





2 Technical and specifications

2. 1 Parameters of single-split type unit

Model		KFR-20GW/NaA512		KFR-25GW/NaA512		KFR-35GW/NaA512		
		Cooling	Heating	Cooling	Heating Cooling Heating			
ltage				23	OV			
cy			50Hz					
	(W)	2100	2300	2500	2700	3500	3700	
ninal power (W) 650 670 780 790 1090		1090						
wer	(W)	920	920	920	920	1440	1440	
rrent	(A)			4		6.	26	
ne	(m3/h)	4	50	45	50	50	00	
ify volume	(L/h)			1	l			
R	(W/W)	3.2	3.4	3.2	3.4	3.2	3.4	
Model		KFR-200	/NaA512	KFR-25G	/NaA512	KFR-35G	/NaA512	
Fan motor speed (r/min) (H/M/L)		1450/1330/1200						
Output power (W)		20						
Auxiliary electric heater power		/						
Fan motor capacity		0.8		0.8		1.	. 0	
Fan motor running current	ţ	0.09						
Fan type-piece		Cross flow fan-1						
Diameter-length(mm	1)	$\Phi77 \times 753$						
Evaporator				Aluminum	fin-copper tu	lbe		
Pipe diameter		Φ7						
Row-fin distance (m	m)	2—	-1.4	2—	1.4	2.5-	-1.4	
Expanding area of heat exchar	nger (IXHXL)	$749 \times 231.6 \times 25.4$						
Swing motor model		MP24GA						
Fan motor power (W	7)	2						
Fuse (A)				PCB3. 15A	Transfor	mer 0. 2A		
Noise (sound pressure le	evel) dB(A)	38/3	5/32	38/3	5/32	40/3	7/34	
Noise (sound power le	vel) dB(A)	48/4	5/42	48/4	5/42	50/4	7/44	
Outline dimension (W/I	D/H) (mm)			1005×1	50×290			
Package dimension (W/	D/H) (mm)			1080×2	43×358			
Net weight/ gross wei	ight (kg)			11/	/13			
	tage y power wer rrent ne ify volume Model Fan motor speed (r/min Output power (W) Auxiliary electric heater po Fan motor capacity Fan motor running current Fan type-piece Diameter-length(mn Evaporator Pipe diameter Row-fin distance (m Expanding area of heat exchar Swing motor model Fan motor power (W Fuse (A) Noise (sound pressure le Noise (sound pressure le Noise (sound power le Outline dimension (W/ Package dimension (W/	tage y (W) power (W) wer (W) rrent (A) ne (m3/h) ify volume (L/h) (W/W) Model Fan motor speed (r/min) (H/M/L) Output power (W) Auxiliary electric heater power Fan motor capacity Fan motor capacity Fan motor running current Fan type-piece Diameter-length(mm) Evaporator Pipe diameter Row-fin distance (mm) Expanding area of heat exchanger (IXHXL) Swing motor model Fan motor power (W) Fuse (A) Noise (sound pressure level) dB(A) Noise (sound pressure level) dB(A) Noise (sound pressure level) dB(A) Outline dimension (W/D/H) (mm) Package dimension (W/D/H) (mm) Net weight/ gross weight (kg)	KFR-20GI CoolingCoolingCoolingNumber 2(W)2100power(W)650wer(W)000power(W)000me(W)000wer(W)ModelKFR-2000Fan motor speed (r/min) (H/M/L)Output power (W)Auxiliary electric heater powerFan motor capacity0.0Fan motor capacity0.0Fan motor capacity0.0Fan type-pieceDiameter-length(mm)EvaporatorPipe diameterRow-fin distance (mm)2—Expanding area of heat exchanger (IXHXL)Swing motor modelFan motor power (W)Fuse (A)Noise (sound pressure level) dB(A)38/3Noise (sound power level) dB(A)A8/4Outline dimension (W/D/H) (mm)Package dimension (W/D/H) (mm)Package dimension (W/D/H) (mm)Pac	KFR-20GW/NaA512CoolingHeatingItagey(W)21002300power(W)650670wer(W)920920rent(A)450ify volume(L/h)R(W/W)3.23.4ModelKFR-20G/NaA512Fan motor speed (r/min) (H/M/L)Output power (W)Auxiliary electric heater powerFan motor capacity0.8Fan motor running currentFan type-pieceDiameter-length(mm)2—1.4EvaporatorPipe diameterRow-fin distance (mm)2—1.4Expanding area ofheat exchanger (IXHXL)Swing motor modelFan motor power (W)Fuse (A)38/35/32Noise (sound pressure level) dB(A)48/45/42Outline dimension (W/D/H) (mm)Package dimension (W/D/H) (mm)Net weight/ gross weight (kg)	KFR-20GW/NaA512 KFR-25GW Cooling Heating Cooling tage 23 y 50 (W) 2100 2300 2500 power (W) 650 670 780 wer (W) 920 920 920 920 rent (A) 4 4 4 ne (m3/h) 450 445 4 fty volume (L/h) 4 7 7 R (W/W) 3.2 3.4 3.2 3 Model KFR-20G/NaA512 KFR-25G 7 Fan motor speed (r/min) (H/M/L) 1450/13 1450/13 1450/13 Output power (W) 2 2 7 7 Fan motor capacity 0.8 0.7 7 Fan motor nuning current 0.5 5 1 Fan type-piece Cross i 1 1 Diameter-length(mm) 2—1.4 2— 2	KFR-20GW/NaA512 KFR-25GW/NaA512 Cooling Heating Cooling Heating Itage 230V 2500 2700 (W) 2100 2300 2500 2700 power (W) 650 670 780 790 wer (W) 920 920 920 920 920 rent (A) 4 4 4 6 6 670 780 790 wer (W) 920 <td< td=""><td>KFR-20GW/NaA512 KFR-25GW/NaA512 KFR-35G Cooling Heating Cooling Heating Cooling (W) 2100 2300 2500 2700 3500 power (W) 650 670 780 790 1090 wer (W) 920 920 920 920 1440 rent (A) 4 6. 6. 6. 56 ify volume (L/h) 1 1 6. 6. 56 fan motor speed (r/min) (H/M/L) 1 1 6. 56 6. 56 Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.</td></td<>	KFR-20GW/NaA512 KFR-25GW/NaA512 KFR-35G Cooling Heating Cooling Heating Cooling (W) 2100 2300 2500 2700 3500 power (W) 650 670 780 790 1090 wer (W) 920 920 920 920 1440 rent (A) 4 6. 6. 6. 56 ify volume (L/h) 1 1 6. 6. 56 fan motor speed (r/min) (H/M/L) 1 1 6. 56 6. 56 Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.8 1. 6. 6. 6. Fan motor capacity 0.8 0.	

