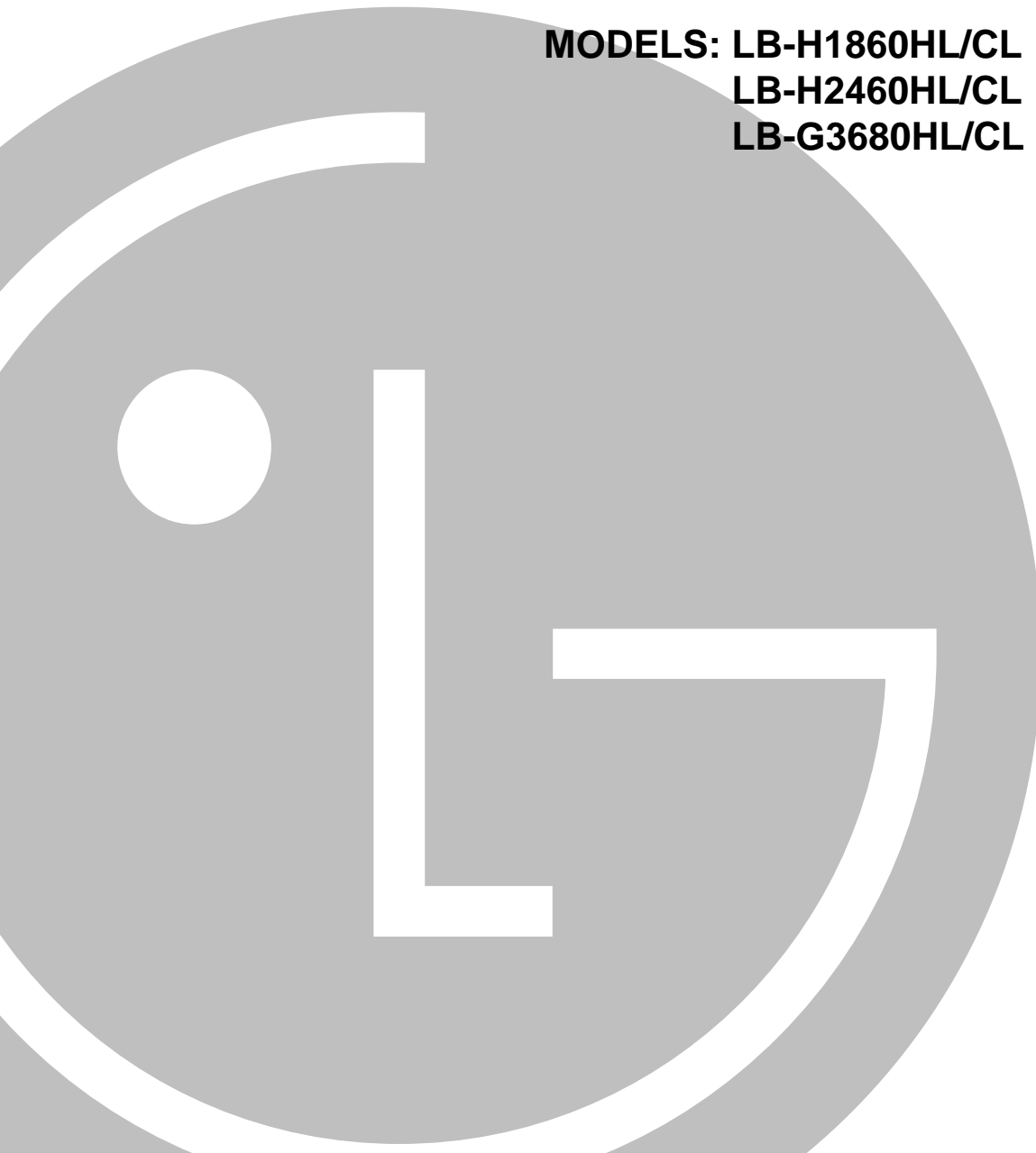




# Ceiling Duct Type Air Conditioner **SERVICE MANUAL**

**MODELS: LB-H1860HL/CL  
LB-H2460HL/CL  
LB-G3680HL/CL**



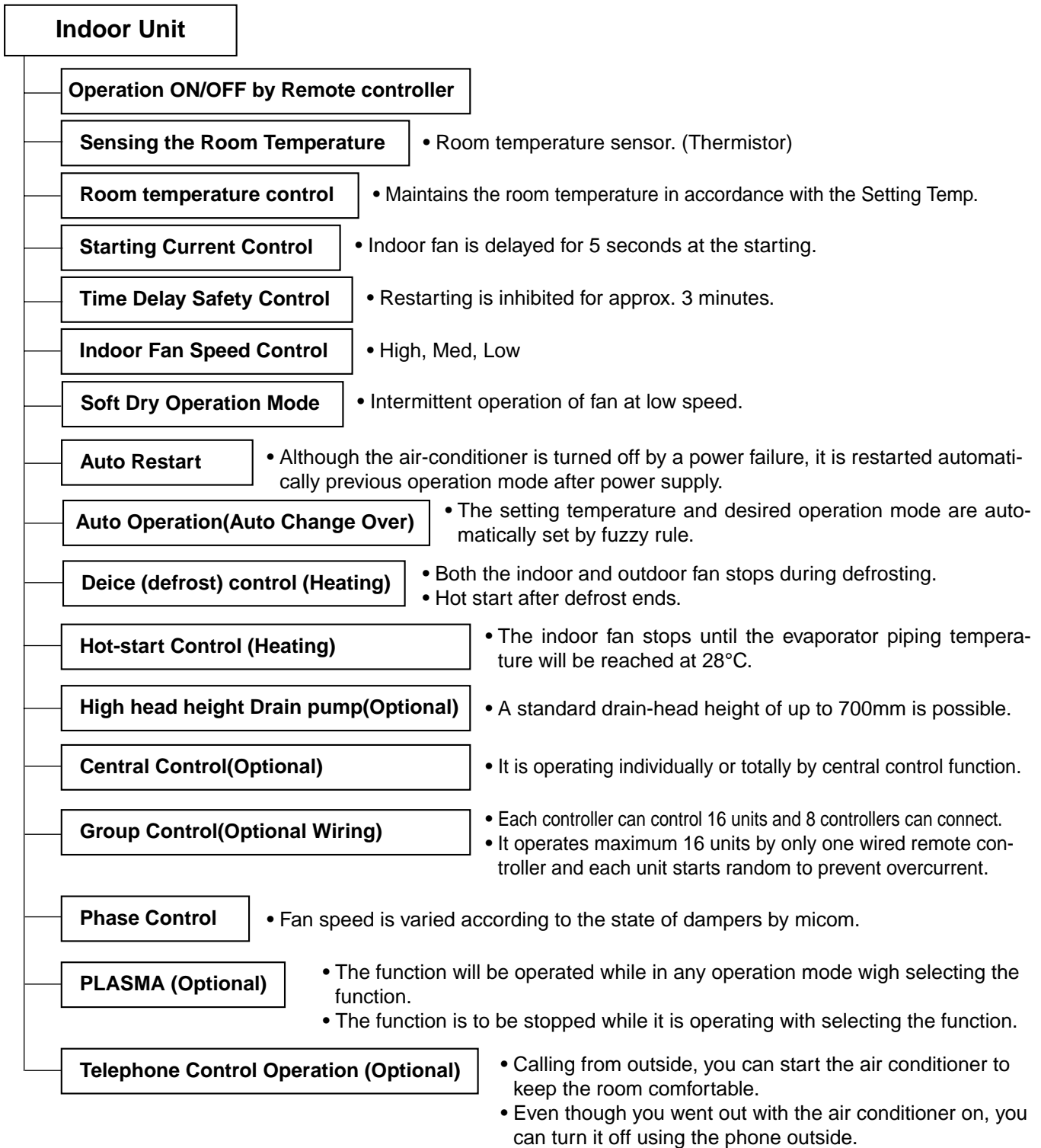
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# Functions

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# Remote Controller

## Operation ON/OFF



## Operation Mode Selection



(Cooling model only)



(Heating model only)

Cooling Operation Mode ( ❄ )

Soft Dry Operation Mode ( 💧 )

Heating Operation Mode ( 🔥 )

Auto Operation Mode ( ⬆ )

## Fan Speed Selection



**LO** (Low)



**MED** (Med)



**HI** (High)



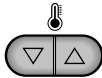
**AUTO**

## Room Temperature Display



: High:39°C ↔ LOW:11°C

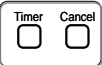
## Temperature Setting



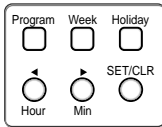
Cooling [ Down to 18°C  
Up to 30°C

Heating [ Down to 16°C  
Up to 30°C

## Setting the Timer



## Weekly Program

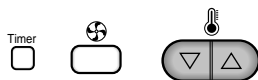


## Fan Operation Mode

: Fan Operates without cooling & heating



## Phase Control Setting



# Product Specifications (Cooling & Heating)

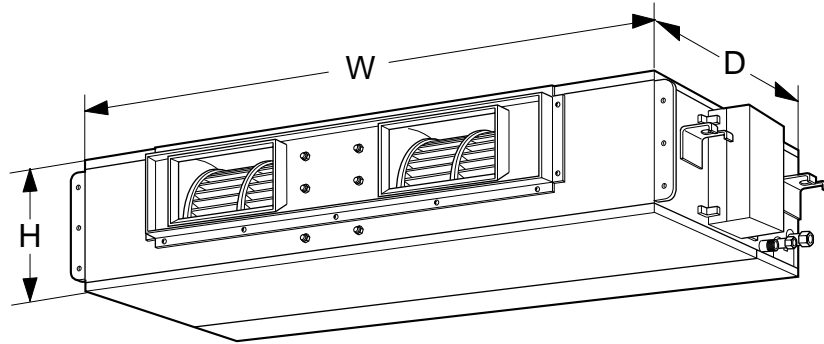
Model			LB-H1860HL	LB-H1860CL	LB-H2460HL	LB-H2460CL
Power Source		Ø, V, Hz"	1, 220-240, 50	1, 220-240, 50	1, 220-240, 50	1, 220-240, 50
Cooling	Capacity	kcal/h(BTU/h)	4,536(18,000)	4,536(18,000)	6,048(24,000)	6,048(24,000)
		W	5,274	5,274	7,033	7,033
	Input	W	2,000	2,000	2,650	2,850
Heating	Capacity	kcal/h(BTU/h)	4,536(18,000)	-	6,048(24,000)	-
		W	5,274	-	7,033	-
	Input	W	1,880	-	2,400	-
Rated Load Amp.	Cooling	A	10	10	12.5	13
	Heating	A	9.5	-	11.5	-
Air Volumn	Cooling(H/M/L)	CMM(m <sup>3</sup> /min)	16.5/14.5/13	16.5/14.5/13	18/16.5/14	18/16.5/14
	Heating(H/M/L)		16.5/14.5/13	-	18/16.5/14	-
Refrigerant(R-22)		g	1,300	1,700	1,920	1,920
Drain Hose	In. Dia	mm	22.6	22.6	22.6	22.6
Main Cable		No. X mm <sup>2</sup>	3*2.5	3*2.5	3*2.5	3*2.5
Connecting Cable			6*0.75	4*0.75	6*0.75	4*0.75
Remote Control Type			L.C.D Wired	L.C.D Wired	L.C.D Wired	L.C.D Wired
Refrigerant Control Type			Capillary type	Capillary type	Capillary type	Capillary type
Fuction	Soft Dry		Yes	Yes	Yes	Yes
	Timer		24 Hours On/Off	24 Hours On/Off	24 Hours On/Off	24 Hours On/Off
	Self Diagnosis		Yes	Yes	Yes	Yes
	Deice Operation		Yes	-	Yes	-
	Hot Start		Yes	-	Yes	-
	Zone Control(Optional)		Optional	Optional	Optional	Optional
	Central Control(Optional)		Optional	Optional	Optional	Optional
	Group Control(Optional wiring)		Yes	Yes	Yes	Yes
	Weekly Programning		Yes	Yes	Yes	Yes
	Thermistor		Yes	Yes	Yes	Yes
	Drain Pump		Yes	Yes	Yes	Yes
	Auto changeover(Auto Operation: CL)		Yes	Yes	Yes	Yes
	Stand-by Consumption 0		Yes	Yes	Yes	Yes
	Phase Control		Yes	Yes	Yes	Yes
	Tele Control(Optional)		Optional	Optional	Optional	Optional
	PLASMA(Optional)		Optional	Optional	Optional	Optional
Connecting Pipe	Liquid	Inch (mm)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)
	Gas		5/8(15.88)	5/8(15.88)	5/8(15.88)	5/8(15.88)
Dimension	Indoor	mm (WxDxH)	880*450*260	880*450*260	880*450*260	880*450*260
	Outdoor		870*320*655	870*320*655	870*320*655	870*320*655
Net Weight	Indoor	Kg	34	34	35	35
	Outdoor		57	57	60	60

Model			LB-G3680HL	LB-G3680CL
Power Source		Ø, V, Hz"	3, 380-415, 50	3,380-415, 50
Cooling	Capacity	kcal/h(BTU/h)	9,072(36,000)	9,072(36,000)
		W	10,548	10,548
	Input	W	4,000	4,000
Heating	Capacity	kcal/h(BTU/h)	9,072(36,000)	-
		W	10,548	-
	Input	W	3,300	-
Rated Load Amp.	Cooling	A	7.2	7.2
	Heating	A	6.3	-
Air Volumn	Cooling(H/M/L)	CMM(m <sup>3</sup> /min)	32/29/26	32/29/26
	Heating(H/M/L)		32/29/26	-
Refrigerant(R-22)		g	1,840	1,800
Drain Hose	In. Dia	mm	22.6	22.6
Main Cable		No. X mm <sup>2</sup>	4*2.5	4*2.5
Connecting Cable			5*0.75	4*0.75
Remote Control Type			L.C.D Wired	L.C.D Wired
Refrigerant Control Type			Capillary type	Capillary type
Fuction	Soft Dry		Yes	Yes
	Timer		24 Hours On/Off	24 Hours On/Off
	Self Diagnosis		Yes	Yes
	Deice Operation		Yes	-
	Hot Start		Yes	-
	Zone Control(Optional)		Optional	Optional
	Central Control(Optional)		Optional	Optional
	Group Control(Optional wiring)		Yes	Yes
	Weekly Programning		Yes	Yes
	Thermistor		Yes	Yes
	Drain Pump		Yes	Yes
	Auto changeover(Auto Operation: CL)		Yes	Yes
	Stand-by Consumption 0		Yes	Yes
	Phase Control		Yes	Yes
	Tele Control(Optional)		Optional	Optional
	PLASMA(Optional)		Optional	Optional
Connecting Pipe	Liquid	Inch (mm)	1/4(6.35)	1/4(6.35)
	Gas		5/8(15.88)	5/8(15.88)
Dimension	Indoor	mm (WxDxH)	1180*450*298	1180*450*298
	Outdoor		870*320*800	870*320*800
Net Weight	Indoor	Kg	38	38
	Outdoor		72	72

# Dimensions

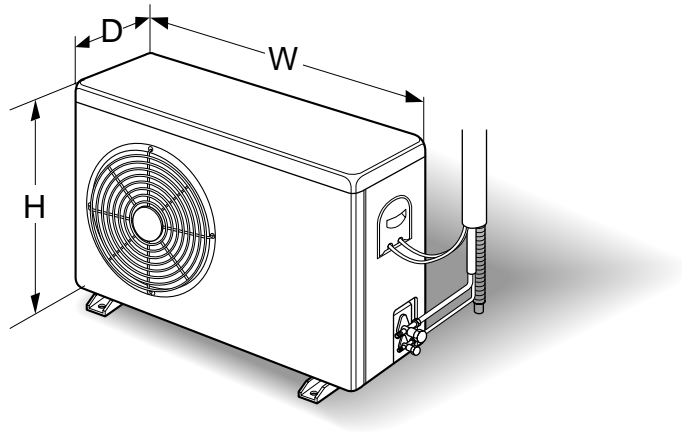
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## (1) Indoor Unit



DIM \ MODEL	18K	24K	36K
W(mm)	880	880	1180
H(mm)	260	260	298
D(mm)	450	450	450

## (2) Outdoor Unit



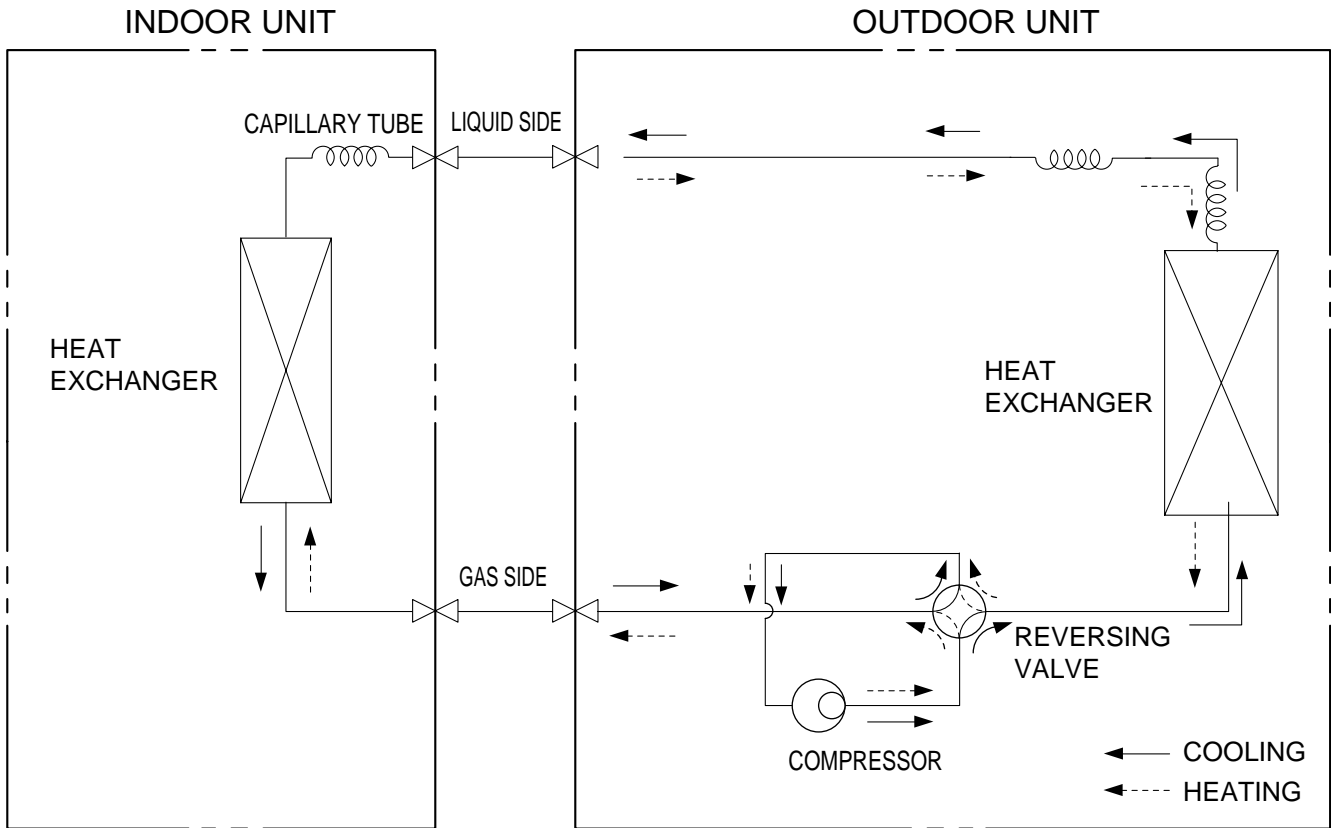
(18K/24K/36K)

