

Model Code Meaning

Model Code	Capacity	Phase	Configuration	Options
GR-100	100kVA	3-Phase	Standard	Standard
GR-150	150kVA	3-Phase	Standard	Standard
GR-200	200kVA	3-Phase	Standard	Standard
GR-250	250kVA	3-Phase	Standard	Standard
GR-300	300kVA	3-Phase	Standard	Standard
GR-350	350kVA	3-Phase	Standard	Standard
GR-400	400kVA	3-Phase	Standard	Standard
GR-450	450kVA	3-Phase	Standard	Standard
GR-500	500kVA	3-Phase	Standard	Standard
GR-550	550kVA	3-Phase	Standard	Standard
GR-600	600kVA	3-Phase	Standard	Standard
GR-650	650kVA	3-Phase	Standard	Standard
GR-700	700kVA	3-Phase	Standard	Standard
GR-750	750kVA	3-Phase	Standard	Standard
GR-800	800kVA	3-Phase	Standard	Standard
GR-850	850kVA	3-Phase	Standard	Standard
GR-900	900kVA	3-Phase	Standard	Standard
GR-950	950kVA	3-Phase	Standard	Standard
GR-1000	1000kVA	3-Phase	Standard	Standard

2. Main Components

The main components of the Rooftop Packaged Commercial Air Conditioner are as follows:

1. Outdoor Unit: The outdoor unit is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the refrigeration cycle and the heat exchange process.
2. Indoor Unit: The indoor unit is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the air circulation and the temperature control.
3. Control Panel: The control panel is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the operation and the maintenance of the unit.
4. Refrigerant Piping: The refrigerant piping is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the refrigerant flow between the outdoor and indoor units.
5. Condenser Piping: The condenser piping is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the condenser flow between the outdoor and indoor units.
6. Evaporator Piping: The evaporator piping is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the evaporator flow between the outdoor and indoor units.
7. Expansion Valve: The expansion valve is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the refrigerant expansion and the pressure control.
8. Filter: The filter is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the air filtration and the dust removal.
9. Fan: The fan is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the air circulation and the temperature control.
10. Compressor: The compressor is the main component of the Rooftop Packaged Commercial Air Conditioner. It is responsible for the refrigerant compression and the pressure control.

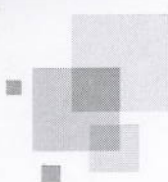
The Rooftop Packaged Commercial Air Conditioner is a self-contained unit that can be installed on the roof of a building. It is designed to provide efficient and reliable cooling and heating for commercial buildings. The unit is made of high-quality materials and is built to last. It is also easy to maintain and repair. The Rooftop Packaged Commercial Air Conditioner is a great choice for anyone looking for a reliable and efficient cooling and heating solution for their commercial building.

The Rooftop Packaged Commercial Air Conditioner is a self-contained unit that can be installed on the roof of a building. It is designed to provide efficient and reliable cooling and heating for commercial buildings. The unit is made of high-quality materials and is built to last. It is also easy to maintain and repair. The Rooftop Packaged Commercial Air Conditioner is a great choice for anyone looking for a reliable and efficient cooling and heating solution for their commercial building.

The Rooftop Packaged Commercial Air Conditioner is a self-contained unit that can be installed on the roof of a building. It is designed to provide efficient and reliable cooling and heating for commercial buildings. The unit is made of high-quality materials and is built to last. It is also easy to maintain and repair. The Rooftop Packaged Commercial Air Conditioner is a great choice for anyone looking for a reliable and efficient cooling and heating solution for their commercial building.

GREE ELECTRIC APPLIANCES, INC. OF ZHUZHAI

Add: West Jinli Rd, Qianshan, Zhuhai, Guangdong, China, 519070
Tel: (+86-756) 8522218 Fax: (+86-756) 8669426
E-mail: gree@gree.com.cn www.gree.com



Rooftop Packaged

Owner's Manual
Commercial Air Conditioners

Thank you for choosing Commercial Air Conditioners, please read this owner's manual carefully before operation and retain it for future reference.

Preface

Please carefully read this manual before installation and operation. Instructions before reading this manual:

- (1) For guaranteeing personal safety when operating this system, please strictly follow the instructions listed in the manual.
- (2) Make sure that this manual is kept by operators and serviceman.
- (3) Please contact Gree Commercial AC Management Dept. immediately when the unit can not run normally.
- ① Information on the nameplate (including model, cooling capacity, product number and delivery date).
- ② Malfunction (Describe the actual condition before and after the error happens in details).
- (4) Every unit has passed through strictly test and trial run before delivery. In the event of damage to the unit due to improper disassembly, user is not allowed to dismantle and check the unit by themselves. Please contact local dealer, then Gree professional serviceman will help to check the unit.
- (5) All the information and illustrations shown in this manual are all for reference. Manufacturer reserves the rights of making necessary change at anytime without advance notice owing to design improvement or other reasons.

Contents

1. Safety Considerations	1
2. Product Introduction	2
2.1 Nominal Operating Condition	2
2.2 Operating Range	2
3. Pre-installation Instruction	2
3.1 Checking Product Received	2
3.2 Before Beginning Installation	2
3.3 Codes & Regulations	3
3.4 Replacement Parts	3
4. Installation Instructions	3
4.1 Physical Dimension	3
4.2 General Information	6
4.3 Location	7
4.4 Crane Way	7
4.5 Installation Positions and Clearances	8
4.6 Ductwork	11
4.7 Installation of Condensate Pipe	12
4.8 Adjust the Tightness of the Belt (Only above 5 Ton)	12
5. Electrical Installation	14
5.1 Electrical Date and Wire Sizing	14
5.2 Connect Wiring to the Terminals	15
5.3 Electrical Connections-supply Voltage	16
5.4 Wiring Diagram	17
6. Trial Run	21
6.1 Preparation for Trial Run	21
6.2 Trial Run	21
7. Troubleshooting	21
8. Error Code Meaning	22
9. Maintenance	22

1. Safety Considerations

The following symbols and labels are used throughout this manual to indicate immediate or potential hazards. It is the owner's responsibility to read and comply with all safety information and instructions accompanying these symbols. Failure to heed safety information increases the risk of serious personal injury or death, property damage and/or product damage.

Warning:

A symbol indicating that improper operation might cause human death or severe injuries.

Caution:

A symbol indicating that improper operation might cause human injury or property damage.

Warning:

(1) This unit shall be used in offices, restaurants, residences or similar places.

(2) Please seek an authorized repair station for installation work. Improper installation might cause water leakage, electric shock or fire.

(3) Please install at a place strong enough to support the weight of air conditioner unit. If not, the air conditioner unit might fall down and cause human injury or death.

(4) To ensure proper drainage, the drainage pipe shall be correctly installed according to installation instructions. Improper installation of pipes might cause leakage.

