

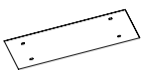

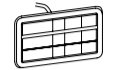







GREE 格力® Split Air Conditioner Duct Type

CAUTION

- For the air conditioner to operate satisfactorily, install it as outlined in this installation manual.
- Installation, movement and service work must be performed by authorized personnel only.
- Be sure to ground both the indoor and outdoor units, otherwise a fire or electric shock may be caused.
- Do not turn on the power until all installation work is complete.
- The following content may be changed without informing the consumers.

ACCESSORIES

The following installation parts are furnished.

Name and Shape	Quantity	Application	Name and Shape	Quantity	Application	Name and Shape	Quantity	Application
Template 	1	For positioning indoor unit	Packing nut 	4	For insulation of drain hose and plug	Main controller 	1	
Coupler joint insulation (large) 	1	For indoor side gas pipe joint (large pipe)	Nut and gasket 	4 pairs	For suspending the indoor unit from ceiling	Remote controller 	1	
Coupler joint insulation (small) 	1	For indoor side liquid pipe joint (small pipe)	Hanger 	4	For suspending the indoor unit from ceiling			
Drain hose insulation 	2	For insulation of drain hose and plug	Nylon fastener 	4				

OUTDOOR UNIT LOCATION

Outdoor unit must be firmly fixed on a solid flat with four secure bolts, and the vertical distance between the flat and ground should be 15cm or more.

- If the outdoor unit is supported by bracket, make sure that the bracket is firm enough and securely fastened.
- Provide the space shown in Fig.1 so that enough servicing space can be ensured.
- Make sure that the air flow is not blocked. If there is any obstacle, remove it.
- Select a place where is well ventilated so that the outdoor unit can inhale and expel sufficient air.
- Do not install the unit where it will be exposed to direct sunlight.
- Ensure that the warm air and operation noise do not disturb neighbors and passerby.

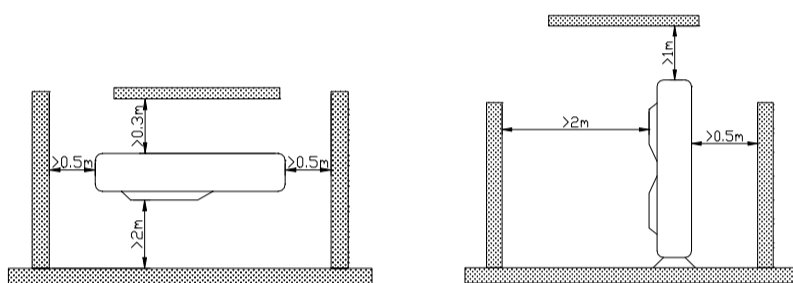


Fig.1 Installation position of outdoor unit

INDOOR UNIT LOCATION

- Select a place where it is well ventilated so that the indoor unit can inhale and expel sufficient air.
- Make sure the suspension bracket is strong enough to withstand the unit's weight.
- Select a place easy to drain water.
- The inlet and outlet ports should not be obstructed so that the indoor air circulates well.
- Make sure there is sufficient space for installation. (Fig. 2)
- Select a place far from heat source, flammable gas leak and smog.
- The indoor unit should be installed at 2.3m or higher above the floor.
- The appliance shall not be installed in the laundry.

