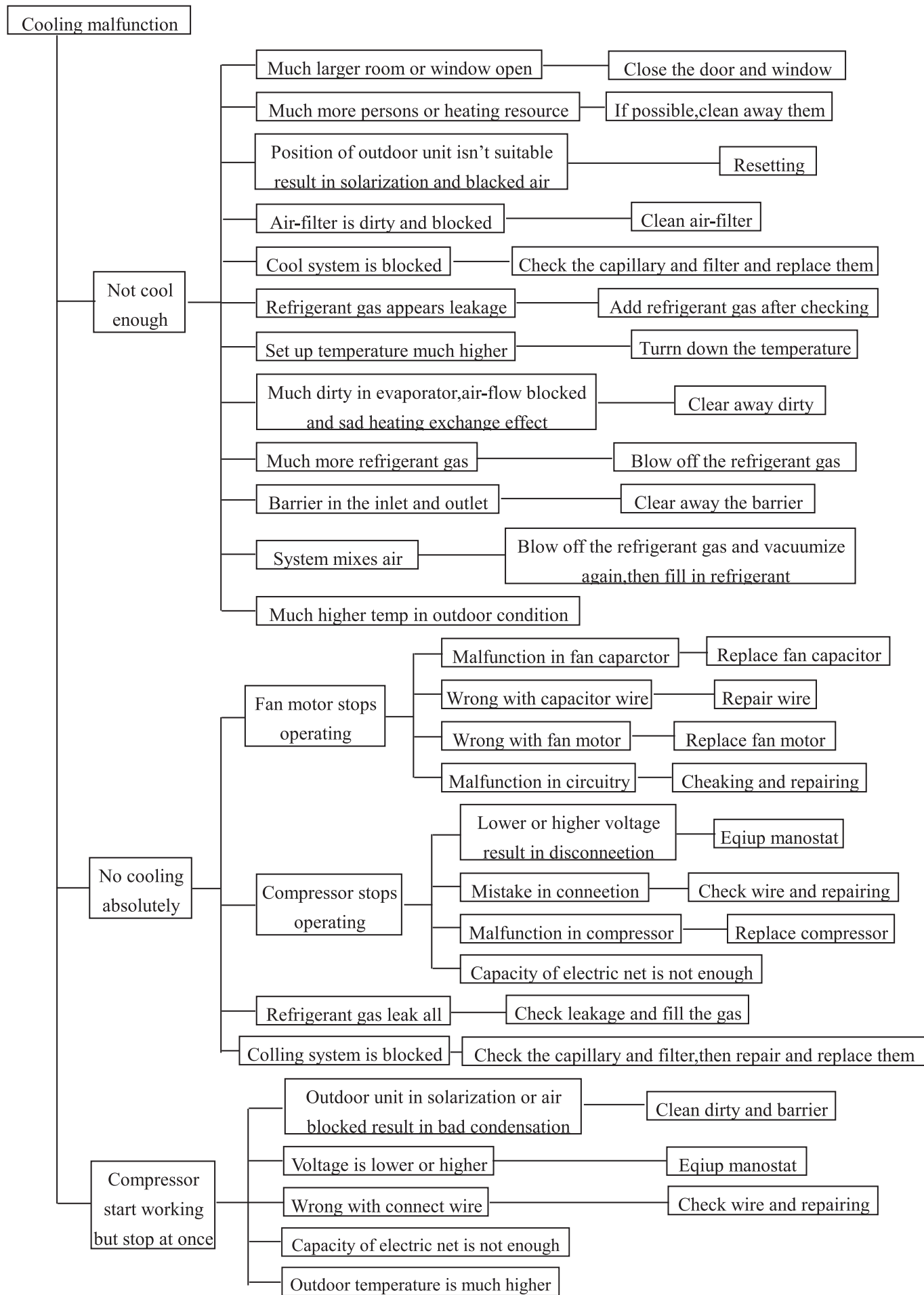
(2)、 It is no delaying for first starting.

(3)、 Once compressor starts, it should be lasting for 5 minutes at least.