(5) Keep air flow to avoid shortage of oxygen in the room.

(6) Do not use or store flammable, explosive, poisonous or other dangerous substances beside the air conditioner.

(7) In case of trouble (e.g. burnt smell), please immediately cut off the main power of air conditioner unit.

Caution:

(1) Before installation, please check the power supply for compliance with the ratings on nameplate. Check the power safety as well.

(2) Before use, please check and confirm if the drainage pipes and cables are correctly connected, hence to eliminate the risk of water leakage, electric shock or fire.

(3) Main power must be securely earthed to ensure effective grounding of air conditioner unit and avoid the risk of electric shock. Please do not connect the earthing cable to coal gas pipe, water pipe, lightning rod or telephone line.

(4) Once started, the air conditioner shall not be stopped at least after 5 minutes or longer, otherwise the oil return to compressor may be affected.

(5) Do not let the child to operate the air conditioner unit.

(6) Do not operate the air conditioner unit with wet hands.

(7) Please disconnect the main power before cleaning the air conditioner or replacing the air filter.

(8) Please disconnect the main power if to put the air conditioner unit out of use for a long period.

(9) Please do not expose the air conditioner unit directly under corrosive environment with water or moisture.

- (10) Please do not foot on or place any goods on air conditioner unit.
- (11) After electrical installation, the air conditioner unit shall be energized for electrical leakage test.
- (12) An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- (13) The appliance shall be installed in accordance with national wiring regulations.
- (14) The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.

2. Product Introduction

GREE rooftop packaged units provide a wide capacity range from 3 to 30 Ton. These units are completely assembled, piped and wired at the factory to provide one-piece shipment and rigging. Each unit is pressurized with a holding charge of refrigerant-22 for storage and shipping.

The compact design, attractive appearance, outstanding anti-rust cabinet and quiet operation make these units suitable for almost any manufactured or modular homes.

2.1 Nominal Operating Condition

Item	Outdoor Condition		Indoor Condition	
	DB Temperature(°C)	WB Temperature(°C)	DB Temperature(°C)	WB Temperature(°C)
Cooling	35	24	27	19
Heating	7	6	20	15

2.2 Operating Range

Item	Outdoor Condition (DB °C)
Cooling	21~52
Heating	-7~24

3. Pre-installation Instruction

3.1 Checking Product Received

Upon receiving the product, check any damage from transportation. Shipping damage is the responsibility of the carrier. Verify the model number, specifications and accessories are correct prior to installation. The distributor or manufacturer will not accept claims from dealers for transportation damage or installation of incorrectly shipped units.

3.2 Before Beginning Installation

Carefully read all instructions for the installation prior to installing product. Make sure each step or procedure is understood and any special considerations are taken into account before starting installation. Assemble all tools, hardware and supplies needed to complete the installation. Some items may need to be purchased locally. Make sure everything needed to install the product is on hand before starting.

3.3 Codes & Regulations

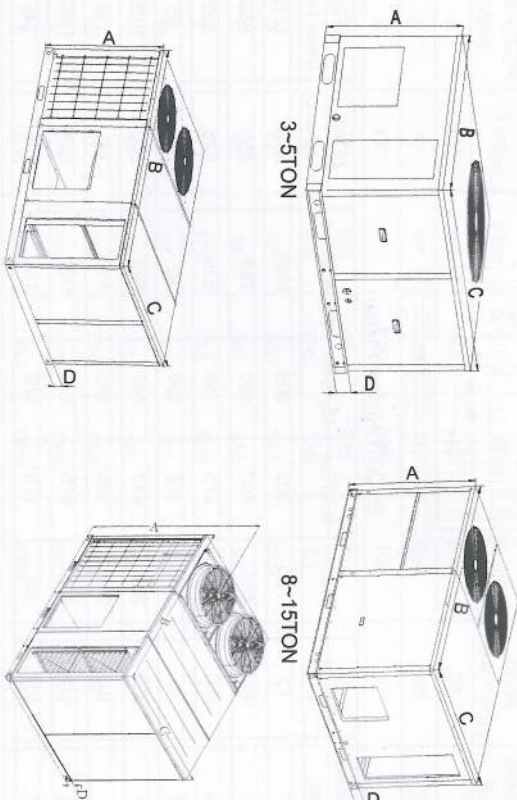
This product is designed and manufactured to comply with national codes. It is installer's responsibilities to install the product in accordance with such codes and/or any prevailing local codes/regulations. The manufacturer assumes no responsibilities for equipment installed in violation of any codes or regulations.

3.4 Replacement Parts

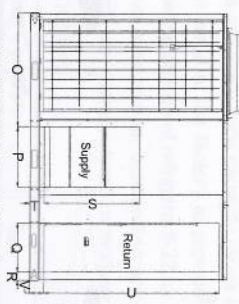
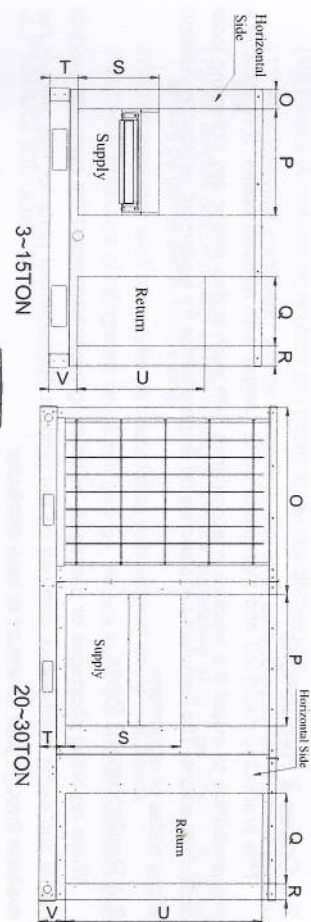
When reporting shortages or damages, or ordering repair parts, give the complete product model and serial numbers as stamped on the product. Replacement parts for this product are available through your contractor or local distributor.

