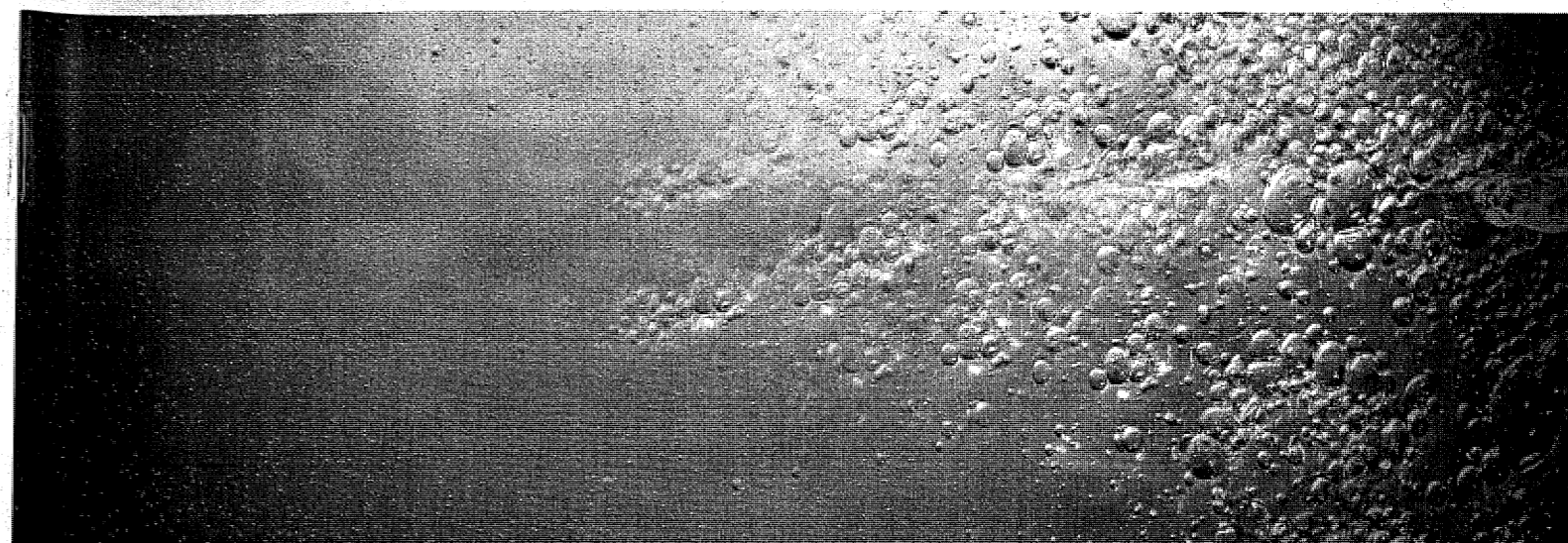




For the Installer

Installation Manual  
climaVAIR



Wall-Mounted Multi-Split

VAH 5-050 M2

0410111-00

■ ■ ■ ■ ■ ■ ■ EN

Directions on using documentation

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Directions on using documentation

The following directions should be used as a guide for all documentation.

As well as this instruction manual, other documents are also applicable.

**We accept no liability for damage arising out of failure to observe these directions.**

**Applicable documents**

**For the plant user**  
1 Instruction Manual, No. 041011U-00

**For the specialist operator:**  
1 Installation and Maintenance Manual, No. 041011I-00

**Custody of documents**  
Please keep this instruction manual and the other applicable documents in a safe place, where they are easily available when needed.

**Symbols used**  
When operating the unit, please observe the safety instructions in this manual!  
The symbols used in the text are explained below:

**Danger!**  
**Incorrect operations may result in severe consequences: death or serious injuries.**

**Caution!**  
**Incorrect operations may result in injuries or machine damages; in some cases they may cause serious consequences.**

**Note!**  
**This information can ensure the correct operation of the machine. Be sure to conform with the following important Safety Cautions. The Safety Cautions should be at hand so that they can be checked at any time when needed. If the air conditioner is transferred to the new user, this manual should be as well transferred to the new user.**

1 Precautions

1.1 Disposal of the old air conditioner

Before disposing an old air conditioner that goes out of use, please make sure it's inoperative and safe. Unplug the air conditioner in order to avoid the risk of child entrapment.

It must be noticed that air conditioner system contains refrigerants, which require specialized waste disposal. The valuable materials contained in a air conditioner can be recycled. Contact your local waste disposal center for proper disposal of an old air conditioner and contact your local authority or your dealer if you have any question. Please ensure that the pipework of your air conditioner does not get damaged prior to being picked up by the relevant waste disposal center, and contribute to environmental awareness by insisting on an appropriate, anti-pollution method of disposal.

1.2 Disposal of the packaging of your new air conditioner

All the packaging materials employed in the package of your new air conditioner may be disposed without any danger to the environment.

