INSTALLATION MANUAL

Middle Static Pressure Duct Type

■ **If used as MULTI unit, please refer to the Installation & operation manuals packed with outdoor unit.**

Thank you very much for purchasing our air conditioner.
Before using your air conditioner , please read this manual carefully and keep it for future reference.

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1. SAFETY PRECAUTIONS

- **Keep this manual where the operator can easily find them.**
- **Read this manual attentively before starting up the units.**
- **For safety reason the operator must read the following cautions carefully.**
- **Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.**

The saffy precautions listed here are divided into two categories.

WARNING

If you do not follow these instrutions exactly, the unit may cause property damage, personal injury or loss of life.

CAUTION

If you do not follow these instrutions exactly, the unit may cause minor or moderate property damage, personal injury.

After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customers on how to operate the unit and keep it maintained.Also, inform customers that they should store this installation manual along with the owner's manual for future reference.

WARNING

Be sure only trained and qualified service personnel to install, repair or service the equipment.

Improper installation, repair, and maintenance may result in electric shock, short-circuit, leaks, fire or other damage to the equipment.

Install according to this installation instructions strictly.
If installation is defective, it will cause water leakage, electrical shock and fire.

When installing the unit in a small room, take measures against to keep refrigerant concentration from exceeding allowable safety limits in the event of refrigerant leakage.
Contact the place of purchase for more information. Excessive refrigerant in a closed ambient can lead to oxygen deficiency.

Use the attached accessories parts and specified parts for installation.
otherwise, it will cause the set to fall, water leakage, electrical shock and fire.

Install at a strong and firm location which is able to withstand the set' s weight.
If the strength is not enough or installation is not properly done, the set will drop to cause injury.

The appliance must be installed 2.3m / 7.5ft above floor.

The appliance shall not be installed in the laundry.

Before obtaining access to terminals, all supply circuits must be disconnected.

The appliance must be positioned so that the plug is accessible.

The enclosure of the appliance shall be marked by word, or by symbols, with the direction of the fluid flow.

For electrical work, follow the local national wiring standard, regulation and this installation instructions. An independent circuit and single outlet must be used.
If electrical circuit capacity is not enough or defect in electrical work, it will cause electrical shock or fire.

Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal.
If connection or fixing is not perfect, it will cause heat-up or fire at the connection.

Wiring routing must be properly arranged so that control board cover is fixed properly.
If control board cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electrical shock.

If the supply cord is damaged, it must be replaced by the manufacture or its service agent or a similarly qualified person in order to avoid a hazard.

An all-pole disconnection switch having a contact separation of at least 3mm/0.118in in all poles should be connected in fixed wiring.

When carrying out piping connection, take care not to let air substances go into refrigeration cycle.
Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury.

Do not modify the length of the power supply cord or use of extension cord, and do not share the single outlet with other electrical appliances.
Otherwise, it will cause fire or electrical shock.

Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Improper installation work may result in the equipment failing and causing accidents.

If the refrigerant leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into the place contacting with fire.

The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.

After completing the installation work, check that the refrigerant does not leak.
Toxic gas may be produced if the refrigerant leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.

CAUTION

Ground the air conditioner.
Do not connect the ground wire to gas or water pipes, lightning rod or a telephone ground wire.inappropriate grounding may result in electric shock.

Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks.

Connect the outdoor unit wires , then connect the indoor unit wires.
You are not allowed to connect the air conditioner with the power supply until the wiring and piping is done.

While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation.
Improper drain piping may result in water leakage and property damage.

Install the indoor and outdoor units, power supply wiring and connecting wires should be at least 1 meter away from televisions or radios in order to prevent image interference or noise.
Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

The appliance is not intended for use by young children or infirm persons without supervision.

Don't install the air conditioner in the following circumstance:

- There is petrolatum existing.
- There is salty air surrounding (near the coast).
- There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
- The Volt vibrates violently (in the factories).
- In buses or cabinets.
- In kitchen where it is full of oil gas.
- There is strong electromagnetic wave existing.
- There are inflammable materials or gas.
- There is acid or alkaline liquid evaporating.
- Other special conditions.

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

Do not operate your air conditioner in a wet room such as a bathroom or laundry room.