	Model	KFR-20W/NaA512	KFR-25W/NaA512	KFR-35W/NaA512			
	Compressor model	GK080PAD	C-1RV096H1A	C-RV133H1A			
	Compressor type		Rotary				
	Block current	17	17	24			
	Compressor running current	3.2	3.7	5.45			
	Compressor input power	702	810	1200			
	Compressor overload model	MPA12009-12026	B150-145-24E	B210-145-241E			
	Throttling method		Capillary				
	Starting method		Capacity				
	Working temperature range		—7~43℃				
	Condenser		Aluminum fin-copper tu	lbe			
	Pipe diameter	$\Phi 7$	Ф9.	52			
	Row-fin distance (mm)		2-1.4				
	Heat exchanger unfold area ($I \times H \times$	L) $766 \times 508 \times 25.4$	747×50	08×44			
	Fan motor speed (rpm)		830				
0.1	Motor rated power (W)	30					
Outdoor	Fan motor running current (A)	0.13					
unit	Fan motor capacitor (µf)	2.5					
unit	Outdoor unit air volume		/				
	Fan type-piece		Axial flow fan-1				
	Fan blade diameter (mm)		Φ400				
	Defrosting method	Automatic					
	Climate type	<u></u>					
	Isolation		Ι				
	Water proof level	IP24					
	Air out side highest work pressure (Mpa)	3.8					
	Air in side highest work pressure (Mpa)		1.2	1			
	Noise (sound pressure level) $dB(A)$	52	53	54			
	Noise (sound power level) dB(A)	62	63	64			
	Outline dimension (W/D/H) (mm)	$848 \times 320 \times 540$					
	Package dimension (W/D/H) (mm)		$878 \times 360 \times 600$				
	Net weight/ gross weight (kg)		32/36	36/40			
	Refrigerant/refrigerant charge (kg)	1.12	1.35	1.4			
	Length		4				
Connection	Outter Liquid pipe (mm)		Φ6				
nine	Unameter Gas pipe (mm)	4		Φ12			
pipe	Max. Height (m)		5				
	distance Lengui (m)		10				

The technical data are subject to change without notice. Please refer to the nameplate of the unit.

2. 2 Parameters of dual-split type unit

Model			$KFR-25 \times 2$	$KFR-25 \times 2GW/NaA512$ $KFR-(25+35)$) GW/NaA512 KFR -35×2 GW/NaA512		GW/NaA512				
Function			Cooling	Heating	Cooling	Heating	Cooling	Heating				
Rated vol	ltage			.	23	OV	<i>G</i>	_ /				
Rated free	quency				50	Hz						
Capacity	()	W)	2500×2	2600×2	2500+3500	2600+3700	3500×2	3600×2				
Nominal	power (V	W)	820×2	800×2	820+1200	800+1250	1200×2	1250×2				
Rated pov	wer (V	W)	940×2	920×2	940+1380	920+1450	1380×2	1450×2				
Rated cur	rrent (A	<i>ł</i>)	5.45 \times 2	5.45 \times 2	5.45+7.25	5.45+7.25	7.25×2	7.25 \times 2				
Air volun	ne ((m3/h)	450	$\times 2$	450	500	500	$\times 2$				
Dehumid	ify volume (I	L/h)	1		-	1	1	-				
C. O. P/EEF	R (W	W/W)	2.9	3.2	2.7	3.1	2.6	3				
Madal			$KFR = (25 \times 2)$	2)G/NaA512	KFR- 25G/NaA522	KFR- 35G/NaA522	KFR-(35×2	2)G/NaA512				
	Ean motor speed (r/min) (H/M/L)		1450/1330/1900									
	Motor output power (W)		20									
-	Auxiliary electric heater power		/									
	Fan motor capacity		0.	8	0.8	1.0	1.	0				
	Fan motor running current		0.09									
	Fan type-piece		Cross flow fan-1									
Indoonumit	Diameter-length(mm)				Φ77	$\times 753$						
indoor unit	Evaporator				Aluminum	fin-copper tub	be and the second se					
	Pipe diameter		Φ7									
	Row-fin distance (mm	1)	2-1.4		2-1.4	2.5-1.4	2.5-	-1.4				
	Heat exchanger unfold area	(IXHXL)	$749 \times 231.6 \times 25.4$									
	Swing motor model		MP24GA									
	Motor power (W)		2									
	Protective fuse (A)				PCB3. 15A	Transformer	0.2A					
	Noise (Sound pressure level) dB(A)	38/3	5/32	38/35/32	40/37/34	40/3	7/34				
	Noise (Sound power level)) dB(A)	48/4	5/42	48/45/42	50/47/44	50/4	7/44				
	Outline dimension (W/D/H	H) (mm)	$1005 \times 150 \times 290$									
	Package dimension (W/D/	/H) (mm)	$1080 \times 243 \times 358$									
	Net weight/ gross weight	ht (kg)			11,	/13		11/13				

	Model	${ m KFR-25 imes 2W/NaA512}$	KFR-60W2	2/NaA512	$KFR-35 \times 2W/NaA512$		
	Compressor model	C-1RV096H1A	C-1RV096H1A	C-RV146H1A	C-RV146H1A		
	Compressor type		Rot	tary			
	Block current	17	17	24	24		
	Compressor running current	3. 7	3. 7	5.45	5.45		
	Compressor input power	810	810	1200	1200		
	Compressor overload model	B150-145-241E	B150-145-24E	B210-145-241E	B210-145-241E		
	Throttling method		Capi	llary			
	Starting method	Capacitance					
	Working temp. range		—7~	43℃			
	Condenser		Aluminum	fin-copper tube			
	Pipe diameter		Ф9.	52			
	Row-fin distance (mm)	2-1.8	2-1	. 8	2-1.6		
	Expanding area of heat exchanger (IXHXL)	814	$814 \times 813 \times 44$				
	Fan motor speed (rpm)		780				
Outdoor unit	Motor rated power (W)		60				
	Fan motor running current (A)		0.26		0.26		
	Fan motor capacitor (μf)		3		3		
	Air volume of outdoor unit		/				
	Fan type-piece	Axial flow fan-1					
	Fan diameter (mm)	Φ450					
	Defrosting method	Auto					
	Climate type	<u> </u>					
	Isolation	I					
	Water proof level	IP24					
	Air outlet side highest work pressure	(Mpa) 3.8					
	Air inlet side highest work pressure	(Mpa)	1.	. 2			
	Noise (sound level pressure) dB(A)	57	5	8	58		
	Noise (sound power pressure) dB(A) 67	6	8	68		
	Outline dimension (W/D/H) (mm)	950	$\times 410 \times 700$		$950 \times 410 \times 840$		
	Package dimension (W/D/H) (mm)	1100	$\times 450 \times 755$		$1100 \times 450 \times 920$		
	Net weight/gross weight (kg)	65/70	69,	/74	72/77		
	Reingerant/reingerant charge volume(kg)	1.12×2	1.02	×1.17	1.4×2		
	Length			-			
Connection	Outer Liquid pipe (mm)		Ф	6			
nine	diameter Gas pipe (mm)	Φ9.52			Φ12		
pipe	Max. Height (m))			
	Distance Length (m)			10			

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The technical data are subject to change without notice. Please refer to the nameplate of the unit.



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When the power is on, indoor unit, outdoor unit start to work. When the system is running in cool mode, the compressor sucks low-temperature, low-pressure, refrierant gas from indoor evaporator and then discharges high-temperature, high-pressure refrigerant gas into outdoor heat exchanger. With the help of axial flow fan, the gas transfers its latent heat into outdoor air and becomes high-pressure refrigerant liquid. The liquid is throttled by the capillary and changes into low-temperature and low-pressure liquid and then flows into indoor heat exchanger. With the help of centrifugal fan, the liquid evaporates into low-temperature refrigerant gas and indoor air is cooled down. The refrigerant gas is sucked into the compressor and the cycle introduced above goes on and on, and the demanded low temperature environment is maintained.

When the system operates in heat mode, 4-way valve changes its way and the refrigerant flows in the reversible cycle as the cool mode. The refrigerant discharges its latent heat in the indoor heat exchange exchanger, and sucks heat from outdoor heat exchanger and forms the heat pump cycle. This cycle goes on and on, and the demanded high temperature environment is maintenained.





