

Haier

Installation manual for room air conditioner



HSU-26HEK03/R2(DB)/I
HSU-35HEK03/R2(DB)/I
HSU-53HEK03/R2(DB)/I
HSU-71HEK03/R2(DB)/I
HSU-26HEK03/R2(DB)/O
HSU-35HEK03/R2(DB)/O
HSU-53HEK03/R2(DB)/O
HSU-71HEK03/R2(DB)/O

**Read this manual before installation and keep it for future reference.
Please explain to the user how the product works and refer them to the operation manual.**

NO.0010553937

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Preparation

Necessary tools for installation

- Driver
- Nibbler
- Hacksaw
- Hole core drill
- Spanner (17, 19 and 26mm)
- Gas leakage detector or soap-and-water solution
- Vacuum pump
- Torque wrench (17mm, 22mm, 26mm)
- Pipe cutter
- Flaring tool
- Knife
- Measuring tape
- Reamer
- Refrigeration gauges

Power source

- Install an exclusive circuit for the power.
- Check the power source voltage is the same as the rating plate.

Selection of installation place

Indoor Unit

The place chosen to install the indoor unit should be:










- Where there is no vibration and where the body can be supported sufficiently.
- Not affected by heat or steam generated in the vicinity, where inlet and outlet of the unit are not blocked or restricted.
- Where it is possible to drain easily, and where piping can be connected with the outdoor unit.
- Where conditioned air can be evenly distributed through the whole room.
- Where there is more than 1m distance from televisions, radios, wireless devices and fluorescent lamps.
- In the case of fixing the remote controller on a wall, choose a place where the indoor unit can receive signals when the fluorescent lamps in the room are on.

Outdoor Unit

The place chosen to install the outdoor unit should be:

- Not affected by rain or direct sunlight and with sufficient ventilation.
- Strong enough to bear the unit, where vibration and noise are not increased.
- Where discharged air and noise do not cause a nuisance to the neighbours.
- Where a distance marked ↔ is available as illustrated in the figure on page 4.

Accessory parts

 Remote controller (1)	 Drain hose (1)
 AAA dry battery (2)	 Cushion (4)
 Mounting plate (1)	 Drain-elbow (1)
 Plastic cap (4)	 Pipe supporting plate (1)
 Ø4X25 Screw (4)	

Selection of pipe

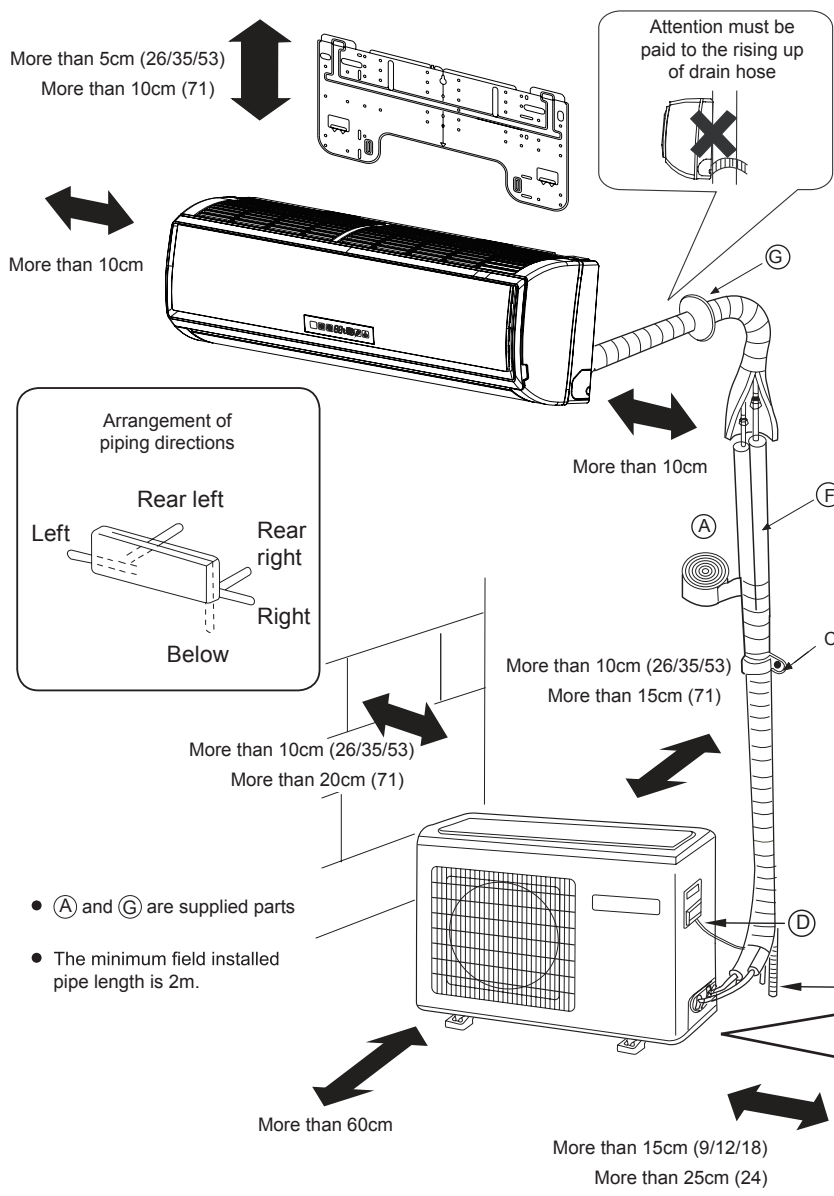
Model	Liquid pipe (Ø)	Gas pipe (Ø)
HSU-26HEK03/R2(DB)/O	6.35mm (1/4")	9.52mm (3/8")
HSU-35HEK03/R2(DB)/O	6.35mm (1/4")	9.52mm (3/8")
HSU-53HEK03/R2(DB)/O	6.35mm (1/4")	12.7mm (1/2")
HSU-71HEK03/R2(DB)/O	9.52mm (3/8")	15.88mm (5/8")