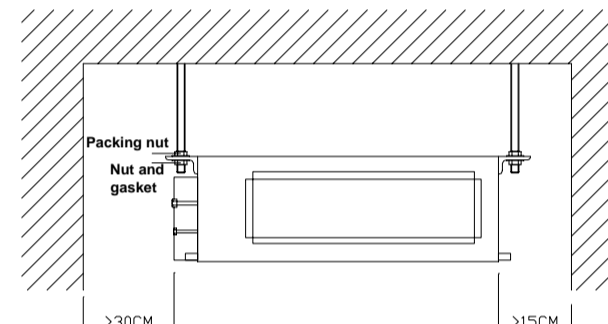


Fig.2 Indoor unit installation

CONNECTION PIPE REQUIREMENT

Model	Diameter		Maximum Length	Maximum height between indoor and outdoor units	Additional refrigerant (for excess length)
	Small	Large			
KF(R)-70PW/NA1A	3/8"	5/8"	25m	15m	20(30) g / m
KF(R)-80PW/NA1A	3/8"	5/8"	25m	15m	20(30) g / m
KF(R)-100PW/NA1A	1/2"	3/4"	35m	25m	30(40) g / m
KF(R)-120PW/NA1A	1/2"	3/4"	35m	25m	30(40) g / m

- Standard length is 5m
- Use 0.8mm to 1.2mm thick pipe, which can withstand a pressure of 3,040KPa

Caution: The refrigerant R407C should be charged as liquid.

ELECTRICAL REQUIREMENT

- Make sure that the power source correspond with the nameplate
- Make sure that the capacity of power source is efficient and the cross section size of the indoor wire should be 2.5mm² or larger
- All wiring must be performed by a skilled technician
- A current-leakage protector and a circuit breaker which has at least 3mm contact separation between the two poles must be installed in the power wire.

INDOOR UNIT INSTALLATION

Dimensions of the indoor unit is shown in Fig.3

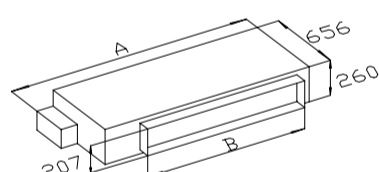


Fig.3 air outlet dimensions

MODEL	KF(R)-70P/NA1A	KF(R)-80P/NA1A	KF(R)-100P/NA1A	KF(R)-120P/NA1A
A(mm)	1159	1159	1395	1395
B(mm)	918	918	1155	1155

NOTICE: Diameter of each round flange is 200mm.

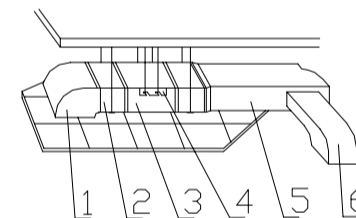


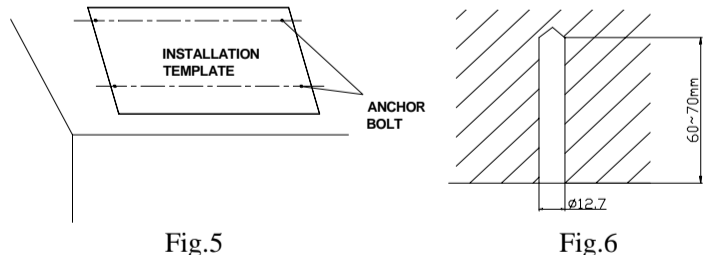
Fig.4 Installation demonstration

Serial number	Name	Serial number	Name
1	Inlet duct	4	Hanger
2	Intake air chamber	5	Main outlet duct
3	Indoor unit	6	Outlet duct branch

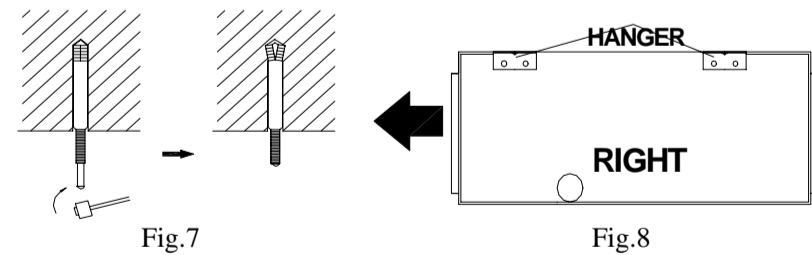
- Air can also be taken in from the bottom side by optional air inlet port at the bottom.

