

TECHNICAL SERVICE MANUAL

—— **Ducted KF series**

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

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Guangdong China

Introduction

In this technical service manual, you will find rich references to Ducted Air-conditioning (Heat Pump) Units (KF series) products. Service people and engineers of Gree's customers and distributors would find it a very handy source of technical information of our products.

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CONTENTS

1. Summary	3
1.1 Name method	3
1.2 The function of the unit	3
2. The characterisitic of the unit	4
2.1 Working principal	4
2.2 The structure of the unit	5
2.3 The characteristic sheet	15
2.4 Revisement of the characteristic	17
3. The electric wiring	19
3.1 The principal of electric wiring for the indoor and outdoor unit	19
3.2 The electric wiring for the unit	26
4. Explanation for hand operation	28
4.1 Control panel of the manual operator	28
4.2 Operation explanation	29
4.3 Remote control operation specifications	33
5. Installation and Test	40
5.1 Installation	40
5.2 Running test	53
6. Maintenance and fault judge	53
6.1 Everyday maintenance	53
6.2 Fault judge	54
7. Explosive view and spare parts list of indoor unit	56
8. Spare parts list of outdoor unit	59

Ducted Air-conditioning (Heat Pump) Units (KF series)



(The indoor unit with round outlet)



(The indoor unit with square outlet)



(Outdoor unit)

MODEL

KF-26PW/K
KFR-26PW/K

KF-35PW/K
KFR-35PW/K

KF-65PW/K
KFR-65PW/K

KF-75PW/K
KFR-75PW/K

KF-100PW/K
KFR-100PW/K

KF-120PW/K
KFR-120PW/K

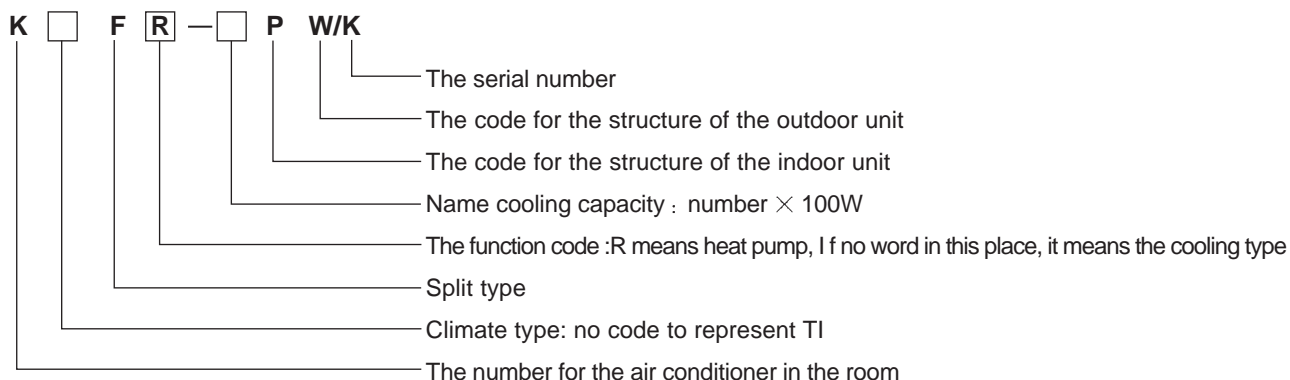
Ducted Air-conditioning (Heat Pump) Units (KF series)

1. Summary

The duct type means the split air conditioner with a wind pipe, installed in the ceiling, combined the easiness of the central unit with the convenience of the home units.

Applicable location: KF series of duct type widely applicable to the small-scale supermarket, chain store, hotel, restaurant, office building, meeting room and studio.

1.1 Name method



Example:

- (1) - KF-65PW/K means the duct unit with the cooling capacity 6500w
- (2) - KFR-65PW/K means the heat pump with the capacity 6500w

1.2 The function of the unit

◇: Controlling function

- The memory function (the unit can remain the same mode and parameter, when resuming the power supply)
- Remote control function (the unit can have optional controller ,with the controlling range 10meters)
- Communciation function (the unit adopt the double CPU, ensuing the communication distance from the mainboard to the wiring controlling board as far as 20meters)
- Time function (it can setup timely start or off separately as well as circularly.)
- The warning alarm function (if the malfunction occurred, showing the code and warning alarm)
- Energy-saving function(the unit can run automatically in the energy saving mode)
- Auto-running function(the indoor unit can adjust the speed automatically, according to the actual demand while on operation)
- The anti-overcooling (only when the heat exchanger is higher than the indoor temperature, the motor start working in the heating mode)
- The left heating (in the mode of heating ,when the compressor stop, the blower of the indoor unit will stop only after a few minutes' operation)

◇: Protection function

Ducted Air-conditioning (Heat Pump) Units (KF series)

- Protection for the deviant voltage (the suction pressure of the compressor is too low, causing the compressor stop working and display the malfunction)
- Overload protection (the compressor allocated with the heat protection, which will stop working when the temperature is higher than permitted, there fore restart if the temperature turns to normal)
- Over-current protection (when the current of the compressor exceeding the normal rate, the compressor stop and display the malfunction code)
- The discharge temperature protection(the discharge temperature is higher than the permitted, the unit stopping working and display the malfunction code)
- Anti-phase (when short of the phase, the unit can't operate, this only applicable for KF(R)100 -KF(R)120)
- Anti-cooling protection(the temperature of the indoor heat exchange is too low, causing the stop of the compressor)
- Anti-high temperature (the temperature of the indoor heat exchange is too low, causing the stop of the compressor)
- Sense organ (when the sense organ in short circuit or open circuit, displaying the malfunction code)

◇ : Function of display

- Display the time (it can display and setup the time)
- On/off display
- Cancel the timely display
- Display the fan speed (high, moderate, low for your option)
- Display the mode (cooling, dehumidify, heating, fan)
- Display defrosting (defrosting for the heating pump)
- Testing display (display the testing mode)
- Display the energy-saving (display the energy-saving)
- Display the temperature (display the room temperature and the setup temperature)
- Display the code for malfunction

2. The characterisitic of the unit

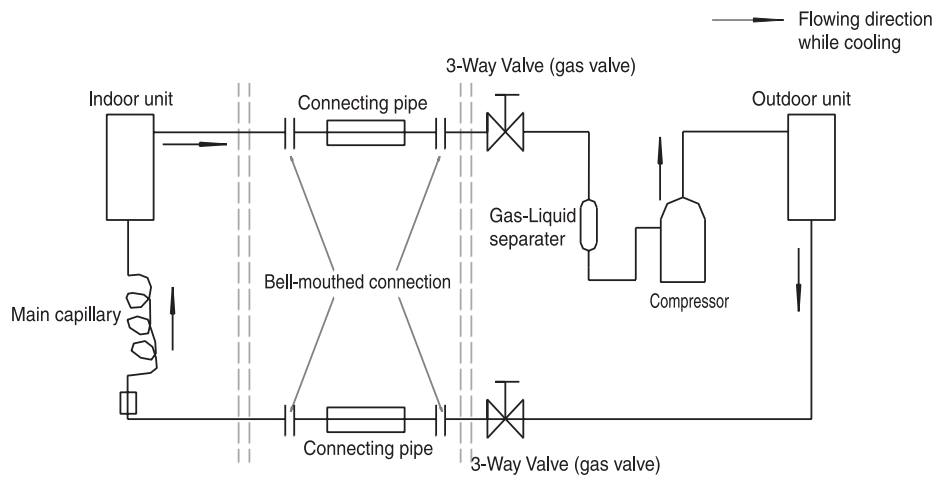
2.1 Working principal

Cooling cycle: the refrigerate was suctioned in the compressor, which turning into stream with high temperature and high pressure in the condenser, where the gas refrigerate exchange heat with the outside air. The stream will condensing into the liquid with high temperature and pressure, through the capillary tube reaches the evaporator, then evaporating in the air, cooling the air. The stream compressed again and a new cycle begin, thus the cooling air from the duct consecutively sent to the central area.

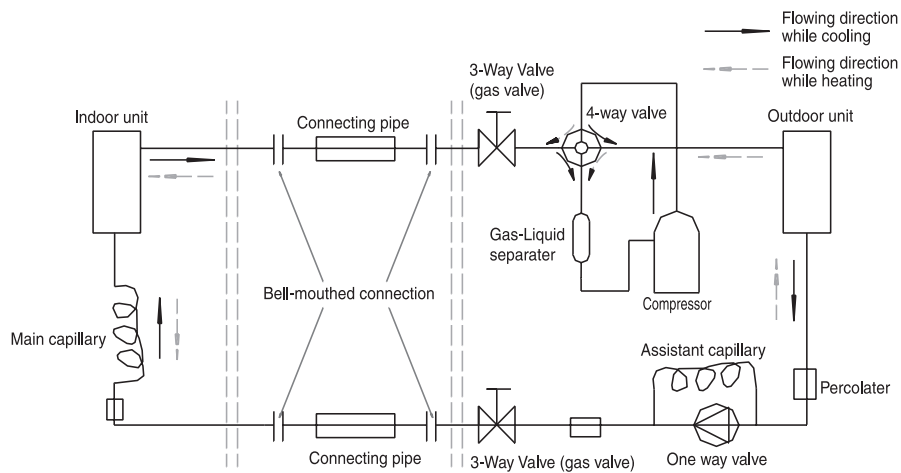
Heating cycle: the heating cycle is the adverse circulation, the four-valve change the way, the refrigerate flows from the compressor to the indoor heat-exchanger. The condensed refrigerate, through the capillary, evaporating from the outside heating exchanger then go into the compressor. The cycle continue, thus the heating air from the duct consecutively sent to the central area.

Ducted Air-conditioning (Heat Pump) Units (KF series)

The working procedure of the unit:



(The flow chart of the unit cooling only)



(The flow chart for the heat pump unit)

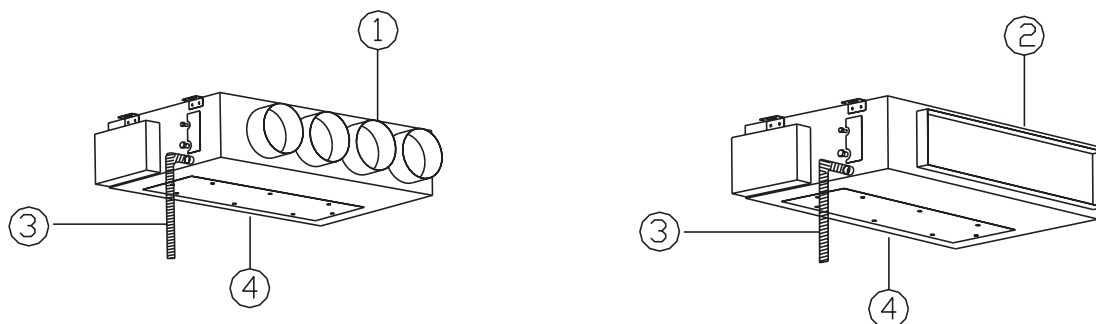
2.2 The structure of the unit

Explanation:

1. This unit combined with the indoor unit ,outdoor unit ,without the connection pipe and the wind outlet .
2. The wind outlet is square as usual , the round square is as accessory need to be purchased separately.
3. The quantity of the round wind outlet for the KF(R)-65, KF(R)-75 is 3, 4 for the KF(R)-100, KF(R)-120.
4. There are two kinds of wind cirallation for indoor unit: circulation from back and from below, the wind outlet and wind circulation share the same dimension.

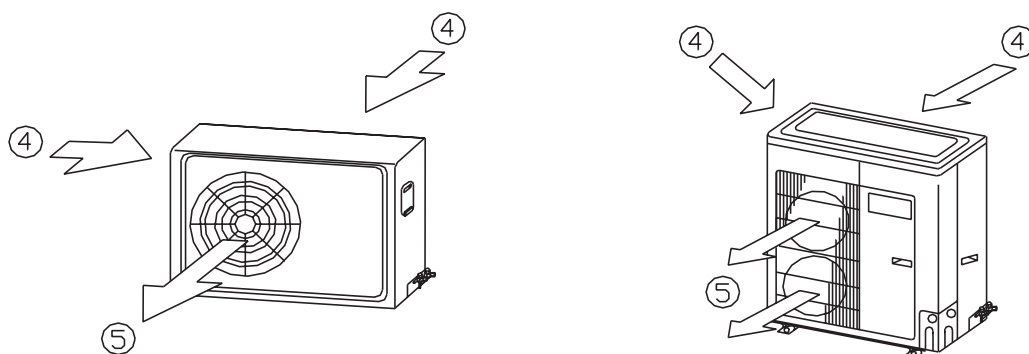
Ducted Air-conditioning (Heat Pump) Units (KF series)

2.2.1 The sketch map for the unit



(For the indoor unit)

Explanation: 1--round outlet 2--square outlet 3--condensing pipe 4--wind circulation



(The outdoor unit)

Explanation: 4-- wind inlet 5-- wind outlet

Ducted Air-conditioning (Heat Pump) Units (KF series)

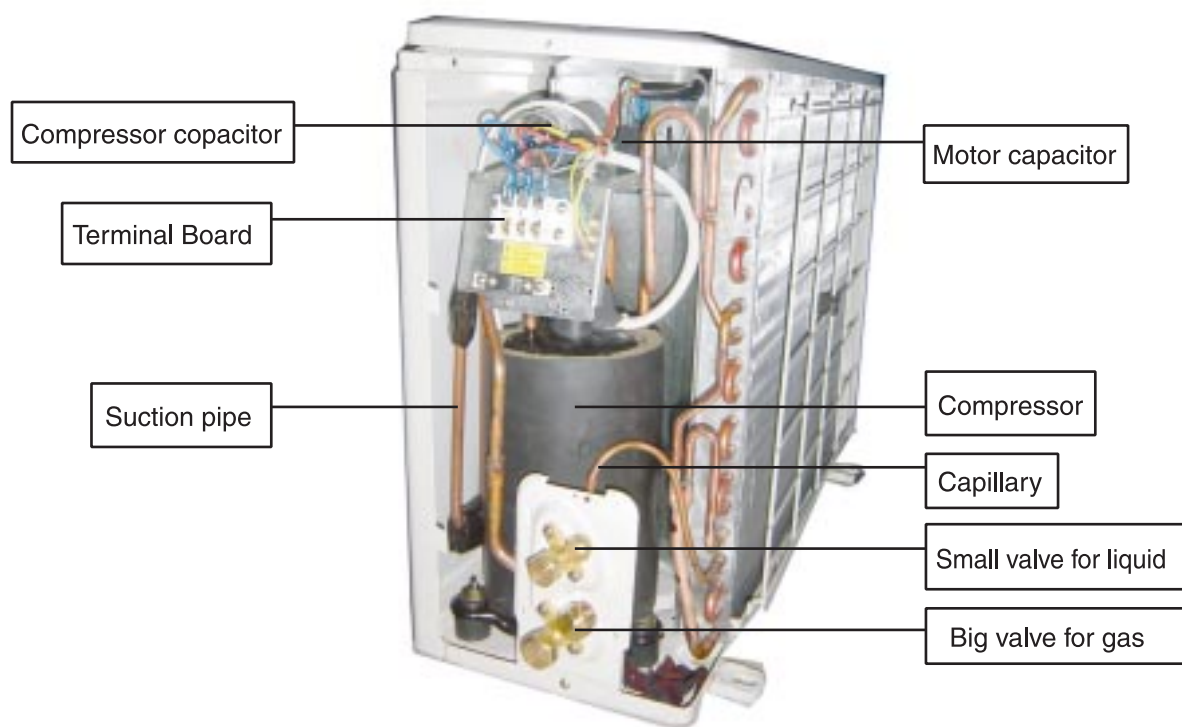
2.2.2 The picture for the indoor and outdoor unit

For example the model as following: KF-26 、 35 、 KF-120 、 KFR-120

KF-26 、 KF-35 outdoor surface view

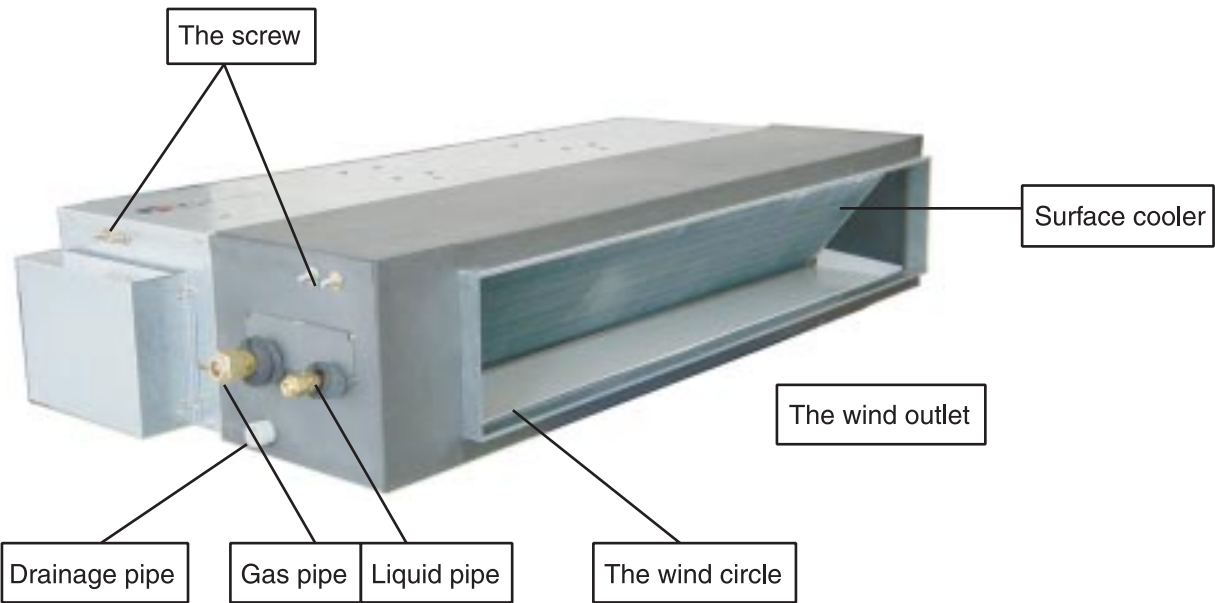


The explosive view for the outdoor spare parts for the type KF-26 、 35

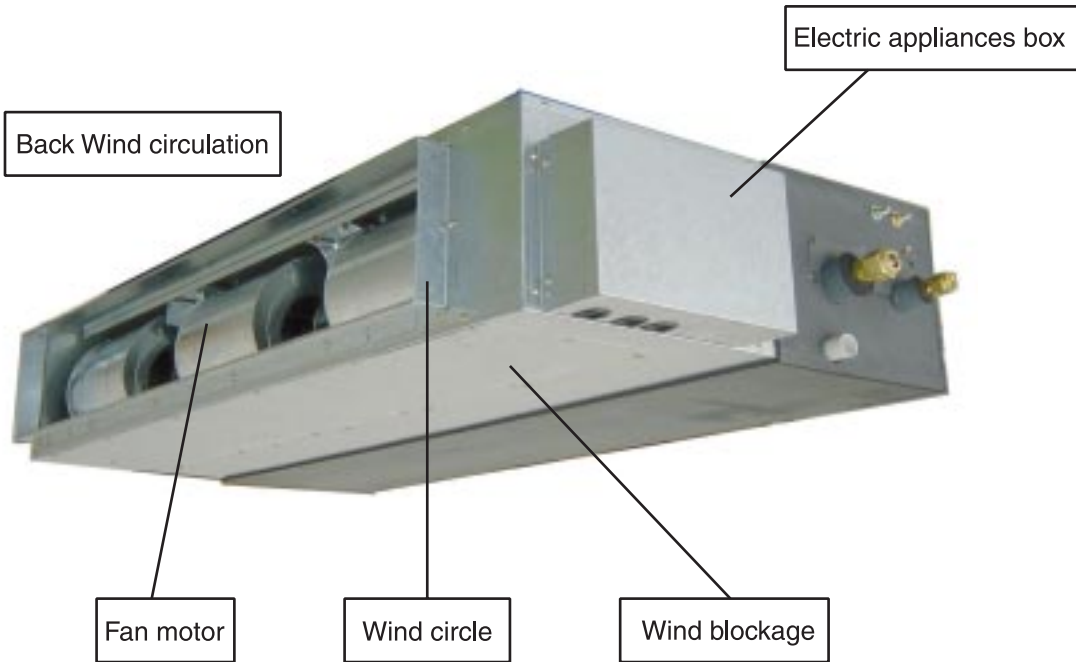


Ducted Air-conditioning (Heat Pump) Units (KF series)

The ventro-view of indoor unit for KF-120

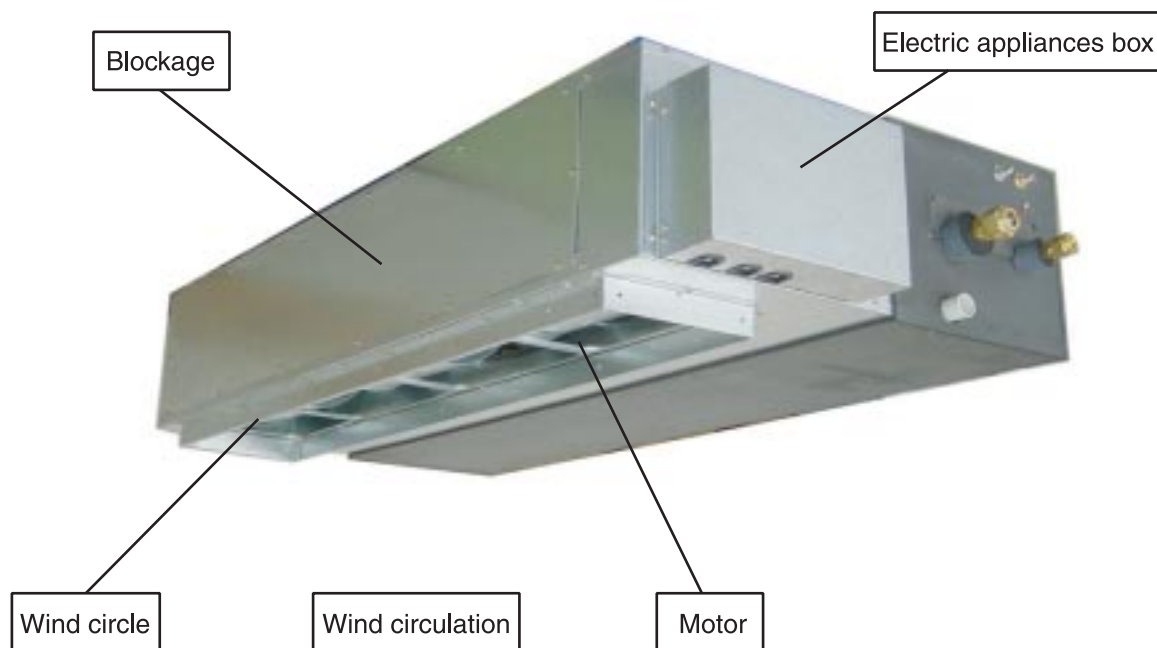


The side elevation of the KF-120 (wind reflurence)



Ducted Air-conditioning (Heat Pump) Units (KF series)

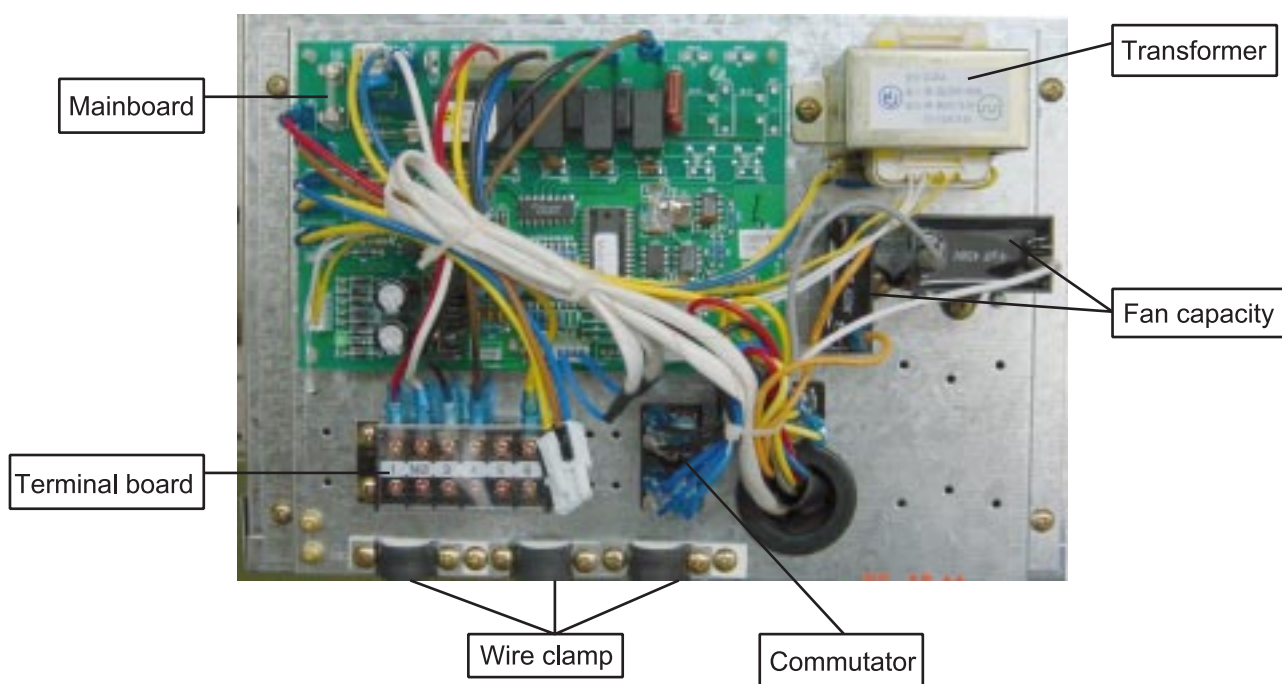
The wind circulation from the behind side (wind circulation from below)



Explanation: the function regarding the wind circulation from back or below can be achieved only if exchanging the wind circulation circle with the wind circulation blockage.