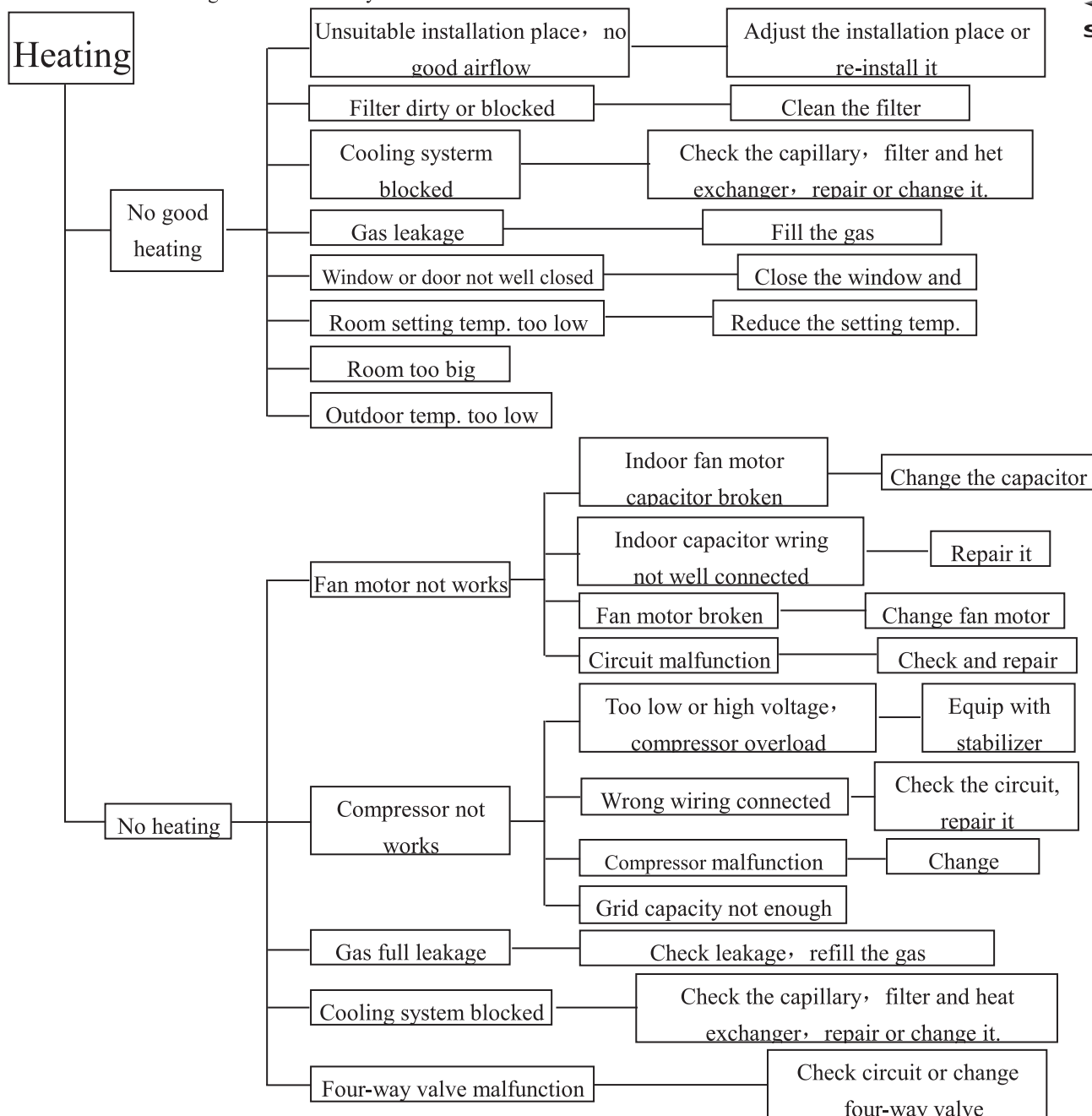


# PROCESS CHART FOR MALFUNCTION ANALYSIS

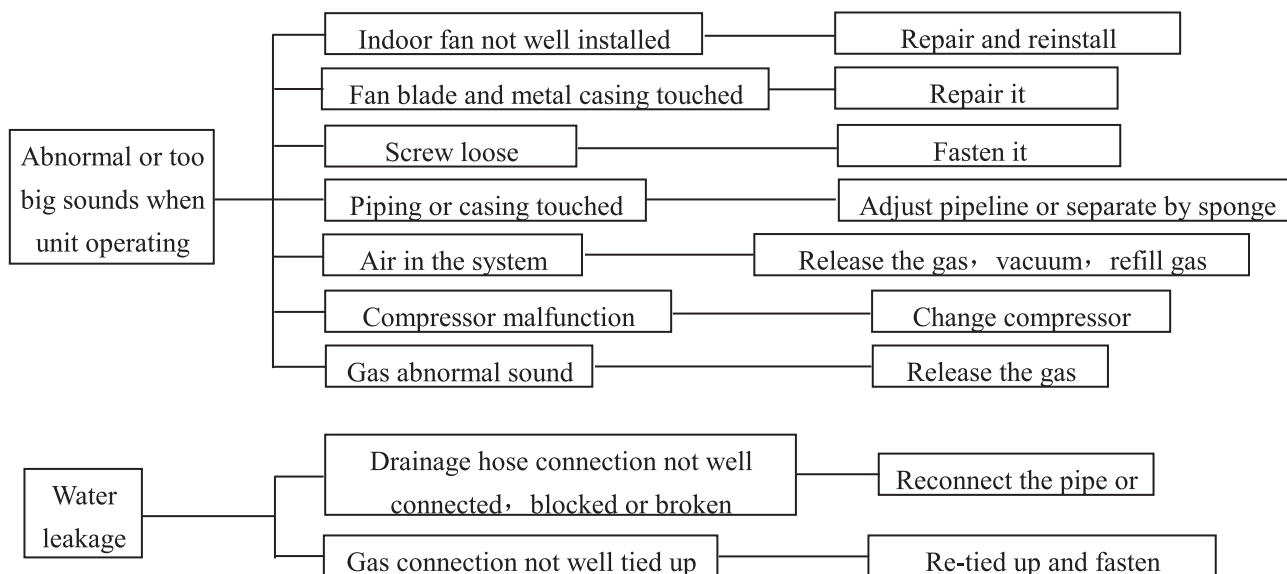
## 1、Process chart for cooling malfunction analysis