4. Installation Instructions

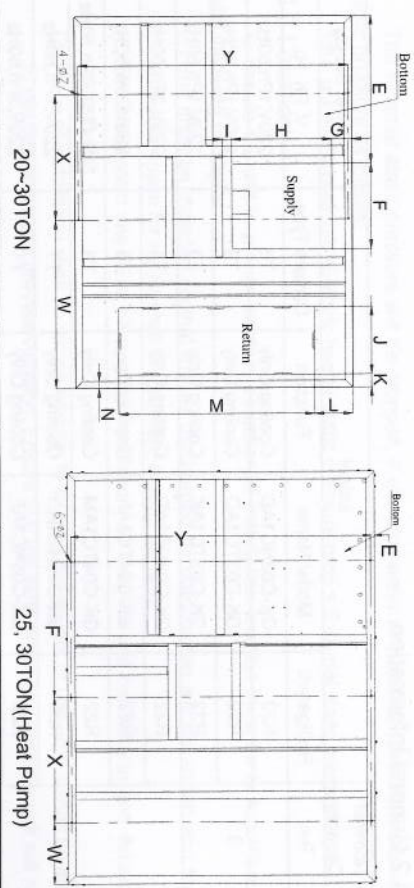
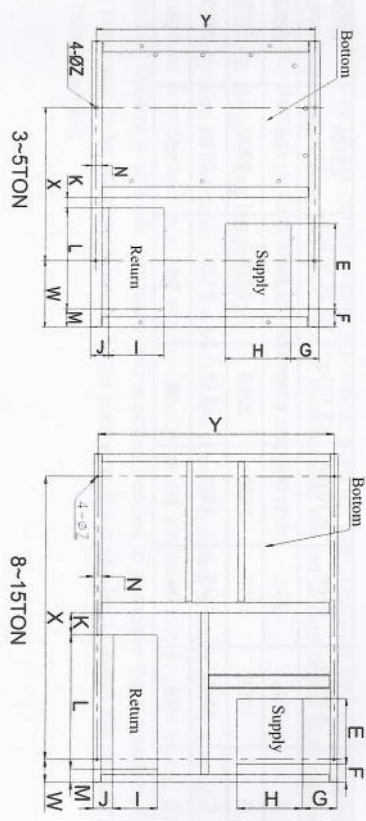
4.1 Physical Dimension



DIMENSION (mm)	20~30TON					25, 30TON(Heat Pump)			
	3.4Ton	5Ton	8,10Ton	13,15Ton	20,25,30Ton	25Ton (Heat Pump)	30Ton (Heat Pump)		
A	640	790	1117	1190	1357	1775	2283		
B	1055	1055	2006	2205	2870	2870	2870		
C	1345	1345	1436	1610	2120	2120	2120		
D	75	75	90	88	95	95	95		



DIMENSION (mm)	3,4Ton	5Ton	8,10Ton	13,15Ton	20,25,30Ton	25Ton (Heat Pump)	30Ton (Heat Pump)
O	73	73	203	208	1083	1219	1219
P	400	400	460	460	765	650	650
Q	260	260	275	360	525	525	525
R	75	75	122	120	92	90	90
S	300	300	443	443	660	800	1000
T	105	105	165	165	150	145	145
U	475	475	815	900	1130	1334	1842
V	104	104	175	170	150	145	145



DIMENSION (mm)	3,4Ton	5Ton	8,10Ton	13,15Ton	20,25,30Ton	25Ton (Heat Pump)	30Ton(Heat Pump)
E	400	400	443	443	1143	26	26
F	87	87	110	117	660	945	945
G	130	130	219	230	150	/	/
H	300	300	430	430	765	/	/
I	260	260	275	360	73	/	/
J	82	82	98	127	525	/	/
K	48	48	95	150	100	/	/
L	475	475	815	900	290	/	/
M	87	87	113	87	1500	/	/
N	50	50	50	50	55	/	/
W	312	312	215	152	1300	430	430
X	720	720	1570	1900	970	873	873
Y	1010	1010	1394	1564	2068	2068	2068
Z	16	16	14	14	14	14	14

Note: Above diagrams may be different from actual mode

4.2 General Information

Nominal Capacity	Model				Power Supply
Ton	Refrigerant	Model Name	Function	Climate Type	V, Ph, Hz
3	R22	GK-C03NC1AD	Cooling Only	T1	220V, 1Ph, 60Hz
	R22	GK-C03TC1AD	Cooling Only	T3	220V, 1Ph, 60Hz
	R22	GK-C03TC1AK	Cooling Only	T3	220V, 1Ph, 50Hz
4	R22	GK-C04NC1AD	Cooling Only	T1	220V, 1Ph, 60Hz
	R22	GK-C04TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
	R22	GK-C04TC1AM	Cooling Only	T3	380-415V, 3Ph, 50Hz
5	R22	GK-C05NC1AD	Cooling Only	T1	220V, 1Ph, 60Hz
	R22	GK-C05NC1AF	Cooling Only	T1	220V, 3Ph, 60Hz
	R22	GK-C05TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
8	R22	GK-C05TC1AM	Cooling Only	T3	380-415V, 3Ph, 50Hz
	R22	GK-H05TC1AM	Heat Pump	T3	380-415V, 3Ph, 50Hz
	R22	GK-C08TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
10	R22	GK-C08TC1AM	Cooling Only	T3	380-415V, 3Ph, 50Hz
	R22	GK-H08TC1AM	Heat Pump	T3	380-415V, 3Ph, 50Hz
	R22	GK-C10TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
13	R22	GK-C10TC1AM	Cooling Only	T3	380-415V, 3Ph, 50Hz
	R22	GK-H10TC1AM	Heat Pump	T3	380-415V, 3Ph, 50Hz
	R22	GK-C13TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
15	R22	GK-C15TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
	R22	GK-C15TC1AM	Cooling Only	T3	380-415V, 3Ph, 50Hz
	R22	GK-H15TC1AM	Heat Pump	T3	380-415V, 3Ph, 50Hz
20	R22	GK-C20TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
	R22	GK-C20TC1AM	Cooling Only	T3	380-415V, 3Ph, 50Hz
	R22	GK-H20TC1AM	Heat Pump	T3	380-415V, 3Ph, 50Hz
25	R22	GK-C25TC1AF	Cooling Only	T3	220V, 3Ph, 60Hz
	R22	GK-C25TC1AM	Cooling Only	T3	380-415V, 3Ph, 50Hz
	R22	GK-H25TH1AM	Heat Pump	T3	380-415V, 3Ph, 50Hz
30	R22	GK-H30TH1AM	Heat Pump	T3	380-415V, 3Ph, 50Hz
	R22	GK-C30TC1AM	Cooling Only	T3	380V, 3Ph, 50Hz

Note: 1Ton = 12000Btu/h = 3.517kW

Electric heater is optional accessory. Following is accessory static pressure drop.

Electric Heater	static pressure drop
20kW	40Pa
30kW	70Pa

The external static pressure will be dropped, if electric heater is installed. Calculate external static pressure as follows.

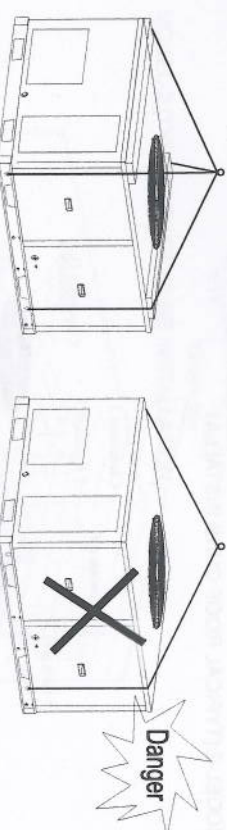
Total unit static pressure = Electric heater static pressure drop + External static pressure

4.3 Location

To ensure the unit in proper function, selection of installation location must be in accordance with following principles.