NOTE: The thickness of the pipe must be at least 0.8mm.

Power requirements

Model	Max rated current
HSU-26HEK03/R2(DB)/O	6.1
HSU-35HEK03/R2(DB)/O	6.0
HSU-53HEK03/R2(DB)/O	10.5
HSU-71HEK03/R2(DB)/O	13.8

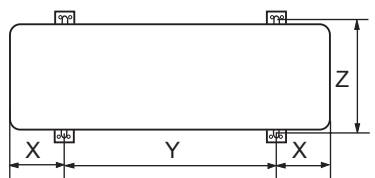
Drawing for the installation of indoor and outdoor units



Optional parts for piping

- (A) Non-adhesive tape
- (B) Adhesive tape
- (C) Saddle (L.S.) with screws
- (D) Connecting electric cable for indoor and outdoor
- (E) Drain hose
- (F) Heating insulating material
- (G) Piping hole cover

Floor fixing dimensions of the outdoor unit (Unit:mm)



Model	Dimensions		
	x	y	z
HSU-26HEK03/R2(DB)/O	140	500	256
HSU-35HEK03/R2(DB)/O	140	500	256
HSU-53HEK03/R2(DB)/O	113.5	583	319.5
HSU-71HEK03/R2(DB)/O	113.5	633	340

Fixing of outdoor unit

- Fix the unit to concrete or block with bolts (10mm) and nuts, firmly and horizontally.
- When fitting the unit to wall surface, roof or rooftop, fix a supporter securely with approved fixings, in case of earthquake or strong wind.
- If vibration may affect the house, fix the unit by attaching a vibration-proof mat.

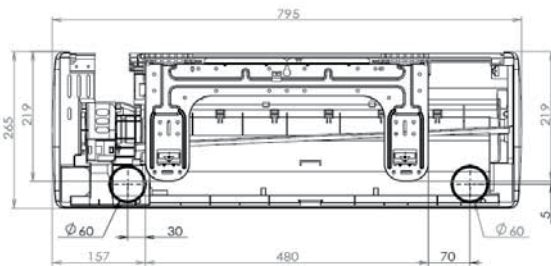
The picture above is just for your reference. Please refer to the actual product purchased.

