



Split Type Air Conditioner

ENGINEERING DATA

MODELS:

AS122AKAHA+AU122ACAHA(HSU-12HF03(B))
(101012884000,101012884100)
AS122ALAHA+AU122ACAHA(HSU-12HH03(B))
(101012884200,101012884300)
AS122AMAHA+AU122ACAHA(HSU-12HT03(B))
(101012884400,101012884500)

AS122AMAIA+AU122ACAHA(HSU-12HO03(B))
(101012884400,101012884500)

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- 2.specifications-----
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and accessories -----
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- 8.refrigerating cycle diagram-----
- 9.Noise level test chart and air velocity distribution-----
- 10.installation and accessory parts-----

Description of product model coding and series introduction

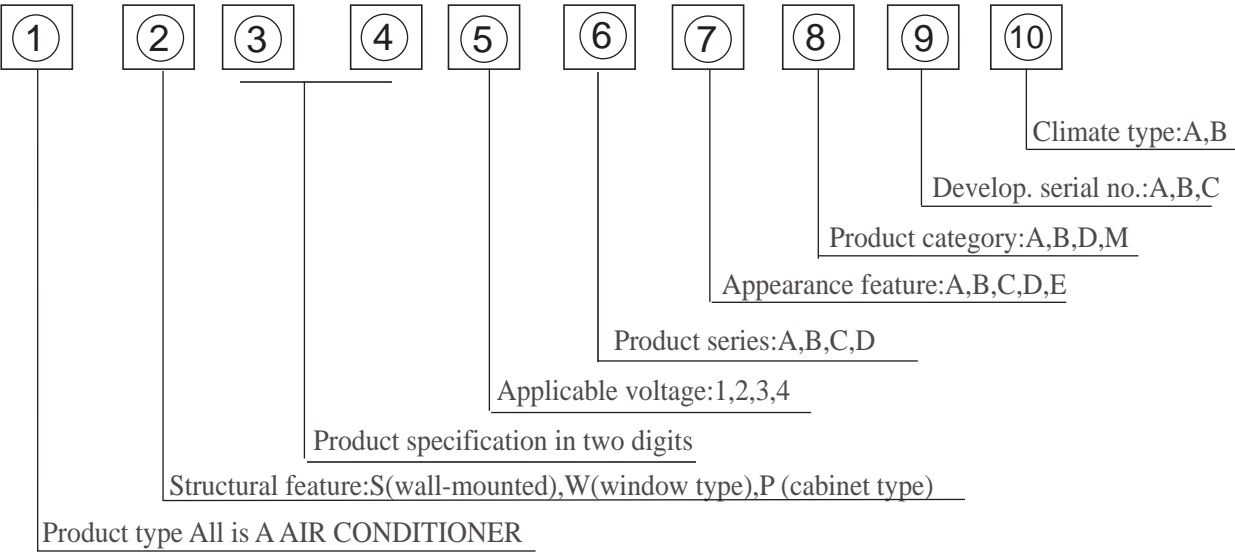
Description of product model coding and series introduct

Introductory Remarks

A. Description of coding rules of unit model

Coding rules and descriptions of new models are as follows:

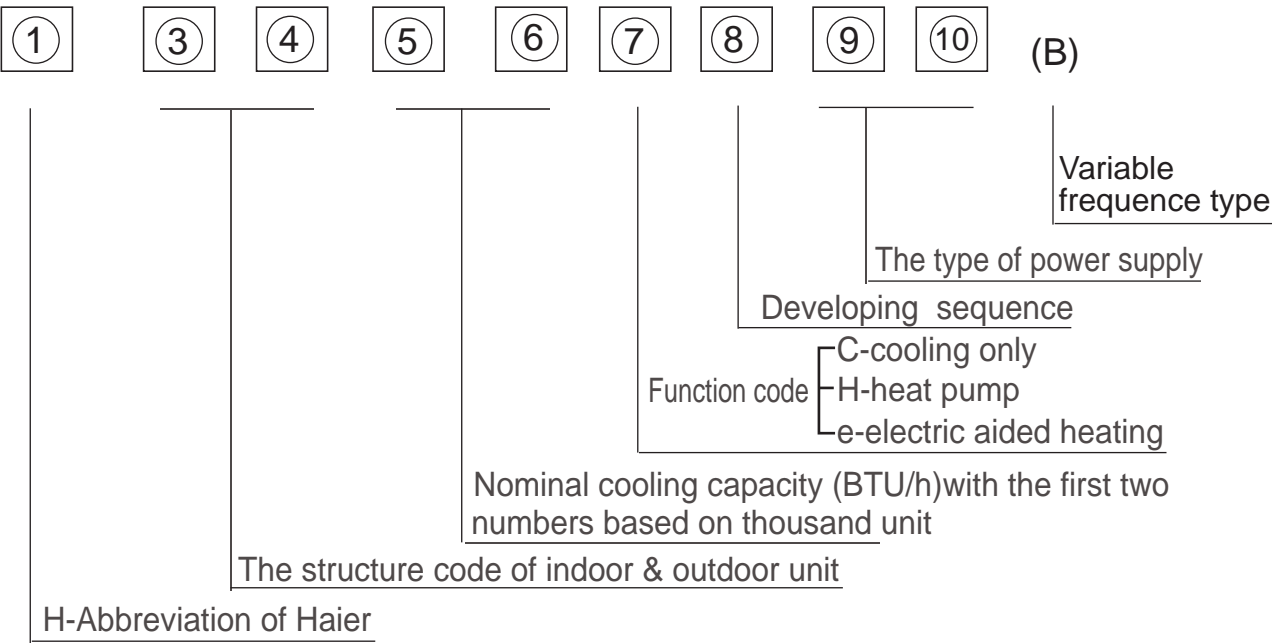
Indoor unit model and outdoor unit model of exported air conditioners shall be separately worked out in 10 digits combining English letters and Arabian numbers. The composition and representation are as follows:



E.g.: in , AS122AKAHA "A" represents air conditioner; "S" means wall mounted indoor unit; "12" indicates heating capacity of 12000BTU/h; "2" means applicable voltage of 220-240V/50Hz; "A" represents single split system; "K" is for appearance characteristics; "A" means heat pump type and refrigerant of R22; "H" is development serial number; "A" represents climate type.

In , AU122ACAHA "A" represents air conditioner; "U" means wall mounted outdoor unit; "12" indicates heating capacity of 12000BTU/h; "2" means applicable voltage of 220-240V/50Hz; "A" represents single split system; "C" is for appearance characteristics; "A" means heat pump type and refrigerant of R22; "H" is development serial number; "A" represents climate type.

B. Another model identification



Examples:

HSU-12HT03(B), It represents wall-mounted split type room air conditioner (variable-frequency type).

The cooling capacity is 12,000 BTU/h, and the power supply is 220V/50Hz.

1. Standard Situation/conditions

NO.	operating condition	indoor air status		outdoor air status	
		DB°C	WB°C	DB°C	WB°C
1	Nominal cooling	27	19	35	24
2	Nominal heating	20	----	7	6
3	Nominal electrical	----	----	----	----

C series brief introduction

1. comfortable: wide-angle airflow.

The vertical dual-flap and horizontal wide-angle louvers ensure the cool (warm) air reaches every corner of the room.

2. Durable and rustproof plastic panel.

Outdoor unit equipped with plastic casing is rust and corrosion-proof as well as weather-resistant.

3. Health air purifying

An air purifying filter with deodorizing and disinfecting functions keeps the air clean and users healthy.

4. Quiet operation

Fan With Random-pitched Blades.

Random-pitched blades help reduce operating noise while maintaining a high airflow rate.

5. Energy efficient

The design of inner-grooved copper tube greatly increases the refrigerant contact area and the efficiency of cooling/heating functions.

6. Convenience

Auto restart and washable panel:

The grille can be removed easily and washed when necessary. Even if the power fails when the unit is operating, the unit will automatically return to the operating settings in use before the power failure when power is restored.

Specifications

Specification:

Model:	AS122AKAHA+AU122ACAHA (HSU-12HF03(B)) AS122ALAHA+AU122ACAHA (HSU-12HH03(B)) AS122AMAHA+AU122ACAHA (HSU-12HT03(B)) AS122AMAIA+AU122ACAHA (HSU-12HO03(B))	Appearance color (indoor/outdoor):	White/White
Cooling capacity:	3500(800-4300)W	Heating capacity:	4800(700-5600)W
Cooling coefficient:	2.54	Heating coefficient:	2.94
cooling Power input:	1380(380-1700)W	Heating power:	1630(400-2000)W
Moisture removal	$1.8 \times 10^{-3} \text{m}^3/\text{h}$	Frequency range	30-120Hz
Operating voltage range	1PH, 220-230V~,50Hz	Refrigerant type	R22
Operating temp. range	-7°C-43°C	Air sending angle/distance	60°
Variation of temp. adjust	$\pm 1^\circ\text{C}$	Fan type/quantity	Cross flow fan(indoor unit) Axial fan(outdoor unit)
Climate type:	T1	Class of electric shock	I
Indoor unit noise (cooling)	39/35/31dB(A)	outdoor unit noise (cooling)	52dB(A)
Indoor unit noise (heating)	40/36/32dB(A)	outdoor unit noise (heating)	53dB(A)
net dimensions	848 x260x315mm	net dimensions	876x363X625mm
Packaging dimensions (indoor unit)	863x275x330mm	Packaging dimensions (outdoor unit)	891X378X640mm
weight(indoor unit)	7.6/10.6(net/gross)kg	Piling layers for indoor/outdoor unit	8/4
Max. mounting height difference:	5m	Outdoor unit net/gross weights:	34/38(net/gross) kg
Refrigerant charge	R22 1030g	Current entering side (indoor/outdoor)	indoor
Frequency of filter cleaning	Once/2 weeks	Max. refrigerant charge	1100g
Compressor model	QXR-23C(F)	Compressor manufacturer	C-1RB132H22AB
Compressor oil charge	320cc	Compressor protector type	-----
Maxi. length of connecting pipe:	10m	model of 4-way valve:	-----
Cap. tube type muffle model:	TP ₂ Y copper tube	Length/diameter of drain hose	2000mm/φ15.6mm
Fan speed: (r/min)	1250/1085/920(indoor) 730(outdoor)	Type/size of evaporator and condenser	Internal treaded pipe φ7/φ12.7mm
Max. operating pressure warm side:	2.65MPa	Max. operating pressure at cool side:	2.65MPa
cut-off valve:	1/4", 1/2"	Appearance features	Indoor unit:plastic:Outdoor unit: iron

Curves of performance

AS122AKAHA+AU122ACAH(AHSU-12HF03(B))

AS122ALAHA+AU122ACAH(AHSU-12HH03(B))

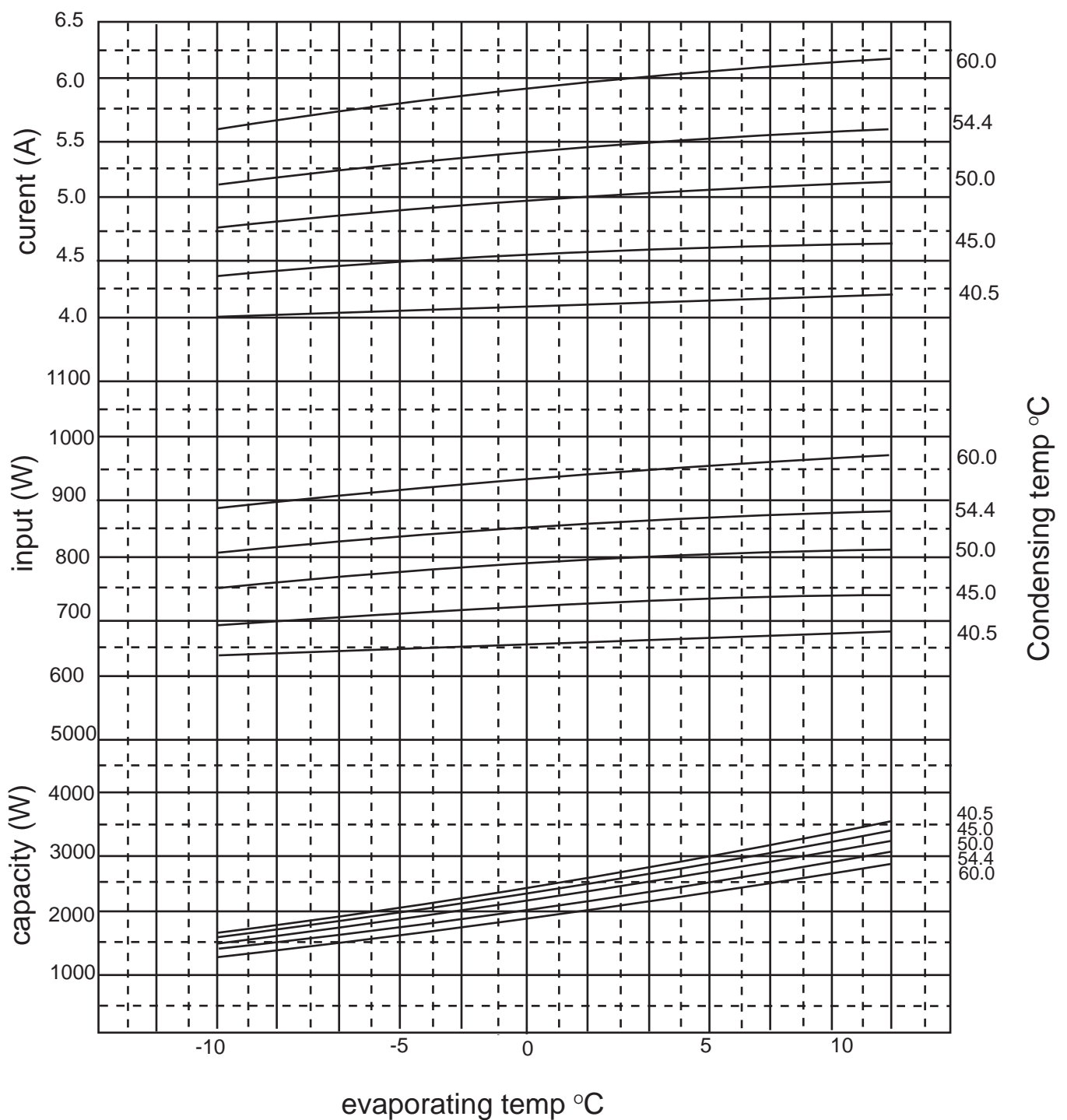
AS122AMAH(AHSU-12HT03(B))

AS122AMAIA+AU122ACAH(AHSU-12HT03(B))

Compressor: C-1RB132H22AB

C-1RB132H22AB
3PH,60Hz,140V
30uF/400VCA
R22

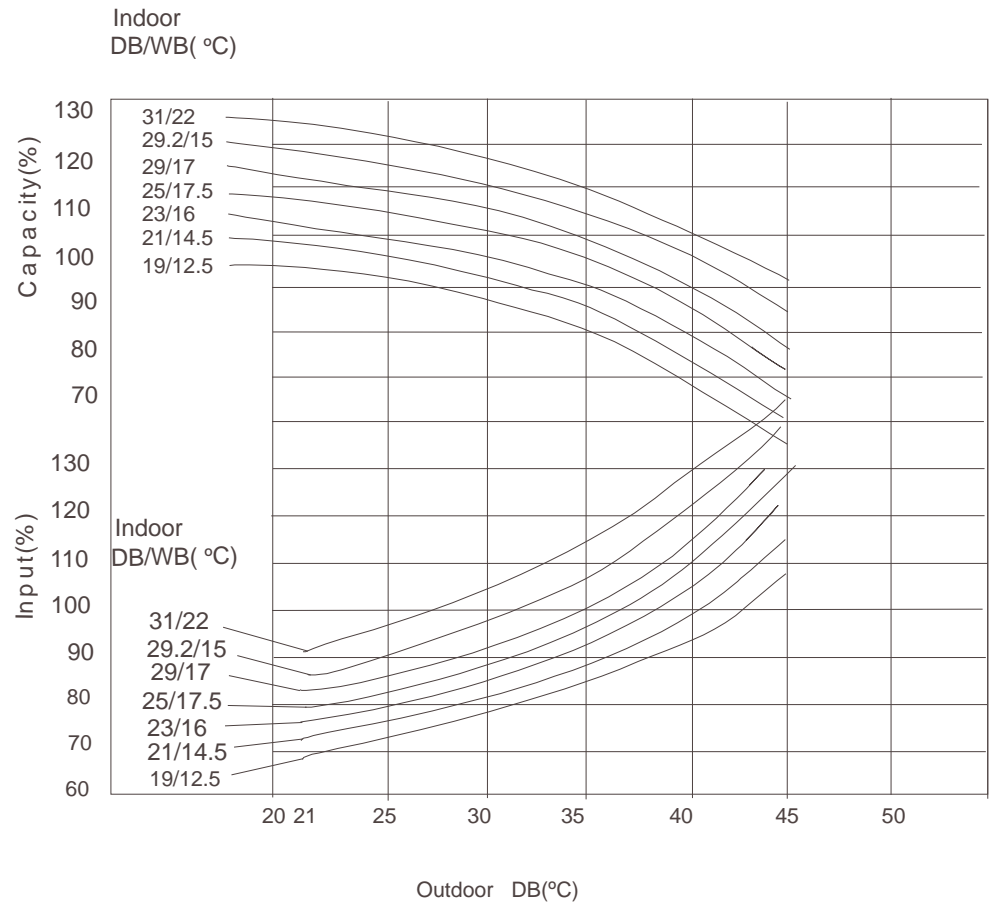
	A	B	C	D	E
Condensing temp °C	40.5	45	50	54.4	60
Return gas temp °C	35	35	35	35	35
	32.2	36.7	41.7	46.1	51.7
Ambient temp °C	35	35	35	35	35