An all-pole disconnection device which has at least 3mm clearances in all poles , and have a leakage current that may exceed 10mA, the residual current device (RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

2. INSTALLATION INFORMATION

- **To install properly, please read this "installation manual" at first.**
- **The air conditioner must be installed by qualified persons.**
- **When installing the indoor unit or its tubing, please follow this manual as strictly as possible.**
- **If the air conditioner is installed on a metal part of the building, it must be electrically insulated according to the relevant standards to electrical appliances.**
- **When all the installation work is finished, please turn on the power only after a thorough check.**
- **Regret for no further announcement if there is any change of this manual caused by product improvement.**

INSTALLATION ORDER

- Select the location;
- Install the indoor unit;
- Install the outdoor unit;
- Install the connecting pipe ;
- Connect the drain pipe;
- Wiring;
- Test operation.

3. ATTACHED FITTINGS

Please check whether the following fittings are of full scope. If there are some spare fittings , please restore them carefully.

Table 3-1

	NAME	SHAPE	QUANTITY
Tubing & Fittings	1. Soundproof / insulation sheath		2
	2. Binding tape		1
	3.Seal sponge		1
	4.Orifice		1 (on some models)
Drainpipe Fittings (for cooling & heating)	5. Drain joint		1
	6. Seal ring		1
Remote controller & Its Frame (Match with remote controller)	7. Remote controller (on some models)		1
	8. Frame		1 (on some models)
	9.Mounting screw(ST2.9×10.C-H)		2
	10.Alkaline dry batteries (AM4)		2
	11. Remote controller manual		1
Wire controller & Its Frame (Match with wire controller)	12. Wire controller		1
EMC & Its Fitting (for some models)	13. Magnetic ring (twist the electric wires L and N around the magnetic ring to five circles)		1
Others	14. Owner's manual		1
	15. Installation manual		1
	16. Transfer connector(Φ12.7~Φ15.9)/（Φ0.5in-Φ0.63in) (Packed with the indoor unit) (NOTE: Pipe size differ from appliance to appliance.To meet different pipe size requirement, sometimes the pipe connections need the transfer connector to install on the outdoor unit .)		1 (on some models)
	17 .Transfer connector(Φ6.35~Φ9.52)/（Φ0.25in-Φ0.375in) (Packed with the indoor unit) (NOTE: Pipe size differ from appliance to appliance.To meet different pipe size requirement, sometimes the pipe connections need the transfer connector to install on the outdoor unit .)		1 (on some models)
	18. Transfer connector(Φ9.52~Φ12.7)/（Φ0.375in-Φ0.5in) (Packed with the indoor unit,used for multi-type models only) (NOTE: Pipe size differ from appliance to appliance.To meet different pipe size requirement, sometimes the pipe connections need the transfer connector to install on the outdoor unit .)		1 (on some models)
	19. Connecting wire for display (2M)		1 (on some models)
	20. Cord protection rubber ring		1 (on some models)

4. INSPECTING AND HANDLING THE UNIT

At delivery, the package should be checked and any damage should be reported immediately to the service agent.

When handling the unit, take into account the following:

1 Fragile, handle the unit with care.
Keep the unit upright in order to avoid compressor damage.

2 Choose on before hand the path along which the unit is to be brought in.

3 Move this unit as originally package as possible.

4 When lifting the unit , always use protectors to prevent belt damage and pay attention to the position of the unit's centre of gravity.

5. INDOOR UNIT INSTALLATION

5.1 Installation place

The indoor unit should be installed in a location that meets the following requirements:

- There is enough room for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.

Maintenance roomage

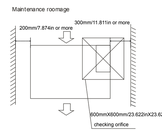


Fig.5-1

CAUTION

Keep indoor unit, outdoor unit, power supply wiring and transmission wiring at least 1 meter away from televisions and radios. This is to prevent image interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if 1 meter is kept.)