The first installation method:

- a. Using the installation template, drill holes for bolts (in Fig.5), and size of the holes is shown in Fig.6.

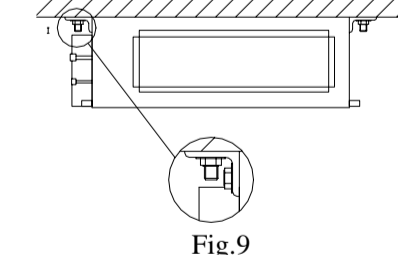


- b. Insert the anchor bolts into the drilled holes, and drive the pins completely into the anchor bolts with a hammer. (Fig.7)



- c. Install the hanger to the unit. (Fig.8)

- d. Install the unit to the ceiling. (Fig.9)



The second installation method:

- Hang the unit with special screw (long screw) from the ceiling. (Fig.4)

LEVELING

The unit must be horizontally level. (Fig.10)

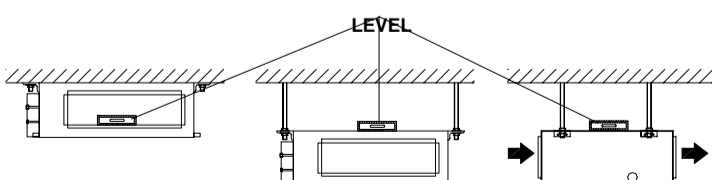


Fig.10

Outlet duct installation

Outlet duct has two available patterns: square and round. The outlet duct is connected to the indoor unit. (Fig.4) When round duct is used, cooled air will be delivered to every room by flexible pipe wrapped by heating insulation. Be sure that at least one outlet port is open.

Inlet duct installation

Connect one end of the inlet duct to the intake port of the indoor unit with rivets, while the other end to the diffuser.

For convenient height adjustment, two-double canvas pipe supported by 8# iron wire can be chosen.

Building condition and maintenance convenience should be taken into consideration when selecting the installation method. (Fig.11a, Fig.11b)

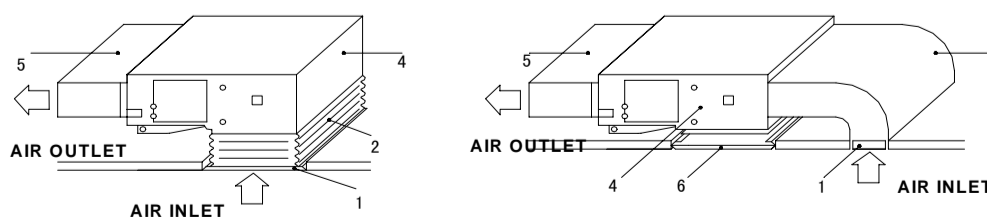


Fig. 11a

Fig.11 inlet duct installation

Fig. 11b

Number	Name	Number	Name
1	Inlet grille (with filter)	4	Indoor unit
2	Canvas pipe	5	Outlet duct
3	Inlet duct	6	Maintenance grille

Advantages of air inlet from the bottom side:

- Installation is simplified by omitting the inlet duct from rear end. (The back inlet must be blocked.)
- The high position of the drain hose outlet results in easy drainage.

Advantages of air inlet from the rear side:

- The maintenance grille will facilitate the maintenance.
- The inlet and outlet can be located where benefits air flow effect most, and the flexible installation will meet different needs of the indoor decoration.

NOTICE:

- The inlet and outlet ducts should be fixed to the lift-slab using iron bracket, and the joining part should be sealed by adhesive tape.
- The distance between inlet duct and wall may as well be 150mm or more, filter should be installed at the inlet port.
- Outlet duct must be wrapped by heat insulation.