2、 Process chart of heating malfunction analysis



3、 Process chart of heating malfunction analysis of others

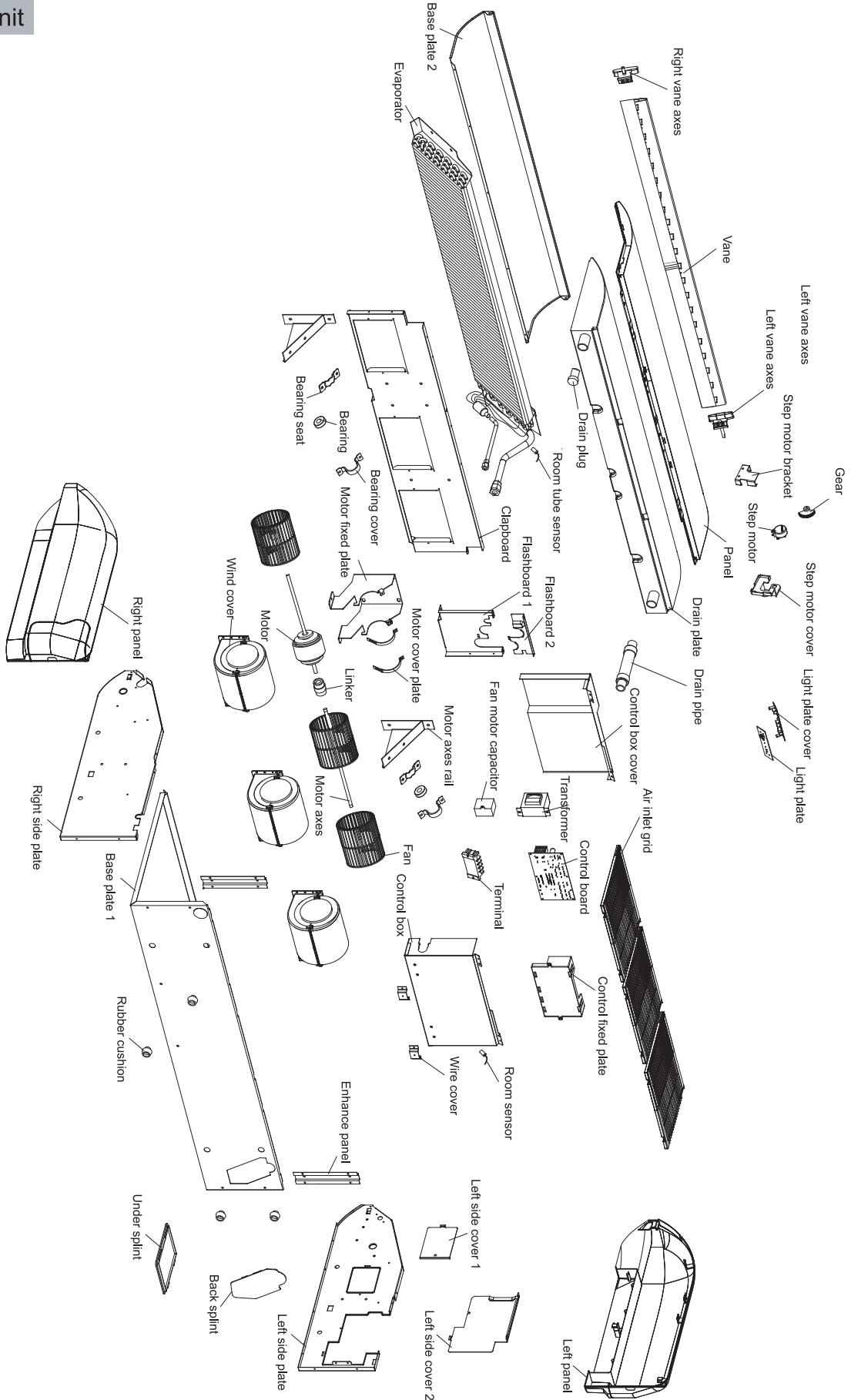


## Diagnosis for malfunctions

No.	Trouble	Solution
1	No reaction after power connected	1) Check whether there is voltage 220V on the terminal L and N 2) Check whether the fuse broken. 3) Check whether the transformer is good or not 4) Check all the connecting wiring connected or not 5) Shortage of Phase
2	Operation indicator light blink 1 time/8 sec.	Indoor temp. sensor problem 1) Check whether the terminal of room temp sensor connected or not 2) Check whether the room temp sensor Shuts or Short-circuits 3) If the above both no problem, change the PCB
3	Operation indicator light blink 2 times/8 sec.	Indoor pipeline sensor problem 1) Check whether the terminal of indoor pipeline sensor connected or not 2) Check whether the indoor pipeline sensor Shuts or Short-circuits 3) If the above both no problem, change the PCB
4	Operation indicator light blink 3 times/8 sec.	Cooling system problem: 1) Check whether the compressor, indoor and outdoor fan motor works. 2) Check the room and indoor pipeline sensor 3) Check whether the system blocked. 4) Check whether the system short of refrigerant 5) Check the outdoor ventilation good or not.
5	Operation indicator light blink 4 times/8 sec.	System overload protection: 1) Check whether the air filter blocked or not 2) check whether the indoor fan motor got problem 3) check the airinlet and outlet blocked or not
6	Operation indicator light blink 5 times/8 sec.	Outdoor pipeline sensor problem 1) Check whether the terminal of Outdoor pipeline sensor connected or not 2) Check whether the Outdoor pipeline sensor Shuts or Short-circuits 3) If the above both no problem, change the PCB
7	Operation indicator light blink 6 times/8 sec.	1) Check whether shortage of phase or wrong phase sequence 2) Check high and low pressure protection, keep closing status.
8	Operation indicator light blink 7 times/8 sec.	Check whether the indoor and outdoor signal wiring wrong connected or not, S,GNG should be connected one by one (70DW and below no this wiring)
9	Stop after 5 min running, normal display	1) Check the room and indoor pipeline sensor 2) Check whether the brace of room temp. sensor close to the evaporator or not 3) Check whether the indoor temp. and indoor pipeline sensor wrong connected or not