KFR-25+35GW/NaA512

KFR-35X2GW/NaA512



PCB function manual and operation method

7.1 PCB function manual

This manual is fit for the single-split type, dual-split type of ultra thin unit series

7. 1. 1 Temperature parameter

- ◆ The room set temperature: (Tset)
- The room ambient temperature:(Tamb)

7.1.2 Foundamental functions

After electrified, no matter in any circumstances, the twice interval of starting should no less than 3mins, when the first electrified, there are no 3mins delay; once the compressor start up, the unit will not be turned off within 6mins, according to room temp. changes.

7. 1. 2. 1 COOL mode

7.1.2.1.1 Cooling condition and procedure

If Tamb Tset+1 , COOL mode will act, compressor and outdoor fan will run, indoor fan will run at the set speed.

If Tamb Tset-1 , the unit will stop, compressor, outdoor fan motor will stop, indoor fan will run at the set speed.

When Tset-1 < Tamb < Tset+1 , the unit will keep running in old mode.

 \geq In this mode, the reversal valve will not power on, the setting temp. range:16 ~30



7. 1. 2. 1. 2 Protection Functions

♦ Overcurrent protection

When detecting the system is running in anti-freezing protection, the compressor, outdoor fan motor will stop running, indoor fan motor will run at set fan speed. When anti-freezing eliminated and compressor had stopped 10mins, system renew the original running mode.



7. 1. 2. 2 DRY Mode

7. 1. 2. 2. 1 The conditions and processes of dehumidifying:

If Tamb > Tset+2 , the DRY mode will act, indoor fan will run at low speed. If Tset-2 Tamb Tset+2 , enter into DRY operation, the compressor and outdoor fan start running for 6 mins then stop running, after 4min, the compressor, outter fan will restart, the DRY operation will run as above, the indoor fan will keeps low fan speed running. If Tamb < Tset-2 , compressor, outdoor fan motor will stop running, indoor fan motor will keep low fan speed running. > In this mode, the reversal valve will not power on, the setting temp. range :16 -30 .



7.1.2.2.2 Protection Functions

♦ Antifreezing Protection

When running in Antifreezing protection, the compressor, outter fan motor, stop running, indoor fan motor runs at low fan speed; when antifreezing is eliminated and compressor has stopped for 4min, the unit will run at the original status.



7.1.2.3 HEAT Mode

7. 1. 2. 3. 1 The conditions and processes of heating

If Tamb Tset+2 ,enter into HEAT mode,at the same time, reversing valve,compressor,outdoor fan start to run, but indoor fan will delay 3min at least to run.

If Tamb Tset+4 , compressor, outdoor fan stop running, the reversing valve will run, but indoor fan will blow wind after 60sec. at low fan speed.

When Tset+2 < Tamb < Tset+4 it will keep the preceding running status.

➤If Tset+2 < Tamb < Tset+4 , the setting range:16 -30</pre>



7. 1. 2. 3. 2 The conditions and processes of defrosting

◆ New defrosting mode (Single split type series)

When detecting there is frost on the condenser, system enter into defrosting state, at this time, compressor continue to run, the outter fan motor, 4-way valve, indoor fan motor stop running, the running indicator flash, when detecting the frost on the condenser elimated,

indicator light flash, when detecting the frost on the condenser had been defrosted, the indoor, outdoor fan motor, 4-way valve start to run at the same time, the compressor keep the original running state, the indicator stop flashing.

 \succ When electrified the first defrosting time is 9min, then according to the frost situation, to adjust the defrosting time, if frost is too much that the defrosting time will be long(the max. time is 9min.), if frost is less, the defrosting time will be short (at least 3min.), when defrosting finished it will quit.



◆ Old defrosting mode (multi-split type series)

When detected there are frost on the condenser, the system will enter into defrosting status, at this time, the compressor continue to run, outdoor fan motor, 4-way valve, indoor fan motor stop running. The running indicator flash, when the frost on the condenser had been defrosted or defrosting operation run for 10mins later, the indoor, outdoor fan motors, 4-way valve will start running at the same time, the compressor keep the running state, the running indicator stop flash, the defrosting procedure finished.



7. 1. 2. 3. 3 Protection function

◆Anti-high temperature protection

When detected the evaporator tube temp. is too high, outdoor fan motor stop running; when tube temp. of evaporator resumed, outdoor fan motor will resume to run.

♦Noise protection

When to turn off the unit by using "RUN/STOP", the reversing valve will delayed 2mins to turn off; or mode shift will delay 2minutes.

7. 1. 2. 4 Fan mode

In this mode, indoor fan can select Hi, Med, Low and Auto (Med is default) to run, the compressor, outdoor fan motor, 4-way valve stop running.

- > In this mode, the temp. setting range is $16 \sim 30$ °C.
- 7. 1. 2. 5 Auto mode

In this mode, system will accord the changes of ambient temp. to select the running mode (COOL, DRY, HEAT and FAN). The protection function as the mode of COOL, HEAT.

7.1.3 Other control

7.1.3.1 Sleep function

When it is cooling and drying, after setting the sleep mode for 1 hour, Tset will be increased 1 ; after 2 hours, Tset will be increased 2 , indoor motor runs at low fan speed.



When it is heating, after set the sleep mode for 1hour, Tset will be declined 1 ; 2hours later, Tset will be declined 2 , indoor fan will run at low fan speed.



7. 1. 3. 2 SWING motor control

When it is powered on, the guide louver turn to position O with anticlockwise direction, turn off the air outlet vent; when the unit is turned on, if there is no setting swing function, the guide louver will turn to the level position L with clockwise direction air outlet, if turning on the unit to set the swing function, the guide louver will swing from U to D.



7.1.3.3 TIMER function

7. 1. 3. 3. 1 Timer on

To set timer on, the system is turned off, after achieved the time of timer on, the controller will run in original setting mode, the time interval is 0.5hour, setting range is 0.5-24hours.

7. 1. 3. 3. 2 Timer off

At operating, to set the timer off function, when the time of timer arrived, the system is turned off, the time interval is 0.5hour, setting range is 0.5-24hours.

7.1.3.4 Buzzer

When PCB is power on or receives the signal from the wireless remote control, the buzzer will send out the sound once.

7. 1. 3. 5 Auto button (indoor unit front panel)

When pressing this button, it will run in Auto mode, indoor fan will run in Auto fan speed, the swing mode will start, when repressed it will turned off.

7. 1. 3. 6 Indicator light

RED: the running indicator, when defrosting it will flash.

YELLOW: HEAT indicator.

GREEN: COOL, DRY indicator.

7.1.3.7 Auto fan speed control

In this mode, the indoor fan motor will accord to the changes of ambient temp. automatically to select Hi, Med, Low fan speed, each fan speed shift time interval is 30sec.

7. 1. 3. 8 Memory function

When the controller break off and power on again, the memory is the state before breaking off, then the compressor will delay 3mins. When the timer had been setup and break off, if the time of timer had arrived, it breake off and power on again, it will carry out follow the state before electricity break; if the time had not arrived, it break off, and opower on, it will renew the memory.

7.2 Names and functions of wireless remote control of each part

Note:

- Be sure that there are no obstructions between receiver and wireless remote control.
- Don't drop or throw the wireless remote control.
- Don't let any liquid in the wireless remote control and put it directly under the sunlight or any place where is very hot.



Note:

- This type of wirless remote control is a kind of current control, it is applicable to various type (function) of units. Some buttons of the controller which are not available to this air conditioner will not be described below.
- The buttons which had not been described will not affect the normal operation of the unit.



