SEDNA AIRE

THE WORLDS FIRST SOLAR ABSORPTION AIR CONDITIONER

ENVIRONMENTALLY FRIENDLY

R407c

INSTALLATION AND SERVICING MANUAL

For Technical Personnel Use Only

MODELS
SWM 9 SP /SP 9 C
SWM 12 SP / SP 12 C
SWM 18 SP / SP 18 C
SWM 24 SP / SP 24 C

WALL MOUNTED

WARNING

This service and installation information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service this product. Products powered by electricity should be serviced or repaired only by an experienced professional technician. Any attempt to service or repair this product by anyone else could result in injury or death.

CONTENTS

TECHNICAL SPECIFICATIONS

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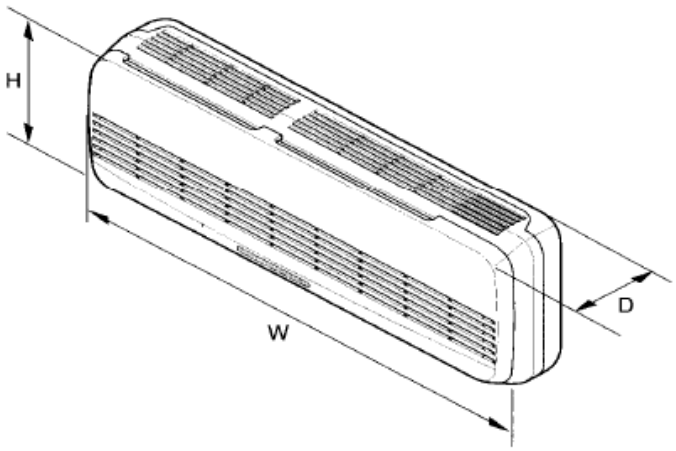
MODEL	INDOOR	SWM 9 SP	SWM 12 SP	SWM 18 SP	SWM 24 SP
	OUTDOOR	SP 9C	SP 12 C	SP 18 C	SP 24 C
NOMINAL COOLING CAPACITY	BTU/h	9,000	12,000	18,000	24,000
	W	2,690	3,516	5,274	7,032
	kcal/h	2,318	3,024	4,536	6,048
RATED TOTAL POWER CONSUMPTION	W		818	1,113	1,760
RATED TOTAL RUNNING CURRENT	A		3.72	5.06	8
ENERGY EFFICIENCY RATING (EER)			14.66	16.17	13.63
FAN COIL UNIT					
POWER SOURCE	V/Ph/Hz	240/1/50-60	240/1/50-60	240/1/50-60	240/1/50-60
AIR FLOW	CFM/CMM	260/	355/10.06	510/14.45	650/18.42
RATED INPUT POWER	W		30	50	69
RATED RUNNING CURRENT	A		0.13	0.22	0.29
HEIGHT DIMENSION	mm/in	250/	260/10.2	306/12.0	306/12.0
WIDTH	mm/in	670/	899/35.4	1062/41.8	1062/41.8
DEPTH	mm/in	190/	198/7.80	222/8.7	222/8.7
WEIGHT	KG	9.2	9.4	15	15
CONDENSING UNIT					
COMPRESSOR					
POWER SOURCE	V/Ph/Hz	240/1/50-60	240/1/50-60	240/1/50-60	240/1/50-60
RATED INPUT POWER	W		796	1,068	1,578
RATED RUNNING CURRENT	A		3.4	4.7	7.05
LOCK ROTOR	A		20	25	38
FAN					
RATED INPUT POWER	W		62	126	141
RATED RUNNING CURRENT	A		0.26	0.53	0.59
HEIGHT DIMENSION	mm/in	500/	540/21.3	651/25.6	753/29.6
WIDTH	mm/in	700/	700/27.6	855/33.7	855/33.7
DEPTH	mm/in	230/	250/9.8	328/12.9	328/12.9
WEIGHT	KG	29	32	57	58
SOLAR PANEL					
LENGTH DIMENSION	CM	179	179	179	179
WIDTH	CM	144	144	144	144
DEPTH	CM	26	26	26	26
SOLAR TUBES					
LENGTH DIMENSIONS	CM	163	163	163	163
WIDTH	CM	39	39	39	39
DEPTH	CM	26	26	26	26
WEIGHT	KG	120	120	120	120

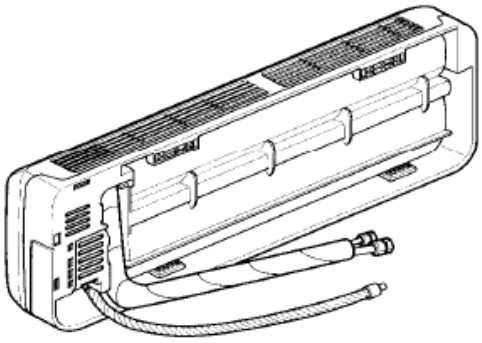
DIMENSIONS

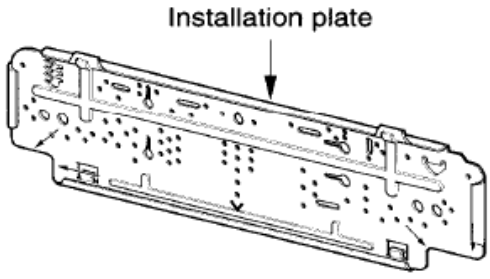
DIMENSIONS

INDOOR DIMENSIONS

MODELS	HEIGHT	WIDTH	DEPTH
SWM9SP	256mm	670mm	190mm
SWM12SP	260mm	899mm	198mm
SWM18SP	306mm	1062mm	222mm
SWM24SP	306mm	1062mm	222mm



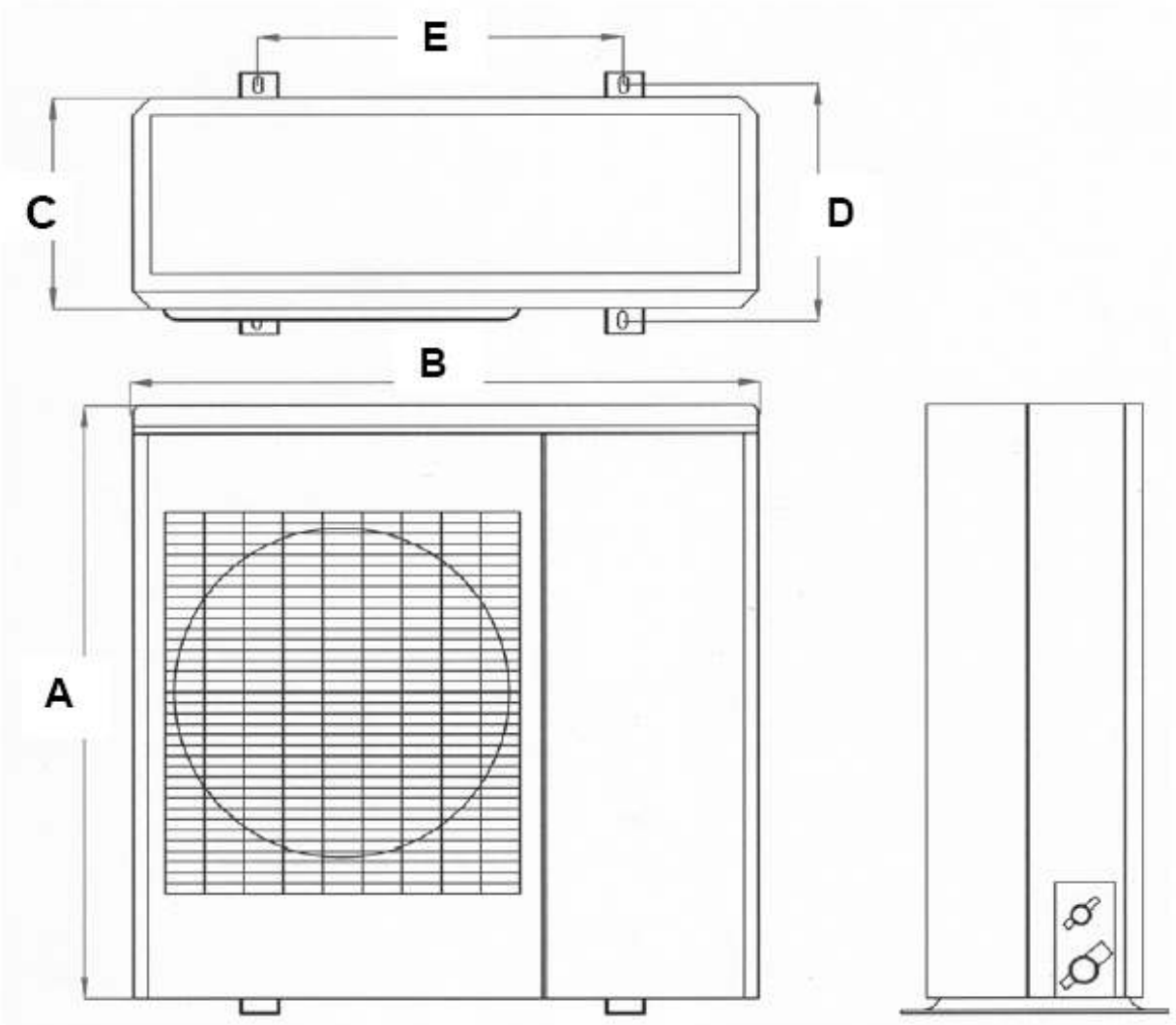




DIMENSIONS

OUTDOOR DIMENSIONS

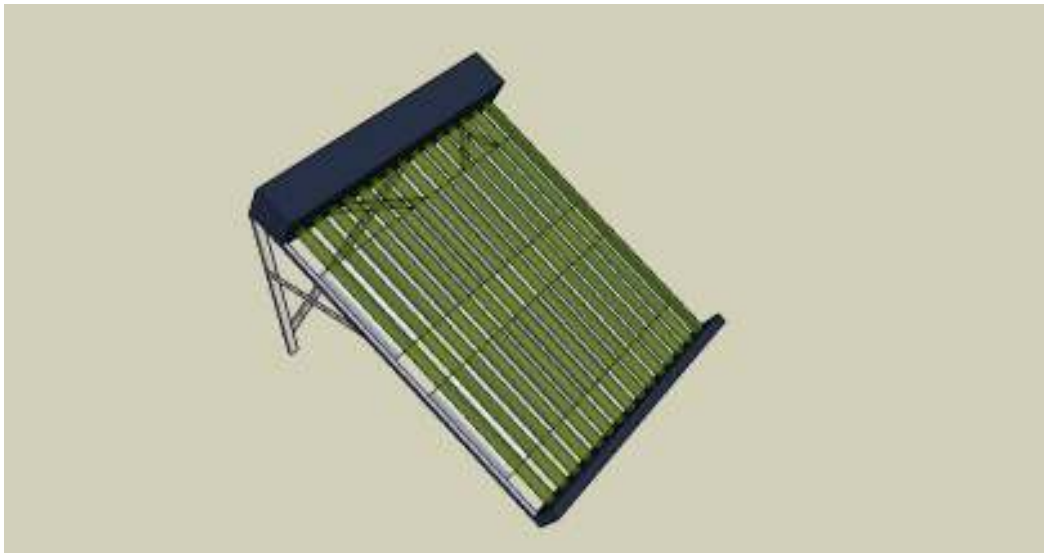
MODELS	HEIGHT A	WIDTH B	DEPTH C	D	E
SP9C	500mm	700mm	230mm	260mm	510mm
SP12C	540mm	700mm	250mm	295mm	510mm
SP18C	651mm	855mm	328mm	320mm	510mm
SP24C	753mm	855mm	328mm	310mm	590mm