Indoor Unit

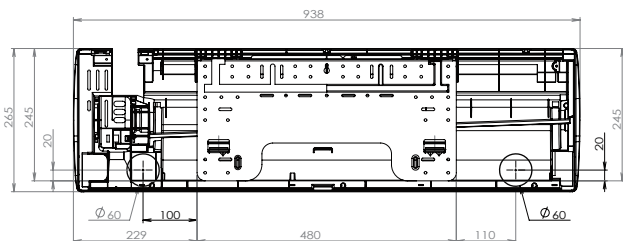
1 Fitting of the Mounting Plate and Positioning of the Wall Hole

When the mounting plate is first fixed

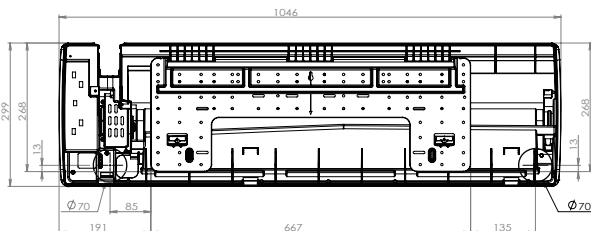
1. Find a suitable mounting location, ensuring there is adequate support to hold the weight of the unit, check it is level, then temporarily fasten the plate.
2. Check the plate is level, by hanging a thread with a weight from the central top of the plate or using a spirit level, then fasten securely.
3. Determine the wall hole location 'A' using a measuring tape.



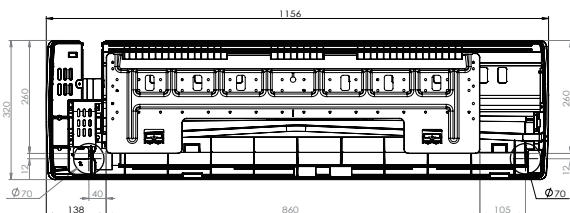
HSU-26HEK03/R2(DB)/I



HSU-35HEK03/R2(DB)/I



HSU-53HEK03/R2(DB)/I



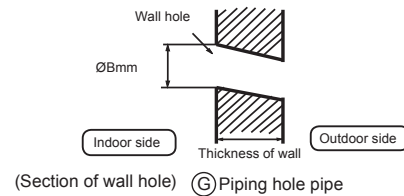
HSU-71HEK03/R2(DB)/I

When the mounting plate is fixed side bar and lintel

- Fix a mounting bar to the side bar and lintel (sold separately), and then fasten the plate to the fixed mounting bar.
- Refer to note 1, "When the mounting plate is first fixed", for the position of wall hole.

2 Making a Hole on the Wall and Fitting the Piping Hole Cover

- Make a hole of 'B' mm in diameter, slightly descending to outside the wall.
- Install piping hole cover and seal it off with putty after installation.



3 Installation of the Indoor Unit

Drawing of pipe

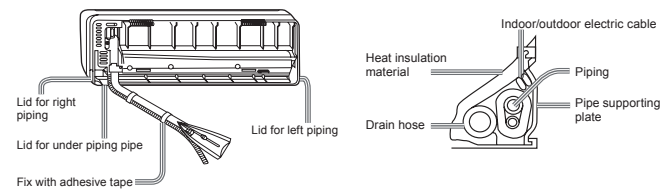
[Rear piping]

- Draw pipes and the drain hose, then fasten them with adhesive tape

[Left • Left-rear piping]

- In case of left side piping, cut away, with a nibbler, the lid for left piping.
- In case of left-rear piping, bend the pipes according to the piping direction to the mark of hole for left-rear piping which is marked on heat insulation materials.

1. Insert the drain hose into the cavity of heat insulation materials of indoor unit.
2. Insert the indoor/outdoor electric cable from the back of the indoor unit, and pull it out on the front side, then connect them.
3. Coat the flaring seal face with refrigerant oil and connect pipes. Cover the connection part with heat insulation materials, and fix it with adhesive tape.



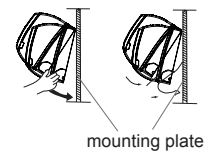
- Indoor/outdoor electric cable and drain hose must be bound with refrigerant piping by protecting tape.

[Other direction piping]

- Cut away, with a nibbler, the lid for piping (according to the piping direction) and then bend the pipe according to the position of wall hole. When bending, be careful not to crush the pipes.
- Connect the indoor/outdoor electric cable.

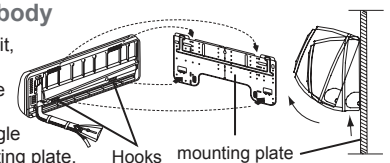
Fixing the indoor unit body

- Hang the unit body onto the upper notches of the mounting plate. Move the body from side to side to confirm it is fixed securely.
- In order to fix the body onto the mounting plate, hold up the body on an angle from the underside and then pull it down perpendicularly.



Unloading of indoor unit body

When you remove the indoor unit, use your hand to raise the body from the hooks, then lift the bottom of the body outward slightly and lift the unit on an angle until it separates from the mounting plate.