# Service Parts Name

Indoor unit



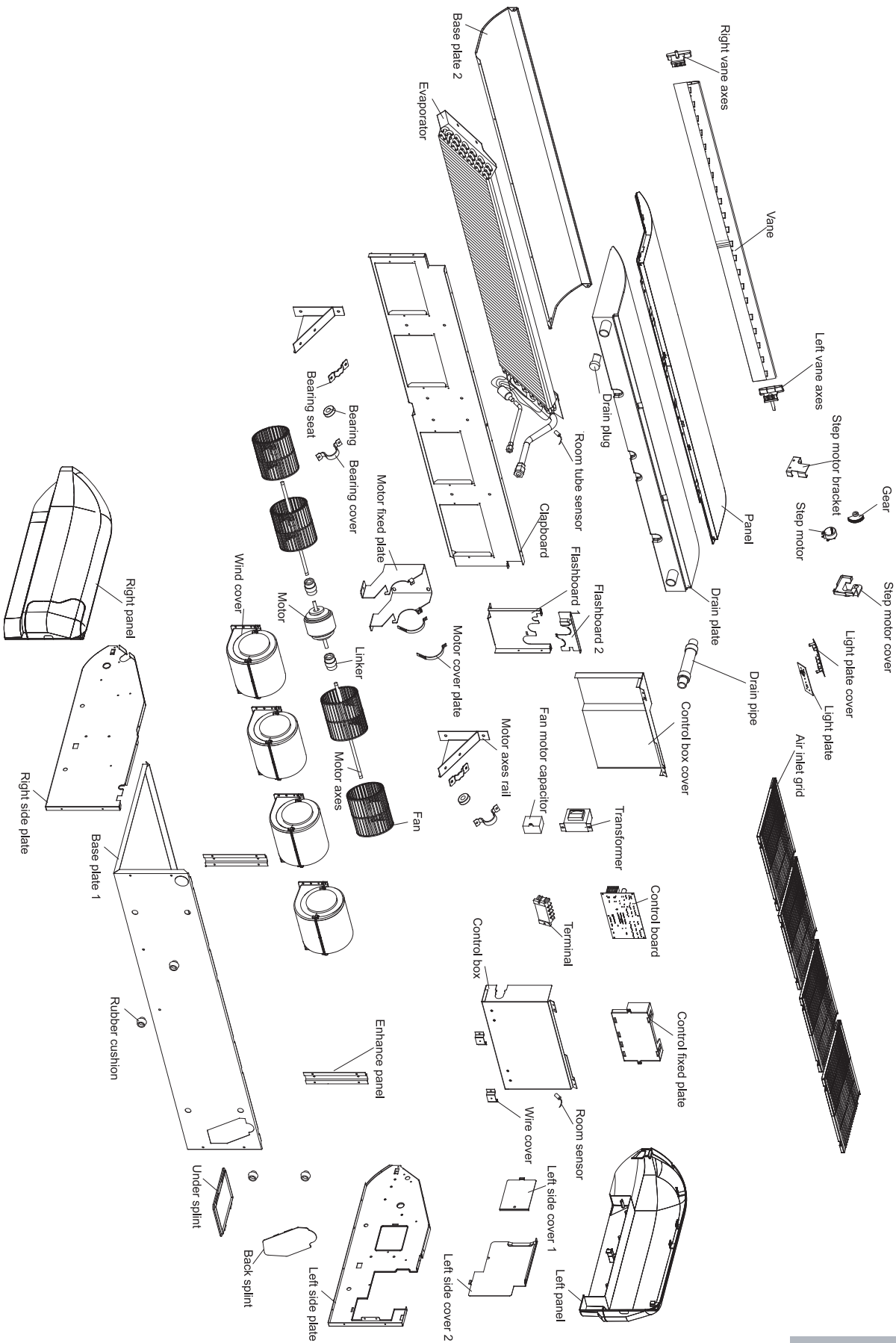
24000Btu



# Service Parts Name



Indoor unit



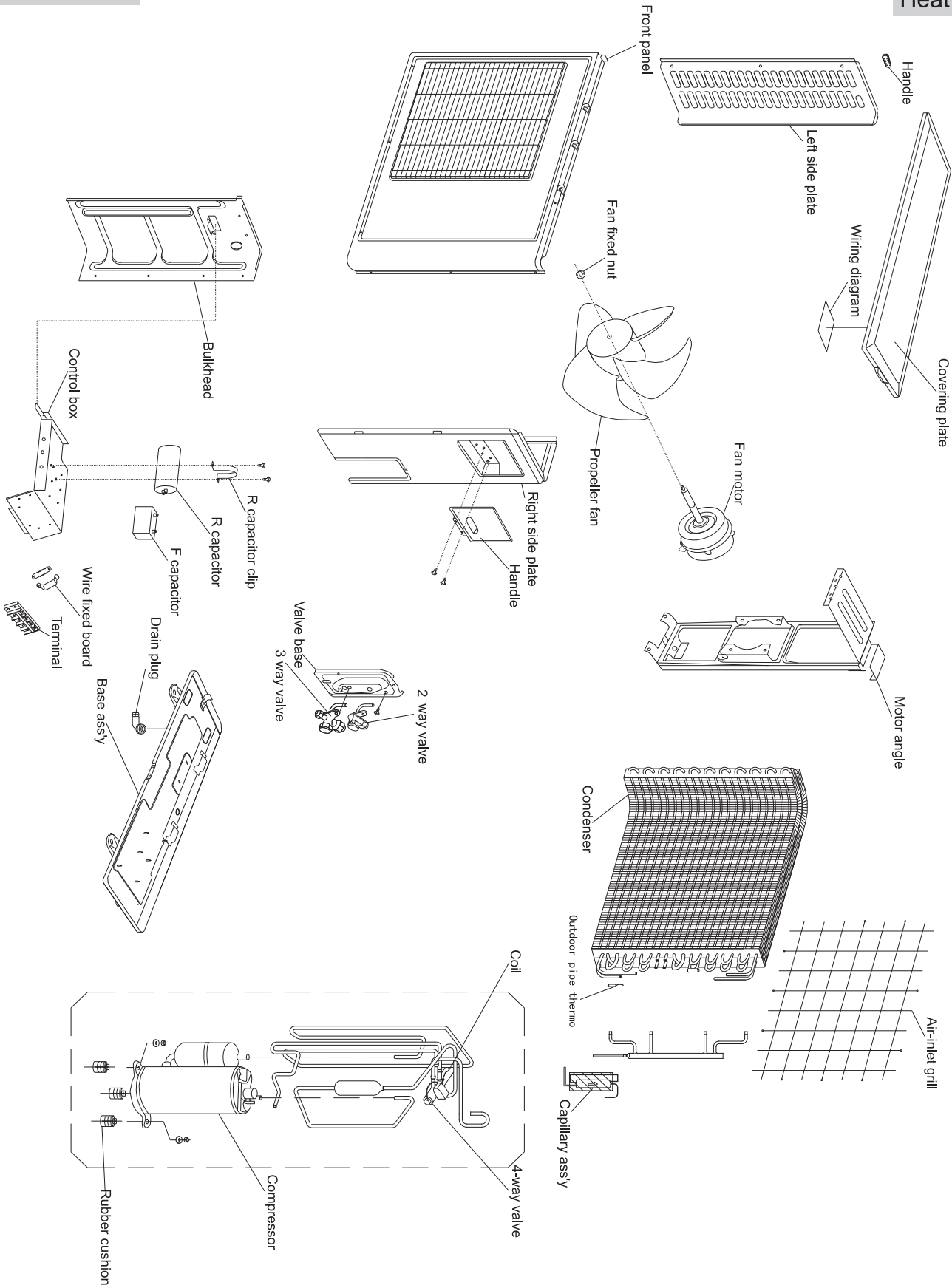
41000/48000Btu



# Service Parts Name

Outdoor unit

Heat pump