- (1) Unit shall be installed so that the air discharged by outdoor fan will not return and that sufficient space for repair shall be provided around the unit.
- (2) The installation site must have good ventilation, so that the unit can take in and exhaust enough air.
- (3) Place of installation shall be strong enough to support the weight of unit, and it shall be able to insulate noise and prevent vibration. Ensure that the wind and noise from the unit will not affect your neighbors.
- (4) Avoid direct sunshine over the unit. It is better to set up a sun shield as the protection.
- (5) Place of installation must be able to drain the rainwater and defrosting water.
- (6) Place of installation must ensure the unit will not subject to the influence of rubbish or oil fog.
- (7) The installation site must be at a place where the air exhaust outlet does not face strong wind.
- (8) Unit must be fixed on stable and solid surface of floor.

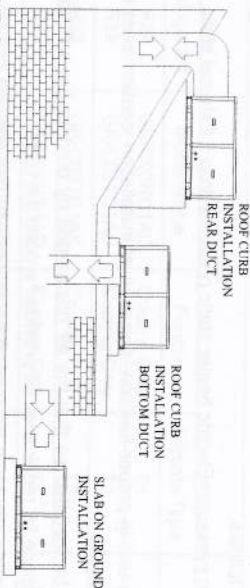
4.4 Crane Way



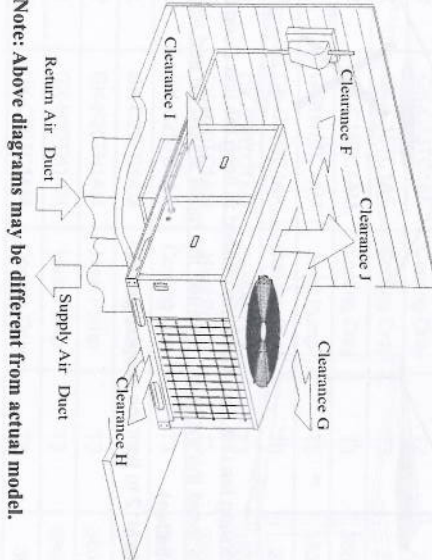
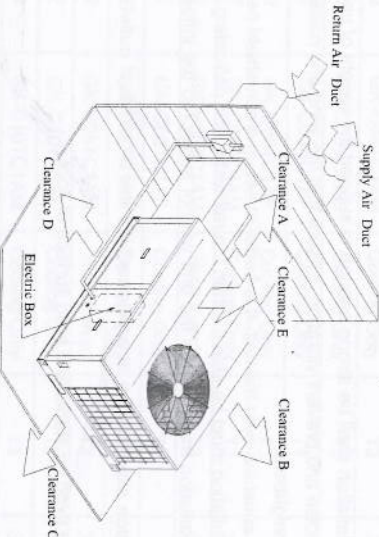
- (1) When removing the unit, two ropes are needed to hang the unit along the four ways.
- (2) In order to avoid the extrusion, between the ropes should be add something to protect the unit (e.g. batten).
- (3) Please use M12 to tight the support fundus.

4.5 Installation Positions and Clearances

MODEL-1:(TYPICAL SLAB ON GROUND INSTALLATION)



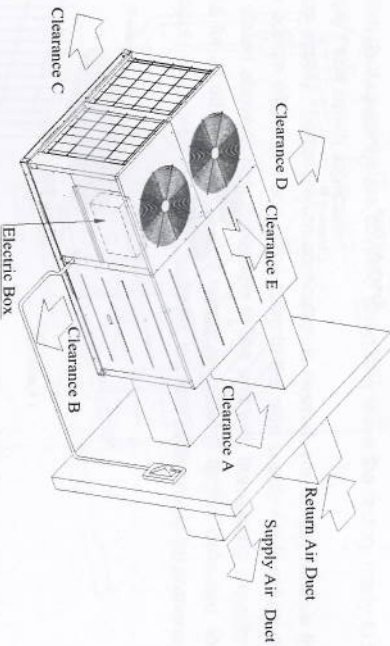
MODEL-2:(TYPICAL ROOF CURB INSTALLA)



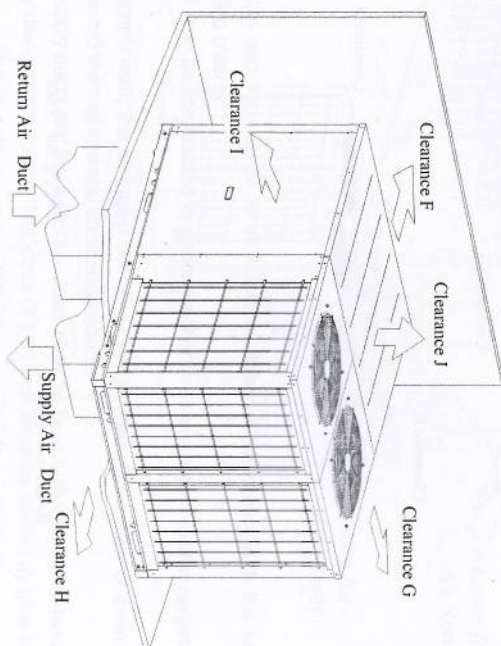
Note: Above diagrams may be different from actual model.

3-5Ton Side Supply/Return Installation			3-5Ton Bottom Supply/Return Installation		
DIMENSION (Minimum)	mm	inch	DIMENSION (Minimum)	mm	inch
A	600	24	F	350	14
B	860	34	G	860	34
C	860	34	H	860	34
D	1100	43	I	1100	43
E	1100	43	J	1100	43

MODEL-1:(TYPICAL SLAB ON GROUND INSTALLATION)



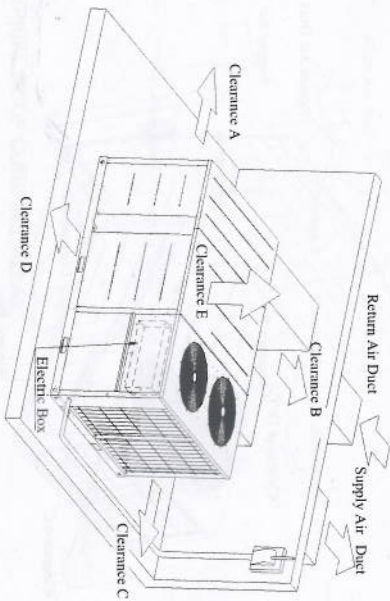
MODEL-2:(TYPICAL ROOF CURB INSTALLATION)



