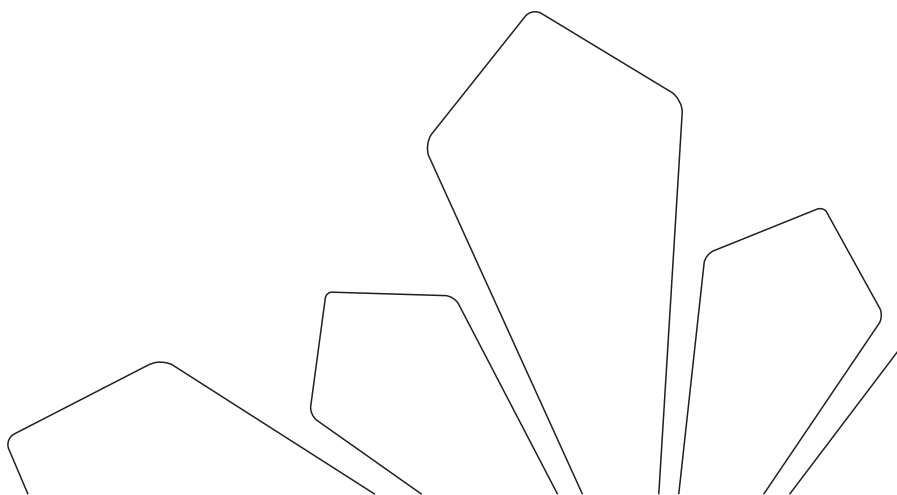




# **AIR CONDITIONER**

# **INSTRUCTION MANUAL**

MODEL: KM42H4O



# Preface

KINGHOME Free Match System adopts the cutting-edge manufacturing technology and takes global acknowledged, environmental-friendly R410A as refrigerant, which is a green product in the 21<sup>st</sup> century. Please carefully read this manual before installation and operation. Instructions before reading this manual:

- (1) This unit measures on the base of UL1995.
- (2) Free Match System conforms to design standard: ARI 210240-2008.
- (3) For guaranteeing personal safety when operating this system, please strictly follow the instructions listed in the manual.
- (4) The total capacity of the indoor units which runs at the same time can not exceed that of the outdoor units; otherwise, the cooling (heating) effect of each indoor unit would be poor.

|  |         |
|--|---------|
| Model  | KM42H4O |
| Minimum number of connectable indoor units   | 2       |
| Maximum number of connectable indoor units   | 5       |
| Minimum capacity of connectable indoor units | 18KBtu  |
| Maximum capacity of connectable indoor units | 56KBtu  |

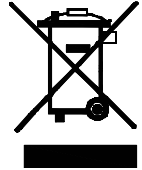
- (5) Switch the main power on 8 hours before starting the unit, helpful for a successful startup.
- (6) It is a normal phenomenon that the indoor unit fan will still run for 20~70 seconds after the indoor unit receives the “stop” signal so as to make full use of after-heat for the next operation.
- (7) When the running modes of the indoor and outdoor units conflict, it will be indicated on the display of the wired controller in five seconds and then the indoor unit will stop. In this case, they can back to the normal condition by harmonizing their running modes: the cooling mode is compatible with the dehumidifying mode and the fan mode can go with any other mode. If the supply power fails when the unit is running, then the indoor unit will send the “start” signal to the outdoor unit three minutes later after power recovery.
- (8) Cautions for the Debugging and Maintenance Personnel:  
During debugging and maintenance, prior to the startup of the compress make sure the heating belt of the compressor has been energized for at least eight hours! Once the compressor is started, it must be guaranteed that it works continuously for at least 30 minutes, otherwise it would be damaged!

## User Notice

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

**DISPOSAL:** Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.




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## Free match series

### 1 Safety Precautions

|   |  |
|---|--|
|  | This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death. |
| <b>▲WARNING</b>   | This mark indicates procedures which, if improperly performed, might lead to the death or serious injury of the user.  |
| <b>▲CAUTION</b>   | This mark indicates procedures which, if improperly performed, might possibly result in personal harm to the user, or damage to property.  |
| <b>NOTICE</b>   | NOTICE is used to address practices not related to personal injury.  |