DIM \ MODEL	18K	24K	36K
W(mm)	870	870	870
H(mm)	655	655	800
D(mm)	320	320	320



# Refrigeration Cycle Diagram

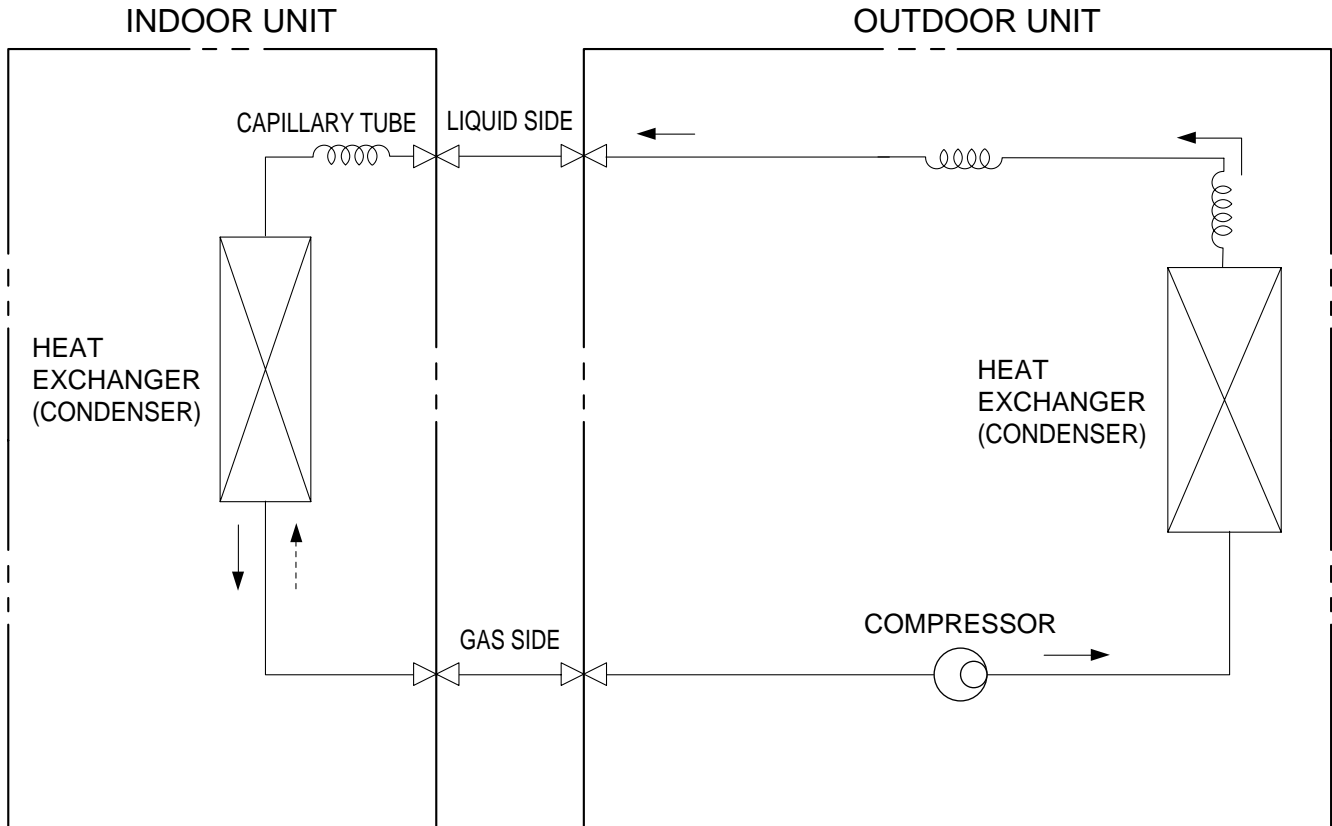
## • HEAT PUMP (LB-H1860HL / LB-H2460HL / LB-G3680HL)



MODEL	Pipe size(Diameter: ø)		Piping length(m)		Elevation(m)		*Additional refrigerant (g/m)
	Gas	Liquid	Rated	Max.	Rated	Max.	
LB-H1860HL	5/8"	1/4"	7.5	50	5	30	30
LB-H2460HL	5/8"	1/4"	7.5	50	5	30	35
LB-G3680HL	5/8"	1/4"	7.5	50	5	30	45

- Rated performance for refrigerant line length of: 7.5m
- If 18K Model is installed at a distance of 15m, 255g of refrigerant should be added  $(15-7.5) \times 30g = 225g$

• **COOLING ONLY (LB-H1860CL / LB-H2460CL / LB-G3680CL)**



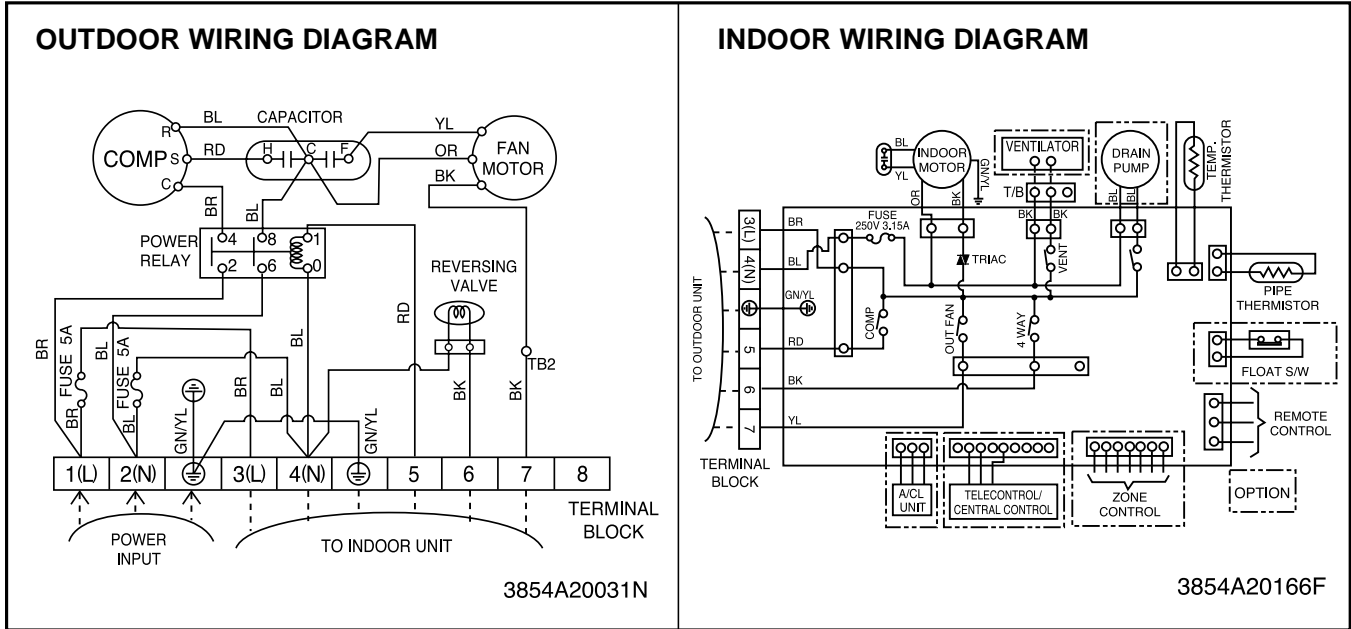
MODEL	Pipe size(Diameter: $\varnothing$ )		Piping length(m)		Elevation(m)		*Additional refrigerant (g/m)
	Gas	Liquid	Rated	Max.	Rated	Max.	
LB-H1860CL	5/8"	1/4"	7.5	50	5	30	30
LB-H2460CL	5/8"	1/4"	7.5	50	5	30	35
LB-G3680CL	5/8"	1/4"	7.5	50	5	30	45

- Rated performance for refrigerant line length of: .7.5m
- If 18K Model is installed at a distance of 15m, 225g of refrigerant should be added  $(15-7.5) \times 30g = 225g$

# Wiring Diagram

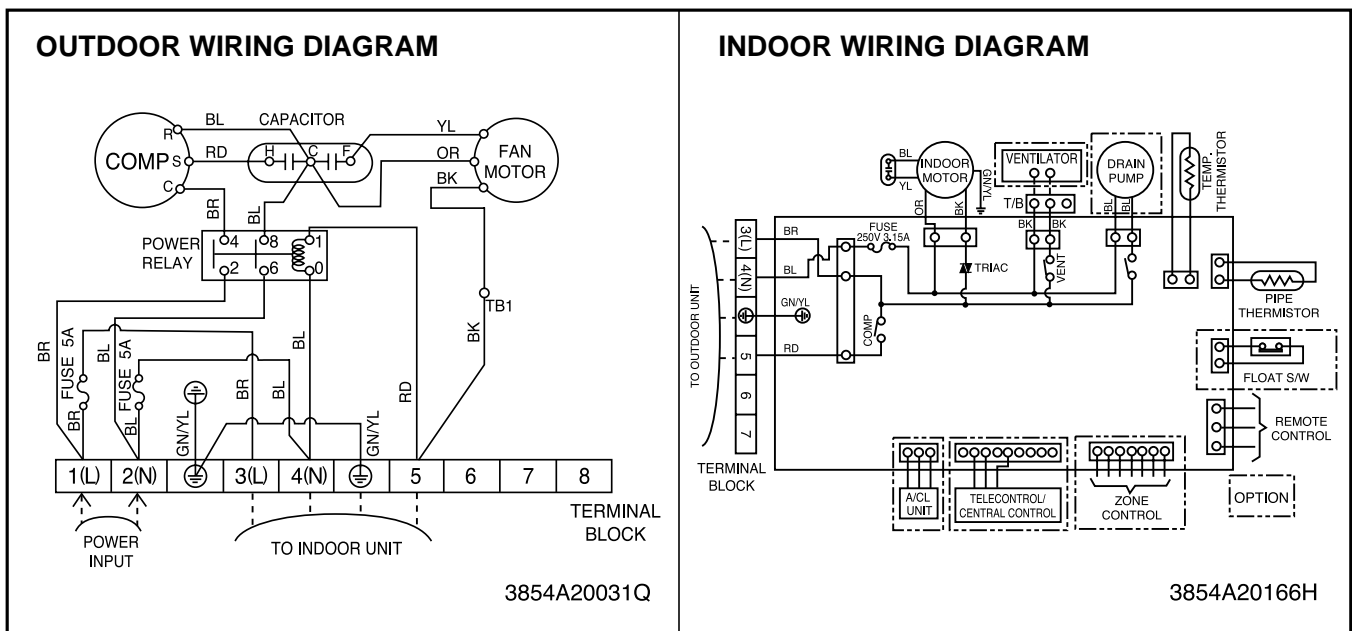
## HEAT PUMP

Model : LB-H1860HL / LB-H2460HL



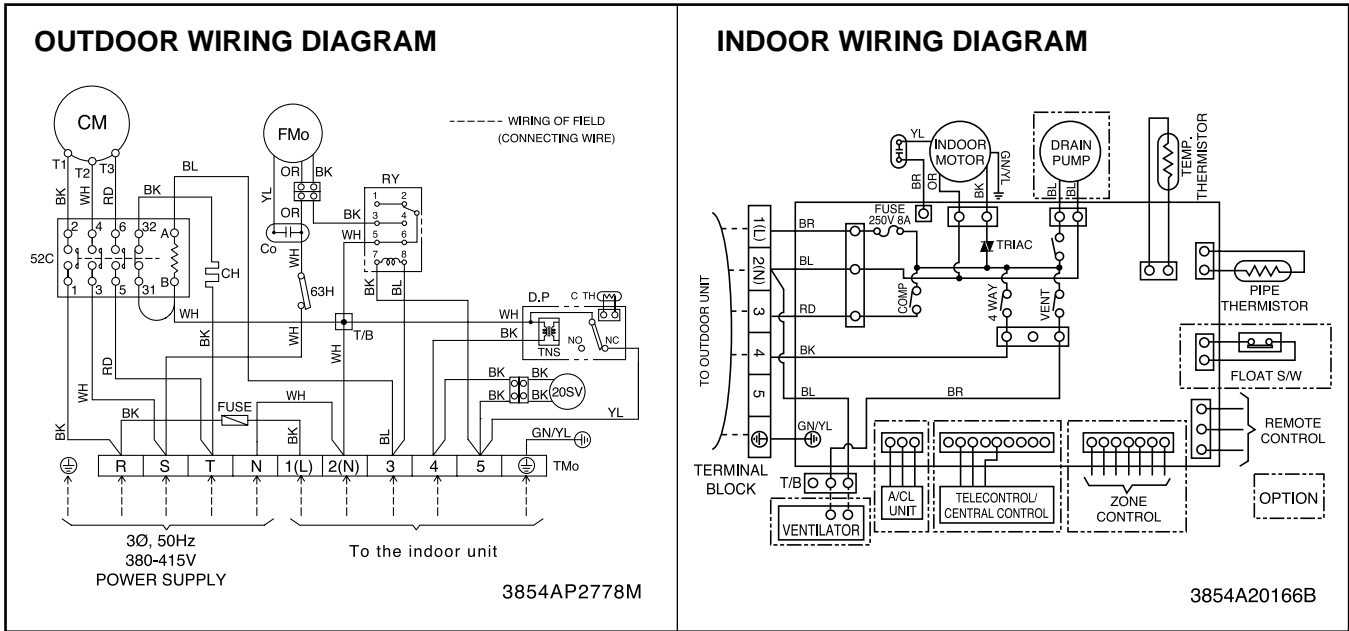
## COOLING ONLY

Model : LB-H1860CL / LB-H2460CL



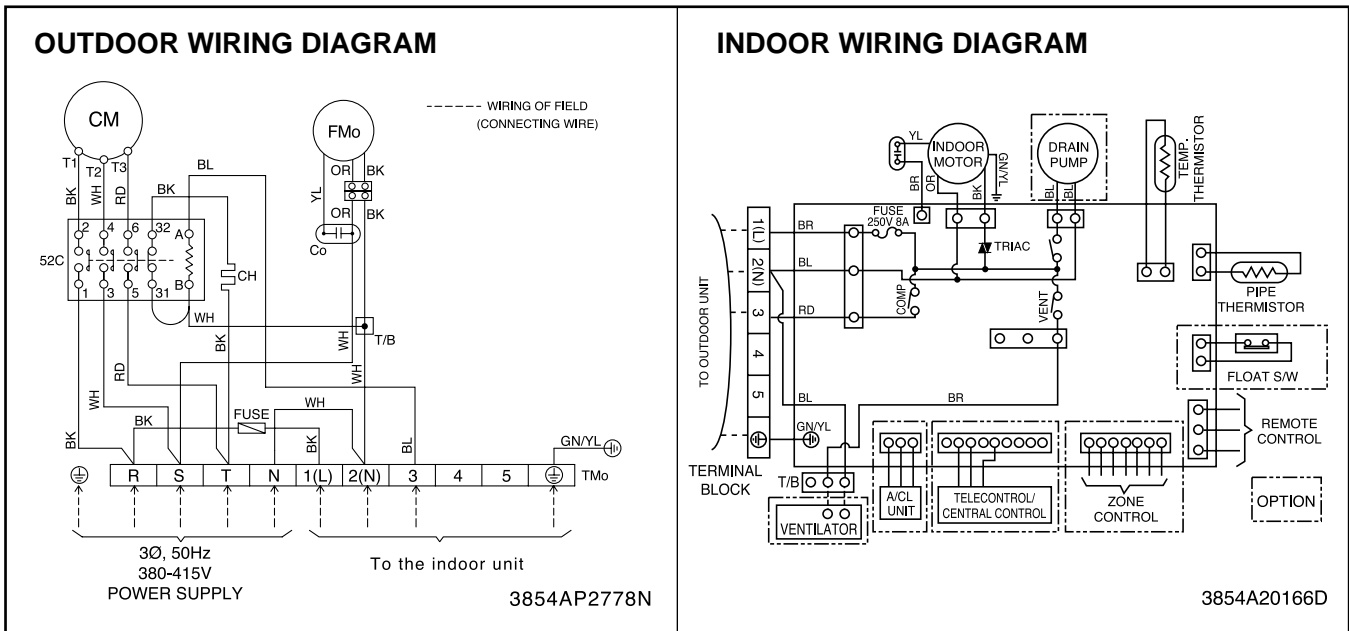
# HEAT PUMP

Model : LB-G3680HL



# COOLING ONLY

Model : LB-G3680CL



# Operation Details

## (1) The function of main control

### 1. Time Delay safety Control

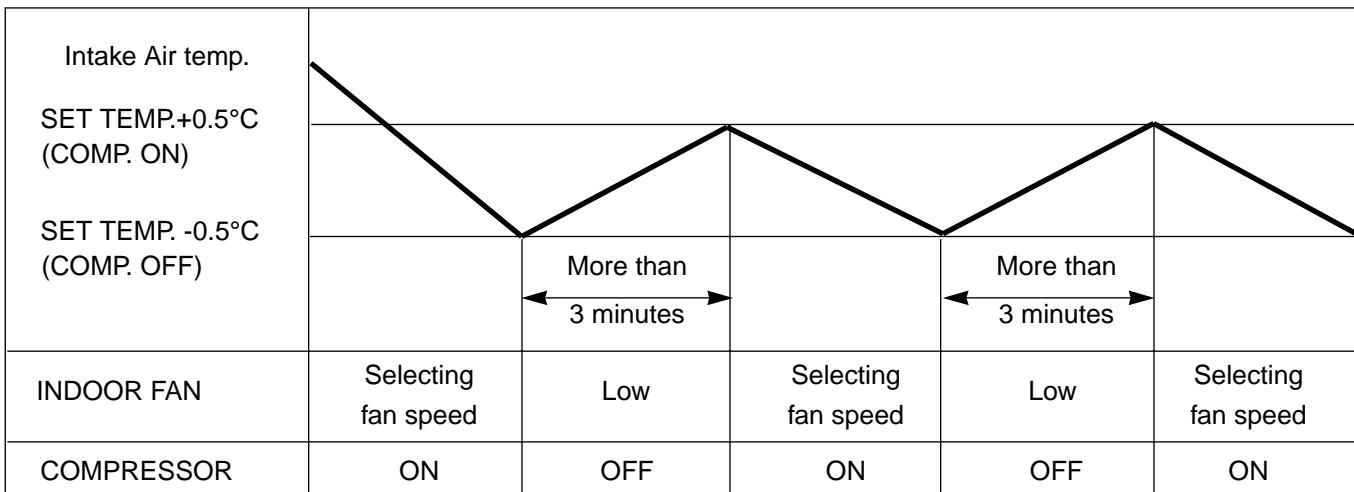
- 3min... The compressor is ceased for 3minutes to balance the pressure in the refrigeration cycle.  
(Protection of compressor)
- 30sec... The 4-way valve is ceased for 30sec. to prevent the refrigerant-gas abnormal noise when the Heating operation is OFF or switched to the other operation mode while compress is off.  
While compressor is running, it takes 3~5 seconds to switch.

### 2. Soft-Dry Operation

- The indoor fan speed is automatically set to the low, so the shift of the indoor fan speed is impossible because of already being set to the best speed for Dry Operation by Micom Control.

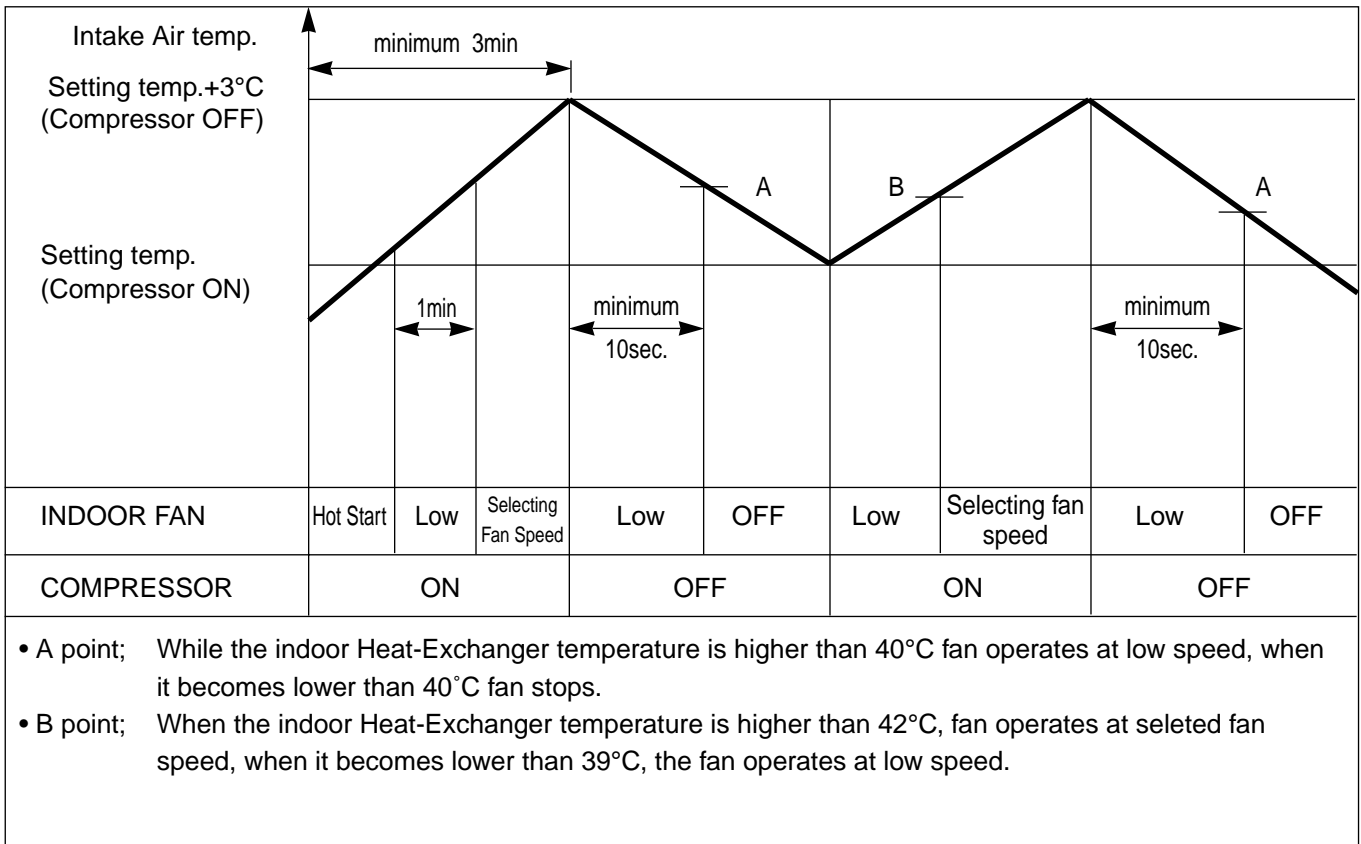
### 3. Cooling Mode Operation

- When selecting the Cooling(※) Mode Operation, the unit will operate according to the setting by the remote controller and the operation diagram is as following.



