





MODEL: GWHD(18)NK3FO GWHD(24)NK3FO GWHD(24)NK3GO GWHD(28)NK3FO (Refrigerant R410A)

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

Table of Contents

Sı	ummary and Features	1
1.	Safety Precautions	2
2.	Specifications	3
3.	Construction Views	6
4.	Refrigerant System Diagram	7
5.	Schematic Diagram	8
	5.1 Electrical Data5.2 Electrical Wiring5.3 Printed Circuit Board	8 8 .11
6.	Description of Each Control Operation	13
7.	Installation Manual	16
	 7.1 Electrical Connections 7.2 Installing the Outdoor Unit 7.3 Installation Dimension Diagram	16 19 20 21
8.	Exploded Views and Parts List	22
9.	Troubleshooting	30
	9.1 Malfunction Indicator 9.2 Malfunction Checking and Elimination	30 31
10). Removal Procedure	47

Summary and Features

Outdoor Unit:

Models	Product Code	
	CB228W03500	
	CB228W03501	





GWHD(24)NK3FO	CB228W03301
GWHD(24)NK3GO	CB228W03401
	CB228W03600
	CB228W03601

1. Safety Precautions

Installing, starting up, and servicing air conditioner can be hazardous due to system pressure, electrical components, and equipment location, etc.

Only trained, qualified installers and service personnel are allowed to install, start-up, and service this equipment. Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel.

When handling the equipment, observe precautions in the manual and on tags, stickers, and labels attached to the equipment. Follow all safety codes. Wear safety glasses andwork gloves. Keep quenching cloth and fire extinguisher nearby when brazing.

Read the instructions thoroughly and follow all warnings or cautions in literature and attached to the unit. Consult local building codes and current editions of national as well as local electrical codes.

Recognize the following safety information:

Caution

Warning

Incorrect handling could result in personal injury or death.

Incorrect handling may result in minor injury,or damage to product or property.

- Make sure the outdoor unit is installed on a stable, level surface with no accumulation of snow, leaves, or trash beside.
- Make sure the ceiling/wall is strong enough to bear the weight of the unit.
- Make sure the noise of the outdoor unit does not disturb neighbors.
- Follow all the installation instructions to minimize the risk of damage from earthquakes, typhoons or strong winds.
- Avoid contact between refrigerant and fire as it generates poisonous gas.
- Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture and other hazards.
- Make sure no refrigerant gas is leaking out when installation is completed.
- Should there be refrigerant leakage, the density of refrigerant in the air shall in no way exceed its limited value, or it may lead to explosion.
- Keep your fingers and clothing away from any moving parts.
- Clear the site after installation. Make sure no foreign objects are left in the unit.
- Always ensure effective grounding for the unit.

Marning

All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.

- Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.
- Never supply power to the unit unless all wiring and tubing are completed, reconnected and checked.
- This system adopts highly dangerous electrical voltage. Incorrect connection or inadequate grounding can cause personal injury or death. Stick to the wiring diagram and all the instructions when wiring.
- Have the unit adequately grounded in accordance with local electrical codes.
- Have all wiring connected tightly. Loose connection may lead to overheating and a possible fire hazard.

All installation or repair work shall be performed by your dealer or a specialized subcontractor as there is the risk of fire, electric shock, explosion or injury.



- Never install the unit in a place where a combustible gas might leak, or it may lead to fire or explosion.
- Make a proper provision against noise when the unit is installed at a telecommunication center or hospital.
- Provide an electric leak breaker when it is installed in a watery place.
- Never wash the unit with water.
- Handle unit transportation with care. The unit should not be carried by only one person if it is more than 20kg.
- Never touch the heat exchanger fins with bare hands.
- Never touch the compressor or refrigerant piping without wearing glove.
- Do not have the unit operate without air filter.
- Should any emergency occur, stop the unit and disconnect the power immediately.
- Properly insulate any tubing running inside the room to prevent the water from damaging the wall.

2. Specifications

Model			GWHD(18)NK3FO	
Product Code			CB228W03500/CB228W03501	
Rated Voltage		V~	220-240V	
Power	Rated Frequency	Hz	50	
supply	Phases		1	
Cooling	capacity(max~min)	W	5000(2050~6200)	
Heating	capacity(max~min)	W	5600(2500~6650)	
Cooling	Power Input(max~min)	W	1550(500~2550)	
Heating	Power Input(max~min)	W	1550(580~2700)	
Cooling	Current Input	Δ	6 88	
Heating	Current Input	Δ	6.88	
Rated Po	ower Input	W	2700	
Rated Cu	Irrent	Δ	11 98	
			56	
SELIC		\\/\\\/	0.0	
300F	Comprospor Trademark	VV/VV		
	Compressor Madel			
	Compressor Model			
			RD00EF	
		٨	Rotary	
	L.R.A	A	7.0	
	Compressor Rated Load Amp (RLA)	A	1.2	
	Compressor Power Input	VV	1440	
	Compressor Thermal Protector		INT11L-6233	
	I hrottling Method	0.0	Electron expansion valve	
	Cooling Operation Ambient Temperature Range	00	-15~48	
	Heating Operation Ambient Temperature Range	<u> </u>	-15~24	
	Condenser Material			
	Condenser Pipe Diameter	mm	Φ7	
	Rows-Fin Gap(mm)	mm	2-1.4	
	Coil length (I) X height (H) X coil width (L)	mm	851X38.1X660	
	Fan Motor Speed (rpm) (H/M/L)	rpm	630	
	Output of Fan Motor	W	60	
Outdoor	Fan Motor RLA	A	1	
	Fan Motor Capacitor	μF	1	
Unit	Air Flow Volume of Outdoor Unit	m³/h	3200	
	Fan Type-Piece		Axial-flow	
	Fan Diameter	mm	Ф520	
	Defrosting Method		Automatic Defrosting	
	Climate Type		T1	
	Isolation			
	Moisture Protection		IP24	
	Permissible Excessive Operating Pressure for the	MDe	1.2	
	Discharge Side	IVIFA	4.5	
	Permissible Excessive Operating Pressure for the		2.5	
	Suction Side	MPa	2.5	
	Dimension (W/H/D)	mm	963X700X396	
Dimension of Package (L/W/H)		mm	1026X455X735	
	Dimension of Package(L/W/H)	mm	1029X458X750	
	Net Weight	ka	50	
	Gross Weight	ka	55	
	efrigerant Charge	3	R410A	
	Refrigerant Charge	ka	1.40	
L		3		