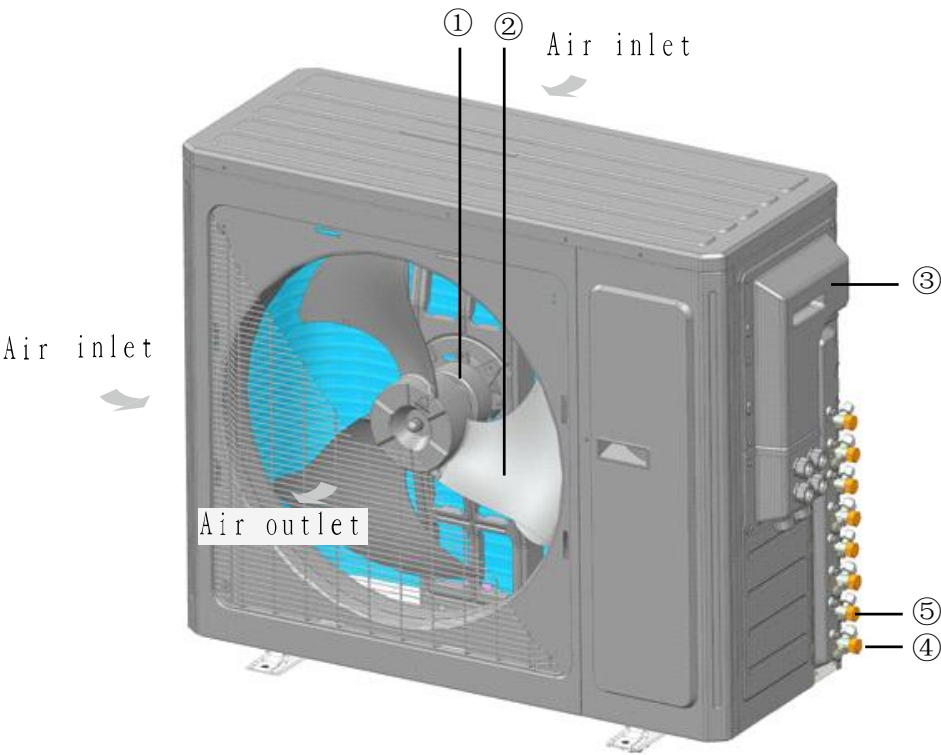
| <b>▲ WARNING</b> |  |
|------------------|--|
| 1)               | Instructions for installation and use of this product are provided by the manufacturer and accompany each unit. The instruction of installation, maintenance and operating and safety instructions shall be included.  |
| 2)               | Installation must be performed in accordance with the requirements of NEC and CEC by authorized personnel only.  |
| 3)               | Before installation, please check if the power supply is in accordance with the requirements specified on the nameplate. And also take care of the power safety.   |
| 4)               | Make sure the unit can be earthed properly and soundly after plugging into the socket so as to avoid electric shock. Please do not connect the ground wire to gas pipe, water pipe, lightning rod or telephone line.   |
| 5)               | Be sure to use the exclusive accessory and part to prevent the water leakage, electric shock and fire accidents.   |
| 6)               | If refrigerant leakage happens during installation, please ventilate immediately. Poisonous gas will emerge if the refrigerant gas meets fire.   |
| 7)               | Wire size of power cord should be large enough. The damaged power cord and connection wire should be replaced by exclusive cable.  |
| 8)               | After connecting the power cord, please fix the electric box cover properly in order to avoid accident.  |
| 9)               | Never fail to comply with the nitrogen charge requirements. Charge nitrogen when welding pipes.  |
| 10)              | Never short-circuit or cancel the pressure switch to prevent unit damage.  |
| 11)              | Please firstly connect the wired controller before energization, otherwise wired controller can not be used.   |
| 12)              | Before using the unit, please check if the piping and wiring are correct to avoid water leakage, refrigerant leakage, electric shock, or fire etc.   |
| 13)              | Do not insert fingers or objects into air outlet/inlet grille.   |
| 14)              | Open the door and window and keep good ventilation in the room to avoid oxygen deficit when the gas/oil supplied heating equipment is used.  |
| 15)              | Never start up or shut off the air conditioner by means of directly plug or unplug the power cord.   |
| 16)              | Turn off the unit after it runs at least five minutes; otherwise it will influence oil return of the compressor.   |
| 17)              | Do not allow children operate this unit.   |
| 18)              | Do not operate this unit with wet hands.   |
| 19)              | Turn off the unit or cut off the power supply before cleaning the unit, otherwise electric shock or injury may happen.   |
| 20)              | Never spray or flush water towards unit, otherwise malfunction or electric shock may happen.   |
| 21)              | Do not expose the unit to the moist or corrosive circumstances.  |
| 22)              | Electrify the unit 8 hours before operation. Please switch on for 8 hours before operation. Do not cut off the power when 24 hours short-time halting (to protect the compressor).   |
| 23)              | Volatile liquid, such as diluent or gas will damage the unit appearance. Only use soft cloth with a little neutral detergent to clean the outer casing of unit.  |
| 24)              | Under cooling mode, please don't set the room temperature too low and keep the temperature difference between indoor and outdoor unit within 41°F  |
| 25)              | If anything abnormal happens (such as burning smell), please power off the unit and cut off the main power supply, and then immediately contact KINGHOME appointed service center. If abnormality keeps going, the unit might be damaged and lead to electric shock or fire. |
| 26)              | User is not allowed to repair the unit. Fault service may cause electric shock or fire accidents. Please contact KINGHOME appointed service center for help.   |

KINGHOME is not responsible of personal injury or equipment damage caused by improper installation and commission, unnecessary service and incapable of following the rules and instructions listed in this manual.

2 Product Introduction

KINGHOME Free Match System adopts inverter compressor technology. According to change displacement of compressor, stepless capacity regulation within range of 15%~120% can be realized. Various product lineup is provided with capacity range from 30KBtu to 42KBtu, which can be widely used in boarding house and working area and especially applicable to the place with variable load change. KINGHOME commercial air conditioner is absolutely your best choice.

2.1 Name of Main Parts



KM42H4O

| NO.  | ①     | ②   | ③            | ④                  | ⑤                     |
|------|-------|-----|--------------|--------------------|-----------------------|
| Name | Motor | Fan | Electric Box | Gas valve assembly | Liquid valve assembly |