DIMENSIONS

SOLAR PANEL

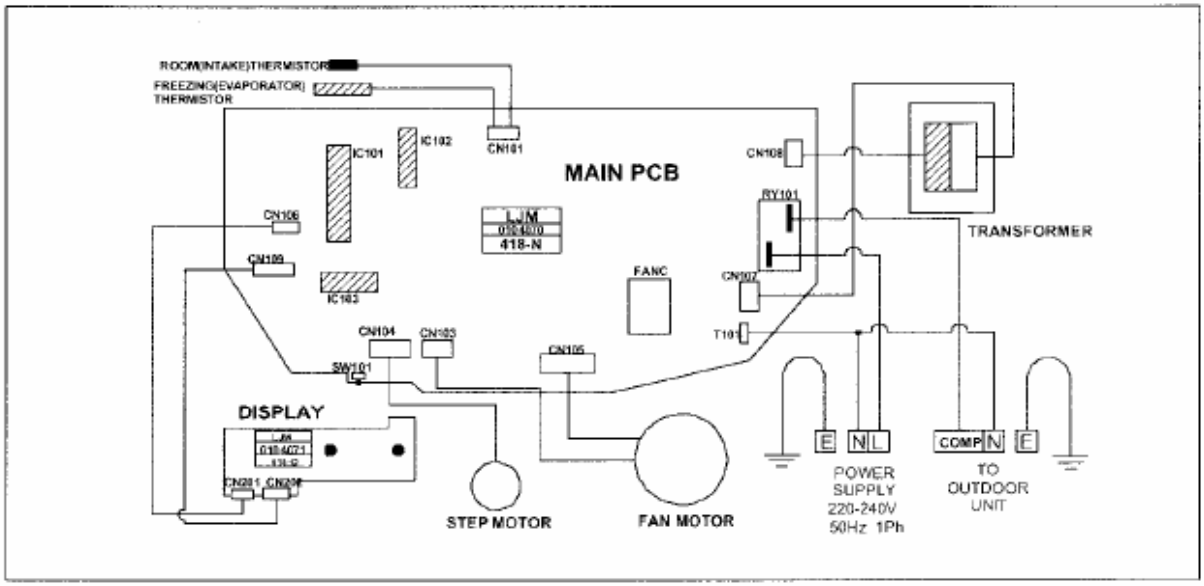
MODELS	HEIGHT	WIDTH	DEPTH
PANEL	179CM	244CM	26CM
TUBES	163CM	29CM	26CM



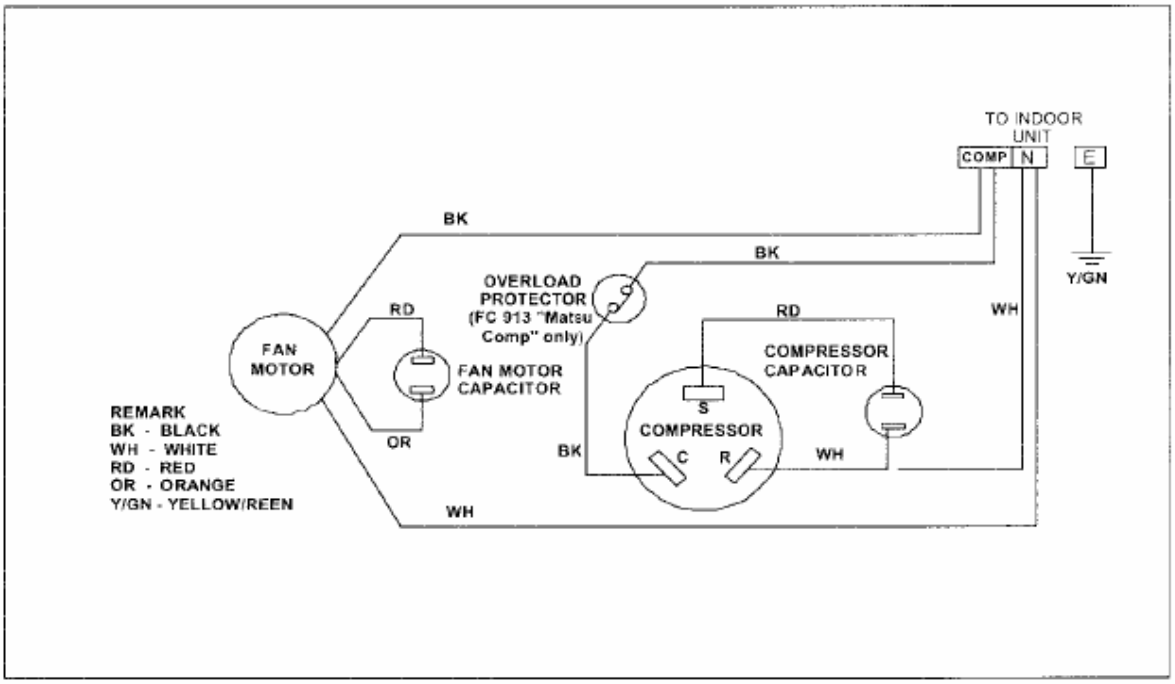
WIRING DIAGRAMS

WIRING DIAGRAMS

INDOOR UNITS
SWM 9 SP / SWM 12 SP

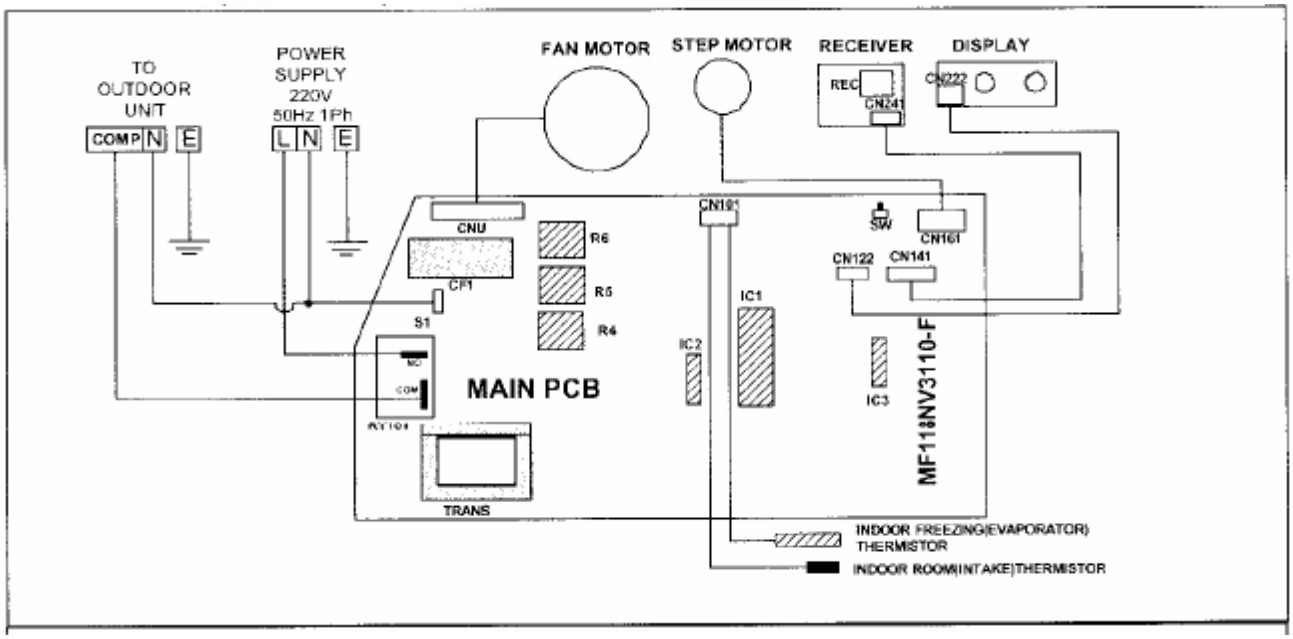


OUTDOOR UNITS
SP 9 C / SP 12 C

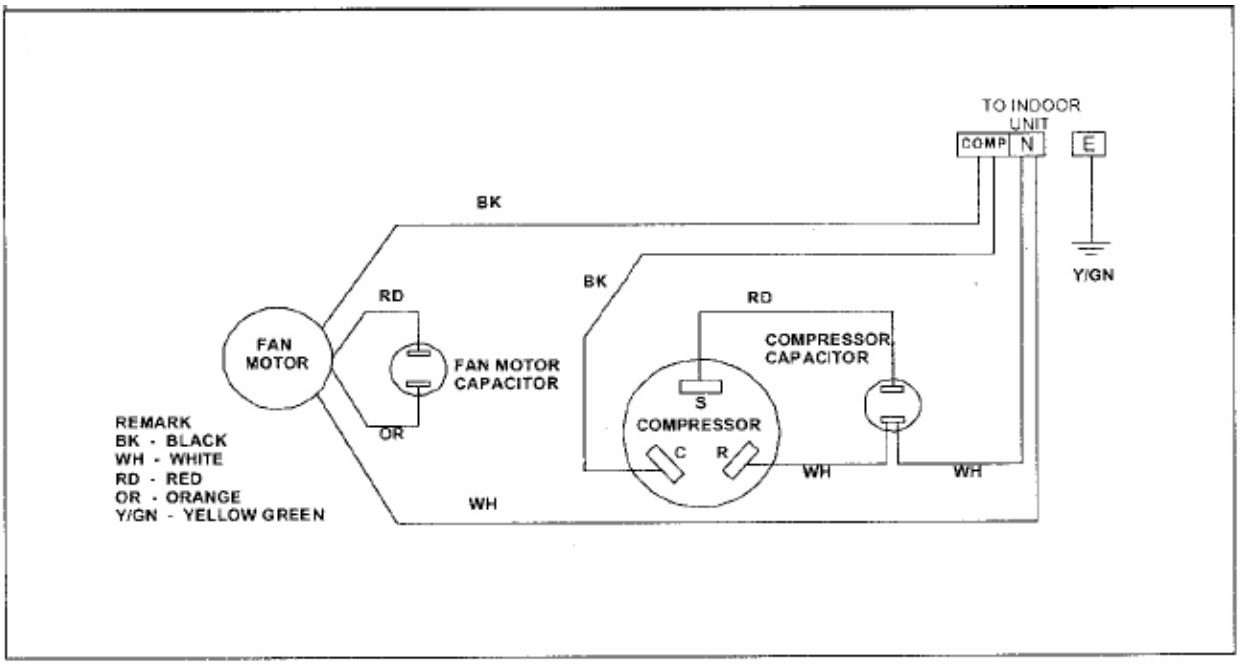


WIRING DIAGRAMS

INDOOR UNITS
SWM 18 C / SWM 24 C

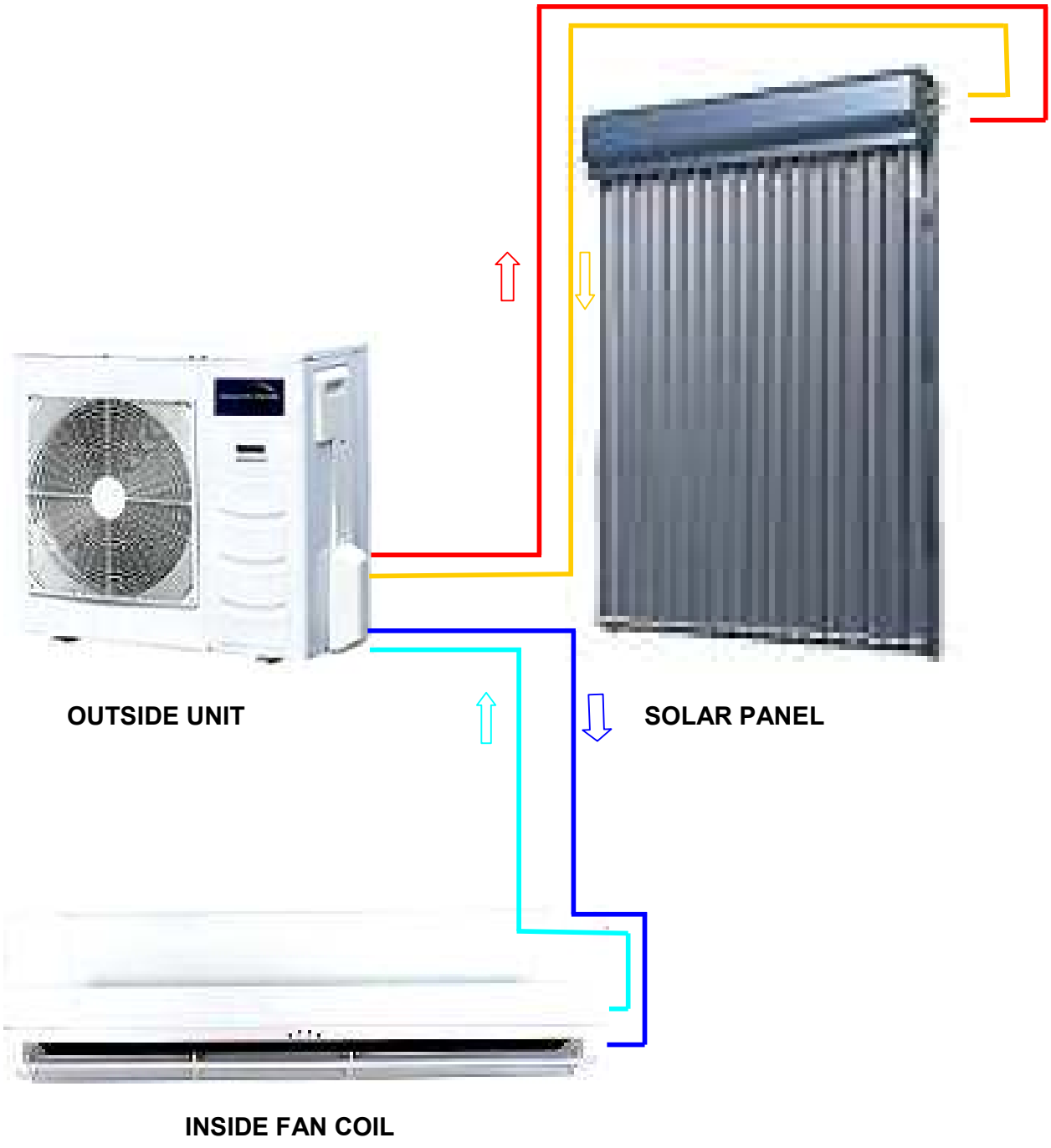


OUTDOOR UNITS
SP 18 C / SP 24 C



REFRIGERANT DIAGRAM

REFRIGERANT DIAGRAM

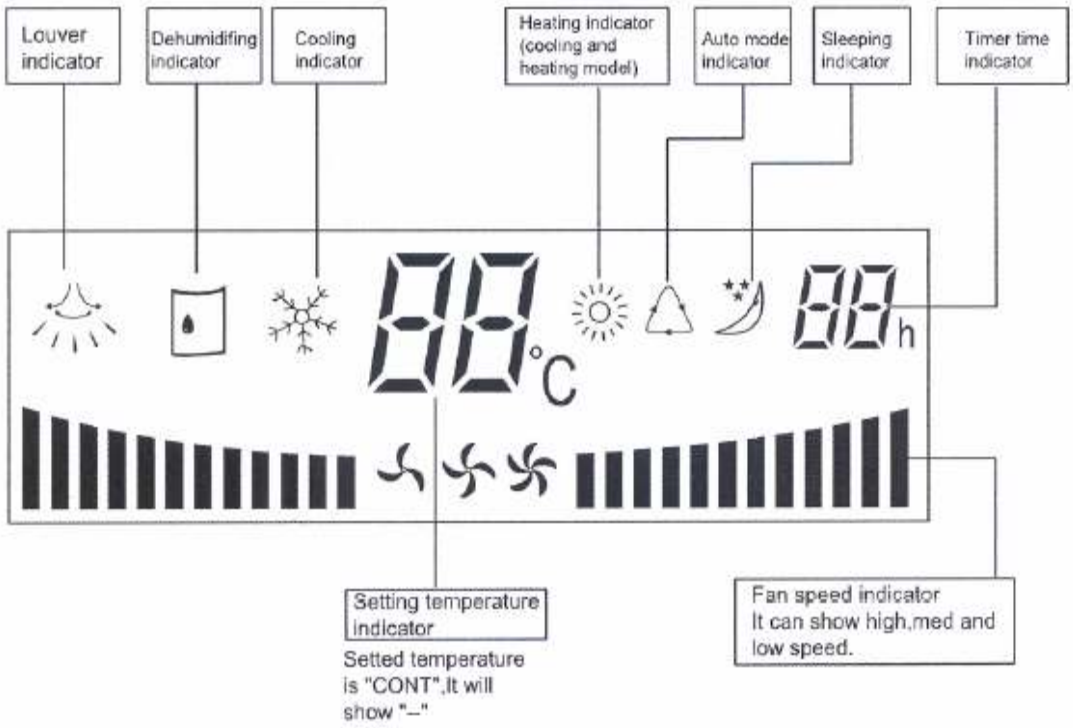


REMOTE CONTROL OPERATION