The cardboard box may be broken or cut into smaller pieces and given to a waste paper disposal service. The wrapping bag made of polyethylene and the polyethylene foam pads contain no fluorochloric hydrocarbon.

All these valuable materials may be taken to a waste collecting center and used again after adequate recycling.

Consult your local authorities for the name and address of the waste materials collecting centers and waste paper disposal services nearest to your house.

1.3 Safety Instructions and Warnings

Before starting the air conditioner, read the information given in the User's Guide carefully. The User's Guide contains very important observations relating to the assembly, operation and maintenance of the air conditioner.

The manufacturer does not accept responsibility for any damages that may arise due to non-observation of the following instruction.

- Damaged air conditioners are not to be put into operation. In case of doubt, consult your supplier.
- Use of the air conditioner is to be carried out in strict compliance with the relative instructions set forth in the User's Guide.
- Installation shall be done by professional people, don't install unit by yourself.
- For the purpose of safety, the air conditioner must be properly grounded in accordance with specifications.
- Always remember to unplug the air conditioner before opening inlet grill. Never unplug your air conditioner by pulling on the power cord. Always grip plug firmly and pull straight out from the outlet.

- All electrical repairs must be carried out by qualified electricians. Inadequate repairs may result in a major source of danger for the user of the air conditioner.
- Do not damage any parts of the air conditioner that carry refrigerant by piercing or perforating the air conditioner's tubes with sharp or pointed items, crushing or twisting any tubes, or scraping the coatings off the surfaces. If the refrigerant splashes and gets into eyes, it may result in serious eye injuries.
- Do not obstruct or cover the ventilation grille of the air conditioner. Do not put fingers or any objects into the inlet/outlet and swing louver.
- Do not allow children to play with the air conditioner. In no case should children be allowed to sit on the outdoor unit.

1.4 Specifications

The refrigerating circuit is leak-proof.

The machine is adaptive in following situation

1 Applicable ambient temperature range:

Indoor	Maximum: D.B / W.B	32°C/23°C
	Minimum: D.B	18°C/14°C
Outdoor	Maximum: D.B	43°C/26°C
	Minimum: D.B	18°C
Indoor	Maximum: D.B	27°C
	Minimum: D.B	15°C
Outdoor	Maximum: D.B / W.B	24°C/18°C
	Minimum: D.B / W.B	-7°C/-8°C

- 2 If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similar qualified person.
- 3 If the fuse on PC board is broken please change it with the type of T. 3.15A /250VAC.
- 4 The wiring method should be in accordance with the local wiring standard.
- 5 All the cables shall have the European authentication certificate.
- 6 The used battery shall be disposed properly.
- 7 The indoor unit installation height is at least 2.5m.
- 8 The appliance must be installed so that the plug should be easily accessible after installation.
- 9 The power plug should be bought separately and it should have the European authentication certificate.

### 2 Safety Cautions

Carefully read the following information in order to operate the air conditioner correctly.

Below are listed four kinds of Safety Cautions and Suggestions:



#### Danger!

- If any abnormal phenomena are found (e.g. smell of fire), please cut off the power supply immediately and contact the dealer to find out the handling method.  
In such case, to continue using the air conditioner will damage the conditioner and may cause electrical shock or fire hazard.
- When maintenance and repair are needed, call specialist to handle it.  
Incorrect maintenance and repair may cause water leak, electrical shock and fire hazard.
- Do not put fingers or any other object into the inlet/outlet and swing louver while the conditioner is in operation. Switch off.  
Because the high-speed fan is very dangerous and may cause injuries.
- Call the specialist to take measures to prevent the refrigerant from leaking.  
Leaking refrigerant over certain density may cause oxygen deficiency. If the air conditioner is installed in a small room be sure to take measures in order to prevent suffocation in case of refrigerant leakage.
- When air conditioner is removed and reinstalled dealer should be responsible for them.  
Incorrect installation may cause water leaking, electrical shock and fire hazard.
- After extended use of air conditioner the base should be checked for any damages.  
If the damaged base is not repaired, the unit may fall down and cause accidents.
- Nothing or nobody should be allowed to stand on outdoor unit.  
Falling articles or people may cause accidents.
- Don't operate the air conditioner with damp hands. Risk of electrocution.
- Only use correct type fuse.  
Do not use wire or any other materials replacing fuse, otherwise may cause faults or fire accidents.
- Don't place any naked flame heater in the airflow of air conditioner, which may cause incomplete combustion.
- Do not use flammable sprays near air conditioner, otherwise may cause fire accident.
- Air conditioner should be cleaned only after power supply is cut off to keep from shock or hurt.
- Don't clean air conditioner with water.  
Otherwise may cause electrocution.
- Connect earthing wire.  
Earthing wire should not be connected to the gas

pipe, water pipe, tightening conductor or phone line. Incorrect earthing may cause shock.