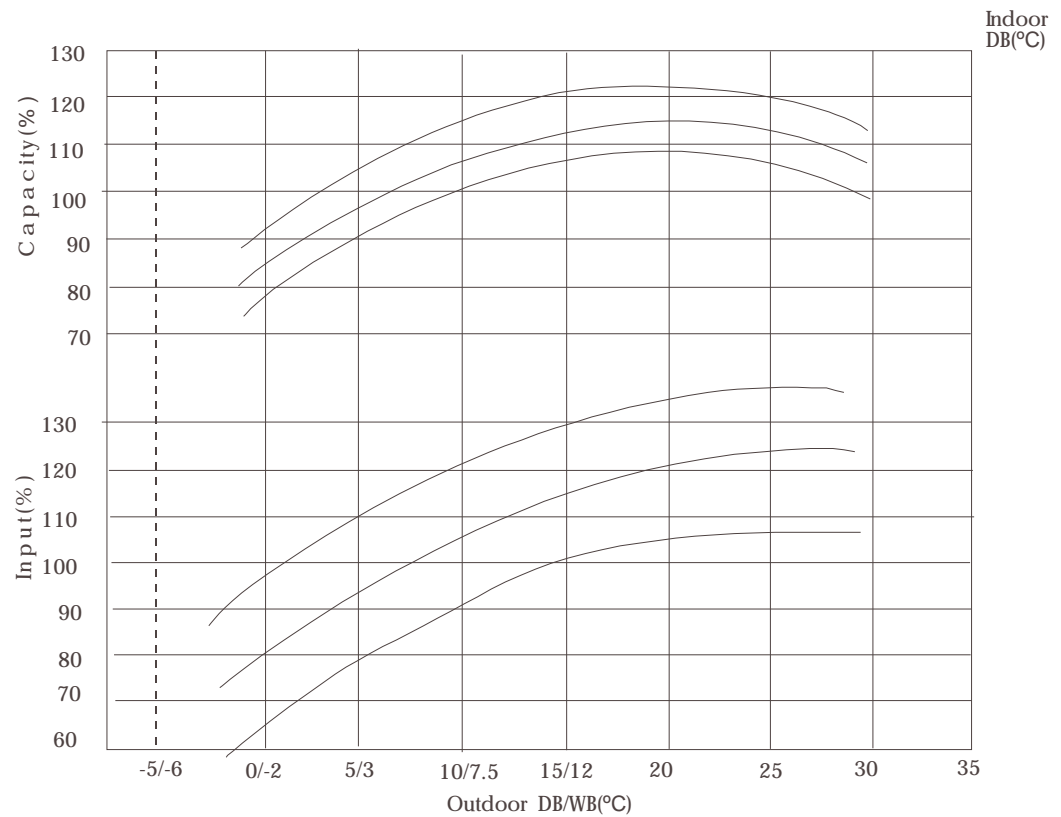
B. curves of performance

Adjust temperature range:-7°C ~ 43°C

Cooling



Heating



Description,dimension and function of main components and accessories

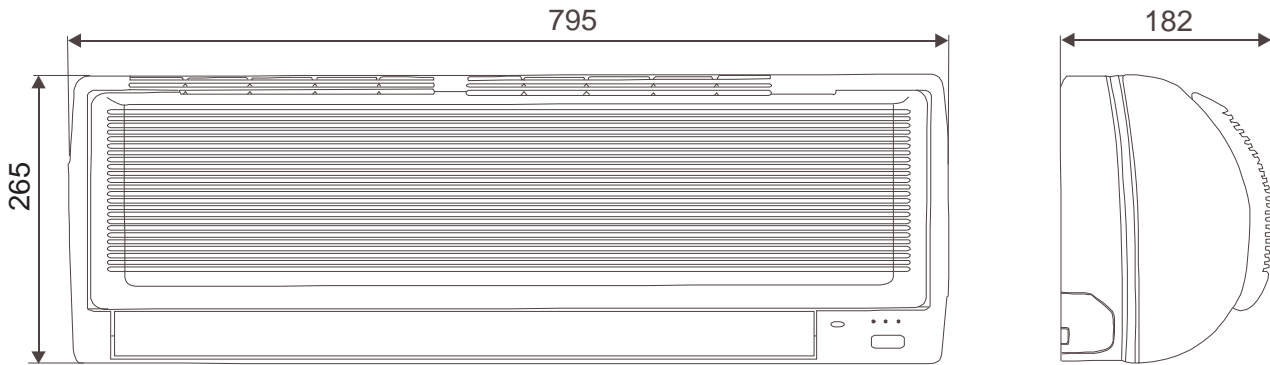
I. NET DIMENSION FOR INDOOR UNIT

NET DIMENSION FOR INDOOR UNIT

NET DIMENSIONS FOR INDOOR UNIT

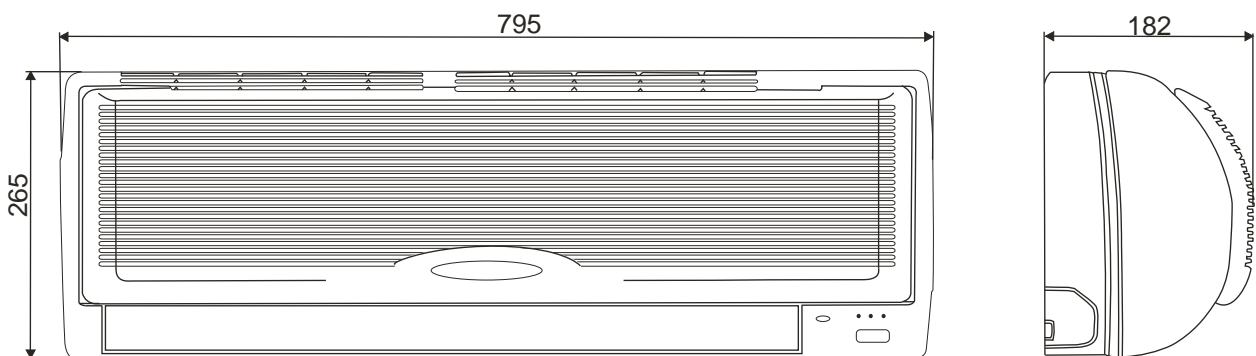
Indoor unit

MODELS:AS122AMAHA+AU122ACAHA(HSU-12HT03(B))



Indoor unit

MODELS:AS122ALAHA+AU122ACAHA(HSU-12HH03(B))

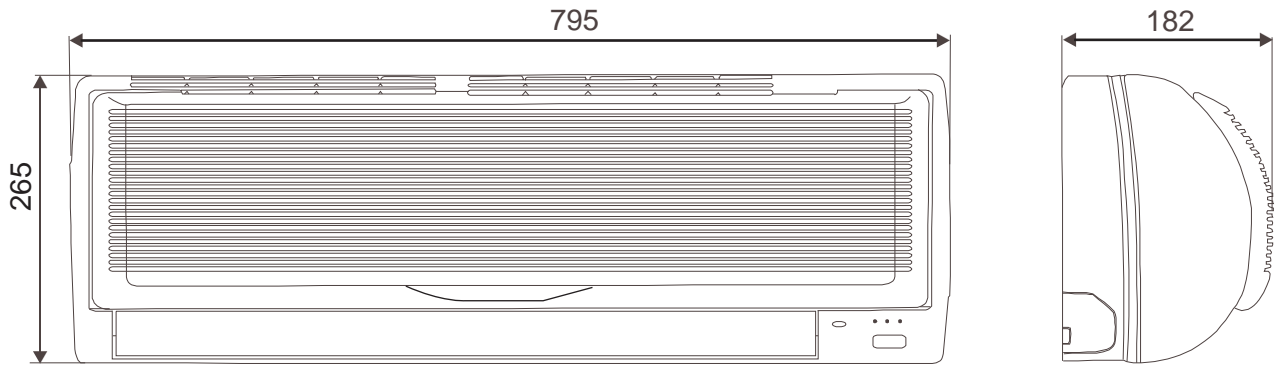


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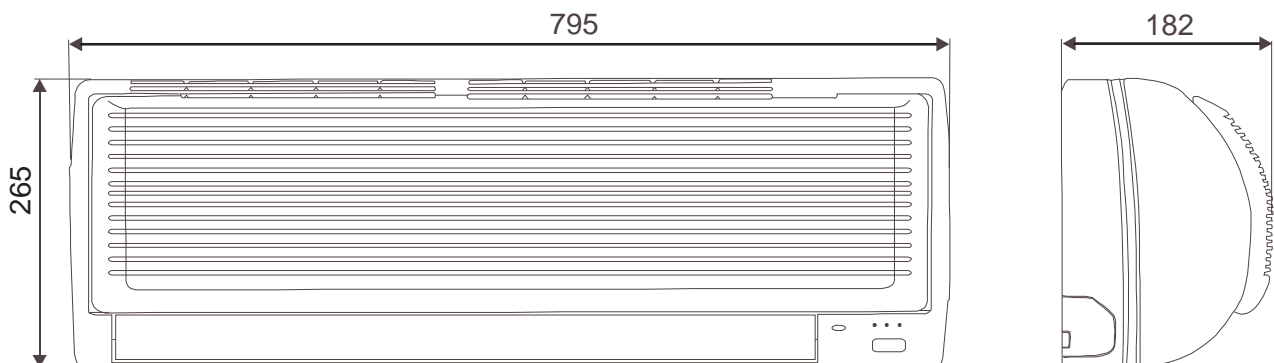
Indoor unit

MODELS:AS122AMAIA+AU122ACAHA(HSU-12HO03(B))



Indoor unit

MODELS:AS122AKAHA+AU122ACAHA(HSU-12HF03(B))

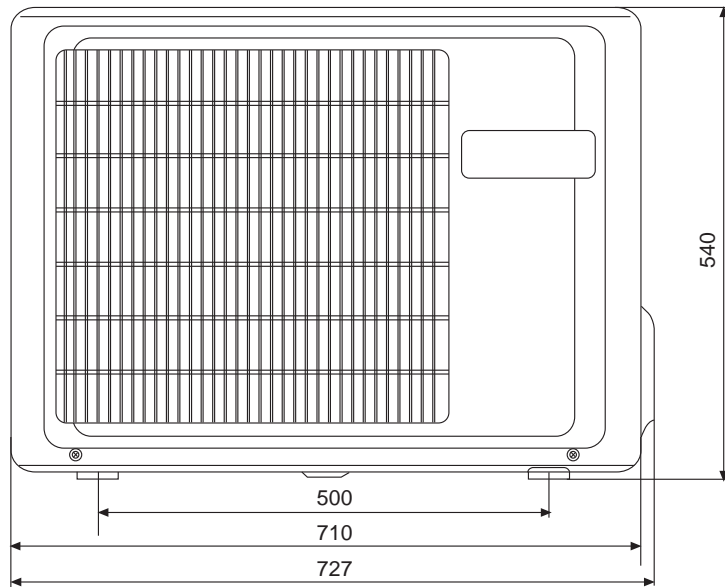
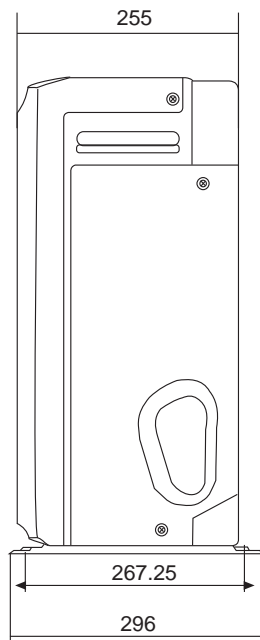


II. NET DIMENSION FOR OUTDOOR UNIT

NET DIMENSION FOR OUTDOOR UNIT

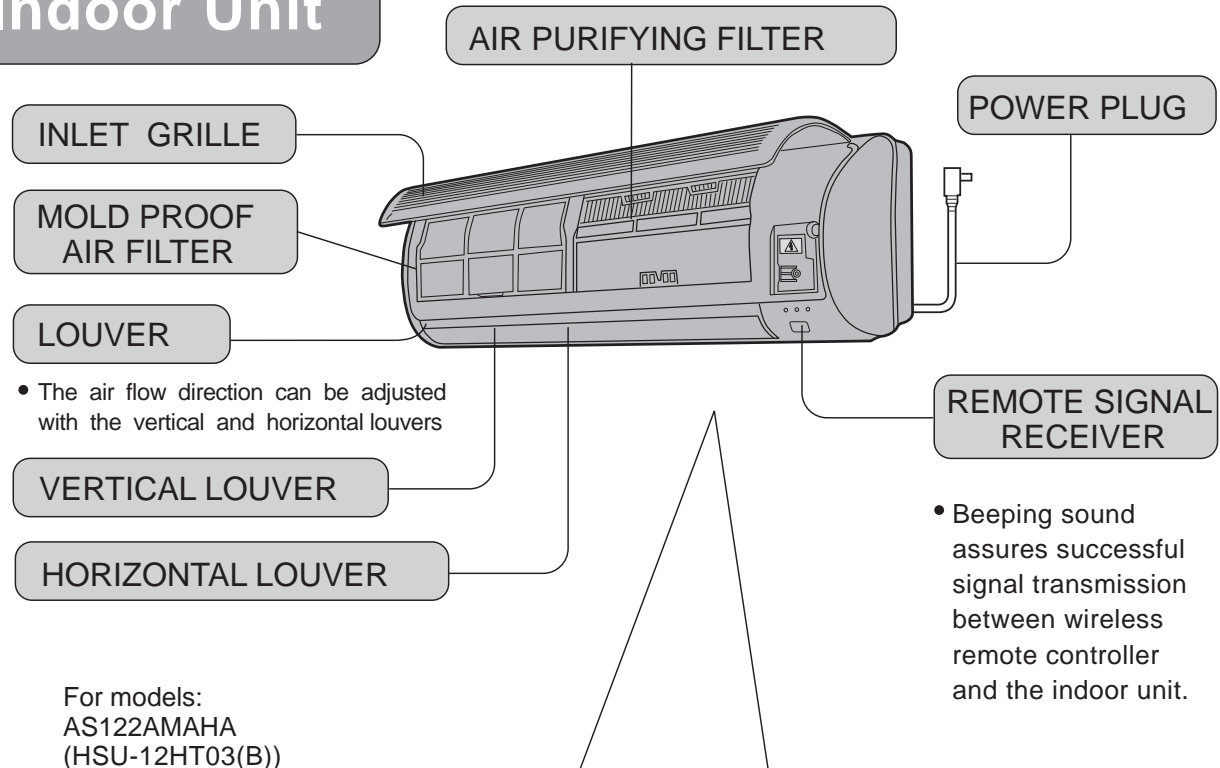
NET DIMENSIONS FOR OUTDOOR

MODELS: AS122AKAHA+AU122ACAHA(HSU-12HF03(B))
AS122ALAHA+AU122ACAHA(HSU-12HH03(B))
AS122AMAHA+AU122ACAHA(HSU-12HT03(B))
AS122AMAIA+AU122ACAHA(HSU-12HO03(B))

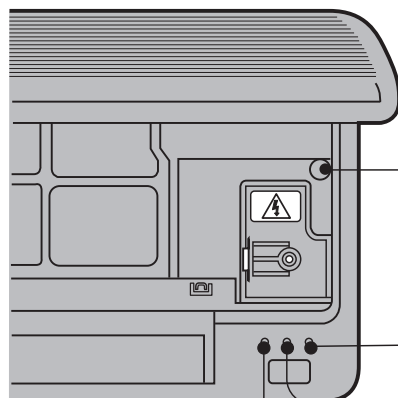


Parts and Functions

Indoor Unit



Operating Panel



The test operation switch is also used as an emergency operation switch.