7.3 COOL mode operation

- According to indoor temp. and setting temp., difference which detected by the room sensor, confirm to start the cooling or not.
- If the temp. which detected by the room sensor is higher than setting temp., compressor will start to run, unit will run in COOL mode.
- If the temp. which detected by the room sensor is lower than setting temp., compressor, outdoor fan motor will stop to run, the indoor fan motor will run in setting speed.
- The range of setting is $16 \sim 30$ °C.



7.4 HEAT mode operation

- The microcomputer according to difference of temp. and setting temp. which detected by the room sensor, to decide to start the heating or not. When the heating is stopped, fan motor will stop to run.
- Setting range is $16 \sim 30^{\circ}$ C.



7.5 DRY mode operation

- If ambient temp. is lower than setting temp.2 °C, compressor, indoor and outdoor fan will stop to run. If ambient temp. is between ± 2 °C of the setting temp., the unit will run in COOL mode. If room temp. is higher than setting temp. 2 °C, unit will run in COOL mode.
- Setting temp. range is $16 \sim 30^{\circ}$ C.



7.6 AUTO mode operation

- In AUTO mode, the setting temp. of COOL is 25 °C , fan speed could be adjusted.
- If ambient temp. is in range of $23 \sim 26$ °C, the unit is running in FAN mode.
- If ambient temp. is higher than 26 °C, the unit is running in COOL mode.







7.9 Changing batteries

- 1. Remove the back cover of the wireless remote control.
- 2 .Take out the worn batteries, insert new batteries. (pay attention to the polarity)
- **3** . Recover the back cover of wireless remote control.

NOTE:

Don't mix new and used or different types of batteries to insert.

◆ Please take out the wireless remote control while the wireless remote control is not used for a long time.



- ◆ The wireless remote control should be operated within 8meters.
- ◆ The lifespan of batteries is about one year.
- The wireless remote control should be placed about 1m or more away from the TV or any other electric appliances.
- ◆ The bad batteries are forbidden to use.



8. 1. 3 |||||||| Remove the front case

To screw off 3 pieces of screw which fix the front panel, then to pull the clasp of the rear, then take off the front case. As shown in Fig. 8-4:





please be carefull. As shown in 8-6, 8-7:



Screw

Fig. 8 - 6



Pull out the tube sensor, screw off earth screw, pull out the indoor motor connection wire, to screw off the screw fix the electric box, can take out the electric box. As shown in Fig.8-8:



8. 1. 7 |||||||| Disassemble the evaporator

To screw off the screw of the connecting pipe clamp, then take off the connecting pipe clamp. As shown in Fig.8-9:

To screw off 2pcs screw of the left and right side of the evaporator. As shown in Fig. 8-10, 8-11: To rise up the evaporator left side slightly, then push it backward, to make the evaporator side clasp slide from the groove.

Be carefully to take out the evaporator, and pay attention to protect the connection pipe.







Loosen the screws which fix the motor clamp, take out the motor clamp. To screw off the 1pc tighten screw on the cross flow fan right sleeve, can take out the motor. Please refer to Fig. 8-12, 8-13:



Fig.8 – 12







Take out the cross flow fan from the rear case. As shown in Fig.8-14:



Cross flow fan







To screw off 3pcs screw fixed the electric box, can take off the electric box. As shown in Fig. 8-18:



Screw

Fig.8 – 18

8. 2. 5 ||||||||Remove the right side plate

To screw off 5pcs screw from the right side plate with screwdirver, can take off the right side plate. As shown in Fig.8-19:



Fig. 8 – 19

8. 2. 6 ||||||||| Remove the axial flow fan

To screw off the nut which fixed the axial flow fan with hands, can pull out the axial flow fan outward at full tilt. As shown in Fig.8-20:



Fig. 8 – 20

8. 2. 7 |||||||| Remove the motor and motor supporter

By the use of screw driver to screw off the screw which fix the motor and motor supporter, can remove the motor and motor supporter. As shown in Fig.8-21:



Fig. 8 – 21



Unsolder 4pcs soldered point from the four-way valve, then to use the spanner to screw off 1pc nut from the four-way valve loop, can take off the four-way valve. As shown in Fig. 8-22;



Fig. 8 – 22

8. 2. 9 ||||||||| Disassemble the capillary

Unsold the both side of the capillary sub-assy, can take off the capillary, pay attention do not let the dregs to block the capillary. As shown in Fig. 8-23:



Capillary sub-assy **Fig.** 8 – 23



To screw off the screw which fixed the valve with screwdriver, then unsolder the connection pipe which connect with the valve. Can take remove the valve. As shown in Fig.8-24:



Fig. 8 – 24

8. 2. 11 ||||||| Remove the compressor

Unsolder two pcs soldered point from the compressor, then to loosen 3pcs bottom screw with screwdriver, can remove the compressor. As shown in Fig.8-25:



Fig. 8 - 25



8.3.4 |||||||| Remove the cabinet

Screw off 8pcs tapping screw which fix the front panel, can disassemble the front panel. As shown in Fig. 8-29:



Fig.8 – 29

8. 3. 5 ||||||||| Remove electric box

Pull out the insert of fan motor, and pull out the connection wire of two compressors, to screw off 2pcs tapping screw of electric box, disassemble the electric box. As shown in Fig. 8-30:





8. 3. 6 ||||||||| Remove rear side plate

To screw off 8pcs screw which fixed the rear side plate, can disassemble the rear side plate. As shown in Fig.8-31:



Screw **Fig.** 8 - 31





To remove the tighten nut from the 4-way valve loop, take out the loop, and wrap the 4-way valve with wet gauze, then unsolder the soldered point which connect on the 4-way valve (4pcs for each 4-way valve), take off 4-way valve. The soldering procedures should be as quickly as possible, and should keep the gauze wet, please note do not burn the compressor lead by soldering flame. As shown in Fig. 8-34;

Solenoid coil 4pcs soldered point



Fig. 8 - 34

8. 3. 10 |||||||| Remove the capillary

Unsolder 2pcs capillary assy and 4pcs soldered point which connected liquid valve and condenser outlet pipe, take off the capillary sub-assy. As shown in Fig.8-35:

8. 3. 11 |||||||| Remove gas valve and liquid valve

air return pipe, take off gas valve. (Note: When

fix the liquid valve, take off liquid valve.

As shown in Fig.8-36;









8. 3. 12 |||||||| Disassemble the compressor

Loosen 6pcs nut with washer at bottom of two compressor: (Note: The refrigerant should be discharged at first.) Unsolder the air in, air out pipes of the comressor, be carefully to remove the pipelines, take out the compressor. As shown in Fig.8-37:



Nut with washer

Fig.8 - 37

8.4 Disassembly procedures for 50, 60 units' outdoor unit

Operation procedures/pictures



To screw off the screw which fix the front side plate, slide it down, can disassemble the front side plate. As shown in Fig. 8-38:



Fig. 8-38



To screw off the screw which fix the top cover, can disassemble the top cover. As shown in Fig. 8-39:

8. 4. 3 |||||||| Remove the rear grill

Screw off 4pcs screw which fix the rear grill, then to remove the rear grill. As shown in Fig.

8-40:



8.4.4 |||||||| Remove the cabinet

8. 4. 5

Pull out the insert of fan motor, pull out the connecting wire of two compressor, disassemble the electric box.