5.2 Install the main body

1 Installing Ø10/Ø0.394in hanging screw bolts. (4 bolts)

- Please refer to the following figures for positioning 4 screw bolts.
- Evaluate the ceiling construction and please install with ø10 / ø0.394in hanging screw bolts.
- Consult the construction personnels for the specific procedures.
  - Do keep the ceiling flat. Consolidate the roof beam to avoid possible vibration.
- Carry out the pipe and line operation in the ceiling after finishing the installation of the main body. While choosing where to start the operation, determine the direction of the pipes to be drawn out. Especially in case there is a ceiling, position the refrigerant pipes, drain pipes,indoor & outdoor lines to the connection places before hanging up the machine.
- The installation of hanging screw bolts.
  - Cut off the roof beam.
  - Strengthen the place that has been cut off, and consolidate the roof beam.
- After the selection of installation location, position the refrigerant pipes, drain pipes, indoor & outdoor wires to the connection places before hanging up the machine.
- The installation of hanging screw bolts.

NOTE

Confirm the minimum drain tilt is 1/100 or more

5.2.1 Wooden construction

Put the square timber traversely over the roof beam, then install the hanging screw bolts. *(Refer to Fig.5-2)*

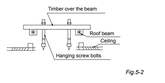


Fig.5-2

5.2.2 New concrete bricks

Inlaying or embedding the screw bolts. (Refer to Fig. 5-3)

Fig.5-3

5.2.3 For Original concrete bricks

Use embedding screw bold, crock and stick harness. (Refer to Fig.5-4)

Fig.5-4

5.2.4 Steel roof beam structure

Install and use directly the supporting angle steel. (Refer to Fig.5-5)

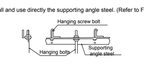


Fig.5-5

2 Overhanging the indoor unit

(1) Overhang the indoor unit onto the hanging screw bolts with block.
(2) Position the indoor unit in a flat level by using the level indicator, unless it may cause leakage.

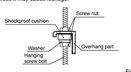


Fig.5-6

5.3 Duct and accessories installation

1. Install the filter(optional) according to air inlet size.
2. Install the canvas tie-in between the body and duct.
3. Air inlet and air outlet duct should be apart far enough to avoid air passage short-circuit.
4. Recommended duct connection

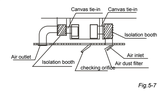


Fig.5-7

5. Please refer to the following static pressure to install

Table.5-1

MODEL (Btu/h)	Static Pressure (Pa)
12	30
18	70
24	70
30~36	80
42~60	100

Change the fan motor static pressure corresponding to external duct static pressure.

NOTE

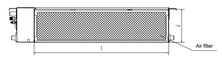
1. Do not put the connecting duct weight on the indoor unit.
2. When connecting duct, use inflammable canvas tie-in to prevent vibrating.
3. Insulation foam should be wrapped outside the duct to avoid condensate and internal duct underlayer shall be added to reduce the noise for special requirement.

The positioning of ceiling hole, indoor unit and hanging screw bolts

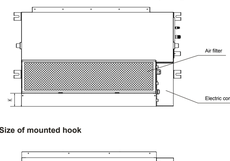
Dimension and air outlet size

Unit: mm

Air inlet size



Position size of descensional ventilation opening



Size of mounted hook

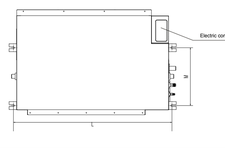


Fig.5-8

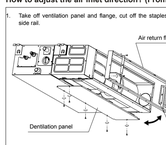
Table.5-2 mm

	Outline dimension				air outlet opening size				air return opening size			Size of mounted lug	
	A	B	C	D	E	F	G	H	I	J	K	L	M
12	700	210	635	570	65	493	35	119	595	200	80	740	350
12~18	920	210	635	570	65	713	35	119	815	200	80	960	350
24	920	270	635	570	65	713	35	179	815	260	20	960	350
36 (small model)	920	270	635	570	65	713	35	179	815	260	20	1180	490
30~36	1140	270	775	710	65	933	35	179	1035	260	45	1240	500
42~60	1200	300	865	800	80	968	40	204	1094	288	45	1240	500

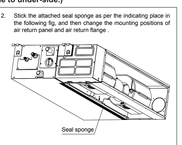
(in=mm/25.4)

How to adjust the air inlet direction? (From rear side to under-side.)

1. Take off ventilation panel and flange, cut off the staples at side rail.



2. Stick the attached seal sponge as per the indicating place in the following fig, and then change the mounting positions of air return panel and air return flange .