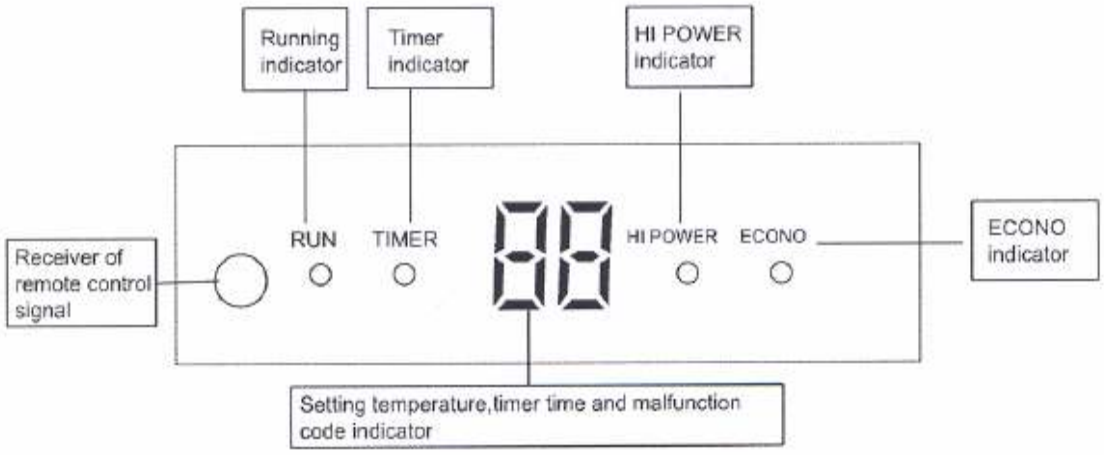
REMOTE CONTROL OPERATION

Indications of unit

(一)



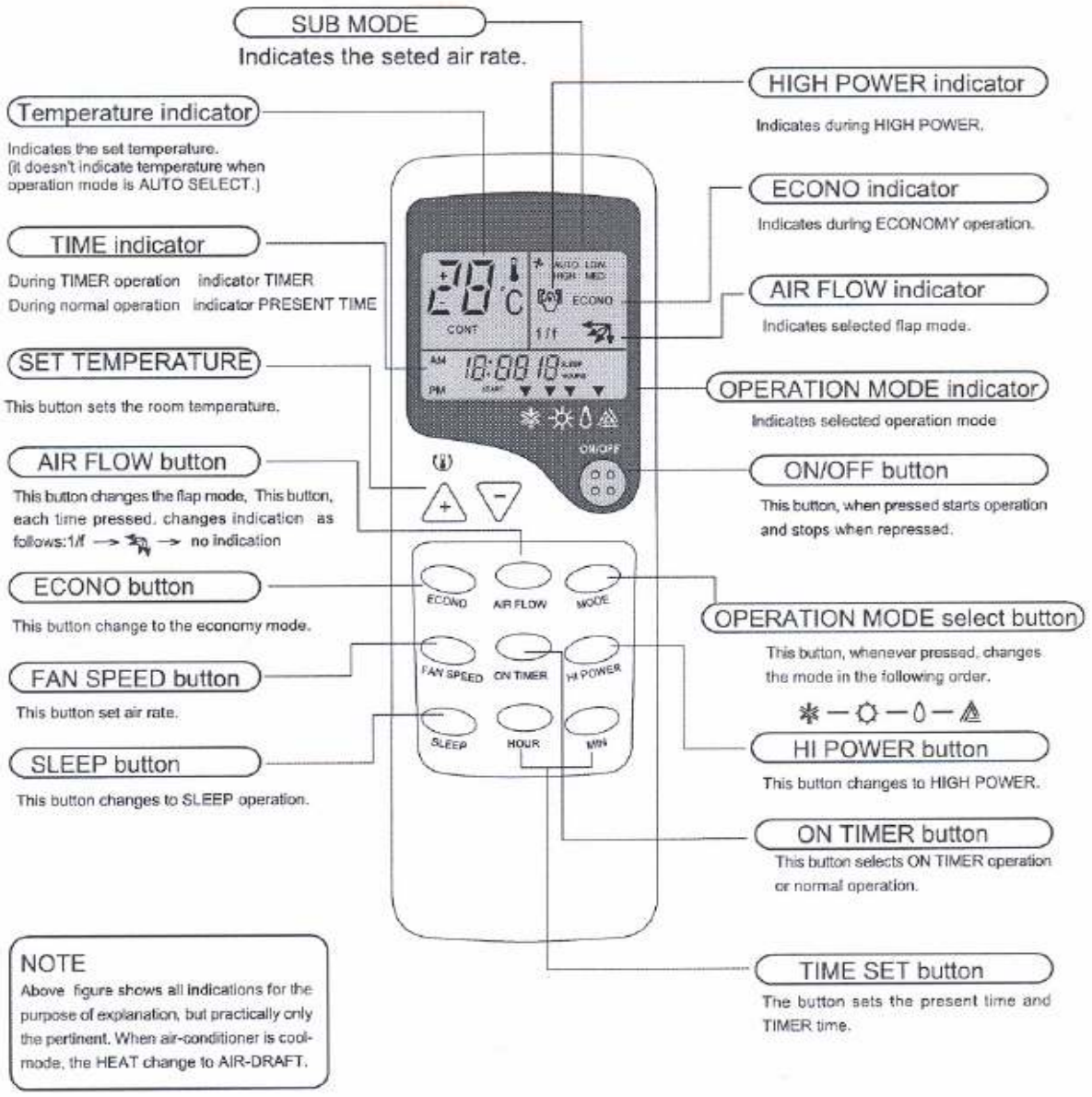
(二)



Above figure shows all indications for the purpose of the explanation but practically only the partinent parts are indicated.
The indicator may be changed,but it does not affect your operation.

REMOTE CONTROL OPERATION

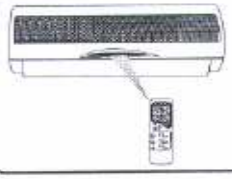
【Operation and indication sections of remote controller】



NOTE

Above figure shows all indications for the purpose of explanation, but practically only the pertinent. When air-conditioner is cool-mode, the HEAT change to AIR-DRAFT.