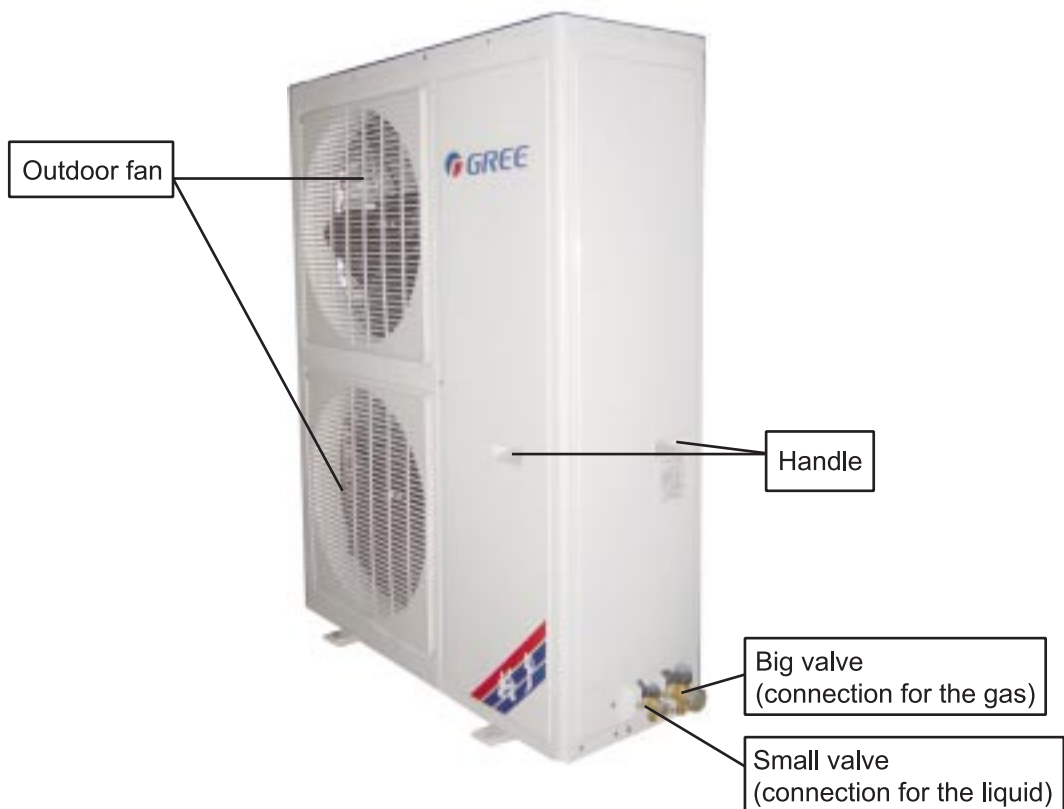
The method is available to all types.

Collocation map for indoor electrical box of KF-120

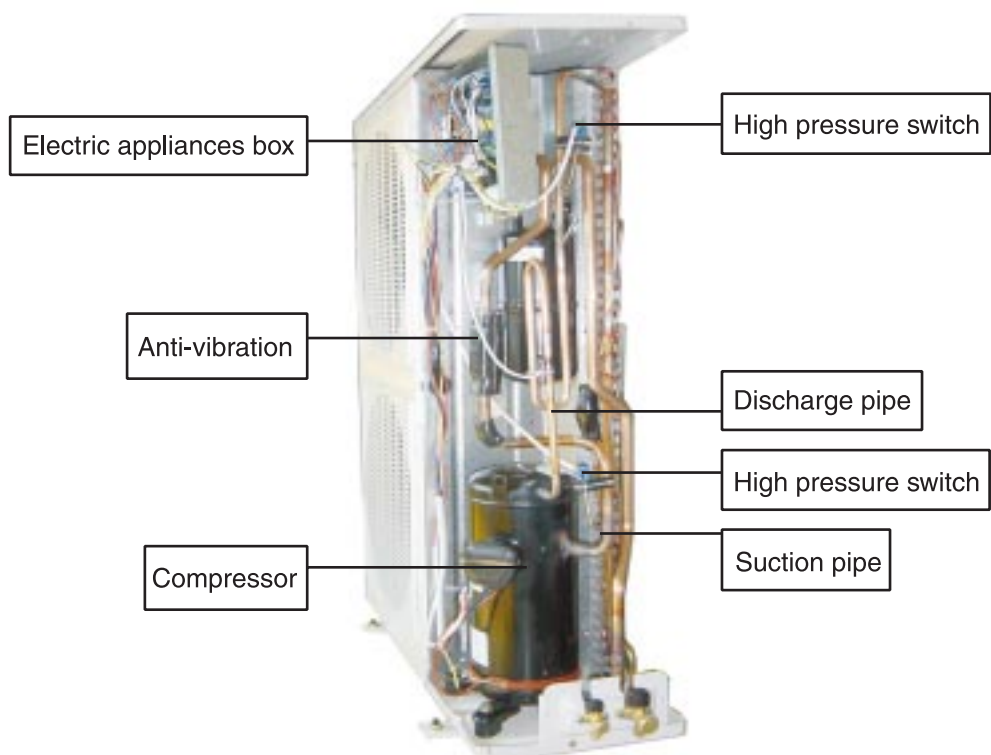


Ducted Air-conditioning (Heat Pump) Units (KF series)

Outdoor front side for KF-120

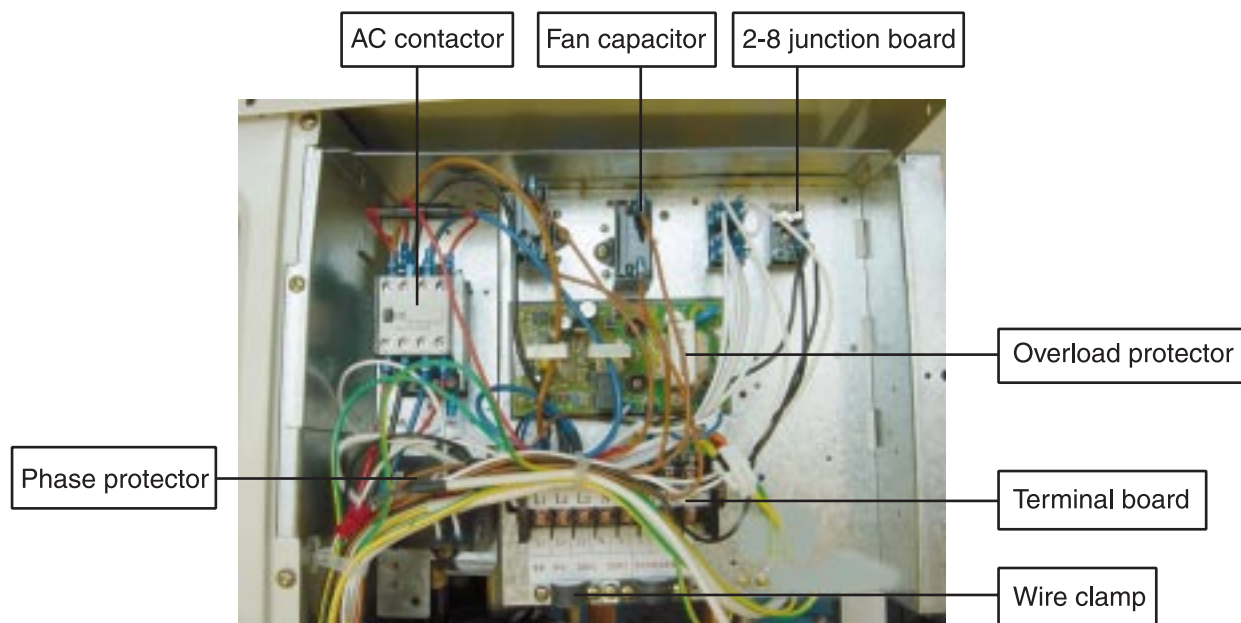


Spare part for the outdoor unit of KF-120

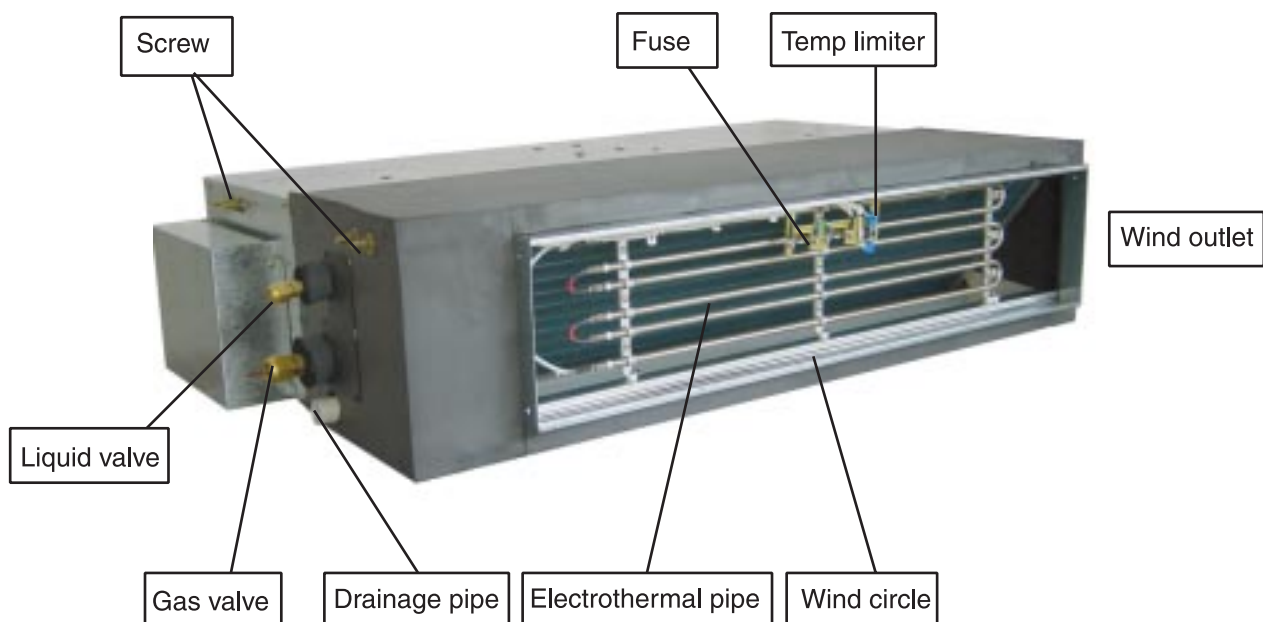


Ducted Air-conditioning (Heat Pump) Units (KF series)

The collection map for electricity of KF-120

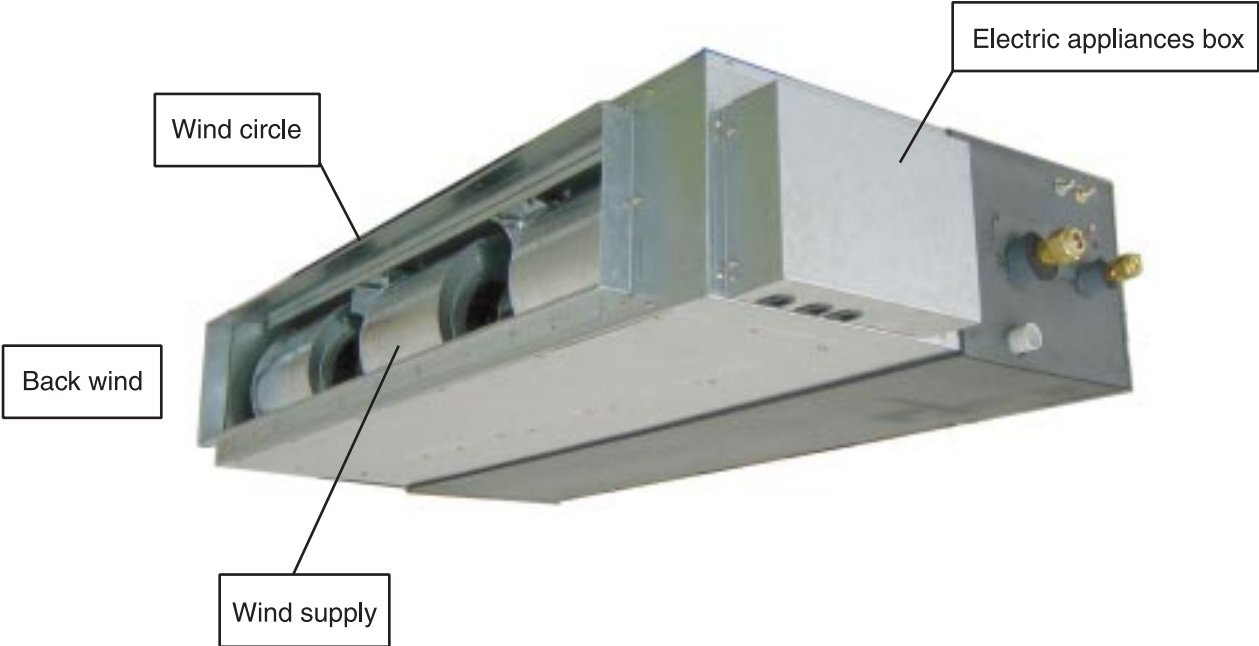


Indoor front- view of KFR-120



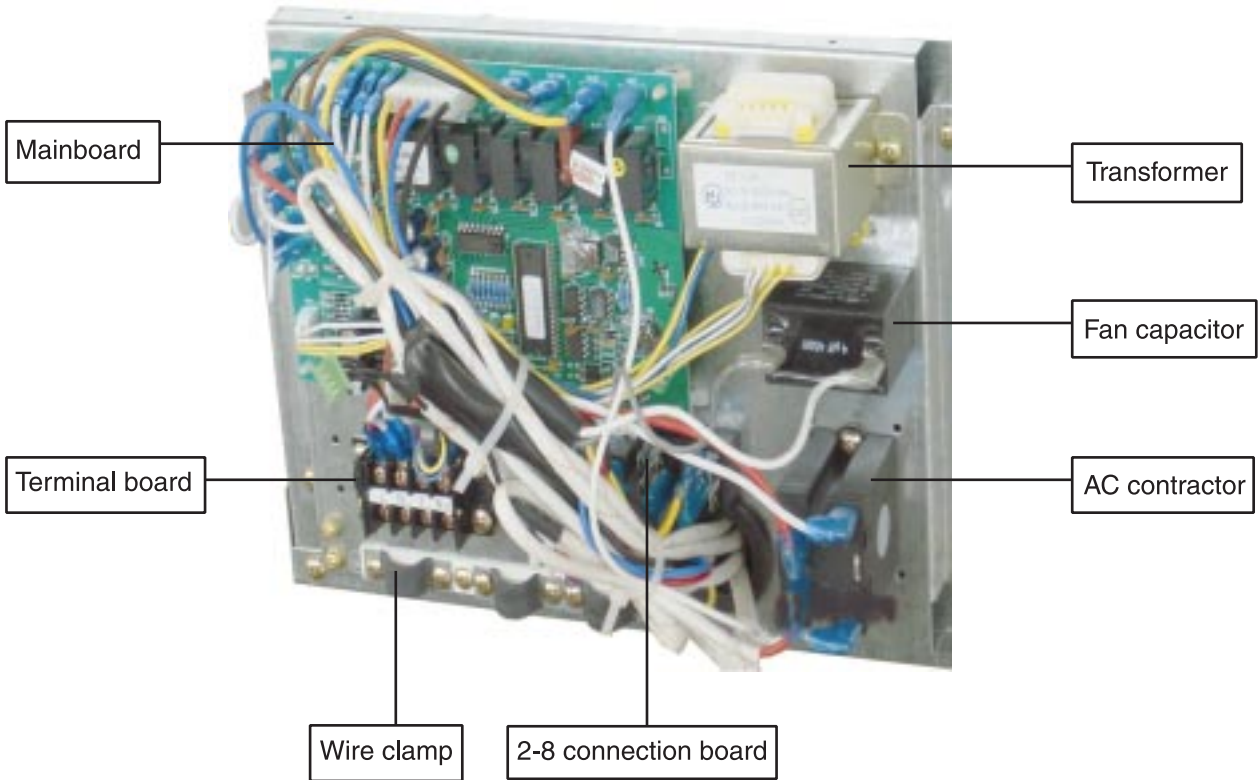
Ducted Air-conditioning (Heat Pump) Units (KF series)

Rear view of indoor unit for KFR-120



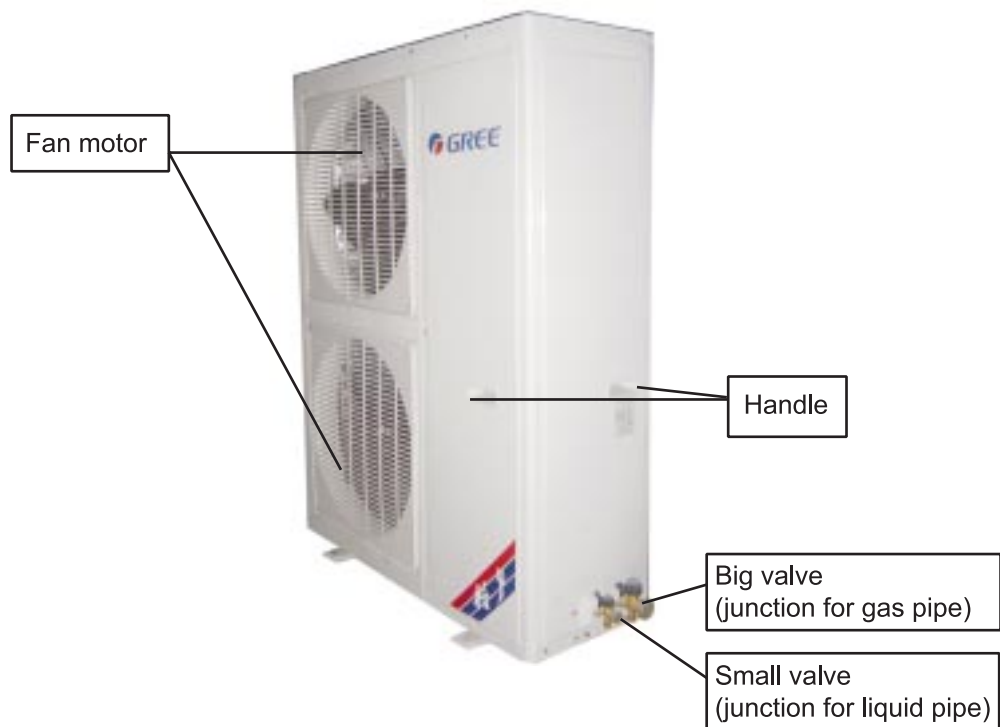
The wind circulation from below can be achieved under the condition the blockage for circulation exchange with the circulation flame.

Allocation map of indoor electricity for KFR-120

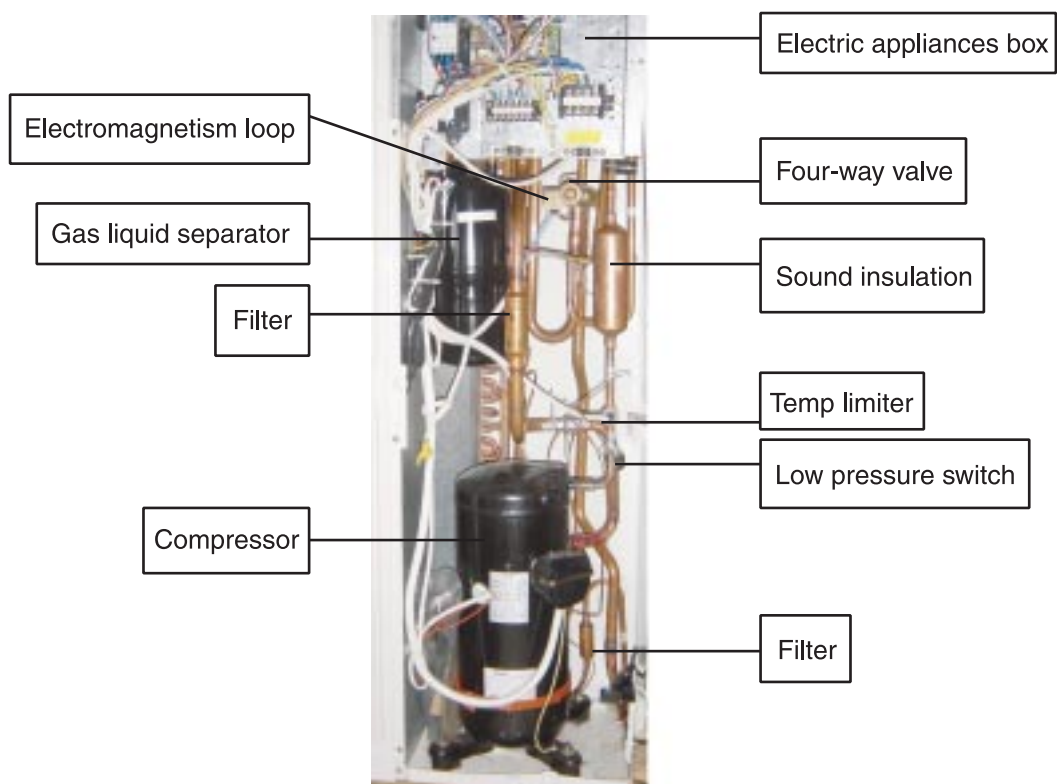


Ducted Air-conditioning (Heat Pump) Units (KF series)

The front view of outdoor unit for KFR-120

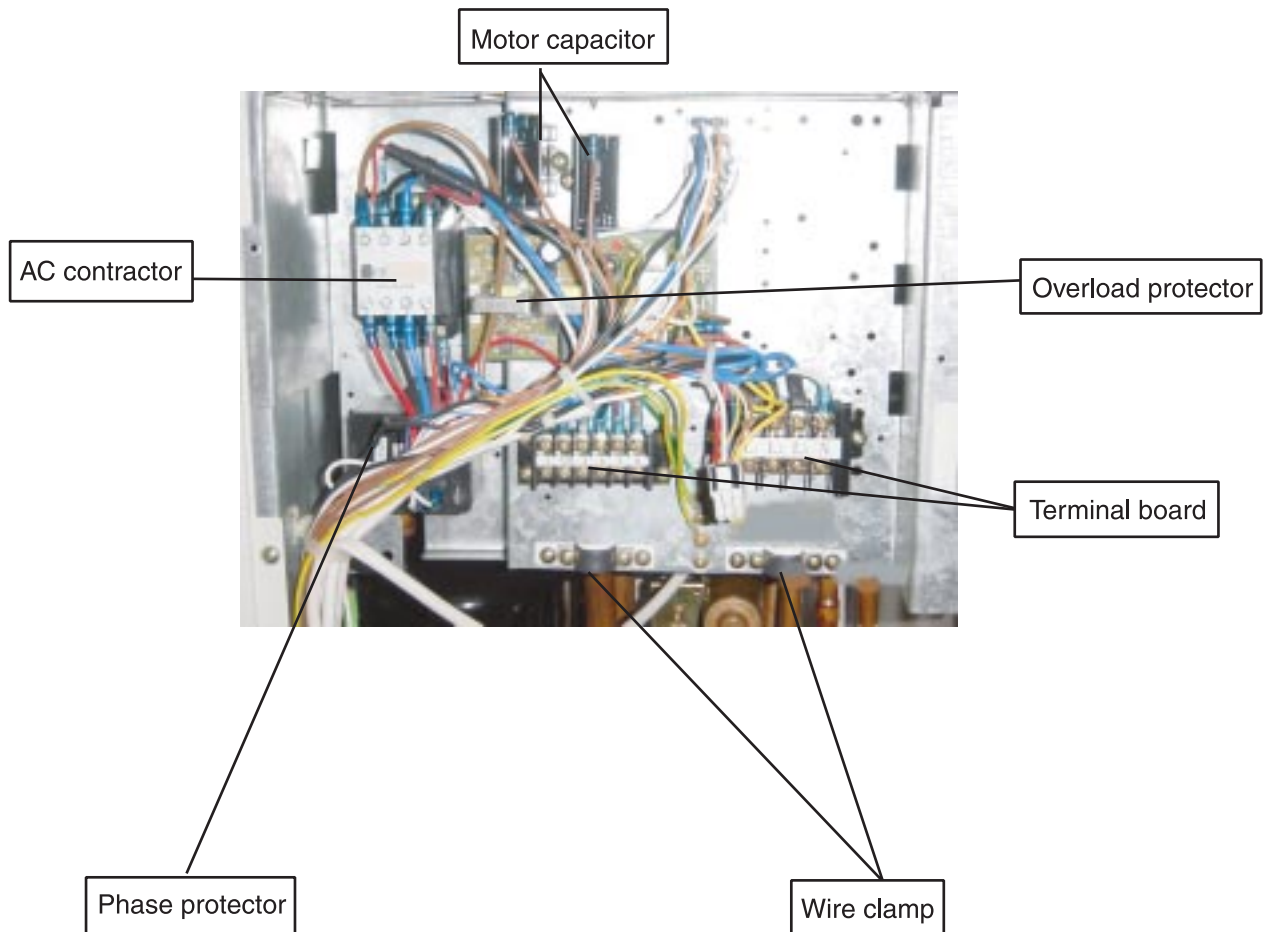


The picture for the outdoor parts of KFR-120



Ducted Air-conditioning (Heat Pump) Units (KF series)

The collection map of electrical part



Ducted Air-conditioning (Heat Pump) Units (KF series)

2.3 The characteristic sheet

◇ The parameter sheet of the KF series

Model			KF(R) -26PW/K	KF(R) -35PW/K	KF(R) - 65PW/K	KF(R) -75PW/K	KF(R) -100PW/K	KF(R) -120PW/K	
Cooling capacity		W	2600	3500	6500	7500	10000	12000	
Heating capacity plus accessorial heating		W	3000+500	3800+800	7000+2100	8000+2100	11000+3600	13000+3600	
Dehumify volume		kg/h	0.9	1.36	1.85	2.9	3.9	5.4	
Air volume		m³/h	452	572	1400		2040		
Balance pressure		Pa	15		50				
Noise	Indoor	dB(A)	37	40	43		45		
	Outdoor	dB(A)	55	56	59		62		
Current	Cooling	A	4.22(4.45)	6.62(6.92)	11.7(12.2)	13.8(14.0)	6.7(7.0)	8.2(8.4)	
	Heating	A	4.96/7.23	5.94/9.97	10.4/20	12.9/22.5	6.7/12.2	8.1/13.6	
Power	Cooling	W	915	1395	2600(2500)	2750(2800)	3800(3850)	4800(4700)	
	Heating capacity plus accessorial heating	W	1081+500	1238+800	2200+2100	2500+2100	3800+3600	4900+3600	
Power plug			~220V 50Hz					3N~380V 50Hz	
Compressor			Close revolving compressor			Close scrolling compressor			
Refrigerate			R22						
Refrigerate charged		kg	0.85(0.95)	1.00(1.10)	1.85(2.1)	2.25(2.5)	3.4(3.5)	3.6(3.8)	
Indoor unit	Width		mm	755		1074		1395	
	Length		mm	600		656			
	Depth		mm	220		260			
	Net weight		kg	23		37		49	
	The dimension for the wind accession	Length	mm	515		918		1155	
		Width	mm	172		207			
Outdoor unit	Width		mm	760		950			
	Length		mm	250		412			
	Depth		mm	530		840		1250	
	Net weight		kg	32		59	75	112	
Connection pipe	Diameter of gas pipe		mm	9.52	12	16		19	
	Diameter of liquid pipe		mm	6		9.52		12	
Drainage pipe		mm	φ 20 × φ 17		φ 30 × φ 27				

Explanation : 1. the design of the unit is subject to the GB/T 7725-1996.