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Madal				CW/UD(24)NIK2CO
Model Product Code			CR228W/03201	CP228W03401
Pated Voltage		M	CB220W03301	CB228W03401
Power Poted Frequency		V~	220-2400	220-2400
supply	Rated Frequency	HZ	50	50
	Phases	14/	1	1
Cooling	capacity(max~min)	VV	7000(2200~10000)	7100(2200~10000)
Heating	capacity(max~min)	W	7700(2600~11000)	8500(3600~11000)
Cooling F	Power Input(max~min)	W	2460(650~4550)	2400(650~4550)
Heating I	Power Input(max~min)	W	2560(980~3950)	2350(980~3950)
Cooling (Current Input	A	10.91	10.91
Heating (Current Input	A	11.36	11.36
Rated Po	ower Input	W	4550	4550
Rated Cu	urrent	А	20.19	20.19
SEER		W/W	5.1	5.1
SCOP		W/W	3.8	3.8
			ZHUHAI LANDA	ZHUHAI LANDA
	Compressor Trademark		COMPRESSOR CO I TD	COMPRESSOR CO. LTD
	Compressor Model		OXAS-D237X090B	0XAS-D23zX090B
	Compressor Refrigerant Oil Type		RB68EP	RB68EP
	Compressor Type		Rotary	Rotary
		Δ		
	Compressor Rated Load Amp (RLA)	A	, 11.5	11 5
	Compressor Rower Input	W	2550	2550
	Compressor Fower Input	VV	1NT11L 6222	11111 6222
	Compressor mermai Protector			
	Casting Method	00		
	Cooling Operation Ambient Temperature Range		-15~48	-15~48
	Reating Operation Ambient Temperature Range	U	-15~24	-15~24
			Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ	Φ
	Rows-Fin Gap(mm)	mm	2-1.4	2-1.4
	Coil length (I) X height (H) X coil width (L)	mm	982.2X38.1X748	982.2X38.1X748
	Fan Motor Speed (rpm) (H/M/L)	rpm	710	710
	Output of Fan Motor	W	90	90
Outdoor	Fan Motor RLA	A	/	/
Unit	Fan Motor Capacitor	μF	/	/
	Air Flow Volume of Outdoor Unit	m³/h	4000	4000
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter	mm	Ф552	Ф552
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the			
	Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the			
	Suction Side	MPa	2.5	2.5
	Dimension (W/H/D)	mm	100187908427	100127002427
	Dimension of Package (L/M/L)	mm	108024952940	108024957940
	Dimension of Package (L/W/T)		100074037040	100074037040
		111111	1003/400000	1003/40020
		кд	00	09
	Gross Weight	кд	13	
	eingerant Unarge	1.	K41UA	K41UA
1	Retrigerant Charge	кg	2.00	2.20

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			GWHD(28)NK3FO	
Product Code			CB228W03600/CB228W03601	
D	Rated Voltage	V~	220-240V	
Power	Rated Frequency	Hz	50	
supply	Phases		1	
Cooling	capacity(max~min)	W	8000(2200~10000)	
Heating	capacity(max~min)	W	9300(2800~11000)	
Cooling F	Power Input(max~min)	W	2490(650~4550)	
Heating F	Power Input(max~min)	W	2580(980~3950)	
Cooling (Current Input	A	11.05	
Heating (Current Input	Α	11.45	
Rated Po	ower Input	W	4550	
Rated Cu	urrent	А	20.19	
SEER		W/W	5.1	
SCOP		W/W	3.8	
	Compressor Trademark		ZHUHAI LANDA COMPRESSOR COLTD	
	Compressor Model		QXAS-D23zX090B	
	Compressor Refrigerant Oil Type		RB68EP	
	Compressor Type		Rotary	
	L.R.A	А	/	
	Compressor Rated Load Amp (RLA)	A	11.5	
	Compressor Power Input	W	2550	
	Compressor Thermal Protector		1NT11L-6233	
	Throttling Method		Electron expansion valve	
	Cooling Operation Ambient Temperature Range	°C	-15~48	
	Heating Operation Ambient Temperature Range	°C	-15~24	
	Condenser Material		Aluminum Fin-copper Tube	
	Condenser Pipe Diameter	mm	Φ7	
	Rows-Fin Gap(mm)	mm	2-1.4	
	Coil length (I) X height (H) X coil width (L)	mm	982.2X38.1X748	
	Fan Motor Speed (rpm) (H/M/L)	rpm	710	
	Output of Fan Motor	W	90	
	Fan Motor RLA	А	1	
Outdoor	Fan Motor Capacitor	μF	1	
Unit	Air Flow Volume of Outdoor Unit	m³/h	4000	
	Fan Type-Piece		Axial-flow	
	Fan Diameter	mm	Ф552	
	Defrosting Method		Automatic Defrosting	
	Climate Type		T1	
	Isolation			
	Moisture Protection		IP24	
	Permissible Excessive Operating Pressure for the			
	Discharge Side	MPa	4.3	
	Permissible Excessive Operating Pressure for the			
	Suction Side	MPa	2.5	
			100172007427	
	Dimension (W/H/D)	mm	1080X485X840	
	Dimension of Package(L/W/H)	mm	100074057040	
	Net Weight	ka	£0	
	Gross Weight	ka ka	74	
	efrigerant Charge	ку	R/10Δ	
	Refrigerant Charge	ka	2 20	
	Interingerallit Ollarge	кy	2.20	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

3. Construction Views

Model:GWHD(18)NK3FO





Models:GWHD(24)NK3FO GWHD(24)NK3GO GWHD(28) NK3FO





Unit:mm

790

6

4. Refrigerant System Diagram



A1:A-unit electronic expansion valve C1:C-unit electronic expansion valve A2:A-unit gas pipe temperature sensor C2:C-unit gas pipe temperature sensor A3:A-unit liquid pipe temperature sensor C3:C-unit liquid pipe temperature sensor C3:C-unit liquid pipe temperature sensor

5. Schematic Diagram

5.1 Electrical Data

Meaning of marks

Symbol	Color symbol	Symbol	Color symbol	Symbol	Parts name
WH	WHITE	GN	GREEN	SAT	OVERLOAD
YE	YELLOW	BN	BROWN	COMP	COMPRESSOR
RD	RED	BU	BLUE		PROTECTIVE EARTH
YEGN	YELLOW GREEN	BK	BLACK	/	/
VT	VIOLET	OG	ORANGE	/	/

5.2 Electrical Wiring

Model:GWHD(18)NK3FO(CB228W03501)



Model:GWHD(18)NK3FO(CB228W03500)



Model:GWHD(24)NK3FO



Model:GWHD(24)NK3GO



Model:GWHD(28) NK3FO(CB228W03601)(CB228W03600)



These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

5.3 Printed Circuit Board

Model:GWHD(18)NK3FO





Models:GWHD(24)NK3FO GWHD(24)NK3GO GWHD(28) NK3FO

• TOP VIEW



BOTTOM VIEW



	1	Compressor terminal
	2	High pressure protection terminal
	3	Low pressure protection terminal
	4	Compressor overload
)		protection terminal
1 2	5	Outdoor temp sensor terminal
3	6	Terminal of chassis electric
1 5		heater
5	7	Terminal of compressor
7		electric heater
	8	Outdoor fan terminal
	9	4-way valve terminal
3	10	Unit A liquid valve and gas
9		valve temp sensor
	11	Unit B liquid valve and gas
		valve temp sensor
	12	Unit C liquid valve and gas
)		valve temp sensor
	13	Unit D liquid valve and gas
1		valve temp sensor
	14	Unit A electronic expansion
		valve
	15	Unit B electronic expansion
	10	valve
	16	Unit C electronic expansion
	17	Valve
	17	valve
	18	Communication wire with
		indoor unit
	19	Communication neutral wire
	20	Live wire
	21	Neutral wire
	22	Reactor 1
	23	Reactor 2
		I

6. Description of Each Control Operation

1 Basic functions of the system

1.1 Cooling Mode

1.1.1 Cooling conditions and process:

If the compressor is in stop status and start the unit for cooling operation, when one of the indoor units reaches the cooling operation condition, the unit start cooling operation; in this case, the electronic expansion valve, the outdoor fan and the compressor start operation.