Fig1

## 2.2 Combinations for outdoor and indoor units

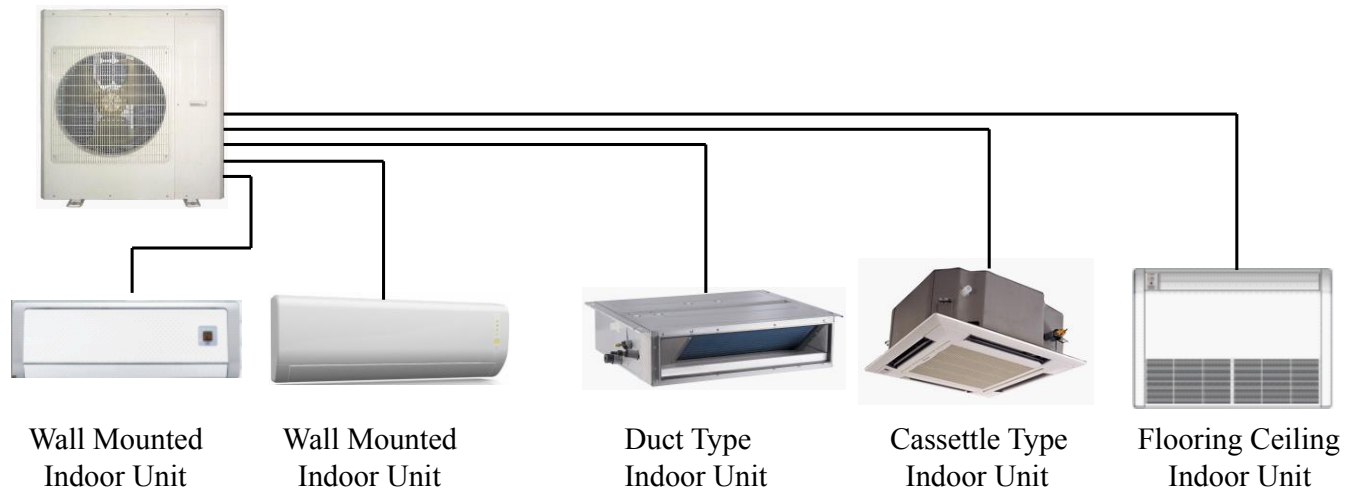


Fig 2

See Fig.2 for Combinations for Outdoor and Indoor Units. For the free match series air conditioning system, one outdoor unit is able to drive up to five indoor units which can be cassette type, duct type, wall-mounted or floor ceiling type. The outdoor unit will run as long as any one indoor unit receives the running command, and all indoor units stop once the outdoor unit is turned off.

Table 1 Energy Level and Capacity Code of the Indoor

| Indoor unit      |      | Model       | Capacity Code | Outdoor unit |
|------------------|------|-------------|---------------|--------------|
| Wall mounted     | Lomo | KW09HQ2B8DI | 09            | KM42H4O      |
|                  |      | KW12HQ2B8DI | 12            |              |
|                  |      | KW18HQ2B8DI | 18            |              |
| Flooring ceiling |      | KM09HTDI    | 09            |              |
|                  |      | KM12HTDI    | 12            |              |
|                  |      | KM18HTDI    | 18            |              |
|                  |      | KM24HTDI    | 24            |              |
| Duct type        |      | KM09HFDI    | 09            |              |
|                  |      | KM12HFDI    | 12            |              |
|                  |      | KM18HFDI    | 18            |              |
|                  |      | KM21HFDI    | 21            |              |
|                  |      | KM24HFDI    | 24            |              |
| Cassette type    |      | KM12HKDI    | 12            |              |
|                  |      | KM18HKDI    | 18            |              |
|                  |      | KM24HKDI    | 24            |              |
| Console          |      | KM09HEDI    | 09            |              |
|                  |      | KM12HEDI    | 12            |              |
|                  |      | KM18HEDI    | 18            |              |



## Free match series

---

### 2.3 Rated working condition

Table 2

|                | Indoor side state |                   | Outdoor side state |                   |
|----------------|-------------------|-------------------|--------------------|-------------------|
|                | Dry buib temp. °F | Wet buib temp. °F | Dry buib temp. °F  | Wet buib temp. °F |
| Rating cooling | 80.06             | 66.92             | 95                 | 75.02             |
| Rating Heating | 69.98             | 60.08             | 47                 | 43.00             |

#### ***NOTICE***

- 1) The following listed cooling /heating capacity and noise is tested before outgoing.
- 2) The parameters below are tested under rated working condition. If there is any change to them, please refer to the nameplate.
- 3) The parameters of heating capacity of indoor unit for heat pump excluded that of auxiliary electric heating power.
- 4) The performance parameters below are tested according to standard ANSI/AHRI 1230-2010.

### 2.4 The range of production working temperature

Table 3

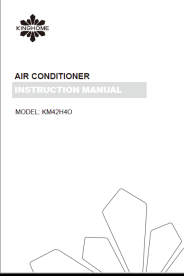
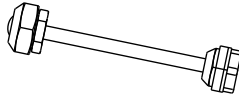
|                       |                             |
|-----------------------|-----------------------------|
| Cooling Working range | Outdoor temperature 0~118°F |
| Heating Working range | Outdoor temperature -4~86°F |

### 3 Preparation before Installation

#### 3.1 Standard parts

Please use the following standard parts supplied by KINGHOME.

Table 4

| Pars of Outdoor Unit |                        |   |          |        |
|----------------------|------------------------|---|----------|--------|
| Number               | name                   | picture   | Quantity | Remark |
| 1                    | Owner's manual         |  | 1        |        |
| 2                    | Tube connector subassy |  | 42K:9    |        |

#### 3.2 Selecting installation site

#### **⚠ WARNING**

- 1) Install the unit at a place where is adequate to withstand the weight of the unit and make sure the unit would not shake or fall off.
- 2) Never expose the unit under direct sunshine and rainfall. Install the unit at a place where is against dust, typhoon and earthquake.
- 3) Try to keep the unit away from combustible, inflammable and corrosive gas or exhaust gas.
- 4) Leave some space for heat exchanging and servicing so as to guarantee unit normal operation.
- 5) Keep the indoor and outdoor units close to each other as much units close to each other as much the pipe length and bends.
- 6) Never allow children to approach to the unit and take measures to prevent children touching the unit.

When the outdoor unit is totally surrounded by walls, the installation space of the unit should be as required in Fig.3.

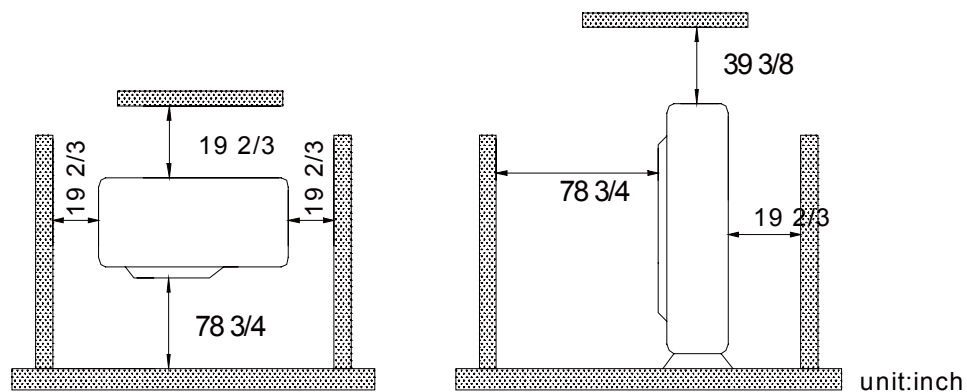


Fig 3

## Free match series

### 3.3 Piping Connection

The maximum pipe length is shown in the following table. When the distance between units (piping length) is out of the range listed below, normal run of the unit can not be guaranteed.