Transmission procedure

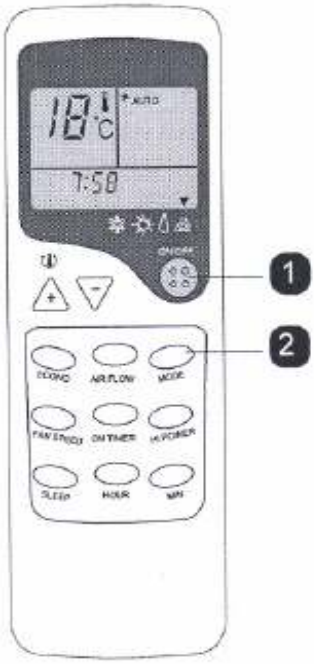


When each button on the remote controller is pressed with the remote controller pointing toward the air conditioner unit, signal is sent. When the signal is received correctly, the receiving sound is emitted from the unit.

REMOTE CONTROL OPERATION

[AUTO mode operation procedure]

Operates by selecting automatically the operation mode (DRY,COOL ,or HEAT, AIR-DRAFT) depending on the room temperature at starting. With the remote controller pointing the air conditioner.



1	Press the ON/OFF button.

When the unit is not at AUTO SELECT mode.

2	Press the MODE button. Set to "AUTO SELECT"

Each time the button is pressed,the operaction mode is changed in sequence,from ❄ (COOL)→☼(HEAT) →💧(DRY) →A (AUTO)

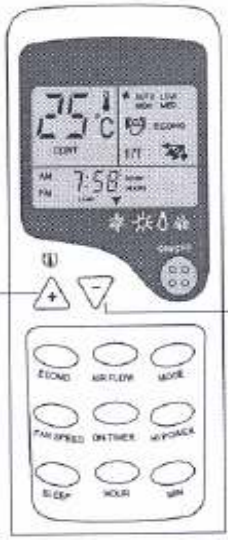
TO Stop:	Press the ON/OFF button.

The operation of the AUTO SELECT mode can be performed by only pressing the ON/OFF button from the next time.

If you don't like the content of AUTO SELECT mode operation. Change to HEAT DRY or COOL than AUTO SELECT.

Temperature adjusting procedure during AUTO SELECT operation

Adjusts air temperature during AUTO SELECT operation , press" △"button or" △"button, adjusts temperature from "one" to "six".



If you feel cool
press △ button

If you feel heat
press ▽ button

Adjusts temperature in your need.

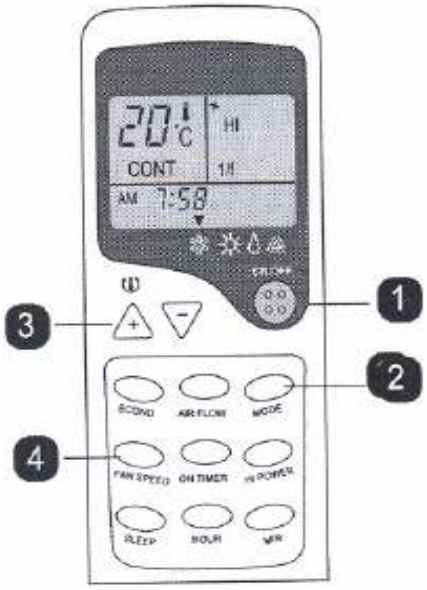
1	Press △ or △ button.

Press △ button once, change from -6 -5·····-1 →+0 +1 to 6, when indicates +6,press △ button , the indicationer isn't change.
Press ▽ button once, change from +6 +5·····-1 →+0 -1 to -6, when indicates -6,press ▽ button , the indicationer isn't change.

REMOTE CONTROL OPERATION

【Cool/Heat/Fan/Dry mode operation procedure】

Cool/Heat/Fan/Dry mode operation procedure



With the remote controller pointing toward the air conditioner.

1. Press the ON/OFF button .
2. Press the MODE select button
   Select the operation mode .
   COOL, DRY,HEAT (FAN), AUTO
3. Press the △ or ▽ button .
   Set to your favorite temperature press △ or ▽ button

HEAT	COOL	DRY
18°C-30°C	18°C-30°C	18°C-30°C

   If CONT , is selected , room temperature isn't controlled , operation being continuously.
4. Press the FAN SPEED button .
   Set to your favorite air flow rate.

To stop : Press the ON /OFF button .

Changing procedure of the content of the operation
Set to the content.
The content of the operation can be set or changed even while the air conditioner is off operation .

•In the Cooling -only operation, the HEAT Mode will cancel,it will be replaced by Fan mode.

HIGH POWER operation

Press "HI POWER" button during "COOL "or "HEAT" operation, the air rate can be setted in "HIGH" and continue to operate 15 minues.

NOTE

During HIGH POWER operation, the air rate cann't be changed.

ECONOMY operation

Press "ECONO" button during "COOL" operation, the setted-temperature can raise 2^0C and the air rate in "LO".

NOTE

During "ECONO" operation the air rate cann't be changed.

REMOTE CONTROL OPERATION

【Air flow direction adjustment procedure】

Adjusting up/down air flow direction

Up/down direction can be adjusted by using the AIR FLOW button on the remote controller. This button , each time pressed , changes the mode in the following sequence:

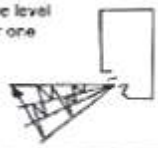
→NATURAL FLOW →SWING →NO indication (flap stopped)

Change to the AIR FLOW mode.

NATURAL FLOW

In COOL , DRY and FAN operation

Stops at the level position for one minute.



Sway operation

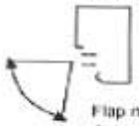
The flap operation as shown above will be repeated.

In HEAT operation

Sway operation

The flap operation as shown above will be repeated.

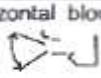
SWING FLAP



Flap moves in upward and downward directions continuously.

MEMORY FLAP(FLAP STOPPED)

When the flap is operating if the AIR FLOW button is pushed once , it stops swinging at an angle . As this angle is memorized in the microcomputer , the flap will be automatically set to the angle when next operation is stared. Recommendable stopping angle of the flap .

COOL , DRY	(Horizontal blowing) 	HEAT	(Slant forward blowing) 

⚠ CAUTION

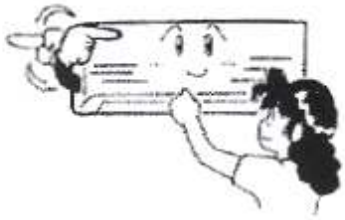
•Avoid direct air flow to the body for many hours .

CAUTION

•Avoid downward blowing operation for many hours
•Do not try to adjust the flaps by hand . Otherwise , the control angle may change or the flap may not close completely.

Adjusting left/right air flow direction

Adjust the direction by moving directly the left /right air flow direction adjusting fin by hand .



⚠ CAUTION

When adjust the direction , stop air conditioner .

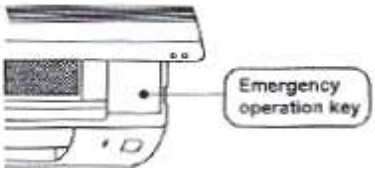
Emergency run operation

•The ON/OFF button operations ON/OFF of the unit temporarily when remote controller is not used .

Operation content

•OPERATION MODE	: AUTO SELECT
•SUB MODE	: AUTO
•AIR FLOW	: NATURAL FLOW

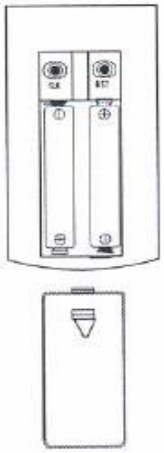
•Operation starts by pressing the RUN button , and by repressing it operation stops .



REMOTE CONTROL OPERATION

【Present time setting procedure】

When cells are inserted, the present is automatically set to AM 12:00 EX:Set to AM 10:30

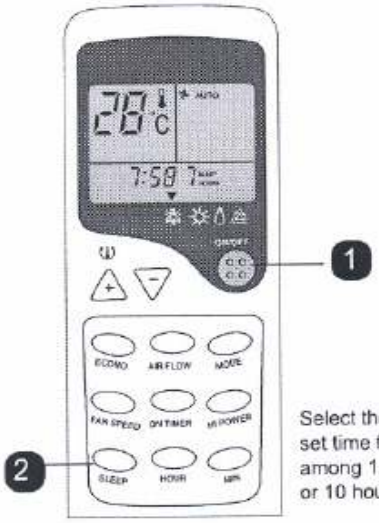


1	Use something with the tip of a ball pen to press the"CLK"button. The time indicaor is flickering and can set the present time.
2	Press the HOUR button. (Set to AM 10:)
3	Press the MIN button. (Set to 30)
4	Press the clock switch again within 15 sec.

NOTE The timer is set on the basis of the present time. so set the present time correctly.

【SLEEP operation procedure】

The unit stops operation at set time. The room temperature is automatically controlled with elapsed time so that the room isn't too cool during cooling, or isn't too heat during heating.



Select the SLEEP set time from among 1, 2, 3, 5, 7 or 10 hours.

Changing of set time
Set to new by using SLEEP button.

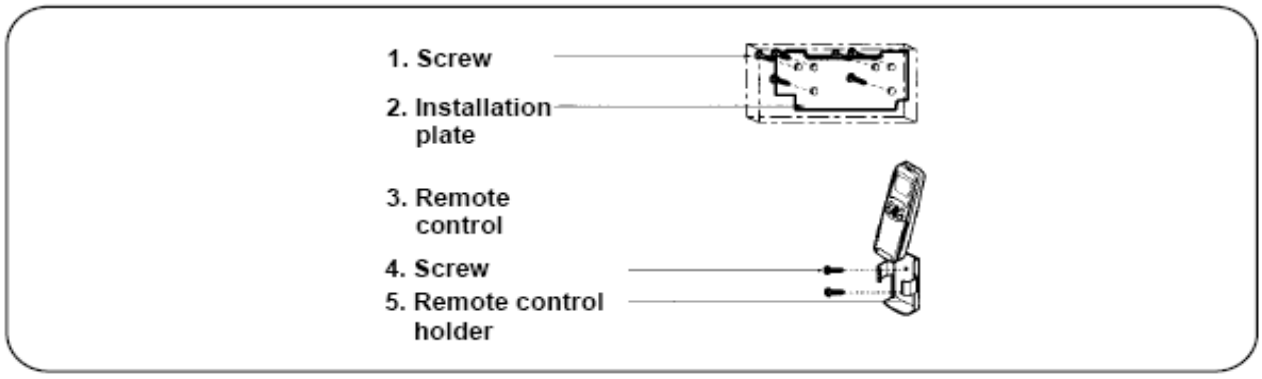
Ex: in case of stopped at after 7 hours.
When the air conditioner is off operation: with the remote controller pointing toward the air conditioner.

1	**Press the ON/OFF button.**
2	Press the SLEEP button. Every time the button is pressed, indication changes in the flowing sequence, 1:00 2:00 3:00 5:00 7:00 10:00 SLEEP SLEEP SLEEP SLEEP SLEEP SLEEP Set to 7. ↓ The unit stops operation at the set time.