1.1.2 Stop in cooling operation

1.1.2.1 Compressor stops

The compressor stops immediately, the outdoor fan stops after 1min.

1.1.2.2 Some of the indoor units reach the stop condition (the compressor does not stop)

The compressor operates immediately according to the required frequency. For the indoor unit with no requirement, the corresponding electronic expansion valve is closed to OP.

1.1.3 Cooling mode transfers to heating mode

When the unit transfers to heating mode, the 4-way valve is energized after the compressor stops for 2min. The other disposals are the same as stopping in cooling mode.

1.1.4 4-way valve: in this mode, the 4-way valve is closed.

1.1.5 Outdoor fan control in cooling mode

The outdoor fan starts before 5s of the starting of compressor. The outdoor fan will run in high speed for 3min after starting and then it will run in set speed. The fan shall run at every speed for at least 80s. (When the quantity of running indoor unit is changed, the unit will enter the control described in 1.3.5.1 and 1.3.5.2);

When the compressor stops, the outdoor fan runs at present speed and stops after 1min.

1.2 Dry Mode

1.2.1 The dry conditions and process are the same as those in cooling mode;

1.2.2 The status of 4-way valve: closed;

1.2.3 The temperature setting range: 16 ~ 30 $^\circ \rm C$;

1.2.4 Protection function: the same as those in cooling mode;

1.2.5 In dry mode, the maximum value A of the capacity requirement percentage of single unit is 90% of that in cooling mode. The open condition of the electronic expansion valve, outdoor fan and compressor is the same as those in cooling mode.

1.3 Heating Mode

1.3.1 Cooling conditions and process:

When one of the indoor units reaches the heating operation condition, the unit starts heating operation.

1.3.2 Stop in heating operation:

1.3.2.1 When all the indoor units reach the stop condition, the compressor stops and the outdoor fan stops after 1min;

1.3.2.2 Some of the indoor units reach the stop condition

The compressor reduces the frequency immediately and operates according to the required frequency;

1.3.2.3 Heating mode transfers to cooling mode(dry mode), fan mode

a. The compressor stops; b. the power of 4-way valve is cut off after 2min; c. the outdoor fan stops after 1min; d. the status of 4-way valve: energized;

Function and Control

1.3.3 Outdoor fan control in heating mode

The outdoor fan starts before 5s of the starting of compressor and then it will run in high speed for 40s;

The fan shall run at every speed for at least 80s;

When the compressor stops, the outdoor fan stops after 1min.

1.3.4 Defrosting function

When the defrosting condition is met, the compressor stops; the electronic expansion valve of all indoor units open in big angle; the outdoor fan stops after 40s of the stop of compressor, meanwhile, the 4-way valve reverses the direction; after the 4-way valve reverses the direction, the compressor starts; then begin to calculate the time of defrosting, the frequency of the compressor rises to reach the defrosting frequency.

1.3.5 Oil-returned control in heating mode

1.3.5.1 Oil-returned condition

The whole unit is operating in low frequency for a long time

1.3.5.2 Oil-returned process in heating mode

The indoor unit displays "H1"

1.3.5.3 Oil-returned finished condition in heating mode

The duration reaches 5min

1.4 Fan Mode

The compressor, the outdoor fan and the 4-way valve are closed; temperature setting range is $16 \sim 30^{\circ}$ C.

2. Protection Function

2.1 Mode Conflict Protection of indoor unit

When the setting mode is different of different indoor unit, the unit runs in below status:

a. The mode of the first operating indoor unit is the basic mode, then compare the mode of the other indoor units to see if there is a conflict. Cooling mode (dry mode) is in conflict with heating mode.

b. Fan mode is in conflict with heating mode and the heating mode is the basic mode. No matter which indoor unit operates first, the unit will run in heating mode.

2.2 Overload protection function

When the tube temperature is a little low, the compressor raises the operation frequency; when the tube temperature is a little high, the compressor frequency is restricted or lows down the operation frequency; when the tube temperature is too high, the compressor protection stops running.

If the discharge temperature protection continuously appears for 6 times, the compressor can't resume running. The compressor can resume running after cutting off the power and then putting through the power. (if the running time of the compressor is longer than 7min, the protection times record will be cleared)

2.3 Discharge Protection Function

When the discharge temperature is a little low, the compressor raises the operation frequency; when the discharge temperature is a little high, the compressor frequency is restricted or lows down the operation frequency; when the discharge temperature is too high, the compressor protection stops running.

If the discharge temperature protection continuously appears for 6 times, the compressor can't resume running. The compressor can resume running after cutting off the power and then putting through the power. (if the running time of the compressor is longer than 7min, the protection times record will be cleared)

2.4 Communication malfunction

Detection of the quantity of installed indoor units:

After 3min of energizing, if the outdoor unit does not receive the communication data of certain indoor unit, the outdoor unit will judge that indoor unit is not installed and will treat it as it is not installed. If the outdoor unit receives the communication data of that indoor unit later, the outdoor unit will treat that unit as it is installed.

2.5 Overcurrent Protection

a. Overcurrent protection of complete unit; b. phase wire current protection; c. compressor phase current protection

2.6 Compressor high-pressure protection

2.6.1 When the high-pressure switch is detected cut off for 3s continuously, the compressor will enter high-pressure protection as it stops when reaching set temperature. Meanwhile, the outdoor unit will send the signal of "high-pressure protection" to the indoor units;

2.6.2 After the appearance of high-pressure protection, when the high-pressure switch is detected closed for 6s continuously, the compressor can resume running only after cutting off the power and then putting through the power.

2.7 Compressor overload protection

If the compressor overload switch is detected having movement, the indoor unit will display the corresponding malfunction as it stops when the indoor temperature reaching set temperature. When the compressor stops for more than 3min and the compressor overload switch is reset, the unit will resume operation status automatically. If the protection appears for more than 6 times (if the running time of the compressor is longer than 30min, the protection times record will be cleared), the unit can not resume operation status automatically, but can resume running only after cutting off the power and then putting through the power.

2.8 Compressor Phase-lacking Protection

When the compressor starts, if one of the three phases is detected open, the compressor will enter phase-lacking protection. The malfunction will be cleared after 1min, the unit will restart and then detect if there is still has phase-lacking protection. If the phase-lacking protection is detected for 6 times continuously, the compressor will not restart but can resume running only after cutting off the power and then putting through the power. If the running time of the compressor is longer than 7min, the protection times record will be cleared.

2.9 IPM Protection

2.9.1 When the IMP module protection is detected, the unit will stop as the indoor temperature reaching set temperature, PFC is closed, display IMP protection malfunction. After the compressor stops for 3min, the unit will resume operation status automatically; if the IMP protection is detected for more than 6 times continuously (If the running time of the compressor is longer than 7min, the protection times record will be cleared), the system will stop and send the signal of module protection to indoor unit. The unit can not resume operation status automatically, but can resume running only after cutting off the power and then putting through the power.

2.9.2 IMP module overheating protection

2.9.2.1 When $T_{IMP} > 85^{\circ}$ C, prohibit to raise frequency;

2.9.2.2 When $T_{IMP} \ge 90^{\circ}C$, the operation frequency of compressor lows down by 15% every 90s according to the present capacity requirement of the complete unit. It will keep 90s after lowing down the frequency. After lowing down the frequency, if $T_{IMP} \ge 90^{\circ}C$, the unit will circulate the above movement until reaching the minimum frequency; if $85^{\circ}C < T_{IMP} < 90^{\circ}C$, the unit will run at this frequency; when $T_{IMP} \le 85^{\circ}C$, the unit will run at the frequency according to the capacity requirement;

2.9.2.3 When $T_{IMP} \ge 95^{\circ}C$, the compressor stops. After the compressor stops for 3min, if $T_{IMP} < 85^{\circ}C$, the compressor and the outdoor fan will resume operation.