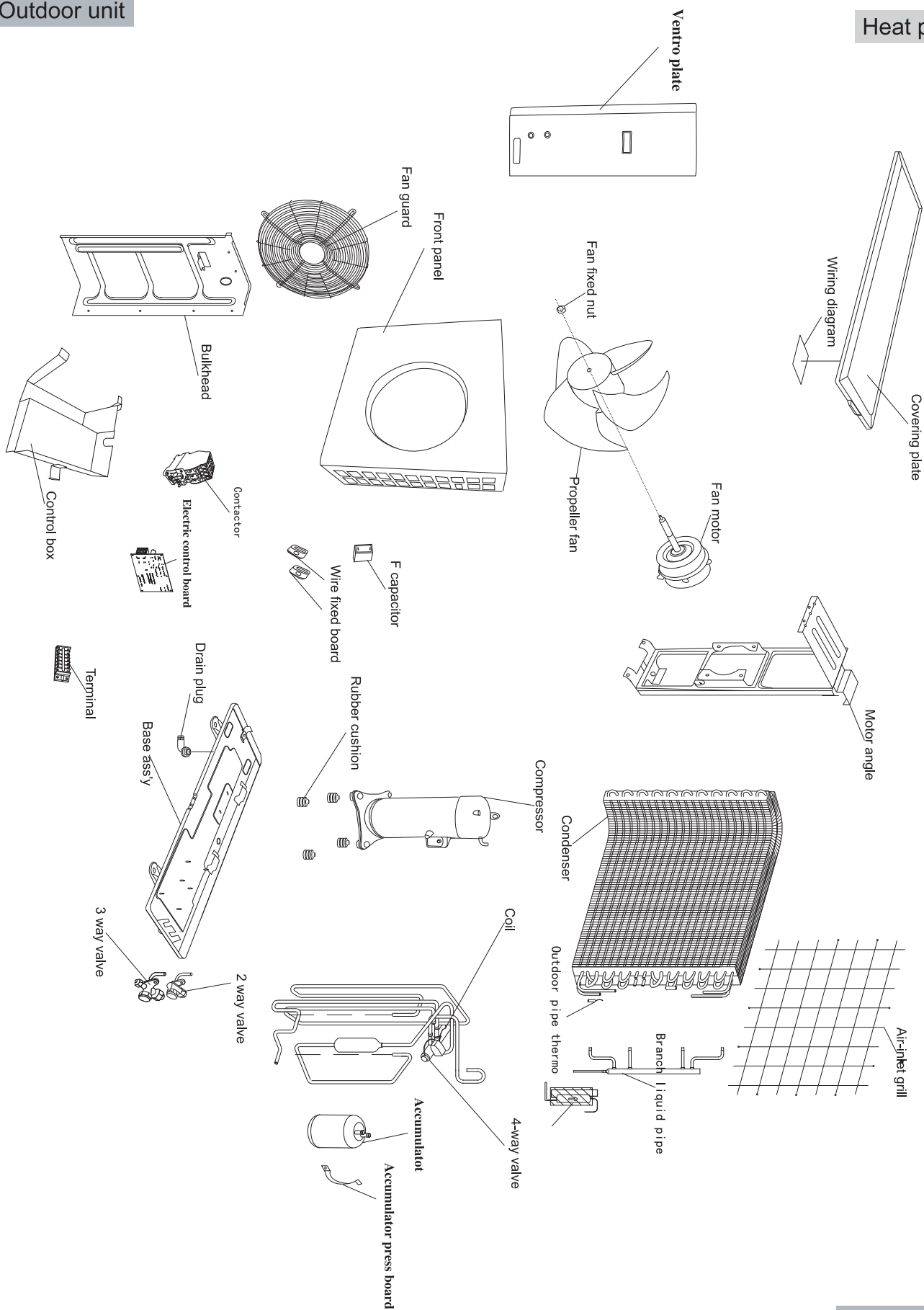
24000Btu

# Service Parts Name



Outdoor unit

Heat pump

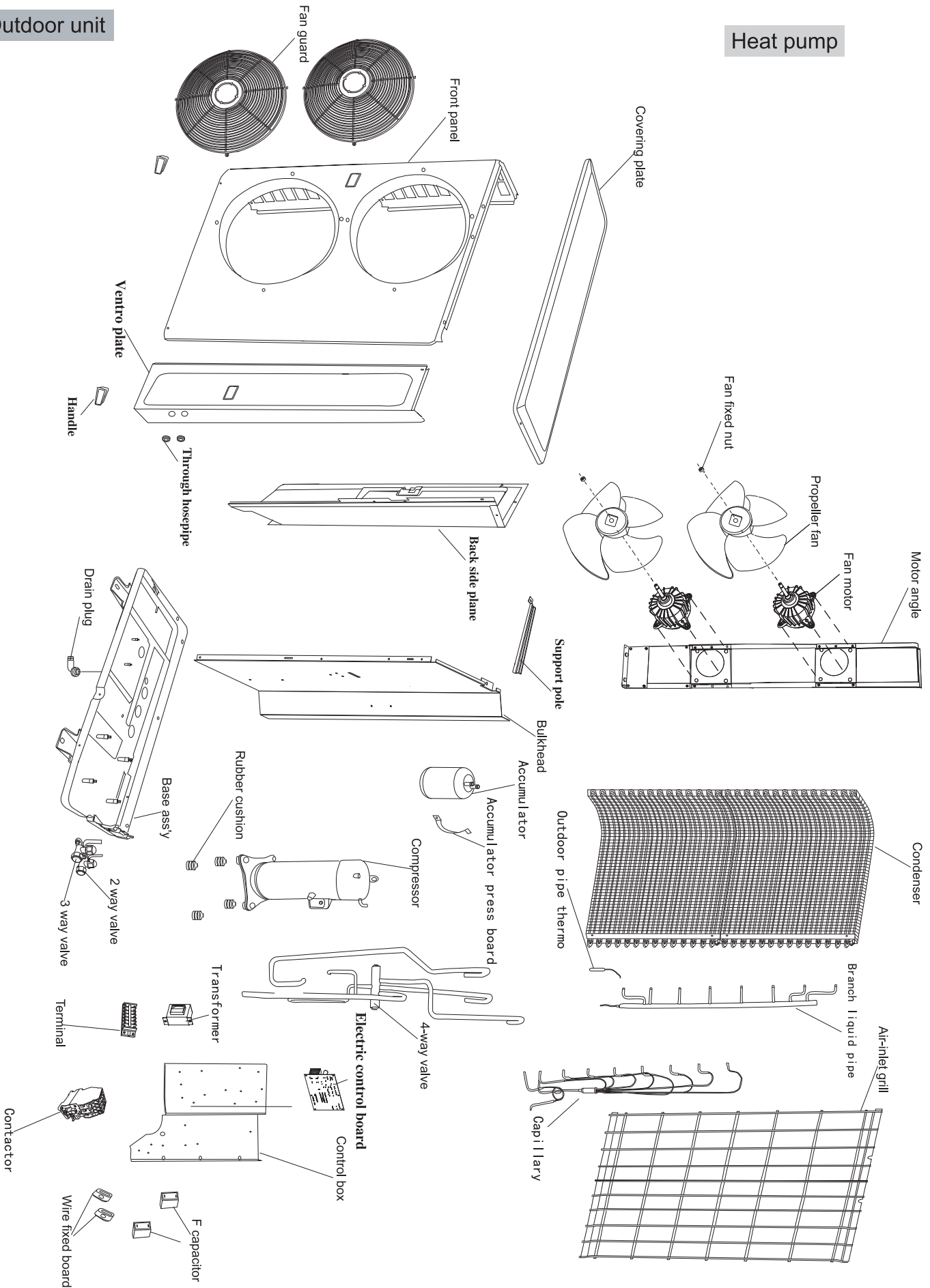


41000Btu



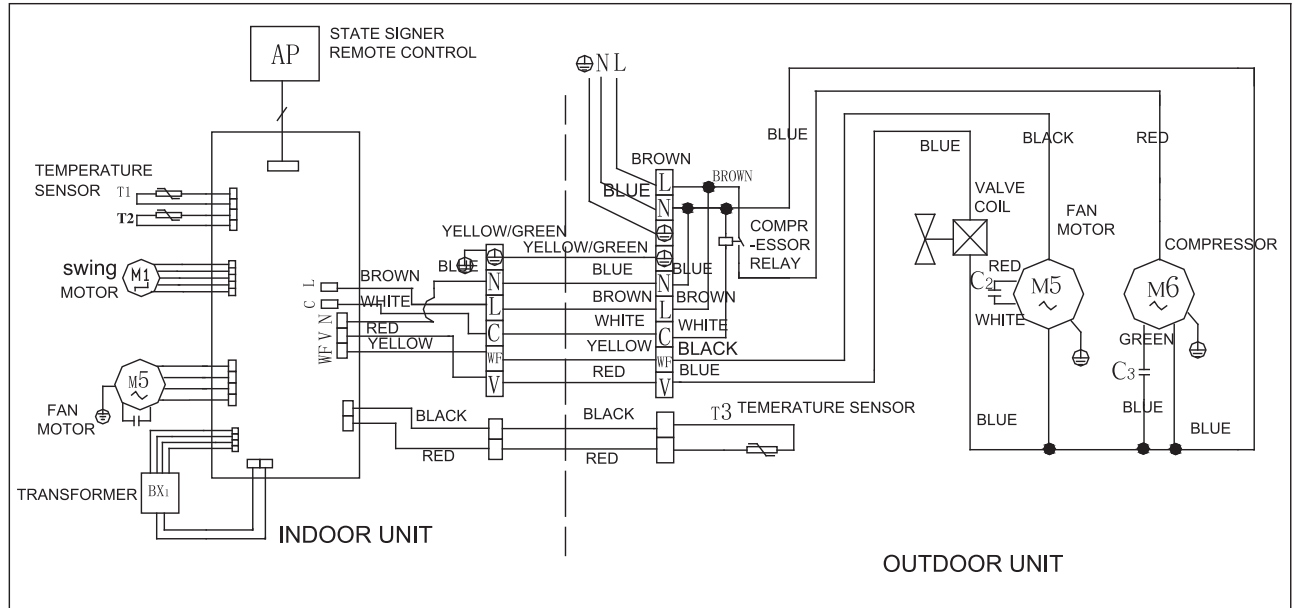
Outdoor unit

Heat pump