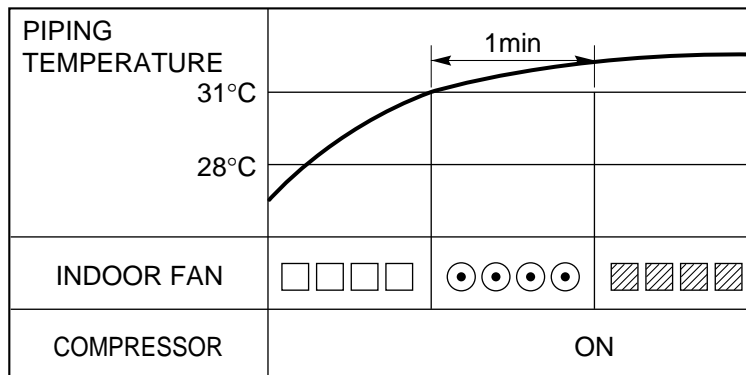
#### 4. Heating Mode Operation (Except Cooling Model)

The unit will operate according to the setting by the remote controller and the operation diagram is shown as following.



#### 5. Hot-Start Control

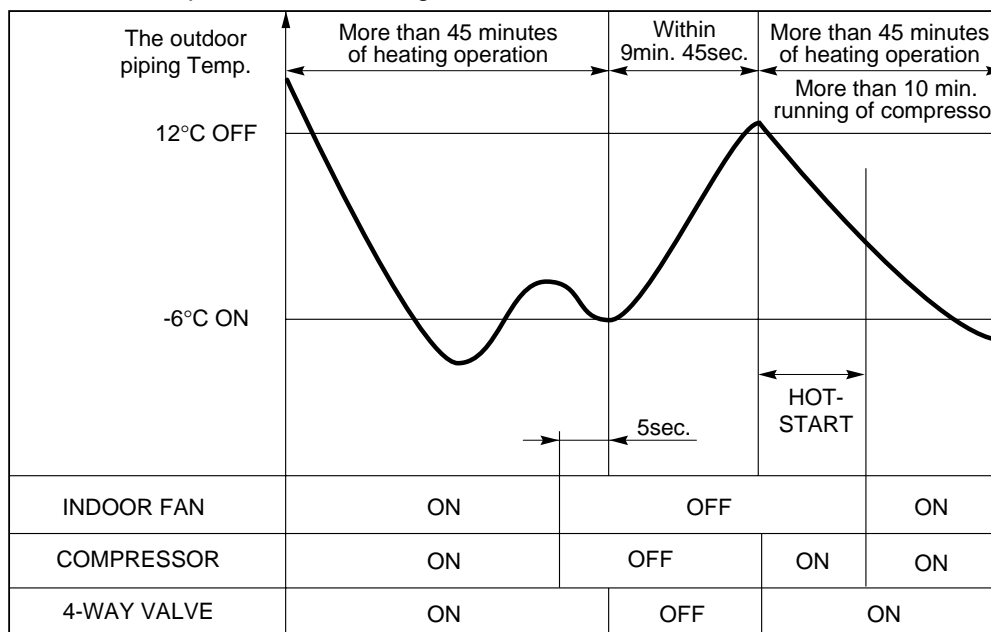
- The indoor fan stops until the evaporator piping temperature will be reached to 31°C.
- The operation diagram is as following.



▨ : Selected Fan    ● : Low Fan    □ : Fan Stop

## 6. Defrost Control(36K)

- Defrost control is available 45 minutes later since heating mode operation started, and it will not prolong over 10 minutes.
- Defrost control is carried out when the outdoor pipe temp. falls below  $-6^{\circ}\text{C}$  for more than 3 minutes after 45 minutes passed from starting of heating operation.
- Defrost ends after 10 minutes passed from starting of defrost operation or when the outdoor pipe temp. rises over  $12^{\circ}\text{C}$  after 5 minutes passed from starting of defrost.



### ■ Defrost Control (New Type Defrost Control) (18K/24K)

- While in heating mode operation in order to protect the evaporator pipe of the outdoor unit from freezing, reversed to cooling cycle to defrost the evaporator pipe of the outdoor unit.
- Defrost control is available 45 min. later since heating mode operation started, and it will not prolong over 10 min.
- Defrost control is carried out according to the following priority order while in heating mode operation.
  - 1st priority : Defrost control is carried out according to the indoor pipe temp 60 min. later since heating mode operation started.
  - 2nd priority : The temp differences between the indoor pipe temp and the intake air temp 25 min. later ( $\Delta T1$ ) and 45 min. later ( $\Delta T2$ ) since heating mode operation started are measured, then defrost control is carried out according to the difference ( $\Delta T = \Delta T1 - \Delta T2$ )
  - 3rd priority : Defrost control is carried out according to the temp difference ( $E = TE1 - TE2$ ) between the indoor pipe temperatures of 25 min later ( $TE1$ ) and 45 min later ( $TE2$ ) after heating mode operation started.
- When the indoor pipe temp is  $41^{\circ}\text{C}$  or above, defrost control is not carried out even if the condition is one of the defrost conditions above.
- While in defrost control, the compressor is on and the indoor fan, the outdoor fan, and the 4 way valve are off.

## 7. Self-diagnosis Function

- 'CHECK' will flash in the remote controller display when a problem occurs. Then please contact your dealer.
- Correct the accident point as shown in the table below before restarting operation.
- During the normal operation 'CHECK' won't be displayed in the remote controller.

Remote controller LCD	Accident Point
CH 01	Indoor room temperature thermistor error
CH 02	Indoor piping thermistor error
CH 03	Indoor main body / Remote controller unit communication error
CH 04(Optional)	Water level float switch error

# Installation of Indoor, Outdoor Unit

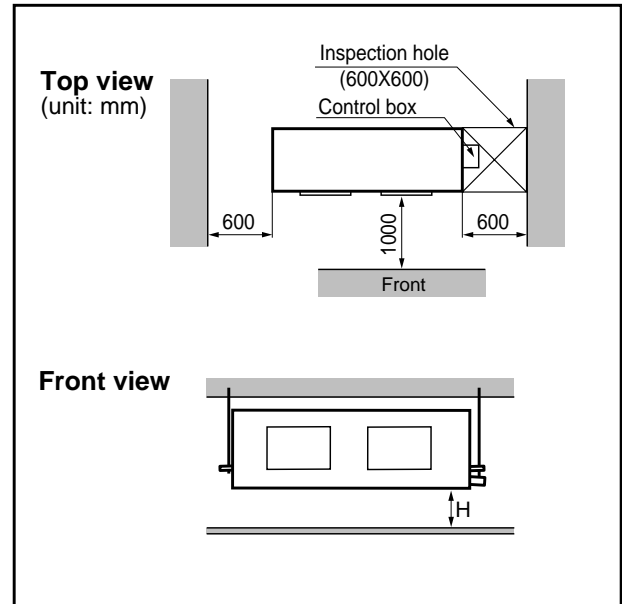
## 1. Selection of the best location

### 1) Indoor unit

#### Select location

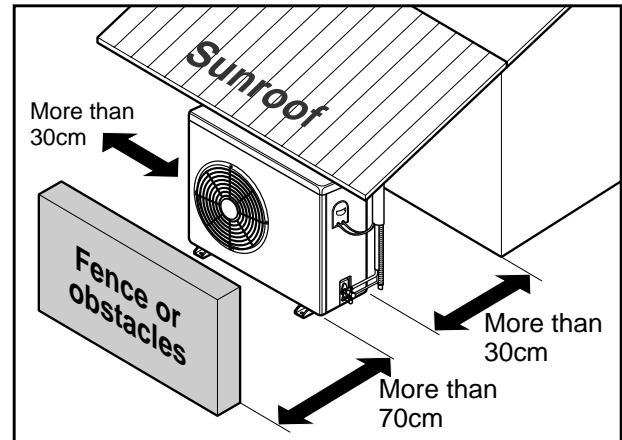
Install the air conditioner in the location that satisfies the following conditions.

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage. (Suitable dimension "H" is necessary to get a slope to drain as figure.)
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good.
- There should not be any heat source or steam near the unit



### 2) Outdoor unit

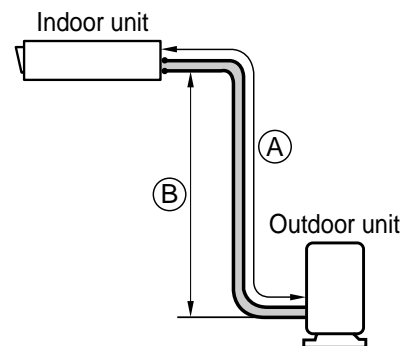
- If an awning is built over the unit to prevent direct sunlight or rain exposure, be careful that heat radiation from the condenser is not restricted.
- There should not be any animals or plants which could be affected by hot air discharged.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.



### 3) Piping length and the elevation

Capacity	Pipe Size (Diameter: Ø)		Length A(m)		Elevation B(m)		*Additional refrigerant (g/m)
	Gas	Liquid	Standard	Max.	Standard	Max.	
18K BTU/h	5/8"	1/4"	7.5	50	5	30	30
24K BTU/h	5/8"	1/4"	7.5	50	5	30	35
36K BTU/h	5/8"	1/4"	7.5	50	5	30	45

- If 18K Model is installed at a distance of 15m, 225g of refrigerant should be added  $(15-7.5) \times 30g = 225g$
- Capacity is based on standard length and maximum allowance length is on the basis of reliability.
- Improper refrigerant charge may result in abnormal cycle.





## 2. Indoor unit installation

### ■ Installation of Unit

Install the unit above the ceiling correctly.

#### CASE 1

##### POSITION OF SUSPENSION BOLT

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Apply a filter Accessory at air return hole.

(Unit:mm)

Dimension Capacity	A	B	C	D	E	F	(G)	H	I
18K BTU/h	932	882	355	45.5	450	30	87	750	163
24K BTU/h	932	882	355	45.5	450	30	87	750	163
36K BTU/h	1232	1182	355	45.5	450	30	87	830	186

- Install the unit leaning to a drainage hole side as a figure for easy water drainage.

#### CASE 2

##### POSITION OF CONSOLE BOLT

- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.

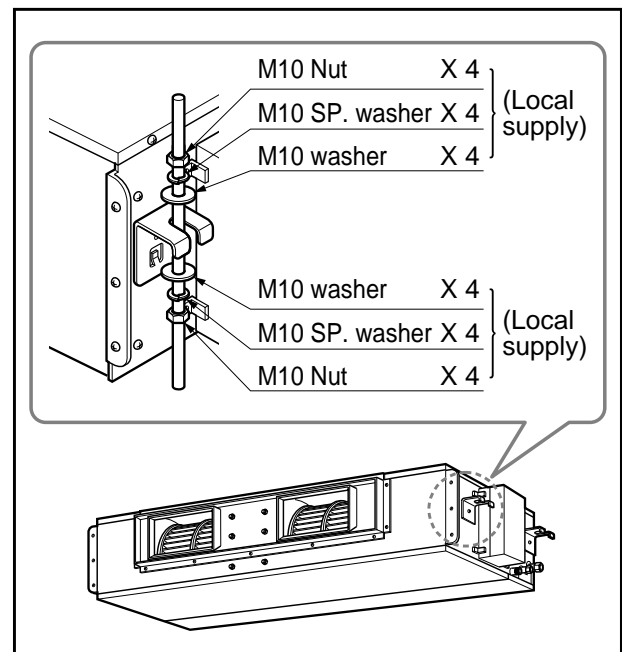
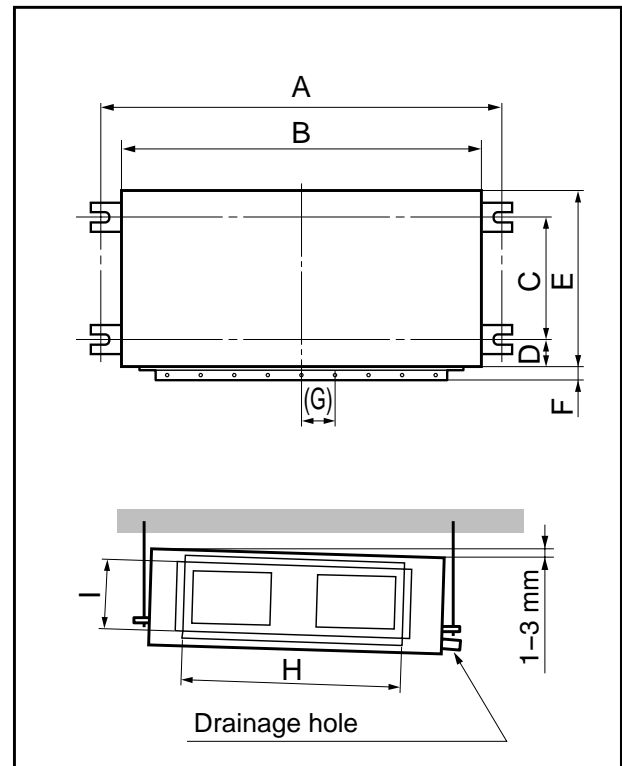
### NOTE:

- Thoroughly study the following installation locations:

1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the fan, the fin of the heat exchanger, resulting in heat exchange reduction, spraying, dispersing of water drops, etc.

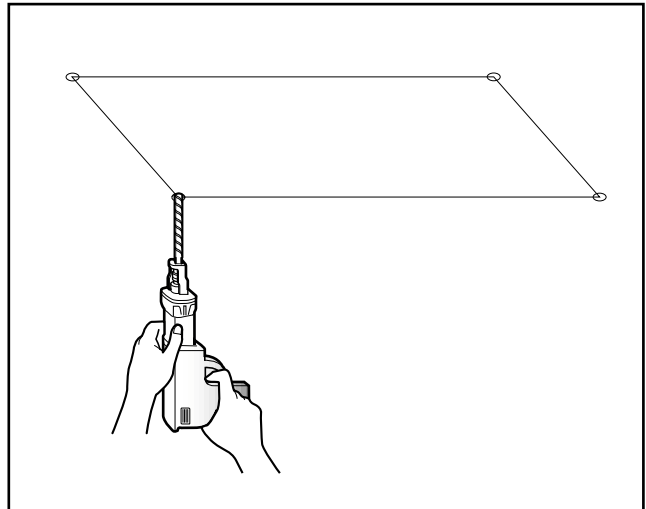
In these cases, take the following actions:

- Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
  - Make enough distance from a cooking room to install the air conditioner in such a place where it may not suck in oil steam.
2. Avoid installing air conditioner in such circumstances where cutting oil mist or iron powder is in suspension in factories, etc.
3. Avoid places where inflammable gas is generated, flows in, is stored or vented.
4. Avoid places where sulfurous acid gas or corrosive gas is generated.
5. Avoid places near high frequency generators.



### 3. The Indoor Unit Installation

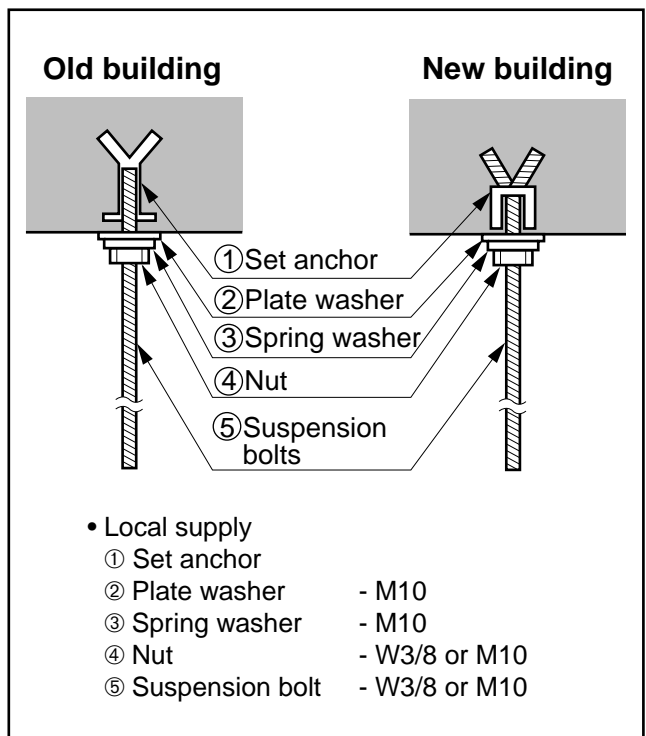
- Select and mark the position for fixing bolts.
- Drill the hole for set anchor on the face of ceiling.



- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
- Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.

#### **CAUTION**

Tighten the nut and bolt to prevent unit falling.



### 4. Remote Controller Installation

- **Although the room temperature sensor is in the indoor unit, the remote controller should be installed in such places away from direct sunlight and high humidity.**

#### **Installation of the remote controller**

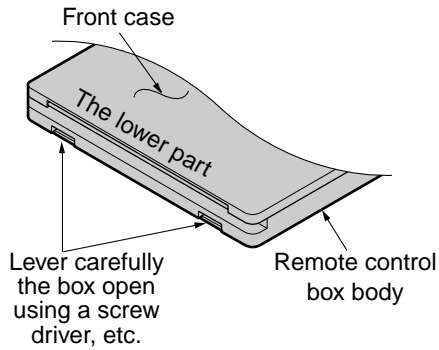
- Select places that are not splashed with water.
- Select control position after receiving customer approval.
- The room temperature sensor is built in the indoor unit.
- This remote controller equipped with liquid crystal display. If this position is higher or lower, display is difficult to see. (The standard height is 1.2 ~ 1.5m high)

#### **Routing of the remote controller cord**

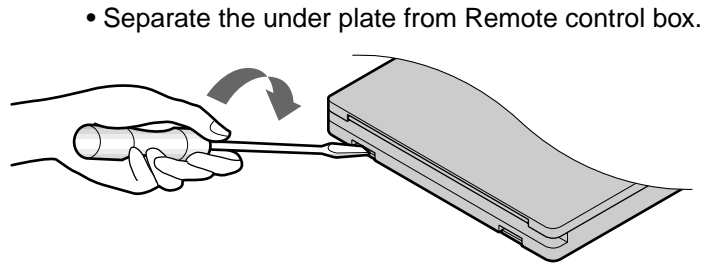
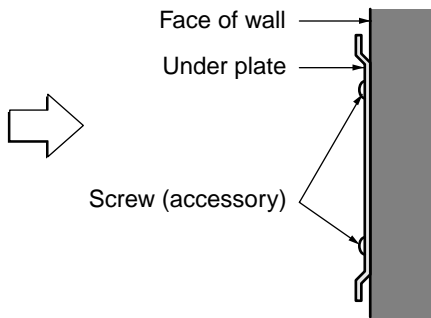
- Keep the remote controller cord away from the refrigerant piping and the drain piping.
- To protect the remote controller cord from electrical noise, place the cord at least 5cm away from other power cables (audio equipment, television set, etc.)
- If the remote controller cord is secured to the wall, provide a trap at the top of the cord to prevent water droplets from running.

## WIRED REMOTE CONTROL INSTALLATION

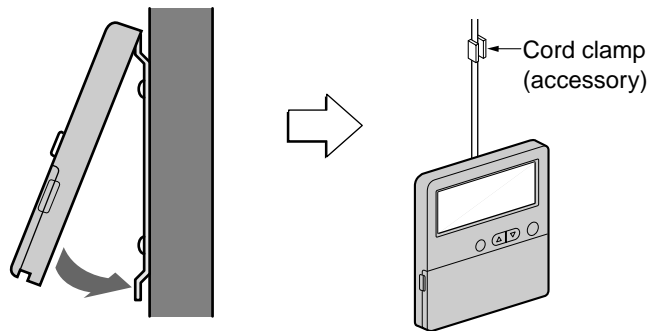
### DISASSEMBLING



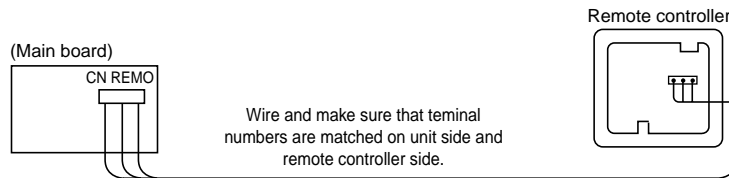
- Fix the under plate on the wall



- Fix the cord clamps on the wall by  $\varnothing 3$  tapping screws (accessory).
- Fix the remote control cord.



### ELECTRICAL WIRING

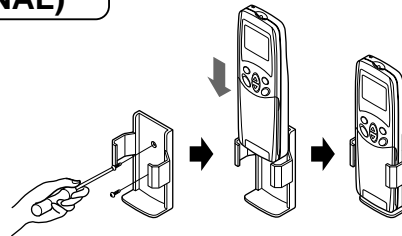


Wire and make sure that terminal numbers are matched on unit side and remote controller side.

The maximum length of the cord is 100m.  
If the length of the cord exceeds 50m,  
use a wire size greater than  $0.5\text{mm}^2$ .

## REMOTE CONTROL PREPARATION(OPTIONAL)

### HOW TO MOUNT ONTO A WALL



### HOW TO INSERT BATTERIES

- 1 Remove the battery cover from the remote controller.
  - Slide the cover according to the arrow direction.
- 2 Insert the two batteries.
  - Be sure that the (+) and (-) directions are correct.
  - Be sure that both batteries are new.
- 3 Re-attach the cover.
  - Slide it back into position.