- Use discharge pipe correctly to ensure efficient discharge.  
In correct pipe usage may cause water to leak.
- Air conditioner must not be installed in environment with inflammable gases.  
Inflammable gases near the air conditioner may cause fire hazard.
- Install electrical circuit breaker.  
Without circuit breaker, electric shocks are easily caused.
- When using insecticides, do not operate air conditioner.  
Otherwise the poisonous chemicals may settle in air conditioner, which may harm health of chemical-allergic people.
- Avoid cooling air blowing on people too long, and don't let the room temperature decrease too low either.  
Discomfort or a health hazard may arise.
- Conditioner should not be used for any other purpose other than air conditioning.  
Don't use air-conditioner for any other special purposes, e.g., the preservation and protection of food, animals, plants, precision apparatus as well as work of art, otherwise the qualities of these articles may be damaged.
- The air flow should not blow directly on pets or plants.  
Otherwise they will suffer damage.

### 3 Main points of Operation

#### • Operation of Air Conditioner

When the environmental humidity is great, water may drip from the air outlet in cooling or drying mode.

#### • 3-minute Protection Function

If restarting the unit immediately after stopping, the compressor will start only 3 minutes later to protect the machine.

#### • Variation of Fan Speed

If fan speed in auto mode, it will automatically lower when the room temperature close to the setting temperature in cooling mode.

In heating mode, the compressor stops when the room temperature at setting temperature and fan turns into low speed or stops.

In Dry mode, fan speed will be automatically varied.

#### • Remote Control

There is a telecommunication interface for remote control on the control panel of the indoor unit. After the peripheral equipment has been installed in accordance with the instruction manual of the selected remote control detector, the air conditioner will be computerized and remote controlled.

#### Prevent Cool Air Blowing

In heating mode, the indoor fan will not run immediately after the unit starts to prevent the cool air blowing.

#### • Defrosting Function

In heating mode, when frost formed on the outdoor heat exchanger, the air conditioner will automatically defrost a few minutes. During defrosting, both indoor and outdoor fan will stop running. When defrosting is finished, air conditioner will automatically return to running.

#### • Hints

The air conditioner absorbs heat from outside and releases inside when in heating mode, therefore the outside environmental temperature will affect heating effects.

#### • Power Failure Compensation (to be applied when necessary)

After the power failure compensation is set, if power failure suddenly occurs while the air conditioner is working, it will resume the previous working state when the power is supplied again.

#### • Setting Method

When the remote controller is on (excluding timer mode and fan mode), press the "sleeping" button on the remote controller 10 times within 5 seconds and after the buzzer rings 4 times, the air conditioner will enter the state of power failure compensation.

#### • Cancel Method

Press the "sleeping" button on the remote controller 10 times within 5 seconds, and after the buzzer sounds twice, the power failure compensation mode will be cancelled.

#### Note!

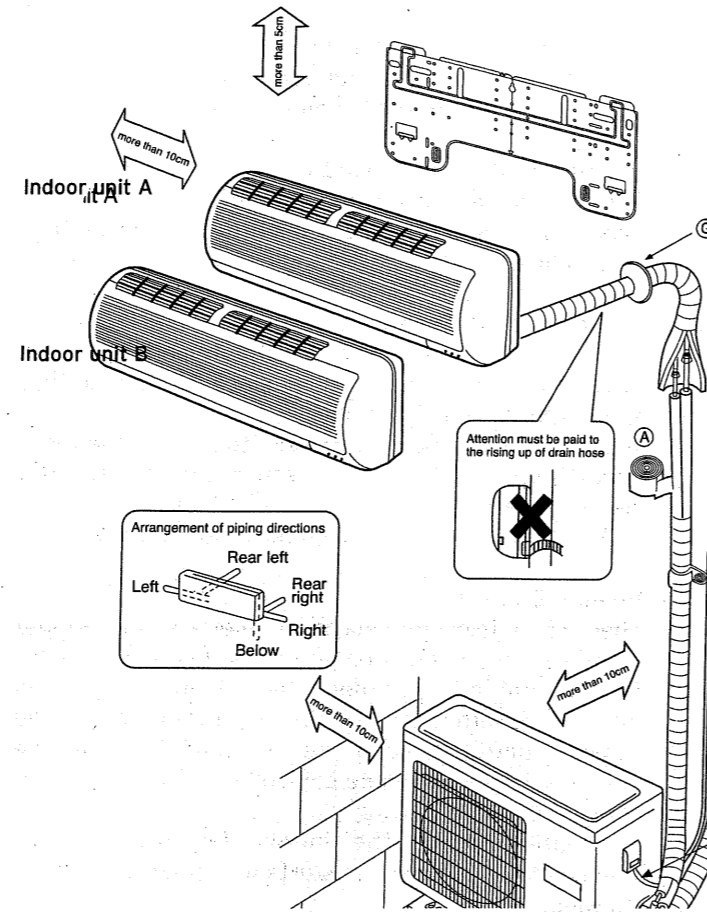
**When a power failure suddenly occurs while the air conditioner is working after the power failure compensation is set. If the air conditioner will not be used for a long time, please cut off the power supply to prevent its operation from being restored after the power is supplied again, or press the "Switch On/Off" button after the power returns.**