Table 5

| Model   | Connecting Pipe (inch) |       | Max. Pipe length(ft) | Max. Height Difference between Indoor Unit and Outdoor Unit (ft)  |
|---------|------------------------|-------|----------------------|---|
|         | Liquid                 | Gas   |                      |   |
| KM42H4O | Φ 1/4                  | Φ 3/8 | 246.1                | When the outdoor unit is above, maximum height difference between indoor and outdoor units is up to 49.2ft;<br>When the indoor unit is above, maximum height difference between indoor and outdoor units is up to 49.2ft; |

#### ***NOTICE***

- 1) Use water-proof insulating pipe.
- 2) Wall thickness of pipe: 0.019-0.039 inch; bearing pressure: 3.0MPa
- 3) The longer the connection pipe is, the more cooling and heating capacity will decrease.

## 4 Installation Instruction

### 4.1 Outline and dimension of the outdoor unit

KM42H4O

Outline dimension and Mounting holes

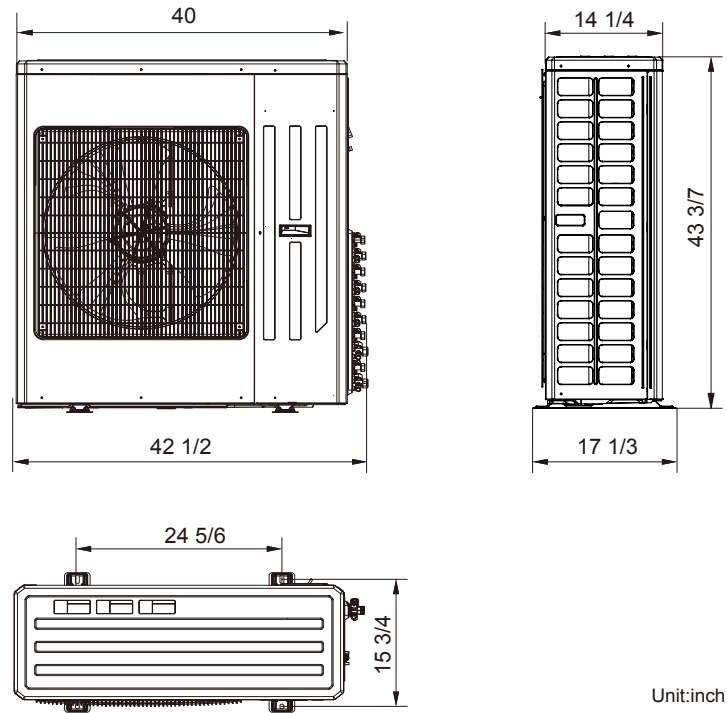


Fig 4

## Free match series

### 4.2 Installation of the Connection Pipe

Connecting piping for indoor unit and outdoor unit are in manifold mode. (As shown below).

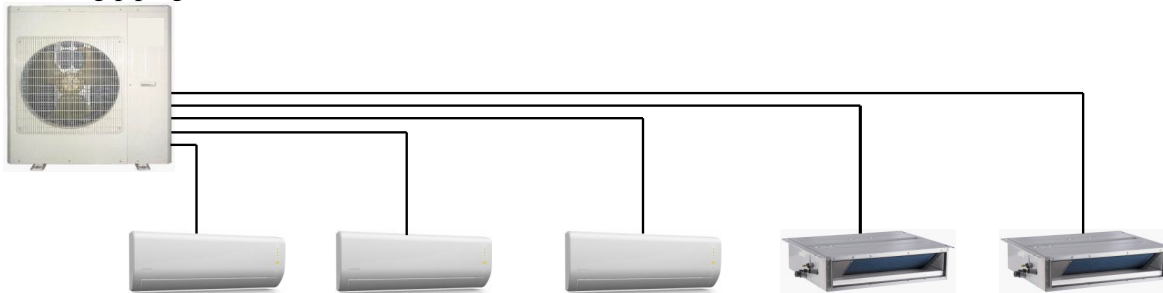
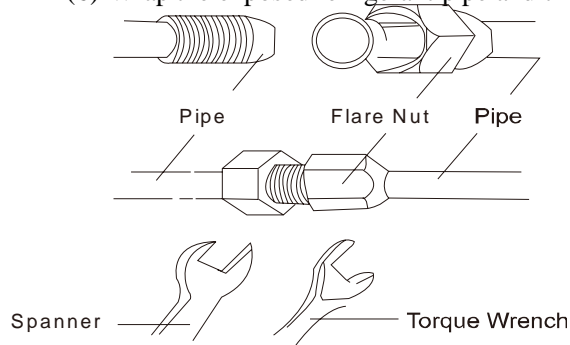


Fig 6

#### 4.2.1 Piping between the Indoor and Outdoor Units

- (1) If the liquid and gas stop valves which have the sign of A , B, C, D or E have not been connected to the indoor units, please turn off the screw cap with the spanner airproof.
- (2) Refer to Fig.7 for the moments of torque for tightening screws.
- (3) Let the flare end of the copper pipe point at the screw and then tighten the screw by hand.
- (4) After that, tighten the screw by the torque wrench unit it clatters (as shown in Fig.7).
- (5) The bending degree of the pipe can not be too small; otherwise it will crack. And please use a pipe tube bender to bend the pipe.
- (6) Wrap the exposed refrigerant pipe and the joints by sponge and then tighten them with the plastic tape.