- Do not use rechargeable batteries, such batteries differ from standard dry cells in shape, dimensions, and performance.
- Remove the batteries from the remote controller if the air conditioner is not going to be used for some long time.

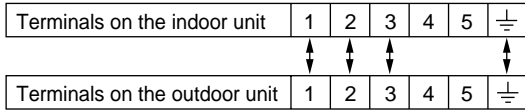
## 5. Connecting Cables between Indoor Unit and Outdoor Unit

### 1) Connecting cables to the Indoor Unit

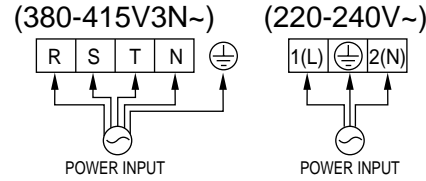
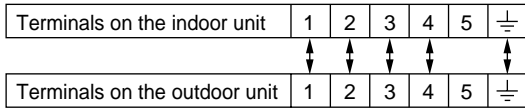
- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
  - Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively

#### ■ 36K Btu

##### • Cooling only type

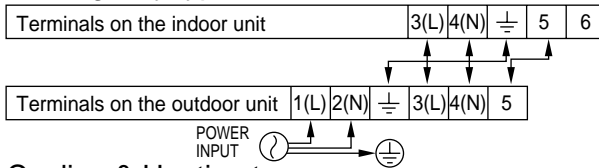


##### • Cooling & Heating type

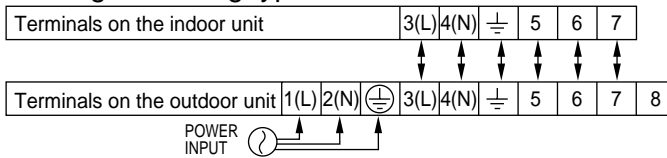


#### ■ 18K/24K Btu

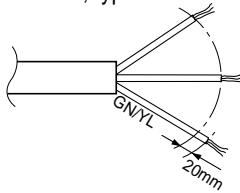
##### • Cooling only type



##### • Cooling & Heating type



The power cord connected to the outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).

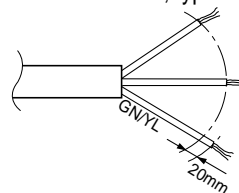


#### NORMAL CROSS-SECTIONAL AREA

Capacity	1 Phase	3 Phase
18K BTU/h	2.5mm <sup>2</sup>	-
24K BTU/h	2.5mm <sup>2</sup>	-
36K BTU/h	5.5mm <sup>2</sup>	2.5mm <sup>2</sup>

### CAUTION

The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).



NORMAL CROSS-SECTIONAL AREA 0.75mm<sup>2</sup> (18K/24K)  
1.25mm<sup>2</sup> (36K)

If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

### ⚠ WARNING

Make sure that the screws of the terminal are free from looseness.

## 2) Clamping of cables

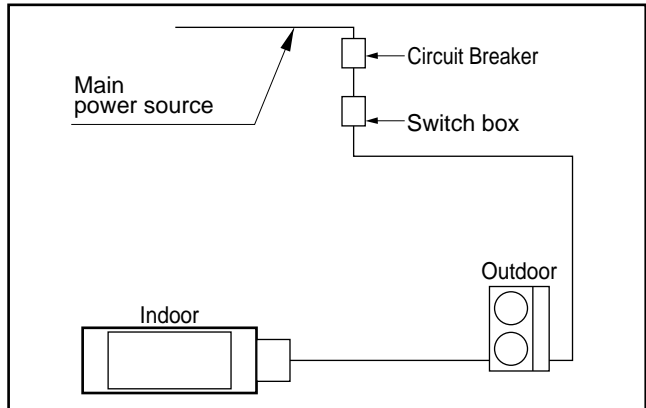
- 1) Arrange 2 power cables on the control panel.
- 2) First, fasten the steel clamp with a screw to the inner boss of control panel.
- 3) For the cooling model, fix the other side of the clamp with a screw strongly.  
For the heat pump model, put the 0.75mm<sup>2</sup> cable(thinner cable) on the clamp and tighten it with a plastic clamp to the other boss of the control panel.
- 4) In Australia, the length of power supply cord measured from the entry of the power supply cord to the middle of live pin on the power plug should be over 1.8m.

# ELECTRICAL WIRING

Perform the electrical wiring work according to the electrical wiring connection.

- All wiring must comply with local requirements.
- Select a power source that is capable of supplying the current required by the air conditioner.
- Use a recognized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.
- Capacity of circuit breaker

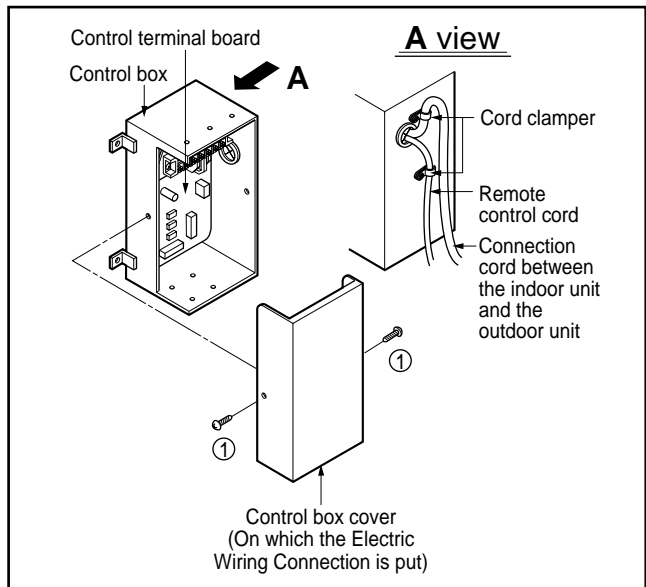
Capacity	1 Phase	3 Phase
18K BTU/h	20A	-
24K BTU/h	25A	-
36K BTU/h	35A	25A



## WIRING CONNECTION

### INDOOR UNIT

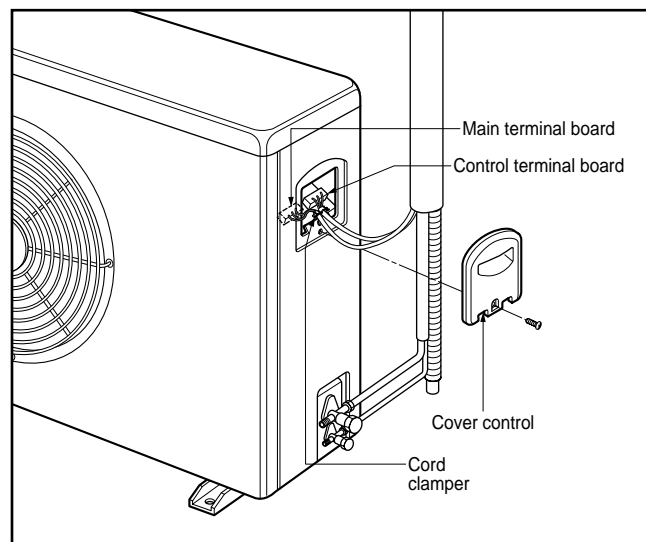
- Remove the control box cover for electrical connection between the indoor and outdoor unit. (Remove two screws ①.)
- Use the cord clamper to fix the cord.



### OUTDOOR UNIT

- Remove the control cover for wiring connection.
- Use the cord clamper to fix the cord.
- Earthing work  
Connect the cable of diameter 1.6mm<sup>2</sup> or more to the earthing terminal provided in the control box and do earthing.

※ Please check !!



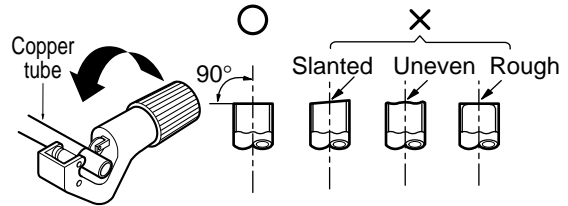
## 6. Connecting Pipes to the Indoor Unit

### • Preparation of Piping

Main cause of gas leakage is defect in flaring work. Carry out correct flaring work in the following procedure.

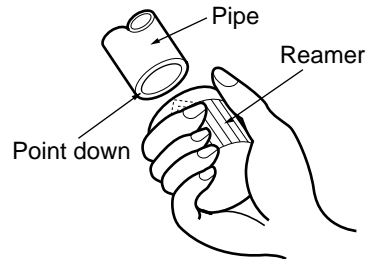
#### 1) Cut the pipes and the cable.

- Use the accessory piping kit or the pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than measured distance.
- Cut the cable 1.5m longer than the pipe length.



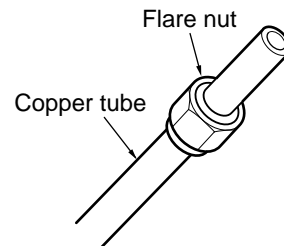
#### 2) Burrs removal

- Completely remove all burrs from the cut cross section of pipe/tube.
- Put the end of the copper tube/pipe to downward direction as you remove burrs in order to avoid to let burrs drop in the tubing.



#### 3) Putting nut on

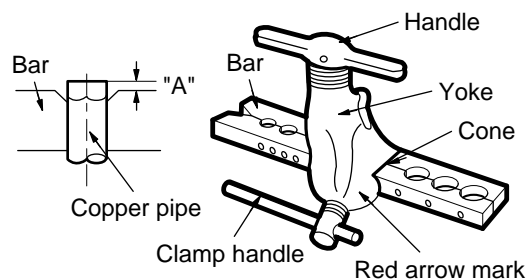
- Remove flare nuts attached to indoor and outdoor units, than put them on pipe/tube having completed burr removal.  
(Not possible to put them on after flaring work)



#### 4) Flaring work

- Carry out flaring work using flaring tool as shown below.

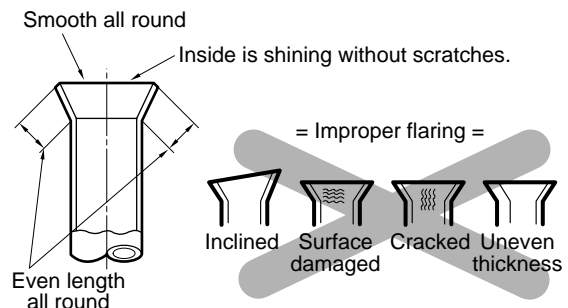
Outside Diameter	"A"
1/4"	0~0.5
3/8"	0.5~0.8
1/2"	0.5~0.8
5/8"	0.8~1.0
3/4"	1.0~1.3



Firmly hold copper tube in a bar(or die) as indicated dimension in the table above.

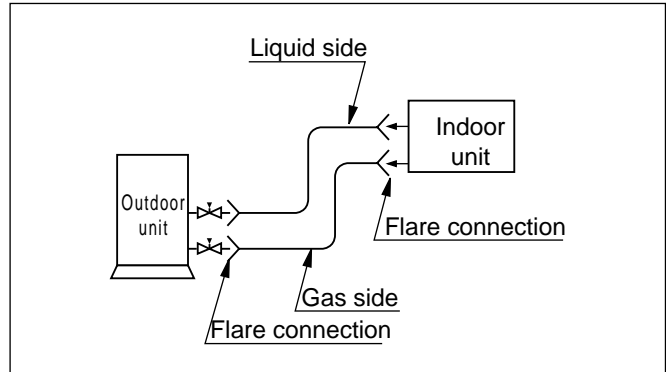
#### 5) Check

- Compare the flared work with figure below.
- If flare is noted to be defective, cut off the flared section and do flaring work again.



## Piping Connection

1. Form the piping according to its routing. Avoid bending and bending back the same piping point more than three times. (This will result in hardening the pipe.)
2. After deforming the piping, align centers of the union fitting of the indoor unit and the piping, and tighten them firmly with wrenches.
3. Connect pipe to the service valve or ball valve which is located below the outdoor unit.
4. After completing the piping connection, be sure to check if there is gas leakage in indoor and outdoor connection.



## Vacuum drying

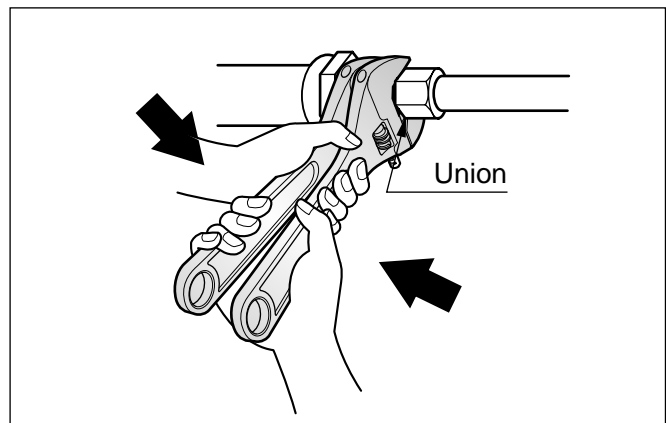
After completing the piping connection, execute vacuum drying for the connecting piping and the indoor unit. The vacuum drying must be carried out using the service ports of both the liquid and gas side valves.

Model	Liquid side piping	Gas side piping
18K, 24K Btu/h	1/4"	5/8"
36K Btu/h	1/4"	5/8"

## ⚠ CAUTION

Use two wrenches and tighten with regular torque.

Flare nut fastening torque	
Ø6.35mm	1.8kg·m
Ø9.52mm	4.0kg·m
Ø12.7mm	5.5kg·m
Ø15.88mm	6.6kg·m
Ø19.05mm	6.6kg·m

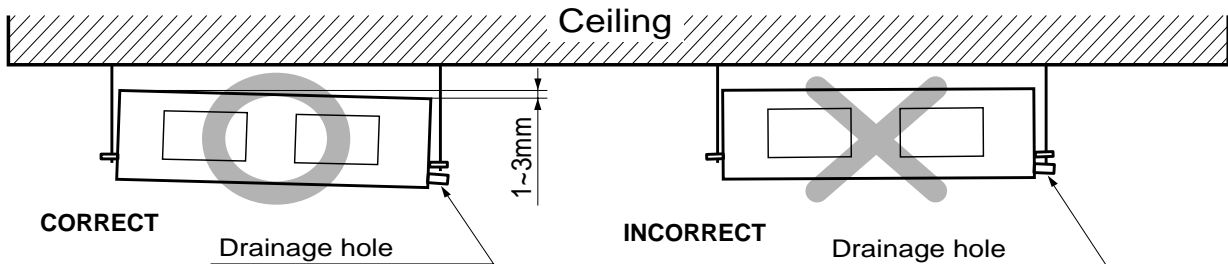


# CAUTION

1. **Install declination** of the indoor unit is very **important for the drain** of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 5mm.

## Front of view

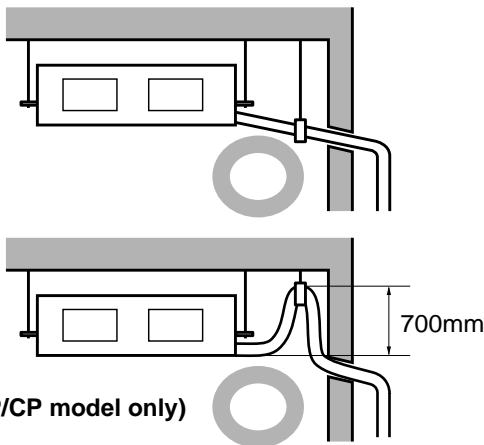
- The unit must be horizontal or declined to the drain hose connected when finished installation.



## CAUTION FOR GRADIENT OF UNIT AND DRAIN PIPING

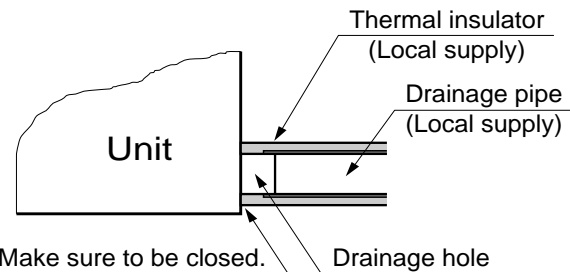
Lay the drain hose with a downware inclination so water will drain out.

- Always lay the drain with downward inclination (1/50 to 1/100). Prevent any upward flow or reverse flow in any part.
- 5mm or thicker formed thermal insulator shall always be provided for the drain pipe.

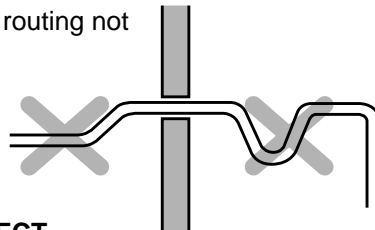


**CORRECT**

- Install the P-Trap (or U-Trap) to prevent a water leakage caused by the blocking of intake air filter.



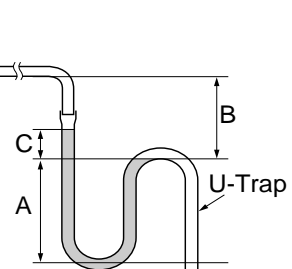
- Upward routing not allowed



**INCORRECT**

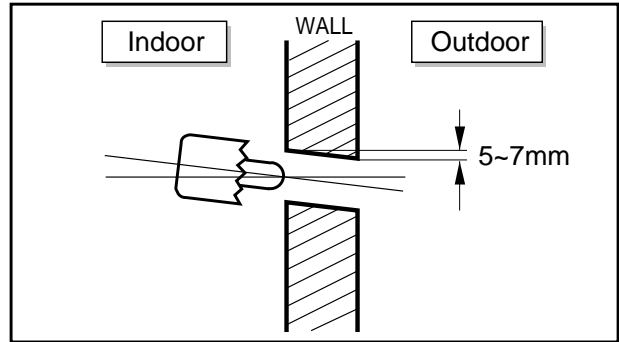
### Applied U-Trap Dimension

- $A \geq 70\text{mm}$
- $B \geq 2C$
- $C \geq 2 \times \text{SP}$
- SP = External Pressure (mmAq)
- Ex) External Pressure = 10mmAq
- $A \geq 70\text{mm}$
- $B \geq 40\text{mm}$
- $C \geq 20\text{mm}$





- Drill the piping hole with 70mm dia, hole core drill.
- Piping hole should be slightly slant to the outdoor side.



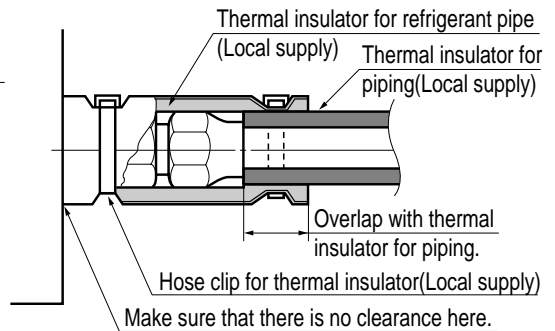
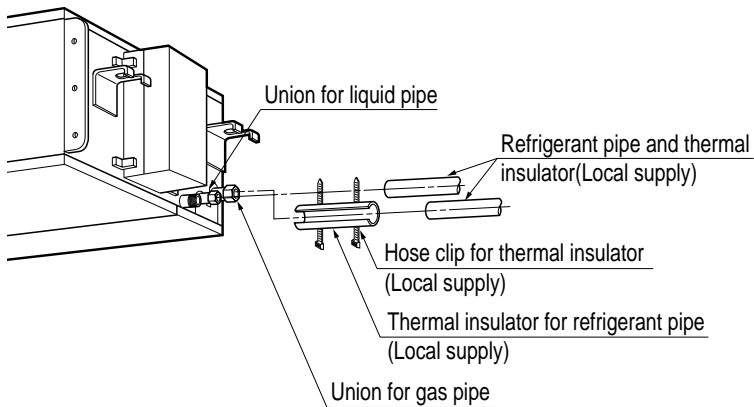
## INSULATION, OTHERS

Insulate the joint and tubes completely.

### THERMAL INSULATION

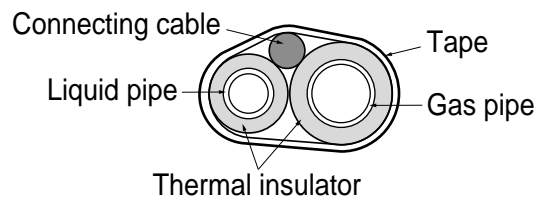
All thermal insulation must comply with local requirement.

#### INDOOR UNIT



#### REFRIGERANT PIPE

- Insulate and tape both the gas piping and liquid piping.