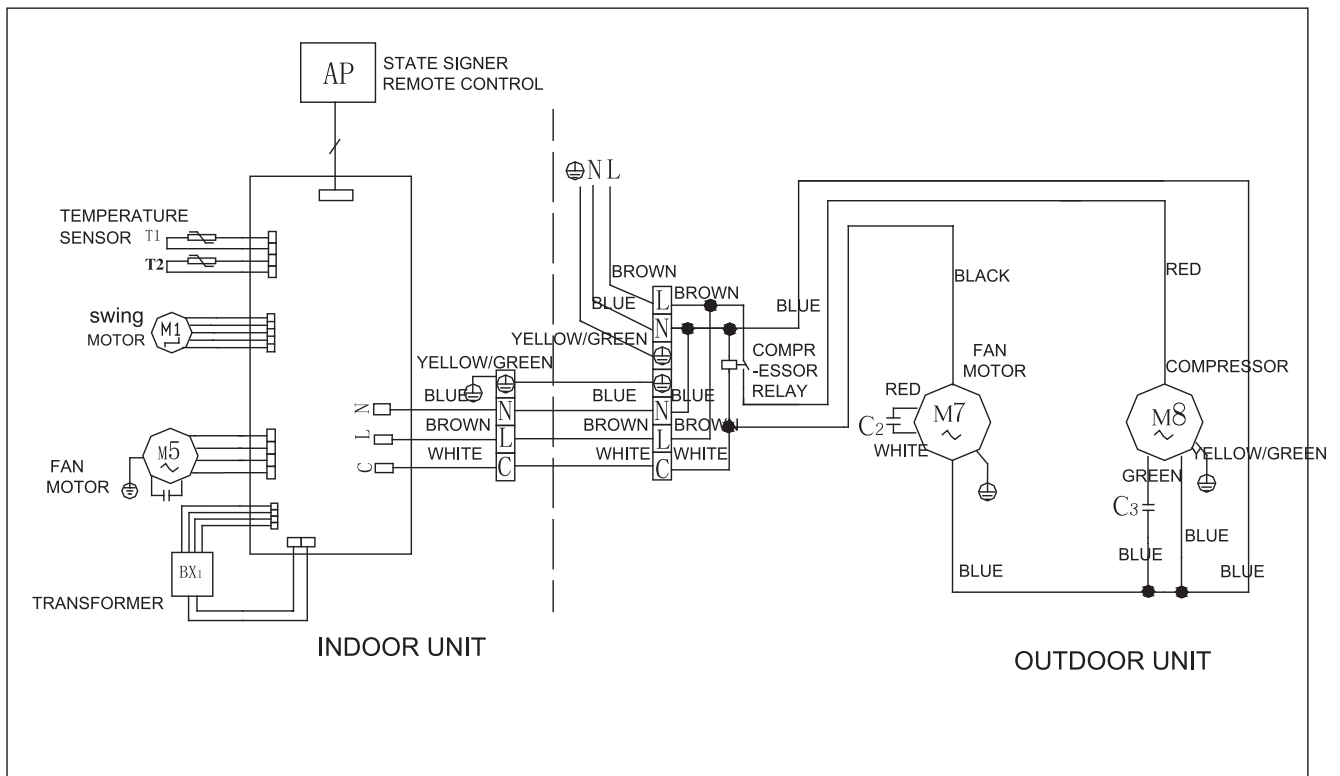


# Wiring diagram

## 24000Btu(Cooling and heating)

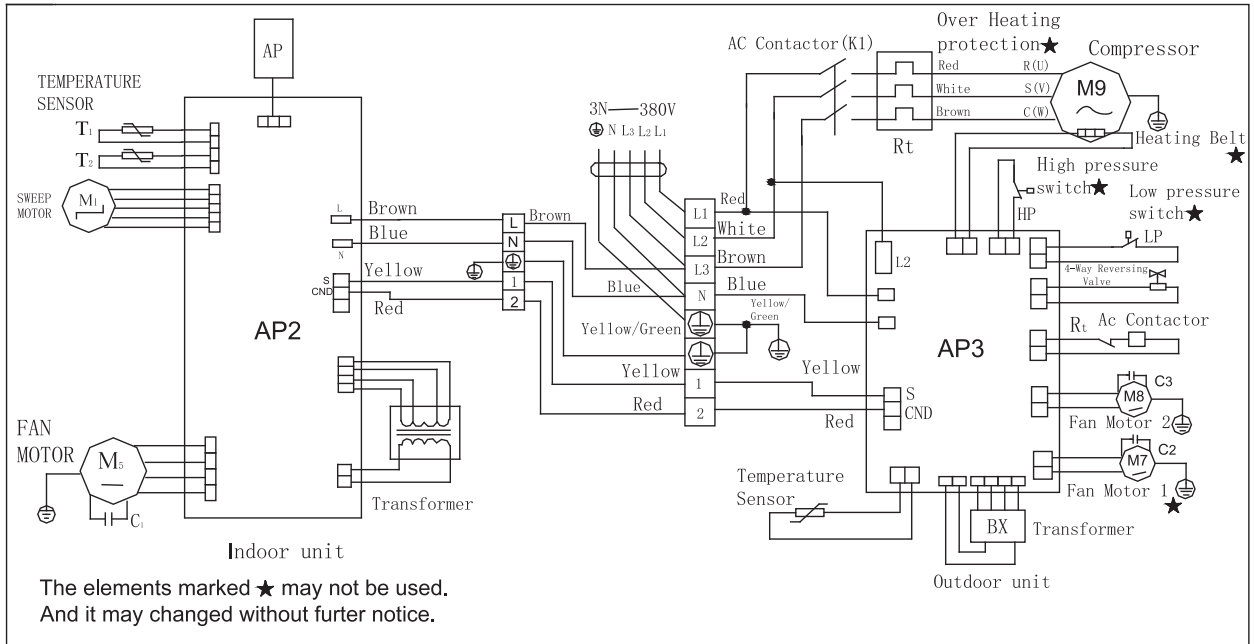


## 24000Btu(Cooling)

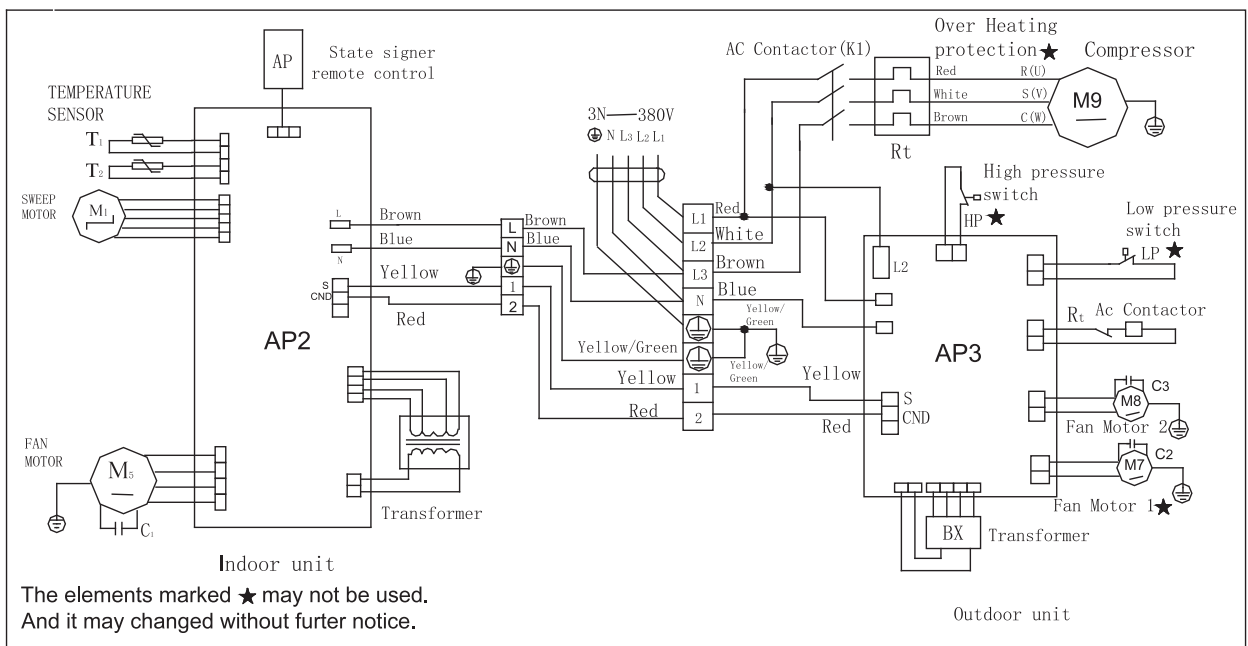


# Wiring diagram

## 41000Btu-48000Btu(Cooling