Fid 7

| Pipe diameter | Thickness of copper tube | Tightening torque |
|---------------|--------------------------|-------------------|
| Φ1/4 inch     | ≥0.0315 inch             | 11~22 ft·lbf      |
| Φ3/8 inch     | ≥0.0315 inch             | 26~29 ft·lbf      |
| Φ1/2 inch     | ≥0.0315 inch             | 33~37 ft·lbf      |
| Φ5/8 inch     | ≥0.0394 inch             | 44~48 ft·lbf      |

### ⚠ CAUTION

- 1) During the connection of the indoor unit and the refrigerant pipe, never pull any joints of the indoor unit by force; otherwise the capillary pipe or other pipe may crack, which then would result in leakage.
- 2) The refrigerant pipe should be supported by brackets, that is, don't let the unit withstand the weight of it.
- 3) If the piping connection size of outdoor unit does not match the piping connection size of indoor unit, use the piping connection dimension of indoor unit. And use different-diameter joints which is installing on the place of the piping connection to connect the indoor unit.
- 4) For the Free Match system, each pipe should be labeled to tell which system it belongs to avoid mistaken inaccurate piping.

#### 4.2.2 Allowable pipe length and drop height among indoor and outdoor units

If the total refrigerant pipe length (liquid pipe) is smaller than that listed in the table below, no additional refrigerant will be charged.

Table 6

| Model                                | KM42H4O |
|--------------------------------------|---------|
| Total Liquid Pipe Length (a+b+c+d+e) | 131.2ft |

Allowable Length and Height Fall of the Refrigerant Pipe

Table 7

|  |                       | Allowable Value | Fitting Pipe                   |
|--|-----------------------|-----------------|--------------------------------|
|  |                       | KM42H40         |                                |
| Total length (actual length) of fitting pipe           |                       | 246.1ft         | $L_1+L_2+\dots+L_M (M \leq 5)$ |
| Length of farthest fitting pipe (ft)                   |                       | 82ft            | $L_X (X=1, 2, 3, 4, 5)$        |
| Height difference between outdoor unit and indoor unit | Outdoor unit at upper | 49.2ft          | H1                             |
|  | Outdoor unit at lower | 49.2ft          | H3                             |
| Height difference between indoor units (m)             |                       | 24.6ft          | H2                             |

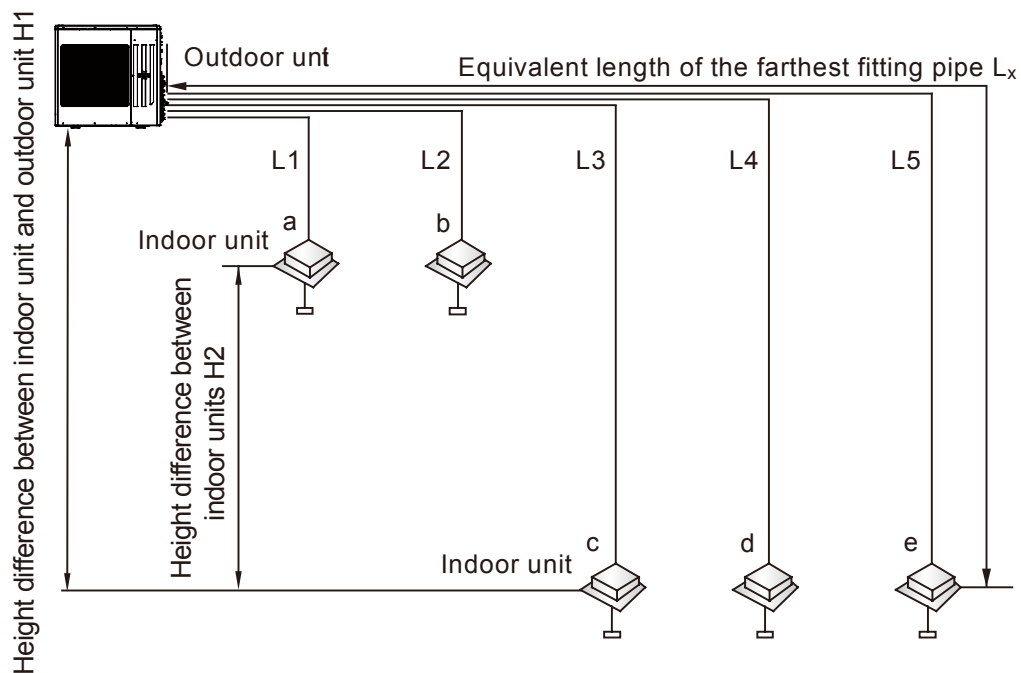


Fig 8

#### 4.2.3 Installation of the Protection Layer of the Refrigerant Pipe

(1) The refrigerant pipe should be insulated by the insulating material and plastic tape in order to prevent condensation and water leakage.

(2) The joints of the indoor unit should be wrapped with the insulating material and no gap is allowed on the joint of the indoor unit, as shown in Fig. 9.

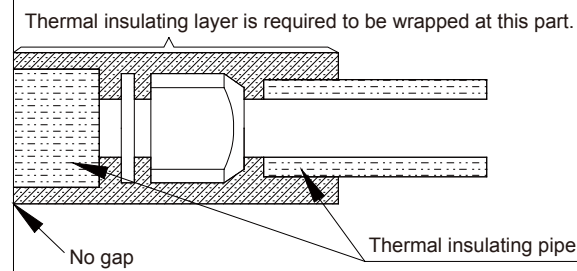


Fig 9

## Free match series

### **⚠ CAUTION**

After the pipe is protected well enough, never bend it to form a small angle; otherwise it would crack or break.

(3) Wrap the Pipe with Tape:

- Bundle the refrigerant pipe and electric wire together with tape, and separate them from the drain pipe to prevent the condensate water overflowing.
- Wrap the pipe from the bottom of the outdoor unit to the top of the pipe where it enters the wall. During the wrapping, the later circle should cover half of the former one.
- Fix the wrapped pipe on the wall with clamps.

### **⚠ CAUTION**

- Do not wrap the pipe too tightly; otherwise the insulation effect would be weakened. Additionally, make sure the drain hose is separated from the pipe.
- After that, fill the hole on the wall with sealing material to prevent wind and rain coming into the room.