## FORM THE PIPINGS

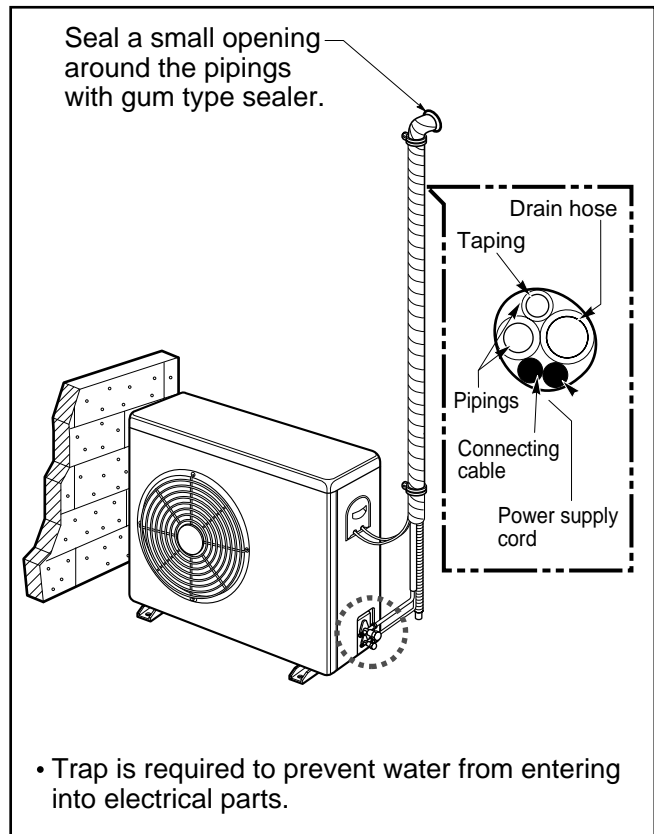
### 1. Wrap the connecting portion of indoor unit with the Insulation material and secure it with two Plastic Bands. (for the right pipings)

- If you want to connect an additional drain hose, the end of the drain-outlet should keep distance from the ground. (Do not dip it into water, and fix it on the wall to avoid swinging in the wind.)

In case of the Outdoor unit being installed below position of the Indoor unit.

### 2. Tape the Pipings, drain hose and Connecting Cable from bottom to top.

### 3. Form the pipings gathered by taping along the exterior wall and fix it onto the wall by saddle or equivalent.



## Test running

### 1) PRECAUTIONS IN TEST RUN

- The initial power supply must provide at least 90% of the rated voltage. Otherwise, the air conditioner should not be operated.

① For test run, carry out the cooling operation firstly even during heating season. If heating operation is carried out firstly, it leads to the trouble of compressor. Then attention must be paid.

#### Caution

② Carry out the test run more than 5 minutes without fail.

(Test run will be cancelled 18 minutes later automatically)

- The test run is started by pressing the room temperature checking button and down timer button for 3 seconds at the same time.
- To cancel the test run, press any button.

### CHECK THE FOLLOWING ITEMS WHEN INSTALLATION IS COMPLETE

- After completing work, be sure to measure and record trial run properties, and store measured data, etc.
- Measuring items are room temperature, outside temperature, suction temperature, blow out temperature, wind velocity, wind volume, voltage, current, presence of abnormal vibration and noise, operating pressure, piping temperature, compressive pressure.
- As to the structure and appearance, check following items.
 

<ul style="list-style-type: none"> <li><input type="checkbox"/> Is the circulation of air adequate?</li> <li><input type="checkbox"/> Is the draining smooth?</li> <li><input type="checkbox"/> Is the heat insulation complete (refrigerant and drain piping)?</li> <li><input type="checkbox"/> Is there any leakage of refrigerant?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Is the remote controller switch operated?</li> <li><input type="checkbox"/> Is there any faulty wiring?</li> <li><input type="checkbox"/> Are not terminal screws loosened?</li> </ul>
---	--

M4...118N·cm{12kgf·cm}

M5...196N·cm{20kgf·cm}

M6...245N·cm{25kgf·cm}

M8...588N·cm{60kgf·cm}

## **2) Connection of power supply**

- 1. Connect the power supply cord to the independent power supply.**
  - Circuit breaker is required.
- 2. Operate the unit for fifteen minutes or more.**

## **3) Evaluation of the performance**

1. Measure the temperature of the intake and discharge air.
2. Ensure the difference between the intake temperature and the discharge one is more than 8°C (Cooling) or reversely (Heating).

### **CAUTION**

After the confirmation of the above conditions, prepare the wiring as follows:

- 1) 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.**
- 2) Provide a circuit breaker switch between power source and the unit.**
- 3) The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations 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.)**
- 4) Specification of power source**
- 5) Confirm that electrical capacity is sufficient.**
- 6) Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.**
- 7) Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)**
- 8) Never fail to equip a leakage breaker where it is wet or moist.**
- 9) The following troubles would be caused by voltage drop-down.**
  - Vibration of a magnetic switch, damage on the contact point there of, fuse breaking, disturbance to the normal function of a overload protection device.
  - Proper starting power is not given to the compressor.

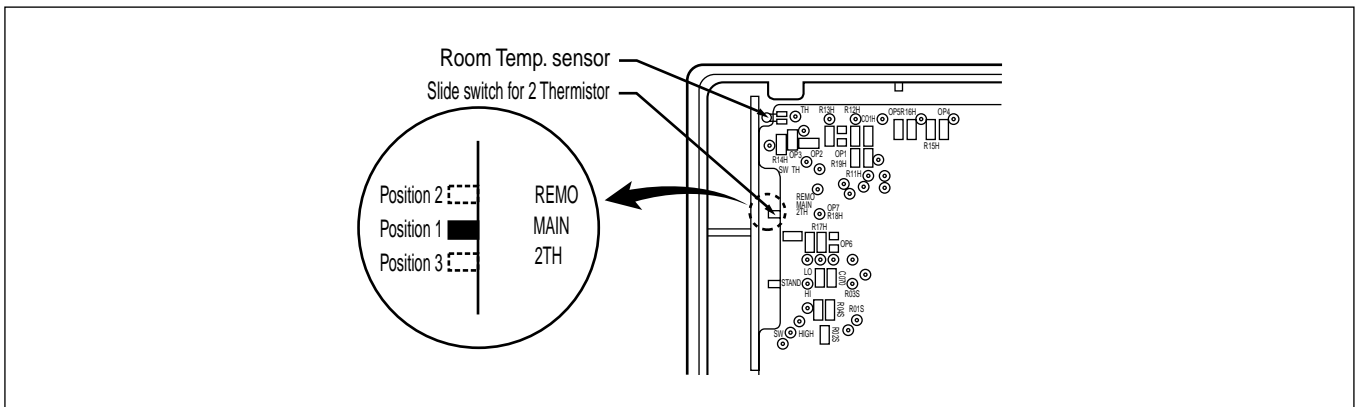
## **HAND OVER**

Teach the customer the operation and maintenance procedures, using the operation manual (air filter cleaning, temperature control, etc.).

# Optional Operation

## 1) Two Thermistor System

- (1) Open the rear cover of the wired remote-controller to set the mode.
- (2) Select one of three selectable modes as follows.
  - Position 1:  
The room temperature is controlled by the thermistor of the main body.
  - Position 2:  
The room temperature is controlled by the thermistor of the wired remote-controller, control the temperature according to the position of wired remote-controller.
  - Position 3:  
The room temperature is controlled by lower temperature between the temperature of main body and of remote-controller sensor.
- (3) Move the slide switch to set position.



- (4) Close the rear cover and check if it works normally.

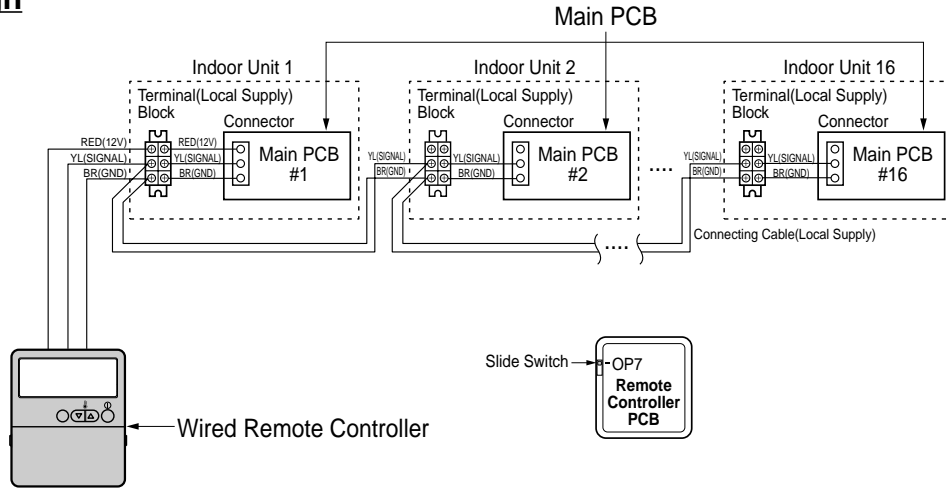
### **CAUTION**

- Select the position after counselling with a customer.
- In case of cooling mode, room temperature is controlled by the main body sensor.
- To control the room temperature by a wired remote controller, install controller(room temp. sensor) to sense the temperature more accurately.
- Manufactured in the position 1.

## 2) Group Control(Optional Wiring)

- You can use a group control operation after connecting the brown and yellow wire of each air-conditioner.
- Remove the resistor "OP 7" in remote controller.
- It operates maximum 16 Units by only one Wired Remote Controller, and each Unit starts sequentially to prevent overcurrent.

### Wiring design



### Features

- Use Only One Wired Remote Controller with several air conditioners(max. 16 Units)
- Random starting to prevent overcurrent.

#### **CAUTION**

- Be careful not to exchange the color of wires.
- The maximum length of connecting wire should be below 200m(25Ω) on connecting each units.
- Use a wire more than 0.5mm<sup>2</sup>

# E.S.P.(External Static Pressure) Setting

- (1) Open the rear cover of the wired remote-controller to set the mode.
- (2) Select one of three selectable modes as follows.

## ■ Without Zone System

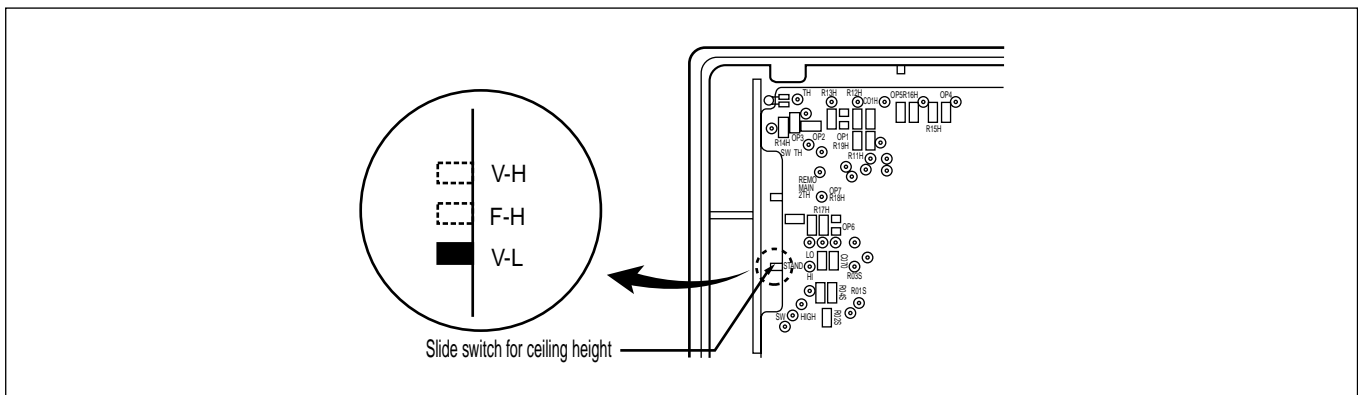
1. Position V-H, F-H:
  - This position sets the maximum E.S.P as a default set.
2. Position V-L:
  - This position sets the minimum E.S.P as a default set.

## ■ With Zone System

1. Position V-H:
  - Maximum E.S.P setting & Fan speed is varied according to the state of dampers by micom.
2. Position F-H:
  - Maximum E.S.P setting & Fan speed doesn't vary according to the opening & Closing of dampers.
3. Position V-L:
  - Minimum E.S.P setting & Fan speed is varied according to the state of dampers by micom.

\*Maximum: 18/24K-8mmAq  
36K-10mmAq  
Minimum: All-0mmAq

- (3) Move the slide switch to set position.



- (4) Close the rear cover and check if it works normally.

## ⚠ CAUTION

- Select the position after checking duct work and E.S.P of the unit.
- Manufactured in the position F-H.

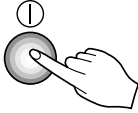
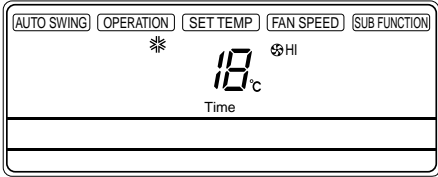
# How to Set E.S.P?

## Procedure of RPM change:

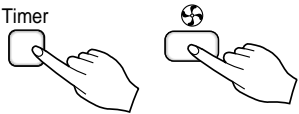
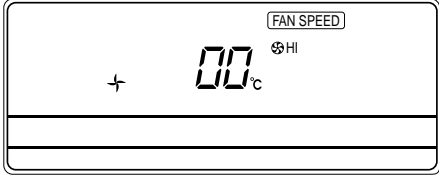
Ex) External Static pressure is 6mmAq for Model Name "LB-G3680HL"

- To protect the unit, compressor is designed to be off during E.S.P. setting.

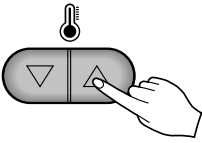
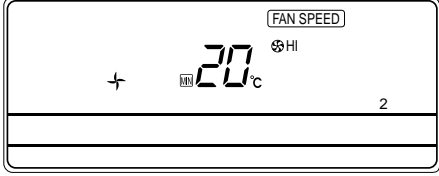
**1** Push the "On/Off" button.  
The unit will start.

**2** Push the "Timer" and "Wind" button simultaneously for more than 3 seconds.

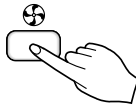



**3** Push the "Up" of "Down" button for E.S.P adjustment.  
And, adjust the number which you want. (In this example, the number is "220". Refer to the table 1 on the next page.)

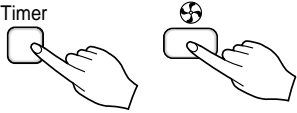
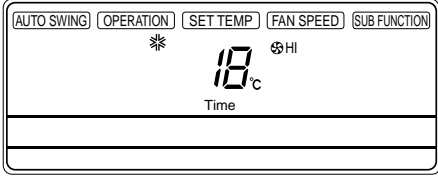



**Note:** The range of selection is from 1~254. Since, the display is two Digit only.  
If the range selection is above 100 then the third digit will appear in the screen as shown.

**4** Shift the fan speed mode by pressing the fan speed button.  
And then, Adjust numbers of next steps by repeating the stage 3.  
(In this example, the numbers are "235" and "243" respectively)



**5** Push the "Timer" and "Wind" button simultaneously for more than 3 seconds.  
Then, Wind Data is memorized by the EEPROM of the main PCB.

**[Table. 1]**

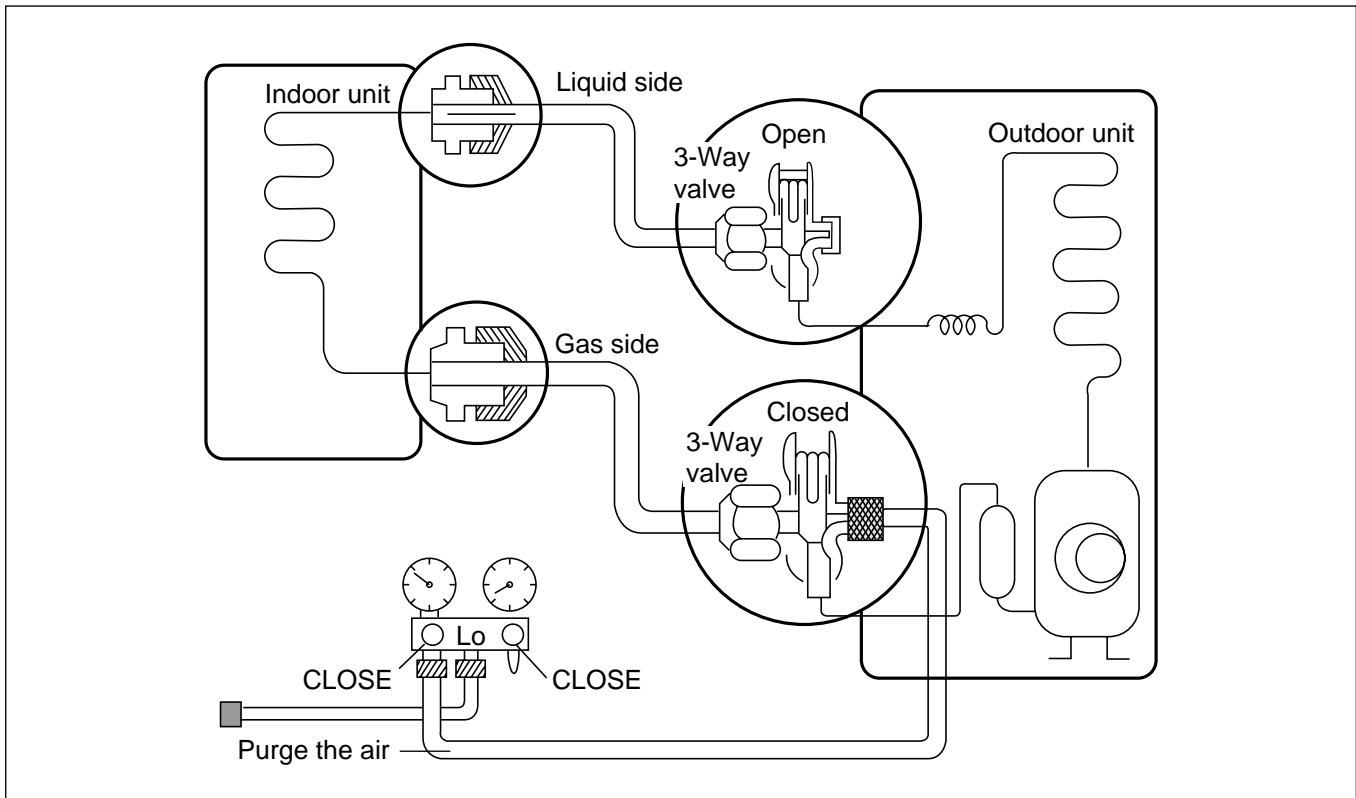
<b>Static Pressure(mmAq)</b>		<b>0</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>10</b>
Model Name	Step(Hi/Med/Lo)	Setting Value					
LB-H1860HL/CL	16.5 CMM	235	230	225	215	180	
	14.5 CMM	245	238	235	230	215	
	13 CMM	254	252	248	245	240	
LB-H2460HL/CL	18 CMM	220	205	190	50	1	
	16.5 CMM	235	230	220	200	100	
	14 CMM	250	240	235	230	210	
LB-G3680HL/CL	32 CMM	230	230	225	220	150	1
	29 CMM	240	238	237	235	230	220
	26.5 CMM	245	245	243	243	240	240

**Note: 1. Be sure to set the value referring table 1. Unexpected set value will cause mal-function.  
 2. Table 1 is based at 230V. According to the fluctuation of voltage, air flow rate varies.**



# 3-way Valve

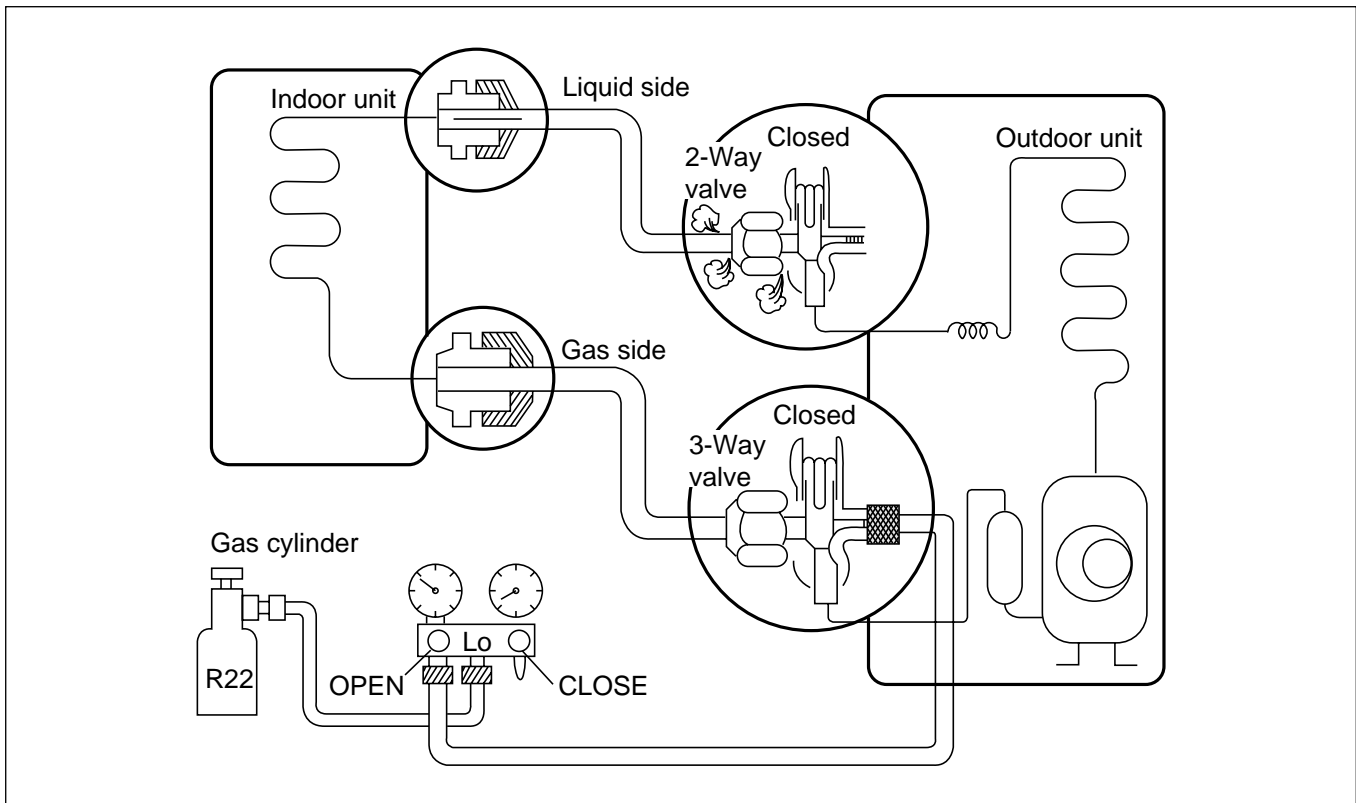
## 1. Pumping down



### • Procedure

- (1) Confirm that both liquid side and gas side valves are set to the open position.**
  - Remove the valve stem caps and confirm that the valve stems are in the raised position.
  - Be sure to use a hexagonal wrench to operate the valve stems.
- (2) Operate the unit for 10 to 15 minutes.**
- (3) Stop operation and wait for 3 minutes, then connect the charge set to the service port of the 3-way valve.**
  - Connect the charge hose to the service port.
- (4) Air purging of the charge hose.**
  - Open the low-pressure valve on the charge set slightly to air purge from the charge hose.
- (5) Set the liquid side valve to the closed position.**
- (6) Operate the air conditioner in cooling mode and stop it when the gauge indicates 1kg/cm<sup>2</sup>g.**
- (7) Immediately set the 3-way valve to the closed position.**
  - Do this quickly so that the gauge ends up indicating 3 to 5kg/cm<sup>2</sup>g.
- (8) Disconnect the charge set, and mount the 2-way and 3-way valve's stem nuts and the service port nut.**
  - Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
  - Be sure to check for gas leakage.