3. When install the filter mesh, please plug it into flange inclined from air return opening, and then push up.

4. The installation has finish, upon filter mesh which fixing blocks have been insert to the flange positional holes.

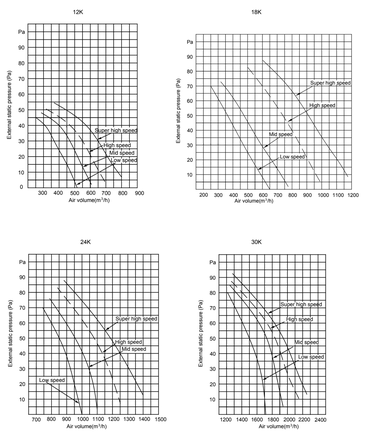
Fig.5-9

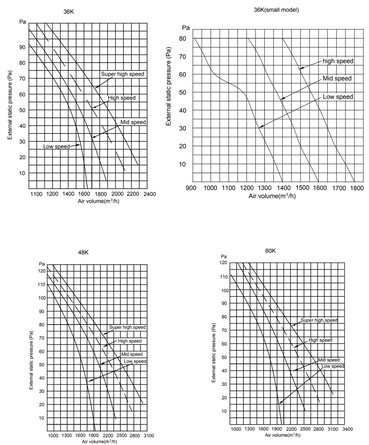
NOTE

All the figures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased.The actual unit shall prevail.

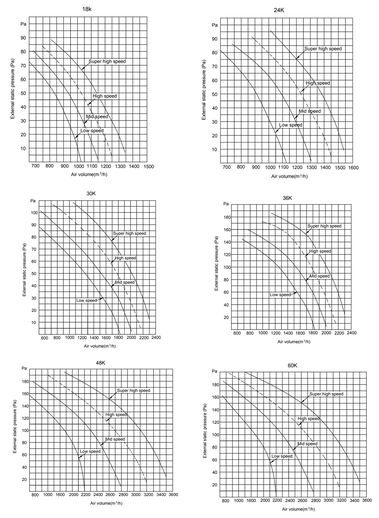
5.9 Fan performances

Static pressure curve(middle static pressure duct)





Static pressure curve(high static pressure duct)



6. OUTDOOR UNIT INSTALLATION

6.1 Installation Place

■ **The outdoor unit should be installed in the location that meets the following requirements:**

- There is enough room for installation and maintenance.
- The air outlet and the air inlet are not impeded, and can not be reached by strong wind.
- It must be a dry and well ventilating place.
- The support is flat and horizontal and can stand the weight of the outdoor unit. And will no additional noise or vibration.
- Your neighborhood will not feel uncomfortable with the noise or expelled air.
- It is easy to install the connecting pipes or cables.
- Determine the air outlet direction where the discharged air is not blocked.
- There is no danger of fire due to leakage of inflammable gas.
- The piping length between the outdoor unit and the indoor unit may not exceed the allowable piping length.
- In the case that the installation place is exposed to strong wind such as a seaside, make sure the fan operating properly by putting the unit lengthwise along the wall or using a dust shield.*(Refer to Fig.6-1)*
- If possible, do not install the unit where it is exposed to direct sunlight.
- If necessary, install a blind that does not interfere with the air flow.
- During the heating mode, the water drained off the outdoor unit ,The condensate should be well drained away by the drain hole to an appropriate place, so as not to interfere other people.
- Select the position where it will not be subject to snow drifts, accumulation of leaves or other seasonal debris. If unavoidable, please cover it with a shelter.
- Locate the outdoor unit as close to the indoor unit as possible.
- If possible, please remove the obstacles nearby to prevent the performance from being impeded by too little of air circulation.
- The minimum distance between the outdoor unit and obstacles described in the installation chart does not mean that the same is applicable to the situation of an airtight room. Leave open two of the three directions (M,N,P) *(Refer to Fig.6-5)*

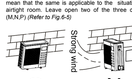


Fig.6-1

NOTE

All the figures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased.The actual unit shall prevail.