2. The parameter in the above-mentioned is for the heat-pump.

3. The wind volume is tested when no the outside pressure is existed.

4. The cooling and heating capacity is tested when no outside pressure existed.

5. The wind outlet and wind circle share the same dimension .

Ducted Air-conditioning (Heat Pump) Units (KF series)

◇ Name working situation

Testing condition	state for the indoor unit		state for the outdoor unit	
	(DBT) °C	(WBT) °C	(DBT) °C	(WBT) °C
Name cooling capacity	27	19	35	24
Name heating capacity	20	—	7	6
Electricity power	20	—	—	—
Air volume	20 ± 2.0	16 ± 1.0	—	—

◇ The parameter sheet of electricity power for the KF series

Table 1

Model	KF-26PW/K	KFR-26PW/K	KF-35PW/K	KFR-35PW/K	KF-65PW/K	KFR-65PW/K
Power type	~220V 50Hz					
Voltage range (V)	187~242					
Rated power (KW)	0.89	0.99/1.1/1.6	1.4	1.4/1.3/2.1	2.6	2.5/2.2/4.3
Rated current (A)	4.11	4.54/5.07/7.34	6.62	6.92/6.33/10.2	12.2	11.7/10.4/20
The largest power (kW)	1.1	1.6	1.7	2.1	3.0	4.3
Starting current (A)	21	21	31	31	56	56
Power for electrothermal (kW)	/	0.5	/	0.8	/	2.1
Power acreage(mm ²)	2.5	2.5	2.5	2.5	2.5	4.0

Table 2

Model	KF-75PW/K	KFR-75PW/K	KF-100PW/K	KFR-100PW/K	KF-120PW/K	KFR-120PW/K
Power type	~220V50Hz		3N~ 380V 50Hz			
Voltage range (V)	185~242		342~418			
Rated power (KW)	2.7	2.8/2.5/4.6	3.5	3.85/3.8/7.4	4.8	4.8/4.7/8.3
Rated current	13.8	14.0/12.9/22.5	6.7	7.0/6.7/12.2	8.2	8.3/8.1/13.6
Largest power(kW)	3.6	4.6	4.3	7.4	5.8	8.3
Starting current(A)	70	70	45	45	55	55
The power for electrothermal(kW)	/	2.1	/	3.6	/	3.6
Power acreage(mm ²)	2.5	4.0	1.5	1.5×2	1.5	1.5×2

Explanation: the power acreage only applicable for the range of 15 meters, if exceeding, extra ascreage needed, otherwise too high pressure, causing plug burned.

◇ The operation range

model [KF (R) -]		26	35	65	75	100	120
Power supply		~220V 50Hz				3N~380V 50Hz	
Voltage range		187~242V				320~420V	
Cooling	Range for surrounding temperature	16~43℃					
Heating	Range for surrounding temperature	-7~24℃					

Ducted Air-conditioning (Heat Pump) Units (KF series)

2.4 Revisement of the characteristic

◇ The characteristic regarding the cooling capacity in vary wet bulb temperature and dry bulb temperature

the inlet temperature of the roomside		the dry bulb temperature of inlet wind from outside				
wet bulb	dry bulb	25	30	35	40	43
16	23	0.98	0.94	0.89	0.85	0.82
18	25	1.05	1	0.95	0.90	0.87
19	27	1.1	1.05	1	0.95	0.91
20	28	1.12	1.07	1.02	0.96	0.93
22	30	1.19	1.13	1.08	1.02	0.99
24	32	1.26	1.20	1.15	1.08	1.05

Calculation of the actual cooling capacity:

Actual cooling capacity= correctional coefficient X name cooling capacity

Among: the name cooling capacity can be traced from the characteristic

While, the correctional coefficient in the above-mentioned sheet

◇ The correctional coefficient as following under vary WBT and DBT

the inlet DBT of indoor	the inlet WBT of outdoor				
	-5	0	6	10	15
16	0.65	0.80	1.02	1.13	-
18	0.61	0.76	1.02	1.12	-
20	0.6	0.75	1	1.11	1.25
21	0.59	0.72	0.99	1.1	1.24
22	0.58	0.71	0.97	1.09	1.23
24	0.56	0.7	0.96	1.08	1.22

Calculation the actual heating capacity:

The actual heating capacity= the correctional coefficient X the name heating capacity

Among these, the name heating capacity can be traced from the characteristic, contrasting the correctional coefficient in the above-mentioned sheet.

Ducted Air-conditioning (Heat Pump) Units (KF series)

◇ Under the vary balance pressure, the corresponding wind volume as below

type \ pressure Pa	0	10	20	30	40	50
KF (R) -65、 75PW/K	1400	—	1280	1230	1170	1110
KF (R) -100、 120PW/K	2110	2050	1950	1820	1680	1520

Explanation: the wind volume and the wind temperature decrease as the left pressure increase.

◇ The utmost length of the wind connection pipe

model \ wind pipe length	Square pipe	Round pipe
KF(R) - 25PW/K, KF(R) - 35PW/K	3	—
KF(R) - 65PW/K, KF(R) - 100PW/K	10	7
KF (R) -75PW/K, KF(R) - 120PW/K	8	6

Explanation : the utmost length is the total length of wind supply pipe plus the remotest wind circulation pipe.

The design and setup of the pipe, suggesting to be completed by professional company.

◇ Sheet regarding the revisement of the cooling capacity ,dues to the vary condition during the course of the setup

Equivalent total length		Revise coefficient of the cooling capacity						
		5m	10m	15m	20m	25m	30m	35m
Discretion difference when the outdoor unit in the high position	0m	1.0	0.98	0.96	0.94	0.92	0.9	0.88
	5m	1.0	0.97	0.95	0.93	0.91	0.89	0.87
	10m	-	0.96	0.94	0.92	0.90	0.88	0.86
	15m	-	-	0.93	0.91	0.89	0.87	0.85
	20m	-	-	-	0.90	0.88	0.86	0.84
	25m	-	-	-	-	0.87	0.85	0.83
Discretion difference when the indoor unit in the high position	0m	1.0	0.98	0.96	0.94	0.92	0.9	0.88
	5m	1.0	0.98	0.96	0.94	0.92	0.9	0.88
	10m	-	0.98	0.96	0.94	0.92	0.9	0.88
	15m	-	-	0.96	0.94	0.92	0.9	0.88
	20m	-	-	-	0.94	0.92	0.9	0.88
	25m	-	-	-	-	0.92	0.9	0.88

Ducted Air-conditioning (Heat Pump) Units (KF series)

Explanation: equivalent total length is means the length of straight pipe plus the elbow. if the pipeline is too long, causing the loss of the energy and less reliable. The resistant of the pipeline system increase as the more elbow exist, decreasing the cooling and heating capacity and bring malfunction to the compressor. Usually it is better to choose the shortest path and the pipeline of vary model according to the above-mentioned sheet. Take the oil backfire into consideration, one oil circulation elbow should add every 4 to 6 meters discretion difference exists.

◇ The demand for the tubing of indoor and outdoor unit

type	(mm) tubing dimension		The longest tubing (m)	The largest discretion difference (m)	Recharge the refrigeration
	gas tubing	Liquid tubing			
KF (R) -26	9.52	6	20	15	15(20)g/m
KF (R) -35	12	6	20	15	15(20)g/m
KF (R) -65	16	9.52	25	15	15(20)g/m
KF (R) -75	16	9.52	25	15	20(30)g/m
KF (R) -100	19	12	35	25	30(40)g/m
KF (R) -120	19	12	35	25	30(40)g/m

Explanation:

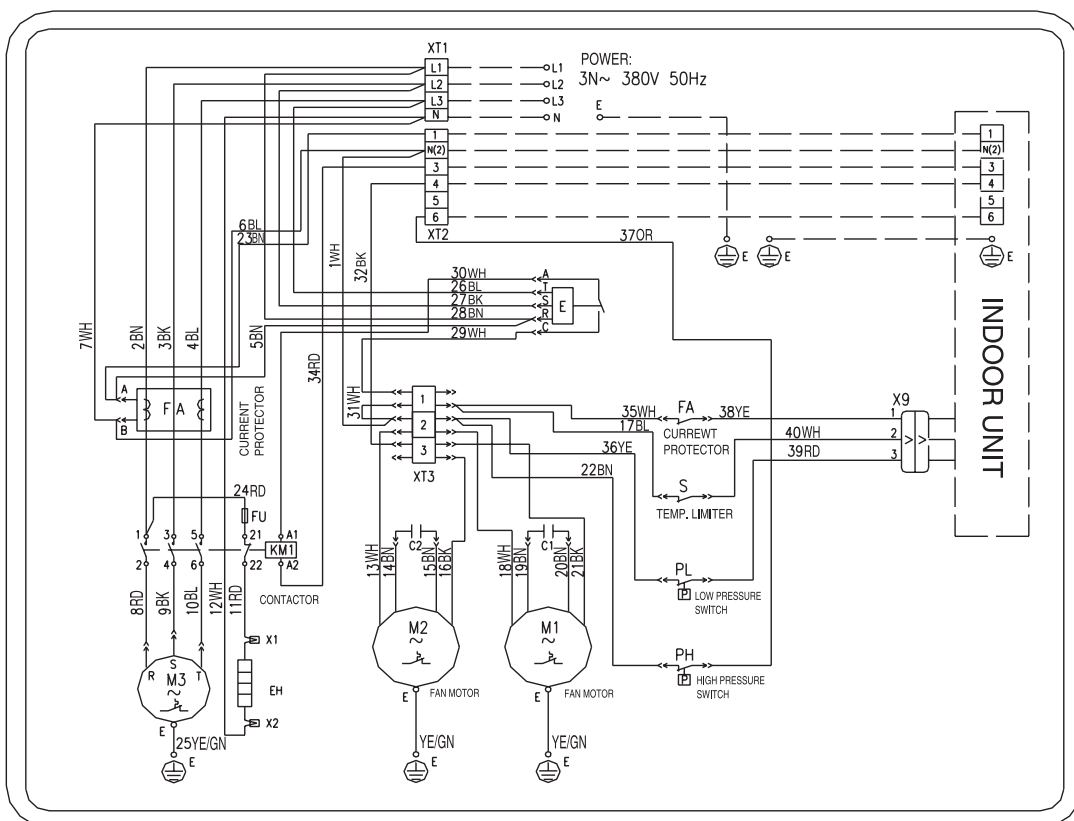
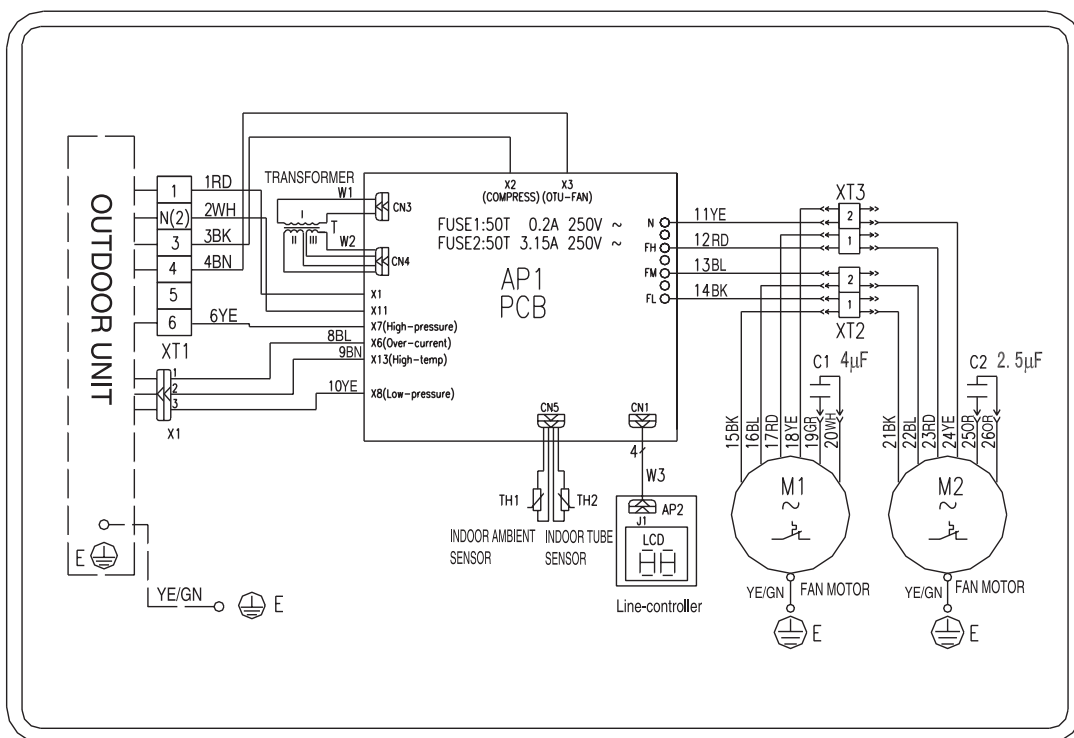
1. The standard length of pipe is 5 meters, if the connection pipe is less than that, no more refrigeration is needed, if the pipe exceed 5 meters, extra refrigeration recharged. The above sheet list the extra refrigeration needed when one more meter added.
2. The copper wall is 0.5-1.0 mm, sustaining the pressure of 3.040 kPa.
3. The data means the refrigeration for the heat pump.
4. The cooling and heating capacity loss more as the length of connection pipe increases.

3. The electric wiring

3.1 The principal of electric wiring for the indoor and outdoor unit

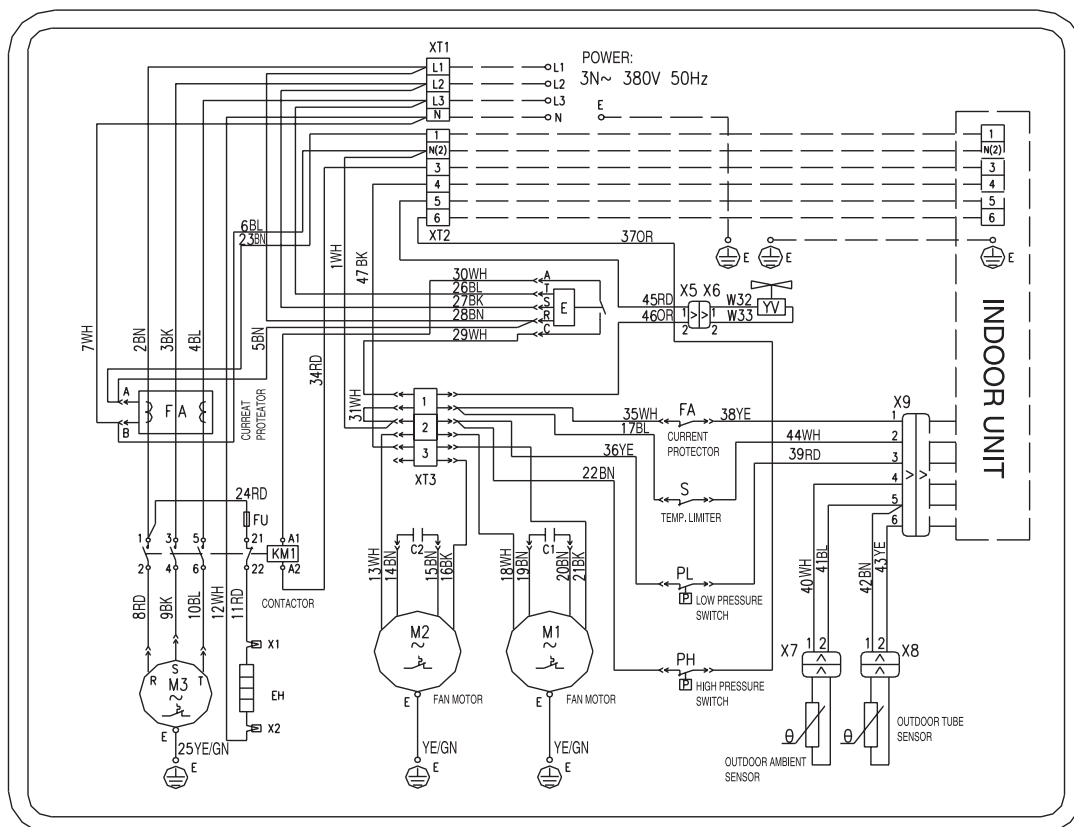
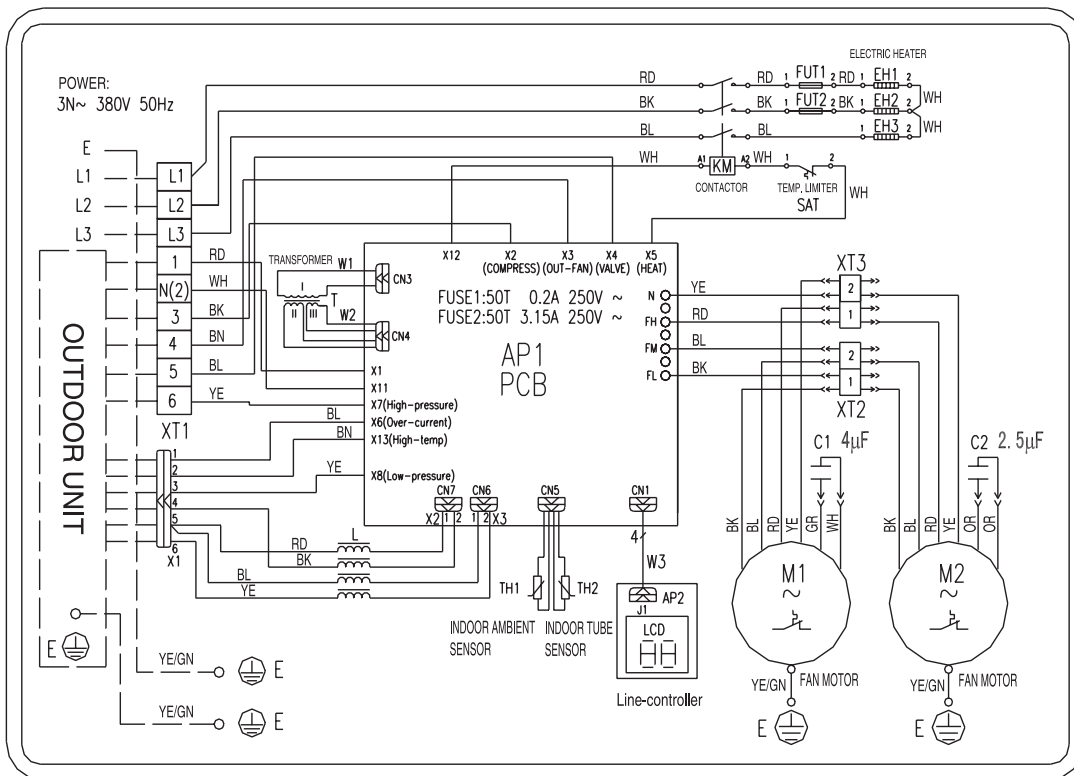
Ducted Air-conditioning (Heat Pump) Units (KF series)

The electric wiring regarding to the type KF-100(120) PWK, including the indoor unit and the outdoor unit



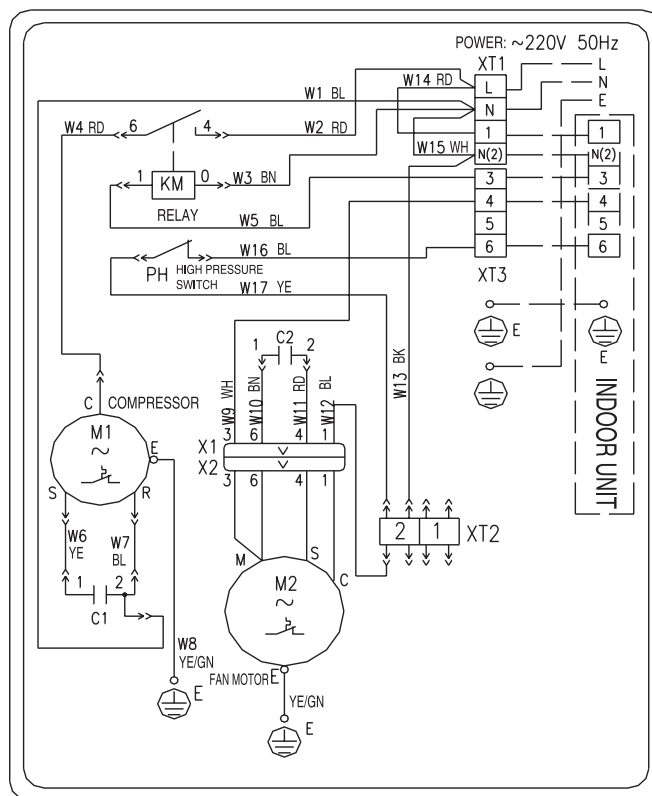
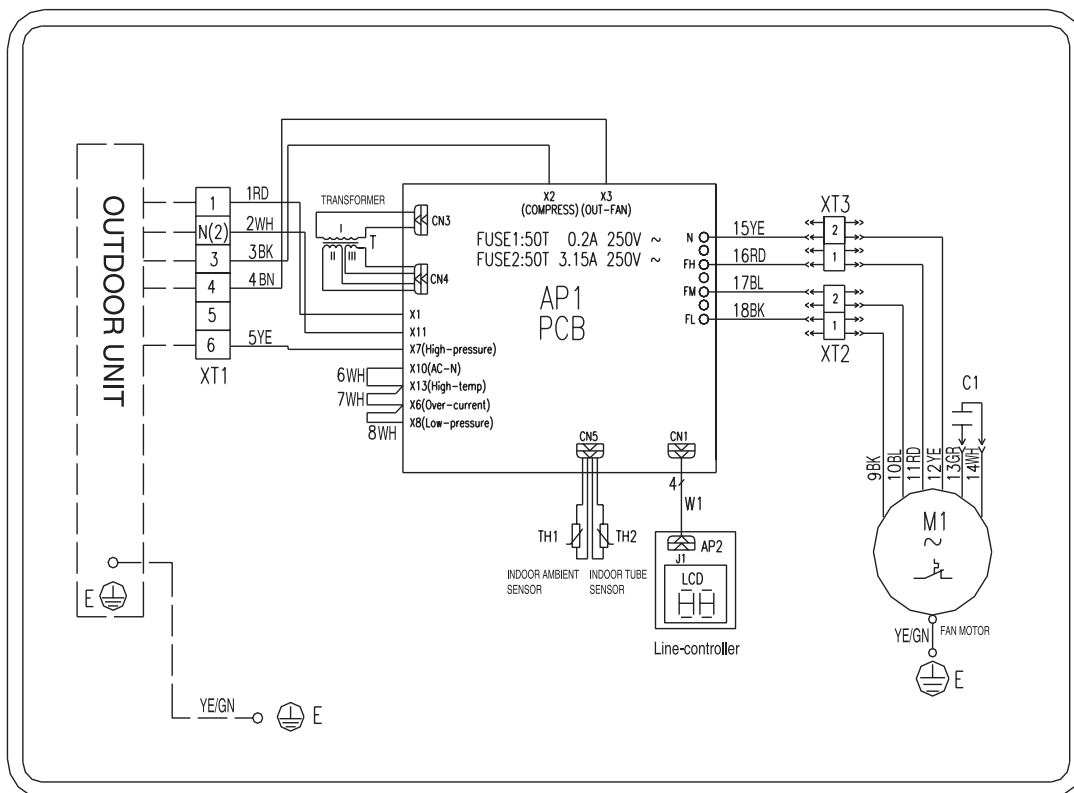
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The electric wiring regarding to the type KF-100(120)PWK, including the indoor unit and the outdoor unit