#### 4.2.4 Support and protection for pipeline

Support should be made for hanging connection pipe. Distance between each support can not be over 1m.

### 4.3 Air Purging and Refrigerant Charge

#### 4.3.1 Air purging

(1) The refrigerant has been charged into the outdoor unit before shipment, while additional refrigerant still need be charged into the refrigerant pipe during the field installation.

(2) Check if the liquid valve and the gas valve of the outdoor unit are closed fully.

(3) As shown in the following figure (Fig.10), expel the gas inside the indoor unit and refrigerant pipe out by the vacuum pump.

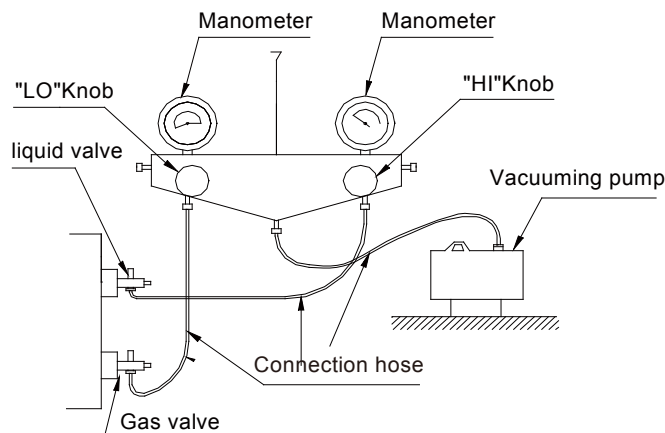


Fig 10

(4) When the compressor is not running, charge the R410A refrigerant into the refrigerant pipe from the liquid valve of the outdoor unit (do not do it from the gas valve).

#### 4.3.2 Additional refrigerant charging

(1) Refrigerant Charge in the Outdoor Unit before Shipment

### **NOTICE**

- Outdoor unit has been charged refrigerant before delivery. The refrigerant charge is not included those charged additionally in the indoor unit and the refrigerant pipe.
- The amount of the additional refrigerant charge is dependent on the diameter and length of the liquid refrigerant pipe which is decided by the actual yield installation requirement.
- Record the additional refrigerant charge for future maintenance.

## (2) Calculation of the Additional Refrigerant Charge

Additional Refrigerant Charge=

$$(\Sigma \text{Length of Liquid Pipe } \phi 0.375 \times 54 + \Sigma \text{Length of Liquid Pipe } \phi 0.25 \times 22) - 880$$

The biggest additional refrigerant charge value is 800g. It means that if the calculated value exceed 800g, the additional refrigerant charge takes 800g, while the calculated value less than 800g, the additional refrigerant charge takes the calculated value.

## 4.4 Electric Wiring

### 4.4.1 Wiring precautions

- (1) The installation must be done in accordance with the national wiring regulations.
- (2) Only the power cord with the rated voltage and exclusive circuit for the air conditioning can be used.
- (3) Do not pull the power cord by force.
- (4) The electric installation should be carried out by the technician as instructed by the local laws, regulations and also this manual.
- (5) The diameter of the power cord should be large enough and once it is damaged it must be replaced by the dedicated one.
- (6) The earthing should be reliable and the earth wire should be connected to the dedicated device of the building by the technician. Besides, the air switch coupled with the leakage current protection switch must be equipped, which is of enough capacity and of both magnetic and thermal tripping functions in case of the short circuit and overload.

Table 8

| Models  | Power Supply  | Capacity of the air Switch (A) | Recommended Cord (pieces × sectional area) |
|---------|---------------|--------------------------------|--|
| KM42H4O | 208/230V~60Hz | 40                             | 3 × 0.0062 sq in                           |



# Free match series

KM42H4O

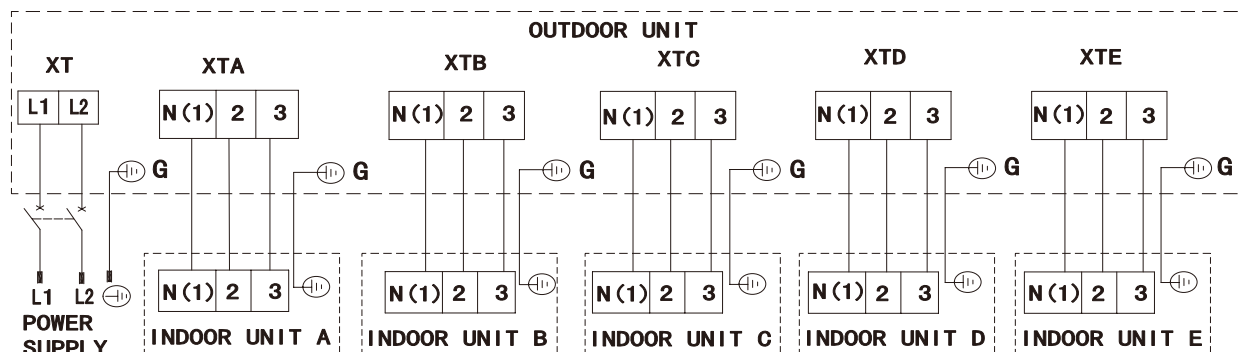


Fig 12

## 4.4.2 Earthing Requirements

- (1) The air conditioner is classified into the Class I appliances, so its earthing must be reliable.
- (2) The yellow-green line of the air conditioner is the earth line and can not be used for other purpose, cut off or fixed by the tapping screw; otherwise it would cause the hazard of electric shock.
- (3) The reliable earth terminal should be provided and the earth wire can not be connected to any of the following places.
  - ①Running water pipe;;
  - ②Coal gas pipe;
  - ③Sewage pipe;
  - ④Other places where the professional personnel think unreliable.