and heating)

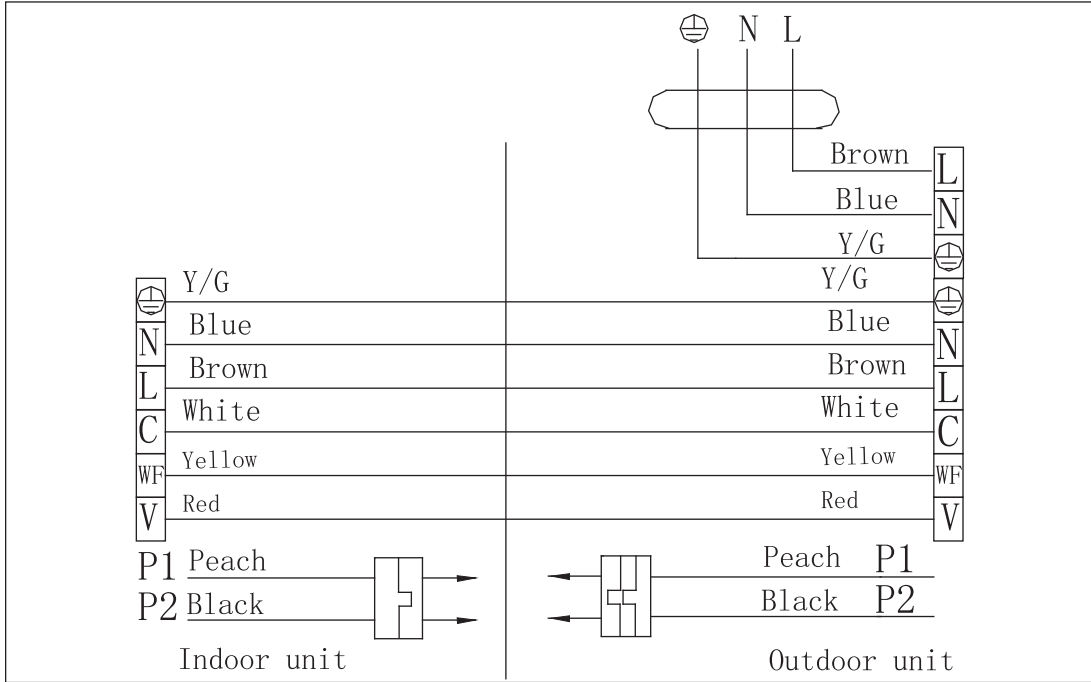


## 41000Btu-48000Btu(Cooling)

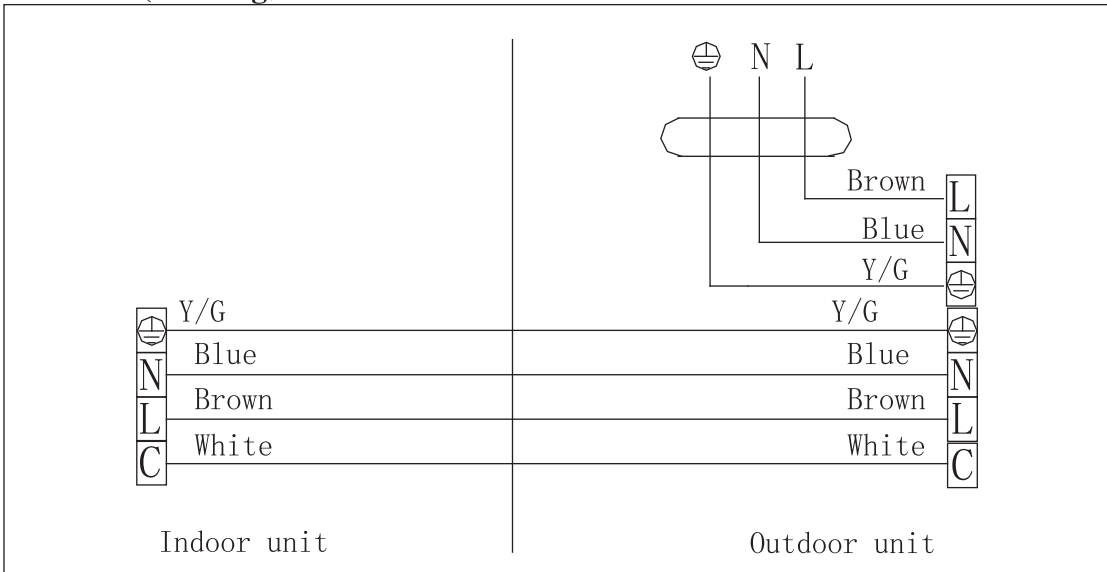


# Wiring diagram

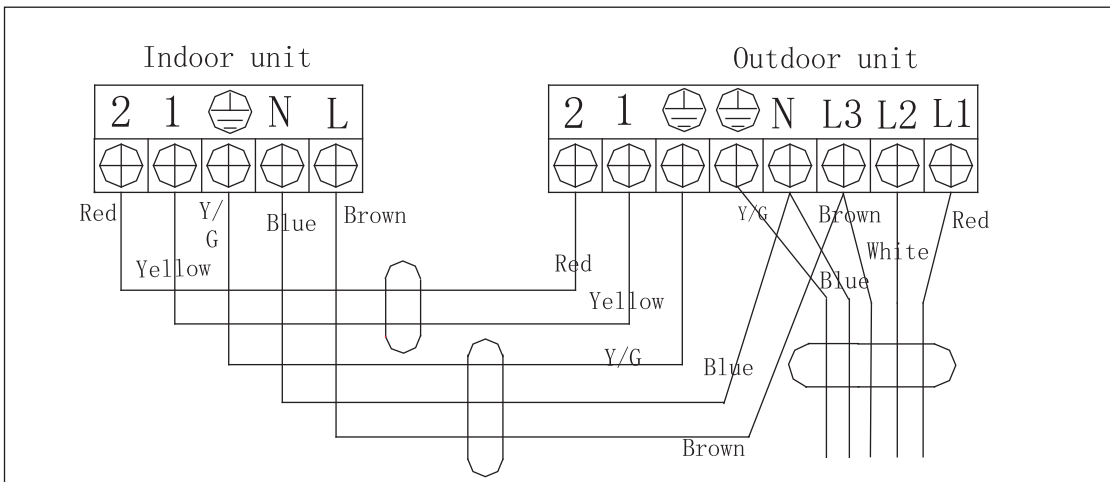
## 24000Btu(Cooling and heating)