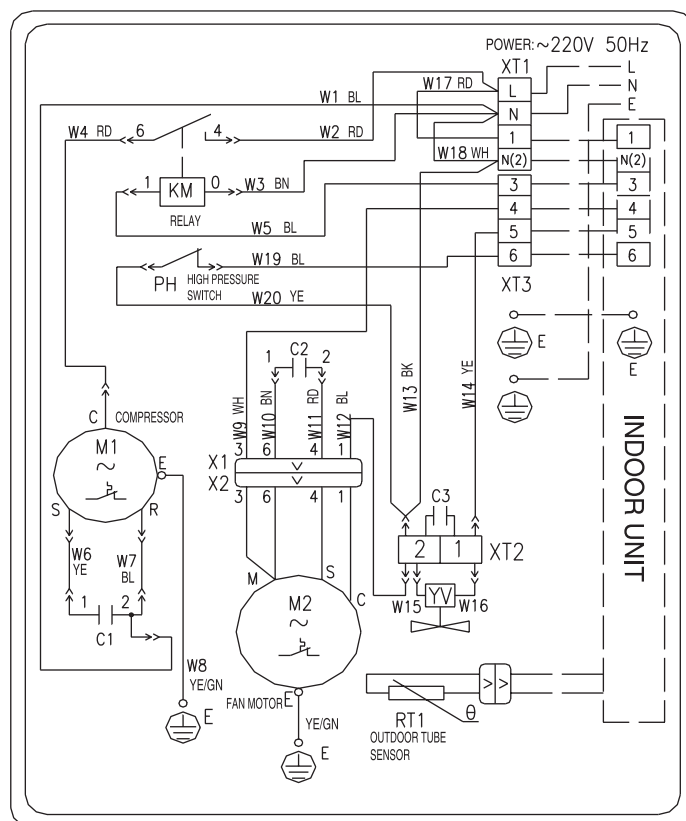
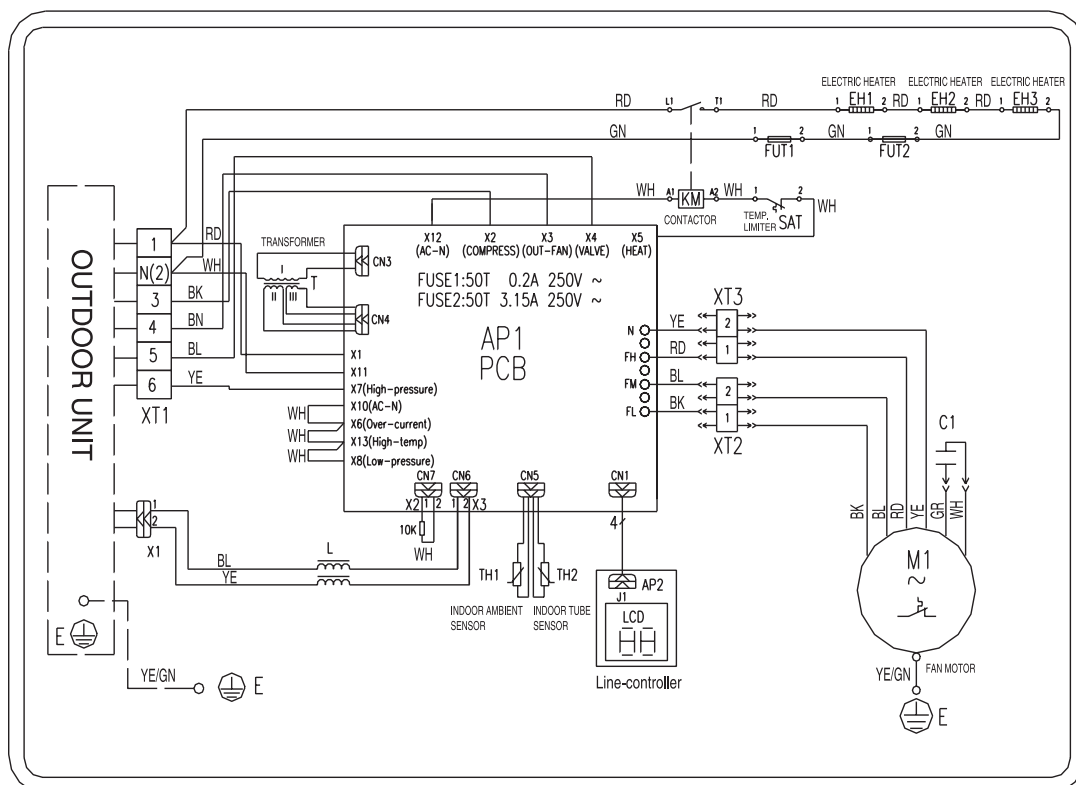
Ducted Air-conditioning (Heat Pump) Units (KF series)

The electric wiring regarding to the type KF-65PWK, including the indoor unit and the outdoor unit



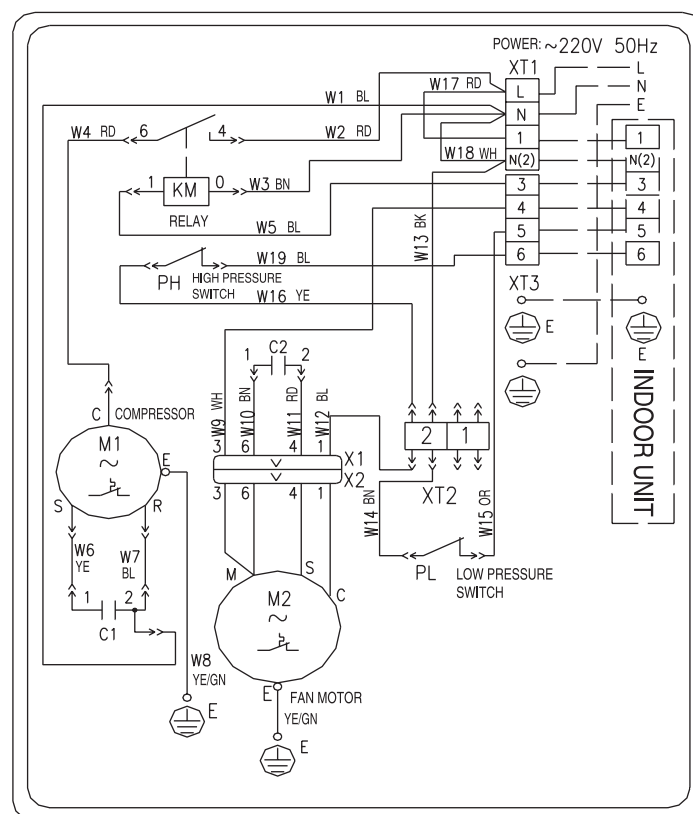
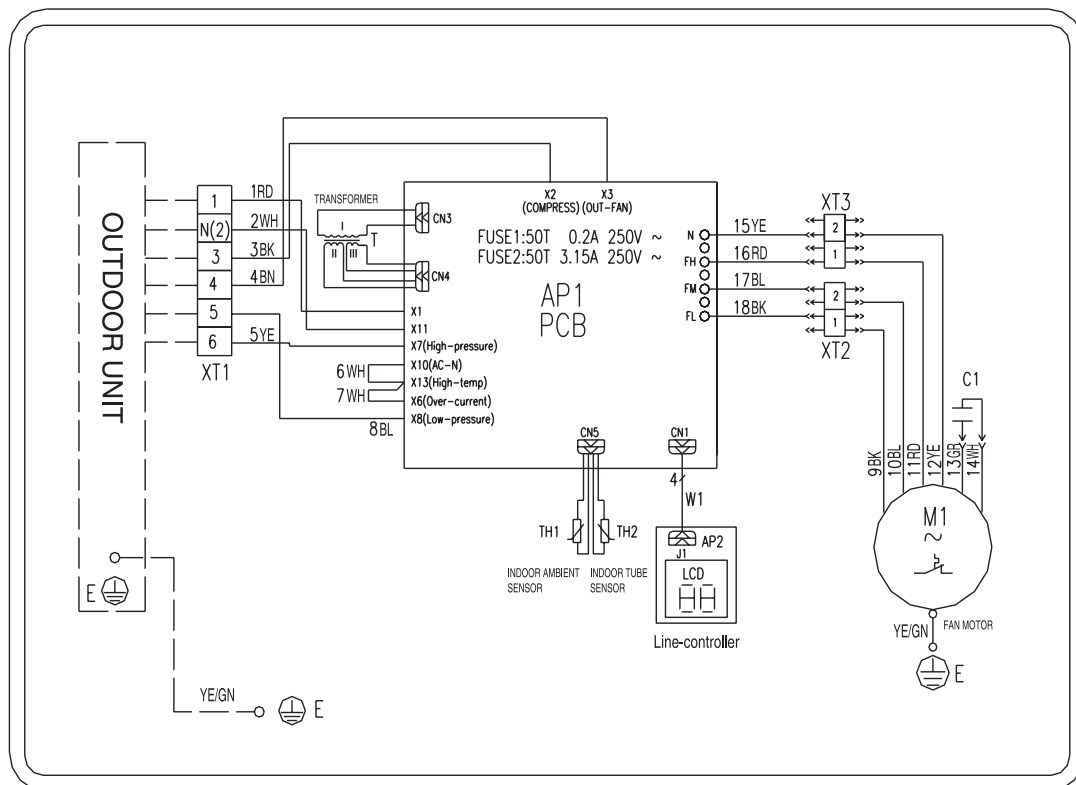
Ducted Air-conditioning (Heat Pump) Units (KF series)

The electric wiring regarding to the type KFR-65PWK, including the indoor and outdoor unit



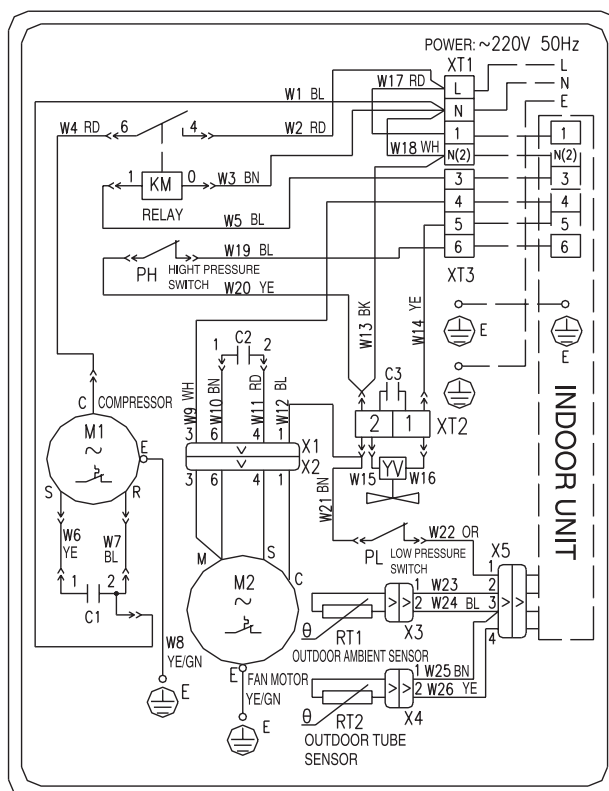
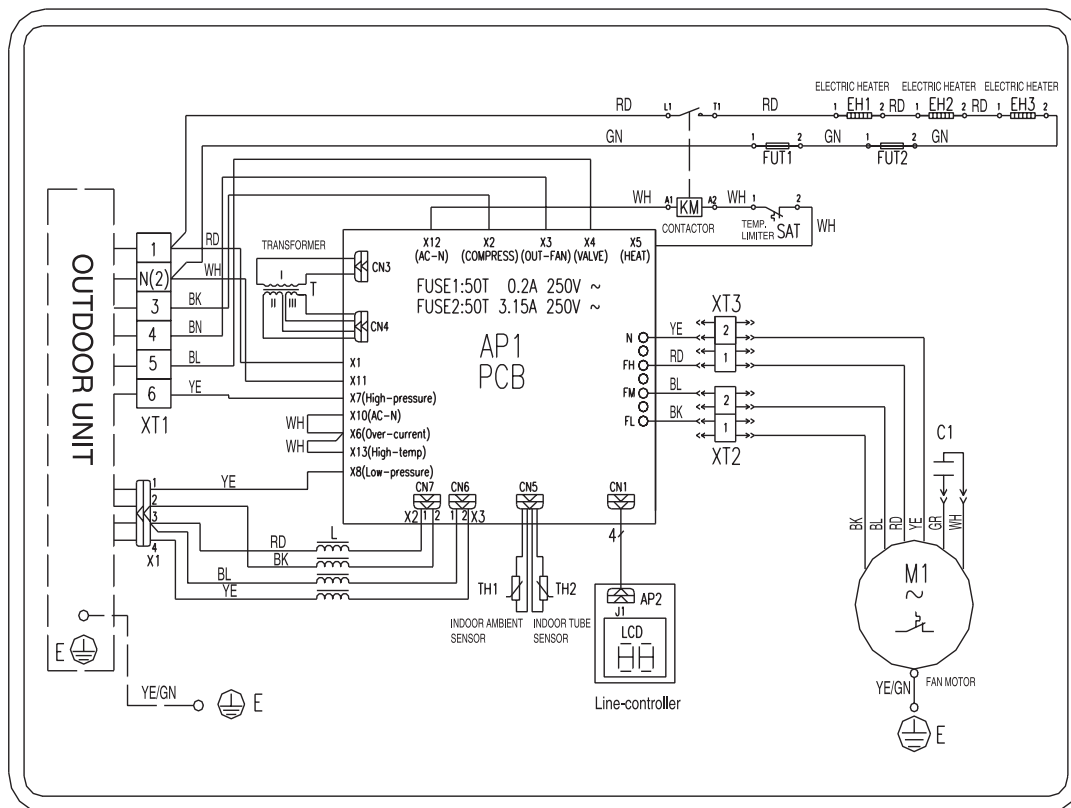
Ducted Air-conditioning (Heat Pump) Units (KF series)

The electric wiring for the KF-75PWK, including the indoor unit and the outdoor unit



Ducted Air-conditioning (Heat Pump) Units (KF series)

The electric wiring regarding to the KFR-75PWK, including indoor and outdoor unit

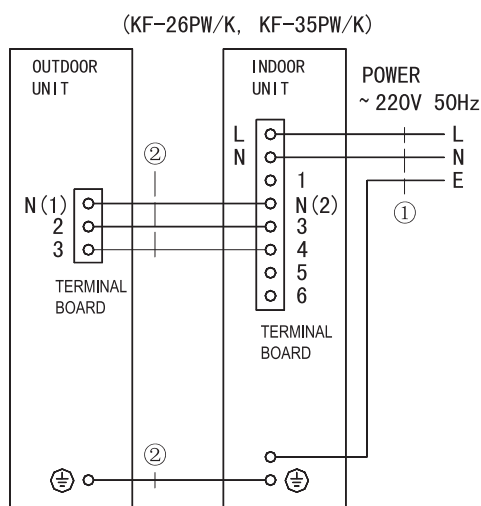


Ducted Air-conditioning (Heat Pump) Units (KF series)

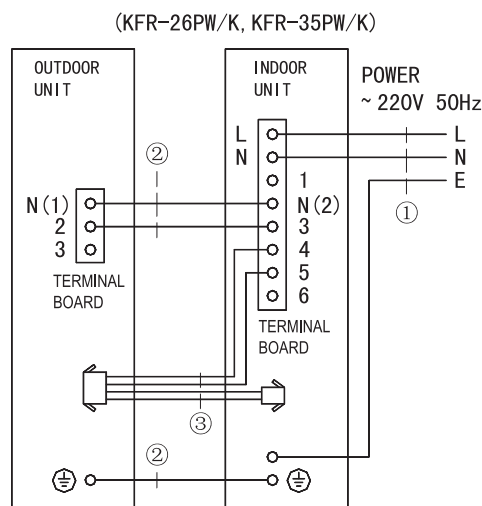
3.2 The electric wiring for the unit

Explanation : The side acreage of the lead can not be smaller than the specification of the following figures.

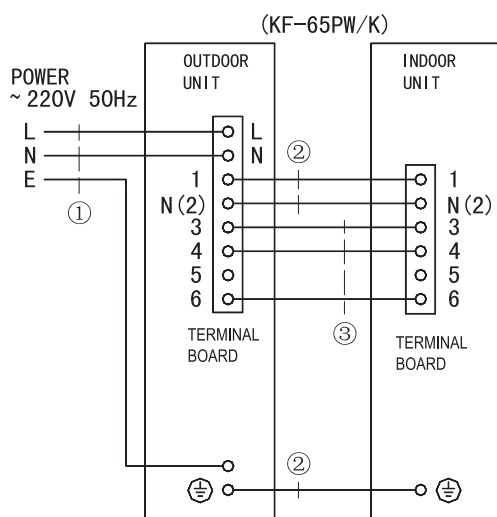
Sketch map for the wire connection



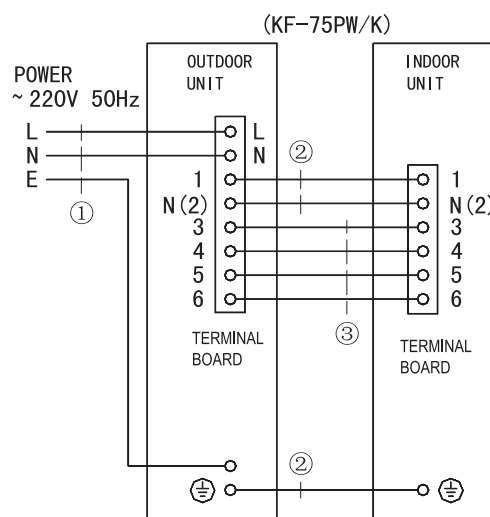
Explanation: ① Power cord 3X2.5mm²
② Connection cable 3X2.5mm²+1X1.5mm²



Explanation: ① Power cord 3X2.5mm²
② Connection cable 3X2.5mm²
③ Signal cable 4X0.75mm²

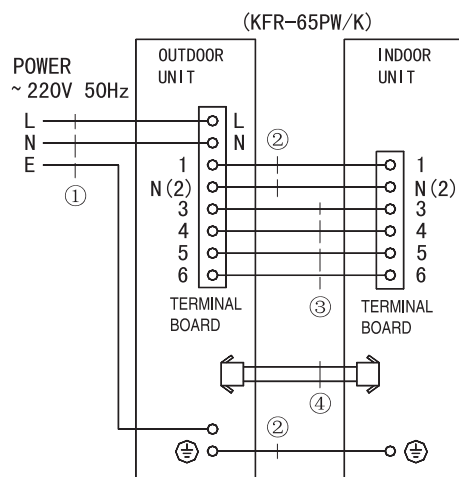


Explanation: ① Power cord 3X2.5mm²
② Connection cable 3X1.0mm²
③ Connection cable 3X0.75mm²

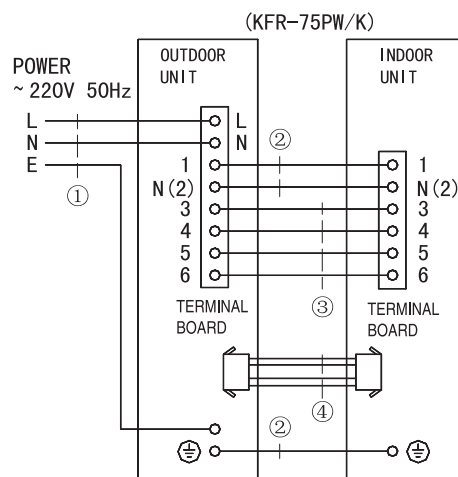


Explanation: ① Power cord 3X2.5mm²
② Connection cable 3X1.0mm²
③ Connection cable 4X0.75mm²

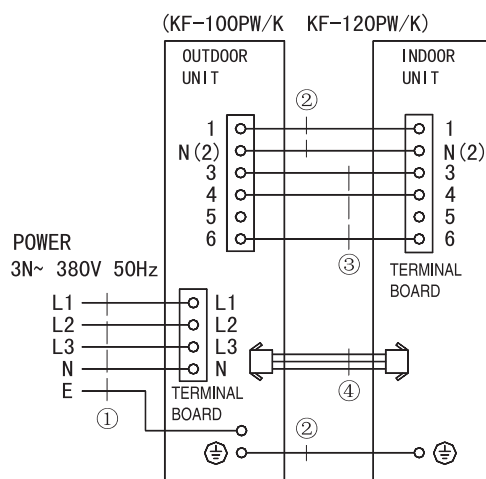
Ducted Air-conditioning (Heat Pump) Units (KF series)



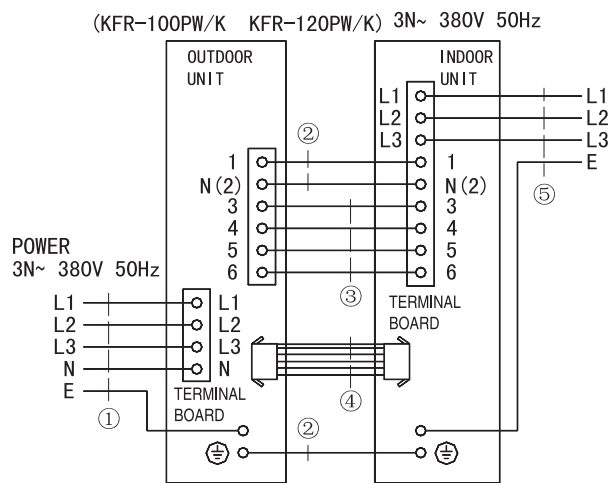
Explanation: ① Power cord 3X4.0mm²
 ② Connection cable 3X2.5mm²
 ③ Connection cable 4X0.75mm²
 ④ Signal cable 2X0.75mm²



Explanation: ① Power cord 3X4.0mm²
 ② Connection cable 3X2.5mm²
 ③ Connection cable 4X0.75mm²
 ④ Signal cable 4X0.75mm²



Explanation: ① Power cord 5X1.5mm²
 ② Connection cable 3X1.0mm²
 ③ Connection cable 3X0.75mm²
 ④ Signal cable 3X0.75mm²



Explanation: ① Power cord 5X1.5mm²
 ② Connection cable 3X1.0mm²
 ③ Connection cable 4X0.75mm²
 ④ Signal cable 6X0.75mm²
 ⑤ Power cord 4X1.5mm²

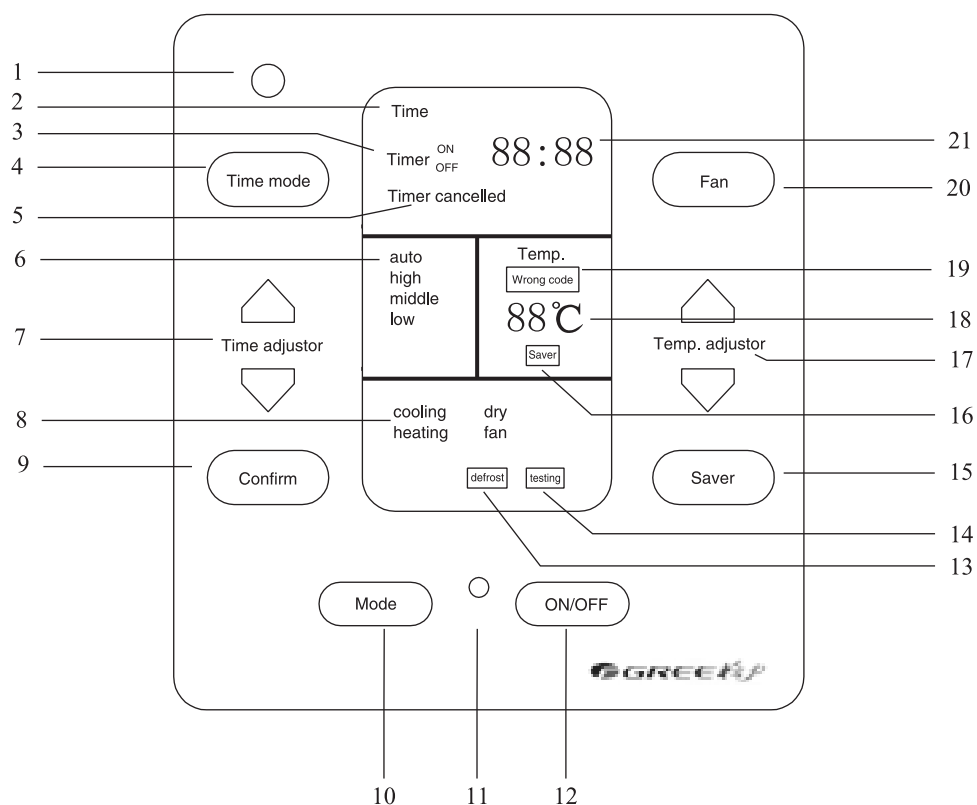
Ducted Air-conditioning (Heat Pump) Units (KF series)

4. Explanation for hand operation

Introduction: allocated with a wire controller and with a displayer showing all the parameters and sending them to the controller of the mainboard.