EMERGENCY OPERATION(MANUAL)SWITCH

- If the wireless remote controlling device is not available (when the wireless remote controller is lost or the battery of the controller has low charge), the air conditioning system can be turned on temporarily.

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TEST OPERATION (MANUAL) SWITCH

- Use the test operation switch when the room temperature is below 16°C: do not use in normal operation.

PAGE18

OPERATION MODE INDICATOR

- The operation mode indicator lights when the air conditioner is in operation.

TIMER MODE INDICATOR

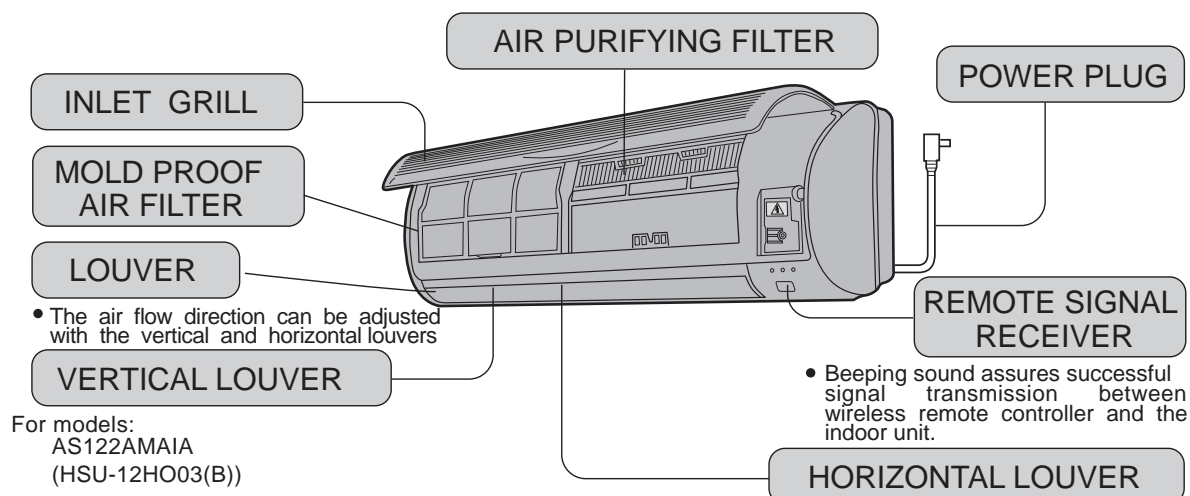
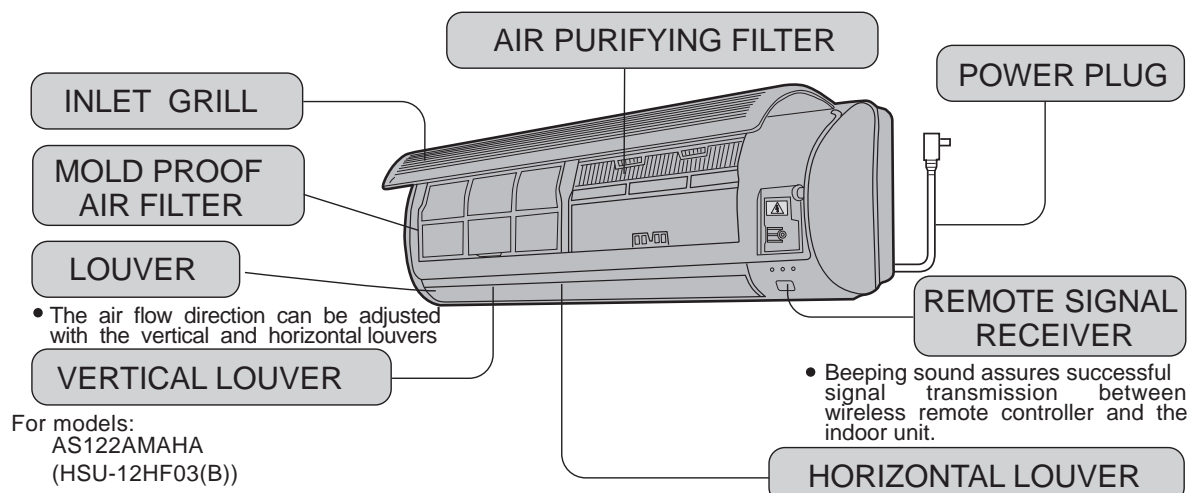
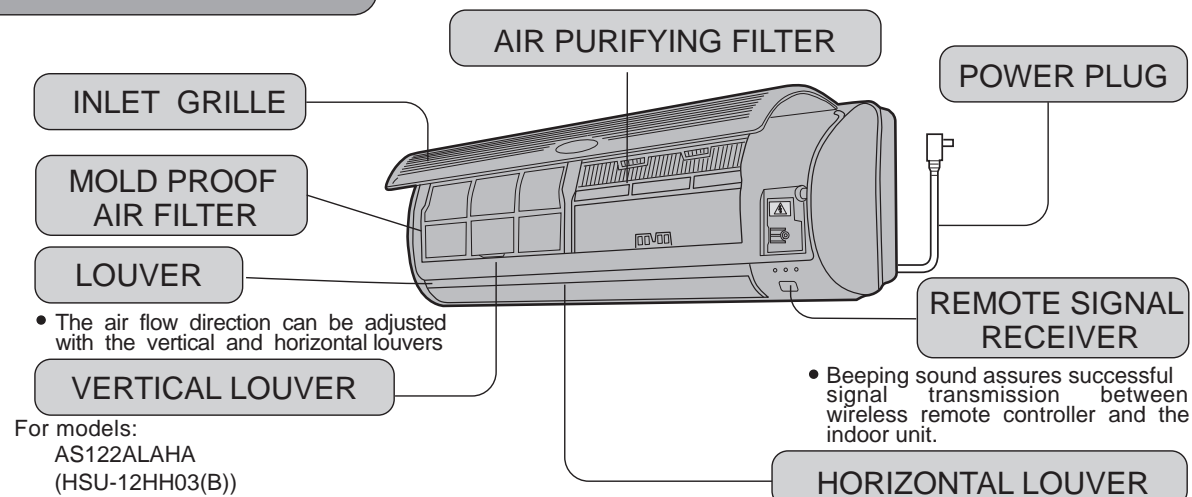
- The timer mode indicator lights when timer switch of the remote controller is "ON" or "OFF" position.

POWER INDICATOR

- The power indicator lights when the ON/OFF switch of remote controller is "ON".

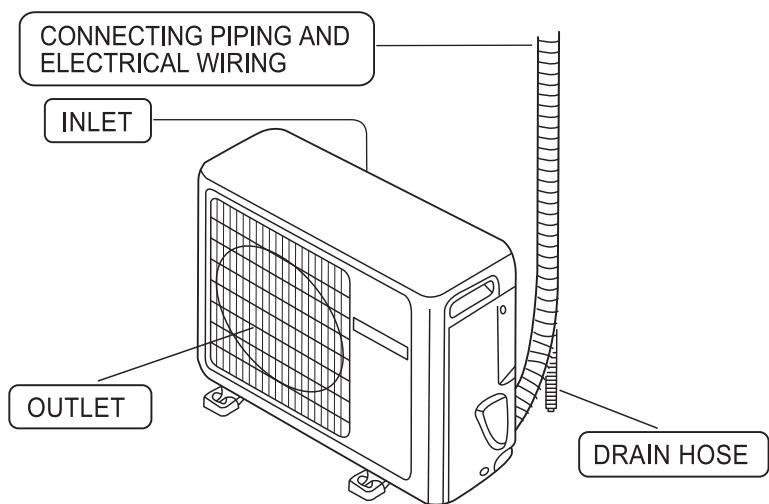
Parts and Functions

Indoor Unit



Parts and Functions

Outdoor Unit



Cooling	Indoor	Maximum: D.B/W.B	32°C / 23°C
		Minimum: D.B/W.B	18°C / 14°C
Heating	Outdoor	Maximum: D.B	43°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	-15°C

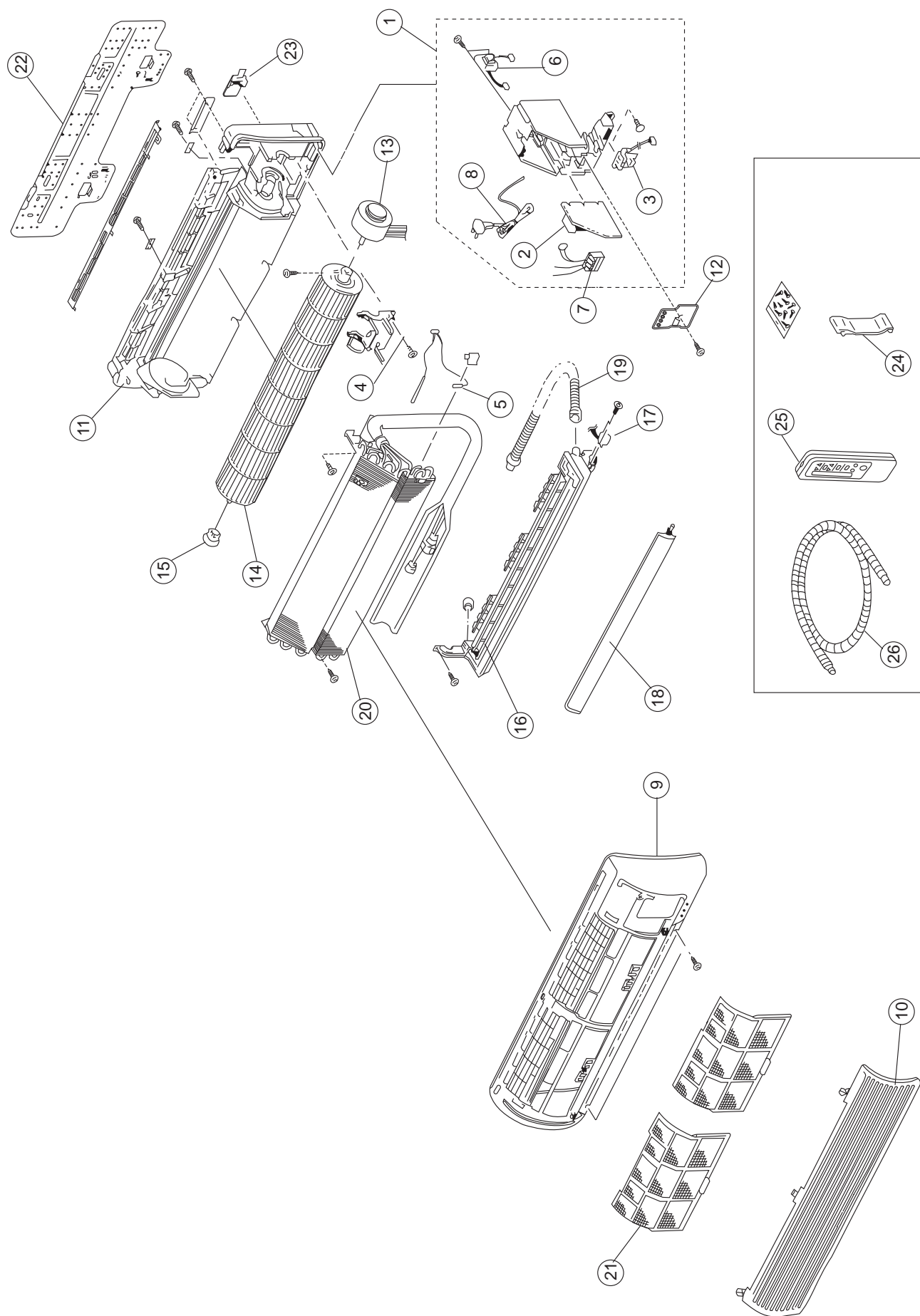
KNOCK-DOWN DRAWINGS

KNOCK-DOWN DRAWINGS FOR INDOOR UNIT

NO.	Name of the COMPOLENT	Specialized No.	QTY	Easily damaged components(Y/N)
1	Electric box	0010801331	1	
2	PCB	0010401588	1	Y
3	PCB(receiver)	001A0600287	1	Y
4	Motor cover	001A1431372	1	
5	Sensor	001A3900059	1	Y
6	Tansformer	0010400633	1	Y
7	Terminal block	001A4000095	1	
8	-----	-----	1	
9	Front panel assy.	001A1232074	1	
10	Front grille	(1)	1	
11	Rear case assy.	001A0100206	1	
12	Service cover	001A1431371	1	
13	Motor	001A3000052	1	Y
14	Fan	001A2335028	1	
15	Bearing	001A0300005	1	
16	Drain pan assy.	001A0900107	1	
17	Swing motor	001A3000040	1	Y
18	Flap	001A1232077	1	
19	Drain hose	001A0900011	1	
20	Heat exchanger	0010702567	1	
21	Air filter(left/right)	001A2400060/ 001A2400061	1 /1	
22	Mounting plate	001A1301216	1	
23	Piping support	001A1431368	1	
24	Tube nip	001A1431038	1	
25	Remote controller	0010401609	1	Y
26	Drain tube	001A1434039	1	

NUMBER	MODEL	Specialized No.
(1)	HSU-12HT03(B)	001A1232075
	HSU-12HF03(B)	001A1232304
	HSU-12HH03(B)	001A1232303
	HSU-12HO03(B)	001A0200293