## 1) Re-air purging (Re-installation)

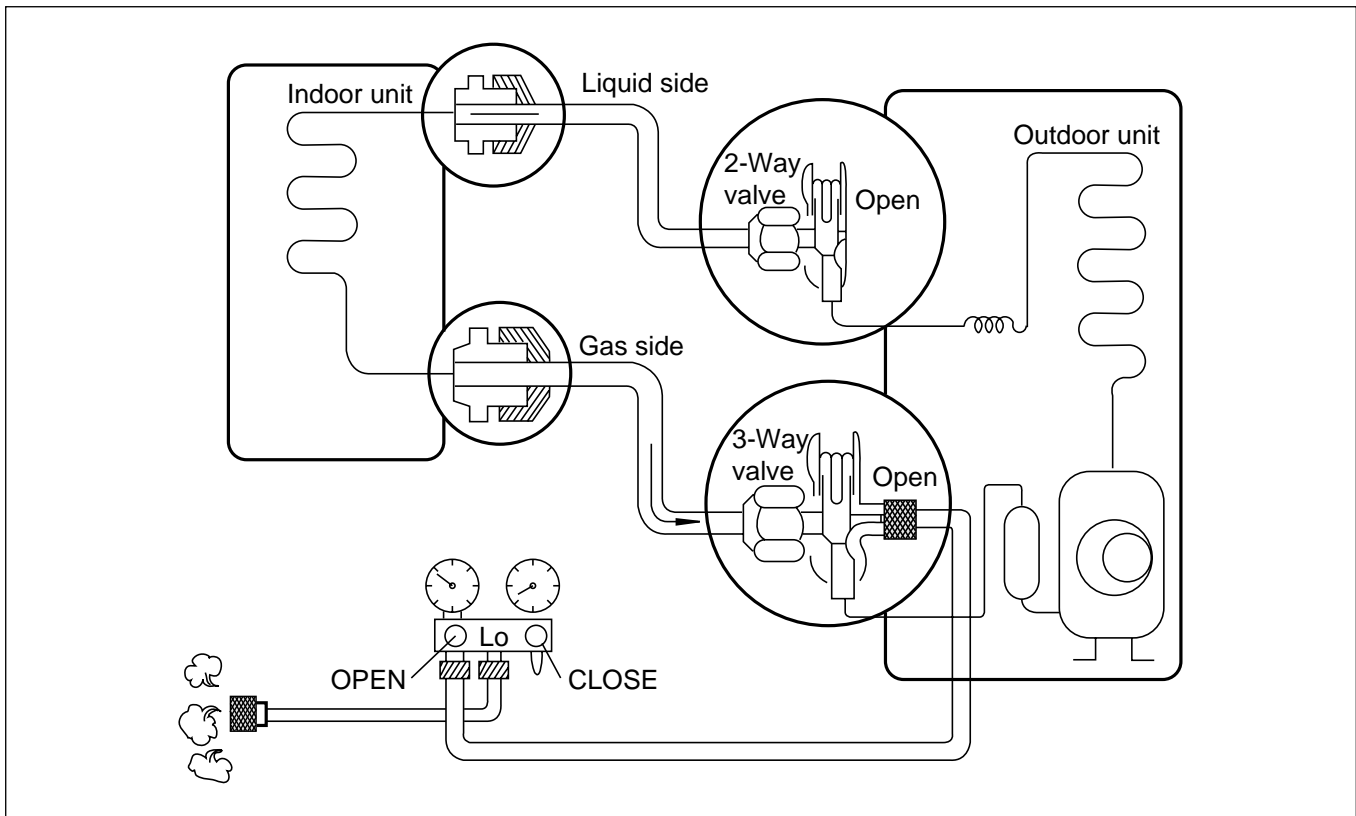


### • Procedure

- (1) **Confirm that both the liquid side valve and the gas side valve are set to the closed position.**
  - (2) **Connect the charge set and a gas cylinder to the service port of the 3-way valve.**
    - Leave the valve on the gas cylinder closed.
  - (3) **Air purging.**
    - Open the valves on the gas cylinder and the charge set. Purge the air by loosening the flare nut on the liquid side valve approximately 45° for 3 seconds then closing it for 1 minute; repeat 3 times.
    - After purging the air, use a torque wrench to tighten the flare nut on liquid side valve.
  - (4) **Check for gas leakage.**
    - Check the flare connections for gas leakage.
  - (5) **Discharge the refrigerant.**
    - Close the valve on the gas cylinder and discharge the refrigerant until the gauge indicates 3 to 5 kg/cm<sup>2</sup>g.
  - (6) **Disconnect the charge set and the gas cylinder, and set the 2-way and 3-way valves to the open position.**
    - Be sure to use a hexagonal wrench to operate the valve stems.
  - (7) **Mount the valve stem nuts and the service port nut.**
    - Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
    - Be sure to check for gas leakage.
- \* **CAUTION:**  
**Do not leak the gas in the air during Air Purging.**

## 2) Balance refrigerant of the 3-way valve

(Gas leakage)

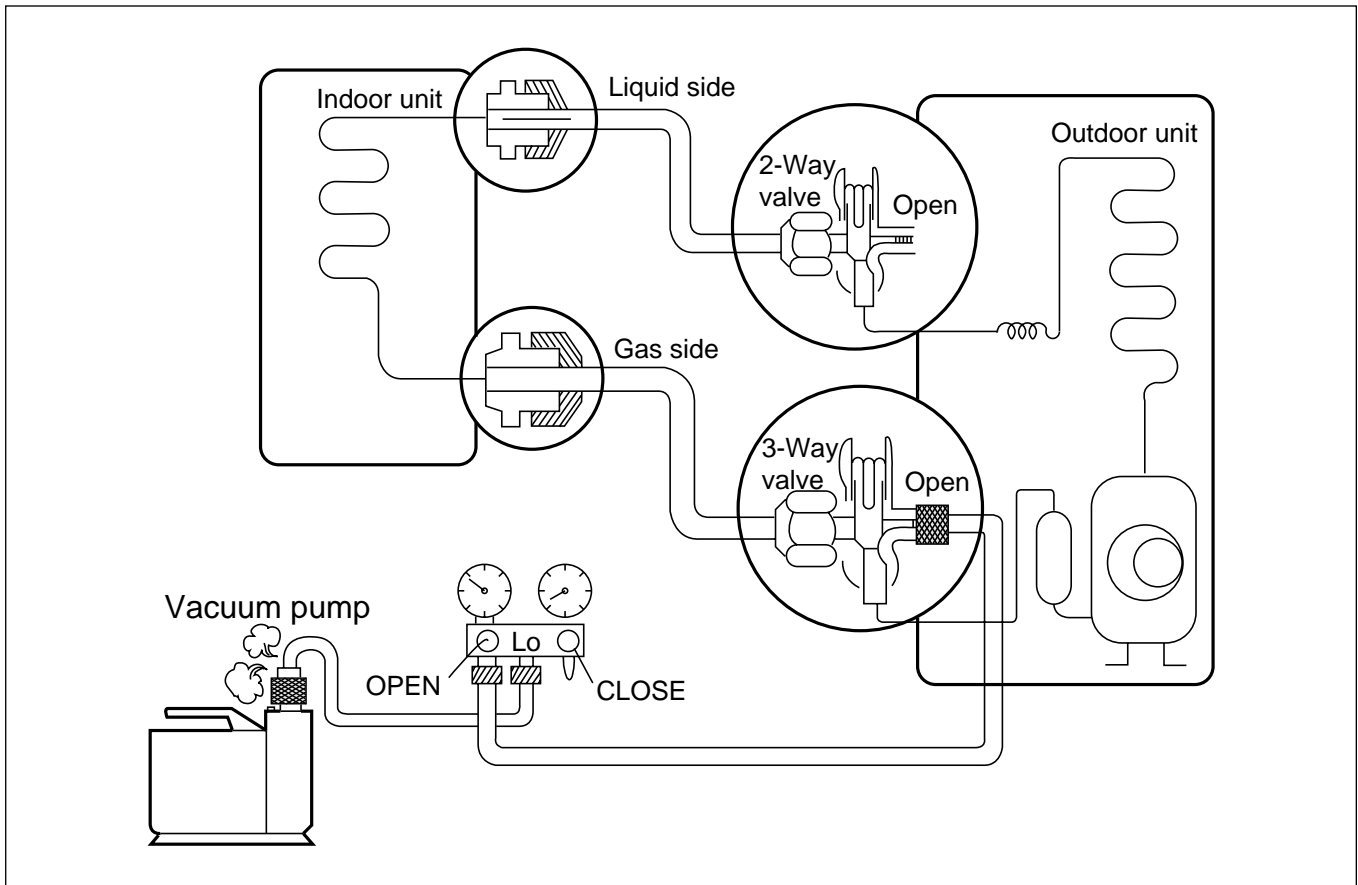


### • Procedure

- (1) Confirm that both the liquid side and gas side valves are set to the back seat.
- (2) Connect the charge set to the 3-way valve's port.
  - Leave the valve on the charge set closed.
  - Connect the charge hose to the service port.
- (3) Open the valve (Lo side) on the charge set and discharge the refrigerant until the gauge indicates 0 kg/cm<sup>2</sup>G.
  - If there is no air in the refrigerant cycle (the pressure when the air conditioner is not running is higher than 1 kg/cm<sup>2</sup>G), discharge the refrigerant until the gauge indicates 0.5 to 1 kg/cm<sup>2</sup>G. if this is the case, it will not be necessary to apply a evacuation.
  - Discharge the refrigerant gradually; if it is discharged too suddenly, the refrigeration oil will also be discharged.

## 2. Evacuation

(All amount of refrigerant leaked)

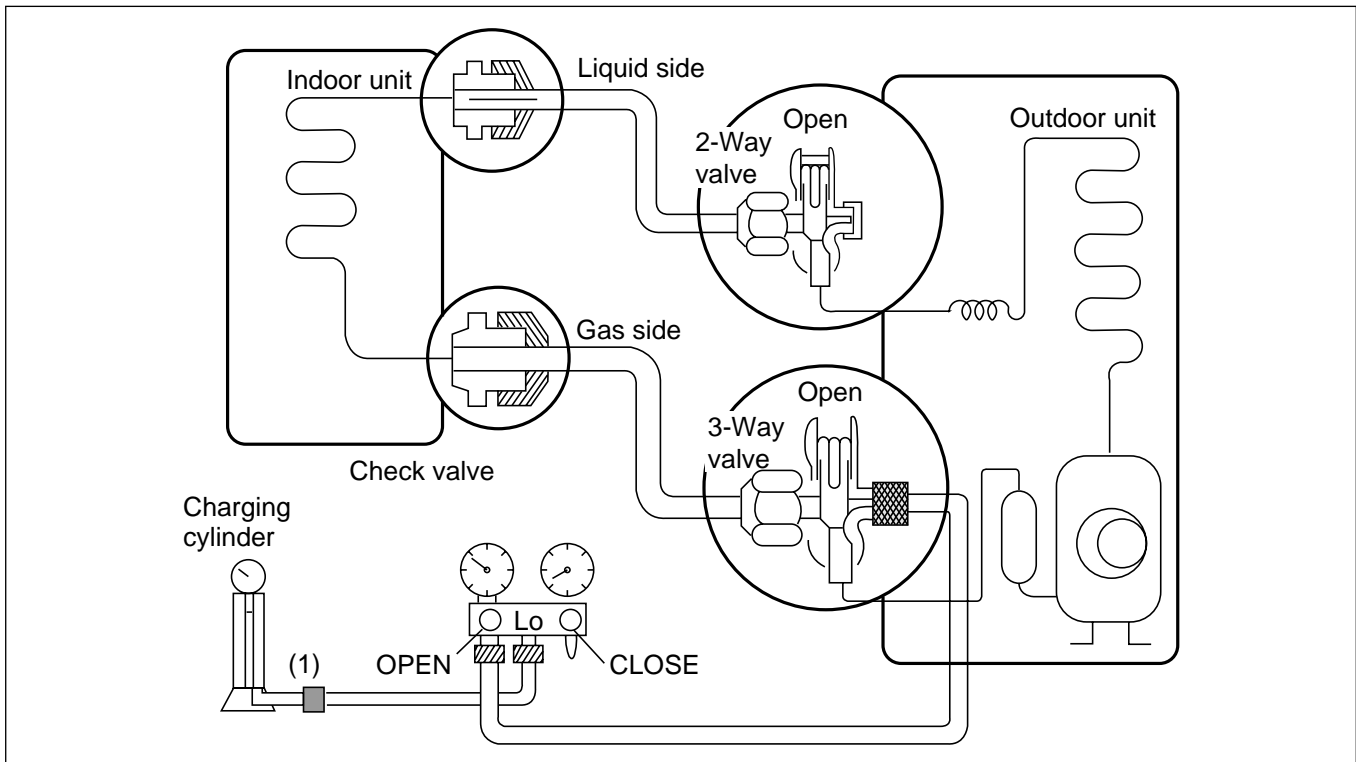


### • Procedure

- (1) Connect the vacuum pump to the center hose of charge set center hose
- (2) Evacuation for approximately one hour.
  - Confirm that the gauge needle has moved toward -76 cmHg (vacuum of 4 mmHg or less).
- (3) Close the valve (Lo side) on the charge set, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after turning off the vacuum pump).
- (4) Disconnect the charge hose from the vacuum pump.
  - Vacuum pump oil.  
If the vacuum pump oil becomes dirty or depleted, replenish as needed.

### 3. Gas Charging

(After Evacuation)



#### • Procedure

##### (1) Connect the charge hose to the charging cylinder.

- Connect the charge hose which you disconnected from the vacuum pump to the valve at the bottom of the cylinder.
- If you are using a gas cylinder, also use a scale and reverse the cylinder so that the system can be charged with liquid.

##### (2) Purge the air from the charge hose.

- Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant). The procedure is the same if using a gas cylinder.

##### (3) Open the valve (Lo side on the charge set and charge the system with liquid refrigerant.

- If the system can not be charged with the specified amount of refrigerant, it can be charged with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the procedure (pumping down-pin).

This is different from previous procedures. Because you are charging with liquid refrigerant from the gas side, absolutely do not attempt to charge with larger amounts of liquid refrigerant while operating the air conditioner.

##### (4) Immediately disconnect the charge hose from the 3-way valve's service port.

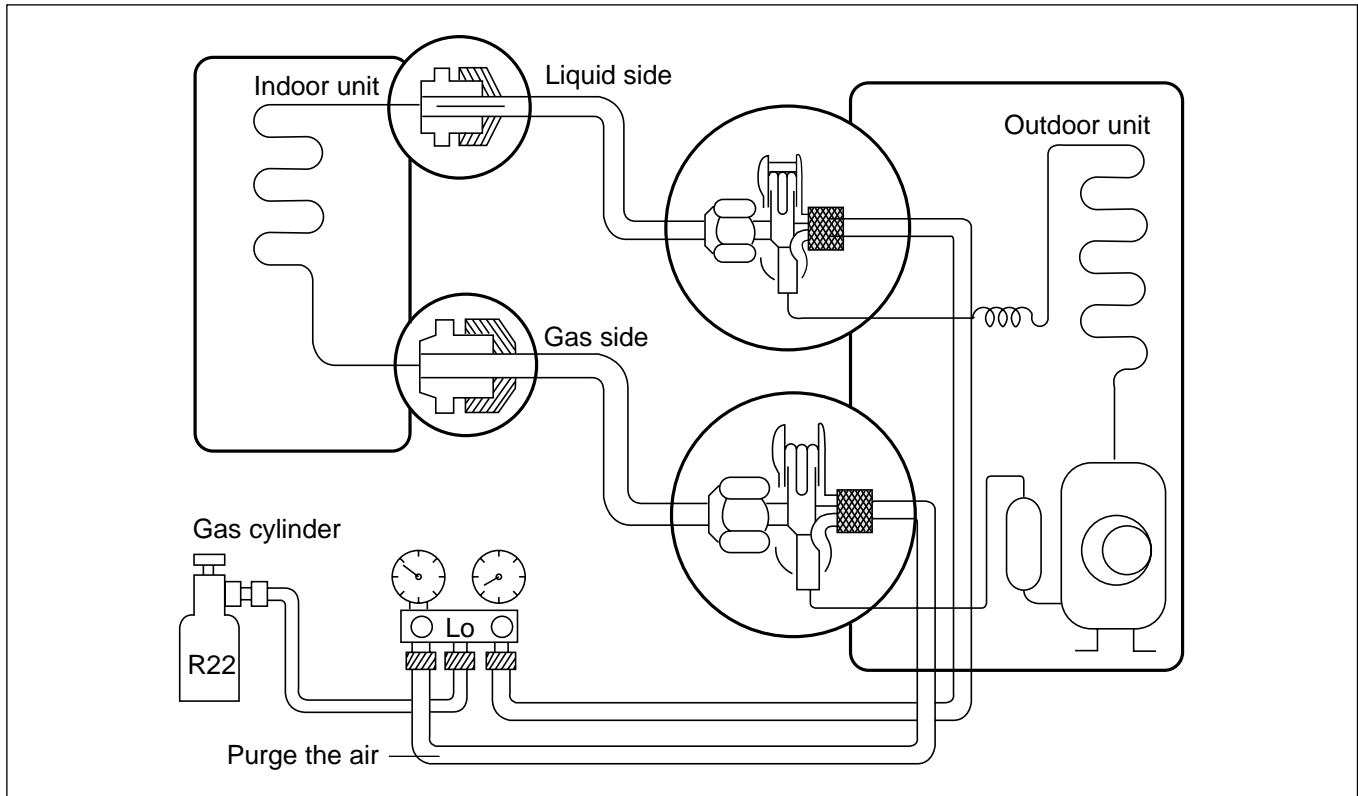
- Stopping partway will allow the gas to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner turn off the air conditioner before disconnecting the hose.

##### (5) Mount the valve stem nuts and the service port nut.

- Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
- Be sure to check for gas leakage.