A remote controller allocated, adjusting the unit together with the line controller.

4.1 Control panel of the manual operator



button	the LCD picture
1 remote receiver	12 on/off
2 time	13 <u>defrost</u>
3 timer	14 <u>testing</u> display
4 time mode	15 saver
5 timer cancelled	16 <u>saver</u>
6 fan speed (automatic, high, medium, low)	17 temperature adjustor
7 timer	18 show the temperature
8 mode (cooling, dehumdity, heating, fan)	19 <u>wrong code</u>
9 confirm	20 fan
10 mode	21 display the time
11 indicator	

Ducted Air-conditioning (Heat Pump) Units (KF series)

4.2 Operation explanation

(1) ON/OFF

❖ Pressing the button, the unit will start working, the indicator light turning on.

❖ Repressing the button, the unit stops working, turning out the indicator light.

(2) Setup the time mode

❖ The time mode will change in turn, as timer, on /off, cancel timer, etc, whiling pressing the button once.

❖ Pressing the time mode, the just showing the whole hour and being adjusted.

△ : Increase the time;

▽ : Decrease the time.

Adjust the hour and confirm, minutes being adjusted, you can also adjust the minutes in the same way.

After adjusting the minutes, pressing confirm, turning to the adjustment of the hour.

(Pressing the time adjusting, time will increase or decrease by hour [or minute].)

Explanation: When setup the time, without pressing the confirm button, the unit will setup the time automatically after 10 seconds.

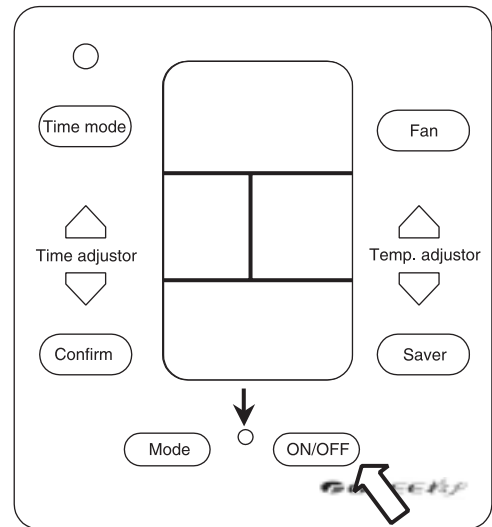


Fig. 4

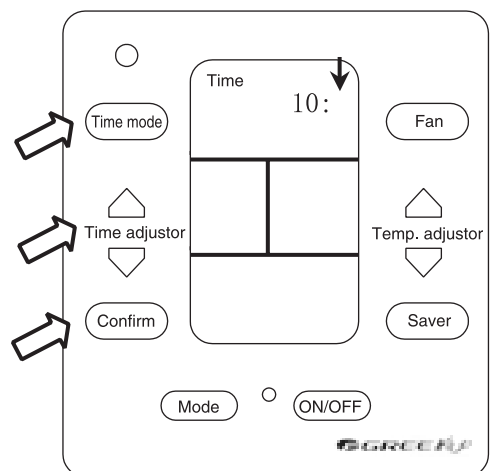


Fig. 5 Example: setup the time as 10 hours

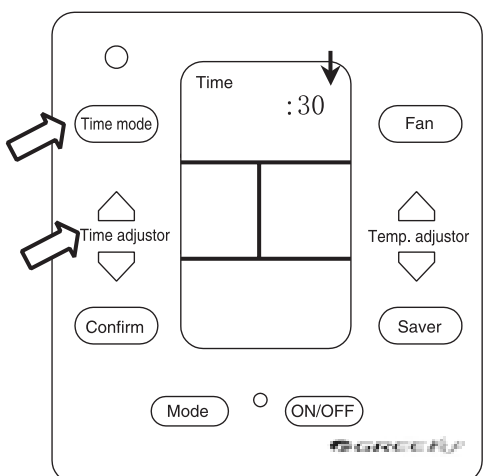


Fig. 6 Example: setup the time as 30 minutes

Ducted Air-conditioning (Heat Pump) Units (KF series)

❖ When turning on the button “on”, adjustment of time keep pace with the time of the clock.

❖ When turning on the button “off”, adjustment of time keep pace with the time of the clock.

❖ The PCB will warning if the time for “on” is the same as the time for “off”.

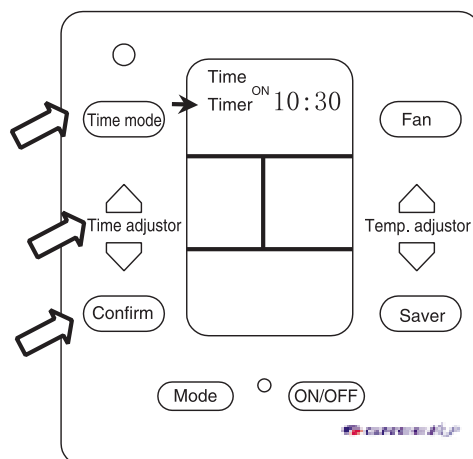


Fig. 7 Example: If the setup time is effective, displaying the “Timely off” while on operation, and “Timely on” when the unit close.

❖ When button “cancel” turning on, pressing the time adjustor to choose whether the function should be cancelled.

△ Effective timer (display “timely on” or “timely off”.

Displaying the “timely off” while on operation, and “Timely on” when the unit close. (as Fig.7)

▽ Cancel the function of timing.

Pressing the button to confirm the mode, escaping the setup of the timing mode. the “timing cancelled” will not display after confirmation. (as Fig.8)

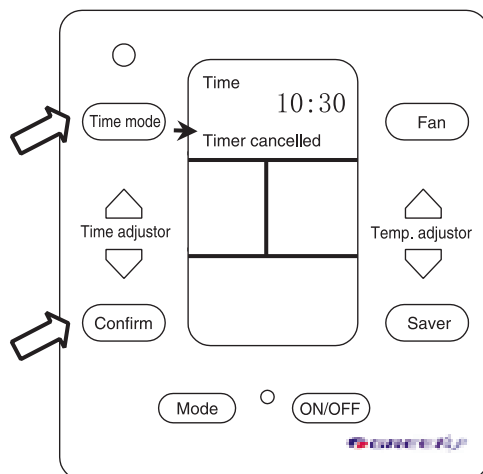


Fig. 8 Example: Setup as cancel timer, nothing showing in the LCD.

(3) Fan controlling

❖ Pressing the fan controller button, the fan speed will change as following in turn:



❖ When setup in the mode of “auto”, (as picture 9 shows) if the unit in the process of cooling or heating, the fan speed can adjust according to the room temperature, while in the process of fan mode, the fan speed will be medium speed automatically.

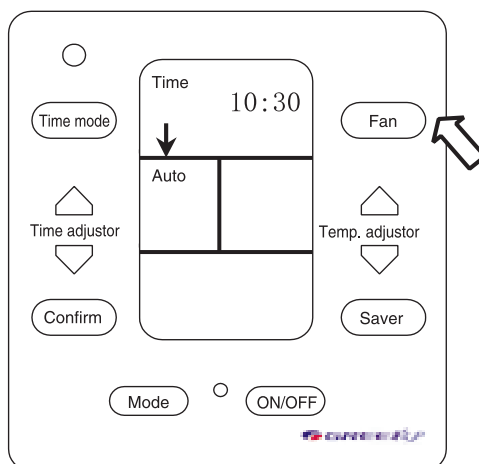


Fig. 9 Example: Setup the fan running automatically.

Ducted Air-conditioning (Heat Pump) Units (KF series)

(4) Adjust the temperature

❖ Pressing the temperature adjustor, the temperature will increasing or decreasing 1°C each time. after 15 seconds of operation, it will show the surrounding temperature.



Increase temperature.



Decrease temperature.

❖ The temperature range of vary mode

heating ----- 16°C~30°C

cooling ----- 16°C~30°C

dehumidify ----- 16°C~30°C

fan ----- can not change the temperature

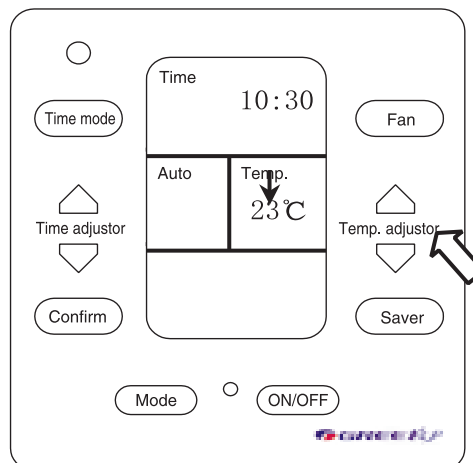


Fig.10 Example: Setup the temperature as 23°C

(5) setup of the energy saving

❖ Pressing the energy saving, entering into the energy saving mode, and the light turning on.

❖ Re-pressing the button, escaping the energy saving mode, nothing to display about the mode.

❖ The energy saving can control the unit economically, increase the temperature slightly in cooling mode and decrease the temperature in heating mode.

❖ The temperature of the remote controller will not change in the energy saving mode.

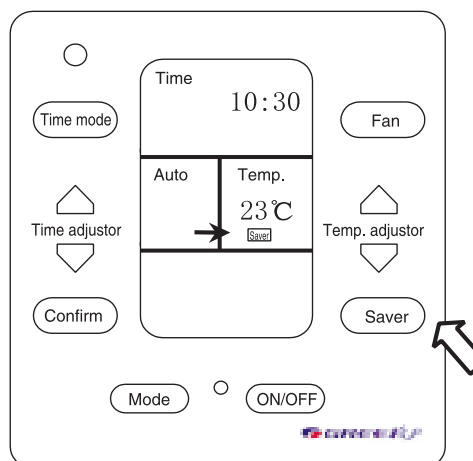
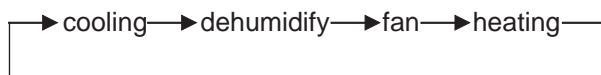


Fig.11 Example: The unit in the state of energy-saving

(6) Setup the running mode

❖ Pressing the button, the operating mode will change as following :



❖ In the cooling mode, the light turning on, the temperature must be lower than the room temperature. Otherwise, the unit will not cool the room and only the fan operating.

❖ In the dehumidify mode, the light turning on, the compressor and outer motor operating as way of running 6 minutes then stop 4 minutes and the inner motor running in the low speed. Thus, bringing a more effective dehumidify effect.

❖ In the heating mode, furthermore, the running temperature must be higher than the room temperature, or it will not operate.

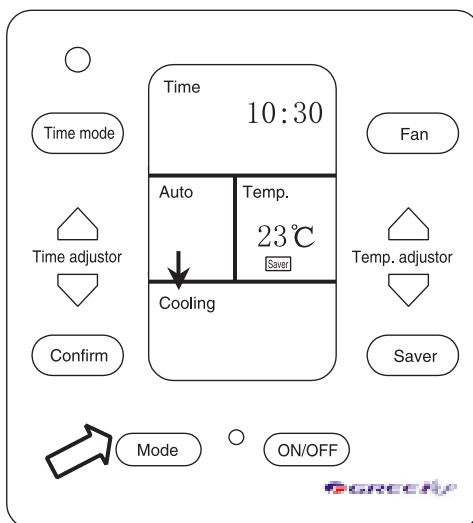


Fig.12 Example: Setup the running mode as cooling.

Ducted Air-conditioning (Heat Pump) Units (KF series)



Memo: the unit endowed with function of anti-cooling wind and electrical heating, the first one is designed for the cooling wind after starting operation, the indoor unit only operate in the certain temperature of condenser, bringing more comfort. The latter is only available for the unit has electrical heating, choosing whether the function operating subject by the indoor fan speed and surrounding temperature.

❖ In the heating mode, turning on the fan indicator, the temperature can't change and displayable on the LCD of controller.

❖ When in the heating mode as well as in the low temperature and high humidity, the unit will defrost, decreasing of the efficiency. Under the circumstance, the PCB defrosting, the indicator turning on.

(7) Testing

When power on

Pressing the temperature button  it forced into the function of heating, the four way valve and compressor running, the unit stop five minutes later (as Fig.14). Re-pressing the button  the unit will be forced into cooling, the fan in the high speed, the unit stop five minutes later (as Fig.15).

❖ The testing function only available for the test before dispatching, you can escape the testing mode by pressing any button.

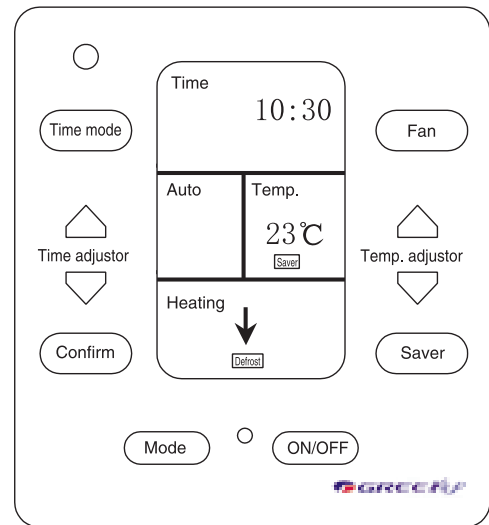


Fig.13 Example: The LCD display while the unit in the state of defrosting

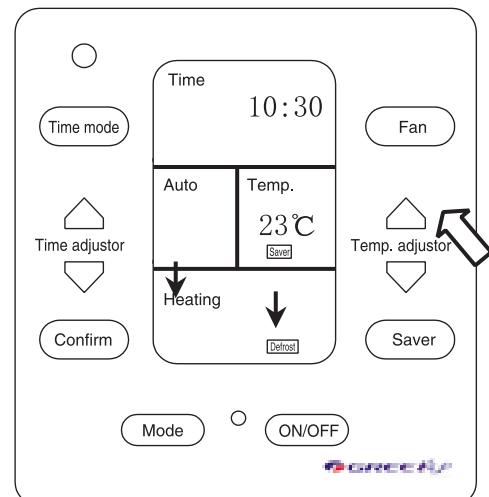


Fig.14 Example: The LCD display while the unit in the state of heating and testing

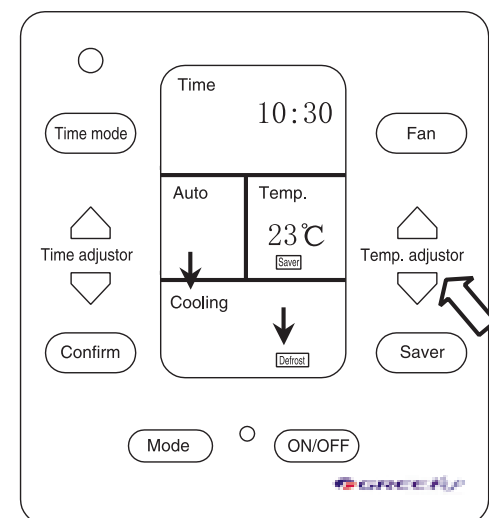


Fig.15 Example: The LCD display while the unit in the state of Cooling and testing

Ducted Air-conditioning (Heat Pump) Units (KF series)

(8) When malfunction occurred, the indicator turning on, making a buzzer sound (as Fig.16), the meaning for the malfunction code as following:

Code	Malfunction
E1	High pressure protection of compressor
E2	Anti - freezing protection
E3	Compressor low pressure
E4	Hightemperature protection of discharge pipe
E5	Overload protection for compressor
F0	Indoor room sensor
F1	Temperature sensor for the evaporator
F2	Temperature sensor for the condenser
F3	Outdoor temperature sensor

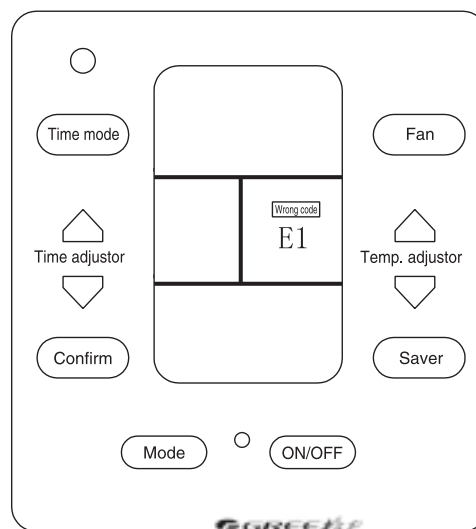


Fig.16 Example: When in high pressure protection of compressor, the error code indicated in the LCD is E1.

In this circumstance, please turning off the unit, sending for the professional for trouble-shooting.

4.3 Remote control operation specifications

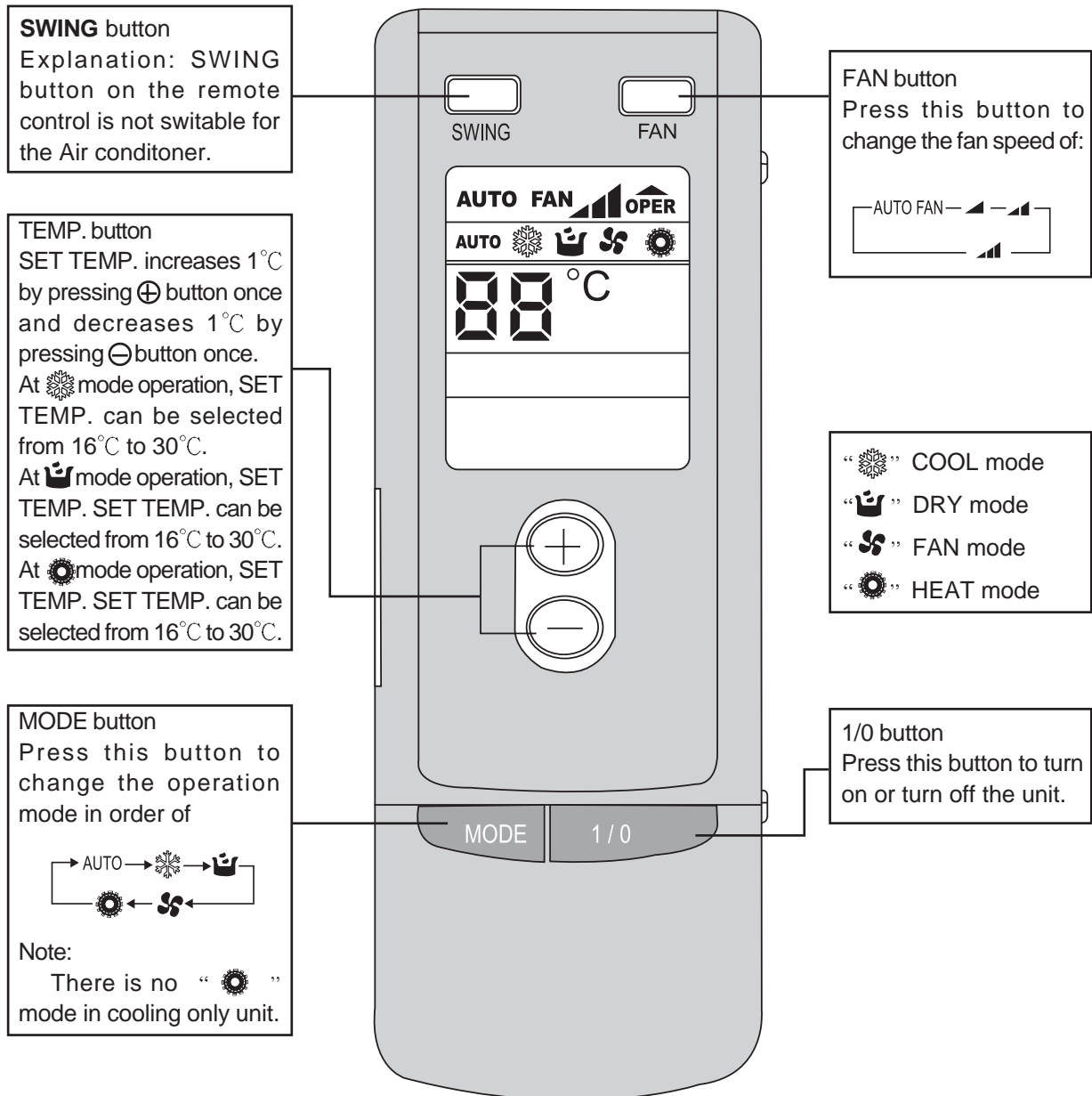
Remote control operation procedure

Note:

1. Besure that there are no obstructions.
2. The remote control signal can bereceioed at adistance of up to about 10m.
3. Don't drop or throw the remote controller.
4. Don't place the remote contreller in a loation exposed to direct run light. Don't make any liquid enter the remote controller.
5. Any operation is unavailable in AUTO mode and AUTO FAN mode.