To screw off 8pcs tapping screw which fix the front panel, can disassemble the front panel. As shown in Fig. 8-41:



Fig.8 – 41



Fig. 8 – 42

8. 4. 6

As shown in Fig.8-42:

To screw off 8pcs screw which fix the rear side plate, can disassemble the rear side plate. As shown in Fig. 8-43:



Screw Fig.8 — 43



To screw off the tighten nut which fix the axial flow fan, take off the gasket, spring washer, to pull out the axial flow fan forcibly. As shown in Fig. 8-44:

Axial flow fan

Tighten nut







8. 4. 9 |||||||Disassemble four-way valve

To remove the tighten nut from the 4-way valve loop, take out the loop, and wrap the 4-way valve with wet gauze, then unsolder the soldered point which connect on the 4-way valve (4pcs for each 4-way valve), take off 4-way valve.

The soldering procedures should be as quickly as possible, and should keep the gauze wet, please note do not burn the compressor lead by soldering flame. As shown in Fig. 8-46; 4p



Fig. 8 – 46

8. 4. 10 ||||||||| Remove the capillary

Unsolder 2pcs capillary assy and 4pcs soldered point which connected liquid valve and condenser outlet pipe, take off the capillary sub-assy. As shown in Fig.8-47:









8. 4. 11 |||||||||Remove gas valve and liquid valve

Remove 4pcs bolt which fix two gas valve, unsolder the soldered point which connect the gas valve and air return pipe, take off gas valve. (Note: When unsolder the soldered point, the gas valve should be entirely wrapped with wet cloth, avoid the valve be damaged by high temp.) screw off 4pcs bolt which fix the liquid valve, take off liquid valve. As shown in Fig.8-48;

8. 4. 12 |||||||| Disassemble the compressor

Loosen 6pcs nut with washer at bottom of two compressor: (Note: The refrigerant should be discharged at first.) Unsolder the air in, air out pipes of the comressor, be carefully to remove the pipelines, take out the compressor. As shown in Fig.8-49:



Nut with washer

Fig. 8 – 49



9. 2 Spare parts list for indoor unit of single-type unit

Description		Part No.					
_	<u>KFR-20G/Na</u> A512	KFR-25G/NaA512	KFR-35G/NaA512				
Wall mounting frame	01252001	01252001	01252001	1			
Connecting pipe clamp	24242001	24242001	24242001	1			
Rear case	22202327	22202327	22202327	1			
Motor FN20Y	15012068	15012068	15012068	1			
Motor clamp	22242034	22242034	22242034	1			
Tube sensor	390000595	390000595	390000595	1			
Sensor insert B	42020063	42020063	42020063	1			
Receiving board JKD	30046074	30046074	30046074	1			
Wire clip	42012415	42012415	42012415	1			
Wire clamp	71010103	71010103	71010103	1			
Electric box	20102186	20102186	20102186	1			
Power transformer SC28B1	43110170	43110170	43110170	1			
Mainboard 5952AJ	30035903	30035903	300359031	1			
Cable groove	70482001	70482001	70482001	1			
Wire board GT4A3A4	42011138	42011138	42011138	1			
Electric box cover 1	20102187	20102187	20102187	1			
Room sensor	390000451	390000451	390000451	1			
Front panel case	20002119	20002119	20002119	1			
Electric box cover 2	20102188	20102188	20102188	1			
Filter	11122016	11122016	11122016	2			
Front panel connecting rod	10582026	10582026	10582026	2			
Bolt of front panel	10562002	10562002	10562002	2			
Crank shaft of front panel	10562001	10562001	10562001	2			
Stepping motor MP 24GB	15212111	15212111	15212111	2			
Front panel	20002076	20002076	20002076	1			
Front panel supporter	01792006	01792006	01792006	1			
Decoration bar	68012022	68012022	68012022	1			
Frame of indicator light	26112045	26112045	26112045	1			
Board of indicator light	22432066	22432066	22432066	1			
Switch board	26112046	26112046	26112046	1			
Evaporator insert block	010723101	010723101	010723101	1			
Evaporator supporter	24212028	24212028	24212028	1			
Water tray	20182032	20182032	20182032	1			
Connecting rod1	10582024	10582024	10582024	1			
Connecting rod2	10582025	10582025	10582025	1			
Swing louver	10512043	10512043	10512043	10			
Guide louver	10512042	10512042	10512042	1			
Guide louver bearing	10542011	10542011	10542011	3			
Rubber sleeve cord (Atype/three-co	re) 40020402	40020403	40020403	1			
Signal control cable	400321444	40032144	400321444	1			
Drainage pipe	052324111	052324111	052324111	1			
Stepping motor MP 24GA	15212102	15212102	15212102	1			
Evaporator assy	010021741	010021741	01002187	1			
Fan bearing	76512210	76512210	76512210	1			
Ring of cross flow fan bearing	76512203	76512203	76512203	1			
Cross flow fan	10352004	10352004	10352004	1			
Wireless remote control Y512F	30515002	30515002	30515002	1			
Power cable sub-assy	40020202	40020203	40020203	1			
	Connecting pipe champRear caseMotor FN20YMotor clampTube sensorSensor insert BReceiving board JKDWire clipWire clampElectric boxPower transformer SC28B1Mainboard 5952AJCable grooveWire board GT4A3A4Electric box cover 1Room sensorFront panel caseElectric box cover 2FilterFront panel connecting rodBolt of front panelCrank shaft of front panelStepping motor MP 24GBFront panel supporterDecoration barFrame of indicator lightBoard of indicator lightBoard of indicator lightSwitch boardEvaporator supporterWater trayConnecting rod1Connecting rod2Swing louverGuide louver bearingRubber sleeve cord (Atype/three-coSignal control cableDrainage pipeStepping motor MP 24GAEvaporator assyFan bearingRing of cross flow fan bearingCross flow fanWireless remote control Y512FPower cable sub-assy	Connecting pipe cramp 24242004 Rear case 22202327 Motor FN20Y 15012068 Motor Clamp 22242034 Tube sensor 390000595 Sensor insert B 42020063 Receiving board JKD 30046074 Wire clip 42012415 Wire clamp 71010103 Electric box 20102186 Power transformer SC28B1 43110170 Mainboard 5952AJ 30035903 Cable groove 70482001 Wire board GT4A3A4 42011138 Electric box cover 1 20102187 Room sensor 390000451 Front panel case 20002119 Electric box cover 2 20102188 Filter 11122016 Front panel connecting rod 10582026 Bolt of front panel 10562002 Crank shaft of front panel 10562001 Stepping motor MP 24GB 15212111 Front panel supporter 01792006 Decoration bar 68012022 Frame of indicator light 26112	Connecting pipe camp 24242001 21212001 Rear case 22202327 22202327 Motor FN20Y 15012068 15012068 Motor Clamp 22202327 22202327 Tube sensor 390000595 390000595 Sensor insert B 442020063 42020063 Receiving board JKD 30046074 30046074 Wire clamp 71010103 71010103 Electric box 20102186 20102186 Power transformer SC28B1 43110170 43110170 Mainboard 5952AJ 30035903 30035903 Cable groove 70482001 70482001 Wire board GT4A3A4 42011138 4201138 Electric box cover 1 20102187 20102187 Room sensor 390000451 390000451 Front panel case 20002119 20002119 Electric box cover 2 20102188 20102188 Filter 11122016 11122016 Front panel connecting rod 10582026 10582026 Dose2026 10582026	Connecting pipe charp 21212001 2121201 2121201 Rear case 22202327 22202327 22202327 22202327 Motor clamp 22242034 22242034 22242034 22242034 Tube sensor 390000595 390000595 390000595 390000595 Receiving board JKD 30046074 30046074 30046074 Wire clip 42012415 42012415 42012415 Receiving board JKD 20162186 20102186 Power transformer SC28B1 43110170 43110170 43110170 Mainboard 5952AJ 30035903 30035903 300359031 Cable groove 70482001 70482001 70482001 Wire board GT4A3A4 42011138 42011138 42011138 Electric box cover 1 20102187 20102187 20102187 Room sensor 390000451 390000451 390000151 Filter 11122016 11122016 11122016 Filter 11122016 11122016 11122016 Front panel <td< td=""></td<>			