7. Installation Manual

7.1 Electrical Connections

GWHD(18)NK3FO GWHD(24)NK3FO

1. Remove the handle at the right side plate of the outdoor unit (one screw).

2. Remove the cable clamp, connect the power connection cable with the terminal at the row of connection and fix the connection. The fitting line distributing must be consistent with the indoor unit. terminal of line bank. Wiring should meet that of indoor unit.

- 3. Fix power connection wire by wire clamp.
- 4. Ensure wire has been fixed well.
- 5. Install the handle.

Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Air switch capacity
GWHD(18)NK3FO	20A
GWHD(24)NK3FO	25A

An all-pole disconnection switch having a contact separation of at least 3mm in all pole should be connected in fixed wiring.

 \wedge

Wrong wire connection may cause malfunction of some electric components.After fixing cable, ensure that leads between connection to fixed point have some space.

The connection pipes and the connectiong wirings of the unit A and unit B must be corresponding to each other respective.



The appliance shall be installed in accordance with national wiring regulations.

Note: the above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.



GWHD(24)NK3GO

1. Remove the handle at the right side plate of the outdoor unit (one screw).

2. Remove the cable clamp, connect the power connection cable with the terminal at the row of connection and fix the connection. The fitting line distributing must be consistent with the indoor unit. terminal of line bank. Wiring should meet that of indoor unit.

- 3. Fix power connection wire by wire clamp.
- 4. Ensure wire has been fixed well.
- 5. Install the handle.



Including an air switch with suitable capacity,please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

ownion oupdoily
25A



An all-pole disconnection switch having a contact separation of at least 3mm in all pole should be connected in fixed wiring.



Wrong wire connection may cause malfunction of some electric components.After fixing cable, ensure that leads between connection to fixed point have some space.



The connection pipes and the connectiong wirings of the unit A, unit B, unit C and unit D must be corresponding to each other respective.



The appliance shall be installed in accordance with national wiring regulations.

Note: The above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.



GWHD(28) NK3FO

1. Remove the handle at the right side plate of the outdoor unit (one screw).

2. Remove the cable clamp, connect the power connection cable with the terminal at the row of connection and fix the connection. The fitting line distributing must be consistent with the indoor unit. terminal of line bank. Wiring should meet that of indoor unit.

- 3. Fix power connection wire by wire clamp.
- 4. Ensure wire has been fixed well.
- 5. Install the handle.



Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Air switch capacity
GWHD(28)NK3FO	25A



An all-pole disconnection switch having a contact separation of at least 3mm in all pole should be connected in fixed wiring.



Wrong wire connection may cause malfunction of some electric components.After fixing cable, ensure that leads between connection to fixed point have some space.



The connection pipes and the connectiong wirings of the unit A, unit B, unit C and unit D must be corresponding to each other respective.



The appliance shall be installed in accordance with national wiring regulations.

Note: The above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.



7.2 Installing the Outdoor Unit

Use bolts to secure the unit to a flat, solid floor. When mounting the unit on a wall or the roof, make sure the support is firmly secured so that it cannot move in the event of intense vibrations or a strong wind.

Do not install the outdoor unit in pits or air vents Installing the pipes



Use suitable connecting pipes and equipment for the refrigerant R410A.

Models(m)	18K	24K	28K
Max. connection pipe length	20	20	20
Max. connection pipe length(Simple one indoor unit)	20	20	20

The refrigerant pipes must not exceed the maximum heights 10m.

Wrap all the refrigerant pipes and joints.

Tighten the connections using two wrenches working in opposite directions.

Caution: Installation Must be Performed in Accordance

with the NEC/CEC by Authorized Personnel Only. Humid air left inside the refrigerant circuit can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circuit using a vacuum pump.

- 1. Unscrew and remove the caps from the 2-way and 3way valves.
- 2.Unscrew and remove the cap from the service valve.
- 3.Connect the vacuum pump hose to the service valve.
- 4.Operate the vacuum pump for 10-15 minutes until an absolute vacuum of 10 mm Hg has been reached.
- 5. With the vacuum pump still in operation, close the low-pressure knob on the vacuum pump coupling. Stop the vacuum pump.
- 6.Open the 2-way valve by 1/4 turn and then close it after 10 seconds Check all the joints for leaks using liquid soap or an electronic leak device.
- 7.Turn the body of the 2-way and 3-way valves. Disconnect the vacuum pump hose.
- 8.Replace and tighten all the caps on the valves.

Diameter (mm)	Twisting moment (N.m)
Ф6	15-20
Ф9.52	35-40
Φ16	60-65
Ф12	45-50
Ф19	70-75

18K unit need to be installed the indoor unit



Installthedrainfittingandthedrainhose(for modelwithheatpumponly)

Condensation is produced and flows from the outdoor unit when the appliance is operating in the heating mode. In order not to disturb neighbours and to respect the environment, install a drain fitting and a drain hose to channel the condensate water. Install the drain fitting and rubber washer on the outdoor unit chassis and connect a drain hose to it as shown in the figure.







inlet

7.3 Installation Dimension Diagram

- Use suitable instruments for the refrigerant R410A.
 - Do not use any other refrigerant than R410A.
- \bigwedge Do not use mineral oils to clean the unit.



The installation must be done by trained and qualified service personnel with reliability according to this manual.

Contact service center before installation to avoid the malfunction due to unprofessional installation.

When picking up and moving the units, you must be guidedby trained and qualified person.

 \bigwedge Ensure that the recommende dspace is left around the appliance.

18K

24/28K



7.4 Check after Installation

Check Items	Problems Owing to Improper Installation
Is the installation reliable?	The unit may drop, vibrate or make noises
Has the gas leakage been checked?	May cause unsatisfactory cooling (heating) effect
Is the thermal insulation of the unit sufficient?	May cause condensation and water dropping
Is the drainage smooth?	May cause condensation and water dropping
Does the power supply voltage accord with the rated voltage specified on the nameplate?	The unit may bread down or the components may be burned out
Are the lines and pipelines correctly installed?	The unit may bread down or the components may be burned out
Has the unit been safely grounded?	Risk of electrical leakage
Are the models of lines in conformity with requirements?	The unit may bread down or the components may be burned out
Are there any obstacles near the air inlet and outlet of the indoor and outdoor units?	The unit may bread down or the components may be burned out
Have the length of refrigerating pipe and refrigerant charge amount been recorded?	It is not easy to decide the charge amount of refrigerant.