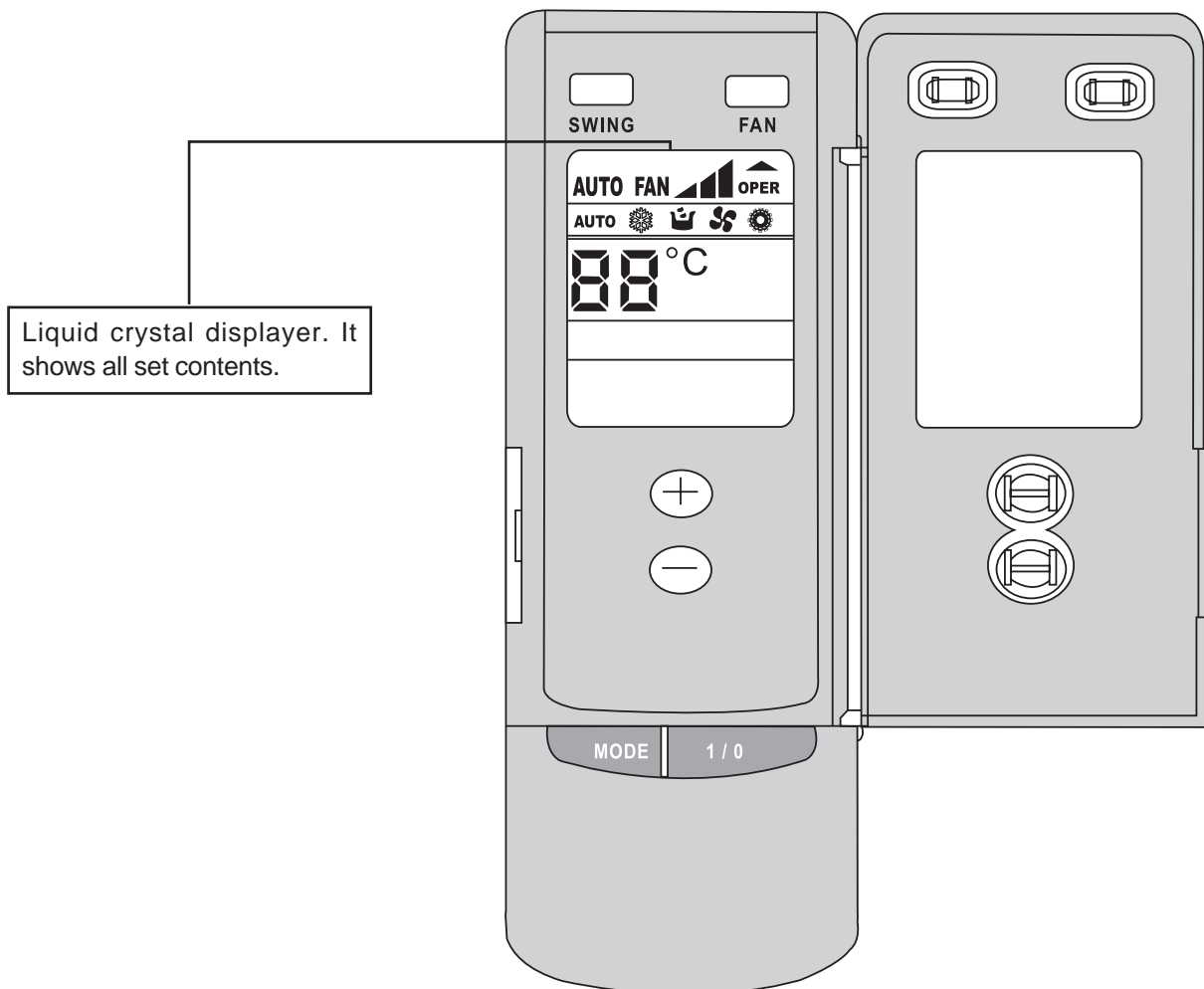
Ducted Air-conditioning (Heat Pump) Units (KF series)

Name and Function-Remote control as follows:



Ducted Air-conditioning (Heat Pump) Units (KF series)

Name and Function-Remote control (Remove the cover)



Ducted Air-conditioning (Heat Pump) Units (KF series)

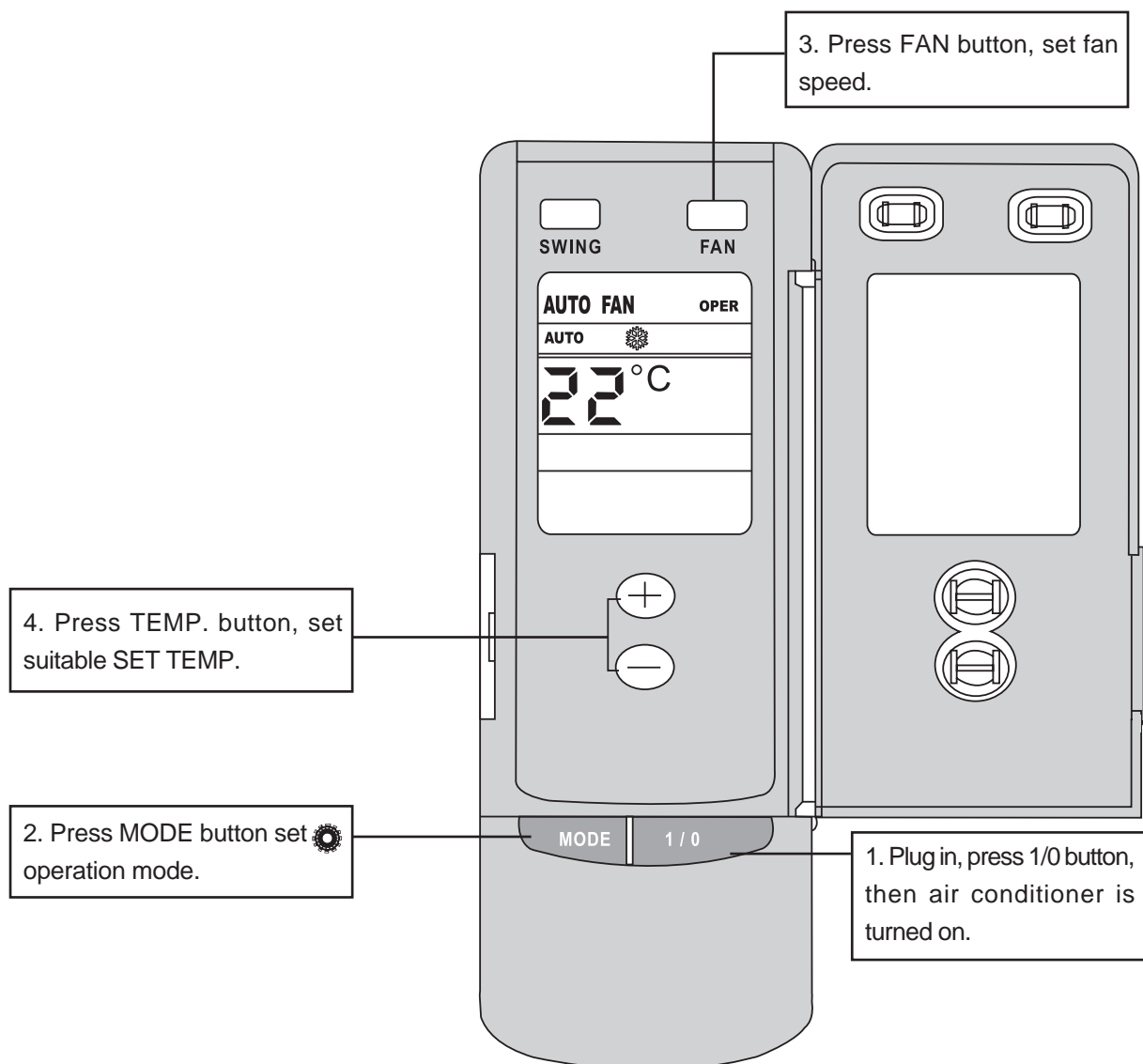
COOL mode operation procedure as follows

According to difference between room temp. and set temp., microcomputer can control cooling on or not.

If room temp. is higher than set temp., compressor runs at COOL mode.

If room temp. is lower than set temp., compressor stops and only indoor fan motor runs.

SET TEMP. should be in range of 16°C to 30°C.



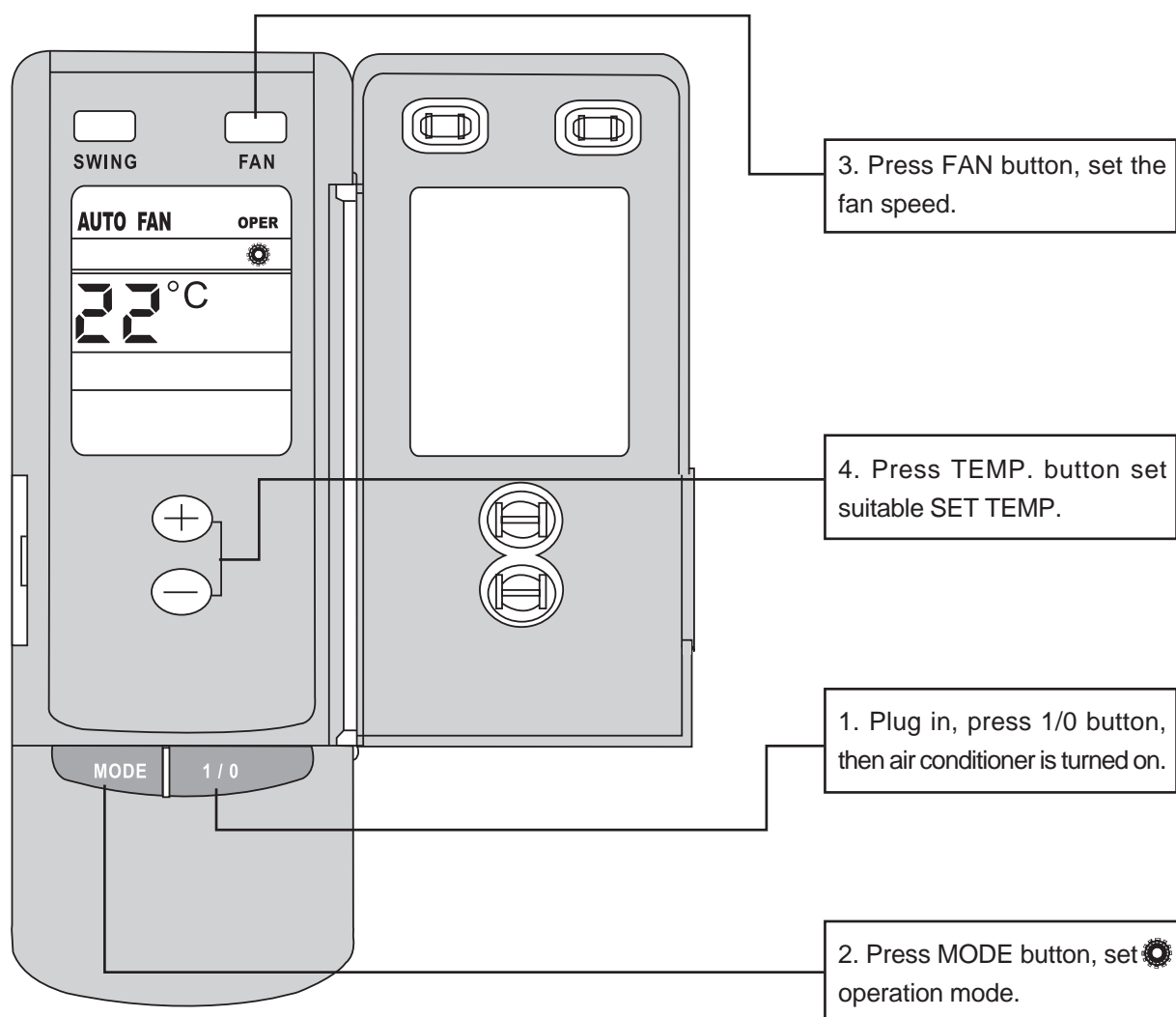
Ducted Air-conditioning (Heat Pump) Units (KF series)

HEAT mode operation procedure

If room temp. is lower than set temp., compressor runs at HEAT mode;

If room temp. is higher than set temp., compressor and outdoor fan motor stop, only indoor fan motor runs,.

SET TEMP. should be in range of 16°C to 30°C.

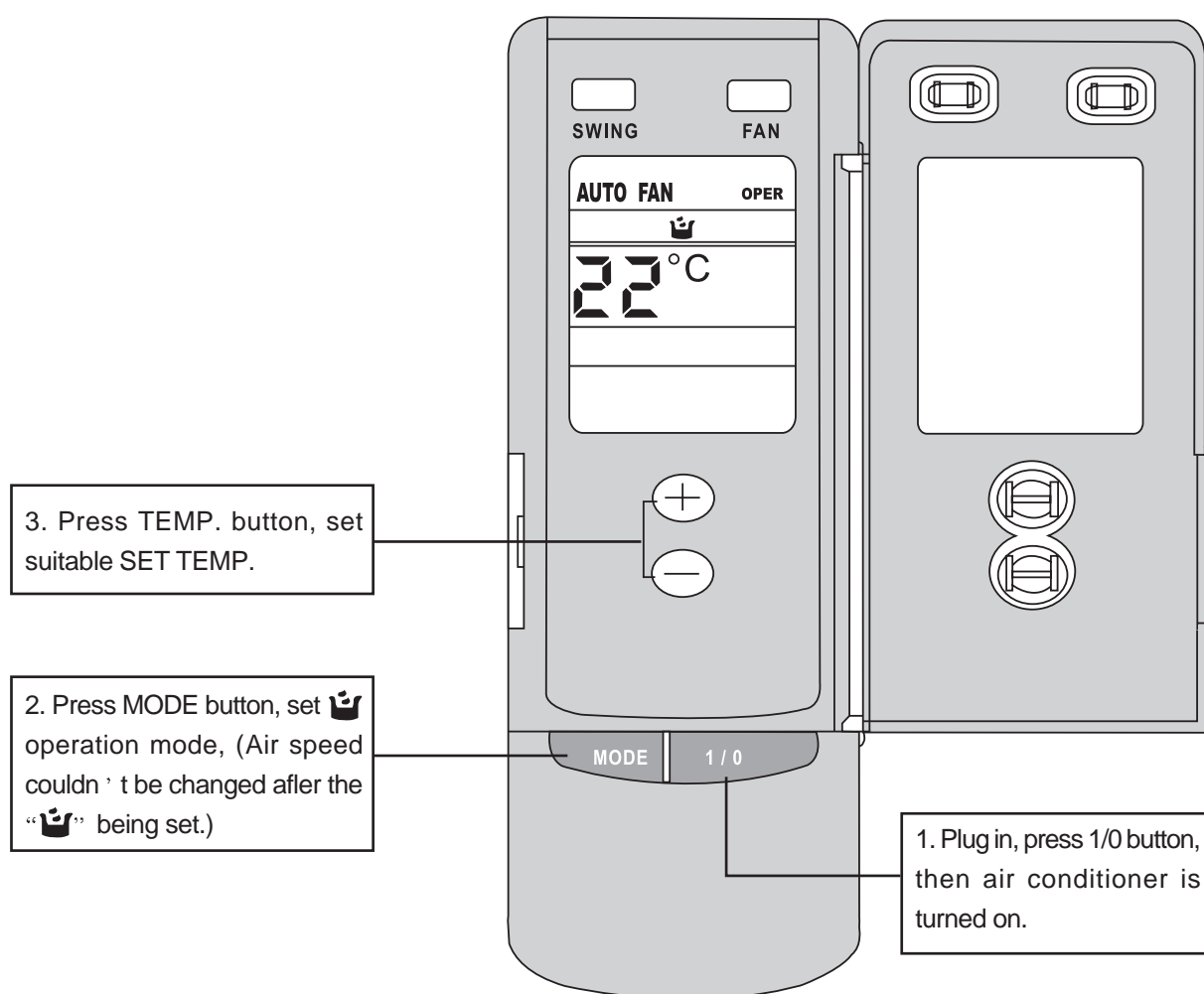


There is no heating mode in cooling only unit.

Ducted Air-conditioning (Heat Pump) Units (KF series)

DRY mode operation procedure

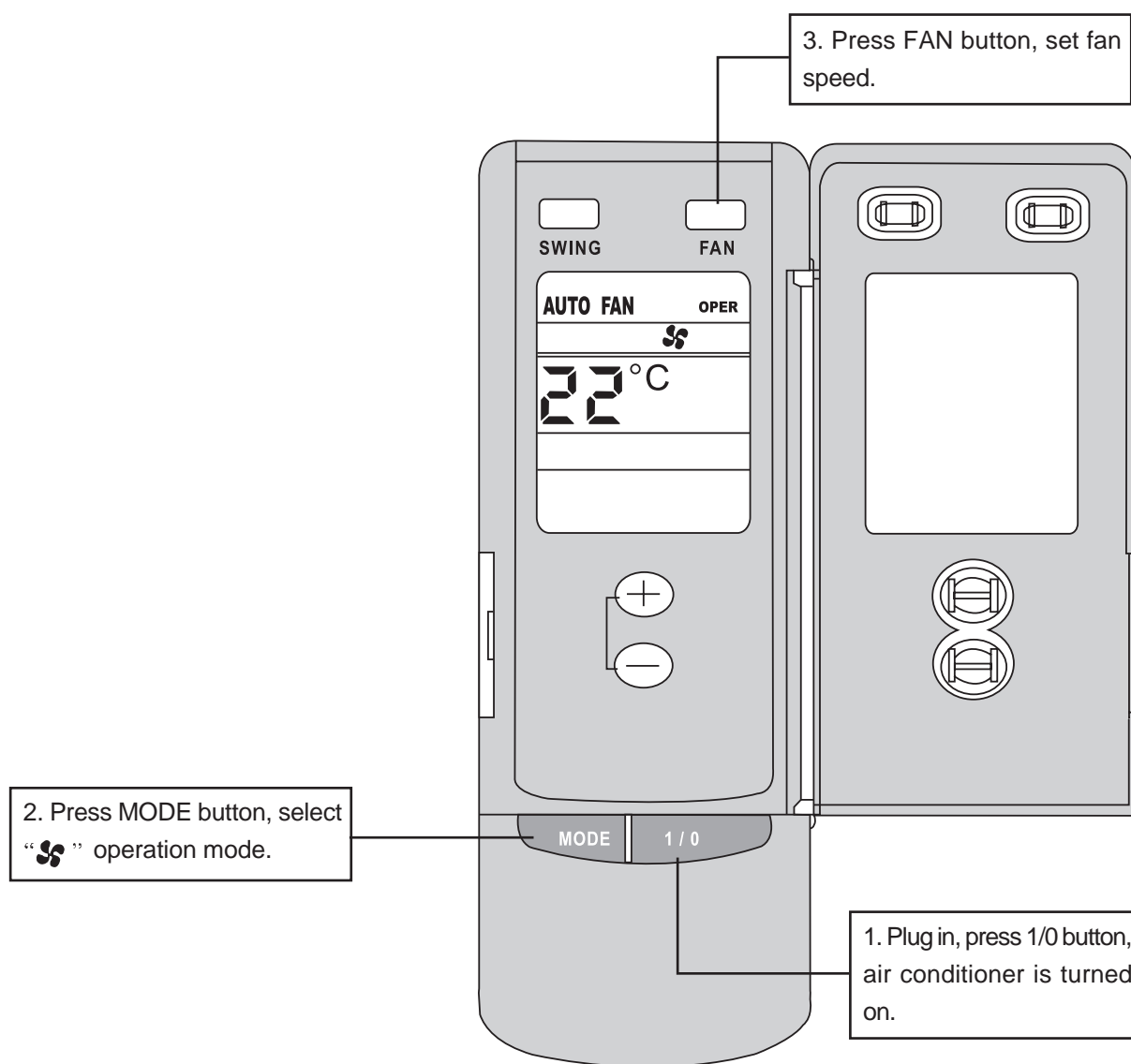
If room temp. is higher than set temp., compress runs at cool mode, indoor fan motor runs at low speed.
SET TEMP. should be in range of 16°C to 30°C.



Ducted Air-conditioning (Heat Pump) Units (KF series)

Fanning operation procedure:

Temperature couldn't be under regulated fanning mode.

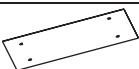











Ducted Air-conditioning (Heat Pump) Units (KF series)

5. Installation and Test

5.1 Installation

Attachment with the Air-con unit

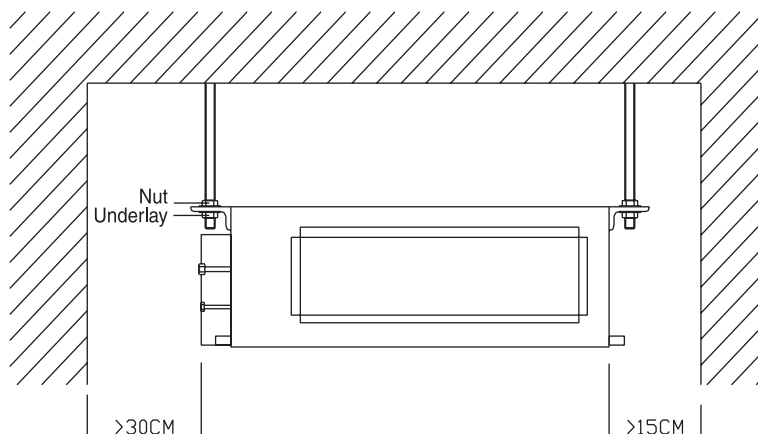
Name and shape	Quantity	Purpose
Intallation template 	1	Fixing indoor unit
Bigger heat insulation 	1	Wrapping tube connector (gas)
Smaller heat insulation 	1	Wrapping tube connector (liquid)
Heat insulation for drainage pipe 	2	Wrapping drainage pipe
Nut 	4	Fixing indoor unit
Nut and underlay 	Apiece 4	
Hook 	4	Fixing indoor unit
String 	2	
Lineate controller 	1	
Remote controller 	1	

5.1.1 Installation of indoor unit

◇ Position select

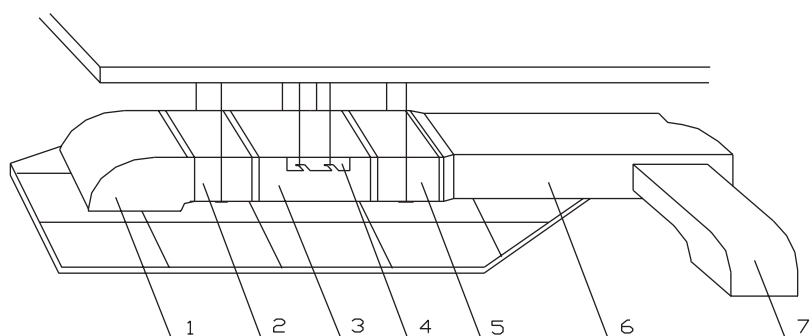
- Be sure the roof is firm enough to install.
- Convenience for drainage out.
- There is no block on the air flowing way.
- Enough space for installation and maintenance.
- Far away from the heat, gas and fog.
- Keep all the cables 1m far away from the other electric appliance to prevent these electric appliance from display disturbing and noise.

Ducted Air-conditioning (Heat Pump) Units (KF series)



Nut spring piece
Enough space for installation

Note: the indoor unit is ceiling type (hidden type)



Installation sketch map

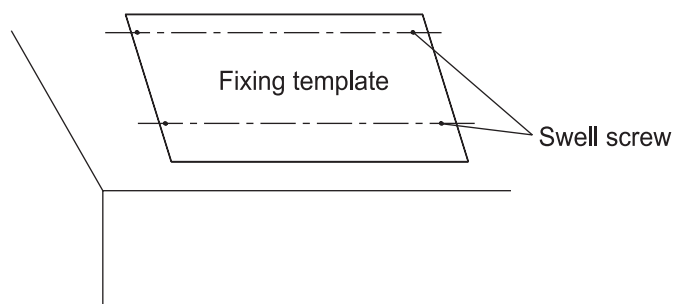
No.	Name	No.	Name
1	air returning pipe	5	static pressure box
2	air ret urning box	6	main blast pipe
3	indoor unit	7	branch blast pipe
4	ceiling hook		

Ducted Air-conditioning (Heat Pump) Units (KF series)

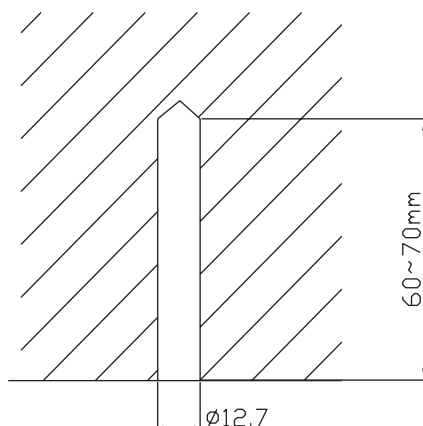
◇ Installation of indoor unit

First solution:

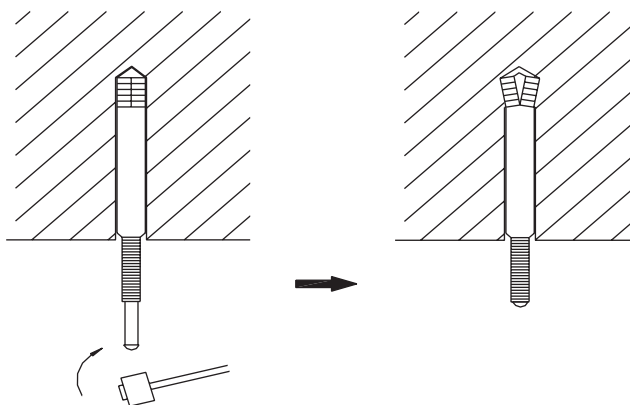
- a. Make stiletto in the roof according to the installation template, as follows:



The dimension of the hole as follows:

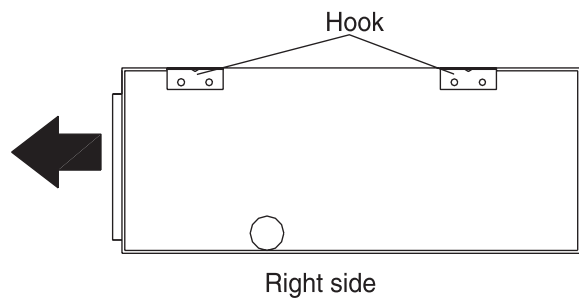


- b. Put the expanding bolt into the hole, then press the nail into the bolt. As follows.

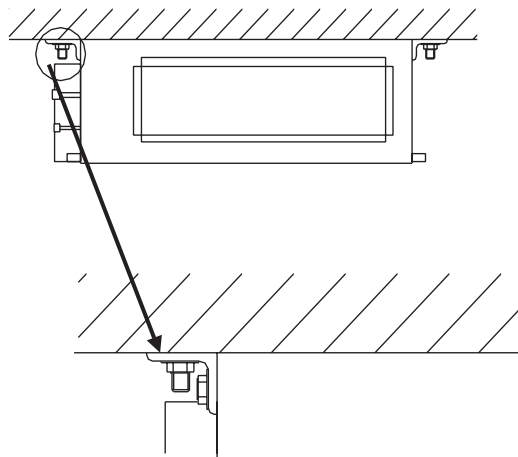


Ducted Air-conditioning (Heat Pump) Units (KF series)

c. Fix the hook on the indoor unit.

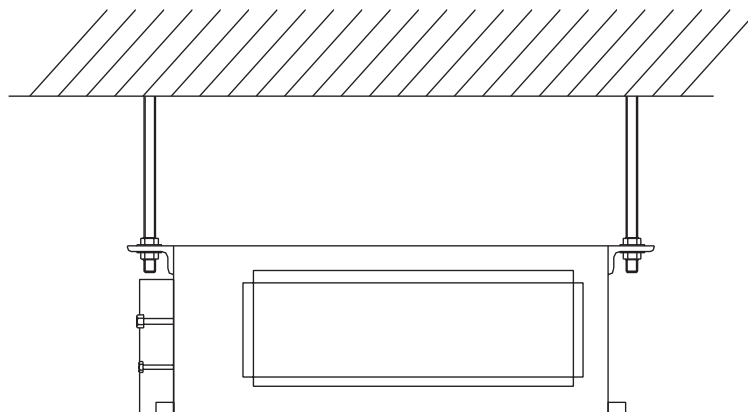


d. Fix the indoor unit up to the roof. As follows:



Second solution:

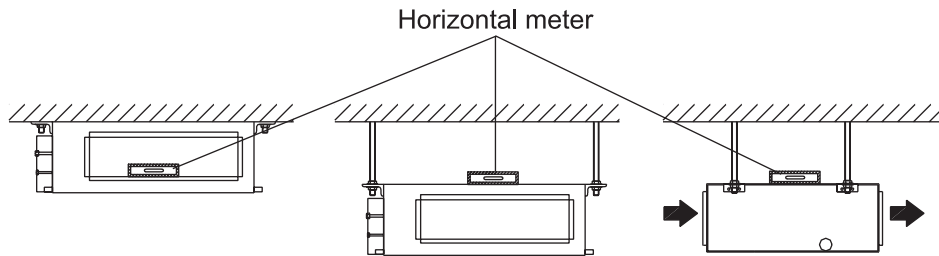
Hang by long screw. As follows



Ducted Air-conditioning (Heat Pump) Units (KF series)

◇ Horizontal test for indoor unit

The indoor unit must be fixed horizontally.