6.2 Figure of body size

1. Split type outdoor unit

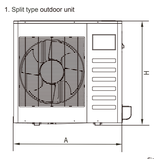


Fig.6-2

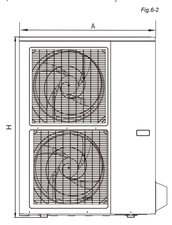


Fig.6-3

Fig.6-4

Table 6-1 mm

MODEL	A	B	C	D	E	F	H	REMARK
12	780	548	266	300	241	250	540	*Fig.6-2*
18	780	530	290	315	270	285	590	*Fig.6-2*
	760	530	290	315	270	285	590	*Fig.6-2*
	842	560	335	360	312	324	695	*Fig.6-2*
24	852	582	368	390	328	340	660	*Fig.6-2*
	990	624	366	396	340	345	865	*Fig.6-2*
30	990	624	366	396	340	345	965	*Fig.6-2*
	900	590	333	355	302	315	860	*Fig.6-2*
36~48	990	624	366	396	340	345	965	*Fig.6-2*
	938	634	404	448	368	392	1369	*Fig.6-3*
45~51	990	624	366	396	340	345	965	*Fig.6-2*
	938	634	404	448	368	392	1369	*Fig.6-3*
60	990	590	378	400	330	350	1170	*Fig.6-3*
	990	590	378	400	330	350	1170	*Fig.6-3*
	938	634	404	448	368	392	1369	*Fig.6-3*

(in=mm/25.4)

2. Vertical discharge type outdoor unit

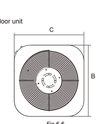


Fig.6-5 *Fig.6-6*

Table 6-2 unit. mm

MODEL	DIMENSIONS			REMARK
	A	B	C	
18	633/24.92in	554/21.81in	554/21.81in	Refore to *Fig.6-5* *Fig.6-6*
24	633/24.92in	554/21.81in	554/21.81in	
36	759/29.88in	554/21.81in	554/21.81in	
36	633/24.92in	600/23.62in	600/23.62in	
48	759/29.88in	710/27.95in	710/27.95in	
60	843/33.19in	710/27.95in	710/27.95in	

3. Centrifugal fan type outdoor unit

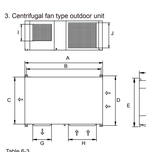


Fig.6-7

Table 6-3 unit. mm

MODEL	A	B	C	D	E	F	G	H	I	J
18	1174	1120	680	720	750	475	300	430	265	393
24	1174	1120	680	720	750	475	300	430	265	393
30	1381	1328	702	740	770	520	336	500	296	443
36	1381	1328	702	740	770	520	336	500	296	443
48	1394	1338	783	820	850	568	398	574	342	463
60	1394	1338	783	820	850	568	398	574	342	463

6.3 Space of installation and maintenance

1. Split type outdoor unit

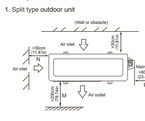


Fig.6-8

2. Vertical discharge type outdoor unit

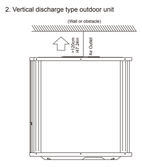


Fig.6-9

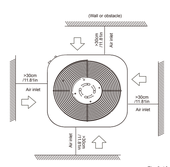


Fig.6-10

3. Centrifugal fan type outdoor unit

a) In case that suspending in the ceiling

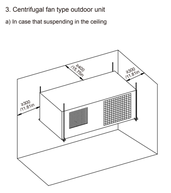


Fig.6-11

b)In case that installing on the floor

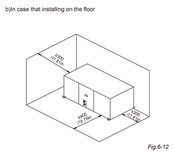


Fig.6-12

NOTE

All the figures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased.The actual unit shall prevail.

6.4 Available configuration for centrifugal fan type outdoor unit

Four different configuration are available for outdoor unit only changing the panels and fan position.

NOTE

Keep in mind that fan unit weight is aprox 30kg/1058oz ,the unit as well as relevant equipment covered with the vinyl cover during installation work.

■ **Air inlet modification**

To change air inlet is only necessary to interchange the indicated panels position. Both panels use screws to be fixed to unit chassis.

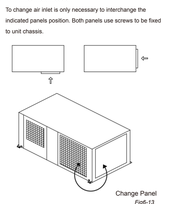


Fig.6-13

To change air outlet is necessary to interchange panels too. Fan outlet panel is attached to fan structure, which must be mounted as follow.