8. Exploded Views and Parts List

(1) Model:GWHD(18)NK3FO



		Part		
NO.		GWHD(18)NK3FO	GWHD(18)NK3FO	Qty
	Product Code	CB228W03501	CB228W03500	
1	Front Grill	22413025	22413025	1
2	Front Panel	01535013P	01535013P	1
3	Chassis Sub-assy	02803263P	02803302P	1
4	Drainage Connecter	06123401	06123401	1
5	Drainage hole Cap	06813401	06813401	3
6	Gas-liquid Separator Assy	07225017	07225017	1
7	Compressor and Fittings	00105249G	00105249G	1
8	Electric Heater(Compressor)	32003001	32003001	1
9	Tube Connector Sub-assy	06643008	06643008	1
10	Magnet Coil	4300040033	4300040033	1
11	4-Way Valve Assy	03073156	03073156	1
12	Right Side Plate	01303268P	01303268P	1
13	Valve Support Assy	07133845	07133845	1
14	Electronic Expansion Valve assy	07133846	07133846	1
15	Valve Support Sub-Assy	0171312802P	0171312802P	1
16	Cut off Valve	071302391	071302391	1
17	Cut off Valve	07130239	07130239	1
18	Valve Cover	20123029	20123029	1
19	Electric Expand Valve Fitting	43000084	43000084	1
20	Electric Expand Valve Fitting	4300008401	43000084	1
21	Temperature Sensor	3900007301	3900007301	1
22	Temperature Sensor	39000073	39000073	1
23	Wiring Clamp	26115004	26115004	1
24	Temperature Sensor	3900030901	3900030901	1
25	Rear Grill	01473043	01473043	1
26	Condenser Assy	01163938	01163938	1
27	Clapboard Assy	0123315301	0123315301	1
28	Coping	01255005P	01255005P	1
29	Supporting Board(Condenser)	01795010	01795010	1
30	Motor Support Sub-Assy	01705036	01705036	1
31	Fan Motor	1501506402	1501506402	1
32	Left Side Plate	01305093P	01305093P	1
33	Axial Flow Fan	10335008	10335008	1
34	Left Handle	26235401	26235401	1
35	Connecting Cable	4002054026	4002054026	0
36	Electric Box Assy	02613683	02613929	1
37	Electric Box	20113027	20113027	1
38	Radiator	49010252	49010252	1
39	Main Board	30148897	30148876	1

The data above are subject to change without notice.

(2) Model:GWHD(24)NK3FO



		Part Code	
NO.	Description	GWHD(24)NK3FO	Qty
	Product Code	CB228W03301	
1	Front Grill	22413026	1
2	Cabinet	01435004P	1
3	Left Handle	26235401	2
4	Front Side Plate	01305086P	1
5	Electrical Heater (Chassis)	7651000411	1
6	Drainage Connecter	06123401	1
7	Chassis Sub-assy	02803280P	1
8	Gas-liquid Separator Assy	07225017	1
9	Compressor and Fittings	0010524501G	1
10	Electric Heater(Compressor)	7651873215	1
11	Tube Connector Sub-assy	06643008	1
12	4-Way Valve Assy	03073181	1
13	Connection Pipe	05113723	1
14	Magnet Coil	4300040045	1
15	Electronic Expansion Valve assy	0713385802	1
16	Valve Support Assy	0713385702	1
17	Cut off Valve	07130239	1
18	Cut off Valve	071302391	1
19	Right Side Plate	01314100009P	1
20	Valve Cover	26904100012	1
21	Electric Expand Valve Fitting	43000084	1
22	Electric Expand Valve Fitting	4300008401	1
23	Temperature Sensor	3900007304	1
24	Temperature Sensor	3900007305	1
25	Wiring Clamp	26115004	1
26	Temperature Sensor	3900030901	1
27	Rear Grill	01574100003	1
28	Condenser Assy	01163980	1
29	Electric Box (Fireproofing)	01413426	1
30	Clapboard Sub-Assy	01233190	1
31	Motor Support Sub-Assy	01705025	1
32	Coping	01255006P	1
33	Fan Motor	1501403402	1
34	Condenser Support Plate	01175092	1
35	Axial Flow Fan	10335014	1
36	Left Side Plate	01305043P	1
37	Connecting Cable	4002054026	0
38	Electric Box Assy	02613684	1
39	Terminal Board	420111041	2
40	Connection Support	01703211	1
41	Electric Box	20113015	1
42	Main Board	30148903	1
43	Electric Box Cover Sub-Assy	02603217	1

The data above are subject to change without notice.



	Description	Part Code	
NO.	Description	GWHD(24)NK3GO	Qty
	Product Code	CB228W03401	
1	Front Grill	22413026	1
2	Cabinet	01435004P	1
3	Left Handle	26235401	2
4	Front Side Plate	01305086P	1
5	Electrical Heater (Chassis)	7651000411	1
6	Drainage Connecter	06123401	1
7	Chassis Sub-assy	02803280P	1
8	Gas-liquid Separator Assy	07225017	1
9	Compressor and Fittings	0010524501G	1
10	Electric Heater(Compressor)	7651873215	1
11	Tube Connector Sub-assy	06643008	2
12	4-Way Valve Assy	03073181	1
13	Connection Pipe	05113723	1
14	Magnet Coil	4300040045	1
15	Electronic Expansion Valve assy	0713385802	1
16	Valve Support Assy	0713385701	1
17	Cut off Valve	07130239	1
18	Cut off Valve	071302391	1
19	Right Side Plate	01314100009P	1
20	Valve Cover	26904100012	1
21	Electric Expand Valve Fitting	/	0
22	Electric Expand Valve Fitting	43000084	1
23	Electric Expand Valve Fitting	4300008401	1
24	Temperature Sensor	3900007304	1
25	Temperature Sensor	3900007305	1
26	Temperature Sensor	3900030901	1
27	Wiring Clamp	26115004	1
28	Temperature Sensor	3900007304	1
29	Rear Grill	01574100003	1
30	Condenser Assy	01163980	1
31	Electric Box (Fireproofing)	01413426	1
32	Clapboard Sub-Assy	01233190	1
33	Motor Support Sub-Assy	01705025	1
34	Coping	01255006P	1
35	Fan Motor	1501403402	1
36	Condenser Support Plate	01175092	1
37	Axial Flow Fan	10335014	1
38	Left Side Plate	01305043P	1
39	Connecting Cable	4002054026	0
40	Electric Box Assy	02613685	1
41	Terminal Board	420111041	3
42	Connection Support	01703211	1
43	Electric Box	20113015	1
44	Main Board	30148905	1
45	Electric Box Cover Sub-Assy	02603217	1

The data above are subject to change without notice.