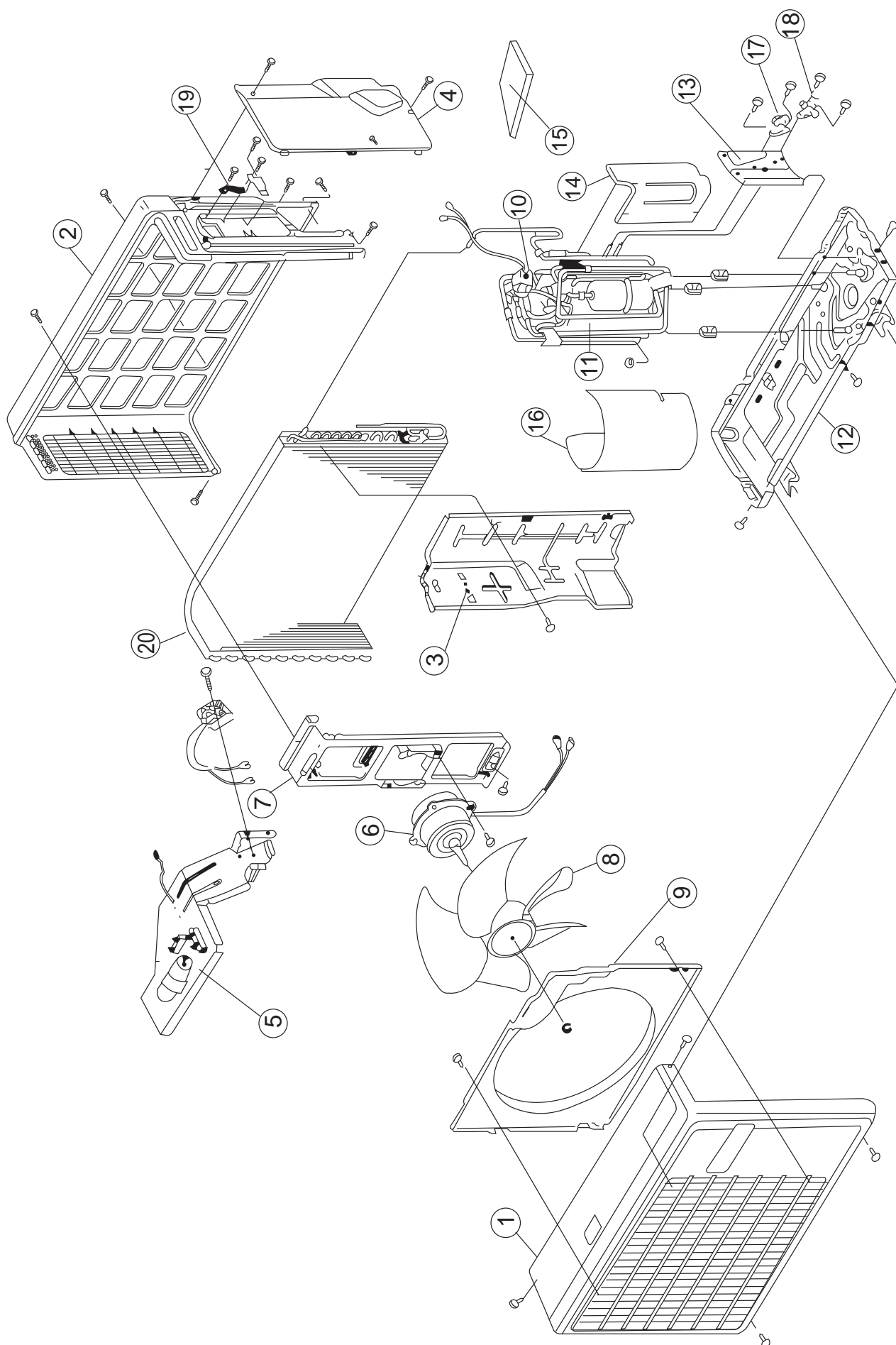
KNOCK-DOWN DRAWINGS FOR INDOOR UNIT



KNOCK-DOWN DRAWINGS FOR OUTDOOR UNIT

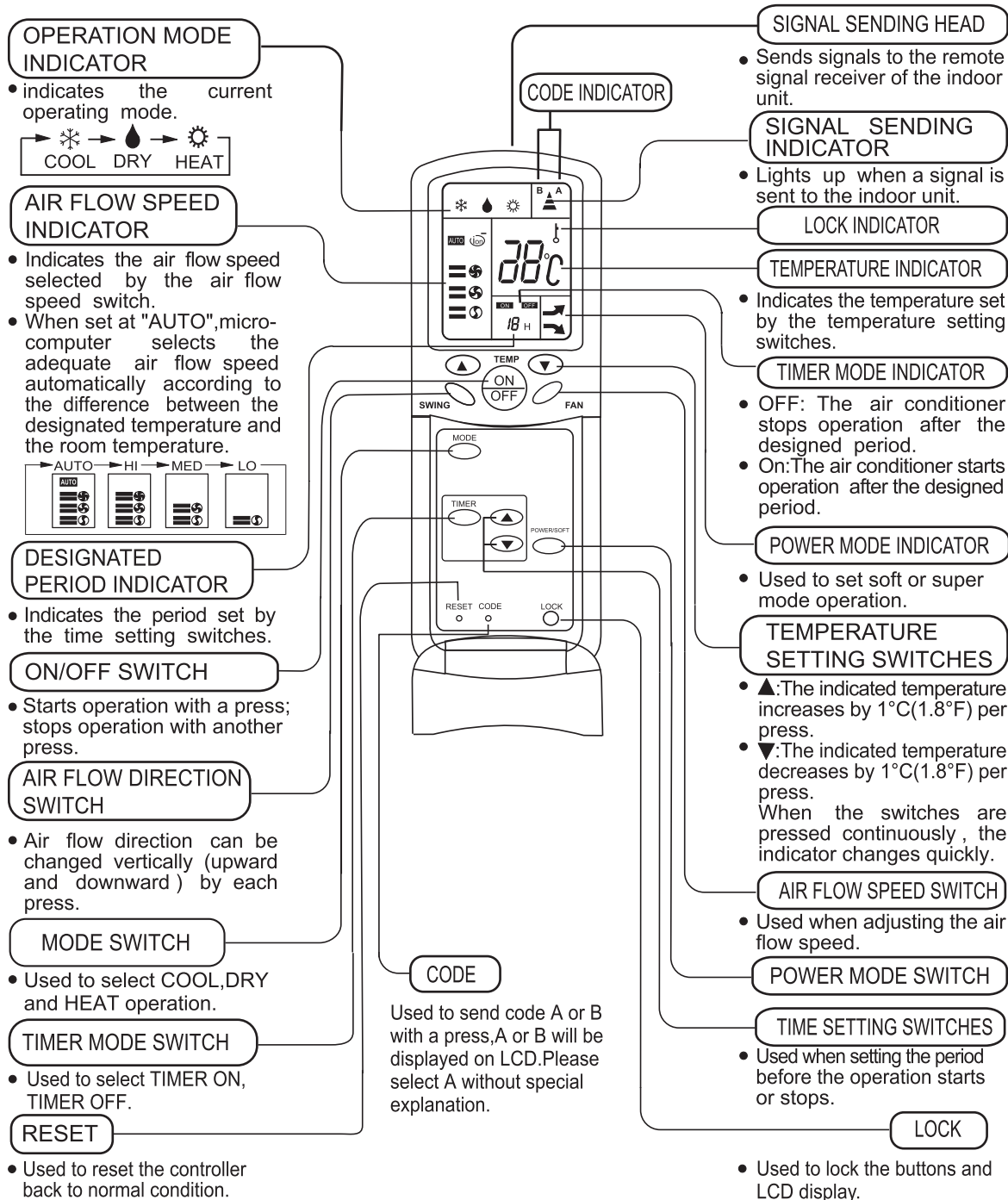
NO.	Name of the COMPOLENT	Specialized No.	QTY.	
1	Front panel assy.	001A0100934	1	
2	Back frame group	001A0100209	1	
3	Bottom panel	001A1301225	1	
4	Right Side panel	001A1436314	1	
5	Axial fan	001A2336029	1	
6	Motor	0010400896	1	Y
7	Motor support	001A1301460	1	
8	Compressor	0010702115	1	
9	4-way valve	001A2500015	1	Y
10	4-way valve winding	001A3800044	1	Y
11	Heat exchanger	001A0400127	1	
12	Stop valve	0010702425	1	
13	Stop valve	0010702435	1	
14	Reactor	0010401591	1	
15	Sound insulating cushion	001A1762574A	1	
16	Sound insulating cushion	001A1762575A	1	
17	Sound insulating cushion	001A1762577A	1	
18	Sound insulating cushion	001A1762576A	1	
19	thermistor	001A3900055	1	
20	thermistor	001A3900056	1	
21	Rubber mat	001A1752769	4	
22	BRIDGE DIODE	001A3700010	1	Y
23	Power module	0010401279	1	Y
24	PCB(main controller)	0010401589	1	Y
25	electrolyte capacitance	001A3600231	1	Y
26	Terminal block	001A4000096	1	Y

KNOCK-DOWN DRAWINGS FOR OUTDOOR UNIT



Parts and Functions

Buttons and display of the remote controller.



Note:

There is no health function with these types.

Parts and Functions

Inserting Dry Batteries

1 Remove the lid.

Gently press the part indicating OPEN, and slide the lid away from the controller.

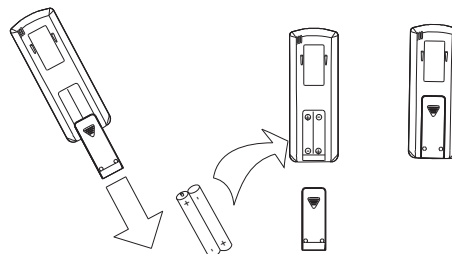
2 Insert the dry batteries.

Make sure the dry batteries are set in the right directions according to the diagram in the cavity.

3 Attach the lid.

4 Verify by the indicators.

If displays do not appear after a press on ON/OFF switch, set dry batteries once more.

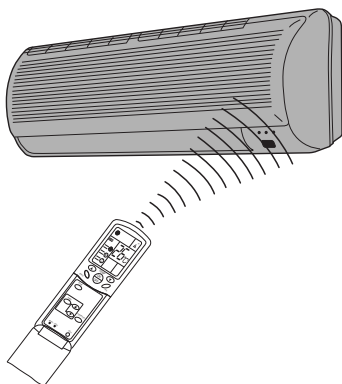


TWO R-03 dry batteries

Note:

- Use two new dry batteries of the same brand and type.
- Remove the batteries from the controller when it is not used for a long period.
- When the remote controller does not work after replacement of new dry batteries, remove the dry batteries and insert them more than 30 seconds later, or press ON/OFF switch in several times without the battery inserted.

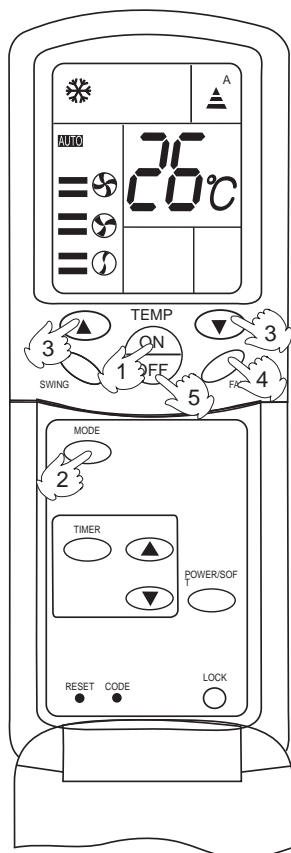
Handling the Wireless Remote Controller



- When operating, point the signal sending head toward the remote signal receiver of the indoor unit.
- Do not allow any obstacles between the signal sending head and the signal receiver.
- The signal receiver may not receive the signal in a room which has an electro-lighting (rapid-start) type fluorescent lamp, an inverter-type fluorescent lamp or a cordless phone.
- When attaching the wireless remote controller to a wall or post, make sure that the indoor unit receives the signals.
- Handle the wireless remote controller with care.
Do not drop, throw or wet the remote controller.
Do not attach the remote controller to a place where it is exposed to direct sunlight or heat.

Operation

Cooling/Dry mode Operation



1 Press the ON/OFF switch.

2 Set the operation mode to "COOL" or "DRY" by pressing the operation mode switch.

3 Adjust the designated temperature by pressing the temperature switches.

4 Adjust the air flow speed by pressing the air flow speed switch.

When the switch is set at "AUTO", the adequate air flow speed is selected by micro-computer automatically.

OFF

5 Press the ON/OFF switch again.

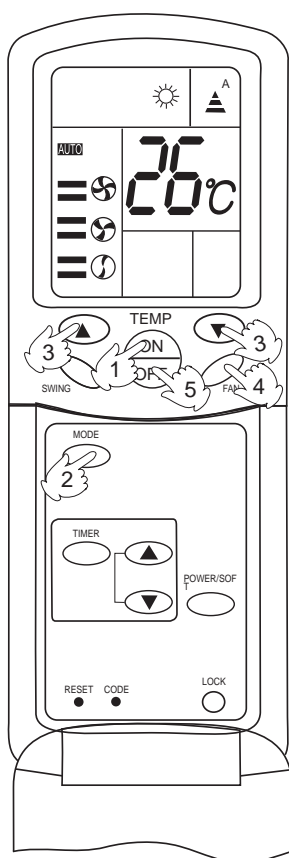
The system retains the previous setting conditions until next operation.

NOTICE

- When you press the ON/OFF switch immediately after a stop, the air conditioner does not start operation for approx. 3min. in order to protect the system. Then the operation will start automatically after 3min.
- If the system continues cooling or dry operation for a long period under high humidity, the outlet may accumulate water and cause dew drops.
- During dry mode operation, the system performs the cooling operation until the room temperature reaches (33.8°F) above the designated temperature. Then it continues dry mode operation intermittently with air flow speed at "LO", regardless of the designated speed.
- Air flow from the system may be cold when the room temperature is low.
- After replacing the dry batteries, the operating conditions return to ex-factory pre-set as follows: operation mode: "COOL"; temperature: "26°C (78.8°F)"; timer mode: "NONE"; air flow speed: "AUTO".

Operation

Heating Operation



1 Press the ON/OFF switch.

2 Set the operation mode to "HEAT" by pressing the operation mode switch.

3 Adjust the designated temperature by pressing the temperature switches.

4 Adjust the air flow speed by pressing the air flow speed switch.

When the switch is set at "AUTO", the micro-computer selects air flow speed automatically.

OFF

5 Press the ON/OFF switch again.

The system retains the previous settings conditions until next operation.

NOTICE

- When you press the ON/OFF switch immediately after a stop, the air conditioner does not start operation for approx. 3 min. in order to protect the system. Operation will start automatically after 3 min.
- When the room temperature has not reached the required level because of a low ambient temperature, add other heating facilities.
- After replacing the dry batteries, the operating conditions become ex-factory preset as follows: operation mode: "COOL"; temperature: "26°C (78.8°F)"; timer mode: "No"; air flow speed: "AUTO".

Operation

Air Flow Direction Adjustment

Vertical Adjustment

When ON/OFF switch is pressed, the vertical louver will move to the adequate positions for each operation automatically.

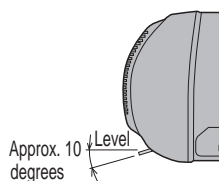
Swing of Air Flow

If air flow direction switch is pressed once, the vertical louver will move within the range of figures as right.

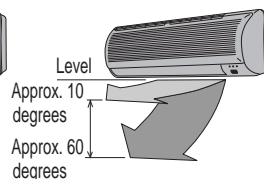
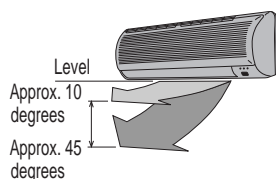
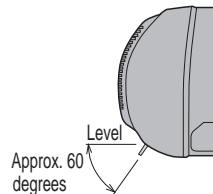
Fixing the Flow Direction

If air flow direction switch is pressed again, the vertical louver will be fixed and that position is more memorized. From the next operation the louver will be set at previous position automatically.

During Cooling, Dry Operation



During Heating Operation



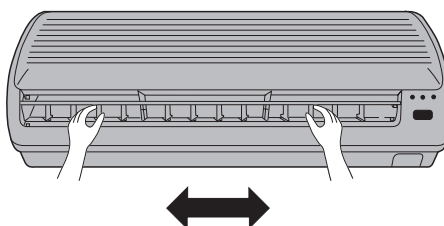
NOTICE

- When the operation is off, the vertical louver closes the outlet automatically.
- DO NOT MOVE THE VETICAL LOUVER BY HANDS. It may make the louver not work properly. In order to move the vertical louver, use wireless remote controller without fail. In case the louver does not work correctly, once stop the operation and turn on again.
- During cooling or dry operation, the vertical louver should not be downward for a long time. If this is done, dew drops may appear at the outlet. (Even the louver directions is in the swing range, the louver will move about 10 degrees from horizontal after one hour.)

Horizontal Adjustment

Audjust the horizontal louner by moving the adjustment tabs.

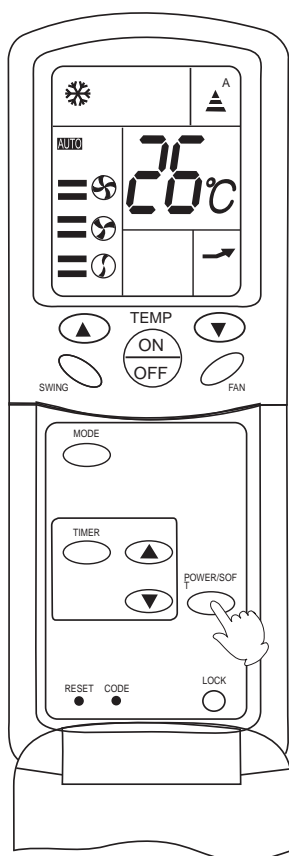
If the system is operated with the horizontal louver faced completely to the left or right under high humidity (e.g. during the rainy season), dew drops may appear at the outlet.



Operation

Power Mode Operation

Power mode operation includes super mode operation and soft mode operation.




Super Mode Operation

This mode is good to have yourself blown directly to feel cooler or warmer.

ON


Press Power Mode Switch once.

The indication  appears on the remote controller and the operation in Super Mode starts.

During the Super Mode operation, the air flow speed is indicated as "AUTO" on the controller.

OFF

Press Power Mode Switch twice.

The indication  appears on the remote controller at one press and it goes out at the second press, then the operation will return to the regular operation.

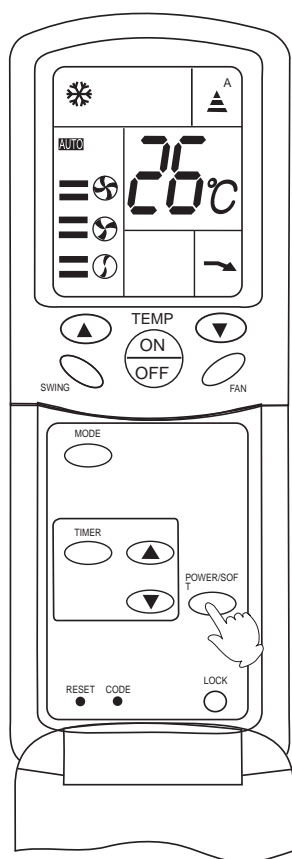
NOTE

- Unevenness of room air temperature may occur due to the intensive operation in a short time.