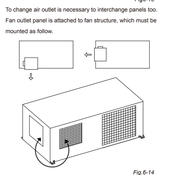


Fig.6-14

6.5 Moving and installation

- Since the gravity center of the unit is not at its physical center, so please be careful when lifting it with a sling.
- Never hold the inlet of the outdoor unit to prevent it from deforming.
- Do not touch the fan with hands or other objects.
- Do not lean it more than 45', and do not lay it sidelong.
- Make concrete foundation according to the sepecif-ications of the outdoor units.*(Refer to Fig.6-15)*
- Fasten the feet of this unit with bolts firmly to prevent it from collapsing in case of earthquake or strong wind.*(Refer to Fig.6-15)*

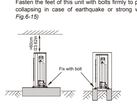


Fig.6-15

■ **Concrete Foundation**

1. Foundation could be on flat and is recommended be 100-300mm /3.94~11.81in higher than ground level.
2. Install a drainage around foundation for smooth drain
3. When installing the outdoor unit fix the unit by anchor bolts of M10
4. When installing the unit on a roof or a veranda, drain water sometimes turns to ice on the cold weather. Therefore, avoid draining in an area that people often use because it is slippery.

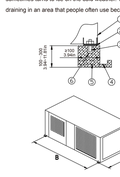


Fig.6-16

Table 6-4

No.	Description
1	Outdoor Unit
2	Vibration-proof rubber
3	Anchor Bolt M10
4	Drainage (Wide 100/3.94in×Depth 150/5.9in)
5	Drainage
6	Mortar Hole (Φ100/3.94in×Depth 150/5.9in)

Table 6-5 unit: mm

MODEL	B	C
18~24	1120/44.1in	720/28.35in
30	1338/52.67in	820/32.28in
36	1338/52.67in	820/32.28in
48~60	1338/52.67in	820/32.28in

■ **Suspended unit**

1. Suspend the unit as the drawing indicates.
2. Ensure that ceiling can resist the Outdoor unit weight indicated in specification label plate.

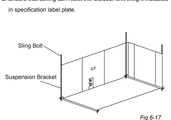


Fig.6-17

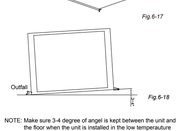


Fig.6-18

NOTE: Make sure 3-4 degree of angel is kept between the unit and the floor when the unit is installed in the low temperature and humid environment.
Make sure the ice on the chassis of the outdoor unit can be dealt with when the unit is installed in the low temperature and humid environment.
The outdoor unit should be installed in mounting rack 30cm /11.81in high.The environment temperature should be above 0'.
The machine must be installed indoor.

7. INSTALL THE CONNECTING PIPE

7.1 Preparation and Caution

Before installation make sure the height difference, the length of refrigerant pipe, and the number of the bends between the indoor unit and outdoor unit meet the following requirements:

Table 7-1 unit:m

The type of models	Model	The length of refrigerant pipe	The max height drop
50Hz T1 condition/R22 Split type air conditioner	12K	15/49.21ft	8/26.25ft
	18K,24K	30/98.42ft	10/32.8ft
	30K,42K	50/164.04ft	20/65.62ft
	48K,60K	50/164.04ft	25/82.02ft
50Hz vertical discharge air conditioner 50Hz T1 condition/R22 Split type air conditioner and Vertical discharge air conditioner	12K	15/49.21ft	8/26.25ft
	18K,24K	30/98.42ft	10/32.8ft
	30K,40K	30/98.42ft	15/49.21ft
R410A inverter Split type air conditioner and and Centrifugal fan outdoor unit	12K	10/32.8ft	5/16.4ft
	18K,24K	25/82.02ft	12/39.37ft
	30K	25/82.02ft	15/49.21ft
	36K	30/98.42ft	20/65.62ft
	48K,60K	50/164.04ft	25/82.02ft
R410A Split type air conditioner and and Centrifugal fan outdoor unit	12K	15/49.21ft	8/26.25ft
	18K,30K	25/82.02ft	15/49.21ft
	36K	30/98.42ft	20/65.62ft
	48K,60K	50/164.04ft	25/82.02ft
50Hz/60Hz T3 condition (outdoor unit down)	18K,24K	25/82.02ft	10/32.8ft
	30K	30/98.42ft	15/49.21ft
	36K	30/98.42ft	20/65.62ft
	42K,60K	50/164.04ft	25/82.02ft
50Hz/60Hz T3 condition (outdoor unit up)	18K,24K	25/82.02ft	15/49.21ft
	30K	30/98.42ft	20/65.62ft
	36K	30/98.42ft	25/82.02ft
	42K	50/164.04ft	30/98.42ft
	48K,60K	50/164.04ft	30/114.83ft
the unit with quick joint	12K-18K	5/16.4ft	5/16.4ft