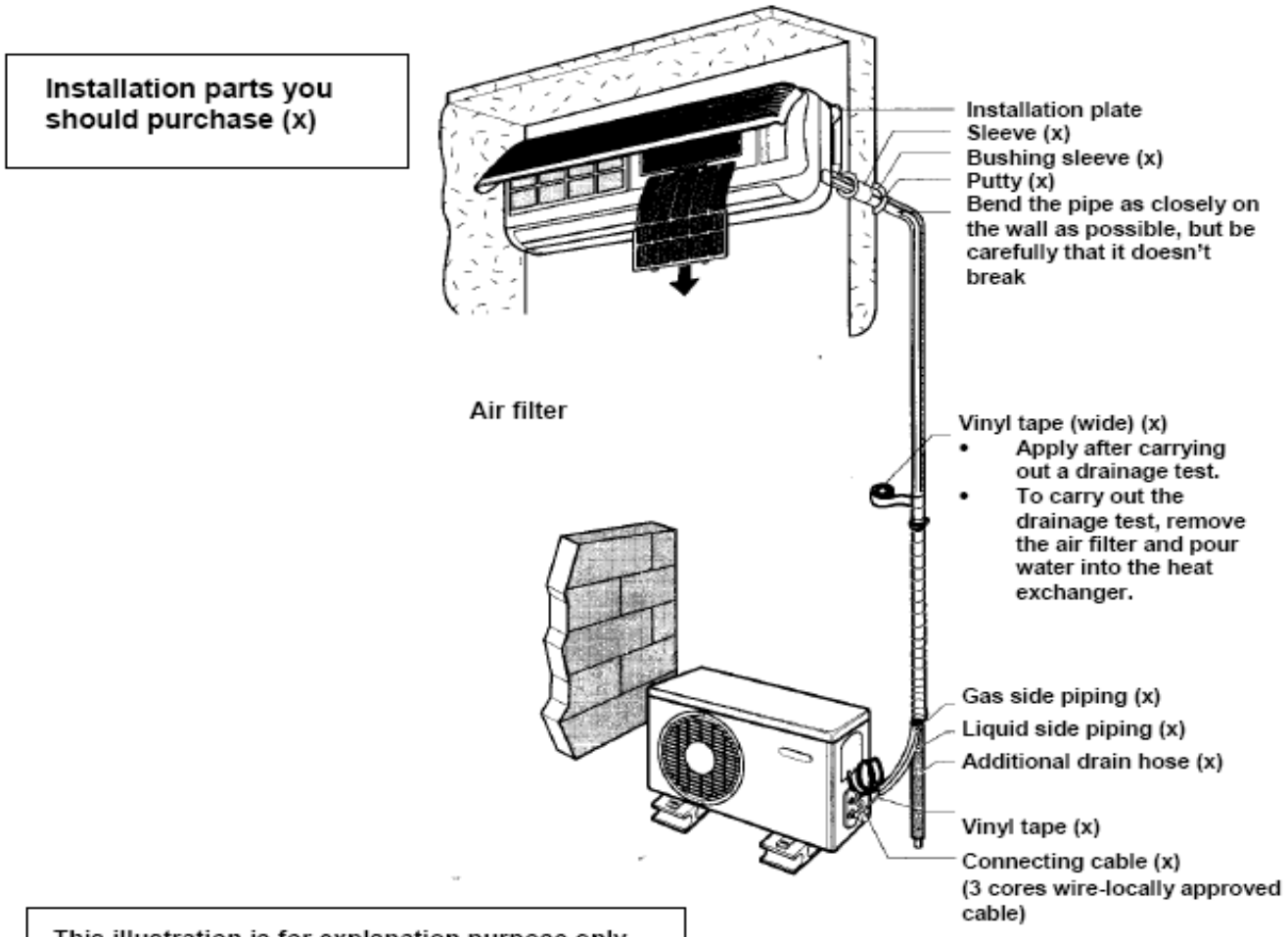
NOTE
Depending on the temperature condition, the operation may be stopped earlier than the set time.

INSTALLATION INFORMATION

INSTALLATION INFORMATION



Installation parts you should purchase (x)

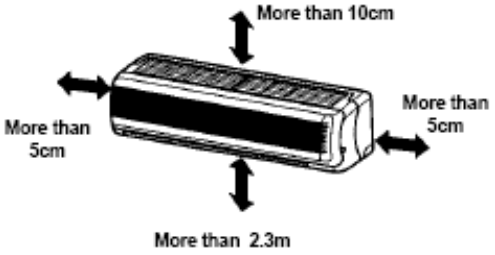


This illustration is for explanation purpose only.
The indoor unit will actually face a different way

SELECT THE BEST LOCATION

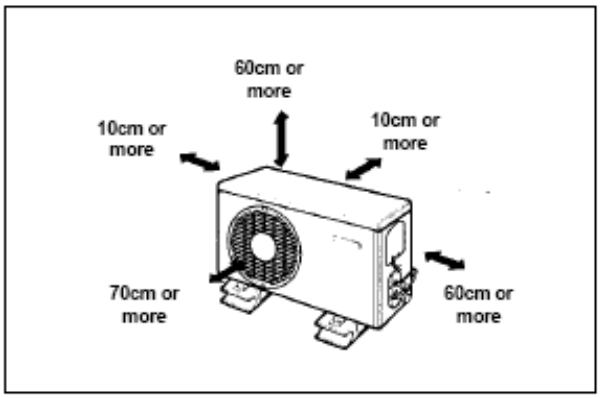
A. Indoor Unit

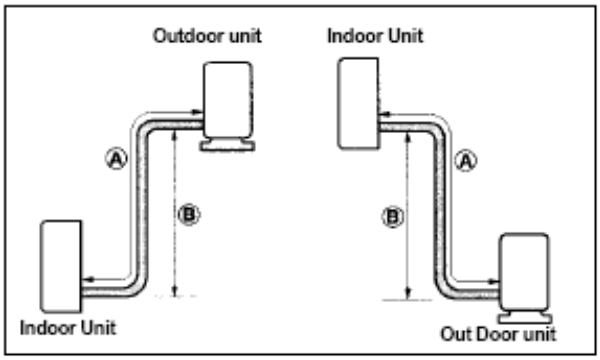
- There should not be any heat source or steam near the unit.
- There should not be any obstacles blocking the air circulation.
- A place where air circulation in the room is good. A place where drainage can be easily done.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the doorway.
- Ensure the spaces indicated by arrows from the wall, ceiling, or other obstacles.
- Indoor unit of this room air conditioner shall be installed on the wall in a height of at least 2.3 m.



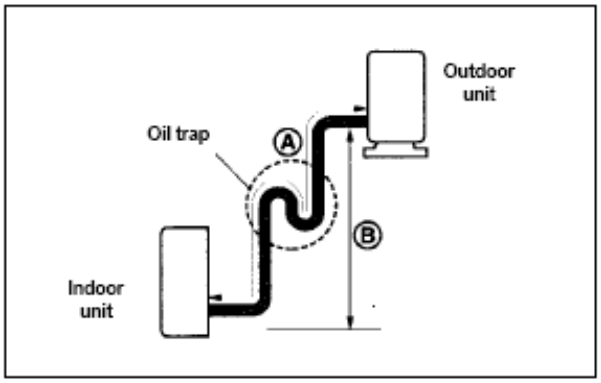
B. Outdoor Unit

- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
- There should not be any animal or plant, which could be affected by hot air discharged. Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.
- Do not place any obstacles, which may cause a short circuit of the discharged air.
- If piping length is over the common length, additional refrigerant should be added as shown in the table.





Piping Length And Elevation



If case more than 5m

Model (Btu/h)	Pipe Size		Standard Length (m)	Max. Elevation B (m)	Max Length A (m)	Additional Refrigerant (g/m)
	Gas	Liquid				
9000	3/8"	1/4"	5	5	7	15
12000	1/2"	1/4"	5	5	7	15
18000	1/2"	1/4"	7	5	15	25
24000	5/8"	3/8"	7	5	15	25

INSTALLATION INDOOR UNIT

1. How To Fix Installation Plate

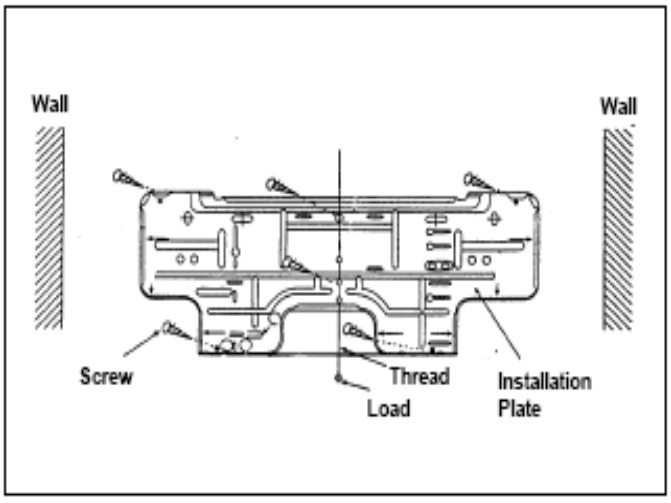
The mounting wall is strong and solid enough to prevent it from the vibration.

A. Mount the installation plate on the wall with 6 screws.
(If mounting the unit on the concrete wall, consider using anchor bolts.)
Always mount the installation plate horizontally by aligning the marking-off line with the thread and using a level gauge.

B. Drill the piping plate hole with ϕ70mm hole-core drill.

Line according to the arrows marked on the lower left and right side of the installation plate. The meeting point of the extended line is the center of the hole.

Drill the piping hole at either the right or the left and the hole should be slightly slanted to the outdoor side.

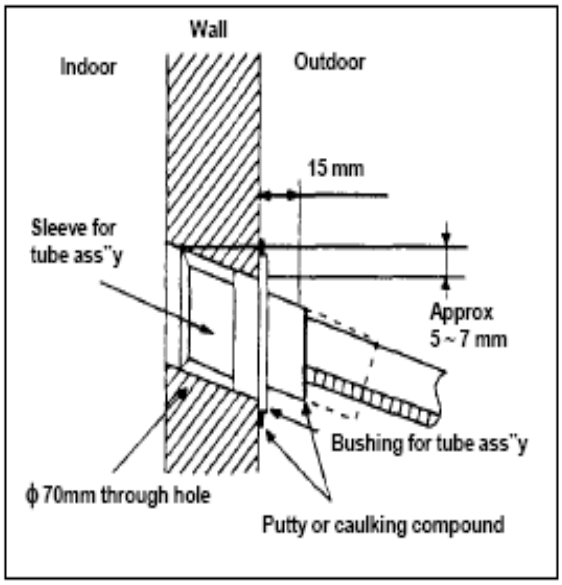


2. To Drill A Hole In The Wall And Install A sleeve Of Piping

A. Insert the piping sleeve to the hole.
B. Fix the bushing to the sleeve.
C. Cut the sleeve until extrudes about 15 mm from the wall.
D. Finish by sealing the sleeve with putty or caulking compound at the final stage.

CAUTION

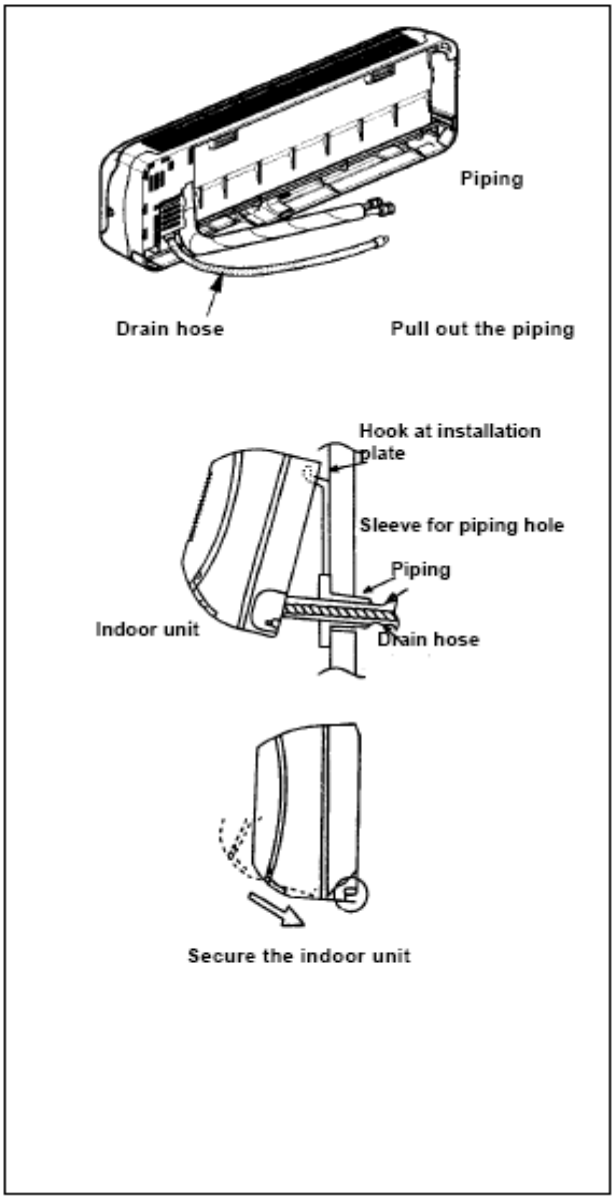
When the wall is hollow, please be sure to use the sleeve for tube ass'y, to prevent dangers caused by mice biting the connecting cable.