## 4 Units location

### 4 Units location

#### 4.1 Optional parts for piping

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



#### 4.2 Accessory parts

No	Accessory parts	Number of articles
1	Remote controller	2
2	R-03 dry battery	4
3	Mounting plate	2
4	Drain hose	2
5	(Ø 4x50) Steel nail, cement	12
6	Screw (Ø 4x25), plastic cap	8
7	Drain-elbow	1
8	Cover	2
9	Cushion	4
10	Connecting cable	2
11	Pipe supporting plate	2

## Units location 4

#### 4.3 Indoor unit dimensions

VA 5-025 MAHWI	795	265	182	7,60 kg
VA 5-025 MAHWI	795	265	182	7,60 kg

Units in mm.

#### 4.4 Outdoor unit dimensions

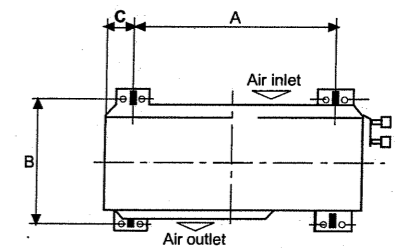
VA 5-050 M2HO	810	680	288	59 kg
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Units in mm.

#### 4.5 Outdoor unit dimensions between legs

MODEL	A	B	C
VA 5-050 M2HO	583	319,5	113,5

Units in mm.



**5 Indoor unit installation**

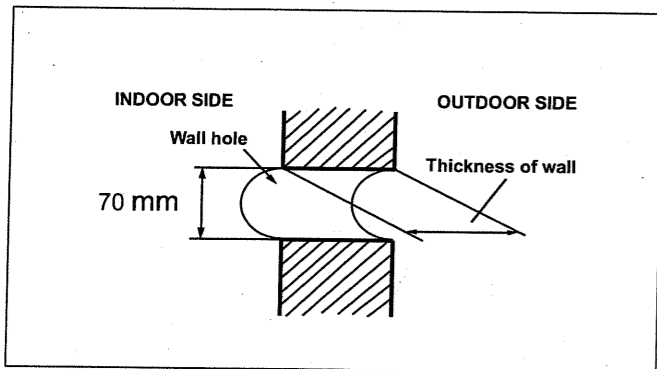
**5.1 Fix the installation plate**

When the mounting plate is first fixed:

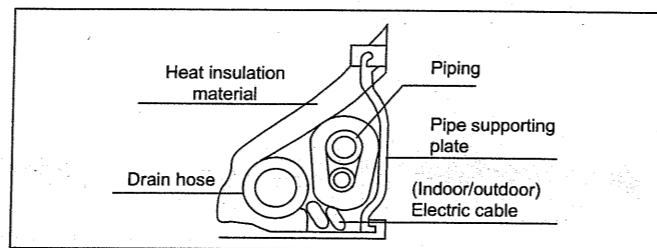
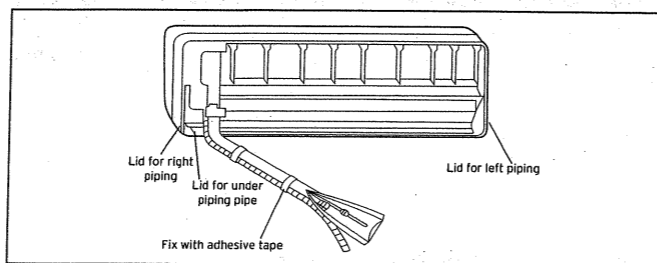
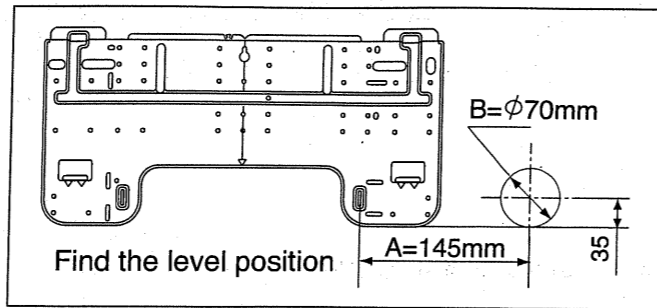
- 1 Carry out, based on the neighboring pillars or lintels, a proper leveling for the plate to be fixed against the wall, then temporarily fasten the plate with one steel nail.
- 2 Make sure once more the proper level of the plate, by hanging a thread with a weight from the central top of the plate, then fasten securely the plate with the attachment steel nail.
- 3 Find the wall hole location A using a measuring tape.

**5.2 Drill holes on the wall**

- 1 Make a hole of 70mm in diameter, slightly descending to outside the wall.
- 2 Install piping hole cover and seal it off with putty after installation.