DRAIN HOSE INSTALLATION

- Install the drain hose with downward gradient of 5~10° for easy drainage of the condensed water. Make sure that there is no leakage in the drain hose and joint, and these parts must be heat insulated as to avoid condensing on the surface. (Fig.12)
- There is a drain port on both the left and right sides. Select the desired drain port and install drain plug to the other port. Nylon fastener should be used to fasten the unused port to prevent water from dripping, and insulate the port securely.
- When the unit is shipped from the factory, drain port on the right side is plugged.

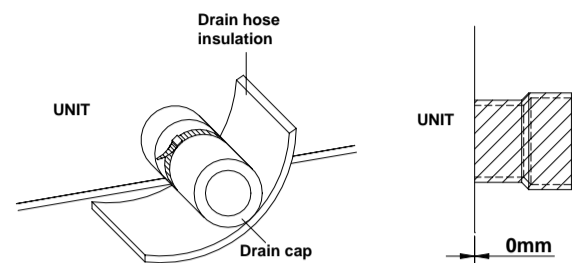


Fig.12

NOTICE: Joints at both ends of the drain port must be wrapped with heat insulation to avoid dew.

PIPE CONNECTION

The tightening torque of flare nut is listed as following:

Diameter	Tightening torque
3/8in (φ9.52mm)	35-40 (N·m)
5/8in (φ15.88mm)	60-65 (N·m)
1/2in (φ12.7mm)	45-50 (N·m)
3/4in (φ19.05mm)	70-75 (N·m)

- Couple the pipe and joint, then tighten the flare nut properly with hand
- Tighten flare nut with a torque wrench till kluck is heard. (Fig.13)

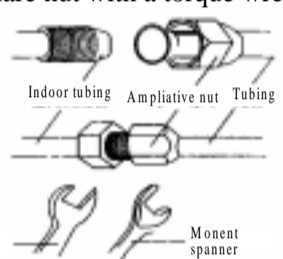


Fig.13

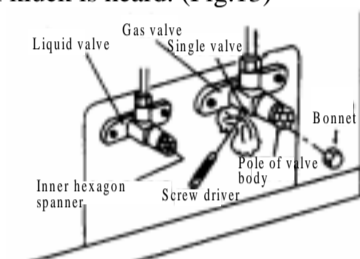


Fig.14

- Bend the pipe in too small angle will result in break. Bend the pipe with a bender.
- Wrap the connection pipe and joint respectively with insulation and coupler heat insulation, fastening it with nylon tape.
- Remove the flare nut of the liquid and gas pipe valves.
- Rotate the liquid valve for 90° with a hexangular wrench and lift the gas valve stem with a driver to expel gas.
- Keeping exhaust for 15 seconds, as soon as refrigerant comes out, turn off the one-way valve and tighten the valve.
- Fully open liquid and gas valve. (Fig.14)
- Turn off the valves tightly, and use suds and gas leakage detector to check the pipe connections for gas leaking
- If possible, evacuate from the one-way valve with a vacuum pump. (Fig.15)

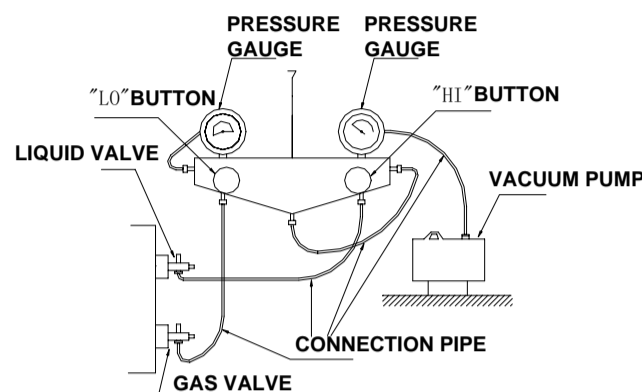


Fig.15

Refrigerant pipe protection

To avoid dew and water dripping, small and large pipe must be wrapped sufficiently with insulation and adhesive tape to separate from surroundings. Joint of the indoor unit should be insulated without failure and no gap should remain between the indoor unit shell and insulation (Fig.16)