## 4.4.3 Electrical Cable Connection

| <b>⚠ CAUTION</b> |  |
|------------------|--|
| 1)               | The mistake connecting line will result in malfunction. After the electrical wiring working, ensure the wire between the connection place and the fixed place has a certain freedom degree.  |
| 2)               | The connection piping and connection line of each indoor unit should connect well according to the instruction.  |
| 3)               | The electric installation should be carried out by the technician as instructed by the local laws, regulations and also this manual.   |
| 4)               | The installation location should be dry, and can't be expose in direct sunlight or strong breeze.  |
| 5)               | Have to install a breaker in the circuit that can shut off the main power supply of the system. Besides, the air switch coupled with the leakage current protection switch must be equipped. |

## 4.4.4 Wiring of the Power Cord

- (1). Open the side plate.
- (2). Connect the power cord to the terminals “L1”, “L2” and also the earthing screw, and then connect the wiring terminals “N(1),2,3” of the indoor unit to those of the outdoor unit correspondingly. Please use the green bonding screw to connect the earthing cord. The location is showing in the figure 13.
- (3). Fix the power cord with wire clips.
- (4). Let the power cord go through the rubber ring.

### ⚠ CAUTION

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

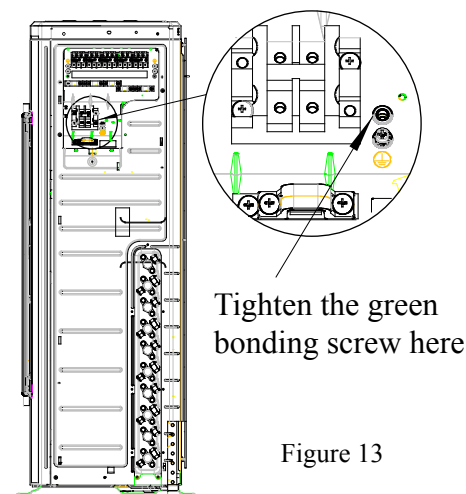


Figure 13

## 5 Troubleshooting

### **WARNING**

- 1) In the event of abnormal conditions (like, stinky smell), please shut off the main power supply immediately and then contact the KINGHOME appointed service center; otherwise the continuous abnormal running would damage the air conditioning unit and also would cause electric shock or fire hazard etc.
- 2) Do not repair the air conditioning personally but instead contact the professionally skilled personnel at the KINGHOME appointed service center, as the incorrect repair would cause electric shock or fire hazard etc.

Check before Contacting Service Center.

Table 9

| Check Items   | Conditions Might Happen                             | Check |
|---|---|-------|
| Has the unit been fixed firmly?   | The unit may drop, shake or emit noise.             |       |
| Have you done the gas leakage test?   | It may cause insufficient cooling/heating capacity. |       |
| Is the unit get proper thermal insulation?                                      | It may cause condensation and dripping.             |       |
| Does the unit drain well?   | It may cause condensation and dripping.             |       |
| Is the voltage in accordance with the rated voltage specified on the nameplate? | It may cause malfunction or damage the part.        |       |
| Is the electric wiring and piping connection installed correctly and securely?  | It may cause malfunction or damage the part.        |       |
| Has the unit been earthed securely?   | It may cause electrical leakage.                    |       |
| Is the power cord specified?  | It may cause malfunction or damage the part.        |       |
| Has the inlet and outlet been blocked?  | It may cause insufficient cooling/heating capacity. |       |

### ***NOTICE!***

If the air conditioner still runs abnormally after the above check and handling, please contact the maintenance serviceman at the local appointed service center and also give a description of the error occurred as well as the model of the unit.

## Free match series

### 6 The conditions listed below are not classified into errors.

Table 10

| Conditions               |  | Causes   |
|--------------------------|--|--|
| The unit does not run    | When restart the unit soon after it is stopped.              | The overload protection switch of the unit let the startup delayed for three minutes.                    |
|                          | As soon as power is on.                                      | The unit will stand by for approximate one minute.   |
| The unit blows out mist  | When the cooling operation starts.                           | The hi-humidity air indoor is cooled quickly.  |
| The unit generates noise | The unit “clatters” as soon as it starts running.            | It is the sound generated during the initialization of the electronic expansion valve.                   |
|                          | The unit “swishes” during the cooling operation.             | It is the sound when the refrigerant gas runs inside the unit.   |
|                          | The unit “swishes” when it is started or stopped.            | It is the sound when the refrigerant gas stops running.  |
|                          | The unit “swishes” when it is in and after the running.      | It is the sound when the draining system is operating.   |
|                          | The unit “squeaks” when it is in and after the running.      | It is the sound of frication generated by the skin plate etc which swells due to the temperature change. |
| The unit blows out dust. | When the unit restarts after it is not used for a long time. | The dust inside the unit is blown out again.   |
| The unit emits odors.    | When the unit is running.                                    | The odors absorbed in are blown out again.   |

### **NOTICE!**

**If problem can not be solved after checking the above items, please contact KINGHOME service center and show phenomena and models.**

Following circumstance are not malfunction

Table 11

| Malfunction                             |   | Reason   |
|---|---|--|
| Unit doesn't run                        | When unit is started immediately after it is just turned off                | Overload protection switch makes it run after 3 minutes delay  |
|   | When power is turned on   | Standby operating for about 1 minute   |
| Mist comes from the unit                | Under cooling   | Indoor high humidity air is cooled rapidly   |
| Noise is emitted                        | Slight cracking sound is heard when just turned on                          | It is noise when electronic expansion valve initialization   |
|   | There is consecutive sound when cooling                                     | That's sound for gas refrigerant flowing in unit   |
|   | There is sound when unit starts or stops                                    | That's sound for gas refrigerant stops to flow   |
|   | There is slight and consecutive sound when unit is running or after running | That's sound for operation of drainage system  |
|   | Cracking sound is heard when unit is operating and after operating          | That's sound caused by expansion of panel and other parts due to temperature change                            |
| The unit blows out duct                 | When unit runs after no operation for a long period                         | Dust in indoor unit is blew out  |
| The unit emits odor                     | Operating   | The room odor absorbed by the unit is blew out again   |
| Indoor unit still runs after switch off | After every indoor unit receive "stop" signal, fan will keep                | Indoor fan motor will keep running 20-70s so as to take good use of excess cooling and heating and prepare for |

## Free match series

|               | running                               | next operation  |
|---------------|---------------------------------------|---|
| Mode conflict | COOL or HEAT mode can not be operated | When the indoor operating mode conflicts with that of outdoor unit, indoor fault indicator will flash and conflict will be shown on the wired controller after 5 minutes. Indoor unit stops to run and meanwhile change outdoor operating mode as the same as that of indoor unit, then the unit will go back to normal. COOL mode doesn't conflict with DRY mode. FAN mode doesn't conflict with any mode. |

## Free match series

### 7 Troubleshooting

The error code will be displayed on the wired controller and the main board of the outdoor unit  
The meaning of each error, as shown in table 13.