# Cycle

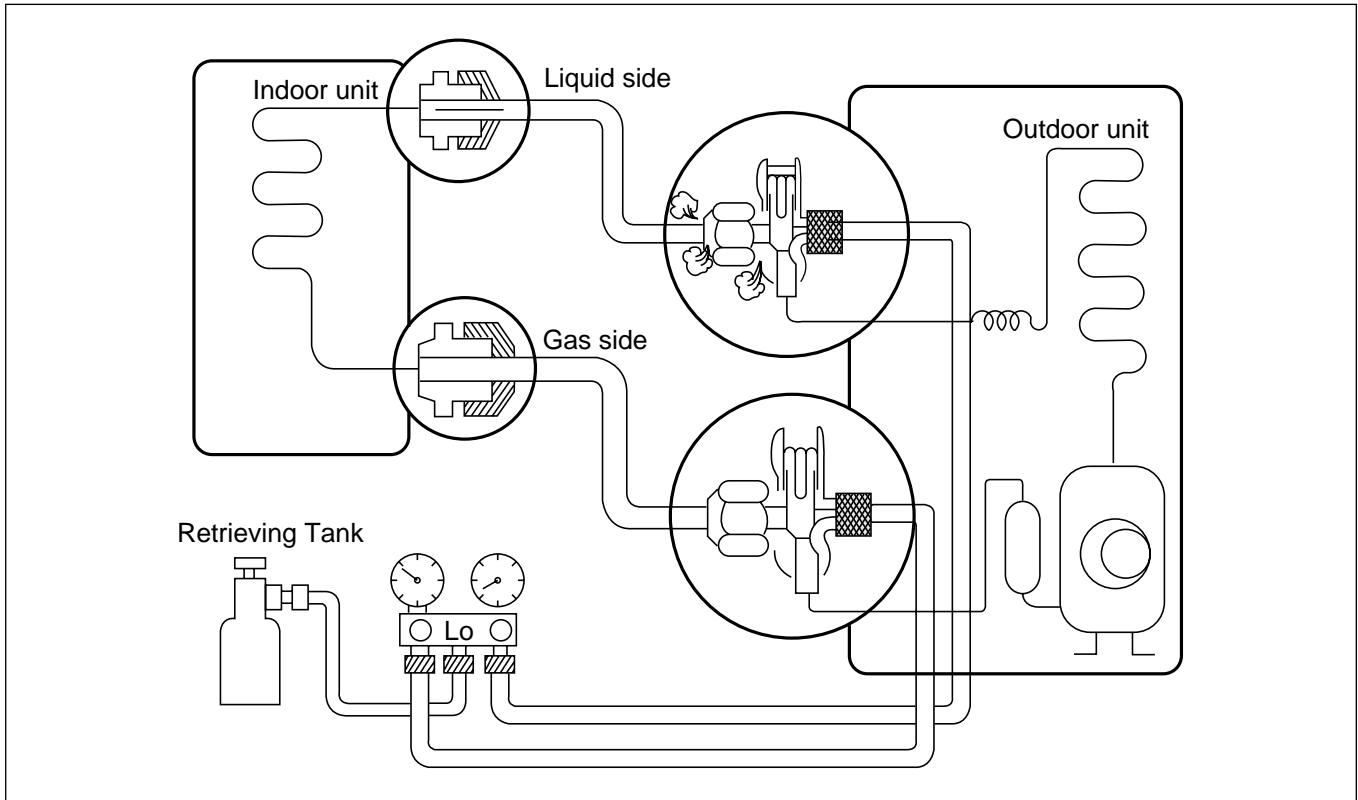
## 1. Installation (Connecting the piping between indoor and outdoor unit)



### • Installation

- (1) Connect the piping between the indoor and outdoor unit firmly.**
  - Incorrect connection may cause the leakage and incomplete vacuuming.
- (2) Attach the charging hose (manifold gage) to the service port.**
  - Charging hose is necessary to check the pressure and to inject R22 for leakage test.
  - The valve of charging hose must be closed before being connected.
- (3) Inject the 100~300g R22 through the charging hose opening the valve.**
- (4) Check the joint part using a gas detector or soapy water for leakage.**
  - On checking, the service valve of main service port must be closed, this test is only for checking whether pipe connection is ok or not.
- (5) If there is no leakage, discharge R22 in piping completely into tank for retrieving.**
  - Complete discharge is needed for vacuuming.
  - If leakage is found, please fasten the joint more tightly.
- (6) After closing the valve of charging hose, disconnect the tank and connect the vacuum pump to charging hose and open the valve again for vacuuming.**
- (7) Turn on the vacuum pump until the pressure drops below 0kg/cm<sup>2</sup>.**
- (8) After vacuuming, disconnect the vacuum pump and open the spindle of service port (liquid-side) slightly for 30 sec and then open the spindle of (gas side) with hexagonal wrench.**
- (9) Open the liquid side completely first and then the gas side fully in order.**

## 2. Disconnection (on moving)

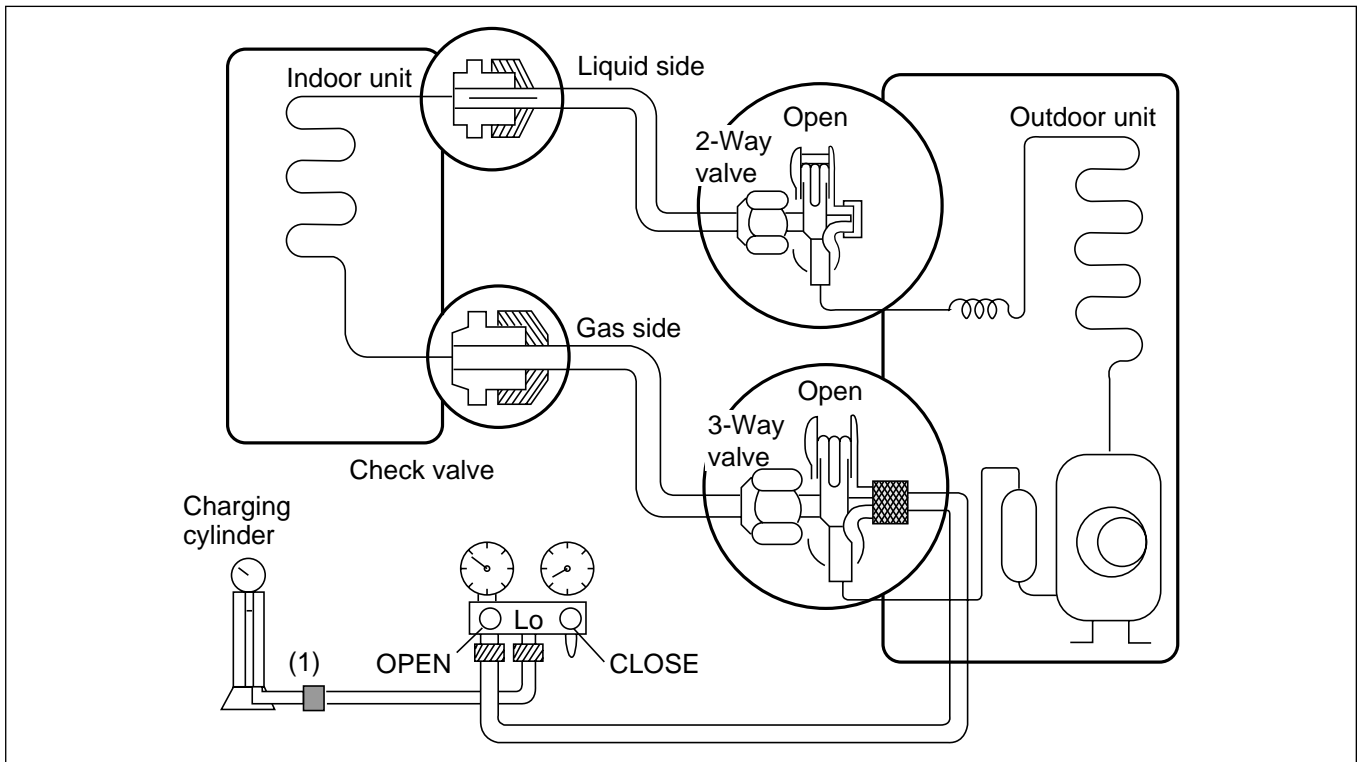


### • Disconnection

- (1) **Attach the charging hose (manifold gage) to the service port.**
  - Connect the manifold gage once to the service port not stopping. Stopping in the middle of process may cause the leakage.
- (2) **Purge the air in hose into special device such as retrieving tank opening the valve of charging- hose (gas side) slightly and then close it tightly.**
- (3) **Operate the air conditioner for 10~15 min until cycle is stabilized.**
- (4) **Close the spindle of service port (liquid side-high pressure) and wait till pressure of gas side (low pressure) drops below 0kgf/cm<sup>2</sup>.**
- (5) **After the needle of gage indicates below 0 kgf/cm<sup>2</sup>, close the valve of gas side quickly and turn off the power.**
- (6) **Disconnect the piping between indoor and outdoor unit and then put on service cap to the service port.**

### 3. Gas Charging

(After Evacuation)



#### • Procedure

**(1) Connect the charge hose to the charging cylinder.**

- Connect the charge hose which you disconnected from the vacuum pump to the valve at the bottom of the cylinder.
- If you are using a gas cylinder, also use a scale and reverse the cylinder so that the system can be charged in liquid state.

**(2) Purge the air from the charge hose.**

- Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant). The procedure is the same if using a gas cylinder.

**(3) Open the valve (Lo side on the charge set and charge the system with liquid refrigerant.**

- If the system can not be charged with the specified amount of refrigerant, it can be charged with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the procedure.

This is different from previous procedures.

Because you are charging with liquid refrigerant from the gas side, absolutely do not attempt to charge with larger amounts of liquid refrigerant while operating the air conditioner.

**(4) Immediately disconnect the charge hose from the 3-way valve's service port.**

- Stopping partway will allow the gas to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner, turn off the air conditioner before disconnecting the hose.

**(5) Mount the valve stem nuts and the service port nut.**

- Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
- Be sure to check for gas leakage.



# Cycle Troubleshooting Guide

## Trouble analysis

1. Check temperature difference between intake and discharge air and operating current.

	Temp. difference : approx. 0°C Current : less than 80% of rated current	All amount of refrigerant leaked out Check refrigeration cycle
Temp. Difference	Temp. difference : approx. 8°C Current : less than 80% of rated current	Refrigerant leakage Clog of refrigeration cycle Defective compressor
Operating Current	Temp. difference : less than 8°C Current : over the rated current	Excessive amount of refrigerant
	Temp. difference : over 8°C	Normal

### Notice :

Temperature difference between intake and discharge air depends on room air humidity. When the room air humidity is relatively higher, temperature difference is smaller. When the room air humidity is relatively lower temperature difference is larger.

2. Check temperature and pressure of refrigeration cycle.

Suction pressure (Compared with the normal value)	Temperature (Compared with the normal value)	Cause of Trouble	Description
Higher	High	Defective compressor Defective 4-way reverse valve	Current is low
	Normal	Excessive amount of refrigerant	High pressure does not quickly rise at the beginning of operation
Lower	Higher	Insufficient amount of refrigerant (Leakage) Clogging	Current is low Current is low

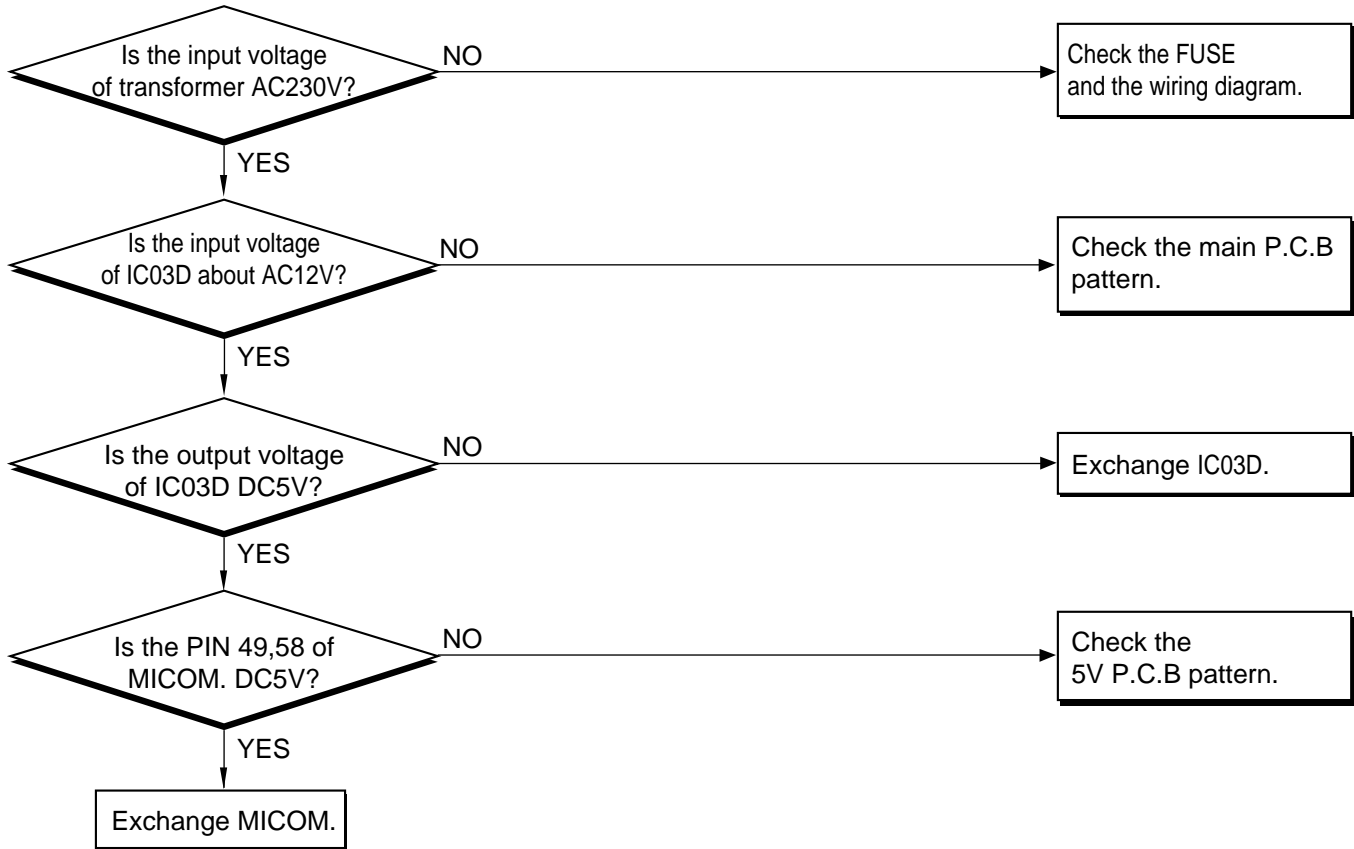
### Notice :

- The suction pressure is usually 4.5~6.0 kg/cm<sup>2</sup>G at normal condition.
- The temperature can be measured by attaching the thermometer to the low pressure tubing and wrap it with putty.

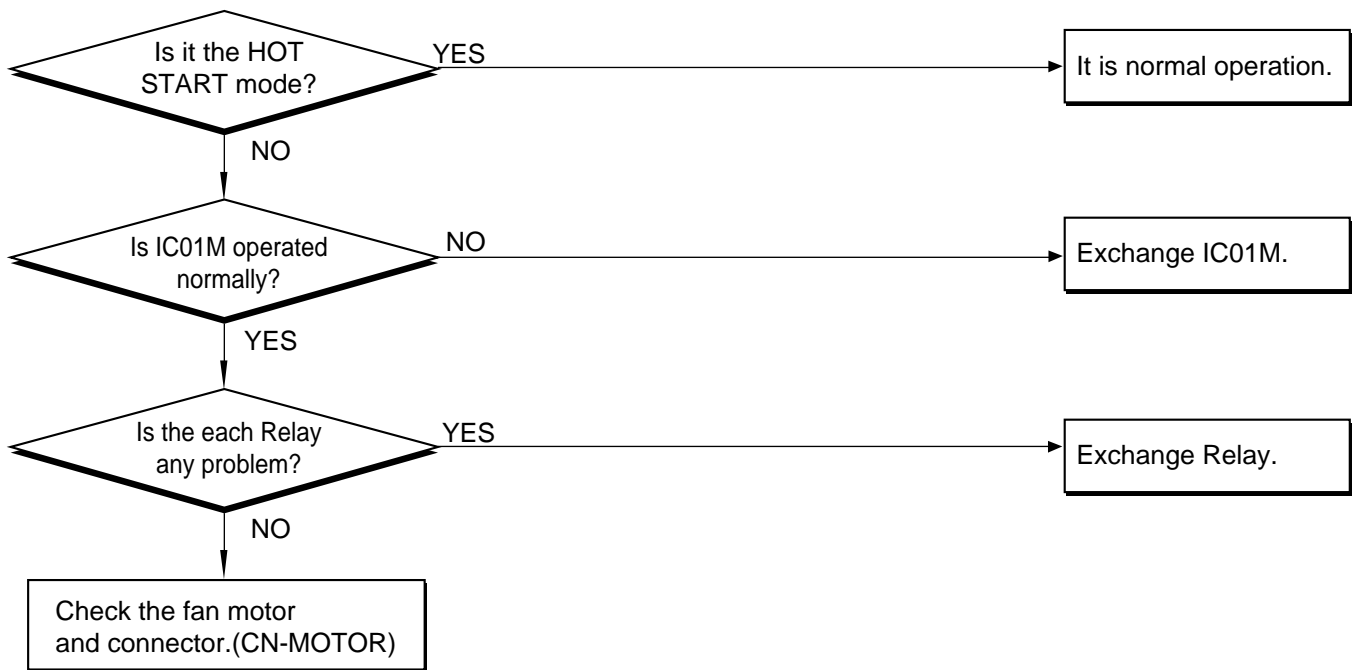
# Electronic Parts Troubleshooting Guide

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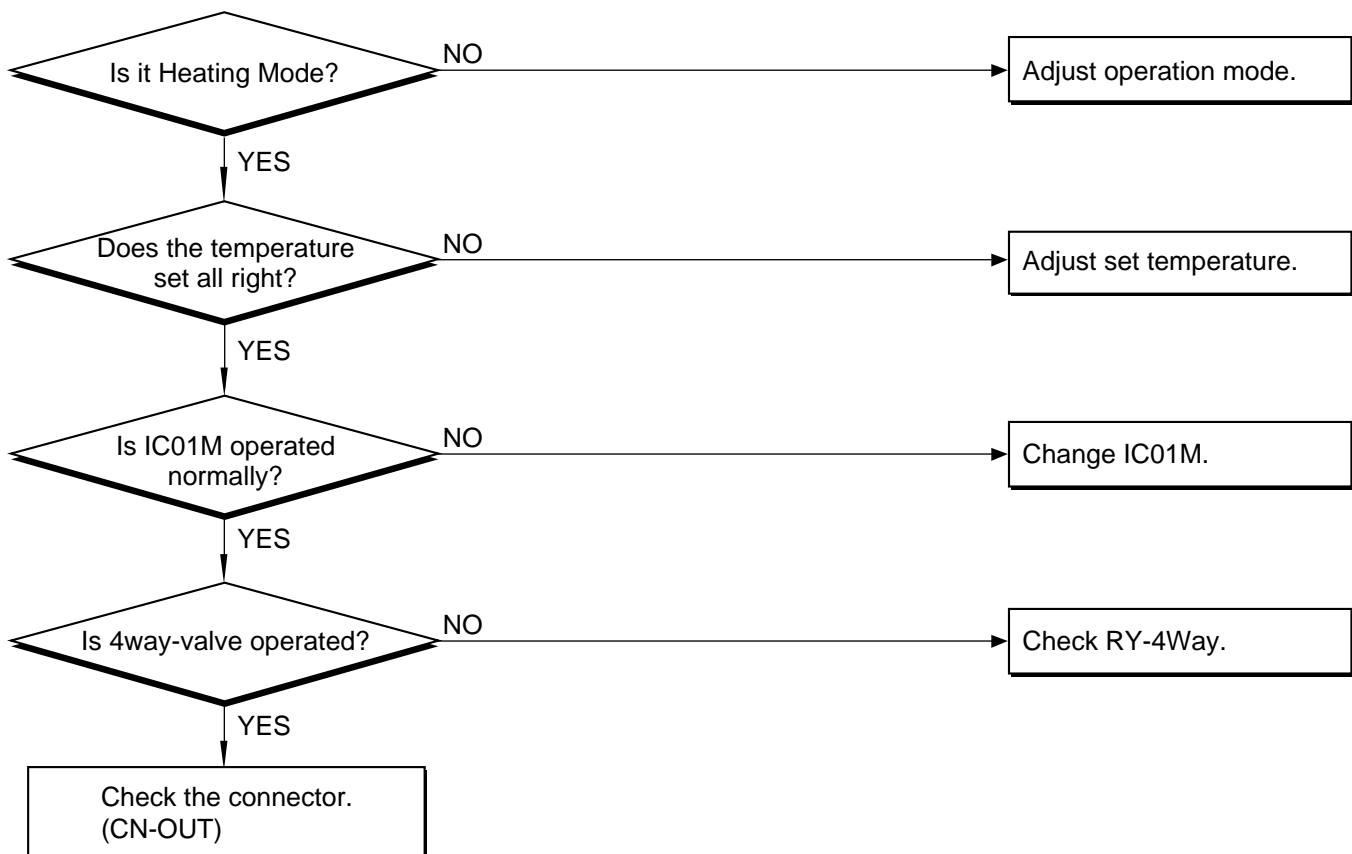
**Possible Trouble 1** : The unit does not operate.