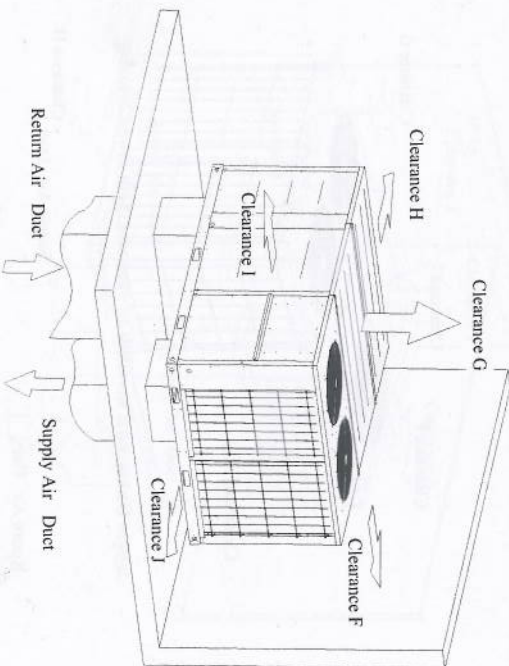
Note: Above diagrams may be different from actual model.

8-15Ton Side Supply/Return Installation				8-15Ton Bottom Supply/Return Installation			
Clearances				Clearances			
DIMENSION (Minimum)	mm	inch	DIMENSION (Minimum)	mm	inch		
A	600	24	F	350	14		
B	860	34	G	860	34		
C	1100	43	H	1100	43		
D	1100	43	I	1100	43		
E	1829	72	J	1829	72		

MODEL-1:(TYPICAL SLAB ON GROUND INSTALLATION)



MODEL-2:(TYPICAL ROOF CURB INSTALLATION)

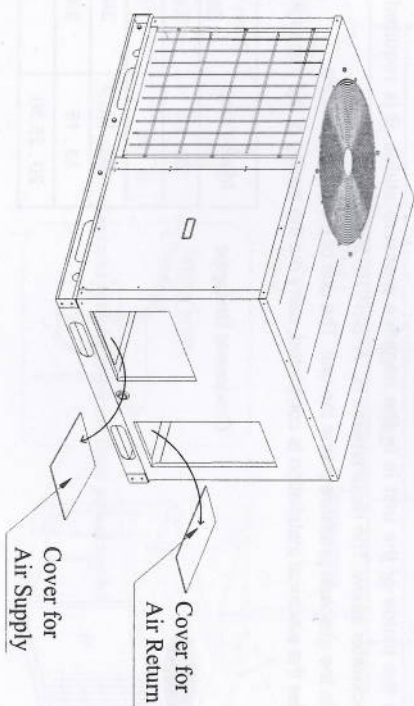


Note: Above diagrams may be different from actual model.

20-30Ton Side Supply/Return Installation				20-30Ton Bottom Supply/Return Installation			
Clearances				Clearances			
DIMENSION (Minimum)	mm	inch	DIMENSION (Minimum)	mm	inch		
A	860	34	F	1100	43		
B	1100	43	G	1100	43		
C	1100	43	H	860	34		
D	1100	43	I	1100	43		
E	1829	72	J	1829	72		

4.6 Ductwork

- (1) The Bottom duct openings are covered when they leave the factory ready to be used for a side supply / side return application.
- (2) If a bottom supply / bottom return application is desired, you simply remove the two covers from the bottom of the unit and place them in the side supply / side return duct openings. What is stated above is only applicable to the unit with the cooling capacity of 15 Ton or lower. As for all other units, the side supply air outlet is factory defaulted. Meanwhile, the bottom supply air outlet is reserved; however, the seal plate should be prepared by the user.



Caution:

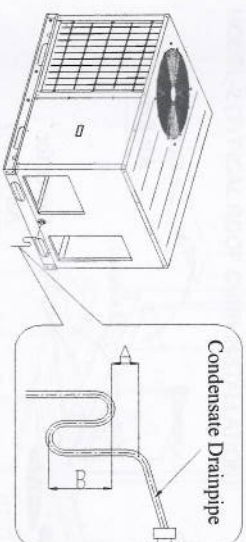
- (1) The design and installation of air ducts must be in conformity with the relevant state engineering criteria.
- (2) Ductwork is to be constructed in a manner that limits restrictions and maintains suitable air velocity.
- (3) The air supply duct, the air intake duct must be covered with a layer of thermal insulation, so as to avoid thermal leakage and condensation.
- (4) The air supply ducts and the air intake ducts shall be fixed to the prefabricated boards of the ceiling by using iron supports. The joints of the ducts must be sealed by glue so as to avoid leakage.
- (5) The edge of the air intake duct must be at least 150mm away from the wall.

- (6) Silencing and shock absorption shall be considered in the design and installation of the air ducts. Additionally, the noise source must be far away from where people stay. The air intake shall not be located above the place where users stay (offices and rest places, etc.).
- (7) Do not terminate the air return duct in an area that can introduce toxic or objectionable fumes/odors into the ductwork.
- (8) Each installation must include a return air filter. This filtering may be performed at the unit or externally such as a return air filter grille.
- (9) Building condition and maintenance convenience should be taken into consideration when selecting the installation method.

4.7 Installation of Condensate Pipe

After the unit is installed, it is required to check the level of the whole unit. The unit must be placed horizontally to ensure the unit in proper function.

- (1) When shipped out from factory, both the condensate outlets are blocked by rubber plug. So before installation, please take the rubber plug out.
- (2) Condensate removal is performed by attaching a PVC pipe to the drain pan and terminated in accordance with local or state Plumbing/HVAC codes.
- (3) The condensate pipe shall be installed with an inclining angel of 5~10°, so as to facilitate the drainage of condensate.
- (4) As the inside of the unit is in the negative pressure status, it is required to set up a backwater elbow. The requirements is: $A=B \times P/10+20(\text{mm})$
P is the absolute pressure inside the unit. The unit of the pressure is Pa.
- (5) After the electrical installation is completed, carry out the testing of the drainage system.



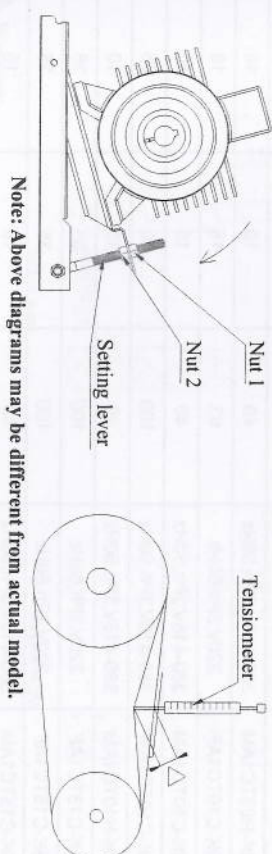
Model(Ton)	Drain Connection Size(Inch)
03 , 04	3/4"(NPT)
05	3/4"(NPT)
08 , 10	3/4"(NPT)
13 , 15	3/4"(NPT)
20 , 25,30	1"(G)

4.8 Adjust the Tightness of the Belt (Only above 5 Ton)

- (1) The rotation of the fan is achieved by the transmission of the belt. The velocity and stability of the fan is associated with the tightness of the belt and the tightness should be adjusted after a period of time.
- (2) For a new belt, the tightness should be adjusted for at least twice within 24 hours. After one week running, the tightness of the belt should be adjusted again, we should routinely check it every 1-2 months; also ensure the test results complying with the following table.
- (3) The adjustment of the tightness of the belt is shown in the following figure. Loosen screws fixing motor on the base, move motor along the direction of arrow as shown in the picture, and then fix the screw again.