Indoor unit cont.

4 Connecting the indoor/outdoor Electric Cable

Removing the wiring cover

- Remove terminal cover at right bottom corner of indoor unit, then take off wiring cover by removing its screws.



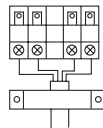
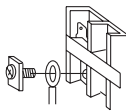
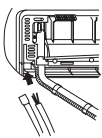
When connecting the cable after installing the indoor unit

- Insert from outside the room cable into left side of the wall hole, in which the pipe is fitted or installed.
- Pull out the cable on the front side, and connect the cable making a loop.



When connecting the cable before installing the indoor unit

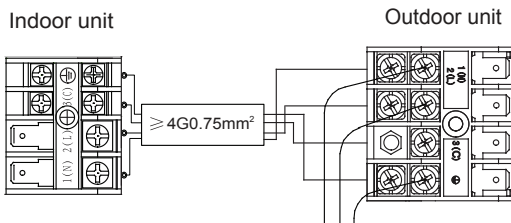
- Loosen the screws and insert the cable ends fully into terminal block, then tighten the screws.
- Pull the cable slightly to make sure the cables have been properly inserted and tightened.
- After the cable connection, always fasten the connected cable with the wiring cover.



Note

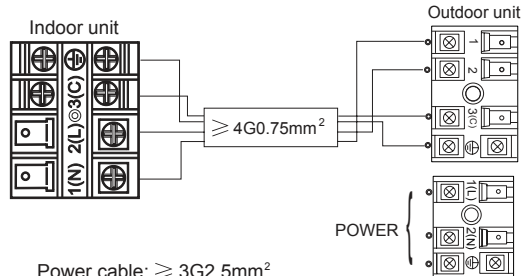
When connecting the cable, confirm the terminal number of indoor and outdoor units carefully. If wiring is not correct, the system will not operate correctly. Damage to the PCB due to incorrect field wiring is not covered by warranty.

Electrical connection



Power cable: $\geq 3G1.5mm^2$

HSU-26HEK03/R2(DB)/O
HSU-35HEK03/R2(DB)/O



Power cable: $\geq 3G2.5mm^2$

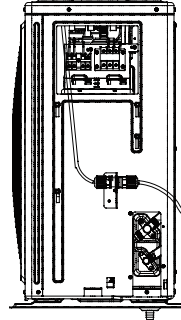
HSU-53HEK03/R2(DB)/O
HSU-71HEK03/R2(DB)/O

- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similar qualified person. The type of connecting wire and power cable is H05RN-F or H07RN-F.
- If the PC board fuse is broken replace with a T.3.15A/250VAC (Indoor) or T.25A/250VAC (Outdoor).
- The wiring method should be in line with the local and national wiring standards.
- After installation, the power isolator should be easily reached.
- A breaker should be incorporated into fixed wiring. The breaker should be all-pole switch and the distance between its two contacts should be not less than 3mm.

DRED Function

- Please consult your reseller and/or installer to determine if you have a DRED appliance. Connect output from your home's electricity power meter (where available) to the RJ45 connector on the outdoor unit, as shown.

(This function is unavailable on some models.)



1 Installation of Outdoor Unit

Install according to 'Drawing for the installation of indoor and outdoor units' (see page 4)

2 Connection of pipes

- To bend a pipe, use the correct bending tool, so as not to crush the pipe, and the bending radius should be 30 to 40 mm or longer.
- Connect the pipe gas side first.
- The connection pipe is specialized for R410A.

Half union Flare nut



Forced fastening without careful centering may damage the threads and cause a leakage of gas.

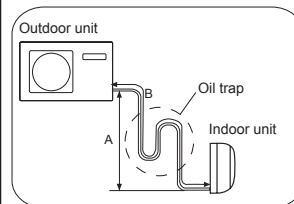
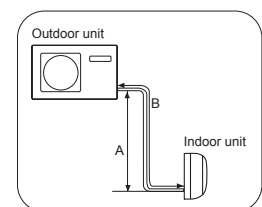
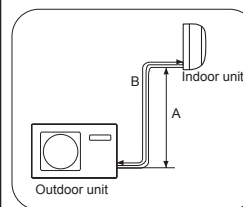


Spanner Torque wrench

Pipe diameter (Ø)	Fastening torque
Liquid side 6.35mm (1/4")	18 N.m
Liquid/Gas side 9.52mm (3/8")	42 N.m
Gas side 12.7mm (1/2")	55 N.m
Gas side 15.88mm (5/8")	60 N.m

Be careful that foreign materials such as sand, etc. do not enter the pipe. The charge of refrigerant must be conducted by professional air conditioner engineer. Before adding additional refrigerant, perform air evacuation from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.