The outdoor unit is charged with rating refrigerant amount in the factory.Additional charge refers to the table below:

Table 7-2

	liquid tube(mm)	R410A	R22
Ø6.35	orifice in the indoorunit	0.022kg/m×(L-5)	0.030kg/m×(L-5)
	orifice in the outdoorunit	0.011kg/m×(L-5)	0.015kg/m×L
Ø9.52	orifice in the indoorunit	0.060kg/m×(L-5)	0.065kg/m×(L-5)
	orifice in the outdoorunit	0.030kg/m×(L-5)	0.033kg/m×L
Ø12.7	orifice in the indoorunit	0.110kg/m×(L-5)	0.115kg/m×(L-5)
	orifice in the outdoorunit	0.060kg/m×(L-5)	0.060kg/m×L
Ø15.9	orifice in the indoorunit	0.170kg/m×(L-5)	0.190kg/m×(L-5)
	orifice in the outdoorunit	0.085kg/m×(L-5)	0.095kg/m×L
Ø19.1	orifice in the indoorunit	0.250kg/m×(L-5)	0.290kg/m×(L-5)
	orifice in the outdoorunit	0.125kg/m×(L-5)	0.145kg/m×L

- NOTE:the table above refer to the liquid tube.
- NOTE:The number of bends is up to the length of the max height drop.Usually for each 10m/32.8ft need a bend.

■ **Suspended unit**

1. Suspend the unit as the drawing indicates.
2. Ensure that ceiling can resist the Outdoor unit weight indicated in specification label plate.

Fig.6-17

Fig.6-18

NOTE: Make sure 3-4 degree of angel is kept between the unit and the floor when the unit is installed in the low temperature and humid environment.
Make sure the ice on the chassis of the outdoor unit can be dealt with when the unit is installed in the low temperature and humid environment.
The outdoor unit should be installed in mounting rack 30cm /11.81in high.The environment temperature should be above 0'.
The machine must be installed indoor.

CAUTION

All field piping must be provided by a licensed refrigeration technician and must comply with the relevant local and national codes.

Prevent let air, dust, or other impurities enter in the pipe system during installation.

Insulation pipe shall be used to the gas piping and the liquid piping. Otherwise, the condensate may happen.

7.2 The Procedure of Connecting Pipes

1 Measure the required length of the connecting pipe, then make it by the following way.

- Connect the indoor unit first, then the outdoor unit.
- Bend the tubing in proper way. Do not twist the pipe.

Fig.7-1

- Put some refrigerant oil on the surfaces of the flare pipe and the joint nuts then wrench it for 3~4 rounds with hands before fasten the flare nuts.(Refer to chart 16)

Fig.7-2

- Be sure to use two wrenches simultaneously when you connect or disconnect the pipes.

Fig.7-3

■ The service valves of the outdoor unit should be completely closedcas original status.Every time to connect,first to loosen nuts, then connect the flare pipes within 5 minutes. If the nuts have been loosened for a long time, dusts and other impurities may enter the pipe system and may cause malfunction.So please expel the air out of the pipe with refrigerant before connection.

■ Expel the air(refer to the '8.1')after connecting the refrigerant pipe with the indoor unit and the outdoor unit.
Then fasten the nuts at the service valves.

■ Bend the connecting pipe of small wall thickness.
- Cut out a proper concave at the bending part of the insulating pipe.
- Then expose the pipe(cover it with tapes after bending).
- To prevent twist of defor