- (4) The tightness level of belt is tested by tensiometer as shown in the following figure, when Δ reaches the deviation length, read the value on the meter, the value should be in the category specified in the following table.

Section area of the belt	Diameter of the small wheel(mm)	Diameter of the big wheel(mm)	The total length of the belt(mm)	Deviation length(mm)	Tension(N)	
					Min.	Max.
SPA	90	200	1582	8.93	18	26
	106	190	1582	8.89	18	26
	125	190	1632	9.07	18	26
	132	180	1632	9.12	15	21
	125	170	1632	9.33	18	26
	150	170	1632	9.03	21	32
	106	180	1432	7.82	18	26
	112	180	1432	7.75	15	21
	95	190	1432	7.80	18	26
	106	190	1432	7.68	18	26
	106	170	1432	7.95	18	26
	125	170	1582	9.33	18	26



Note: Above diagrams may be different from actual model.

5. Electrical Installation

5.1 Electrical Date and Wire Sizing

Unit Model Designation	Power Supply (V, Ph, Hz)	Capacity of Air Switch(A)	Min. Sectional Area of Earth Wire(mm ²)	Min. Sectional Area of Power Cord(mm ²)
GK-C03NC1AD	220V,1Ph,60Hz	40	10	10
GK-C03TC1AD	220V,1Ph,60Hz	40	10	10
GK-C03TC1AK	220V,1Ph,50Hz	40	10	10
GK-C04NC1AD	220V,1Ph,60Hz	40	10	10
GK-C04TC1AF	220V,3Ph,60Hz	32	6	6
GK-C04TC1AM	380-415V,3Ph,50Hz	16	2.5	2.5
GK-C05NC1AD	220V,1Ph,60Hz	40	10	10
GK-C05NC1AF	220V,3Ph,60Hz	32	6	6
GK-C05TC1AF	220V,3Ph,60Hz	32	6	6
GK-C05TC1AM	380-415V,3Ph,50Hz	20	4	4
GK-H05TC1AM	380-415V,3Ph,50Hz	20	4	4
GK-C08TC1AF	220V,3Ph,60Hz	63	16	16
GK-C08TC1AM	380-415V,3Ph,50Hz	20	4	4
GK-H08TC1AM	380-415V,3Ph,50Hz	40	10	10
GK-C10TC1AF	220V,3Ph,60Hz	63	16	16
GK-C10TC1AM	380-415V,3Ph,50Hz	40	10	10
GK-C10TC1AM*	380-415V,3Ph,50Hz	100	50	25
GK-H10TC1AM	380-415V,3Ph,50Hz	40	10	10
GK-C13TC1AF	220V,3Ph,60Hz	100	35	35
GK-C15TC1AF	220V,3Ph,60Hz	100	35	35
GK-C15TC1AM	380-415V,3Ph,50Hz	63	16	16
GK-C15TC1AM*	380-415V,3Ph,50Hz	110	50	25
GK-H15TC1AM	380-415V,3Ph,50Hz	63	16	16
GK-C20TC1AF	220V,3Ph,60Hz	125	50	25
GK-C20TC1AM	380-415V,3Ph,50Hz	100	35	35
GK-C20TC1AM*	380-415V,3Ph,50Hz	120	50	25
GK-H20TC1AM	380-415V,3Ph,50Hz	80	25	25
GK-C25TC1AF	220V,3Ph,60Hz	200	95	48
GK-C25TC1AM	380-415V,3Ph,50Hz	120	50	25
GK-C25TC1AM*	380-415V,3Ph,50Hz	130	50	25
GK-H25TH1AM	380-415V,3Ph,50Hz	100	35	35
GK-H30TH1AM	380-415V,3Ph,50Hz	125	50	25
GK-C30TC1AM	380V,3Ph,50Hz	125	50	25

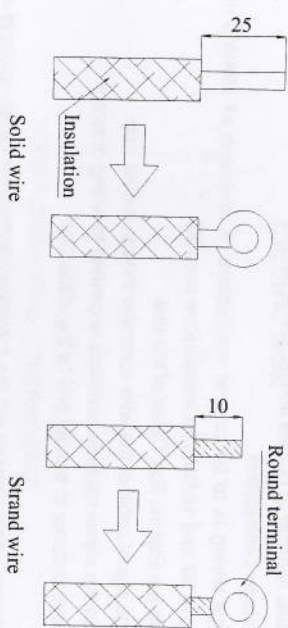
Note: *The unit with electric heat.

5.2 Connect Wiring to the Terminals

Caution:

Please note the following items before installing the electric appliance.

- (1) Check if the power supply accords with its value on the nameplate.
- (2) The capacity of the power supply must be large enough.
- (3) The circuit should be installed by the professional technician.
- (4) In fixed circuit, there must be electricity leakage protection switch of enough power capacity and air switch with space between its electrode contacts $\geq 3\text{mm}$.
- (5) Single wire connection.
 - ① Peel off the insulation for 25mm with pliers.
 - ② Remove the screw from the terminal board.
 - ③ Bend the peeled wire into circle with pliers.
 - ④ Screw cross the circle and fix it on the terminal board.
- (6) Strand wires connection.
 - ① Peel off the insulation for 10mm with pliers.
 - ② Remove the screw from the terminal board.
 - ③ Clamp a round terminal of the peeled wires.
 - ④ Screw cross the circle and fix it on the terminal board.



Warning:

If the power line or the signal line is defective, use the special coil to replace it.

- (1) Before connecting lines, read the voltages of the relevant parts on the nameplate. Then carry out line connection according to the schematic diagram.
- (2) The air-conditioning unit shall have special power supply line which shall be equipped with electricity leakage switch and air switch, so as to deal with overload conditions.
- (3) The air-conditioning unit must have grounding to avoid hazard owing to insulation failure.
- (4) All fitting lines must use crimp terminals or single wire. If multiple twisted wires are connected to terminal board, arc may arise.
- (5) All line connections must conform to the schematic diagram of lines. Wrong connection may cause abnormal operation or damage of the air-conditioning unit.
- (6) Do not let any cable contact the refrigerant pipe, the compressor and moving parts such as fan.