INSTALLATION INDOOR UNIT

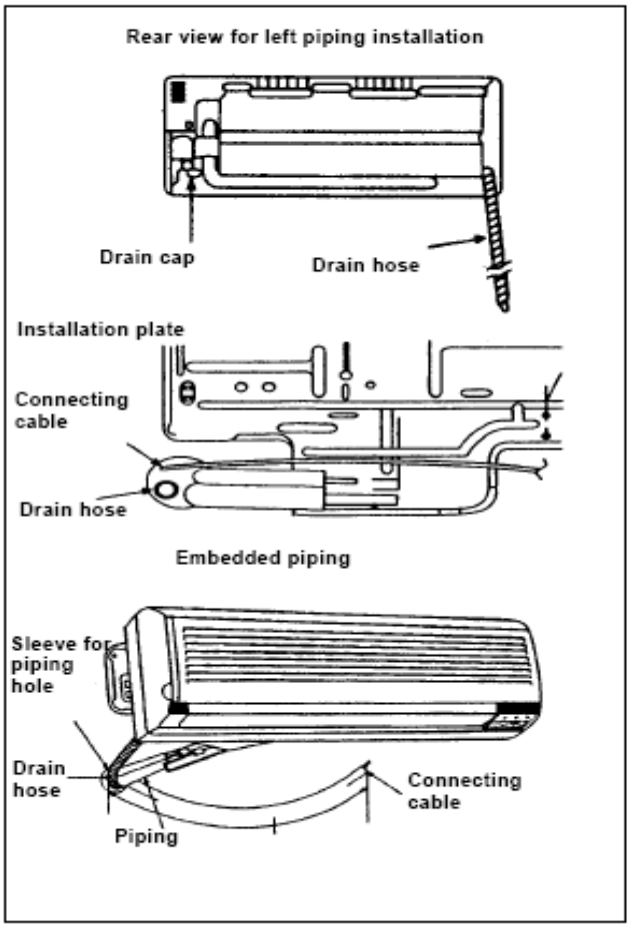
3. Indoor Unit Installation

1. Pull out the indoor piping
2. Install the indoor unit
3. Secure the indoor unit
4. Insert the connecting cable



For The Embedded Left Piping

1. Replace the drain hose.
2. Bend the embedded piping
   - Use a spring bender or equivalent to bend the piping so that the piping is not crushed.
3. Install the indoor unit
4. Cut and flare the embedded piping
   - Please refer to Cutting and flaring column.
5. Pull the connecting cable into indoor unit.
6. Connect the piping.
   - Please refer to Connecting the piping column.
7. Insulate and finish the piping.
8. Connect the connecting cable.
9. Secure the indoor unit.



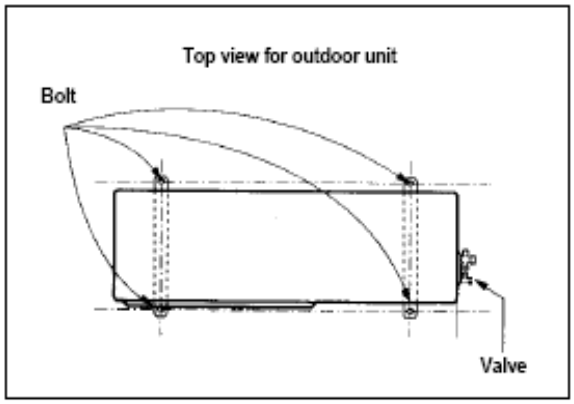
INSTALLATION OUTDOOR/SOLAR UNIT

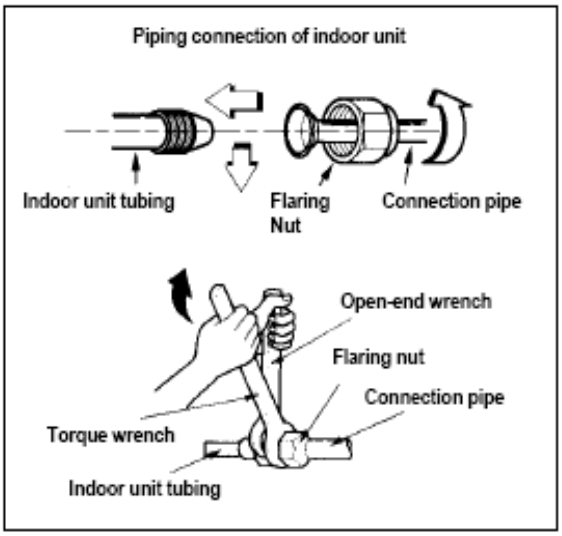
1. Outdoor Unit Installation

After selecting the best location, start installation according to indoor / outdoor unit installation diagram.

A. Fix the unit on concrete or rigid frame firmly and horizontally buy bolt and nut.

B. When installing at roof, please consider strong wind. Please fasten the installation stand firmly with bolt / nut

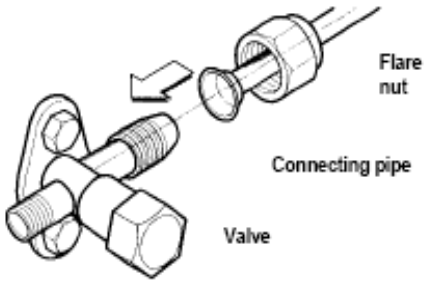




B. **Connect the piping to outdoor and solar unit**

- Align the center of piping and sufficiently tighten the flare nut with fingers.
- Further tighten the flare nut with torque wrench to the specified torque as stated in the table.

Outdoor and Solar piping connection



Outside Diameter		Torque
mm	inch	kg.m
6.35	1/4	1.8
9.52	3/8	4.2
12.7	1/2	5.5
15.88	5/8	6.6

2. Connecting the Piping

A. Connect the piping to indoor unit

- Please make flare after inserting flare nut.
  - Please refer to Cutting and flaring column.
- Locate at joint portion of tube assembly in case of using long piping.
- Align the center of piping and sufficiently tighten the flare nut with fingers.
- Further tighten the flare nut with torque wrench to the specified torque as stated in the table.

INSTALLATION OUTDOOR/SOLAR UNIT

3. Vacuuming the System

Step 1: Assembly of the Solar Collector ***MUST*** be carried out in the early morning or in a cool, dry area; this is to avoid scalding to the installers.

Step 2: Install the double rubber seals into the main medium tank taking care not to damage the seal.

Step 3: Slide the Vacuum tubes over the copper u-tubes taking care not to scratch or damage the vacuum tubes, seat the vacuum tubes into the main medium tank, and secure the tail end to the collector frame by using the tail stock ring and plastic nut. Note: Keep stock ring nut loosely in place until medium is installed.

Step 4: Vacuum Solar panel to 30 inch mercury and hold vacuum 24 hours, before the introduction of the solar medium into the panel. Failure to do so **will void the warranty**, if damage occurs to the air conditioner.

Step 5: Installation of the solar panel should face the East with the variation from 10 to15 degrees to East-West.

Step 6: Fix the solar collect firmly to the building to guarantee the integrity of the system. Attach the building lightening cable to the solar collector.

Step 7: Fill system with 12/1 absorption medium supplied with solar collector; Note: Some systems are pre-charged and will not be supplied with medium.

Step 8: Fill the balance of the Solar Collector with Distilled water, allow distilled water to reach ambient air temperature before introduction into the solar tank. Failure to do so may result in damage to the solar tubes.

Step 9: Attach 3/8 or 1/2 copper lines to the inlet and outlet connections of the solar collector and also to the 1st and 2nd service valves located at the back of the condensing unit.

Step 10: Vacuum system to 30 inch mercury and hold vacuum 24 hours.

Step 11: Refer to nameplate for proper electrical current requirements, and then connect power to a properly grounded power supply. Minimum circuit ampacity should be at least 125% of the amperage shown in the design data section for appropriate model. No other equipment should be connected to this circuit to prevent overloading. Use of an extension cord is not recommended. Electrical circuit should be fused with slow blow or HACR circuit breaker.

INSTALLATION OUTDOOR/SOLAR UNIT

Step 12: Operate the air conditioner for five (5) to ten (10) minutes. No excessive noise or vibration should be evident during this run period. The condenser blower (ambient air), the evaporator blower (inside unit), and the compressor should be running.

Step 13: Charge system slowly with refrigerant 407c until operating pressures are achieved.

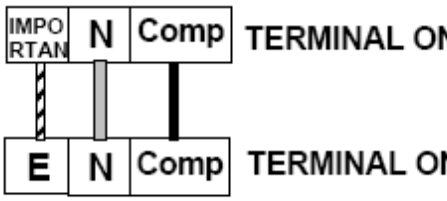
Step 14: Allow the solar collector to charge for 5 days and readjust refrigerant levels as required.

CONNECTING THE CABLE

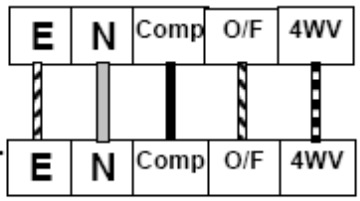
- The inside and outside connecting cable can be connected without removing the front grille
- Connecting cable between indoor and outdoor unit shall be approved polychloroprene sheathed flexible cord, type designation H05 RN-F or heavier cord.
- Ensure the color of wires of outdoor unit and the Nos. are the same to the indoor's respectively.
- Earth lead wire shall be longer than the other lead wire for the electrical safety in case of the slipping out of the cord from the anchorage.
- Secure he cable onto the control board with the holder or clamper.
- Attach the control board cover back to the original position.

INDOOR UNIT WITH POWER SUPPLY CORD

1. Cooling Model

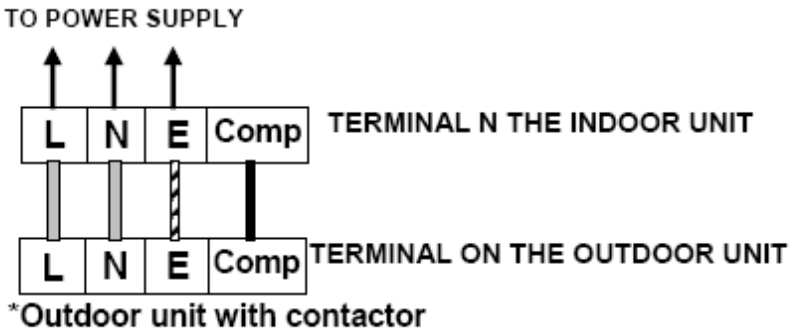


2. Heat Pump Model

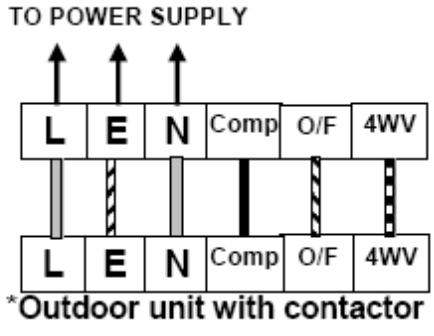


INDOOR UNIT WITHOUT POWER SUPPLY CORD

1. Cooling Model



2. Heat Pump Model



** If Outdoor unit without contactor, make sure no live wire go to outdoor unit accept comp wire, neutral wire and earth wire.