**Fix the installation plate and drill holes on the wall installation plate**



**5.3 Indoor unit installation**

**5.3.1 Rear piping**

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

**5.3.2 Left / left-rear piping**

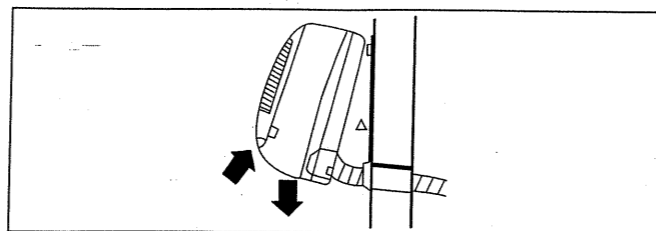
- In the case of left side piping, cut away, with a nipper, the lid for left piping.
  - In the case of left-rear piping, bend the pipes according to the piping direction to the mark of hole for left-rear piping which is marked on heat insulation materials.
- 1 Insert the drain hose into the dent of heat insulation materials of indoor unit.
  - 2 Insert the indoor/outdoor electric cable from backside of indoor unit, and pull it out on the front side, then connect them.
  - 3 Cover the connection part with heat insulation materials closely, and make sure fixing with adhesive tape. Indoor/outdoor electric cable and drain hose must be bound with refrigerant piping by protecting tape.

**5.3.3 Other direction piping**

- Cut away, with a nipper, 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 crash pipes.
- Connect beforehand the indoor/outdoor electric cable, and then pull out the connected to the heat insulation of connecting part specially.

**5.3.4 Fixing the indoor unit body**

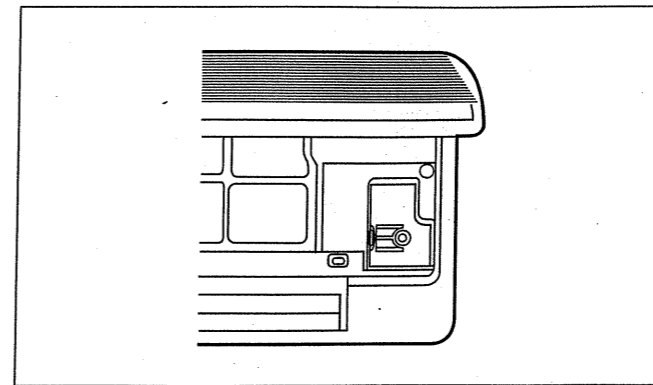
- Hang surely the unit body onto the upper notches of the mounting plate. Move the body from side to side to verify its secure fixing.
- In order to fix the body onto the mounting plate, hold up the body aslant from the underside and then put it down perpendiculary.



**5.4 Connecting the indoor/outdoor electric cable**

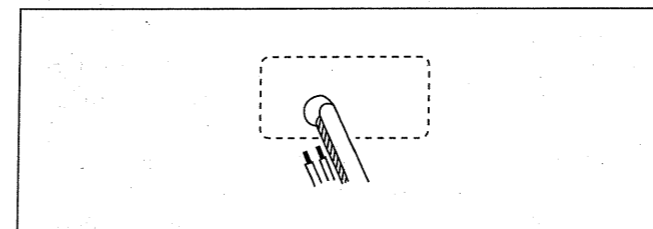
**5.4.1 Removing the wiring cover**

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



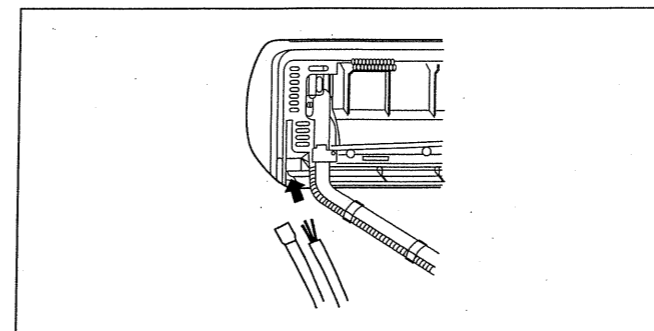
**5.4.2 When connecting the cable after installing the indoor unit**

- 1 Insert from outside the room cable into left side of the wall hole, in which the pipe has already existed.
- 2 Pull out the cable on the front side, and connect.