- (7) Do not change the internal line connections inside the air-conditioning unit. The manufacturer shall not be liable for any loss or abnormal operation arising from wrong line connections.
- (8) If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
- (9) All of the supplied components, material, and electric operation should be accorded with the local principles.

5.3 Electrical Connections-supply Voltage

- (1) Air-conditioning unit with single-phase power supply
 - ① Remove the Electric Box Cover of the unit.
 - ② Pass the cable through rubber ring.
 - ③ Connect the power supply cable to the "L1, L2" terminals and the grounding screw.
 - ④ Use cable fastener to bundle and fix the cable.
- (2) Air-conditioning unit with 3-phase power supply
 - ① Remove the Electric Box Cover of the unit.
 - ② Pass the cable through rubber ring.
 - ③ Connect the power supply cable to terminals and the grounding screw according to wiring diagram.
 - ④ Use cable fastener to bundle and fix the cable.

(3) Low Voltage Connections

Low voltage wiring is to be copper conductors. A minimum of 18AWG must be used for installations up to 50' and 16AWG for installations over 50'.

- ① Remove the Electric Box Cover of the unit.
- ② Pass the signal cable of the wire controller through rubber ring.
- ③ Connect the signal cable to terminals according to wiring diagram.
- ④ Use cable fastener to bundle and fix the cable.

Caution:

Take great care when carrying out the following connections, so as to avoid malfunction of the air-conditioning unit because of electromagnetic interference.

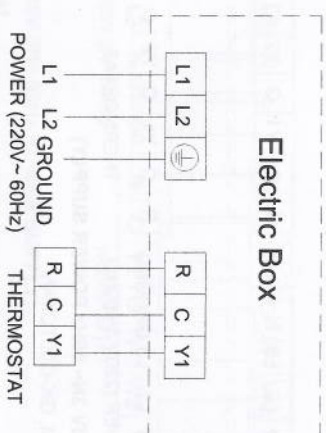
- (1) The signal line of the wire controller must be separated from the power line.
- (2) In case the unit is installed in a place vulnerable by electromagnetic interference, it is better to use shielded cable or double-twisted cable as the signal line of the wire controller.

5.4 Wiring Diagram

5.4.1 Cooling Only

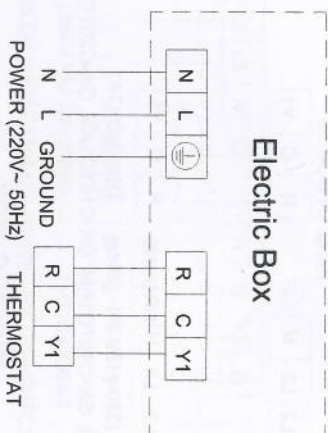
Single Phase (220V~60Hz POWER SUPPLY)

Model: GK-C03NC1AD, GK-C03TC1AD, GK-C04NC1AD, GK-C05NC1AD



Single Phase (220V~50Hz POWER SUPPLY)

Model: GK-C03TC1AK



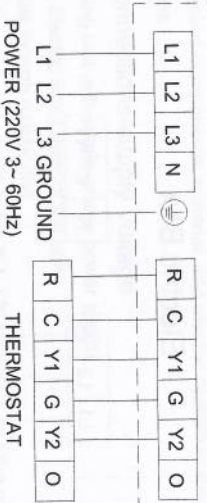
Three Phase (220V 3~60Hz POWER SUPPLY)

Model: GK-C04TC1AF, GK-C05NC1AF, GK-C05TC1AF



Model: GK-C08TC1AF, GK-C10TC1AF, GK-C13TC1AF, GK-C15TC1AF, GK-C20TC1AF, GK-C25TC1AF

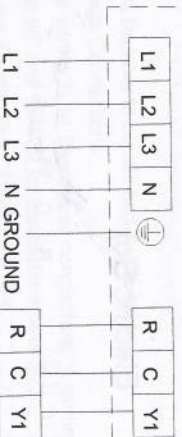
Electric Box



Three Phase (380-415V 3N~50Hz POWER SUPPLY)

Model: GK-C04TC1AM, GK-C05TC1AM

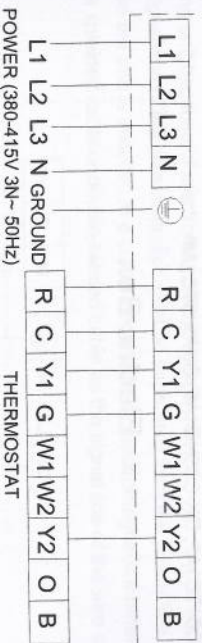
Electric Box



POWER (380-415V 3N~50Hz) THERMOSTAT

Model: GK-C08TC1AM, GK-C10TC1AM, GK-C15TC1AM, GK-C20TC1AM, GK-C25TC1AM

Electric Box

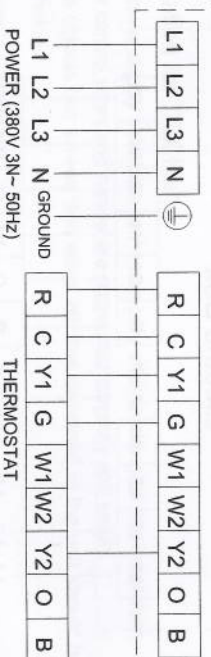


POWER (380-415V 3N~50Hz)

THERMOSTAT

Three Phase (380V 3N~50Hz POWER SUPPLY)
Model: GK-C30TC1AM

Electric Box



POWER (380V 3N~50Hz)

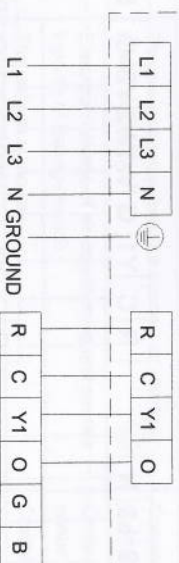
THERMOSTAT

5.4.2 Heat Pump

Three Phase (380-415V 3N~50Hz POWER SUPPLY)

Model: GK-H05TC1AM

Electric Box

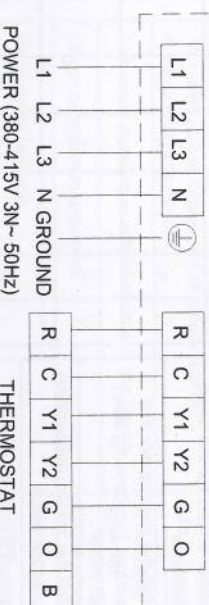


POWER (380-415V 3N~50Hz)