(4) Model:GWHD(28) NK3FO



		Part		
NO.	Description	GWHD(28) NK3FO	GWHD(28) NK3FO	Qty
	Product Code	CB228W03601	CB228W03600	7
1	Front Grill	22413026	22413026	1
2	Cabinet	01435004P	01435004P	1
3	Left Handle	26235401	26235401	2
4	Front Side Plate	01305086P	01305086P	1
5	Electrical Heater (Chassis)	7651000411	/	1
6	Drainage Connecter	06123401	06123401	1
7	Chassis Sub-assy	02803280P	02803301P	1
8	Gas-liquid Separator Assy	07225017	07225017	1
9	Compressor and Fittings	0010524501G	0010524501G	1
10	Electric Heater(Compressor)	7651873215	7651873215	1
11	Tube Connector Sub-assy	06643008	06643008	2
12	4-Way Valve Assy	03073181	03073181	1
13	Connection Pipe	05113723	05113723	1
14	Magnet Coil	4300040045	4300040045	1
15	Electronic Expansion Valve assy	07133858	07133858	1
16	Valve Support Assy	07133857	07133857	1
17	Cut off Valve	07130239	07130239	1
18	Cut off Valve	071302391	071302391	1
19	Right Side Plate	01314100009P	01314100009P	1
20	Valve Cover	26904100012	26904100012	1
21	Electric Expand Valve Fitting	43000084	43000084	1
22	Electric Expand Valve Fitting	4300008401	4300008401	1
23	Electric Expand Valve Fitting	4300008402	4300008402	1
24	Electric Expand Valve Fitting	4300008403	4300008403	1
25	Temperature Sensor	Sensor 3900007303 3900007303		1
26	Temperature Sensor	3900007302 39000		1
27	Temperature Sensor	3900007301	3900007301	1
28	Temperature Sensor	39000073	39000073	1
29	Wiring Clamp	26115004	26115004	1
30	Temperature Sensor	3900030901	3900007304	1
31	Rear Grill	01574100003	01574100003	1
32	Condenser Assy	01163980	01163980	1
33	Electric Box (Fireproofing)	01413426	01413426	1
34	Clapboard Sub-Assy	01233190	01233190	1
35	Motor Support Sub-Assy	01705025	01705025	1
36	Coping	01255006P	01255006P	1
37	Fan Motor	1501403402	1501403402	1
38	Condenser Support Plate	01175092	01175092	1
39	Axial Flow Fan	10335014	10335014	1
40	Left Side Plate	01305043P	01305043P	1
41	Connecting Cable	4002054026	4002054026	0
42	Electric Box Assy	02613686	02613930	1
43	Ierminal Board	420111041	420111041	4
44	Connection Support	01703211	01703211	1
45	Electric Box	20113015	20113015	1
46	Main Board	30148906	30148896	1
47	Electric Box Cover Sub-Assy	02603217	02603217	1

The data above are subject to change without notice.

9. Troubleshooting

9.1 Malfunction Indicator

1. Requirement of malfunction display

When several malfunctions happen at the same time, malfunction codes will be displayed circularly.

2. Malfunction display method

(1) Hardware malfunction: it will be displayed immediately, please refer to "Malfunction status sheet";

(2) Operation status: it will be displayed immediately, please refer to "Malfunction status sheet";

(3) Other malfunction: It will be displayed after the compressor has been stopped for 200s, please refer to "Malfunction status sheet".

(Note: when the compressor starts up again, malfunction display waiting time (200s) will be cleared.)

3. Malfunction display control

Indoor unit displays malfunction code as shown in the sheet below. ODU communication light will be off for 1s and then blink for 1s circularly.

4. Viewing malfunction code through remote controller

Enter viewing malfunction code: pressing light button for 6 times within 3S to view malfunction code;

Exit viewing malfunction code: pressing light button for 6 times within 3S or after the malfunction code is displayed for 5min.

Malfunction status sheet							
Malfunction name	Malfunction type	Nixie tube					
Zero cross detection circuit malfunction	Hardware malfunction	U8					
Malfunction protection of jumper cap	Hardware malfunction	C5					
Feedback of without IDU motor	Hardware malfunction	H6					
Indoor ambient temperature sensor is open/short circuited	Hardware malfunction	F1					
Indoor evaporator temperature sensor is open/short circuited	Hardware malfunction	F2					
Liquid valve temperature sensor is open/short circuited	Hardware malfunction	b5					
Gas valve temperature sensor is open/short circuited	Hardware malfunction	b7					
Modular temperature sensor is open/short circuited	Hardware malfunction	P7					
Outdoor ambient temperature sensor is open/short circuited	Hardware malfunction	F4					
Outdoor condenser inlet pipe temperature sensor is	Hardware malfunction	A5					
open/short circuited (commercial)							
Outdoor condenser middle pipe temperature sensor is	Hardware malfunction	F4					
open/short circuited							
Outdoor condenser outlet pipe temperature sensor is	Hardware malfunction	A7					
open/short circuited (commercial)							
Outdoor discharge temperature sensor is open/short	Hardware malfunction	F5					
circuited							
Communication malfunction	Hardware malfunction	E6					
Malfunction of phase current detection circuit for compressor	Hardware malfunction	U1					
Compressor demagnetization protection	Viewing malfunction code	HE					
Malfunction of voltage dropping for DC bus-bar	through remote controller within	U3					
Module high temperature protection	200s: displayed directly on	P8					
Refrigerant lacking or blockage protection of system (not	nixietube after 200s	F0					
available for residential ODU)							
Charging malfunction of capacitor	Hardware malfunction	PU					
High pressure protection of system	Hardware malfunction	E1					
Low pressure protection of system (reserved)	Hardware malfunction	E3					

	Viewing malfunction code	
Compressor overload protection	through remote controller within	H3
	200s; displayed directly on	
	nixietube after 200s	
Indoor unit and outdoor unit do not match	Hardware malfunction	LP
Malfunction of memory chip	Hardware malfunction	EE
Wrong connection of communication wire or malfunction of	Hardwara malfunction	dn
electronic expansion valve	Haldware manufiction	
Malfunction of complete units current detection	Hardware malfunction	U5
Malfunction protection of outdoor fan 1	Hardware malfunction	L3
Detection status of wrong connection of communication wire	Operation status	dd
or malfunction of electronic expansion valve	Operation status	
Mode conflict	Operation status	E7
Refrigerant recycling mode	Operation status	Fo
X-fan	Operation status	AL
Defrosting or oil return in heating mode	Operation status	H1
Start failure of compressor		Lc
High discharge temperature protection of compressor		E4
Overload protection		E8
Whole unit overcurrent protection		E5
Compressor phase current protection	Viewing malfunction code	P5
Compressor desynchronizing	through remote controller within	H7
Compressor phase-lacking/phase-inverse protection	200s; displayed directly on	Ld
IPM modular protection	nixietube after 200s	H5
DC bus-bar low voltage protection		PL
DC bus-bar high voltage protection		PH
PFC protection		HC
The four-way valve is abnormal		U7

9.2 Malfunction Checking and Elimination

Note: discharge the position in below pictures with discharge resistance after open the top cover and check if the voltage is below 20V with universal meter, then begin to check.



24/28K:



1. IPM protection malfunction

Main checking point:

- If the input voltage of the unit is within normal range?
- If the connection wire of compressor is connected well? Is it loose? If the connection sequence is correct?
- If the resistance of compressor coil is normal? If the isolation of compressor coil with copper pipe is good?

If the unit is overloaded? If the heat radiation of the unit is good?







2. PFC protection malfunction, capacity charging malfunction

Main checking points:

- If the wiring of the induction is connected well and if the induction is broken;
- If the mainboard is broken;

Flow chart:

For 18K



For 24/28K



Troubleshooting

3. Compressor desynchronizing malfunction

Main checking points:

- If the pressure of the system is too high;
- If the eletric expansion valve is working normally or it is broken;
- If the radiation of the unit is good;





Troubleshooting

4. Compressor overload, diacharge protectionmalfunction

Main checking points:

- If the eletric expansion valve is connected well or it is broken;
- If there is refrigerant leakage;
- If the overload protector is broken;

Flow chart:



Note: the detection method of the coil of the eletric expansion valve: there is five pieces of coil of the eletric expansion valve, the resistance of one of them (the leftmost or the rightmost one) is almost the same as the resistance of other terminal (within 100 Ω). Judge the condition of the electronic expansion valve through detecting these resistance.