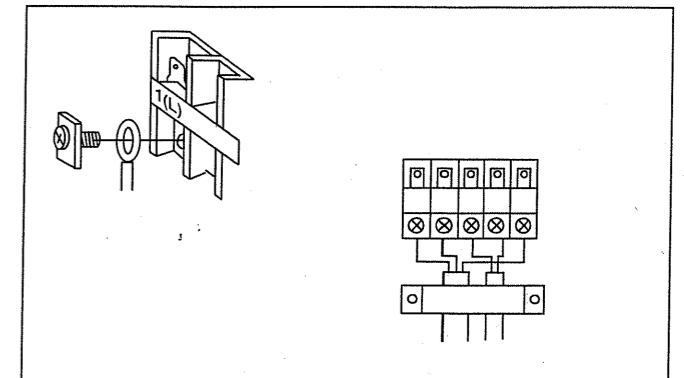


**5.4.3 When connecting the cable before installing the indoor unit**

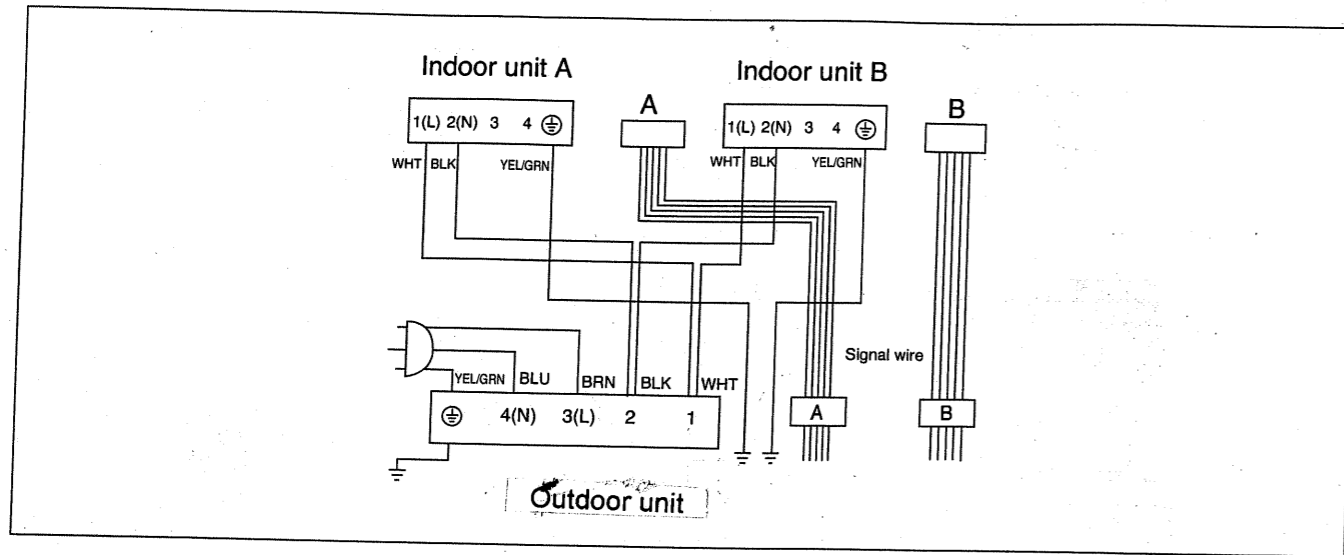
- Insert the cable from the back side of the unit, then pull it out on the front side.
- Loosen the screws and insert the cable ends fully into terminal block, then tighten the screws.
- Pull the cable slightly to make sure the cables have been properly inserted and tightened.
- After the cable connection, never fail to fasten the connected cable with the wiring cover.



- 1 If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similar qualified person.
- 2 If the fuse on PC board is broken please change it with the type of T.3.15A/250V.
- 3 The wiring method should be in line with the local wiring standard.



**Note!**  
When connecting the cable, confirm the terminal number of indoor and outdoor units carefully. If wiring is not correct, proper operation can not be carried out and will cause defect.



Model	Voltage (V)	Max. current (A)	Start current (approx.)	Minimum supply section (mm <sup>2</sup> )	Recommended supply section (mm <sup>2</sup> )	Fluoride gas (25 m cable)	Thermal magnetic circuit breaker type D	Immediate residual current protector
VAH 5-050 M2	230/1/50 Hz	20	60	2,5	2,5	4,36%	20	0,03 A

An individual branch circuit and a single receptacle used only for this air conditioner must be available.

- The installation of electric assault to the machine should have a Bipolar court or Tetrapolar switch according to machine model, (single phase or treephase), of at least 3 mm of separation among contacts (norm EN-60335-2-40).
- To ensure that this appliance complies with EN-61000-3-11 standard verify that the service current supply capacity is >100A at the interface point.
- Perform the wiring with sufficient capacity. Installation places legally require a short circuit isolator to be attached to prevent electrical shock.
- Power voltage should be in the range of 90%~110% of the rated voltage.
- The plug of the air conditioner takes a ground leg, therefore the customers should use a grounding socket, so that, the air conditioner can be grounded efficiently.

**Remark per EMC Directive 89/336/EEC**

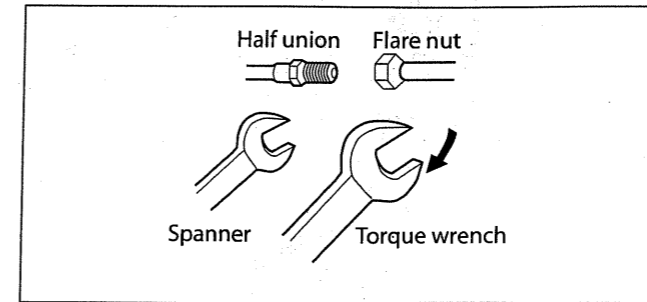
In order to prevent flicker impressions during the start of the compressor (technical process), following installation conditions do apply.