Operation

Power Mode Operation

Power mode operation includes super mode operation and soft mode operation.




Soft Mode Operation

Soft mode operation, operating more quietly by controlling the air flow of indoor unit, it is useful when noises should be smaller, such as, for reading and sleeping.

ON


Press Power Mode Switch once.

The indication  appears on the remote controller and the operation in Soft Mode starts.

During the Soft Mode operation, the air flow speed is indicated as "AUTO" on the controller.

OFF

Press Power Mode Switch twice.

The indication  goes out at one press, then the operation will return to the regular operation.

NOTE

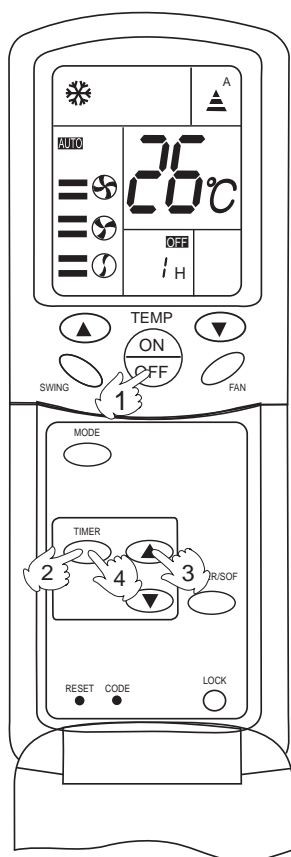
- Soft mode operation may not be powerful enough to keep the room temperature at the designated for a long time.

Operation

Timer Function Usage

Timer OFF Function

With this function, the system stops operating after the designated period.



1 Press the ON/OFF switch

Make sure that the operating conditions are those desired.

2 Set the timer mode to "OFF" by pressing the timer mode switch.

Make sure that the timer mode indicator of the indoor unit lights up.

3 Set the operation period by pressing the time setting switches.

The operation period can be set from 1 hour to 12 hours by an hour.

Timer Cancellation

4 Just press the timer mode switch several times until TIMER mode disappears.

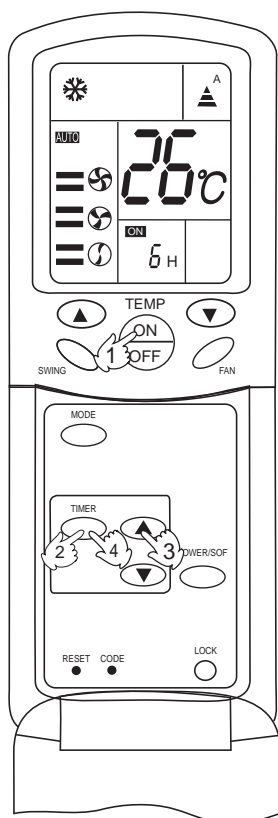
Changing the Designated Period

Press either ▲ or ▼ time setting switch to adjust the operating period. The timer then immediately start its function.

Operation

Timer Function Usage

Timer ON Function



With this function, the system starts operating after the designated period: the system can be set to turn on automatically at the time of awakening or arriving home.

1 Press the ON/OFF switch

Make sure that the operating conditions are those desired.

2 Set the timer mode to "ON" by pressing the timer mode switch.

Make sure that the timer mode indicator of the indoor unit lights up.

3 Set the operation period by pressing the time setting switches.

The operation period can be set from 1 hour to 12 hour by an hour.

Timer Cancellation

4 Just press the timer mode switch several times until TIMER mode disappears.

NOTICE

- Once the wireless remote controller set the timer, the period is memorized. From next time, you can operate easily with operation of the ON/OFF switch and the timer mode switch.
- After replacing the dry batteries, the designated period is set automatically as follows: OFF: 1 hour, ON: 6 hours. Set the timer again if necessary.
- If the power fails, set timer again.

Power Failure Resume Function

- Only some of the models have this function. If the unit is started for the first time, the compressor will not start running unless 3 minutes have elapsed. When the power resumes after power failure, the unit will run automatically, the power indicator lights up, and 3 minutes later the compressor starts running with the indicator lighting up.

Brief introduction to electrical function

Brief introduction to electrical function

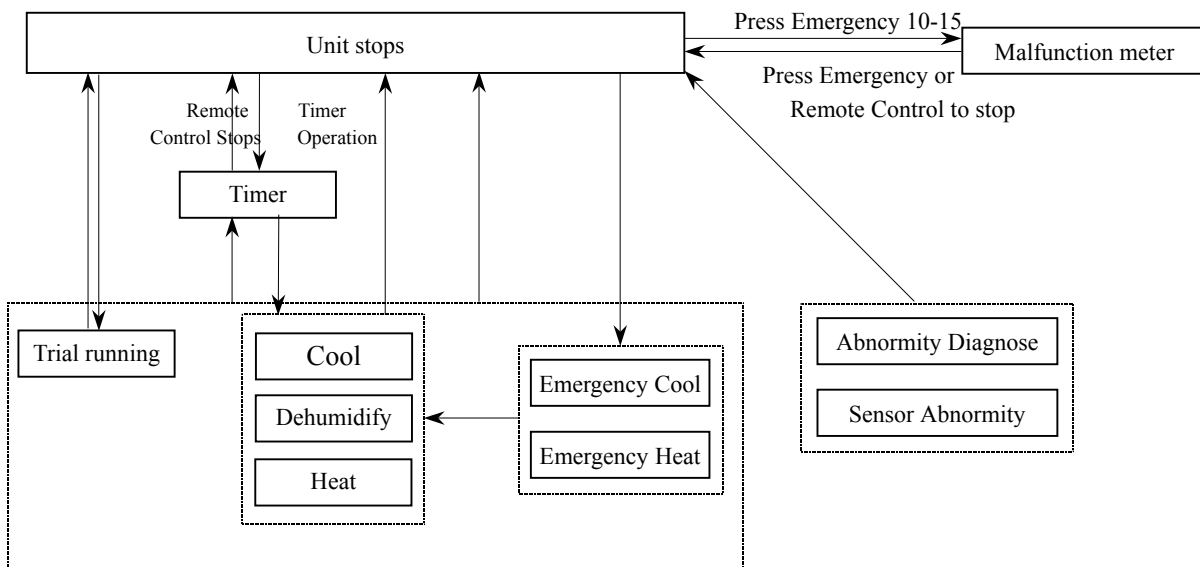
1. Introduction to electrical control function

Including brief introduction to air conditioners of series models and electrical control function as well as the technical information.

1.1 Brief introduction to electrical function

1.1.1 Status conversion

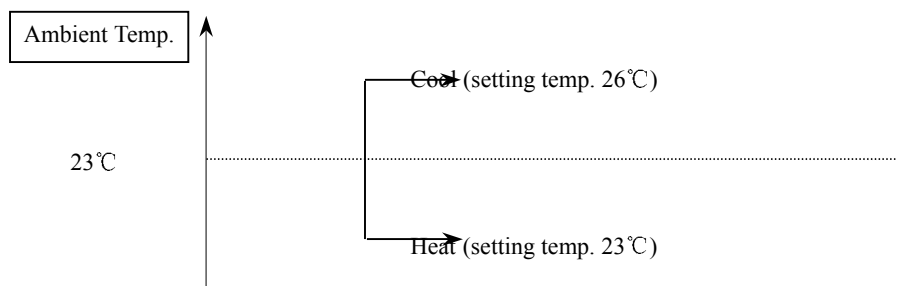
As the following figure:



1.1.2 Automatic function (automatic running function is selected after pressing emergency button 0-5s)

1.1.2.1 Status conversion under automatic running

As the following figure:



When running in the automatic emergency status, indoor unit can receive the remote controller's signal to convert status.

1.1.2.2 Air volume control under automatic running

Wind speed of indoor fan is automatically adjusted when automatic running, refer to air volume control under cool/heating running for details.

1.1.2.3 Frequency control for compressor under automatic running

It is the same as the frequency control for compressor under cool/heating running.

1.1.2 Cooling running

Brief introduction to electrical function

1.1.2.1 Air volume control under cooling running (Cool compensation temp. -0.33°C)

When setting manual control, wind speed will run accord to the setting value during compressor running, and run in the speed of setting value minus 60rpm during compressor stopping.

When setting automatic wind speed, its velocity is related to temperature difference ΔT (| ambient temp. — compensation temp. — setting temp.). See the following table for details:

Temperature difference ($^{\circ}\text{C}$)	$\Delta T > 4.3$	$4.3 \geq \Delta T \geq 0.3$	$\Delta T < 0.3$
Wind speed	High	Middle	Low

1.1.2.2 Compressor control under cooling running

1.1.2.2.1 when running in normal status, control of compressor frequency:

Temperature difference ($^{\circ}\text{C}$)	$\Delta T > 4.3$	$4.3 \geq \Delta T \geq 1.3$	$1.3 \geq \Delta T \geq -1$	$\Delta T < -1$
Maximum frequency (Hz)	High frequency	Mid. frequency	Low frequency	Compressor stop

1.1.2.2.2 when running in cool mode, the setting air volume restricts frequency as follows:

Setting air volume	Maximum frequency (Hz)
Middle	90 Hz
Low	52 Hz

1.1.2.2.3 when running in cool mode, the outdoor ambient temperature restricts frequency as follows: (only applying to the machine models with outdoor ambient temperature sensor).

Outdoor ambient temp. ($^{\circ}\text{C}$)	Maximum frequency (Hz)
$\Delta T \geq 26$	No limitation
$\Delta T < 26$	60 Hz

1.1.3 Dehumidification running

1.1.3.1 Air volume control under dehumidification running (Cool compensation temperature -0.33°C)

Except for the first running that fan runs in low speed during compressor stopping, fan stops during compressor OFF.

When setting manual control, wind speed runs according to the following table during compressor running:

Temperature difference ($^{\circ}\text{C}$)	$\Delta T \geq 0.3$	$\Delta T < 0.3$
Wind speed	Setting	Low

When setting automatic wind speed, its velocity is related to temperature difference (ambient temp. — setting temp.). See the following table for details:

Temperature difference ($^{\circ}\text{C}$)	$\Delta T > 4.3$	$4.3 \geq \Delta T \geq 0.3$	$\Delta T < 0.3$
Wind speed	High	Middle	Low

Brief introduction to electrical function

1.1.3.2 Compressor control under dehumidification running

1.1.3.2.1 When running in normal status, control of compressor frequency:

Temperature difference (°C)	$\Delta T > 4.3$	$4.3 \geq \Delta T \geq 1.3$	$1.3 \geq \Delta T \geq -1$	$\Delta T < -1$
Maximum frequency (Hz)	High frequency	Mid. frequency	Low frequency	Compressor stop

1.1.3.2.2 When running in dehumidify mode, the setting air volume restricts frequency as follows:

Setting airflow	Maximum frequency (Hz)
Middle	90 Hz
Low	52 Hz

1.1.3.2.3 When running in dehumidify mode, the outdoor ambient temperature restricts frequency as follows: (only applying to the machine models with outdoor ambient temperature sensor).

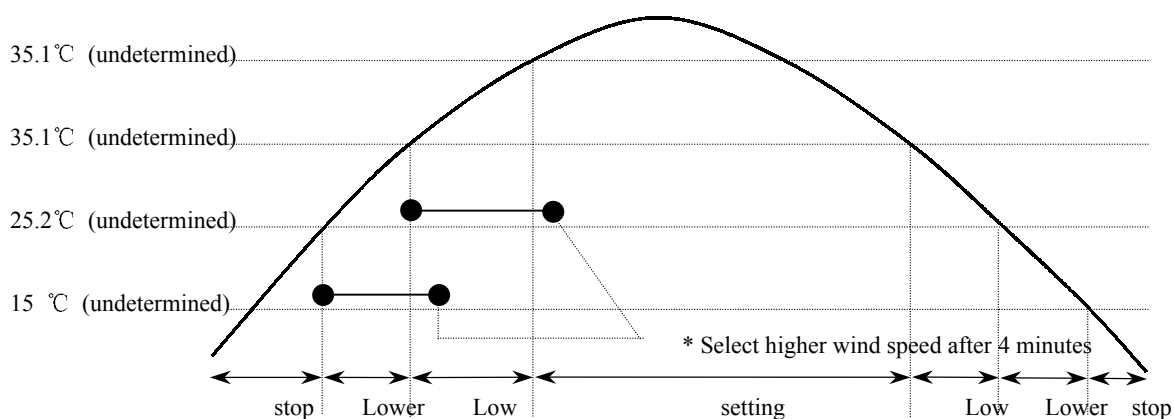
Outdoor ambient temp. (°C)	Maximum frequency (Hz)
$\Delta T \geq 26$	No limitation
$\Delta T < 26$	60 Hz

1.1.4 Heating running (heat compensation temp. 4.67°C)

1.1.4.1 Air volume control under heating running

When heating running starts, defrosting stops. When compressor restarts, it shall be warm start to prevent cold wind.

Thermal conversion temperature:



Note:

For different machine type, the “undetermined” parameters is also different, here only take this example for illustration.

“ * ” Indicating that if unit maintains in this wind speed for more than 4 minutes, it then select higher speed.

When setting automatic wind speed, its velocity is related to the temperature difference (including compensation temperature), see the following table for details:

Temperature difference (°C)	$\Delta T > 4.3$	$4.3 \geq \Delta T \geq 0.3$	$\Delta T < 0.3$
Wind speed	High	Middle	Low

1.1.4.2 Compressor control under heating running

Brief introduction to electrical function

1.1.4.2.1 When running in normal status, control of compressor frequency:

Temperature difference (°C)	$\Delta T > 4.3$	$4.3 \geq \Delta T \geq 1.3$	$1.3 \geq \Delta T \geq -1$	$\Delta T < -1$
Maximum frequency (Hz)	High frequency	Mid. frequency	Low frequency	Compressor stops

1.1.4.1.2 When running in dehumidify mode, the outdoor ambient temperature restricts frequency as follows: (only applying to the machine models with outdoor ambient temperature sensor).

Outdoor ambient temp. (°C)	Maximum frequency (Hz)
$\Delta T \geq 15$	60 Hz
$\Delta T < 15$	No limitation

1.1.5 Defrosting running

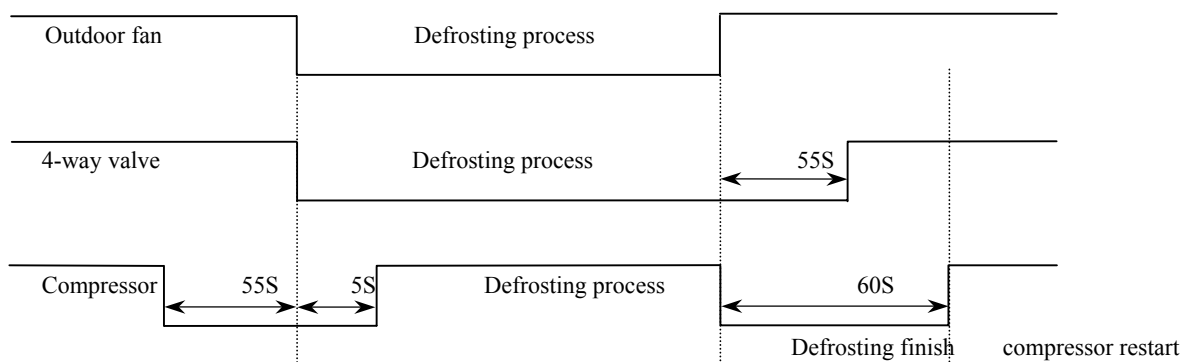
1.1.5.1 Defrosting process

When defrosting during heating operation, frequency is not controlled according to the temperature difference, and the maximum heating frequency is displayed.

Compressor does not stop in the process of defrosting.

Defrosting beginning conditions: Heat mode, the first power on operation or the lasting time to the previous defrosting finishing is more than 47 minutes, and the outdoor ambient temperature is continuously found to be less than -4°C (model: 26, 28) or -5°C (model: 32, 36, 40) during compressor running, and then defrosting starts.

Defrosting process as following illustration:



1.1.5.2 Air volume control during defrosting

20 seconds Low wind is firstly selected during defrosting, then indoor fan stops running.

1.1.6 Special function

1.1.6.1 Trial running

1.1.6.1.1 Beginning conditions

Pressing emergency button 5-10 seconds and buzzer sounding twice, then starts.

1.1.6.1.2 Running status

Brief introduction to electrical function

When in trial running, the display frequency of compressor is 58Hz, running mode is cool, compressor keeps on running for 30 minutes and will not be restricted by low-load protection (refer to protection function).