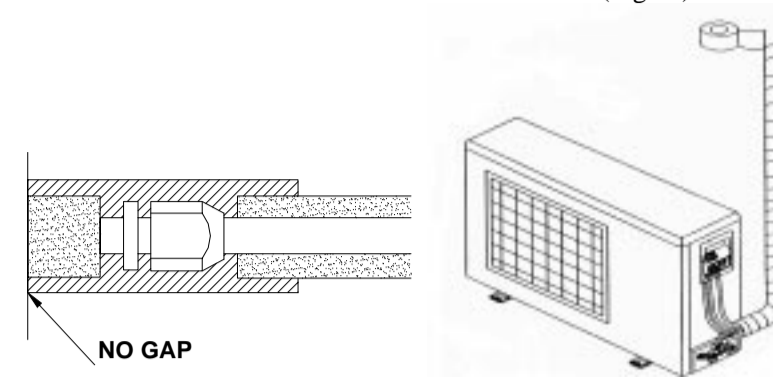


Fig.16

Fig.17

NOTICE: To prevent breaking the pipe, avoid sharp bends after connection.

Wrap the pipe with tape

- Using adhesive tape to bundle the connection pipe and cable. To avoid condensed water dripping by any chance, drain hose should be separated from the cable.
- Wrap the pipe with heat insulation tape from bottom of the outdoor unit to the up end into the wall. Every circle of heat insulation adhesive tape should cover half the width of previous one. (Fig.17)
- Fix the wrapped pipe to the wall with nylon clamp.

NOTICE:

- Do not wrap the tape too tight, which will do harm to the heat insulation effect. Ensure that the drain hose is separated from the pipes.
- After wrapping the pipe, seal the socket in the wall with sealing material to insulate indoor air from outer surroundings.

MAIN CONTROLLER INSTALLATION

A suitable place to install the controller should reserve a pit or a hole in the wall for the connection signal lines. The connection wire between indoor unit and controller can be laid in the pit covered by 1# PVC pipe for direct installation (shown in Fig.18), while for concealed installation, a 10mm×10mm hole on the wall is required (shown in Fig.19). Then insert the signal wire pin into the plug (shown in Fig.20), and finally fix the controller to the wall.

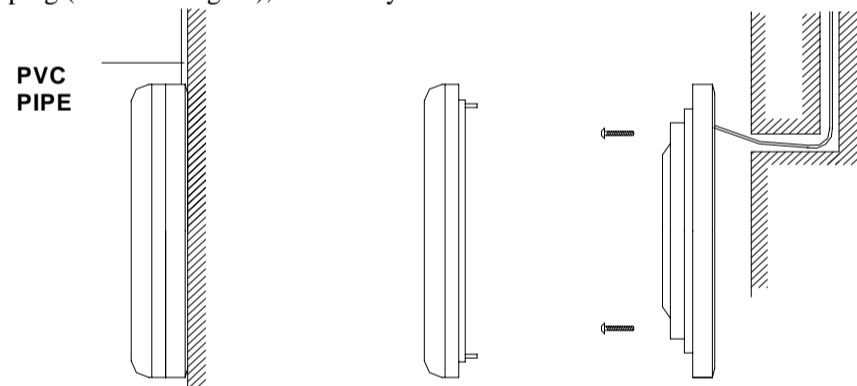


Fig.18

Fig.19

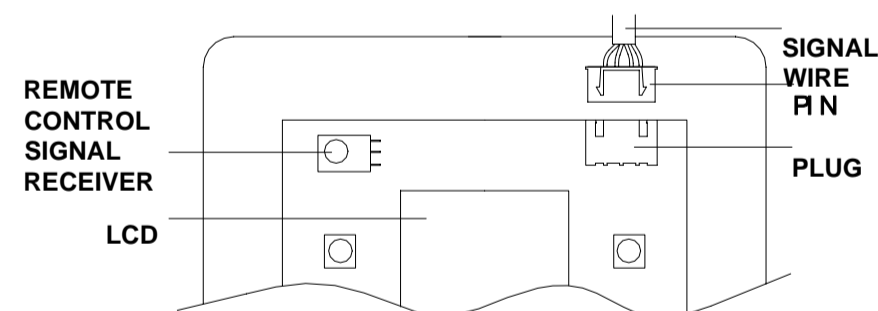


Fig.20

NOTE:

- The distance between the mainboard and the main controller can be up to 20m (standard distance is 8m).
- On-off function is reserved for every co-user of the whole system, that is, every user can start the unit with switch by his hand, but the system will not stop unless all these switches are shut down.

ELECTRICAL WIRING

Connect wiring to the terminals (Fig.21)

A. For solid core wiring:

1. Cut the wire end with wire-cutting pliers, and then strip the insulation for about 25mm.
2. Using a screwdriver, remove the terminal screw on the terminal board.
3. Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
4. Place the wire loop on the terminal board and fix securely with the screw through the loop.

B. For strand wiring

1. Cut the wire end with wire-cutting pliers, and then strip the insulation for about 10mm.
2. Using a screwdriver, remove the terminal screw on the terminal board.
3. Using a round terminal fastener or pliers, clamp a round terminal to each stripped wire end.
4. Position the wire loop on the terminal board and fix securely with the screw through the loop

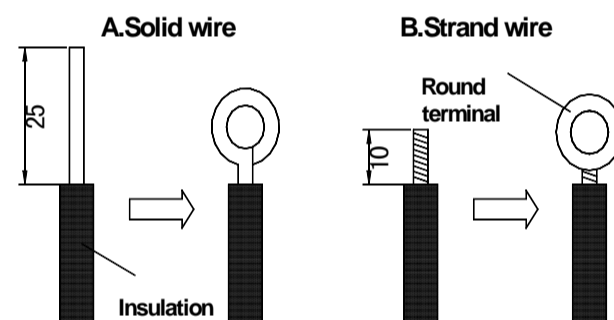


Fig.21

WARNING:

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

1. Checking for the rated voltage, then start wiring according to the wiring diagram.
2. A air switch having a contact separation of at least 3mm in all poles should be fixed in fixed wiring.
3. Ground the unit properly.
4. Use solid core or strand core terminal for wiring. Connecting the strand core directly to the junction board may strike fire.
5. The whole wiring procedure should be under the direction of the wiring diagram, faulty connection may cause abnormal operation or damage in the air conditioner.
6. Keep the electrical wire away from the refrigerant pipe and any movable component such as compressor or fan.
7. Any arbitrary change of the wiring is forbidden, Manufactory is not responsible for any of the consequent loss or malfunction.
8. If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard.
9. The appliance shall be installed in accordance with national wiring regulation.

Power supply wiring:

- A. One phase power supply
 1. Remove the cover of the control box.
 2. Pull the wires through the insulation ring.
 3. Connect the power wires to the "L, N" terminals and grounding screws.
 4. Fix the wires securely with the clamp.
- B. Three phase power supply
 1. Remove the front cover of the outdoor unit.
 2. Drill a hole for the wiring on the outdoor unit board and set a insulation ring.
 3. Pull the wires through the insulation ring.
 4. Connect the power wires to the terminals signed by "L1, L2, L3, N" and the grounding screw
 5. Fix the wires securely with the clamp.

Signal wires connection in the main controller

1. Remove the cover of the control box.
2. Pull the wires through the insulation ring.
3. Insert the signal wires from the main controller into the white socket in the indoor unit circuitry board.
4. Fix the wires securely with the fastener.

NOTICE:

- The signal wires should be separated from power wires and connection wires.

Connection wiring:

Wiring between indoor unit and outdoor unit of each model are shown in the following diagrams.

NOTICE: The cross section size of the wire must not be smaller than demonstrated.