- The power connection for the air conditioner has to be done at the main power distribution. The distribution has to be of an low impedance, normally the required impedance reaches at a 32 A fusing point.
- No other equipment has to be connected with this power line.
- For detailed installation acceptance, please refer to your contract with the power supplier if restrictions do apply for products like washing machines, air conditioner or electrical ovens.
- For power details of the air conditioner, refer to the rating plate of the product.
- For any question contact your local dealer.

**6 Outdoor unit installation**

**6.1 Connecting of pipes**

- To bend a pipe, give the roundness as large as possible not to crush the pipe.
- Connecting the pipe of gas side first makes working easier.
- The connection pipe is specialized for R-407C



**Caution!** Force fastening without careful centering may damage the threads and cause a leakage of gas.

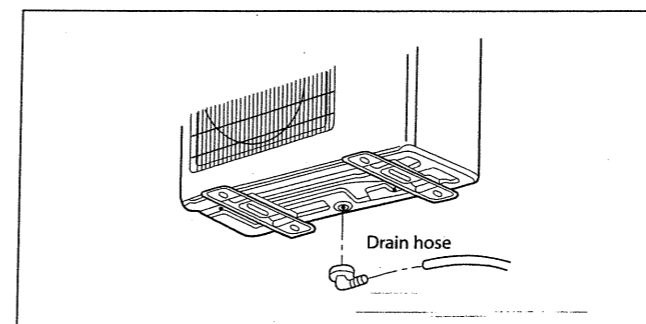
**6.2 Connection**

- 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.
- Insert the cable according to terminal number in the same manner as the indoor unit.
- If wiring is not correct, proper operation can not be carried out and controller may be damaged.
- Fix the cable with a damp.

**6.3 Attaching drain-elbow**

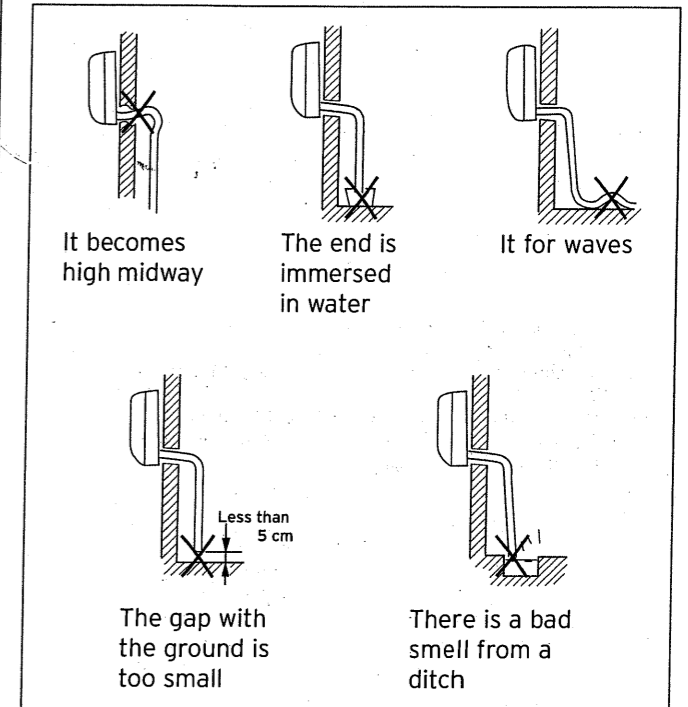
- If the drain-elbow is used, please attach it as figure.

**Note!** Only for heat pump unit.



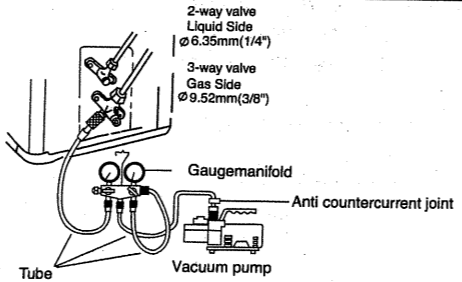
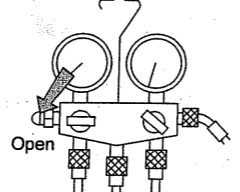
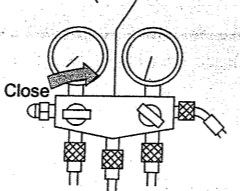
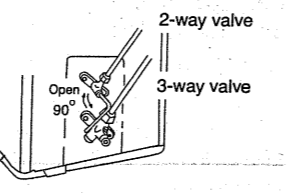
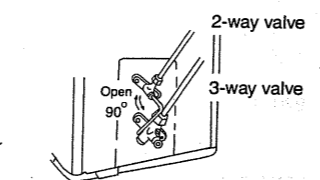
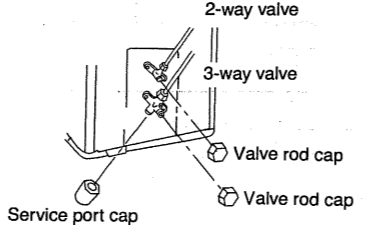
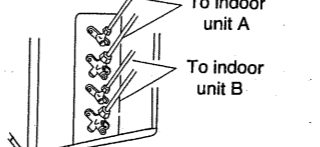
**6.4 On drainage**

- Please install the drain hose so as to be downward slope without fail.
- Please don't do the drainage as shown below.
- Please pour water in the drain pan of the indoor unit, and confirm that drainage is carried out surely to outdoor.
- In case that the attached drain hose is in a room, please apply heat insulation to it without fail.