THERMOSTAT

Model: GK-H08TC1AM, GK-H10TC1AM, GK-H15TC1AM, GK-H20TC1AM, GK-H25TH1AM, GK-H30TH1AM

Electric Box



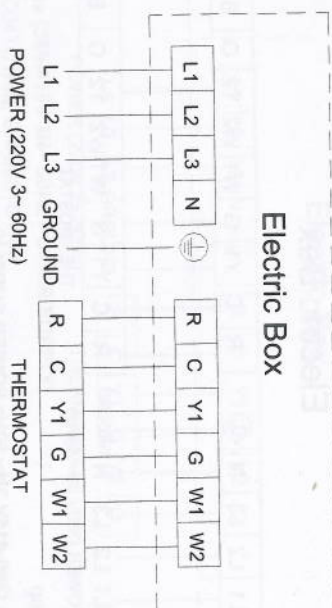
POWER (380-415V 3N~50Hz)

THERMOSTAT

5.4.3 Cooling with Electric Heat

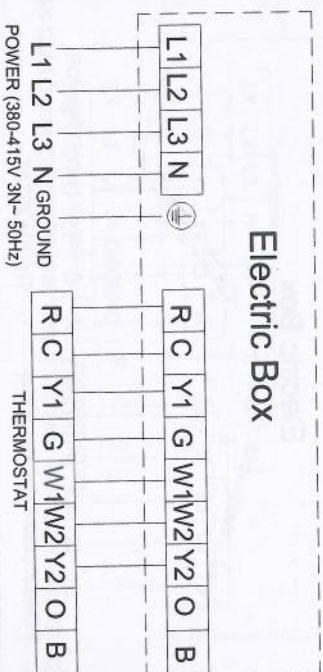
Three Phase (220V 3~60Hz POWER SUPPLY)

Model: GK-C13TC1AF, GK-C25TC1AF



Three Phase (380-415V 3N~50Hz POWER SUPPLY)

Model: GK-C10TC1AM, GK-C15TC1AM, GK-C20TC1AM, GK-C25TC1AM



Apply to cooling with electric heat units: GK-C10TC1AM, GK-C13TC1AF, GK-C15TC1AM, GK-C20TC1AM, GK-C25TC1AF, GK-C25TC1AM, GK-C30TC1AM

TERMINAL	FUNCTION	R	C	Y1/Y2	G	W1	W2	RUNNING MODE
R	power supply for the wired controller	✓	✓	✓	✓			COOLING
C	power supply for the wired controller			✓	✓			HEATING (10KW/15KW heater)
Y1/Y2	start the compressor and outdoor (condensing side) fan motor	✓	✓		✓		✓	HEATING (10KW/15KW heater)
G	start the indoor (evaporating side) fan motor				✓	✓	✓	HEATING (20KW/30KW heater)
W1	startup electrical heater	✓	✓					
W2	startup electrical heater							

Caution:

When it is cooling operation, "Y1/Y2", "G" must be started, when it is heating operation, "Y1/Y2" must be shut down, and either of "W1" or "W2" must be started, or both. When electrical heater

is startup, both compressors and outdoor fan motors will be shut down automatically. If cooling operation is required, please make sure that electrical heater has been shut down. During installation, the main power cord of the whole unit must be separated from the communication line of the thermostat so as to avoid electromagnetic interference.

6. Trial Run

6.1 Preparation for Trial Run

- (1) The power supply should be turned on only after finishing all the installation.
- (2) All the control wires and cables are connected correctly and safely.
- (3) All the objects like screws and wires etc that remained in the unit should be cleared after installation.

6.2 Trial Run

Switch on power supply and press the ON/OFF button to start operation.

7. Troubleshooting

If your air-conditioning unit suffers from abnormal operation or failure, please first check the following points before repair

Failure	Possible cause	Solution
The unit can not be started.	The power supply does not connect or improper phase sequence.	Connect the power supply or change two random phase.
	Electrical leakage of air-conditioning unit causes tripping of leakage switch.	Contact the nearest service center.
	The voltage is too low.	Contact the dealer.
	The control loop has failure.	Contact the nearest service center.
The unit operates for a while and then stops.	Air outlet port or intake port of the unit is blocked.	Move the obstacles.
	There is obstacle in front of the condenser.	Move the obstacles.
	The control loop is abnormal.	Contact the nearest service center.
	Air filter is dirty.	Clean air filter.
Poor cooling effect.	Air outlet port or intake port of indoor unit or outdoor unit is blocked.	Move the obstacles.
	Too many persons or a heat source in the Room.	If possible, clear heat sources.
	Doors or windows are open.	Close windows and doors.
	Refrigerant leakage.	Contact the nearest service center.
	Some model unit has a High Pressure Switch which is welded on discharge pipe. When the switch goes into effect, the power supply of compressor will be shut off.	Find and manual reset the High Pressure. Switch which is welded on discharge pipe.

Note:

After carrying out the check of the above items and taking relevant measures to solve the problems found but the air-conditioning unit still does not function well, please stop the operation of the unit immediately and contact the nearest service center. Only ask professional serviceman to check and repair the unit.

8. Error Code Meaning

Error code	Malfunction	Error code	Malfunction
E1	High Pressure Protection	F2	Condenser Temperature Sensor Error
E3	Low Pressure Protection	F3	Ambient Temperature Sensor Error
E4	High Discharge Temperature Protection	F4	Discharge Temperature Sensor Error

9. Maintenance

To protract the life of the air-conditioning unit, check and maintain the unit regularly with specialized person.

(1) Cleaning the Air Filter

- ① Do not disassemble the air filter when cleaning it. Otherwise failure may be caused.
- ② If the air-conditioning unit is used in an environment with much dust, you should clean the air filter frequently (once every two weeks).

(2) Cleaning the Outdoor Heat Exchanger

Outdoor heat exchanger must be cleaned regularly, at least once every two months. You can clean the surface with vacuum cleaner or nylon brush, please do not wash it with water.

(3) Belt

The indoor units are driven by belt. You should check the tightness of the belt after operating for a period of time (only above 5 ton).

(4) Maintenance at the Beginning of Operating Season

- ① Check the air inlet and outlet of the units to confirm there is no blockage.
- ② Check to see if the grounding wire is in good condition.
- ③ Check to see if the line connection is in good condition.
- ④ Check the drainage pipe so as to confirm the fluency flow of condensate.
- (5) Maintenance at the End of the Operational Season
 - ① When the weather is clear, operate the unit for half a day, so as to dry the inside of the unit.
 - ② If not to use the air-conditioning unit for a long time, please disconnect the power supply.

Caution:

You shall pay attention to the following matters when cleaning the air-conditioning unit.

- (1) Cut off all power supply before contacting the line connecting equipment.
- (2) Only clean the air-conditioning unit after the unit is shut off and the power supply is disconnected. Otherwise electrical shock or injury may be caused.
- (3) Do not use water to clean the air-conditioning unit. Otherwise there may be electrical shock.
- (4) Pay more attention to the place that the air conditioner should be installed firm.