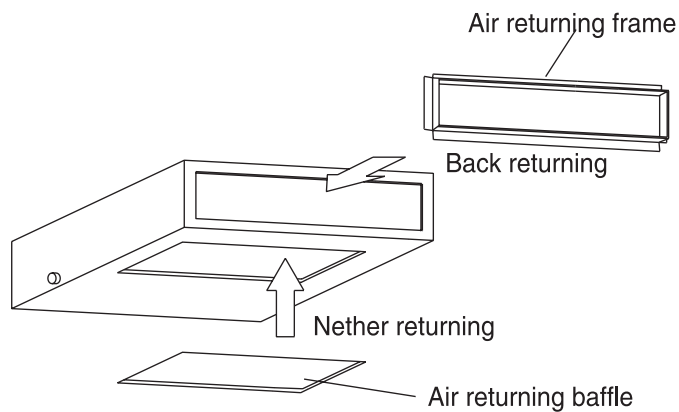


◇ Installation of pipe

A、Installation of returning pipe

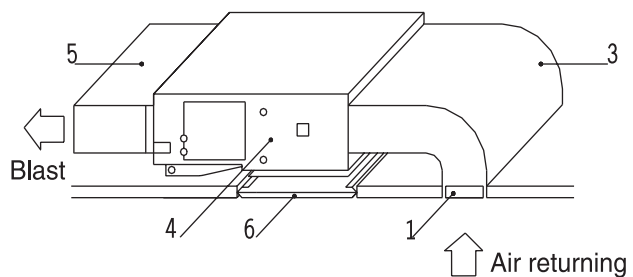
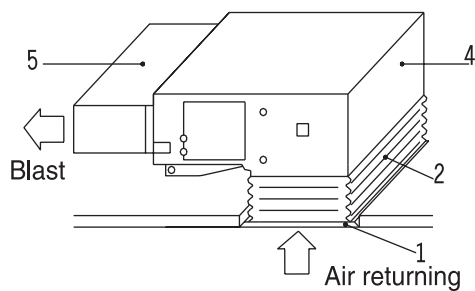
1、The returning frame and returning baffle is enclosed.

2、The air returning frame and air returning baffle can be exchange in the position according to your choice.



3、Connect the air returning pipe to the indoor unit by rivet, use a sect of canvas pipe so that the position can be adjusted.

The installation solution is optional according to the condition.



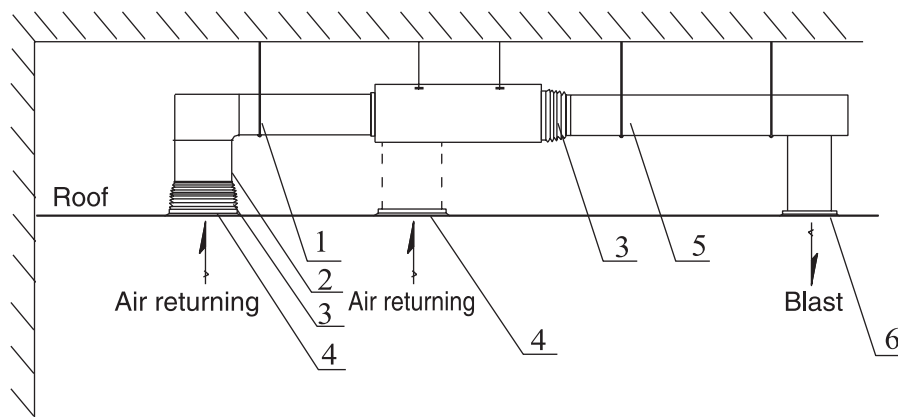
Ducted Air-conditioning (Heat Pump) Units (KF series)

Nether air returning and back air returning

No.	Name	No.	Name
1	air returning gate	4	indoor unit
2	canvas pipe	5	blast pipe
3	air returning pipe	6	grille

B、Installation of rectangle pipe

The indoor unit is installation in ceiling mode (hidden type) with rectangle pipe. As follows:



Installation sketch map

No.	Name	No.	Name
1	hook	4	air returning louver
2	air returning pipe	5	blast pipe
3	canvas pipe	6	spreader

1、Note broken line means nether air returning.

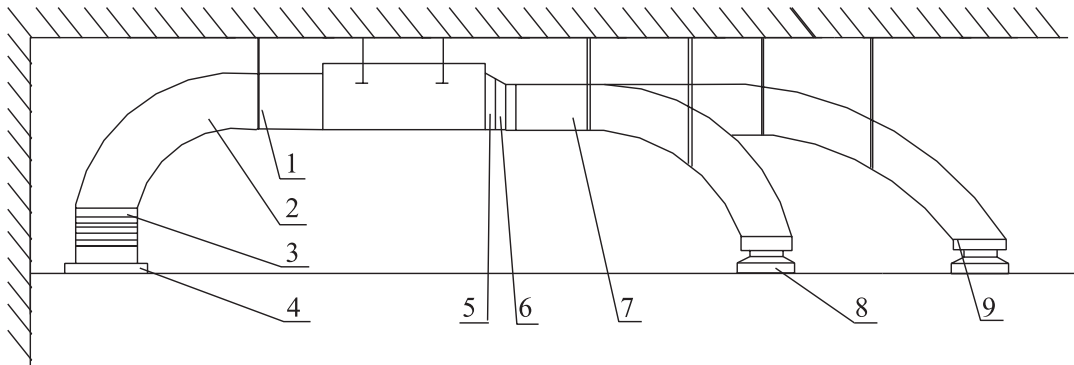
2、To make the AC running well, 1~2 vent must be open when running.

C、Installation of round pipe

A transition pipe is necessary in the installation of round pipe. Our transition pipe is 200mm in the beeline length, 200mm in the diameter.

Note: for the electric heater unit, the beeline length must be larger than 200mm.

Ducted Air-conditioning (Heat Pump) Units (KF series)



The installation of round pipe
Installation sketch map

No.	Name	No.	Name
1	hook	6	transition pipe
2	air returning pipe	7	blast pipe
3	canvas pipe	8	spreader
4	air returning louver	9	spreader connector
5	drainage pipe	10	round vent

To make the AC running well, 1~2 vent must be open when running.

D、Recommended air flow rate for AC

position \ rate m/s	low rate pipe		
	personal house	public building	plant
main pipe	3.5~4.5	5.0~6.5	6.0~9.0
branch pipe (horizontal)	3.0	3.0~8.5	4.0~5.0
vent	1.0~2.0	1.5~3.5	3.0~4.0
air returning pipe	lower than blast pipe	lower than blast pipe	lower than blast pipe

1、The pipes must be wrapped by heat insulation against the heat leak and drainage.

2、The pipes must be fixed firmly and sealed in the tie-in.

3、The design and installation must accord with the local regulation.

4、The edge of the air returning pipe must keep 150mm far away from the wall. And filter is necessary in the air returning gate.

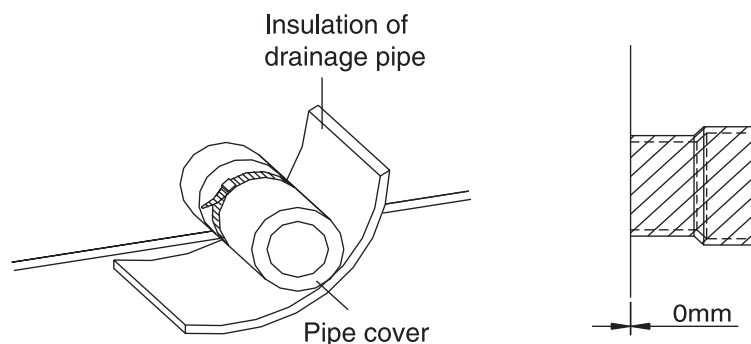
Ducted Air-conditioning (Heat Pump) Units (KF series)

- 5、Decreasing the noise and vibration must be considered in the installation of the pipe.
- 6、The anti-dew material such as the wood is recommended for the vent and entrance of the air.

◇ Installation of the drainage pipe

A、Installation

- 1、The drainage pipe should be gradient for 5~10° to lead the water out. And the tie-in should be wrapped with insulation.
- 2、Both the right and left side of the indoor unit have an exit for the drainage water. One of them must be blocked and kept heat preservation.
- 3、Blocking the right exit is default.



Note :the tie-in of the drainage pipe can not make water.

B、Testing the drainage system

- 1、The drainage system must Tested after installation.
- 2、Check if the water flow through the pipe well and there is any water leak in the tie-in.
- 3、For a new building, it is better to test before the fitment.

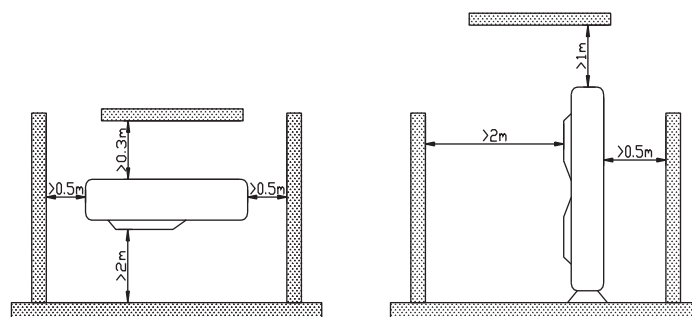
5.1.2 Installation of the outdoor unit

The unit must be located in the flat 15cm higher than the floor and fixed firmly.

To make the unit run better, please note the following principle.

- 1) Be sure the discharge air can not recycle and keep enough space for maintaining.
- 2) Be sure that there is no block in the air flow way.
- 3) Be sure the noise and vibration of the unit do not trouble other people.
- 4) To prevent from direct sunshine.
- 5) The drainage water can flow out.
- 6) Keep the dust and oil fog away.
- 7) Be sure the vent is not against the strong wind.
- 8) Enough space as follows:

Ducted Air-conditioning (Heat Pump) Units (KF series)



Enough space

◇ The connection of tubes

A、Selecting the connecting tube

Reference to table 5.2.4.

B、The connection of tubes

Please follow these request.

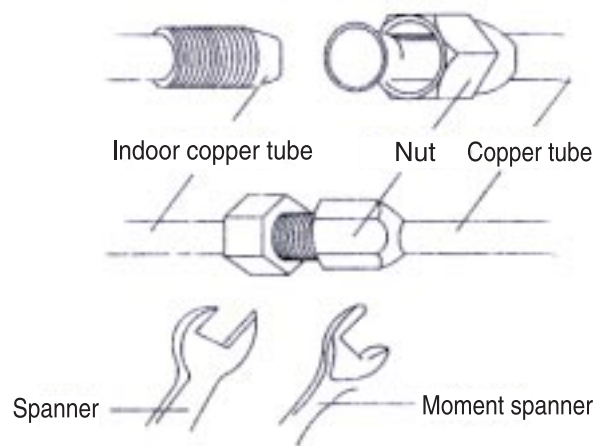
1、Screw down the nut with moment spanner. The moment is recommended as follows:

pipe diameter	moment
3/8in (ϕ 9.52mm)	35 - 40 (N · m)
5/8in (ϕ 15.88mm)	60 - 65 (N · m)
1/2in (ϕ 12.7mm)	45 - 50 (N · m)
3/4in (ϕ 19.05mm)	70 - 75 (N · m)

2、Join the tubes together by the nut.

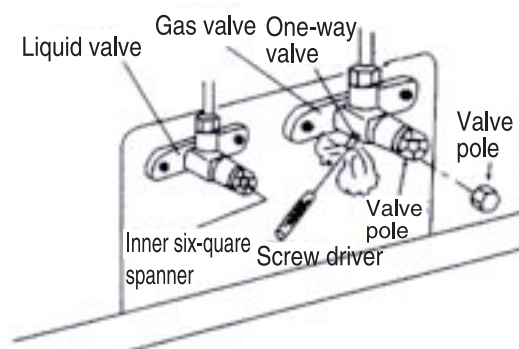
3、Screw down the nut till “kata” is heard.

Ducted Air-conditioning (Heat Pump) Units (KF series)

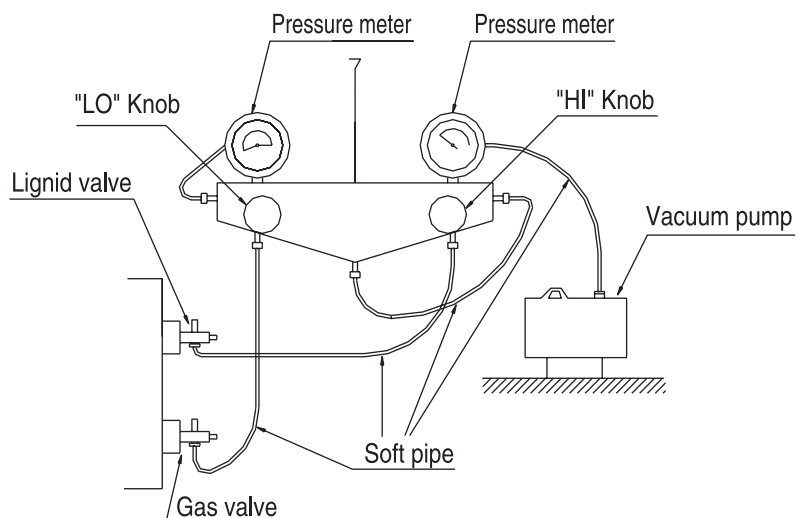


Joining sketch map

- 4、Please use the special facility to bend the tube, bend too much would cause crack.
- 5、The tie-in and tube which are not insulation must be wrapped by sponge.
- 6、Take down the bonnet of the gas valve and liquid valve.
- 7、Turn out the inner cores of the liquid valve and gas valve with spanner and screw driver.
- 8、After 15 second, when the gas leak out, shut off the one-way valve, screw down the bonnet.
- 9、Open the gas valve and liquid valve completely.



- 10、Screw down the bonnet, then check if there is any leak in the tie-in by suds or the meter.
- 11、If possible, it is better vacuumize the unit by vacuum pump.

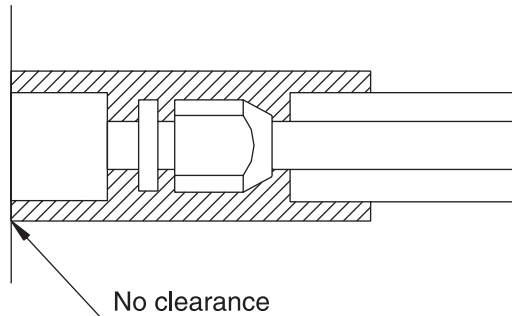


Ducted Air-conditioning (Heat Pump) Units (KF series)

LO knob pressure meter HI knob vacuum pump connecting pipe gas liquid valve

C、Insulation of the refrigerant tube

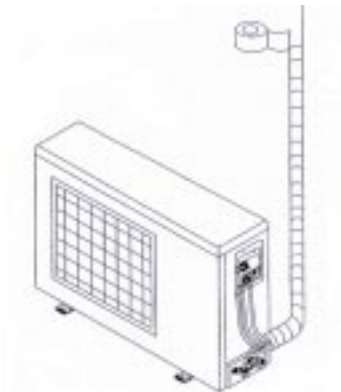
1、Refrigerant tubes and tie-in must be wrapped by insulation against dew and water leak. And there must be no clearance between the insulation and the unit surface.



Note: do not bend the tube too much, it would cause crack.

2、Wrap the tube with tape

- Wrap the tube and cable together with tape. But the drainage pipe must be separated in case of water leak.
- Wrap the tube from the bottom of the outdoor unit to the hole in wall.



- Fix the tube group on the wall by nip.

Note: ☆ Do not wrap the tube too tightly, it will decrease the heat exchanging. Be sure the drainage pipe is separated.

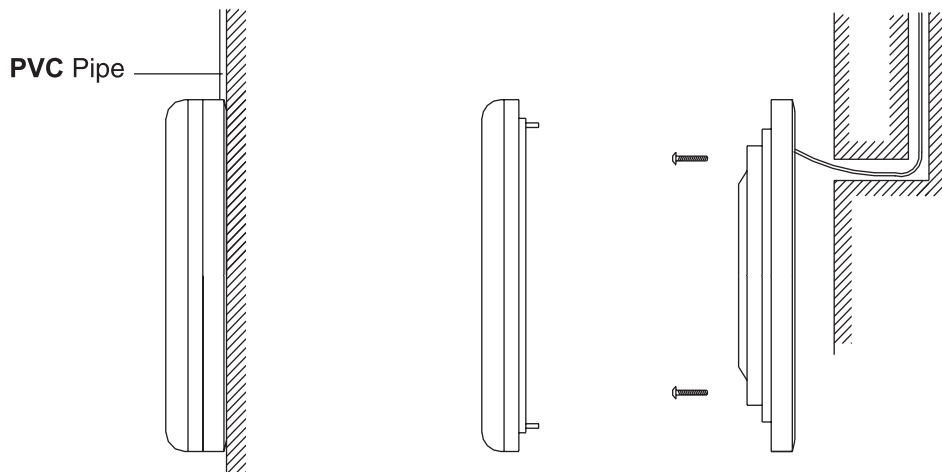
☆ Fill the hole in the wall with rubber mud after installation.

◇ Connection of cables

A、Installation of lineate controller and connection of signal cable

Installation of lineate controller: make a groove or hole on the wall for the cable. The cable can be fixed on the wall in either exposed mode or hidden mode as follows.

Ducted Air-conditioning (Heat Pump) Units (KF series)

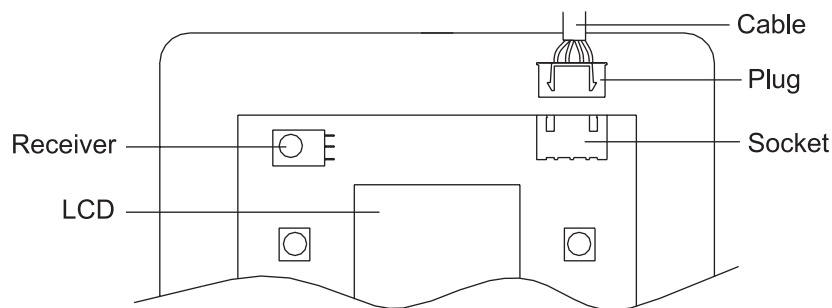


Exposed mode sketch map

Hidden mode sketch map

Connection of signal cable:

The communicating distance between main PCB and lineate controller is up to 20 meters. (standard 8 meter)



Connecting sketch map

Connecting steps:

- 1、Open the electric box.
- 2、Cross the cable through the rubber ring.
- 3、Plug the cable to the white socket on the electric board.
- 4、Tie the cable with string.

Note: ☆ To prevent the AC from magnetic disturbing, the signal cable must be separated from the power supply cable.

☆ It is better to use the shield cable or twisted-pair as signal cable.

B、Connection of power cable

For one phase AC:

- 1、Open the electric box.
- 2、Cross the cable through the rubber ring.
- 3、Connect the wires to the right terminals of "L", "N", and earthing.
- 4、Tie the cable with string.

Ducted Air-conditioning (Heat Pump) Units (KF series)

For the 3 phase AC:

- 1、Remove the front side plate of outdoor unit.
- 2、Burrow the hole for wire, fixed the rubber ring.
- 3、Cross the cable through the rubber ring
- 4、Connect the wires to the right terminal of “L”, “N”, and earthing.
- 5、Fix the cable with the nip.

Connection of the communicating cable:

Reference to sketch map 5.3.2.

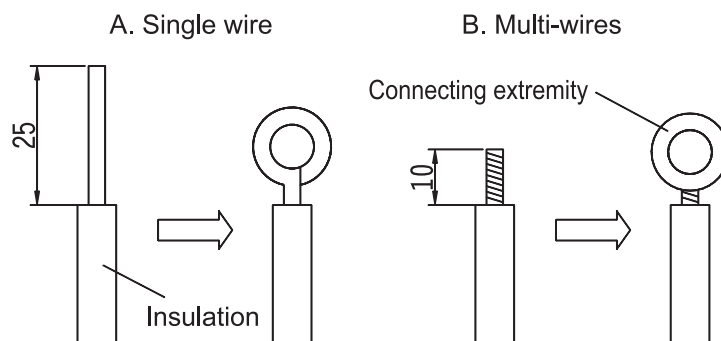
C、Note item

Single wire connection

- 1、Peel off the insulation for 25mm with pliers.
- 2、Remove the screw on the terminal board.
- 3、Bend the peeled wire into circle with pliers.
- 4、Screw cross the circle and fix it on the terminal board.

Multi-wires connection

- 1、Peel off the insulation for 10mm with pliers.
- 2、Remove the screw on the terminal board.
- 3、Make a circle extremity of the peeled wires.
- 4、Screw cross the circle and fix it on the terminal board.



Caution:

- 1、Please note the right voltage before connection and follow the diagram to connect.
- 2、There must be a expert power cable for AC, creepage switch and air switch to protect in case of overload.
- 3、Earthing is necessary in case that the insulation is invalid.
- 4、All the wirings must be pressed extremity or single wire. Multi-mires may cause flash.
- 5、All the connection must follow the diagram, or else the AC will be damaged or can not run.
- 6、Do not make any refrigerant tube touch the running parts such as compressor and fan motor.

Ducted Air-conditioning (Heat Pump) Units (KF series)

7、The manufacturer is not with responsibility for any fault because of owner change in wiring.

8、The damaged power cable and signal cable must be replaced by the expert cables.

5.2 Running test

Do the test after installation.

Step:

1、Check the installation

- Check whether the indoor unit, outdoor unit and wiring are follow the request of the manual.
- Check whether the power supply, the cables and switches is right.
- Check whether the pipes and insulation is legal.
- Check whether the pressure is right.
- Check whether the pipe is ventilative and clean.

2、Try running

- Power on then check if the lineate controller LCD.
- Check whether the metal cabinet is electriferous.
- Check the blast.
- Check the cooling and heating function.
- Check the controller system.
- Test is over if all run well.
- Training the user about the operation and maintenance.

6. Maintenance and fault judge

6.1 Everyday maintenance

(1) Clean the air filer

- Do not remove the filter unless cleaning.
- The filter should be often cleaned when the AC is used in dusty condition. (generally once for 3 month)

(2) Maintenance before use season

- Check if the vent and entrance is blocked.
- Check if it is complete earthing.
- Check the weir connection.
- Check the lineate controller LCD.

Note if anything wrong, please judge the fault.

(3) Maintenance after use season

- Running the AC in fan mode for half an day to dry the AC in the sunny day.
- If the AC will not be used for a long time, please shut off the power.