Table 12

| Name of malfunction  | The indicator display |                |  |
|--|-----------------------|----------------|--|
|  | Yellow light          | Red light      | Green light  |
| Compressor runs  | Flash once            |                |  |
| Defrost  | Flash twice           |                |  |
| Anti-freezing protection                                   | Flash 3 times         |                |  |
| IPM protection   | Flash 4 times         |                |  |
| AC over-current protection                                 | Flash 5 times         |                |  |
| Over-burden protection                                     | Flash 6 times         |                |  |
| Compressor exhaust high temperature protection             | Flash 7 times         |                |  |
| Compressor overload protection                             | Flash 8 times         |                |  |
| Power protection   | Flash 9 times         |                |  |
| EEPROM reads and write protection                          | Flash 11 times        |                |  |
| Low PN voltage protection                                  | Flash 12 times        |                |  |
| Over voltage protection for PN                             | Flash 13 times        |                |  |
| PFC protection   | Flash 14 times        |                |  |
| PFC module temperature protection                          | Flash 15 times        |                |  |
| Low pressure protection                                    | Flash 17 times        |                |  |
| High pressure protection                                   | Flash 18 times        |                |  |
| Limit/decline frequency(electric current)                  |                       | Flash 1 times  |  |
| Frequency limit (exhaust)                                  |                       | Flash 2 times  |  |
| Frequency limit (Over-burden)                              |                       | Flash 3 times  |  |
| Outdoor ambient sensor malfunction                         |                       | Flash 6 times  |  |
| Outdoor tube sensor malfunction                            |                       | Flash 5 times  |  |
| Exhaust sensor malfunction                                 |                       | Flash 7 times  |  |
| Attain the temperature of switch on                        |                       | Flash 8 times  |  |
| Frequency limit(power)                                     |                       | Flash 13 times |  |
| Outdoor fan malfunction                                    |                       | Flash 14 times |  |
| Frequency limit(PFC module temperature)                    |                       | Flash 15 times |  |
| PFC module sensor malfunction                              |                       | Flash 16 times |  |
| Liquid pipe temperature sensor malfunction of A            |                       | Flash 17 times |  |
| Gas pipe temperature sensor malfunction of A               |                       | Flash 18 times |  |
| Liquid pipe temperature sensor malfunction of B            |                       | Flash 19 times |  |
| Gas pipe temperature sensor malfunction of B               |                       | Flash 20 times |  |
| Liquid pipe temperature sensor malfunction of C            |                       | Flash 21 times |  |
| Gas pipe temperature sensor malfunction of C               |                       | Flash 22 times |  |
| Liquid pipe temperature sensor malfunction of D            |                       | Flash 23 times |  |
| Gas pipe temperature sensor malfunction of D               |                       | Flash 24 times |  |
| Liquid pipe temperature sensor malfunction of E            |                       | Flash 25 times |  |
| Gas pipe temperature sensor malfunction of E               |                       | Flash 26 times |  |
| Exit of the condenser tube sensor malfunction              |                       | Flash 27 times |  |
| Correspondence is normal                                   |                       |                | Flash n times (n=indoor unit number)                 |
| Communication failure between indoor unit and outdoor unit |                       |                | Often bright (indoor unit all Communication failure) |

## 8 Maintenance

Regular check, Maintenance and care should be performed by professional personnel, which will prolong the unit life span.

### 8.1 Outdoor heat exchanger

Outdoor heat exchanger is required to be cleaned once every two months. Use vacuum cleaner with nylon brush to clean up dust and sundries on the surface of heat exchanger. Blow away dust by compressed air if it is available. Never use water to wash the heat exchanger.

### 8.2 Drain Pipe

Regularly check if the drain pipe is clogged in order to drain condensate smoothly.

### 8.3 Notice before Seasonal Use

- (1) Check if the inlet/outlet of the indoor/outdoor unit is clogged.
- (2) Check if the ground wire is earthed reliably.
- (3) Check if battery of remote wireless controller has been replaced.
- (4) Check if the filter screen has been set soundly.
- (5) After long period of shutdown, open the main power switch 8 hours before re-operating the unit so as to preheat the compressor crankcase.
- (6) Check if the outdoor unit is installed firmly. If there is something abnormal, please contact the KINGHOME appointed service center.

### 8.4 Maintenance after Seasonal Use

- (1) Cut off main power supply of the unit.
- (2) Clean filter screen and indoor and outdoor units.
- (3) Clean the dust and sundries on the indoor and outdoor units.
- (4) In the event of rusting, use the anti-rust paint to stop spreading of rust.

### 8.5 Parts Replacement

Purchase parts from KINGHOME appointed service center or dealer if necessary.

#### ***NOTICE!***

**During airtight and leakage test, never mix oxygen, ethyne and other dangerous gas into refrigeration circuit. In case of hazard, it's better to use nitrogen or refrigerant to accomplish such test.**

### 9 After-sales Service

In case the air-conditioning unit you bought has any quality problem or you have any inquiry, please contact the local after-sales service agency designated by KINGHOME.

Warranty should meet the following requirements:

- (1) First run of the unit should be operated by professional personnel from KINGHOME appointed service center.
- (2) Only KINGHOME manufactured accessories can be used on the machine.
- (3) All the instructions listed in this manual should be followed.
- (4) Warranty will be automatically invalid if fails to obey any item mentioned above.



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