9. 4 Spare parts list for outdoor unit of single-split type unit

		-			
No	Description		Part No.		
110.	Description	KFR-20W/NaA512	KFR-25W/NaA512	KFR-35W/NaA512	Quy.
1.	Front grill	22413431	22413431	22413431	1
2.	Nut M6	70310132	70310132	70310131	1
3.	Washer	70410252	70410252	70410252	1
4.	Axial flow fan	10333414	10333413	10333413	1
5.	Front panel	01533012	01533012	01533012	1
6.	Chassis sub-assy	012032301	01203170	01203179	1
	Four-way valve sub-assy	03023645	03023608	03023147	1
7	Four-way valve (1P)	430004022	430004022	430004032	1
	Four-way valve fitting	43000400	43000400	43000400	1
8.	Capillary sub-assy	03003529	03003527	03003528	1
9.	Compressor C-RV096H1A	00100086	00100368	00100378	1
10.	Compressor gasket	76710253	76710240	76710240	3
11.	Compressor overload	00180044	00180019	00180043	1
12.	Big handle	26233433	26233433	26233433	1
13.	Valve 3/8"	07100005	07100005	07100006	1
14.	Valve 1/4"	07100003	07100003	07100003	1
15.	Valve supporter	01713041	01713041	01713041	1
16.	Right side plate sub-assy	01302004	01302004	01302004	1
17.	Wire clamp	71010103	71010103	71010103	1
18.	Insulation gasket C	70410523	70410523	70410523	1
19.	Three-bit terminal board A	42011113	42011113	42011113	1
20.	Electrtic box	01413425	01413425	01413425	1
21.	Capacitor CBB65 25uF/450VAC (440V)	33000017	33000017	33000017	1
22.	Capacitor clamp	02143401	02143401	02143401	1
23.	Capacitor CBB61 2.5 uF/450VAC (VDE	TUV) 33010026	33010026	33010026	1
24.	Terminal plate 2-8	42011103	42011103	42011103	1
25.	Isolation sheet sub-assy	01233417	01233417	01233417	1
26.	Condenser sub-assy	011036102	011032819	011030512	1
27.	Rear grill	11123203	01473030	11123402	1
28.	Top cover sub-assy	01253261	012532611	012532611	1
29.	Motor supporter	01703020	01703391	01703391	1
30.	Tapping screw ST4.8X16	70140259	70140165	70140165	4
31.	Motor FW25K	150130671	150130671	150130671	1
32.	Outdoor drainage joint	06123401	06123401	06123401	1

The data of above are subject to change without notice.



9. 6 Spare parts list for indoor unit of dual-split type unit

		Part No.				
NO.	Description	VED DEVOC/N-AE10		VED SEC /N-AESS	KED DEVOC /N-AE10	Qty.
1	Wall mounting from a	01252001	NFK-23G/NaA322	01252001	ΛFK=35λ2G/NaA512	1
1.		01232001	01202001	01202001	01232001	1
<u> </u>	Connecting pipe clamp	24242001	24242001	24242001	24242001	1
5.	Kear case	22202327	22202327	22202327	22202327	1
4.	Motor FN20Y	15012068	15012068	15012068	15012068	1
5.	Motor clamp	22242034	22242034	22242034	22242034	1
6.	Tube sensor	390000595	390000595	390000595	390000595	1
7.	Sensor insert B	42020063	42020063	42020063	42020063	1
8.	Receiving board JKD	30046074	30046074	30046074	30046074	1
9.	Wire clip	42012415	42012415	42012415	42012415	1
10.	Wire clamp	71010103	71010103	71010103	71010103	1
11.	Electric box	20102186	20102186	20102186	20102186	1
12.	Power transformer SC28B1	43110170	43110170	43110170	43110170	1
13.	Mainboard 5952BJ	30035904	30035904	300359041	300359041	1
14.	Cable groove	70482001	70482001	70482001	70482001	1
15.	Wire board GT4A3A4	42011138	42011138	42011138	42011138	-
16.	Electric box cover 1	20102187	20102187	20102187	20102187	1
17.	Room sensor	390000451	390000451	390000451	390000451	1
18.	Front panel case	20002119	20002119	20002119	20002119	1
19.	Electric box cover 2	20102188	20102188	20102188	20102188	1
20.	Filter	11122016	11122016	11122016	11122016	2
21.	Front panel connecting rod	10582026	10582026	10582026	10582026	2
22	Bolt of front panel	10562002	10562002	10562002	10562002	2
22.	Crank shaft of front panel	10562001	10562001	10562001	10562001	2
24.	Stepping motor MP 24GB	15212111	15212111	15212111	15212111	2
25	Front papel	20002076	20002076	20002076	20002076	1
26	Front panel supporter	01792006	01792006	01792006	01792006	1
27	Decoration bar	68012022	68012022	68012022	68012022	1
27.	Frame of indicator light	26112045	26112045	26112045	26112045	1
20.	Board of indicator light	22432066	22432066	22432066	22432066	1
30	Switch board	26112046	26112046	26112046	26112046	1
31	Evaporator insert block	010723101	010723101	010723101	010723101	1
22	Evaporator supporter	24212028	24212028	24212028	24212028	1
22	Water tray	24212020	24212020	24212020	24212020	1
24	Connecting rod1	10582024	10582032	10592024	10592024	1
34.	Connecting rod?	10582024	10582024	10582024	10582024	1
35.	Swing louver	10512025	10512025	10502025	10502025	1
30. 27	Guida louver	10512045	10512043	10512045	10512043	10
20 20	Guide louver	10512042	10512042	10512042	10512042	1
<u> </u>	Guide louver bearing	10542011	10542011	10542011	10542011	3
<u> </u>	Rubber sleeve cord	40020441	40020441	40020441	40020441	1
40.	Signal control cable	40032150	40032150	40032150	40032150	1
41.	Drainage pipe	052324111	052324111	052324111	052324111	1
42.	Stepping motor MP 24GA	15212102	15212102	15212102	15212102	1
43.	Evaporator assy	01002186	01002186	1002187	01002187	1
44.	Fan bearing	76512210	76512210	76512210	76512210	1
45.	Ring of cross flow fan bearing	76512203	76512203	76512203	76512203	1
46.	Cross flow fan	10352004	10352004	10352004	10352004	1
47.	Wireless remote control Y512F	30515002	30515002	30515002	30515002	1

The above data are subject to change without notice.