5. Start failuremalfunction

Main checking points:

- If the connection wire of the compressor is connected properly;
- If the stop duration of the compressor is sufficient;
- If the compressor is broken;
- If the refrigerant charging amount is too much;



6. Temperature sensor malfunction

Main checking points:

- If the temperature sensor is damaged or broken
- If the terminal of the temperature sensor is loosended or not connected;
- If the mainboard is broken;



7. DC fan malfunction

Main checking points:

- If the outdoor fan is blocked by foreign objects;
- The connection wire of DC fan is connected reliably? If it is loose?



8. Communication malfunction

Main checking points:

- If the connection wire between the indoor unit and outdoor unit is connected well, if the wires inside the unit is connected well;
- If the indoor mainboard or outdoor main board is broken;





9. Anti-high temperatureand overload malfunction

Main checking points:

- If the outdoor ambient temperature is within the normal range;
- If the indoor fan and outdoor fan are running normally;
- If the indoor and outdoor radiation environment is good;



Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)
-19	138.1	20	18.75	59	3.848	98	1.071
-18	128.6	21	17.93	60	3.711	99	1.039
-17	121.6	22	17.14	61	3.579	100	1.009
-16	115	23	16.39	62	3.454	101	0.98
-15	108.7	24	15.68	63	3.333	102	0.952
-14	102.9	25	15	64	3.217	103	0.925
-13	97.4	26	14.36	65	3.105	104	0.898
-12	92.22	27	13.74	66	2.998	105	0.873
-11	87.35	28	13.16	67	2.896	106	0.848
-10	82.75	29	12.6	68	2.797	107	0.825
-9	78.43	30	12.07	69	2.702	108	0.802
-8	74.35	31	11.57	70	2.611	109	0.779
-7	70.5	32	11.09	71	2.523	110	0.758
-6	66.88	33	10.63	72	2.439	111	0.737
-5	63.46	34	10.2	73	2.358	112	0.717
-4	60.23	35	9.779	74	2.28	113	0.697
-3	57.18	36	9.382	75	2.206	114	0.678
-2	54.31	37	9.003	76	2.133	115	0.66
-1	51.59	38	8.642	77	2.064	116	0.642
0	49.02	39	8.297	78	1.997	117	0.625
1	46.6	40	7.967	79	1.933	118	0.608
2	44.31	41	7.653	80	1.871	119	0.592
3	42.14	42	7.352	81	1.811	120	0.577
4	40.09	43	7.065	82	1.754	121	0.561
5	38.15	44	6.791	83	1.699	122	0.547
6	36.32	45	6.529	84	1.645	123	0.532
7	34.58	46	6.278	85	1.594	124	0.519
8	32.94	47	6.038	86	1.544	125	0.505
9	31.38	48	5.809	87	1.497	126	0.492
10	29.9	49	5.589	88	1.451	127	0.48
11	28.51	50	5.379	89	1.408	128	0.467
12	27.18	51	5.197	90	1.363	129	0.456
13	25.92	52	4.986	91	1.322	130	0.444
14	24.73	53	4.802	92	1.282	131	0.433
15	23.6	54	4.625	93	1.244	132	0.422
16	22.53	55	4.456	94	1.207	133	0.412
17	21.51	56	4.294	95	1.171	134	0.401
18	20.54	57	4.139	96	1.136	135	0.391
19	19.63	58	3.99	97	1.103	136	0.382

Appendix 1: Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(15K)

Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)
-19	181.4	20	25.01	59	5.13	98	1.427
-18	171.4	21	23.9	60	4.948	99	1.386
-17	162.1	22	22.85	61	4.773	100	1.346
-16	153.3	23	21.85	62	4.605	101	1.307
-15	145	24	20.9	63	4.443	102	1.269
-14	137.2	25	20	64	4.289	103	1.233
-13	129.9	26	19.14	65	4.14	104	1.198
-12	123	27	18.13	66	3.998	105	1.164
-11	116.5	28	17.55	67	3.861	106	1.131
-10	110.3	29	16.8	68	3.729	107	1.099
-9	104.6	30	16.1	69	3.603	108	1.069
-8	99.13	31	15.43	70	3.481	109	1.039
-7	94	32	14.79	71	3.364	110	1.01
-6	89.17	33	14.18	72	3.252	111	0.983
-5	84.61	34	13.59	73	3.144	112	0.956
-4	80.31	35	13.04	74	3.04	113	0.93
-3	76.24	36	12.51	75	2.94	114	0.904
-2	72.41	37	12	76	2.844	115	0.88
-1	68.79	38	11.52	77	2.752	116	0.856
0	65.37	39	11.06	78	2.663	117	0.833
1	62.13	40	10.62	79	2.577	118	0.811
2	59.08	41	10.2	80	2.495	119	0.77
3	56.19	42	9.803	81	2.415	120	0.769
4	53.46	43	9.42	82	2.339	121	0.746
5	50.87	44	9.054	83	2.265	122	0.729
6	48.42	45	8.705	84	2.194	123	0.71
7	46.11	46	8.37	85	2.125	124	0.692
8	43.92	47	8.051	86	2.059	125	0.674
9	41.84	48	7.745	87	1.996	126	0.658
10	39.87	49	7.453	88	1.934	127	0.64
11	38.01	50	7.173	89	1.875	128	0.623
12	36.24	51	6.905	90	1.818	129	0.607
13	34.57	52	6.648	91	1.736	130	0.592
14	32.98	53	6.403	92	1.71	131	0.577
15	31.47	54	6.167	93	1.658	132	0.563
16	30.04	55	5.942	94	1.609	133	0.549
17	28.68	56	5.726	95	1.561	134	0.535
18	27.39	57	5.519	96	1.515	135	0.521
19	26.17	58	5.32	97	1.47	136	0.509

Appendix 2: Resistance Table of Outdoor and Indoor Tube Temperature Sensors(20K)

Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)	Temp(℃)	Resistance(kΩ)
-29	853.5	10	98	49	18.34	88	4.75
-28	799.8	11	93.42	50	17.65	89	4.61
-27	750	12	89.07	51	16.99	90	4.47
-26	703.8	13	84.95	52	16.36	91	4.33
-25	660.8	14	81.05	53	15.75	92	4.20
-24	620.8	15	77.35	54	15.17	93	4.08
-23	580.6	16	73.83	55	14.62	94	3.96
-22	548.9	17	70.5	56	14.09	95	3.84
-21	516.6	18	67.34	57	13.58	96	3.73
-20	486.5	19	64.33	58	13.09	97	3.62
-19	458.3	20	61.48	59	12.62	98	3.51
-18	432	21	58.77	60	12.17	99	3.41
-17	407.4	22	56.19	61	11.74	100	3.32
-16	384.5	23	53.74	62	11.32	101	3.22
-15	362.9	24	51.41	63	10.93	102	3.13
-14	342.8	25	49.19	64	10.54	103	3.04
-13	323.9	26	47.08	65	10.18	104	2.96
-12	306.2	27	45.07	66	9.83	105	2.87
-11	289.6	28	43.16	67	9.49	106	2.79
-10	274	29	41.34	68	9.17	107	2.72
-9	259.3	30	39.61	69	8.85	108	2.64
-8	245.6	31	37.96	70	8.56	109	2.57
-7	232.6	32	36.38	71	8.27	110	2.50
-6	220.5	33	34.88	72	7.99	111	2.43
-5	209	34	33.45	73	7.73	112	2.37
-4	198.3	35	32.09	74	7.47	113	2.30
-3	199.1	36	30.79	75	7.22	114	2.24
-2	178.5	37	29.54	76	7.00	115	2.18
-1	169.5	38	28.36	77	6.76	116	2.12
0	161	39	27.23	78	6.54	117	2.07
1	153	40	26.15	79	6.33	118	2.02
2	145.4	41	25.11	80	6.13	119	1.96
3	138.3	42	24.13	81	5.93	120	1.91
4	131.5	43	23.19	82	5.75	121	1.86
5	125.1	 44	22.29	83	5.57	122	1.82
6	119.1	45	21.43	84	5.39	123	1.77
7	113.4	46	20.6	85	5.22	124	1.73
8	108	47	19.81	86	5.06	125	1.68
9	102.8	48	19.06	87	4.90	126	1.64

Appendix3: Resistance Table for Outdoor Discharge Temperature Sensor (50K)

Note: The information above is for reference only.