## 24000Btu(Cooling)



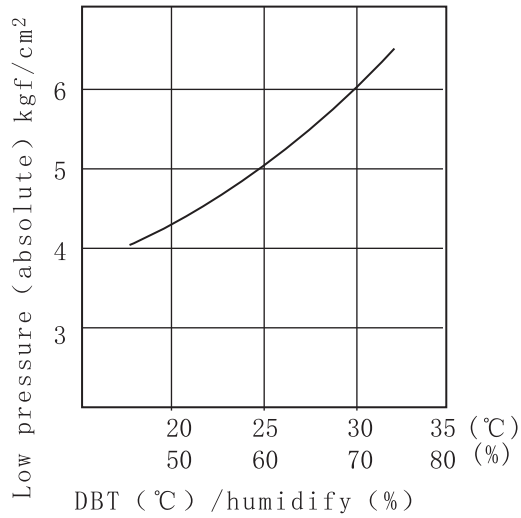
## 41000Btu/48000Btu



# CHARACTERISTIC CURVE

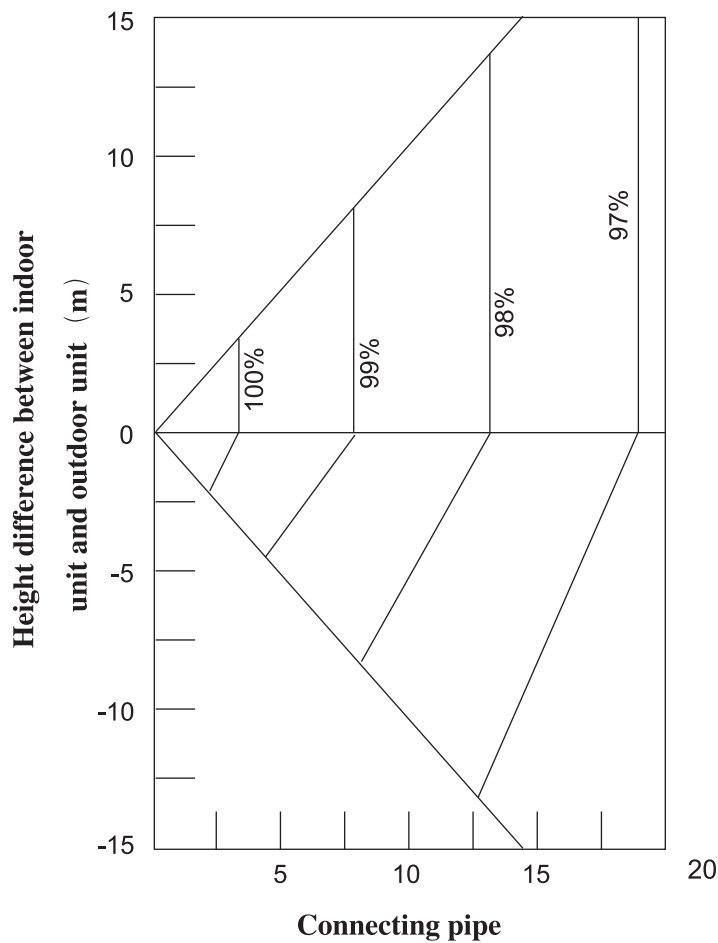
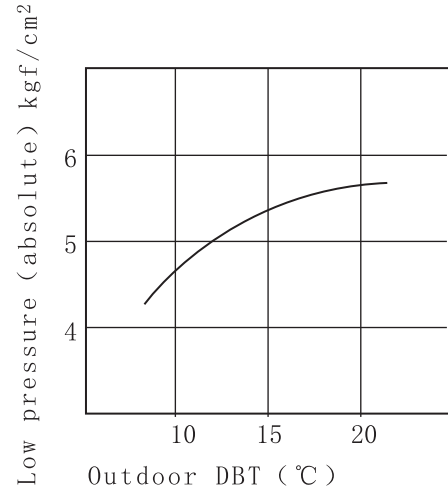
## COOLING

Same condition of the indoor and outdoor when it tests



## HEATING

Roomside condition: DBT21°C, WBT15.5°C



**The change of refrigerant according to the connecting pipe length**

# RESISTANCE TEMPERATURE SPECIALITY TABLE

R25=5.000K Ω B25/50=3470K

Temp (C)	Resistance (KΩ)	Temp (C)	Resistance (KΩ)	Temp (C)	Resistance (KΩ)
-16	30.517	13	8.093	42	2.674
-15	29.029	14	7.764	43	2.582
-14	27.622	15	7.451	44	2.493
-13	26.291	16	7.151	45	2.409
-12	25.033	17	6.866	46	2.327
-11	23.842	18	6.593	47	2.249
-10	22.716	19	6.333	48	2.174
-9	21.649	20	6.085	49	2.102
-8	20.623	21	5.848	50	2.032
-7	19.689	22	5.621	51	1.966
-6	18.773	23	5.405	52	1.902
-5	17.913	24	5.198	53	1.840
-4	17.097	25	5.000	54	1.780
-3	16.323	26	4.811	55	1.723
-2	15.589	27	4.630	56	1.668
-1	14.891	28	4.457	57	1.615
0	14.229	29	4.291	58	1.564
1	13.602	30	4.132	59	1.514
2	13.006	31	3.980	60	1.467
3	12.439	32	3.835	61	1.421
4	11.901	33	3.700	62	1.376
5	11.389	34	3.562	63	1.334
6	10.903	35	3.434	64	1.292
7	10.440	36	3.311	65	1.253
8	9.999	37	3.194	66	1.214
9	9.580	38	3.081	67	1.177
10	9.181	39	2.973	68	1.141
11	8.801	40	2.869	69	1.107
12	8.439	41	2.769	70	1.073



# Faults & self-diagnoses



## ■ Resistance of compressor motor

- Wall split air conditioner ( R22 )

Model of compressor	Value of compressor motor ( $\Omega$ ) (20°C)		
	R-C		S-C
PH420	1.13		2.10
SHV33	1.03		2.57
	U-V	U-W	W-V
VR57KF-TFP	2.76	2.76	2.76

- Wall split air conditioner (R407C)

Model of compressor	Value of compressor motor ( $\Omega$ ) (20°C)		
	R-C		S-C
PG420	1.13		2.10
CHV33	1.45		3.34
	U-V	U-W	W-V
C-SBN353	2.806	2.806	2.651
C-SBN373	2.806	2.806	2.651

## Adjustment of refrigerant charging

Type	70DW	120/140DW
<b>Additional refrigerant charging for adding each meter of connection tube</b>	60g	80g