CAUTION



- Max. Elevation: Amax = 10m (HSU - 26/35) = 15m (HSU - 53/71)
- In case the elevation A is more than 5m, oil trap should be installed every 5~7m
- Max. Length: Bmax = 15m (HSU - 26/35) = 25m (HSU - 53/71)

Model	Base charge	Pre charge pipe length	Additional charge amount
HSU-26HEK03/R2(DB)/O	1000g	7m	20g/m
HSU-35HEK03/R2(DB)/O	1080g	7m	20g/m
HSU-53HEK03/R2(DB)/O	1550g	10m	20g/m
HSU-71HEK03/R2(DB)/O	2100g	10m	50g/m

Outdoor unit cont.

3 Connection of Electrical Cable

- Use the same method on indoor unit. Loosen the screws on terminal block and insert the plugs fully into terminal block, then tighten the screws.
- If wiring is not correct, proper operation can not be carried out and the controller may be damaged.
- Fix the cable with a clamp.

4 Attaching Drain-Elbow

- If the drain-elbow is used,
- please attach it as figure.
(Note: Only for heat pump unit.)

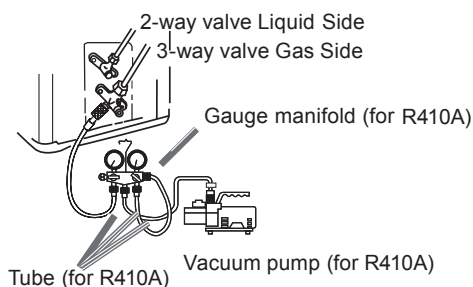


5 Evacuation Method: Use vacuum pump

Step 1

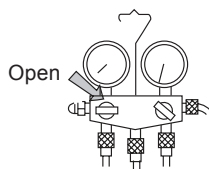
Remove the service port cap from the 3 way valve, the valve caps for the 2 way & 3 way valves. Connect hose to the service port (low) side of the manifold gauge.

Then connect the centre hose from the manifold gauge to the vacuum pump.



Step 2

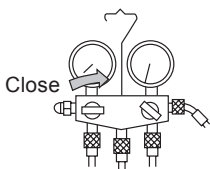
Open the tap on the low side of the manifold and operate the vacuum pump. If the gauge (low) reaches a vacuum immediately repeat step 1 above again.



Step 3

Vacuum for over 15min. Check the (low) gauge which should read -0.1 MPa (-76 cm Hg) at low pressure side. After completion of vacuuming the system, close the low tap on the manifold and turn off the vacuum pump.

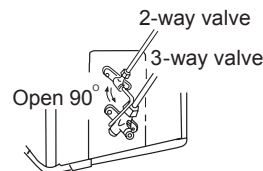
Check the low side gauge to see if it holds for 1-2 min. If the gauge does not hold pressure, check all the flares and return to the beginning of Step 3.



Step 4

Open the 2-way valve to an angle of anticlockwise 90 degrees.

After 6 seconds, close the 2-way valve and test for refrigerant gas leakage.



Step 5

No gas leakage? If ok, proceed to Step 6.

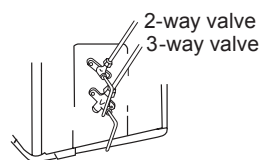
In case of refrigerant leakage, tighten parts of pipe connections. If leakage stops, then proceed to Step 6.



If this does not stop gas leakage, reclaim all refrigerant from the service port. After reflaring and repeating vacuuming on the system, fill with the prescribed refrigerant level. Check again for leaks.

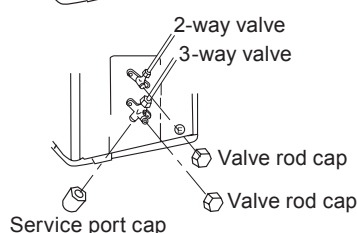
Step 6

Detach the charge hose from the service port, open 2-way valve and 3-way valve. Turn the valve anticlockwise until closed.



Step 7

To prevent refrigerant leakage, tighten the service port's taps and caps to ensure they are sufficiently sealed.



Step 8

After fitting the caps, check for refrigerant gas leakage around the caps.