1.1.6.1.3 Finishing conditions

Trial running will stop when remote control or emergency signal is received. After 30 minutes trial running, emergency running (automatic running) starts.

1.1.6.2 Abnormity diagnose

When displaying abnormity, using indicator to express the previous error.

When having no error code record, show nothing.

The abnormity indicating mode will automatically disappeared 30 seconds later.

The remote controller only receives stopping signal and abnormity record indicating mode will finish according to the stopping signal of the switch or the remote controller.

1.1.6.2.1 Beginning conditions

Pressing emergency switch 10-15 seconds, the buzzer sounds three times, and then start.

1.1.6.2.2 Running status

The indicator displays the previous error code (see the error code list).

1.1.6.2.3 Finishing condition

Finishing when remote control or emergency signal is received.

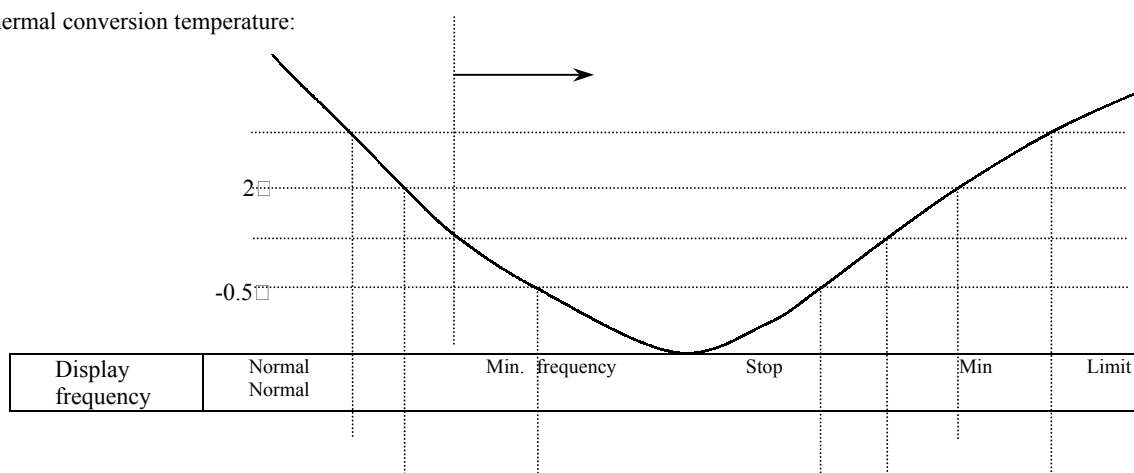
1.1.7 Protection function

1.1.7.1 Low-load protection

During cooling running, if the indoor coil-pipe does not evaporate thoroughly and the temperature is too low, the compressor must be stopped for protection to prevent it from damaging due to the system “liquid hitting”. See the following figure for action details:

Low-load protection control:

Thermal conversion temperature:



Indoor coil pipe temperature sensor type: R (25)=10KΩ

Brief introduction to electrical function

During cooling-dehumidification running, low-load protection is carried out according to indoor coil-pipe temperature; whereas, the displayed frequency is “58Hz”.

The minimum frequency is displayed when indoor coil- pipe temperature is lower than 2°C and coil-pipe temperature is above -0.5°C.

When thermal conversion temperature is lower than 0.5°C, selecting 3 minutes stand-by status.

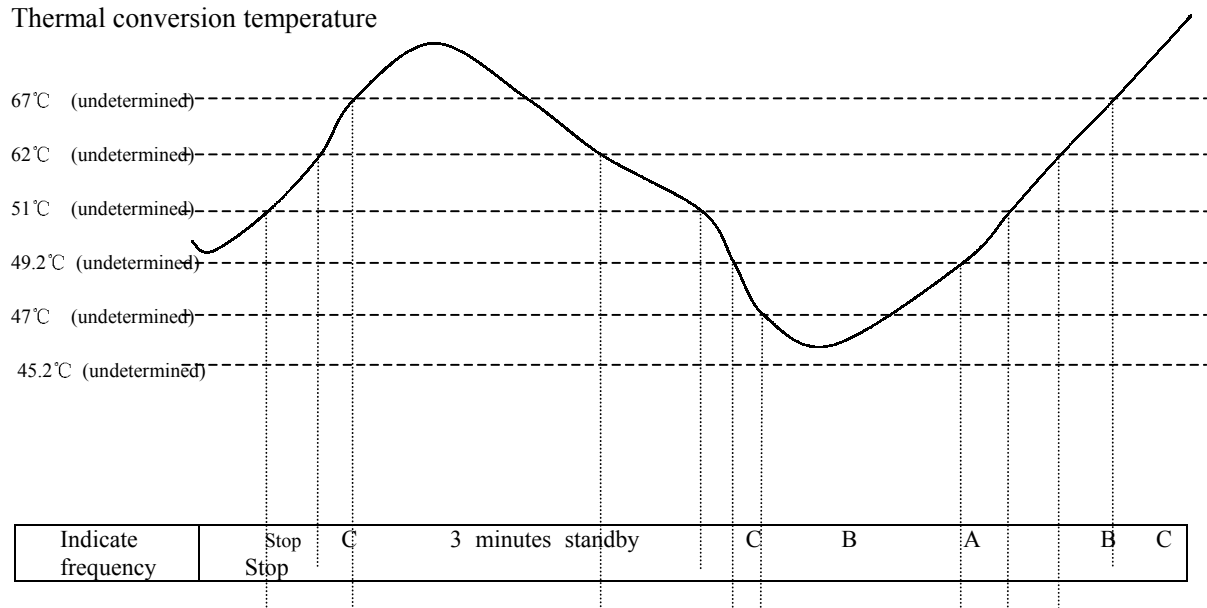
When indoor coil-pipe temperature is 2.1°C, the compressor restarts.

During trial running, the low-load protection control can be overlooked.

1.1.7.2 High-load protection

During heating running, if the indoor coil-pipe temperature is too high, the compressor must be stopped for protection to prevent it from damaging due to the system overheating. See the following figure for details:

Thermal conversion temperature



	Parameters
Frequency A	80Hz
Frequency B	72Hz
Frequency C	50Hz
Frequency D	30Hz

When high-load protection is limited to act twice within 30 minutes, it is high-load protection alarm.

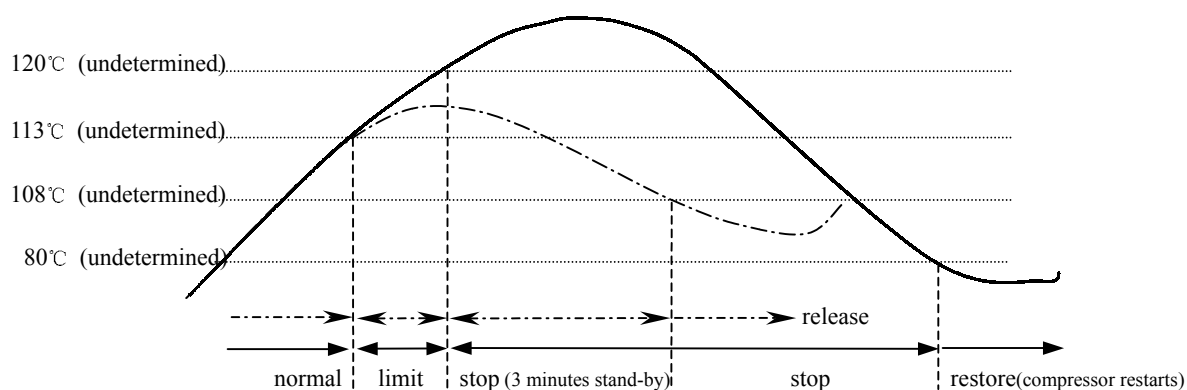
When indoor coil pipe temperature is lower than 45°C, it comes back to normal control.

The frequency of high load protection is priority.

1.1.7.3 Compressor discharge temperature protection

Brief introduction to electrical function

When air conditioner is running, the discharge temperature need not to be detected within the first 10 minutes and starts to detect after 10 minutes. If the detected temperature is found too high, the compressor shall be protected from damaging by decreasing frequency or stopping, see the following figure for details:



If the compressor continuously stops twice within 30 minutes, the compressor discharge temperature protection alarms.

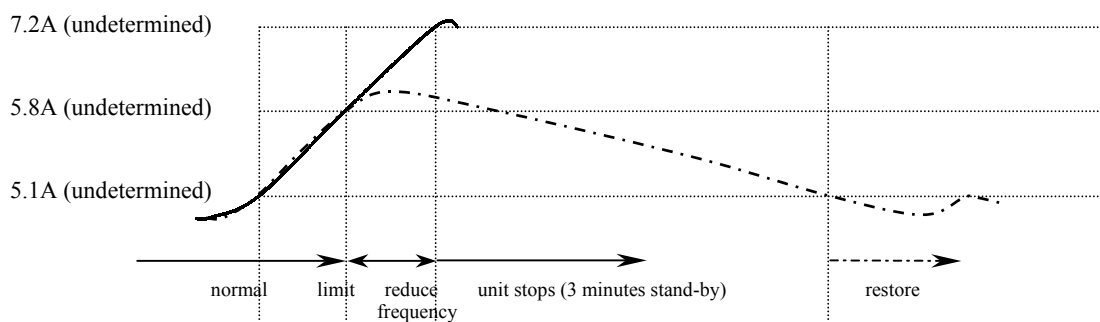
Note:

The undetermined data are for the example machine type, not for all types.

The dotted line indicates the descending curve of the discharge temperature after frequency is limited, and the real line indicates the continuous ascending curve of the discharge temperature after frequency is limited.

1.1.7.4 AC over-current protection

When compressor is running, overhigh current will appear if the system load is heavy. In order to reduce the current and protect the compressor, the frequency must be reduced or the compressor must be stopped, see the following for details:



If continuously appears twice within 30 minutes, AC over-current protection alarms.

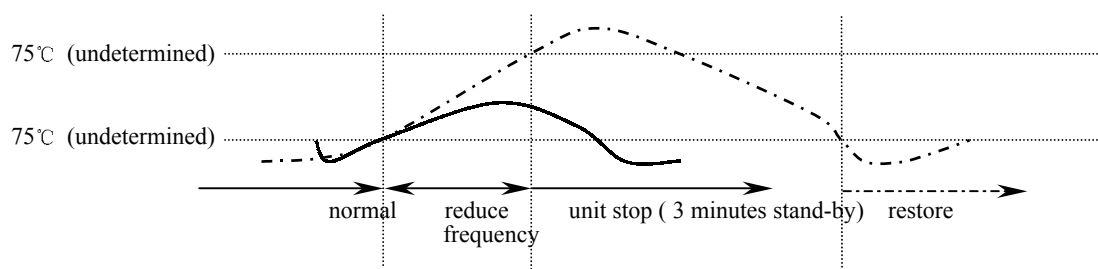
1.1.7.5 Over-current protection of the power module

When compressor is running, if “rotation obstacle” appears or the system pressure is too high, the power module will send “over-current signal of power module” to outdoor computer board to protect it from damaging and the unit stops and alarms.

1.1.7.6 Overhigh temperature protection of the outdoor computer board

Brief introduction to electrical function

If the temperature of the outdoor computer board is too high, the system will reduce the frequency or stop the compressor to protect other components on the computer board from damaging, see the following figure for details:



1.1.8 Abnormity confirmation alarm

1.1.8.1 Indoor ambient temperature sensor abnormal

When in running, temperature above 126°C or below -31°C is abnormal.

When leaving the above ranges, operation resets automatically.

1.1.8.2 Indoor coil pipe temperature sensor abnormal

When in running, temperature above 196°C or below -53°C is abnormal.

When leaving the above ranges, operation resets automatically.

If abnormality appears, the low-load protection shall be released.

1.1.8.3 High-load protection

Within 30 minutes after upper limit of high-load acting, the high-load protection will alarm if the upper limit of high-load acts once more.

1.1.8.4 Outdoor ambient temperature sensor abnormal

Displayed as thermistor abnormality mode respectively after outdoor unit received the abnormal error code signals of defrosting, discharge temperature, control board and outdoor thermistor.

Resetting operation automatically after outdoor unit received the signal of temperature sensor abnormality released.

If abnormality appears, the low-load protection shall be released.

1.1.8.5 Control action of outdoor unit protection

Displaying abnormality confirmation mode since outdoor unit received the following error code:

Overhigh temperature protection of air discharge pipe, DC peak current, CT wiring disconnected, AC over-current, overhigh temperature protection of control board, low-voltage protection and compressor abnormal rotation.

1.1.8.6 Transmission abnormality

According to the communication between indoor unit and outdoor unit, it is considered abnormal if outdoor unit cannot receive signals within 20 seconds after indoor unit's sending. (Except for the first 2 minutes after power on).

It is regarded as transmission abnormality after outdoor unit receives the signal of transmission abnormality.

Transmission abnormality is released by running stopping.

Brief introduction to electrical function

1.1.8.7 EEPROM

When power on, EEPROM is abnormal if the control parameters and the checking total amount are not identical. EEPROM is considered abnormal since the outdoor received the abnormal signal of EEPROM.

At the same time, remote control and emergency running are not accepted.

It is only can be released by power blackout.

1.1.8.8 List of error code

Abnormity mode	Error display			Indo or	Outd oor	Autom atic restore
	Powe r	Time r	Run ning			
Abnormity of indoor thermistor	★	■	■	*		*
Abnormity of thermal conversion thermistor	★	□	□	*		*
Abnormity of defrosting thermistor	□	□	★		*	*
Abnormity of discharging thermistor	★	□	■		*	*
Abnormity of control board thermistor	□	■	★		*	*
Abnormity of module thermistor	□	★	□		*	*
Abnormity of outdoor thermistor	□	★	■		*	*
Transmission abnormality	■	■	★	*		
					*	
Compressor running abnormality	★	■	□		*	
Overhigh discharging temperature protection	■	★	■		*	
AC current protection	★	★	■		*	
DC current protection	★	★	□		*	
Insufficient current protection	■	★	□		*	
Outdoor control board temperature protection	■	★	★		*	
Module temperature rising protection	□	★	★		*	
High-load protection	★	★	★	*		
CT wiring disconnected protection	★	■	★		*	
EEPROM abnormality	★	□	★	*		
					*	
Note:	□: Lightning ★: Flashing ■: Blackout			* Indicating that this function is provided.		

Brief introduction to electrical function

Parameter list of the main components

No.	Name	Type	Unit	Indoor unit	Outdoor unit	Remarks
1	Optical coupler	TLP371	Piece	1	1	
2	Optical silicon controlled rectifier	TLP3526	Piece	1		
3	Rectifying bridge	S15VB60 (15A 600V)	Piece		2	
4	Rectifying bridge	SINB60	Piece	1		
5	Power module	TM-03	Piece		1	
6	Relay	G4A-1A DC12V (20)A	Piece	1	1	
7	Ceramic resonator	CST10.0MTW-TF01	Piece		1	
8	Receiver	HS0038A2M	Piece	1		

Brief introduction to electrical function

2. Abnormity diagnose

For the appeared abnormal phenomena, please refer to the following table for trouble analysis and troubleshooting:

List of error code:

Abnormity mode	Error display			Indoor	Outdoor	Automatic restore	Possible reason
	Power	Timer	Running				
Abnormity of indoor thermistor	★	■	■	*		*	1. Inserter does not contact well or control board is not good.
Abnormity of thermal conversion thermistor	★	□	□	*		*	1. Inserter does not contact well or control board is not good.
Abnormity of defrosting thermistor	□	□	★		*	*	1. Inserter does not contact well or control board is not good.
Abnormity of discharging thermistor	★	□	■		*	*	1. Inserter does not contact well or control board is not good.
Abnormity of control board thermistor	□	■	★		*	*	1. Inserter does not contact well or control board is not good.
Abnormity of module thermistor	□	★	□		*	*	1. Inserter does not contact well or control board is not good.
Abnormity of outdoor thermistor	□	★	■		*	*	1. Inserter does not contact well or control board is not good.
Transmission abnormity	■	■	★	*			1. There is great interference source around
					*		2. Incorrect wire connection or control board is not good.
Compressor running abnormity	★	■	□		*		1. Check if compressor shaft is seized. 2. Whether power module is damaged
Overhigh discharging temperature protection	■	★	■		*		1. Whether system gas is insufficient or charged gas is too much. 2. Whether system voltage is too high (above 242V) or too low (below 187V) 3. Whether capillary tube is blocked. 4. Whether sensors or control board components are abnormal. 5. Whether the indoor/outdoor ambient temperature is too high.