MODELS	PIPES		MAX. LENGTH	MAX. WEIGHT		LOAD R-407C	ADDITIONAL CHARGE grs.
	LIQUID	GAS		Above I.U.	Below O.U.		
VAH 5-050M2	1/4"	3/8"	10 m.	5 m.	5 m.	1560 gr.	5 m. 20gr/m.

6.5 Purging method: to use vacuum pump

<p>Detach the service port's cap of 3-way valve, the valve rod's cap for 2-way valve and 3-way's, connect the service port into the projection of charge hose (low) for gaugemanifold. The connect the projection of charge hose (center) for gaugemanifold into vacuum pump.</p>	
<p>Open the handle at low in gaugemanifold, operate vacuum pump. If the scale-moves of gauge (low) reach vacuum condition in a moment, check once again.</p>	
<p>Vacuumize for over 15min. And check the level gauge which should read -0.1MPa (-76 cm Hg) at low pressure side. After the completion of vacuumizing, close the handle "Lo" in gaugemanifold and stop the operation of the vacuum pump. Check the condition of the scale and hold it for 1-2min. If the scale-moves back in spite of tightening, make flaring work again, the return to the beginning of 3.</p>	
<p>Open the valve rod for the 2-way valve to and angle of anticlockwise 90 degree. After 6 seconds later, close the 2-way valve and make the inspection of gas leakage.</p>	
<p>No gas leakage? In case of gas leakage, tighten parts of pipe connection. If leakage stops, then proceed 6 steps.</p>	<p>If it does not stop gas leakage, discharge whole refrigerants from the service port. After flaring work again and vacuumize, fill up prescribed refrigerant from the gas cylinder.</p>
<p>Detach the charge hose from the service port, open 2-way valve and 3-way. Turn the valve rod anticlockwise until hitting lightly.</p>	
<p>To prevent the gas leakage, turn the service port's cap, the valve rod's cap for 2-way valve and 3-way's a little more than the point where the torque increases suddenly.</p>	
<p>After attaching the each caps, check the gas leakage around the caps.</p>	

7 Maintenance and check

7.1 Maintenance instructions

- Never add oil to the appliance; the compressor is filled with polyaldohol oil, a special oil which cannot tolerate the presence of other oils.
- The instruments used for filling, pressure measurements, emptying under vacuum and recovering the fluid, must be compatible and only used for the R-407C fluid.
- In the case of a new charge do not use the charging cylinder, use a balance and a dip pipe type R-407C cylinder, charge the weight of R-407C as per the value indicated on the unit's identification plate (for "split systems", refer to the installation instructions as the charge must consider the length of the connecting lines).
- The charge must be undertaken in liquid phase.
- In the case of leakage, do not complete the charge: recover the remaining refrigerant or recycling and perform a total charge. Recovery, recycling or the destruction of the fluid must be done in compliance with the laws in force in the country concerned.
- If the refrigerant circuit is opened, you must avoid the entry of air into the circuit as much as possible, replace the filter drier and perform the "vacuum operation" at a minimum level of -0.1 MPa (-76 cm Hg).

7.2 Check for installation and test run

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

Test Run Checklist (Tick the boxes <input type="checkbox"/> )	
<input type="checkbox"/>	Does gas leak from the pipe connection?
<input type="checkbox"/>	Is the pipe connection heat insulated?
<input type="checkbox"/>	Are the connecting wirings of the indoor and outdoor unit firmly inserted in the terminal block?
<input type="checkbox"/>	Is the connecting wiring of the indoor and outdoor unit firmly in place?
<input type="checkbox"/>	Is the drainage securely carried out?
<input type="checkbox"/>	Is the earth line securely connected?
<input type="checkbox"/>	Is the indoor unit securely fixed?
<input type="checkbox"/>	Is the power source voltage correct?
<input type="checkbox"/>	Is there any noise?
<input type="checkbox"/>	Does the lamp usually illuminate?
<input type="checkbox"/>	Are cooling and heating (when in heat pump) performed normally?
<input type="checkbox"/>	Does the room temperature regulator operate as normal?

**Caution!**

- If the refrigerant of the air conditioner lacks, it is necessary to make all the refrigerant out. Vacuumize first, then charge the liquid refrigerant into air conditioner according to the amount marked on the name plate.
- Please do not let other cooling medium, except specified one (R-407C), or air to enter into the cooling circulation system. Otherwise, there will be abnormal high pressure in the system to make it crack and lead to personal injuries.