Connecting cable specification

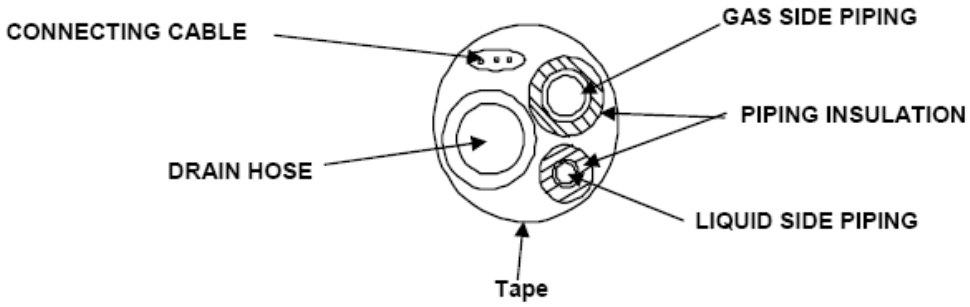
Model (Btu/h)	9000 / 12000	18000 / 24000	30000
Connecting cable (mm^2)	1.5	2.5	2.5
Circuit breaker (amp)	15	20	30

NOTE :
Comp - Compressor
O/F - Outdoor Fan
4WV - 4 Ways Valve
N - Neutral
E - Earth
L - Live

IMPORTANT

INSULATING THE PIPING

- Please carry out insulation at pipe connection portion as mention in indoor / outdoor unit installation diagram. Please wrap the insulated piping end to prevent water from going inside the piping.
- If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using **POLY - E FOAM** with thickness 6 mm or above.
- For connecting piping (gas and liquid) should have individual insulation.
- Wrap the piping, the drain hose and the connecting cable with tape.



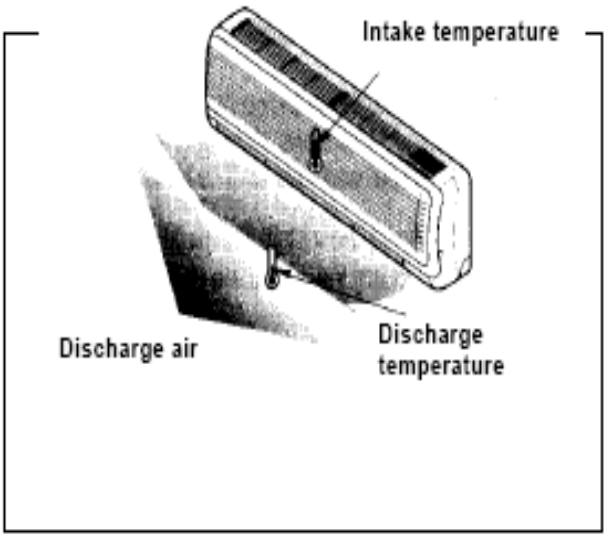
CAUTION

Before connecting power supply cable to air conditioner:

1. Specification of power source.
2. The screws which fasten the wiring in the casing of electrical fitting are liable to come loose from vibration to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened.(If they are loose ,it could give rise to burn-out of the wires.)
3. Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram pasted on the inside of control box cover.
4. Provide a circuit breaker switch between power source and the unit.
5. Confirm that electrical capacity is sufficient.
6. Confirm that the cable thickness is as specified in power sources specification.
7. Never fail to equip a leakage breaker where it is wet or moist.
8. For secure connect Grounding cable to terminal first and then other cable (live, neutral).For disconnect cable , Grounding cable should disconnect lastly.
9. Connect the wires to the terminal on the control board individually according to the outdoor unit connection. Ensure that the color of the wires of outdoor unit and the terminal NO ('L','N','E','COMP') are the same as the indoor unit.

EVALUATING THE PERFORMANCE

- Operate the unit at cooling operation mode for 15 minutes or more.
- Measure the temperature of the intake and discharge air.
- Ensure the difference between the intake temperature and the discharge one is more 8°C



SERVICING AND MAINTENANCE

SERVICING AND MAINTENANCE

The unit is designed to give a long life operation with minimum maintenance required. However, it should be regularly checked and the following items should be given due attention.

Components	Maintenance procedure	Recommended Schedule
Air Filters (Indoor Unit)	1. Clean with a vacuum cleaner or by tapping lightly on a hard surface and then wishing in lukewarm water (below 40^{O}C) with neutral soap. 2. Rinse well to dry before re-installing. 3. Note: Never use petrol, thinner, benzene or other volatile chemicals, which may cause plastic surface to deform.	Every 2 weeks. More frequently if required.
Indoor Unit	1. Clean away dirt or dust on grille or panel by wiping with a soft cloth soaked in lukewarm (or cold) water or neutral detergent solution. 2. Note: Never use petrol, thinner, benzene or other volatile chemicals, which may cause plastic surface to deform.	Every 2 weeks. More frequently if required.
Condensate Drain Pan and Hose/Pipe	1. Check and clean	Every 3 months
Indoor Fan	1. Check for unusual noise	If necessary
Indoor and Outdoor coil	1. Check and remove dirt, which are clogged between fins. 2. Check and remove obstacles which hinder airflow in and out of indoor / outdoor unit.	Every month.
Electrical	1. Check current, voltage and wiring. 2. Check faulty contacts caused by loose connections, foreign matter, etc.	Every 2 months.
Compressor	1. No maintenance needed if refrigerant circuit remains sealed. However check for refrigerant leak at joints and fittings. 2. Compressor oil is factory charged. Not necessary to add oil if circuit remains sealed.	Every 6 months. No maintenance required.
Fan Motor Lubrication	1. All motor pre-lubricated and sealed at factory.	No maintenance required.

SERVICING AND MAINTENANCE

Regular service and maintenance will extend the life of the air conditioner and prevent wastage of electricity. Before performing any maintenance procedure, be sure to set the power switch to OFF.

Regular care and maintenance

Before Maintenance

<Caution>

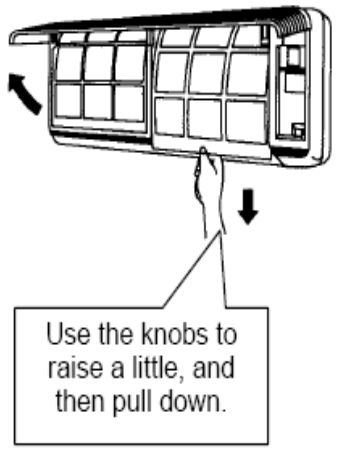
- Do not use water or volatile liquids.
- Do not make the air conditioner wet, as there is the danger that it could cause electric shocks.
- Be sure not to apply water when cleaning or at any other time.
- Using water above 40°C could cause deformation and/or discoloration.
- Volatile liquids such as thinner or benzene may damage the air conditioner

Cleaning of the air conditioner and the remote control

- Wipe gently with a soft, dry cloth.
- Use vacuum cleaner with a thin nozzle fitted to clean the dust from the louvers and the front panel.

Cleaning the air filter

(Once every 2 weeks is recommended)



- To remove the dust adhering to the filters, either use a vacuum cleaner, or wash them in water and dry in the shade.
- Re-insert the filters correctly at the left and right.
- If the air filters become damaged.
  Purchase replacement filters from your air conditioner dealer.

PRE-SEASON INSPECTION

Operate for 15 minutes.
If the difference in temperature between the air outlet vent and the air intake vent is 8°C or more when cooling, the unit is normal.

Are the air outlet vents and air intake vents obstructed?
If they are, cooling performance will drop and cause problem.

Is the drain hose cracked or crushed?
If it is, leaks will result

Are the remote control batteries in good condition?

If display is faint or no display is visible, the batteries should be replace

WHEN NOT USING FOR LONG PERIODS OF TIME

Operate the air conditioner for 2 to 3 hours.

- Type of operation: cooling
- Temperature setting: 30°C

For air conditioners with a power plug, stop operation and pull out the power plug.

Remove the batteries from the remote control.

TROUBLESHOOTING GUIDE

TROUBLESHOOTING GUIDE

REFRIGERATION CYCLE SYSTEM

- In order to diagnose malfunctions, make sure there are no electrical problems before inspecting the refrigeration cycle. Such problems may include insufficient insulation, power source, and malfunction of the solar compressor or fans.

- The normal difference of the inlet and outlet air temperature and pressure of the refrigeration cycle depends on various conditions, the standard value for them are shown in the table below:

	Cooling Capacity (BTU/h)	Inlet and Outlet air temperature difference (C°)
Cooling Mode	**9,000 12,000**	**More than 7°**
Cooling Mode	**18,000 24,000**	**More than 10°**