Brief introduction to electrical function

AC current protection	★	★	■		*		<ol style="list-style-type: none"> Whether system is charged too many gases. Whether voltage is too low (below 187V). Whether CT or control board component is abnormal.
-----------------------	---	---	---	--	---	--	---

Continued:

DC current protection	★	★	□		*		1. Whether compressor shaft is seized. 2. Whether power module is damaged. 3. Whether system voltage is too high (above242V) or too low (below 187V)
Insufficient current protection	■	★	□		*		1. Whether voltage is too low. 2. Whether control board is damaged.
Outdoor control board temperature protection	■	★	★		*		1. Whether control board is abnormal. 2. Whether outdoor ambient temperature is too high.
Module temperature rising protection	□	★	★		*		1. Whether compressor shaft is seized. 2. Whether power module is damaged. 3. Whether heat emission glue is evenly distributed. 4. Whether system voltage is too high (above242V) or too low (below 187V)
High-load protection	★	★	★		*		1. Whether filter is blocked. 2. Whether the indoor/outdoor ambient temperature is too high 3. Whether system is charged too much gases. 4. Whether control board component is damaged. 5. Whether voltage is too high or too low.
CT wiring disconnected protection	★	■	★		*		1. Whether control board is damaged. 2. Whether 4-way valve is converted. 3. Whether charged gas is normal
EEPROM abnormality	★	□	★	*			1. Whether control board is damaged.
					*		1. Whether control board is damaged.
Note:	□: Lightning ★: Flashing ■: Blackout			* Indicating that this function is provided.			

Abnormity diagnose

Trouble Shooting

Caution

In the event of a malfunction (burning smell, etc.), immediately stop operation, disconnect the power supply plug, and consult sales shop.

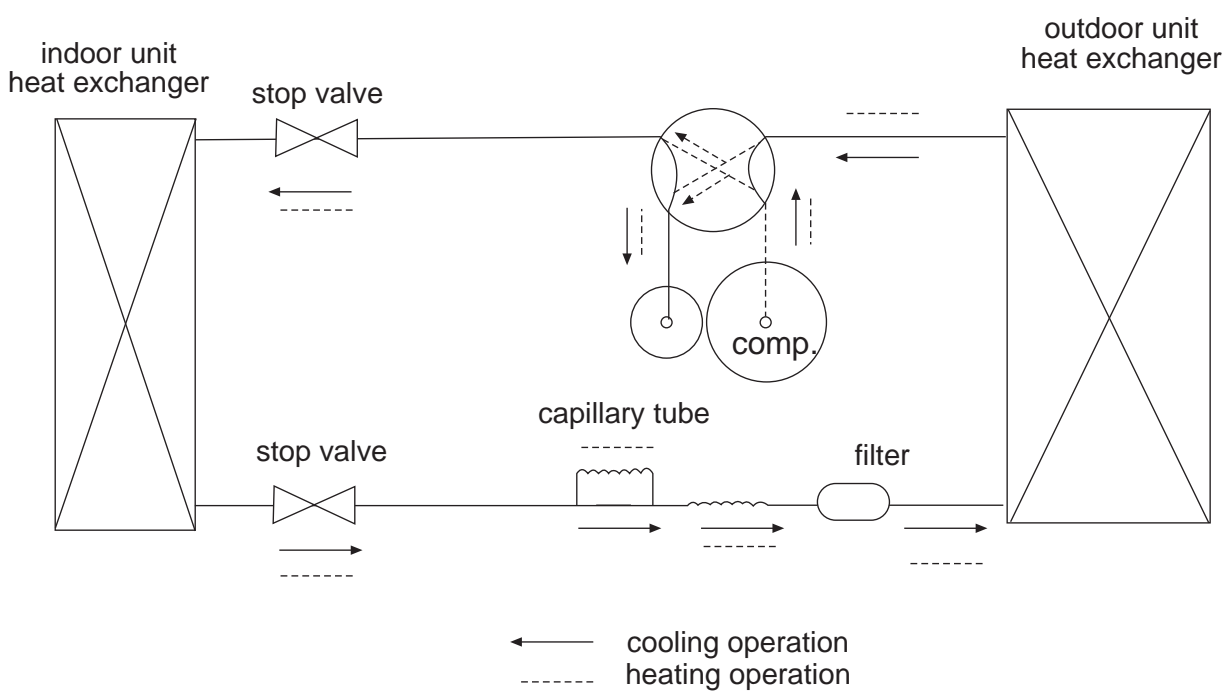
The following is not a machine trouble.

Before requesting service, perform the following checks:

CONDITION	CAUSES OR CHECK POINTS
The system does not start re-operation immediately.	○ This is for protection of the system. After a stop, the system does not start operation for approx, 3min.
Smells are generated.	○ This is because the system circulates smells from the interior air such as the smell of cigarettes, cosmetics, the walls or furniture.
Occurring of noise	<ul style="list-style-type: none"> ○ When cooling is started or heating is stopped, a swishing or a gurgling noise may be heard. This noise is generated while the refrigerant is flowing in the air conditioner. ○ When starting or stopping operation, a cracking noise may be heard. This noise is generated by temperature changes. ○ A whooshing noise is may be heard during operation of the system. This noise is generated when the refrigerant changes direction.
<ul style="list-style-type: none"> ● Air does not flow. (Indoor Unit) ● Air flow speed can not be changed. 	<ul style="list-style-type: none"> ○ During the dry mode operation, air may not flow out, to prevent excessive cooling. ○ During the heating operation, air does not flow out until the air is heated enough to prevent cold air flow. During the thawing in heating, air may not flow.
Air does not flow. (Outdoor Unit)	○ During the dry mode operation and heating mode operation. Air may not flow out.
Cooling/heating is not sufficient.	<ul style="list-style-type: none"> ○ The cooling / heating function may not work effectively when the air filter is clogged with dust and dirt. ○ Make sure the room temperature has not yet reached the designated level. ○ Make sure the air flow speed is not set at "LO". ○ Make sure the inlet or outlet of the outdoor unit is not blocked. ○ When the room temperature has not reached the required level because of a low ambient temperature, add other heating facilities.
The indicator on the wireless remote controller is dim. The indicator dims when sending signals. Indication does not appear on the wireless remote controller.	<ul style="list-style-type: none"> ○ Make sure if the dry batteries have enough charge. Replace worn dry batteries with a new pair. Use R-03 dry batteries. ○ Make sure the dry batteries are set in the right directions.
Misting (Indoor Unit)	○ It is caused by chilled air in cooling operation.
Steaming (Outdoor Unit)	○ It is caused by defrosting of outdoor unit in heating operation.

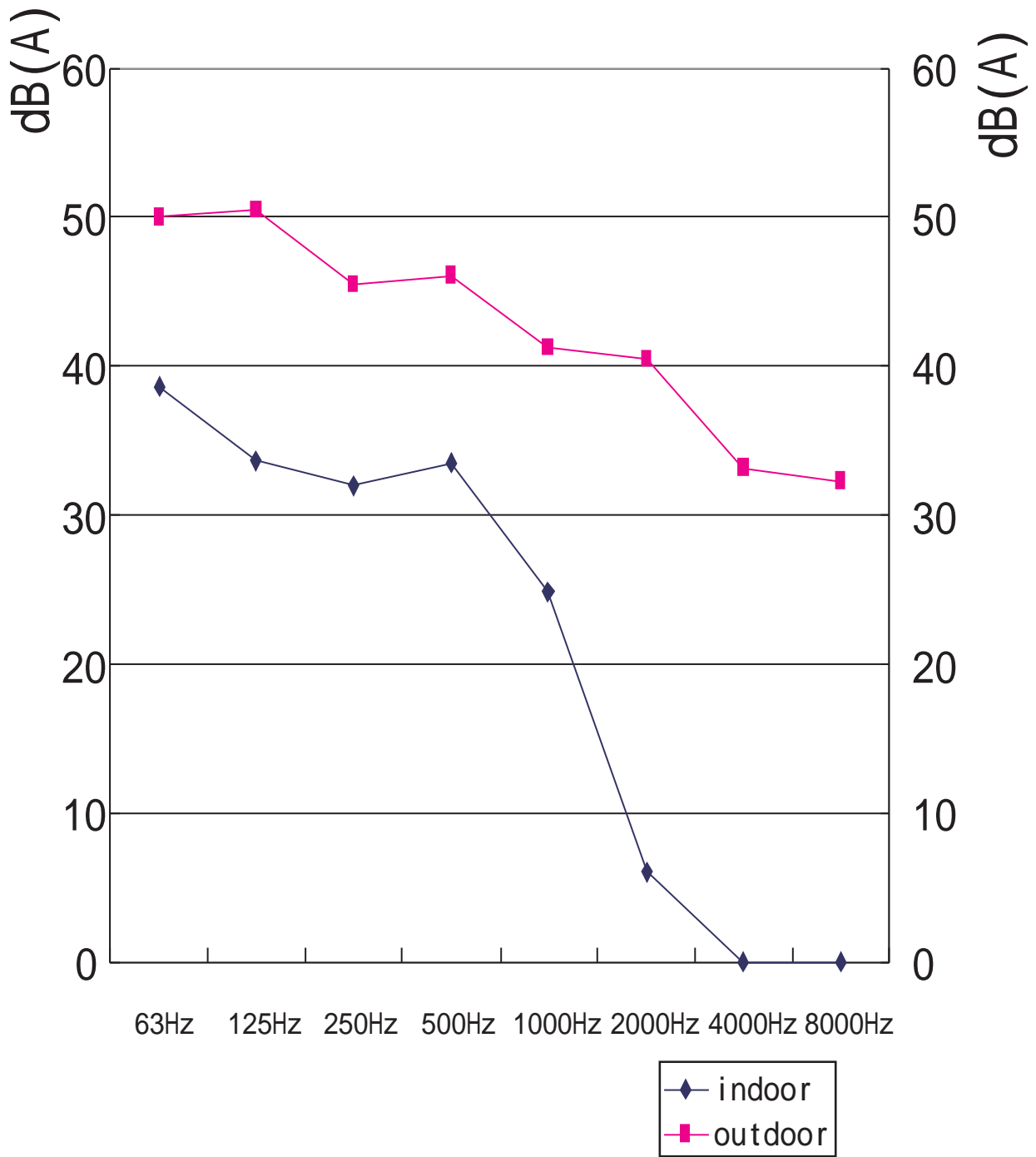
Refrigerating cycle diagram

Refrigerating cycle diagram



Noise level test chart and air velocity distribution

Noise level test chart and air velocity distribution



Noise level test chart and air velocity distribution

Air velocity distribution

Fig 1
top view
flow control panel horizontal
louver:center

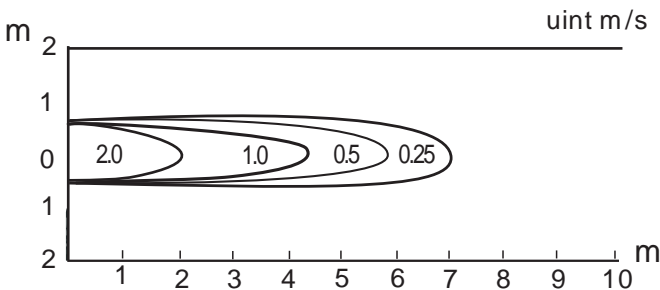


Fig 2
top view
flow control panel horizontal
louver:right and left

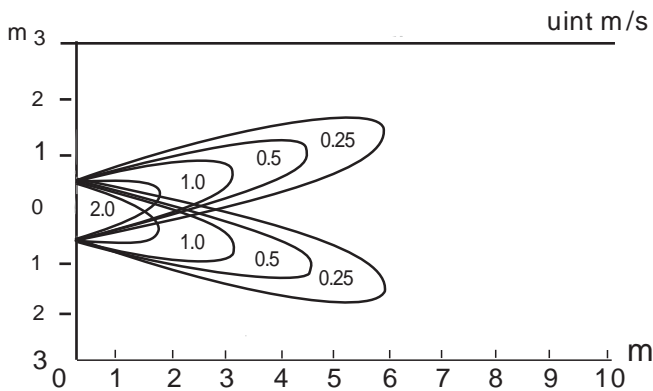


Fig 3
top view
flow control panel horizontal
louver:center

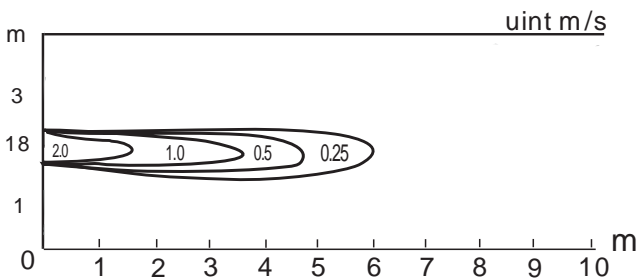
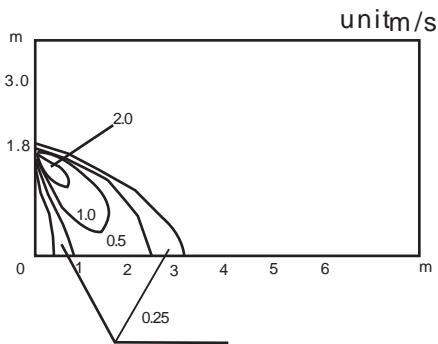


Fig 4
top view
flow control panel vertical
louver:center



Condition
Fan speed:high
Operation mode:fan
Voltage:230V,50Hz

Installation and accessory parts

Installation Manual of Room Air Conditioner

- Read this manual before installation.
- Explain sufficiently the operating means to the user according to this manual.

Necessary Tools for Installation

- | | | | |
|-------------------------|-----------------------------------|---|---------------------|
| 1. Driver | 5. Spanner (14,17,19 and 24mm) | 9. Knife | 12. Measuring tape |
| 2. Hacksaw | 6. Torque wrench (17mm,22mm,24mm) | 10. Nipper | 13. Reamer |
| 3. Hole core drill | 7. Pipe cutter | 11. Gas leakage detector or soap-and-water solution | 14. Refrigerant oil |
| 4. Hexagon wrench (5mm) | 8. Flaring tool | | |

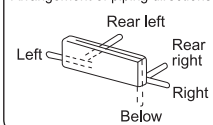
Accessory parts

No.	Accessory parts	Number of articles
①	Remote controller	1
②	R-03 dry battery	2
③	Mounting plate	1
④	Drain hose	1
⑤	Φ4X50 Steel nail, cement	6
⑥	Main pipes	1
⑦	Φ 4X25 Screw Plastic cap	6
⑧	Drain-elbow	1
⑨	Hexagon wrench	1
⑩	Cover	1
⑪	Cushion	4
⑫	Plastic clamp	1
⑬	Connecting cable	1
⑭	Pipe supporting plate	1

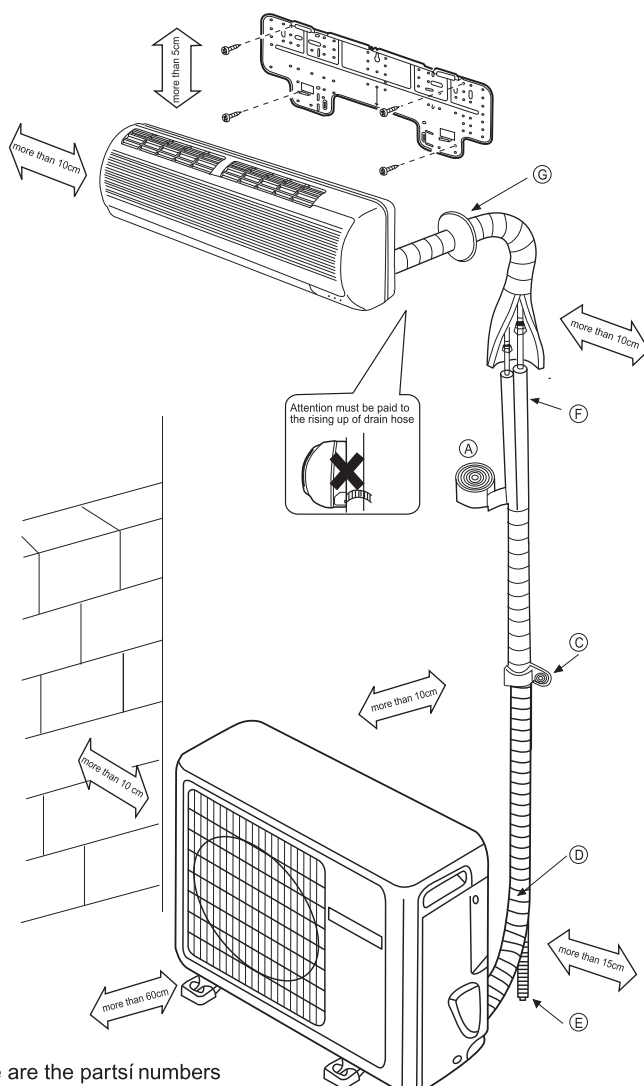
Optional parts for piping

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

Arrangement of piping directions

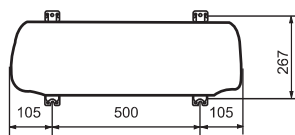
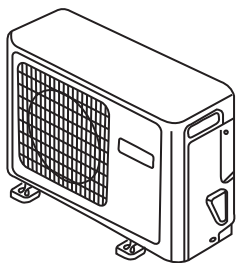


Drawing for the installation of indoor and outdoor units



※ The marks from Ⓐ to Ⓗ in the figure are the parts numbers

※ The distance between the indoor unit and the floor should be more than 2m.