10. Removal Procedure

/ Warning

Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

Model:GWHD(18)NK3FO

Steps	Procedure									
1. Before	disassembly									
	Complete axonometric drawing.									
2. Remove	e valve cover									
	Remove the connection screw fixing the valve cover and then remove the valve cover.	valve cover								
3. Remove	e Coping									
	Remove the connection screws connecting the top panel with the right side plate and the left side plate, and then remove the Coping.	Coping								

Steps	Pro	ocedure
4. Remov	e front grille Remove the connection screws connecting the front grille and the front panel, and then loosen the clasp to remove the front grille.	grille
5. Remove	e front panel Remove the screws connecting the front panel and then remove the front panel.	Font panel
6. Remove	e right side plate	
	Remove the screws connecting the right side plate with the chassis and the valve support. Then remove the right side plate.	right side plate

Steps	Pro	ocedure
7. Remov	e rear grill Remove the screws connecting the rear grill and the left side plate, and then remove the rear grill.	rear grill
8. Remove	e left side plate	
	Remove the screws fixing the left side plate with the chassis and the condenser support, and then remove the left side plate.	left side plate
9. Remov	e condenser support	support
	Remove the connection screws connecting the condenser support and the chassis, and then remove the condenser support.	

Steps	Pro	ocedure
10. Remov	ve axial flow blade	
	Remove the nut on the blade and then remove the axial flow blade.	axial flow blade
11. Remov	re motor and motor support	
	Remove the 4 tapping screws fixing the motor and disconnect the leading wire insert of the motor. Then remove the motor. Remove the 2 tapping screws fixing the motor support and chassis, and then lift the motor support to remove it.	motor support
12. Remov	ve electric box assy	
	Remove the screws fixing the electric box assy and the middle isolation sheet, and then lift the electric box assy to remove it.	electric box assy

Steps	Pro	cedure
13. Remov	ve PFC induction	
	Remove the screw connecting the PFC induction and middle isolation sheet, and then remove the PFC induction.	PFC induction
14. Remov	ve 4-way valve assy and suction pipe sub-assy	A
	Unsolder the welding joint connecting the 4-way valve assy with compressor suction and discharge port, the valve with the outlet pipe of condenser. Then lift the 4-way valve assy to remove it. (NOTE: Discharge the refrigerant completely before unsoldering.) Unsolder the welding joint connecting the suction pipe sub-assy with compressor and liquid container, and then remove the suction pipe sub-assy.	4-way valve assy
15. Remo	ve liquid container	
	Remove the screws connecting the isolation plate sub-assy and the liquid container, and then lift the liquid container to remove it.	liquid container

Steps	Pro	ocedure
16. Remo	ve middle isolation sheet	
	Remove the screws connecting the middle isolation sheet with the chassis assy and the condenser assy, and then remove the middle isolation sheet.	middle isolation sheet
17. Remov	ve compressor	
	Remove the 3 foot nuts fixing the compressor and then remove the compressor.	compressor
18. Remo	ve valve support sub-assy	
	Remove the screw connecting the valve support assy and the chassis sub-assy, and then remove the valve support assy.	condenser assy

Steps	Pro	cedure
19. Remov	ve electronic expansion valve assy	
	Unsolder the welding joint connecting the electronic expansion valve sub-assy with the gas collection pipe, and then remove the electronic expansion valve assy. (Note: when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature).	electronic expansion valve assy
20. Remov	ve condenser assy	
	Remove the screws connecting the condenser assy and the chassis assy, and then remove the condenser assy.	condenser assy

Models:GWHD(24)NK3FO GWHD(24)NK3GO GWHD(28) NK3FO

Take GWHD(28) NK3FO for example(Only cut-off valve of valve support, electronic expansion valve and coil have some differences)

Steps	Pro	ocedure
1. Remo	ve valve cover and top panel	
1	Twist off the screws used for fixing and valve cover , pull valve cover up ward to remove it.	valve cover
2	Remove the 3 screws connecting the top panel with the front panel and the right side plate, and then remove the top panel.	top panel
2. Remov	ve grille,front side plate and panel.	
1	Remove the 2 screws connecting the grille and the panel, and then remove the grille.	grille
2	Remove the 1 screw connecting the front side plate and the panel,and then remove the front side plate.	front side plate

Steps	Proce	dure
3	Remove the 5 screws connecting the panel with the chassis and the motor support, and then remove the panel.	panel
3. Remo	ove right side plate and left side plate	
1	Remove the screws connecting the right side plate with the chassis, the valve support and the electric box, and then remove the right side plate assy.	right side plate
2	Remove the screws connecting the left side plate and the chassis, and then remove the left side plate assy.	left side plate

Steps	Proced	ure
4. Remo	ve fan motor and axial flow blade	
1	Remove the nuts fixing the blade and then remove the axial flow blade.	axial flow blade
		fan motor fixing frame
2	Remove the 4 tapping screws fixing the motor; disconnect the leading wire insert of the motor and then remove the motor. Remove the 2 tapping screws fixing the motor support and then pull the motor support upwards to remove it.	fan motor
5. Remo	ve electric box	electric box
	Remove the screws fixing the electric box sub-assy; loosen the wire bundle; pull out the wiring terminals and then pull the electric box upwards to remove it.	

Steps	Pn	ocedure
6.Remo	ve soundproof sponge and 4-way valve assy	
1	Since the piping ports on the soundproof sponge are torn easily, remove the soundproof sponge carefully	soundproof sponge
2	Discharge the refrigerant completely;unsolder the pipelines connecting the compressor and the condenser assy,and then remove the 4-way valve assy.	4-way valve assy
		Connection Pipe
7. Rem	ove Isolation sheet	
	Remove the 3 screws fixing the isolation sheet and then remove the Isolation sheet.	Isolation sheet

Steps	Pn	ocedure
8. Remo	ve Cut off Valve and Valve Support	
	Remove the 2 bolts fixing the valve subassemblies. Unsolder the welding joint connecting the gas valve and the return air pipe. Remove the gas valve. (Note: When unsoldering the soldering joint, wrap the gas valve with wet cloth completely to avoid damage to the valve caused by high temperature.) Unsolder the welding joint connecting the liquid valve and the connecting pipe.Remove the liquid valve. Remove screws fixing valve support and then remove the valve support; remove the screw fixing the condenser and then pull the condenser upwards to remove it.	Valve Support Cut off Valve
9. Remo	ove compressor	
	Remove the 3 foot nuts fixing the compressor and then remove the compressor.	
10.Rem	Dve support	
1	Remove the screws connecting the support and condenser assy,and thenremove the support.	support



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