9.8 Spare parts list for outdoor unit of dual-split type unit

			De stá Nie		1
No.	Description	KED OFNOW /N AF10		KED DENOW /N AF10	Qty.
1	Tapping scrow	KFR-25X2W/NaA512	KFR-60W2/NaA512	KFR-35X2W/NaA512	10
1.	Front grill sub assy	70140553	70140553	70140553	16
2.	Cabin at	22265250	22265250	22265251	1
5.		01433028	10225052	10225254	1
4.	Axial flow fan	10335253	10335253	10335253	1
<u> </u>	Motor supporter	15013106	15013106	15013063	1
0.		01703027	01703027	01705253	1
/. o	Condenser sub-assy	01103653	01103653	011030982	1
<u>0.</u>	l op cover	01255262	01255262	01255262	1
9.	Rear grill	01473028	01473028	01475252	1
10.		39000009	39000009	3900009	1
11.	Dual defrost board 2F16HS	30112003	30112003	30112003	1
12	Capacitor CBB61 3uF/450V (UL/VDE/TUV)	33010027	33010027	33010027	1
13.	Electric box	01413003	01413003	01413003	1
14. (CapacitorCBB65 25uF/450V(440)	() 33000017	33000017	33000017	2
15.	Filter capacitor 0.33uF/275V	33020201	33020201	33020201	2
16.	Capacitor fix sleeve	42030005	42030005	42030005	2
17.	Capacitor clamp	02143013	02143013	02143013	2
18.	Wire board RS9413G	42010178	42010178	42010178	1
19.	Wire board RS 9413	42011104	42011104	42011104	2
20.	Four-way valve fitting	430004002	430004002	430004002	2
21.	Four-way valve	430004022	430004022	430004022	2
0.0	Stop valve 3/8 (R410a)	07130209	07130209	/	0
22	Stop valve $1/2$ (R410a)	/	07130210	07130210	2
23.	Stop valve1/4(R410a)	07130208	07130208	07130208	2
24.	Outdoor drainage joint	06123401	06123401	06123401	1
25.	Rear side plate sub-assy	01303021	01303021	013030325	1
26.	Valve supporter	01713028	01713028	01713028	1
27.	Capillary sub-assy2	03003523	03003525	030036021	1
28.	Capillary sub-assy1	03003524	03003526	030036011	1
29.	One-way valve	07130103	07130103	07130103	2
20	Compressor C-1RV096H1A	00100368	00100368	/	1
30	Compressor C-1RV146H1A	/	00100369	00100369	1
9.1	Compressor rubber pad	76710240	76710240	76710249	3
31	Compressor rubber pad	76710240	76710249	76710249	3
20	Compressor overload	00180019	00180019	00180043	1
32	Compressor overload	00180019	00180043	00180043	1
33.	Mid. isolation sheet sub-assy	012330241	012330241	012352531	1
34.	Chassis sub-assy	01203137	01203370	01203013	1
35.	Handle	26235252	26235252	26235253	3
36.	Front side plate	01303023	01303023	01303108	1
37.	Rubber sleeve cord	40020318	40020318	40020318	1

The above data are subject to change without notice.

10) Care and maintenance Warning Turn power off and pull out the power plug before cleaning air conditioner. Or it may cause the electric shock. • Never dampen the air conditioner, it can cause the electric shock. And never sprinble water on the unit. ● Volatile liquid (e.g. thinner or gasoline) will damage the air conditioner. (So wipe the units with a dry soft cloth, or a cloth slightly moistened with water or cleanser.) **10.1** Clean the surface panel **(1)**Take down the front panel According to the arrow head direction to open the front panel, take off the bolt of both end, take off the front panel. (2)Clean the front panel Bolt Use a soft brush with little water and detergent to clean, then to dry it in the shade. (3) To install the front panel Reinsert the front panel into axial seat, then reattach the front panel and clasp. 10.<u>2</u> **Clean the filter** (1) Take down the filter Open the front panel to an angle, then push the filter upward, and pull it outward and take it off, refer to right figure. (2)Cleaning To clean the filter by dust collector or water, when the filter is too dirty (such as greasy) could use the warm water with neutral cleaning (below 45) for cleaning, then dry it in the shade, as shown in right figure. (3) Reinsert the filter. Reinstall the filter, the filter surface remarked with "Front " face to yourself, then recover the front panel and clasp it. NOTE: Never to put the front panel or filter directly under the sun. Never use water above 45 to wash the filters, or it could cause deformation or discoloration. Never parch it by fire, or it could cause a fire or deformation.



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- \star Contact with service center of GREE before instllation to avoid the malfunction due to unprofessional installation.
- \star When picking up and moving the units, you must be guided by trained and qualified personnal.



11.3 Selection of installation location

(1) Indoor unit

- The inlet and outlet should be far away from the obstructions so that the outflow air can reach all parts of the room.
- Install in a location from which the condensation water can be drained out conveniently and that is permitting easy connection with the outdoor unit.
- Avoid a location where there is heat source, steam or inflammable gas.
- Install in a location where is strong enough to withstand the full weight and vibration of the unit.
- Be sure that the installation conforms to the installation dimension diagram.
- Be sure to leave enough space to allow access for routine maintenance. The height of the installed location should be 200cm or more away from the floor.
- Install in a location where is 1m or more away from other electric appliances such as television, audio devices, etc.
- Select a location where is easy to remove and clean the filter.

(2) Outdoor unit

- Select a location from which noise and outflow air emitted by unit will not inconvenience neighbors.
- Select a location where there should be sufficient ventilation.
- The outdoor unit inlet and outlet vent should not be covered.
- The installation position should withstand the full weight and vibration of the unit, and make sure that the installation work can be carried through safely.
- Thereshould be no danger of flammable gas or corrosive gas leaks.
- Be sure that the installation conforms to the installation dimension diagram.

NOTE:

Install in the following place may cause malfunction. If it is unavoidable, contact the dealer please.

- The place where oil (machine oil) is used.
- The place where a lot of salinities such as coast exists.
- The place where a sulfured gas such as the hot spring zones is generated.
- The palce where high-frequency waves are generated by radio equipment, welders and medical equipment.
- Other place with special circumstance.



11.4 Electric wiring

- 1. All electric installation should accord with the national regulation.
- 2. The rated voltage and exlusive circuit of air conditioner must be used, the diameter of power cord should be big enough.
- 3. Please do not pull the power cord at full tilt.

4. The earthing must be reliable, it should be connected to the exclusive earthing device of the building, should ask for the professional to install. There must be air leakage protection switch and air switch with enough capacity in the fixed circuit (could refer to the following). The air switch should have the magnetic release, and thermal release function, to make sure that the short circuit and over load be protected.

Models	Air switch capacity	Earth wire min. cross sectional area	Power cord of unit min. cross sectional area
KFR-20GW/NaA512	10A	1. 0mm ²	1. 0mm ²
KFR-25GW/NaA512	10A	1. 0mm ²	1. 0mm ²
KFR-30GW/NaA512	15A	1. 5 mm ²	1.5mm ²
KFR-25 $ imes$ 2GW/NaA512	15A	1. 5 mm ²	1.5mm ²
KFR-(25+35)GW/NaA512	20A	2.5mm ²	2. 5mm^2
$\texttt{KFR-35} \times 2\texttt{GW}/\texttt{NaA512}$	20A	2.5mm ²	2. 5mm ²

Requirement for earth

- 1. The unit is class I, the reliable earth wire should be adopted.
- 2. The yellow-green wire in the unit is earth wire, can not be used for other purpose, can not be cut off. Can not be fixed by tapping screw, otherwise, it can cause the danger of electric shock.
- 3. The earth resistance, should accord with the requirement of national standard GB17790.
- 4. The users' power supply should be reliably earthed. Please do not connect the earth wire to the places of following:
- (1) Water pipe (2) Gas pipe (3) Sewage pipe (4) And places where the professional considered is not reliable earthed.