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

Fixing of outdoor unit

- Fix the unit to concrete or block with bolts ($\phi 10\text{mm}$) and nuts firmly and horizontally.
- When fitting the unit to wall surface, roof or rooftop, fix a supporter surely with nails or wires in consideration of earthquake and strong wind.
- If vibration may affect the house, fix the unit by attaching a vibration-proof mat.

Indoor Unit

Selection of Installation Place

Outdoor Unit

- Place, robust not causing vibration, where the body can be supported sufficiently.
- Place, not affected by heat or steam generated in the vicinity, where inlet and outlet of the unit are not disturbed.
- Place, possible to drain easily, where piping can be connected with the outdoor unit.
- Place, where cold air can be spread in a room entirely.
- Place, nearby a power receptacle, with enough space around. (Refer to drawings).
- Place where the distance of more than 1m from televisions, radios, wireless apparatuses and fluorescent lamps can be left.
- In the case of fixing the remote controller on a wall, place where the indoor unit can receive signals when the fluorescent lamps in the room are lightened.
- Place, which is less affected by rain or direct sunlight and is sufficiently ventilated.
- Place, possible to bear the unit, where vibration and noise are not increased.
- Place, where discharged wind and noise do not cause a nuisance to the neighbors.
- Place, where a distance marked \Leftrightarrow is available as illustrated in the above figure.

Power Source

- Before inserting power plug into receptacle, check the voltage without fail. The power source is the same as the corresponded name plate.
- Install an exclusive branch circuit of the power.
- A receptacle shall be set up in a distance where the power cable can be reached. Do not extend the cable by cutting it.

Selection of Pipe

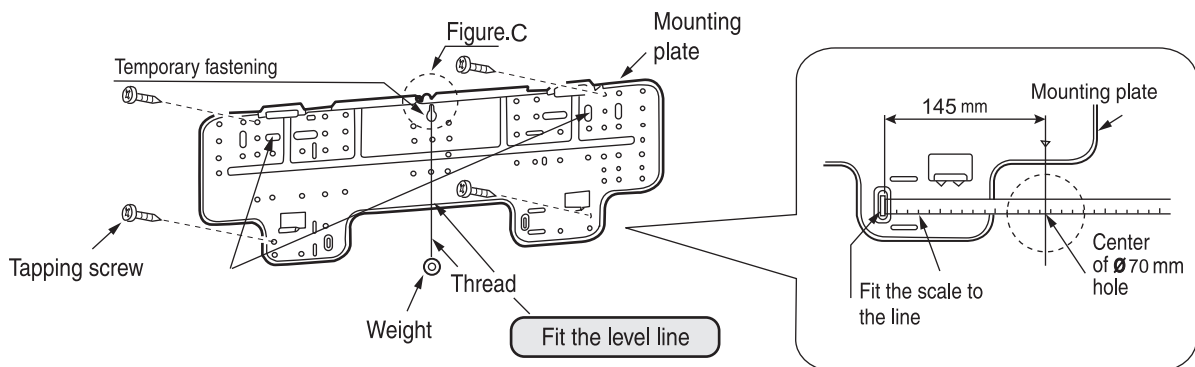
- To this unit, both liquid and gas pipes shall be insulated as they become low temperature in operation.
- Use optional parts for piping set or pipes covered with equivalent insulation material.

Indoor Unit

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

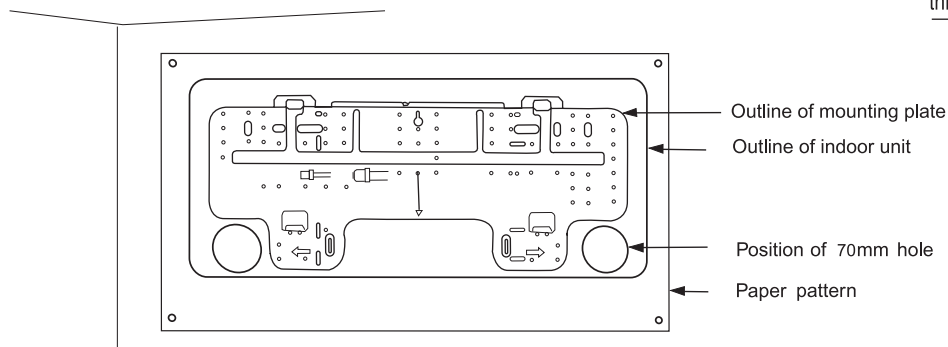
When the mounting plate is first fixed

- 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 Amm using a measuring tape.



When the paper pattern is used

- 1 Stick a paper pattern on the wall horizontally
- 2 Position by using the pattern then remove the pattern

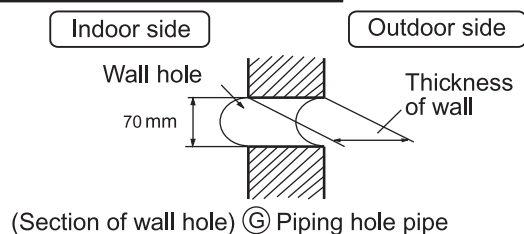


When the mounting plate is fixed to side bar and lintel

- Fix to side bar and lintel a mounting bar, Which is separately sold, and then fasten the plate to the fixed mounting bar.
- Refer to the previous article, " [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 70mm in diameter, slightly descending to outside the wall.
- Install piping hole cover and seal it off with putty after installation.



Indoor Unit

3 Installation of the Indoor Unit

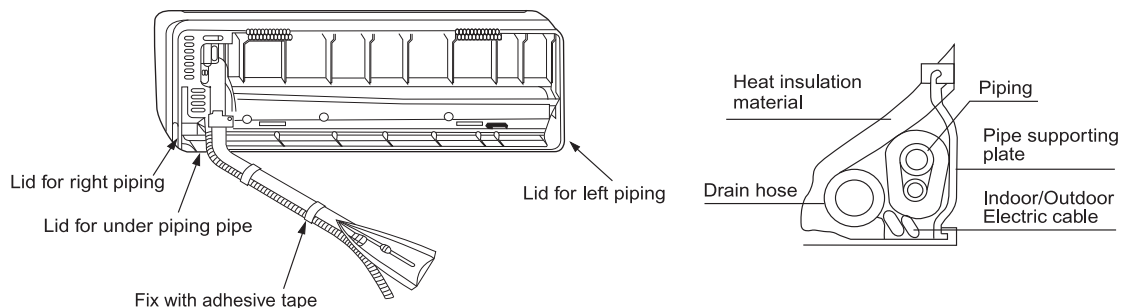
Drawing of pipe

[Rear piping]

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

[Left • Left-rear piping]

- In case of left side piping, cut away, with a nipper, 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 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. Coat the flaring seal face with refrigerant oil and connect pipes.
- Cover the connection part with heat insulation materials closely, and make sure fixing with adhesive tape.



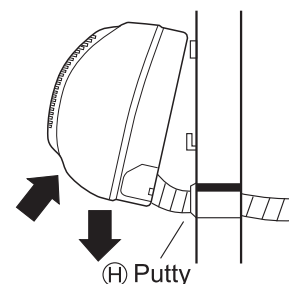
- Indoor/outdoor electric cable and drain hose must be bound with refrigerant piping by protecting tape.

[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.

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 perpendicularly.

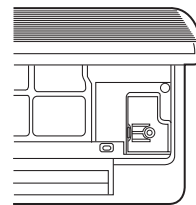


Indoor Unit

4 Connecting the indoor/outdoor Electric Cable

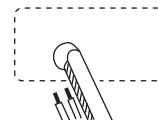
Removing the wiring cover

- 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 has already existed.
- Pull out the cable on the front side, and connect the cable making a loop.

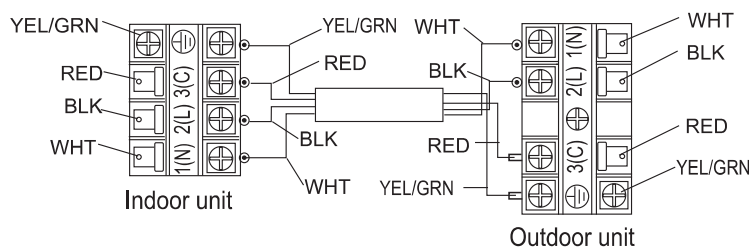
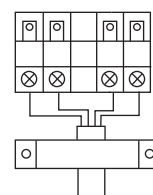
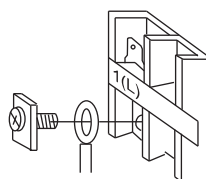
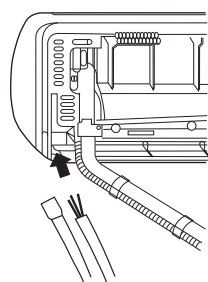


When connecting the cable before installing the indoor unit

- 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.

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.

- 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 is H05RN-F or H07RN-F.
- If the fuse on PC board is broken please change it with the type of T.3.15A/250V.
- The wiring method should be in line with the local wiring standard.
- After installation, the power plug should be easily reached.



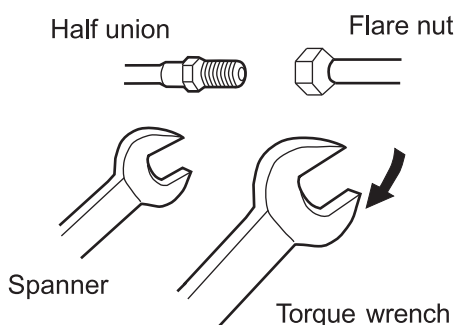
Outdoor Unit

1 Installation of Outdoor Unit

Install according to **Drawing for the installation of indoor and outdoor units**

2 Connection of Pipes

- Apply refrigerant oil on half union and flare nut.
- 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.

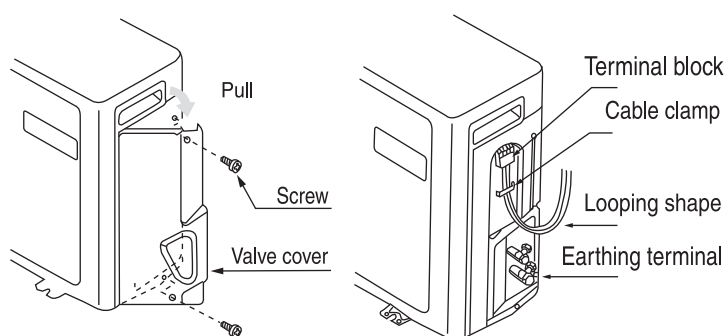


Forced fastening without careful centering may damage the threads and cause a leakage of gas.

Pipe Diameter (ϕ)	Fastening Torque
Liquid Side 6.35mm(1/4")	18N·m
Gas Side 12.7mm(1/2")	50N·m

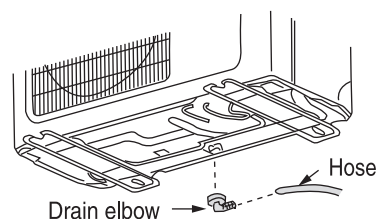
3 Connection

- 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.



4 Attaching Drain-Elbow

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

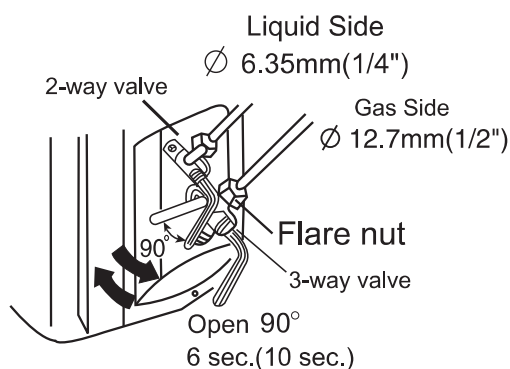


Outdoor Unit

5 Purging Method

Push the air out of the indoor unit and piping as follows:

- (1) Remove the valve cap on 2-way valve in outdoor unit.
- (2) Loosen by 1/2 turn the flare nut of gas pipe, which is connected to 3-way valve.
- (3) Loosen 2-way valve by 90° using hexagon wrench, and after approx. 6 sec tighten it up. Gas comes out through flare nut on wide pipe. if no gas is discharged, tighten flare nut with specified torque.
- (4) Open 2-way and 3-way valves using specified torque.
- (5) Tighten the caps on the valves with specified torque.



	Tightening torque N.m
Valve rod	7-9
Valve cap	20-25

- When connecting pipe exceeds 5 meters, 16g refrigerant shall be added per exceeding meter. Charge according to the following list.

Piping length	5m	7m	10m
Additional amount	No need	32g	80g

- Note: When extending piping, air inside piping shall be removed by using external refrigerant gas, then discharge excess refrigerant by air purging.

Brand new outdoor unit is charged 50g more refrigerant than regulated weight. Only for first installation, this extra 50g can be used to purge air in the pipes.

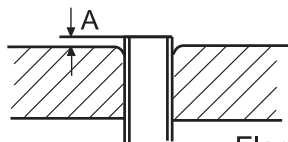
- ★ 1 During this procedure, 50g refrigerant will be discharged in piping.
 (This must be strictly controlled within 90° and 6sec.)

1 Power Source Installation

- The power source must be exclusively used for air conditioner. (Over 10A)
- In the case of installing an air conditioner in a moist place. please install an earth leakage breaker.
- For installation in other places, use a circuit breaker as far as possible.

2 Cutting and Flaring Work of Piping

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



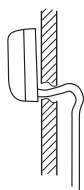
Flare tooling die

	Pipe diameter ϕ	Size A (mm)
Liquid side	6.35mm(1/4")	0.8 ~1.5
Gas side	12.7mm(1/2")	1.2 ~2.0

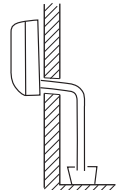
Correct	Incorrect				
	Lean	Damage of flare	Crack	Partial	Too outside

3 On Drainage

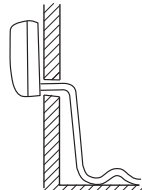
- Please install the drain hose so as to be downward slope without fail.
- Please don't do the drainage as shown below.



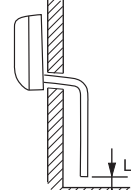
It becomes high midway.



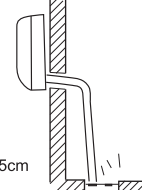
The end is immersed in water.



It waves.



The gap with the ground is too small.



There is the bad smell from a ditch.

- 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.

Check for Installation and Test Run

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

Check Items for Test Run

☐ Put check mark \checkmark in boxes

- | | | |
|--|--|--|
| <input type="checkbox"/> Gas leak from pipe connecting? | <input type="checkbox"/> Is drainage securely carried out? | <input type="checkbox"/> Is the lamp normally lighting? |
| <input type="checkbox"/> Heat insulation of pipe connecting? | <input type="checkbox"/> Is the earth line securely connected? | <input type="checkbox"/> Are cooling and heating (when in heat pump) performed normally? |
| <input type="checkbox"/> Are the connecting wirings of indoor and outdoor firmly inserted to the terminal block? | <input type="checkbox"/> Is the indoor unit securely fixed? | <input type="checkbox"/> Is the operation of room temperature regulator normal? |
| <input type="checkbox"/> Is the connecting wiring of indoor and outdoor firmly fixed? | <input type="checkbox"/> Is power source voltage abided by the code? | |
| | <input type="checkbox"/> Is there any noise? | |

AS122ALAH A AS122AKAHA AS122AMAHA AS122AMAIA
 (HSU-12HH03(B)) (HSU-12HF03(B)) (HSU-12HT03(B)) (HSU-12HO03(B))

- Paper Pattern for Indoor Unit Installation Leave at Least 50mm between the top of the unit and the ceiling
 Please use this sheet to site the unit