CAUTION

- If the refrigerant of the air conditioner leaks, it is necessary to reclaim all the refrigerant, then pull a vacuum BEFORE recharging the refrigerant into the air conditioner according to the amount marked on the name plate.
- Please do not charge with refrigerant, except as specified (R410A), or allow air to enter into the cooling circulation system. Otherwise, this may cause abnormal high pressure in the system which may lead to personal injuries or damage to piping.

Outdoor unit cont.

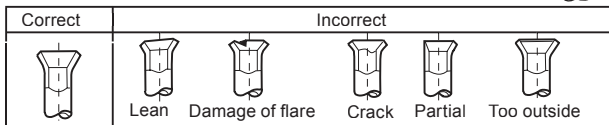
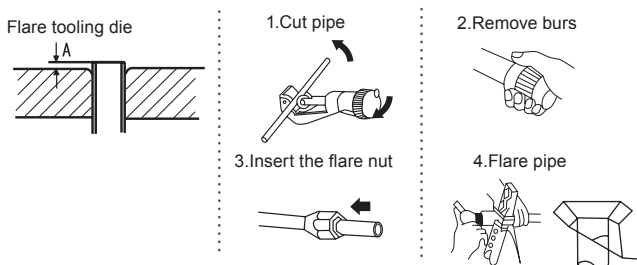
1 Power Source Installation

- The air conditioner must be wired with a dedicated circuit to the distribution board. The protection device should be sized to meet the current requirements of the unit as shown on page 3 and comply with local and national wiring standards.
- If installing the air conditioner in a moist place, please install an earth leakage breaker.
- For installation in other places, use a circuit breaker.

2 Cutting and Flaring Work of Piping

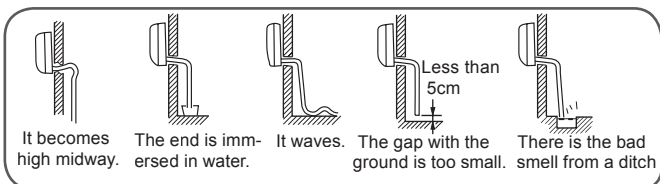
- Pipe cutting is carried out with a pipe cutter and burrs must be removed.
- After inserting the flare nut, flaring work is carried out.

Flare tool for R410A	Conventional flare tool	
	Clutch-type	clutch-type(Rigid-type) Wing-nut type (Imperial-type)
A	0~0.5mm	1.0~1.5mm 1.5~2.0mm



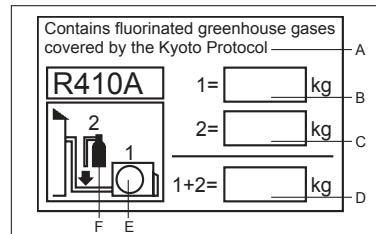
3 On Drainage

- Please install the drain hose to be always sloping downhill.
- Examples of incorrect



- Please pour water in the drain pan of the indoor unit, and confirm that condensate is carried to outdoor.
- In case that the attached drain hose is in a room, please apply insulation to drain

Refrigerant charge label



This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent into the atmosphere.

Refrigerant type: R410A

GWP* value:1975

GWP=global warming potential

Please fill in with indelible ink,

- 1 the factory refrigerant charge of the product
- 2 the additional refrigerant amount charged in the field and
- 1+2 the total refrigerant charge

on the refrigerant charge label supplied with the product. The filled out label must be adhered in the proximity of the product charging port (e.g. onto the inside of the stop value cover).

A contains fluorinated greenhouse gases covered by the Kyoto Protocol

B factory refrigerant charge of the product: see unit name plate

C additional refrigerant amount charged in the field

D total refrigerant charge

E outdoor unit

F refrigerant cylinder and manifold for charging

Check for installation and test run

Please kindly explain to our customers how to operate the unit through the instruction manual.

- Check items for test run Put check mark ✓ in boxes
- Gas leak from connecting pipe?
 - Insulation of pipe connecting ?
 - Are the indoor and outdoor interconnecting cables firmly inserted to the terminal block?
 - Is the interconnecting cables of indoor and outdoor firmly fixed?
 - Is drainage securely carried out?
 - Is the earth line securely connected?
 - Is the indoor unit securely fixed?
 - Is power source voltage correct?
 - Is there any noise?
 - Is the indicator lamp lit?
 - Are cooling and heating (when in heat pump) performing normally?
 - Is the operation of room temperature adjustment normal?

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