Ducted Air-conditioning (Heat Pump) Units (KF series)

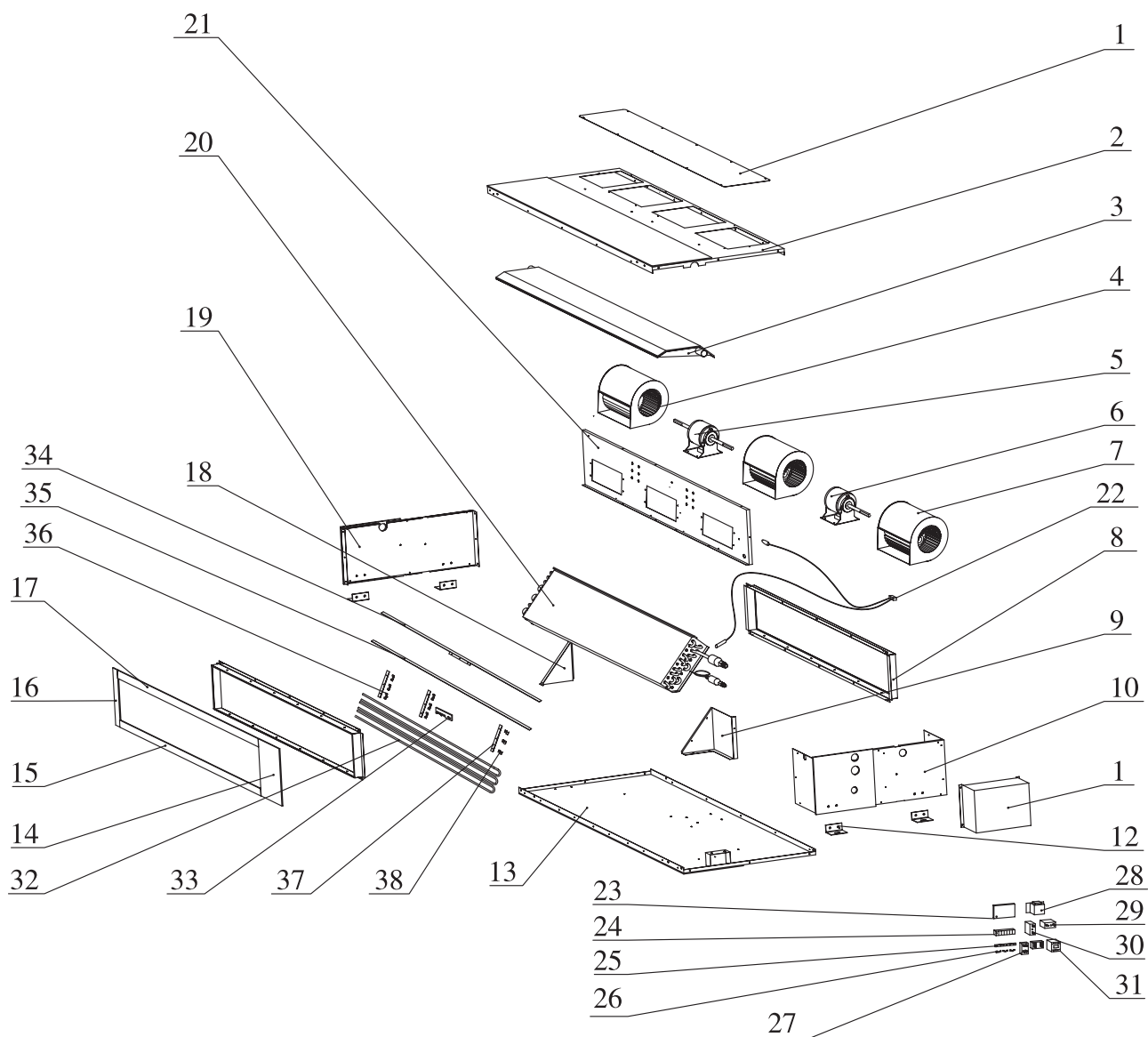
6.2 Fault judge

Fault	Reason possible	Solution
AC can not start	<ol style="list-style-type: none"> 1. Power is off. 2. Creepage switch turn off. 3. The power voltage is too low. 4. The on/off switch is off. 5. Something wrong with the controller system. 	<ol style="list-style-type: none"> 1. Power on. 2. Check the wiring and switch. 3. Turn the voltage higher. 4. Replace the defect part.
AC stop after a short time running	<ol style="list-style-type: none"> 1. Something block before the condenser. 2. Something wrong with the controller system. 3. The outdoor side temperature is higher than 43°C. 	<ol style="list-style-type: none"> 1. Remove the block. 2. Replace the defect part. 3. Out of the normal temperature range.
Bad cooling effect	<ol style="list-style-type: none"> 1. The filter is blocked 2. There is too many people or heat source in the room. 3. The door or window is open. 4. Something blocked in the air recycle circuit. 5. The setting temperature is too high. 6. Gas leak. 7. Temperature sensor is wrong. 8. The resistance of the pipe is too large. 	<ol style="list-style-type: none"> 1. Clean the filter. 2. Remove the heat source or choose a larger capacity AC. 3. Close the door and window. 4. Remove the block. 5. Set lower temperature. 6. Delete the leak and add refrigerant. 7. Replace the sensor. 8. Choose a larger power blower or decrease the resistance.
Bad heating effect	<ol style="list-style-type: none"> 1. The filter is blocked. 2. The door or window is open. 3. The setting temperature is too low 4. Gas leak. 5. The outdoor side temperature is lower than -5°C. 6. Something wrong with the controller system. 7. The resistance of the pipe is too large. 	<ol style="list-style-type: none"> 1. Clean the filter. 2. Close the door and window. 3. Set higher temperature. 4. Delete the leak and add refrigerant. 5. Check if the electric heater is working. 6. Replace the defect part. 7. Choose a larger power blower or decrease the resistance.
Fan motor do not run while heating	<ol style="list-style-type: none"> 1. Tube temperature sensor is wrong located. 2. Tube sensor is not inserted. 3. The sensor get wrong. 4. Creepage of capacitor. 	<ol style="list-style-type: none"> 1. Put it in the right location. 2. Insert it. 3. Replace the sensor. 4. Replace the capacitor.
Dew formation in the vent while cooling	<ol style="list-style-type: none"> 1. The filter is blocked. 2. The resistance of the pipe is too large. 3. The vent is not prevented from dew formation. 	<ol style="list-style-type: none"> 1. Clean the filter. 2. Choose a larger power blower or decrease the resistance. 3. Replaced by wood vent.

Ducted Air-conditioning (Heat Pump) Units (KF series)

(Blank)

7. Explosive view and spare parts list of indoor unit



Ducted Air-conditioning (Heat Pump) Units (KF series)

Table1

No.	Description	Part No.				Qty
		KF-26P/K	KFR-26P/K	KF-35P/K	KFR-35P/K	
1	Cover of Air intake	回风盖板	01252481	01252481	01252481	1
2	Lower cover board assy	下盖板组件	01252482	01252482	01252482	1
3	Water tray Assy	接水盘部件	01272464	01272464	01272464	1
4	Fan motor(right)	风机(右式)	15012461	15012461	15012461	1
5	Motor FG12A	电机 FG12A	15012462	15012462	\	1
	Motor FG20A	电机 FG20A	\	\	15012465	1
6	Motor FG45B	电机 FG45B	\	\	\	\
7	Fan motor(left)	风机(左式)	15012460	15012460	15012460	1
8	Air intake side-board Assy	回风口边板组件	01492476	01492476	01492476	2
9	Left support of evaporator	蒸发器左支架	01072487	01072487	\	1
	Left support of evaporator	蒸发器左支架	\	\	01072492	1
10	Left side plate assy	左侧板部件	01302481	01302481	\	1
	Left side plate assy	左侧板部件	\	\	01302474	1
11	Electric box assy	电器盒组件	01402459	01402459	01402459	1
12	Hook	挂钩	02112446	02112446	02112446	4
13	Top cover board assy	上盖板组件	01252479	01252479	01252479	1
14	Left air outtake sponge	左侧板出风口外海绵	12122281	12122281	12122281	1
15	Top air outtake sponge	上盖板出风口外海绵	12122274	12122274	12122274	1
16	Right air outtake sponge	右侧板出风口外海绵	12122285	12122285	12122285	1
17	Lower air outtake sponge	下盖板出风口外海绵	12122277	12122277	12122277	1
18	Right support of evaporator	蒸发器右支架	01072486	01072486	01072486	1
19	Right side plate assy	右侧板部件	01302477	01302477	01302477	1
20	Evaporator assy	蒸发器部件	010024651	010024651	\	1
	Evaporator assy	蒸发器部件	\	\	01002465	1
21	Fan motor holder	风机安装板组件	01332468	01332468	01332468	1
22	4 core sensor	四芯感温包	390001371	390001371	390001371	1
23	Main board Z4035	主板 Z4035	\	30224001	\	1
	Main board Z4015	主板 Z4015	30224002	\	30224002	1
24	9-bit Terminal board	九位接线板	\	\	\	\
	6-bit Terminal board	六位接线板	\	\	\	\
25	Insulation gasket F	绝缘垫片 F	70410524	70410524	70410524	1
26	Wire clamp	电线夹	71010102	71010102	71010102	3
27	Terminal board 2-8	接线板 2-8	\	\	\	\
28	Transformer SC25A	电源变压器 SC25A	43110168	43110168	43110168	1
29	Capacitor CBB61 4 μ /450V	电源 CBB61 4 μ /450V	\	\	\	\
30	Capacitor CBB61 1.5 μ /450V	电源 CBB61 1.5 μ /450V	\	\	33010020	1
	Capacitor CBB61 1.2 μ /450V	电源 CBB61 1.2 μ /450V	33010052	33010052	\	1
31	Contacto LC1K0910M7	交流接触器 LC1K0910M7	\	44010199	\	1
	Contacto GC8-30	交流接触器 GC8-30	44010234	44010234	44010234	1
32	Electric heater	电加热管	320120051	320120051	\	2
	Electric heater	电加热管	\	\	32012005	2
33	Heat-protector assy	热保护器组件	\	46012405	\	1
34	Electric heater holder assy	电加热管上安装架组件	\	\	\	\
	Electric heater holder assy	电加热管上安装架组件	\	\	\	\
35	Electric heater holder	电加热管下安装架	\	\	\	\
	Electric heater holder	电加热管下安装架	\	\	\	\
36	Electric heater clamp II	电热管卡件 II	\	\	\	\
37	Fix bar for electric-heat tube	电加热管固定条	\	\	\	\
38	Electric heater clamp I	电热管卡件 I	\	\	\	\

The data are subject to change without notice.

Ducted Air-conditioning (Heat Pump) Units (KF series)

Table2

No.	Description	Part No.				Qty
		KF-65P/K	KFR-65P/K	KF-75P/K	KFR-75P/K	
1	Cover of Air intake	回风盖板	01252463	01252463	01252463	1
2	Lower cover board assy	下盖板部件	01252462	01252462	01252462	1
3	Water tray Assy	接水盘部件	01272458	01272458	01272458	1
4	Fan motor(right)	风机(右式)	15012458	15012458	15012458	1
5	Motor FG90B	电机 FG90B	15012465	15012465	15012465	1
6	Motor FG45B	电机 FG45B	\	\	\	\
7	Fan motor(left)	风机(左式)	15012454	15012454	15012454	1
8	Air intake side-board Assy	回风口边板组件	01492458	01492458	01492458	2
9	Left support of evaporator	蒸发器左支架	01072483	01072483	01072483	1
10	Left side plate assy	左侧板部件	01302457	01302457	01302457	1
11	Electric box assy	电器盒组件	01402458	01402458	01402458	1
12	Hook	挂钩	02112466	02112466	02112466	4
13	Top cover board assy	上盖板组件	012524571	012524571	012524571	1
14	Left side plate sponge	左侧板外海绵 4	12122493	12122493	12122493	1
15	Top air outtake sponge	上侧板出风口外海绵	12122485	12122485	12122485	1
16	Right side plate sponge	右侧板外海绵 4	12122497	12122497	12122497	1
17	Lower air outtake sponge	下盖板出风口外海绵	12122489	12122489	12122489	1
18	Right support of evaporator	蒸发器右支架	01072482	01072482	01072482	1
19	Right side plate assy	右侧板部件	01302466	01302466	01302466	1
20	Evaporator assy	蒸发器部件	01002463	01002463	01002463	1
21	Fan motor holder	风机安装板组件	01332470	01332470	01332470	1
22	4 core sensor	四芯感温包	390001371	390001371	390001371	1
23	Main board Z4035	主板 Z4035	\	30224001	\	1
	Main board Z4015	主板 Z4015	30224002	\	30224002	1
24	6-bit Terminal board	六位接线板	42011117	42011117	42011117	1
25	Insulation gasket F	绝缘垫片 F	70410524	70410524	70410524	1
26	Wire clamp	电线夹	71010102	71010102	71010102	3
27	Terminal board 2-8	接线板 2-8	42011103	42011103	42011103	2
28	Transformer SC25A	电源变压器 SC25A	43110168	43110168	43110168	1
29	Capacitor CBB61 4 μ /450V	电源 CBB61 4 μ /450V	33010011	33010011	33010011	1
30	Capacitor CBB61 2.5 μ /450V	电源 CBB61 2.5 μ /450V	\	\	\	\
31	Contacto GC8-30	交流接触器 GC8-30	\	44010234	\	1
32	Electric heater	电加热管	\	32012402	\	3
33	Heat-protector assy	热保护器组件	\	46012402	\	1
34	Electric heater holder assy	电加热管上安装架组件	\	01222406	\	1
35	Electric heater holder	电加热管下安装架	\	01222405	\	1
36	Electric heater clamp II	电热管卡件 II	\	01224255	\	6
37	Fix bar for electric-heat tube	电加热管固定条	\	01222401	\	3
38	Electric heater clamp I	电热管卡件 I	\	02115001	\	3

The data are subject to change without notice.

Ducted Air-conditioning (Heat Pump) Units (KF series)

Table3

No.	Description	Part No.				Qty
		KF-100P/K	KFR-100P/K	KF-120P/K	KFR-120P/K	
1	Cover of Air intake	回风盖板	01252474	01252474	01252474	1
2	Lower cover board assy	下盖板部件	01252476	01252476	01252476	1
3	Water tray Assy	接水盘部件	01272459	01272459	01272459	1
4	Fan motor(right)	风机(右式)	15012458	15012458	15012458	1
5	Motor FG90B	电机 FG90B	15012465	15012465	15012465	1
6	Motor FG45B	电机 FG45B	15012457	15012457	15012457	1
7	Fan motor(left)	风机(左式)	15012454	15012454	15012454	2
8	Air intake side-board Assy	回风口边板组件	01492463	01492463	01492463	2
9	Left support of evaporator	蒸发器左支架	01072483	01072483	01072483	1
10	Left side plate assy	左侧板部件	01302468	01302468	01302468	1
11	Electric box assy	电器盒组件	01402458	01402458	01402458	1
12	Hook	挂钩	02112466	02112466	02112466	4
13	Top cover board assy	上盖板部件	01252465	01252465	01252465	1
14	Left side plate sponge 4	左侧板外海绵 4	12122493	12122493	12122493	1
15	Top air outtake sponge	上盖板出风口外海绵	12122415	12122415	12122415	1
16	Right side plate sponge	右侧板外海绵 4	12122497	12122497	12122497	1
17	Lower air outtake sponge	下盖板出风口外海绵	12122419	12122419	12122419	1
18	Right support of evaporator	蒸发器右支架	01072482	01072482	01072482	1
19	Right side plate assy	右侧板部件	01302471	01302471	01302471	1
20	Evaporator assy	蒸发器部件	01002462	01002462	01002462	1
21	Fan motor holder	风机安装板组件	01332471	01332471	01332471	1
22	4 core sensor	四芯感温包	390001371	390001371	390001371	1
23	Main board Z4035	主板 Z4035	\	30224001	\	1
	Main board Z4015	主板 Z4015	30224002	\	30224002	1
24	9-bit Terminal board	九位接线板	\	42011143	\	1
	6-bit Terminal board	六位接线板	42011117	\	42011117	1
25	Insulation gasket F	绝缘垫片 F	70410524	70410524	70410524	1
26	Wire clamp	电线夹	71010102	71010102	71010102	3
27	Terminal board 2-8	接线板 2-8	42011103	42011103	42011103	2
28	Transformer SC25A	电源变压器 SC25A	43110168	43110168	43110168	1
29	Capacitor CBB61 4 μ /450V	电源 CBB61 4 μ F/450V	33010011	33010011	33010011	1
30	Capacitor CBB61 2.5 μ /450V	电源 CBB61 2.5 μ F/450V	33010026	33010026	33010026	1
31	Contactor LC1K0910M7	交流接触器 LC1K0910M7	\	44010199	\	1
32	Electric heater	电加热管	\	32012401	\	3
33	Heat-protector assy	热保护器组件	\	46012402	\	1
34	Electric heater holder assy	电加热管上安装架组件	\	01222403	\	1
35	Electric heater holder	电加热管下安装架	\	01222402	\	1
36	Electric heater clamp II	电热管卡件 II	\	01224255	\	6
37	Fix bar for electric-heat tube	电加热管固定条	\	01222401	\	3
38	Electric heater clamp I	电热管卡件 I	\	02115001	\	3

The data are subject to change without notice.

Ducted Air-conditioning (Heat Pump) Units (KF series)

8. Spare parts list of outdoor unit

Model of unit:KFR-100W/pK

No.	Description		Part No.	Qty
1	Motor LW68A	电机 LW68A	15015421	2
2	Wires clip	电线夹	71010102	2
3	Contacto GC3-18/01KK	交流接触器 GC3-18/01KK	44010226	1
4	Current protector 10.3A	过流保护器 10.3A	46020115	1
5	6-way terminal	六位接线板	42011117	1
6	Capacitor CBB61 3.5 μ F/450V	电容 CBB61 3.5 μ F/450V	33010010	2
7	Phase protector	逆相保护器	46020052	1
8	Terminal T480C	接线板 T480C	42011043	1
9	Temp limiter 130	限温器 130	45040012	1
10	Ambient temp sensor	室外环境感温包	390001291	1
11	Outdoor tube sensor	室外管温感温包	390001211	1
12	Compressor C-SB303H8A	压缩机 C-SB303H8A	00120043	1
13	4-way valve	四通阀(5匹) (STF0408)	43000405	1
14	Accumulator	汽液分离器部件	07225433	1
15	Motor LW68A	电机 LW68A (室外)	15015421	2
16	Axial fan	轴流风叶 (室外)	10335253	2

Model of unit:KF-100W/pK

No.	Description		Part No.	Qty
1	Motor LW68A	电机 LW68A	15015421	2
2	Wires clip	电线夹	71010102	2
3	Contacto GC3-18/01KK	交流接触器 GC3-18/01KK	44010226	1
4	Current protector 10.3A	过流保护器 10.3A	46020115	1
5	6-way terminal	六位接线板	42011117	1
6	Capacitor CBB61 3.5 μ F/450V	电容 CBB61 3.5 μ F/450V	33010010	2
7	Phase protector	逆相保护器	46020052	1
8	Terminal T480C	接线板 T480C	42011043	1
9	Temp limiter 130	限温器 130	45040012	1
10	Compressor C-SB303H8A	压缩机 C-SB303H8A(KFR100)	00120043	1
11	Accumulator	汽液分离器部件	07225433	1
12	Motor LW68A	电机 LW68A (室外)	15015421	2
13	Axial fan	轴流风叶 (室外)	10335253	2

Ducted Air-conditioning (Heat Pump) Units (KF series)

Model of unit:KFR-120W/P

No.	Description		Part No.	Qty
1	Motor LW68A	电机 LW68A	15015421	2
2	Wire clamp	电线夹	71010102	2
3	Contactor GC3-18/01KK	交流接触器 GC3-18/01KK	44010226	1
4	Current protector HD-13.2-22	过流保护器 HD-13.2-22	46020112	1
5	6-way terminal board	六位接线板	42011117	1
6	Capacitor CBB61 3.5 μ F/450V	电容 CBB61 3.5 μ F/450V	33010010	2
7	Phase protector	逆相保护器	46020052	1
8	Terminal board T480C	接线板 T480C	42011043	1
9	Temp limiter 130	限温器 130	45040012	1
10	Ambient temp sensor	室外环境感温包	390001291	1
11	Outdoor tube sensor	室外管温感温包	390001211	1
12	Compressor C-SB373H8A9	压缩机 C-SB373H8A9(KFR120)	00100330	1
13	4-way valve (STF0408)	四通阀(5 匹) (STF0408)	43000405	1
14	Accumulator	汽液分离器部件	07225433	1
15	Motor LW68A (outdoor)	电机 LW68A (室外)	15015421	2
16	Axial fan (outdoor)	轴流风叶 (室外)	10335253	2

Model of unit:KF-120W/P

No.	Description		Part No.	Qty
1	Motor LW68A	电机 LW68A	15015421	2
2	Wire clamp	电线夹	71010102	2
3	Contactor GC3-18/01KK	交流接触器 GC3-18/01KK	44010226	1
4	Current protector HD-13.2-22	过流保护器 HD-13.2-22	46020112	1
5	6-way terminal	六位接线板	42011117	1
6	Capacitor CBB61 3.5 μ F/450V	电容 CBB61 3.5 μ F/450V	33010010	2
7	Phase protector	逆相保护器	46020052	1
8	Terminal board T480C	接线板 T480C	42011043	1
9	Temp limiter 130	限温器 130	45040012	1
10	Compressor C-SB373H8A9	压缩机 C-SB373H8A9 (KFR120)	00100330	1
11	Motor LW68A (outdoor)	电机 LW68A (室外)	15015421	2
12	Axial fan (outdoor)	轴流风叶 (室外)	10335253	2

Ducted Air-conditioning (Heat Pump) Units (KF series)

Model of unit:KFR-35W/P

No.	Description		Part No.	Qty
1	Capacitor CBB65 30uF/450V	电容 CBB65 30uF/450V (440V)	33000018	1
2	Capacitor CBB61 3uF/450VAC	电容 CBB61 3uF/450VAC	33010021 / 33010027	1
3	3-way terminal board T386A	三位接线板 T386A	42011241	1
4	Wire clamp	电线夹	71010103	2
5	Outdoor tube sensor	室外管温感温包	390001211	1
6	Motor FW48C	电机 FW48C	15013039	1
7	Compressor C-RV232BH1AA	压缩机及其配件 C-RV232BH1AA	00100339	1
8	4-way valve SHF-4/STF-0108/DHF-2	四通阀 (1匹) SHF-4/STF-0108/DHF-2	43000402	1
9	Motor FW48C	电机 FW48C	15013039	1
10	Axial fan	轴流风叶	10333412	1

Model of unit:KF-35W/P

No.	Description		Part No.	Qty
1	Capacitor CBB65 30uF/450V	电容 CBB65 30uF/450V (440V)	33000018	1
2	Capacitor CBB61 3uF/450VAC	电容 CBB61 3uF/450VAC	33010021 / 33010027	1
3	3-way terminal board A	三位接线板 A	42011113	1
4	Wire clamp	电线夹	71010103	2
5	Motor FW48C	电机 FW48C	15013039	1
6	Compressor C-RV222H1AA	压缩机及其配件 C-RV222H1AA(KF35)	00100340	1
7	Compressor RH220VHLC	压缩机及其配件 RH220VHLC	00120079	1
8	Motor FW48C (outdoor)	电机 FW48C (室外)	15013039	1
9	Axial fan (outdoor)	轴流风叶 (室外)	10333412	1

Model of unit:KFR-26W/P

No.	Description		Part No.	Qty
1	Capacitor CBB65 25uF/450VAC	电容 CBB65 25uF/450VAC(440V)	33000017	1
2	Capacitor CBB61 2.5uF/450VAC	电容 CBB61 2.5uF/450VAC(插片)	33010019	1
3	3-way terminal board T386A	三位接线板 T386A	42011241	1
4	Wire clamp	电线夹	71010103	2
5	outdoor tube sensor	室外管温感温包	390001211	1
6	Motor FW30E	电机 FW30E	15013153	1
7	Compressor RH174VHAC	压缩机及其配件 RH174VHAC (KFR26)	00120078	1
8	4-way valve SHF-4/STF-0108/DHF-2	四通阀 SHF-4/STF-0108/DHF-2 (1匹)	43000402	1
9	Motor FW30E (outdoor)	电机 FW30E (室外)	15013153	1
10	Axial fan (outdoor)	轴流风叶 (室外)	10333412	1

Ducted Air-conditioning (Heat Pump) Units (KF series)

Model of unit:KF-26W/P

No.	Description		Part No.	Qty
1	Capacitor CBB65 25uF/450VAC	电容CBB65 25uF/450VAC(440V)	33000017	1
2	Capacitor CBB61 2.5uF/450VAC	电容 CBB61 2.5uF/450VAC(插片)	33010019	1
3	3-way terminal board A	三位接线板 A	42011113	1
4	Wire clamp	电线夹	71010103	2
5	Motor FW30E	电机 FW30E	15013153	1
6	Compressor 2P17S225ANA	压缩机及其配件 2P17S225ANA	00120110	1
7	Motor FW30E (outdoor)	电机 FW30E (室外)	15013153	1
8	Axial fan (outdoor)	轴流风叶 (室外)	10333412	1

Model of unit:KFR-65W/pk

No.	Description		Part No.	Qty
1	Wire clamp	电线夹	71010102	2
2	Capacitor CBB65 50uF/450V	电容 CBB65 50uF/450V	33010710	1
3	Capacitor CBB61 3uF/450V	电容 CBB61 3uF/450V	33010021	1
4	Terminal board T480D	接线板 T480D	420110433	1
5	Terminal board T480E	接线板 T480E	420110434	1
6	Double pole contactor CJX9B-25S	双极交流接触器 CJX9B-25S	44010221	1
7	Capacitor 334KME630	金属膜电容 334KME630	33030001	1
8	Outdoor tube sensor	室外管温感温包	390001211	1
9	Motor FW68T	电机 FW68T	15013302	1
10	Compressor SHV33YE6UG	压缩机及其配件SHV33YE6UG(KFR65)	00100140	1
12	4-way valve (SHF-7/STF-0223/DHF-3)	四通阀(2匹) (SHF-7/STF-0223/DHF-3)	43000403	1
13	Motor FW68T(outdoor)	电机 FW68T(室外)	15013302	1
14	Axial fan (outdoor)	轴流风叶 (室外)	10335253	1

Model of unit:KF-65W/pA₁

No.	Description		Part No.	Qty
1	Wire clamp	电线夹	71010102	2
2	Capacitor CBB65 50uF/450VAC	电容 CBB65 50uF/450VAC	33010710	1
3	Capacitor CBB61 3uF/450V	电容 CBB61 3uF/450V	33010021	1
4	Terminal board T480D	接线板 T480D	420110433	1
5	Terminal board T480E	接线板 T480E	420110434	1
6	Double pole contactor CJX9B-25S	双极交流接触器 CJX9B-25S	44010221	1
7	Motor FW68T	电机 FW68T	15013302	1
8	Compressor SHV33YE6UG	压缩机 SHV33YE6UG(KFR65)	00100140	1
9	Motor FW68T(outdoor)	电机 FW68T(室外)	15013302	1
10	Axial fan (outdoor)	轴流风叶 (室外)	10335253	1