11.5 Install the indoor unit

(1) Install the wall mounting frame

- Measure horizon by handing line or horizontal measurement. Since drainage pipe hole is on left side, when adjusting panel, the left should never be higher; it is better to make it lower.
- Fix the wall mounting frame on the selected location with screws.
- Pull the wall munting frame by hand after installation to see if ti is firm enough. The rear panel should be able to stand the weight of an adult (60kg) and the weight should be evenly shared by each screw.



Fig. 11 - 1

(2) Install the piping hole

- Make the piping hole $(\Phi 50)$ in the wall at a slight downward slant, the dimension please refer to fig.11-1.
- Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.

(3) Install the drainage hose

- For well draining, the drain hose should be placed at a downward slant.
- Do not wrench or bend the drain hose or flood its end by water.
- The prolonged drainage hose should be wrapped with heat insulation material when going through indoor unit

(4) Install the connection pipes

• Connect the connection pipes with the relevant union pipes of the indoor unit and tighten the flare nut of the connection pipes.

NOTE:

- Connect the connection pipes with the indoor unit firstly and the outdoor unit secondly.
- Be careful in bending the connection pipes, or you will damage the pipes.
- If the tightening torque is too great in tightening the flare nuts, leakage will happen.

(5) Electric wiring

- Open panel upwardly.
- Remove the electric box cover.
- Make power connect wire through wire hole at rear case and bottom of
- electric box from down to up. As shown in Fig.11-3, connect the blue wire of power connect wire onto termianl "N(1)", brown onto terminal "2", red onto "3" (there is no red wire in the single-split type unit), yellow-green one (earth wire) to terminal "(), and to tighten the power connection wire with cable groove, which is on the electric box.
- For heat pump unit, the signal control wire via the connection of connector and indoor unit (As shown in Fig.11-3). Then to tighten the signal control wire with wire clamp on the bottom of unit body case.
- Reinsert the covering plate to the original place, screw in the bolts.
- Recover the front panel.

(6) Install indoor unit

- When routing the pipe (wiring) from the left or right side, and cut off the tailings on base of main unit (As shown in Fig.11-5. The indoor unit piping, tube mill forms refer to Fig.11-4 (a), (b).
- ① Cut off tailing 1 when only power cord is routed;
- 2 Cut off tailings 1 and 2 (thereinto 1, 2, 3 are recommended) when connection pipe and power cord are routed.
- Wrap the piping and wiring and pull them through the cut-off tailings hole. (Shown in Fig. 11-6)
- Hang the mounting slots of the indoor unit on the upper tabs of the rear panel and remove the unit body, to check if it is firm enugh; As shown in Fig.11-7.
- The height of indoor unit installation should be 2.0m or more from the floor.









11.6

(1) Install the connection pipe

- Align the center of the piping flare with the relevant valve.
- Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench torque wrench refer to right figure.

NOTE: Exceeding tightening torque will damage the flare surface. Tightening torque table

Hex nut diameter (mm)	Tightening torque (N • m)
Φ6	$15 \sim 20$
Φ9.5	$31 \sim 35$
Φ12	$50 \sim 55$



Fig. 11 - 5

(2) Wiring connection)

1. Wiring connection for single -split type unit

- Remove the handle of outdoor unit right side plate. (1pc bolt)
- Remove the wire clamp, connect the power cable to the wiring terminal and fix it. The wiring layout should be the same with indoor unit.
- To fix the power cable with wire clamp, for the cooling and heating unit, fix the singnal control cord with wire clamp, then connect the corresponding connector.
- Make sure that the wiring is fixed well.
- Assemble the handle. (fixed by 1pc screw)



2. Outdoor unit wiring connection of dual split type unit

- Disassebmle the front side plate.
- Cut off the tailings of wire hole on the right side plate, and wear the electric wire rubber loop.
- Put the electric wire through to the cable-cross loop pass through the outdoor unit.
- Connect the power cable to the terminal board with screw, make sure that the wiring match with the wiring of indoor unit, and make sure that the earth wire is reliably earthed.
- For heat pump unit, connect the signal control cable (5X1.0) on the corresponding terminal of outdoor unit.
- Fix the wiring with wire clamp.
- Connect all the wirings fixed on the hook of right side plate, avoid the wirings touch the compressor, as shown in Fig.11-9.
- Assemble the front side plate.

The earth list of earth terminalEarth terminalElectric wire

N(1)	Blue
2	Brown
3	Red
	Yellow-green



Fig.11 - 9

NOTE:

- Wrong wiring connection will cause electrical malfunction.
- Don't pull the wire which fixed well by the wire clamp.

(3) Air purging and leakage test

- Remove the nut cap from the fluorine charge nuzzle of gas valve.
- Connect the middle charge hose which is on the pressure gauge to the vacuum pump, the low pressure end (Lo) connect to the fluorine charge nuzzle on the gas valve. (As show in fig.11-10)
- Start the vacuum pump and vacuumize, when the multi-purposed arrow pointed 1bar, then to close the low pressure handle (Lo) on the vacuum pump tightly, stop vacummizing. keep stopping for 15 mins above, make sure that the pressure of vacuum is unchanged.
- Remove the valve cap of liquid valve and gas valve.
- Loosen the valve stem of liquid valve by hex wrench, when the pressure of the vacuum pump rised up to 0 bar above.
- Remove the charge hose from the fluorine charge nuzzle on the gas valve, then tighten the nut cap of fluorine charge nuzzle.
- Open the valve stem of liquid valve and gas valve by hex wrench.
- Tighten the valve caps of gas valve and liquid valve, and check there is no leakage.



Fig.11 - 10

(4) Outdoor condensation drainage (Heat pump type only)

• When the unit is heating or defrosting, the waste water formed in the outdoor unit can be drained out reliably through the drain hose.

Installation method:

Install the outdoor drain elbow in the ϕ 25 hole on the base plate as shown in Fig.9 and joint the drain hose to the elbow, so that the waste water formed in the outdoor unit can be drained out to a proper place.





11.7 Test operation and check after installation

(1) Test operation

1. Before test operation

- Do not switch on power before installation is finished completely.
- Electric wiring must be connected correctly and securely.
- Gas valve, liquid valve, stop valve should be opened.
- All the impurities such as scraps and thrums must be cleared from the unit.



Fig. 11 - 10

2 The operation method

- Switch on power, press " () "button on the wireless remote control.
- Press "MODE" button, to select the 🎎 💥 🐭 modes, to check whether the operation is normal or not.
- Emergency operation

When the wireless remote control is lost, operation can be operated as below:

- (1) At stopping, press the button, the unit will automatically run in the AUTO mode, the COOL, HEAT, FAN will be selected by the microcomputer system. according to the surrounding temp., to obtain the comfortable effect.
 (2) At operation, press the STOP button, the unit will stop running.

(2) Check after installation

Items to be checked	Possible malfunction	Remark
Has it been fixed firmly?	The unit may drop, shake or emit noise	
Have you done the refrigerant leakage test?	It may cause insufficient cooling (heating) capacity	
Is heat insulation sufficient?	It may cause condensation and dripping	
Does the unit drain well?	It may cause condensation and dripping	
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the part.	
Is the electric wiring and piping connection installed correctly and securely?	It may cause electric malfunction or damage the part.	
Is the electric wiring and piping connection installed correctly and securely?	It may cause electrical leakage.	
Is the power cord specified?	It may cause electric malfunction or damage the part.	
Are the inlet and outlet vents of indoor unit and outdoor unit been covered?	It may cause insufficient cooling (heating) Capacity.	
Have the length of connection pipes and refrigerant capacity been recorded?	The refrigerant capacity is not accurate.	



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