Outside air at 35c

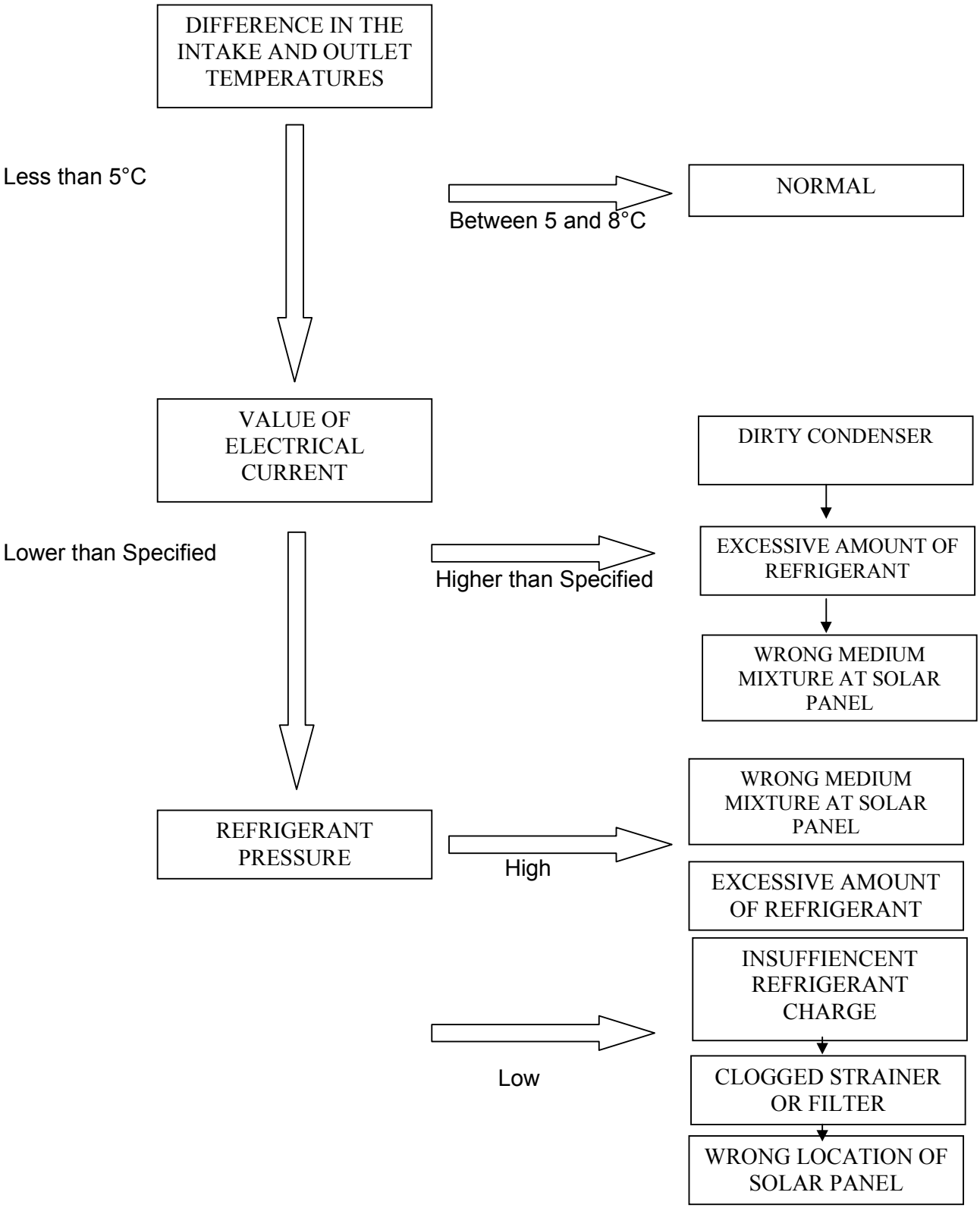
TEMPERATURE PRESSURE CHART

F407c

Temperature (C)	Pressure (PSI)	Temperature (C)	Pressure (PSI)	Temperature (C)	Pressure (PSI)
-51	*12.0*	-11.1	34.7	5.5	71.5
-48	*9.2*	-10.5	35.7	6.1	73.0
-45	*6.2*	-10	36.7	6.6	74.5
-42	*2.7*	-9.4	37.7	7.2	76.0
-40	0.5	-8.8	38.7	7.7	77.6
-37	2.6	-8.3	39.8	8.3	79.2
-34	4.9	-7.7	40.9	8.8	80.8
-31	7.4	-7.2	41.9	9.4	82.4
-28	10.1	-6.6	43.0	10	84.0
-27	11.3	-6.1	44.1	12.7	92.6
-26	12.5	-5.5	45.3	15.5	101.6
-25	13.8	-5	46.4	18.3	111.2
-24	15.1	-4.4	47.6	21.1	121.4
-23	16.5	-3.8	48.8	23.8	132.2
-22	17.9	-3.3	49.9	26.6	143.6
-21	19.3	-2.7	51.2	29.4	155.7
-20	20.8	-2.2	52.4	32.2	168.4
-18	22.4	-1.6	53.6	35	181.8
-17.7	24.0	-1.1	54.9	37.7	195.9
-17.2	24.8	-0.5	56.2	40.5	210.8
-16.6	25.6	0	57.5	43.3	226.4
-16.1	26.5	0.5	58.8	46.1	242.7
-15.5	27.3	1.1	60.1	48.8	259.9
-15	28.2	1.6	61.5	51.6	277.9
-14.4	29.1	2.2	62.8	54.4	296.8
-13.8	30.0	2.7	64.2	57.2	316.6
-13.3	30.9	3.3	65.6	60	337.3
-12.7	31.8	3.8	67.1	62.7	358.9
-12.2	32.8	4.4	68.5	65.5	381.5
-11.6	33.7	5	70.0	68.3	405.1

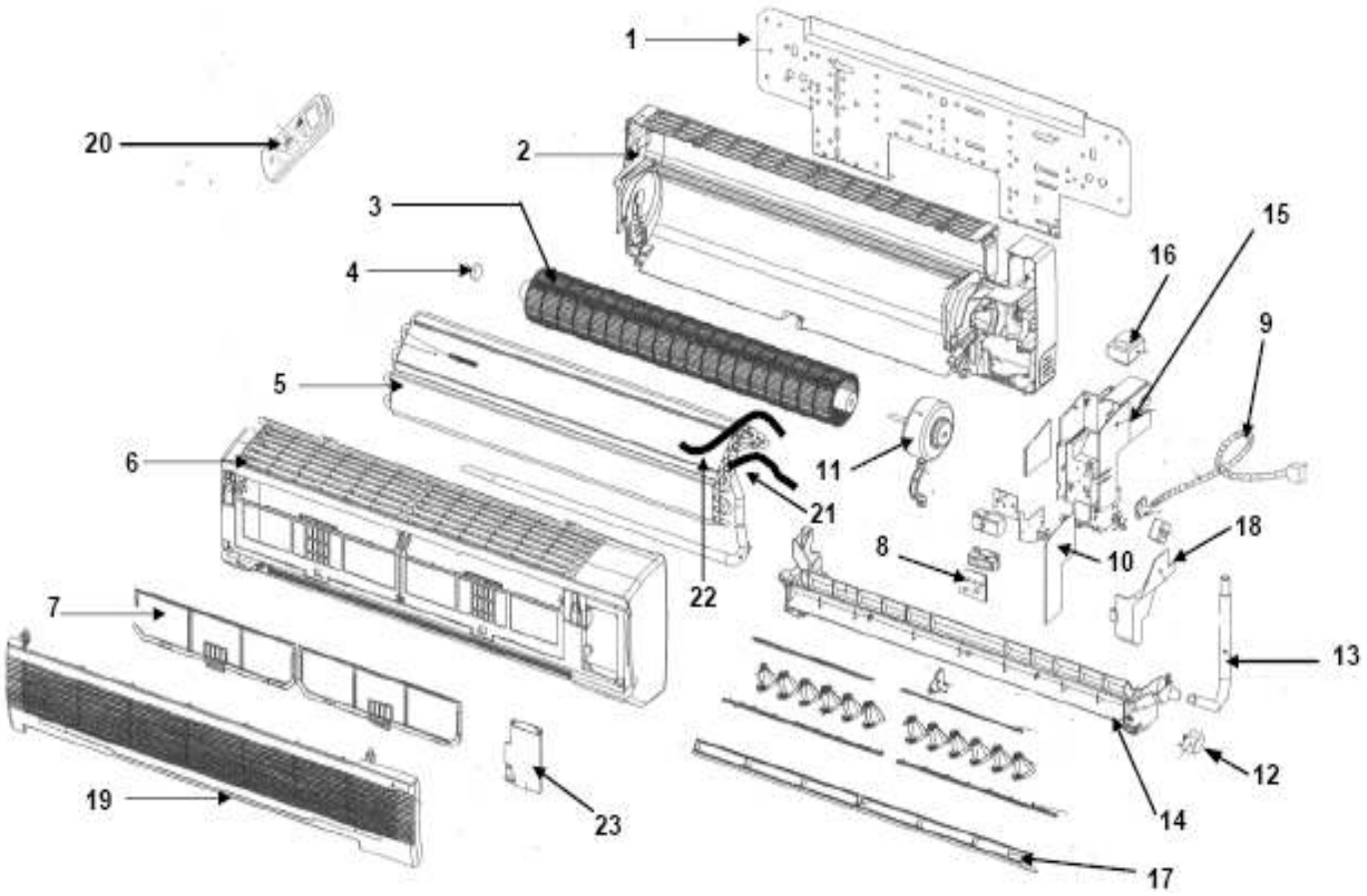
*** Italic inch of vacuum**

TROUBLESHOOTING GUIDE



PARTS LIST

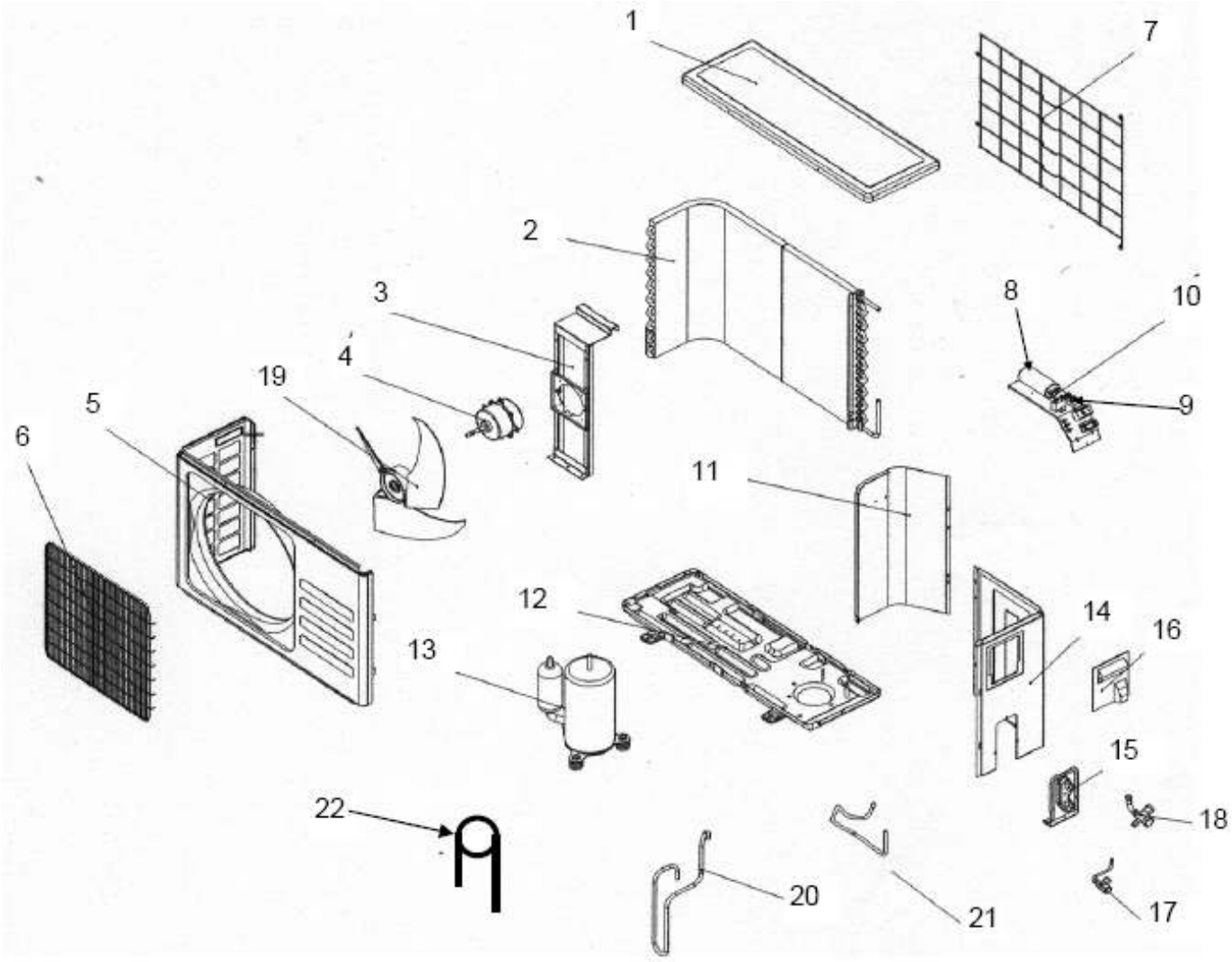
PARTS LIST



INDOOR UNIT

NO	PART DESCRIPTION	NO	PART DESCRIPTION
1	INSTALLATION PLATE	13	DRAIN HOSE
2	CHASIS	14	DRAINING PAN
3	INDOOR FAN	15	ELECTRIC BOX
4	BEARING	16	TRANFORMER
5	EVAPORATOR ASSEMBLY	17	HORIZONTAL LOUVER
6	CABINET	18	WATER PREVENTIVE PLATE
7	AIR FILTER	19	FRONT COVER
8	DISPLAY PCB	20	REMOTE CONTROL
9	POWER SUPPLY CORD	21	PIPE SENSOR
10	CONTROL PCB	22	INTAKE SENSOR
11	INDOOR FAN MOTOR	23	SAFETY COVER
12	LOUVER MOTOR		

PARTS LIST



OUTDOOR UNIT

NO	PART DESCRIPTION	NO	PART DESCRIPTION
1	TOP COVER	12	CHASSIS
2	CONDENSER	13	COMPRESSOR
3	MOTOR BRACKET	14	RIGHT SIDE PLATE
4	OUTDOOR FAN MOTOR	15	VALVE PLATE
5	CABINET	16	SERVICE COVER
6	FAN GUARD	17	2 WAY VALVE (1/4")
7	BACK LATITICE	18	3 WAY VALVE (3/8")
8	COMPRESSOR CAPACITOR	19	OUTDOOR FAN
9	FAN MOTOR CAPACITOR	20	DISCHARGE TUBE
10	ELECTRICAL ASSEMBLY PLATE	21	SUCTION TUBE
11	PARTITION PLATE	22	CAPILLARY TUBE