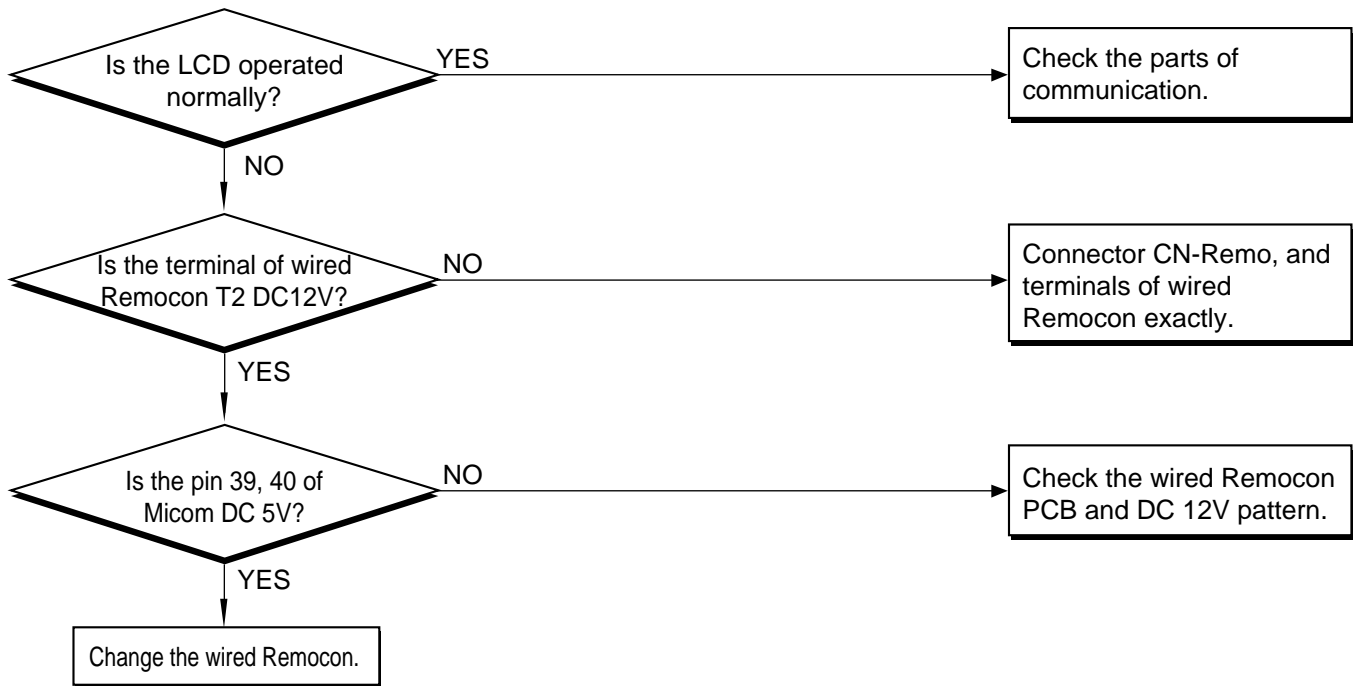
**Possible Trouble 2** : The indoor fan does not operate.



**Possible Trouble 3** : Ineffective Heating



**Possible Trouble 4** : Wired remote controller does not operate.

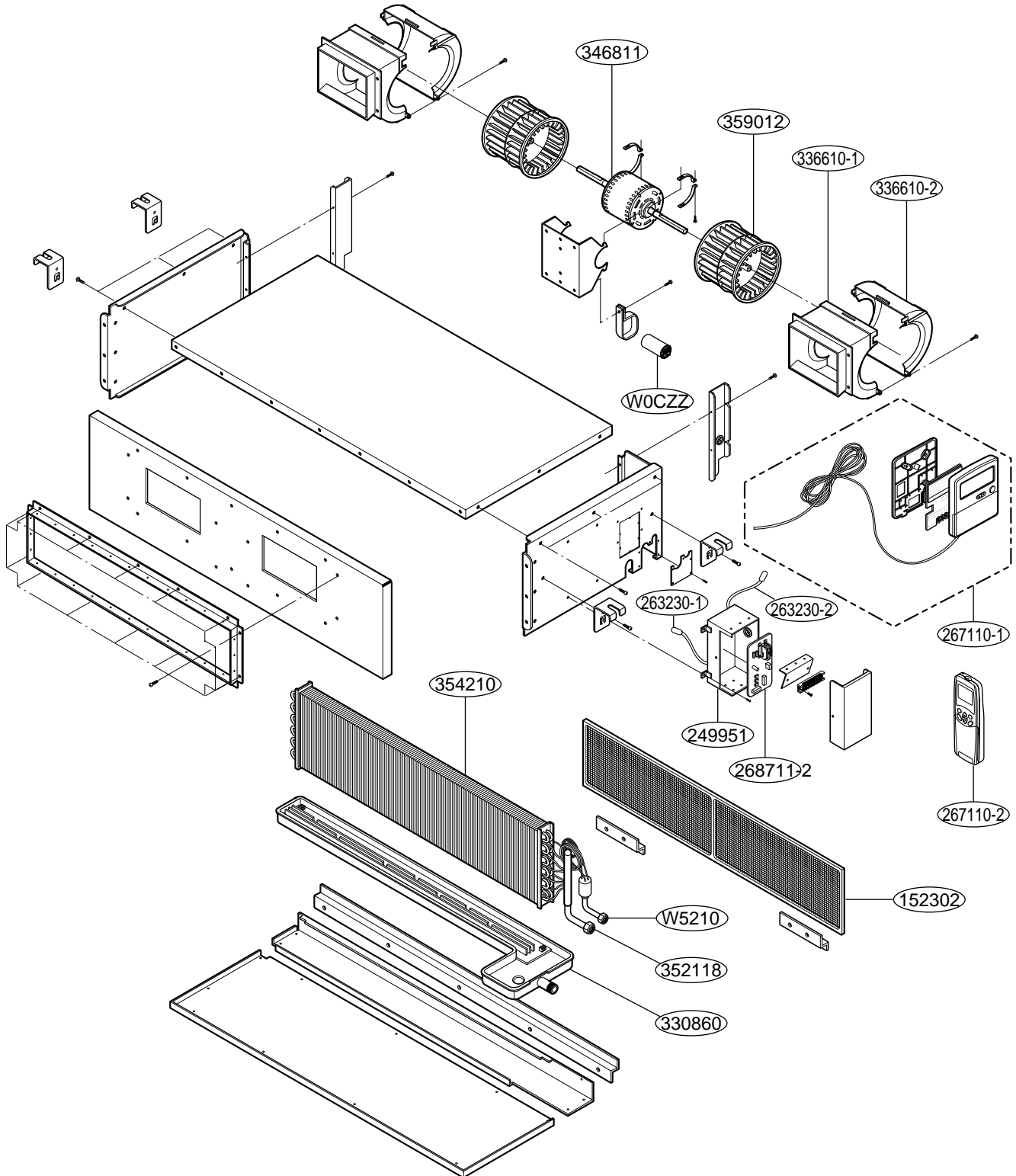




# Exploded View and Replacement Parts List

## 1. Indoor Unit

- Models: LB-H1860HL/CL, LB-H2460HL/CL, LB-G3680HL/CL



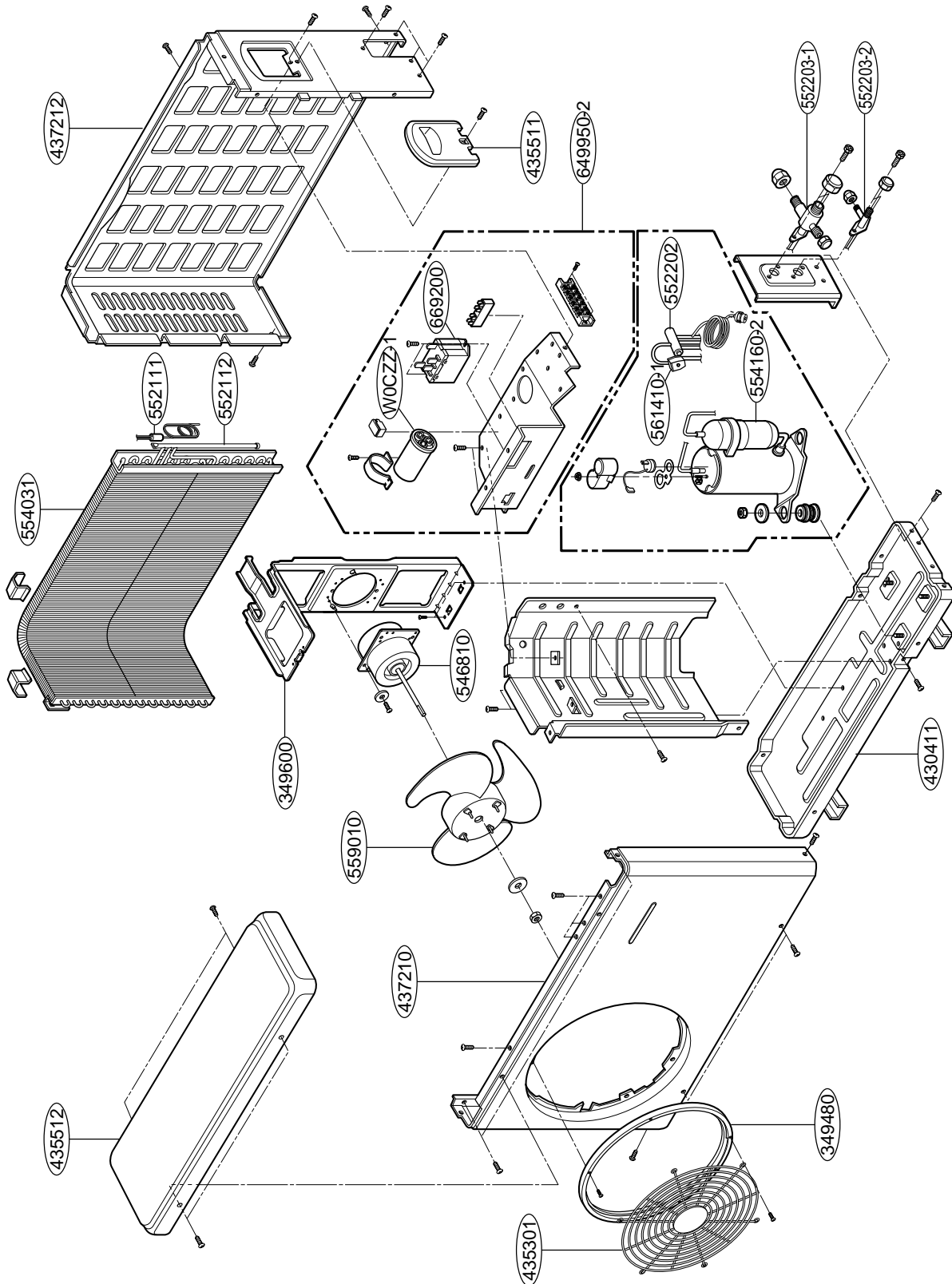
## Parts List

• Models: LB-H1860HL/CL, LB-H2460HL/CL, LB-G3680HL/CL

LOCATION No.	DESCRIPTION	Part No.						REMARKS
		LB-H1860HL	LB-H1860CL	LB-H2460HL	LB-H2460CL	LB-G3680HL	LB-G3680CL	
152302	FILTER(MECH), A/C	5230A90002A	5230A30001M	5230A90002A	5230A90002A	5230A30001L	5230A30001L	R
249951	CONTROL BOX ASSY(INDOOR)	4995A20011Y	4995A20164C	4995A20164E	4995A20164E	4995A20011W	4995A20164B	R
263230-1	THERMISTOR ASSY	6323AQ3226G	6323AQ3226G	6323AQ3226G	6323AQ3226G	6323AQ3226G	6323AQ3226G	R
263230-2	THERMISTOR ASSY	6323AQ3214Q	6323AQ3214Q	6323AQ3214E	6323AQ3214Q	6323AQ3214Q	6323AQ3214Q	R
267110-1	REMOTE CONTROLLER ASSY	6711A20043D	6711A20043E	6711A20043V	6711A20043E	6711A20043D	6711A20043E	R
267110-2	REMOTE CONTROLLER ASSY	6711A20041E	6711A20041D	6711A20041G	6711A20041D	6711A20041E	6711A20041D	R
268714	PWB(PCB) ASSY, MAIN	6871A10038W	6871A10038X	6871A10038J	6871A10038K	6871A20181A	6871A20181B	R
330860	DRAIN PAN ASSEMBLY	3087A10008B	3087A10008B	3087A10008B	3087A10008B	3087A10008A	3087A10008A	R
336610-1	HOUSING(MECH), WRAPPER	3660A20017A	3660A20017A	3660A20017A	3660A20017A	3660A20019A	3660A20019A	R
336610-2	HOUSING(MECH), WRAPPER	3660A20018A	3660A20018A	3660A20018A	3660A20018A	3660A20020A	3660A20020A	R
346810	MOTOR ASSY, INDOOR	4681A10013C	4681A10013C	4681A10013C	4681A10013C	4681A10013A	4681A10013A	R
352118	TUBE ASSY, MENIFOLD(INDOOR)	5211A20465A	5211A20465A	5211A20465A	5211A20465A	5211A20416A	5211A20416A	R
354210	EVAPORATOR ASSY, FIRST	5421A20100A	5421A20100A	5421A20100B	5421A20100B	5421A10027A	5421A10027A	R
359012	FAN ASSY, BLOWER	5901A10026A	5901A10026A	5901A10026A	5901A10026A	5901A10026A	5901A10026A	R
552111	TUBE ASSY, CAPILLARY	5211A20466A	5211A20466A	5211A20466B	5211A20466B	5211A20450A	5211A20450A	R
738281	MANUAL, SERVICE	3828A20172A	3828A20172A	3828A20168R	3828A20172A	3828A20172A	3828A20172A	R
738290	MANUAL, OWNERS	3828A20167A	3828A20167A	3828A20167L	3828A20167A	3828A20167A	3828A20167A	R
WOCZZ	CAPACITOR, DRAWING	2A00986D	2A00986D	2A00986D	2A00986D	2A00986D	2A00986D	R

## 2. Outdoor Unit

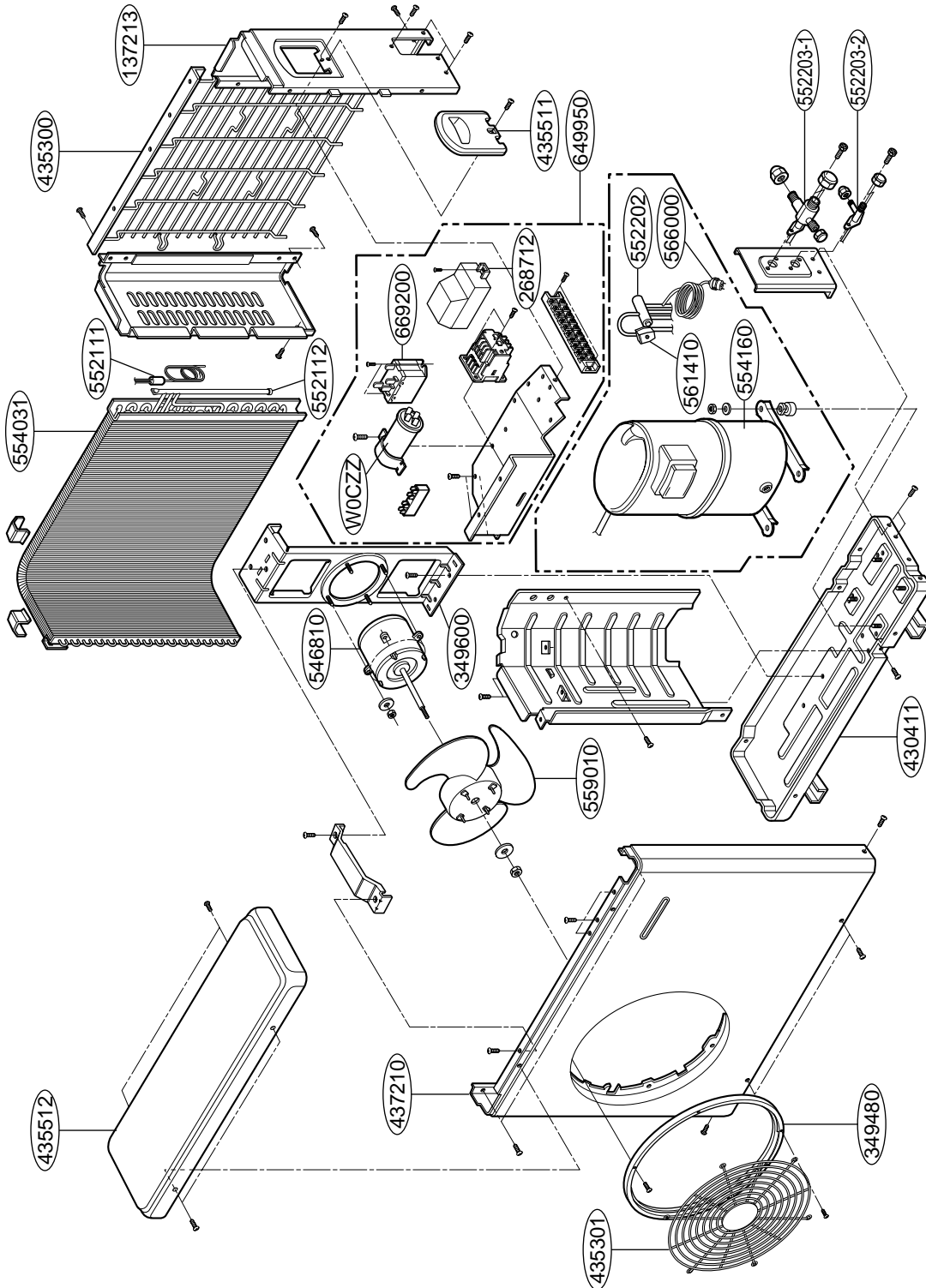
- Models: LB-H1860HL/CL, LB-H2460HL/CL





### 3. Outdoor Unit

• Models: LB-G3680HL/CL



## Parts List

• 18K/24K/36K

LOCATION No.	DESCRIPTION	Part No.						REMARKS
		LB-H1860HL	LB-H1860CL	LB-H2460HL	LB-H2460CL	LB-G3680HL	LB-G3680CL	
137213	PANEL ASSY, SIDE	-	-	-	-	1A00202C	1A00202C	R
263230	THERMISTOR ASSY	-	-	-	-	3Q35015H	-	R
268712	PWB(PCB) ASSY, DEICER	-	-	-	-	6871A20015U	-	R
349480	ORIFICE	4948AP2527A	4948AP2527A	4948A20005A	4948AP2527A	4948AP2527A	4948AP2527A	R
349600	MOUNT, MOTOR	4960AP1361A	4960AP1361A	4960AP1361A	4960AP1361A	3A02086B	3A02086B	R
430411	BASE ASSY,WELD(OUTDOOR)	3041A30003U	3041A30003U	3041A20022G	3041A30003U	3041A30003K	3041A30003K	R
435300	GRILLE, REAR	-	-	-	-	1A00208D	1A00208D	R
435301	GRILLE, DISCHARGE	3530A20007B	3530A20007B	3530A20007B	3530A20007B	3530A20007B	3530A20007B	R
435511	COVER ASSY, CONTROL(OUTDOOR)	3A01919B	3A01919B	3A01919B	3A01919B	3A01919B	3A01919B	R
435512	COVER ASSY, TOP(OUTDOOR)	3H03266X	3H03266X	3H03266N	3H03266X	3H03266H	3H03266H	R
437210	PANEL ASSY, FRONT SUB	3721A20004R	3721A20004R	3721A20005P	3721A20004R	1A00197C	1A00197C	R
437212	PANEL ASSY, REAR	3720AP0003L	3720AP0003L	3720AP0003L	3720AP0003L	-	-	R
546810	MOTOR ASSY, OUTDOOR	4681A20013A	4681A20013A	4681A20013A	4681A20013A	4681A20061A	4681A20061A	R
548490	ACCUMULATOR ASSY	-	4849A20008C	-	4849A20008C	-	4849A20008E	R
552111	TUBE ASSY,CAPILLARY	5211A10218A	5211A10218A	5211A10222A	5211A10222A	5425AP7109P	5425AP7109P	R
552112	TUBE ASSY, CONDENSER IN	5211A20486A	5211A20486B	5211A20486A	5211A20486B	5211A30298E	5211A30298E	R
552116	TUBE ASSY, REVERSING	5211A20493B	-	5211A20493A	-	5211A20032Q	-	R
552202	VALVE, REVERSING	3A02027B	-	3A02027B	-	3A02027B	-	R
552203-1	VALVE, SERVICE	2A00392E	2A00392E	2A00392E	2A00392E	2A00392E	2A00392E	R
552203-2	VALVE, SERVICE	2H02479B	2H02479B	2H02479B	2H02479B	2H02479F	2H02479F	R
554031	CONDENSER ASSY, BENT	5403A20049Q	5403A20049S	5403A20049U	5403A20049S	5403A20047P	5403A20070A	R
554160-2	COMPRESSOR ASSY,FINAL	5416A20016A	5416A20016A	5416A20016B	5416A20016B	5417A90001E	5417A90001E	R
559010	FAN ASSY, PROPELLER	1A00195B	1A00195B	1A00195B	1A00195B	1A00195B	1A00195B	R
561410-1	COIL ASSY, REVERSING VALVE	3A02028Y	-	3A02028Y	-	3A02028Y	-	R
566000	SWITCH, PRESSURE	-	-	-	-	3A02524A	-	R
649950-2	CONTROL BOX ASSY, OUTDOOR	4995A20014C	4995A20014D	4995A20014C	4995A20014D	4995A20167G	4995A20167T	R
666000	SWITCH, MAGNET	-	-	-	-	2A01031A	2A01031A	R
669200	RELAY	6920AP3400A	6920AP3400A	6920AP3400A	6920AP3400A	3A00261C	3A00261C	R
WOCZZ-1	CAPACITOR, DRAWING	6120AR2194K	6120AR2194K	6120AR2194K	6120AR2194K	2A00986C	2A00986C	R

