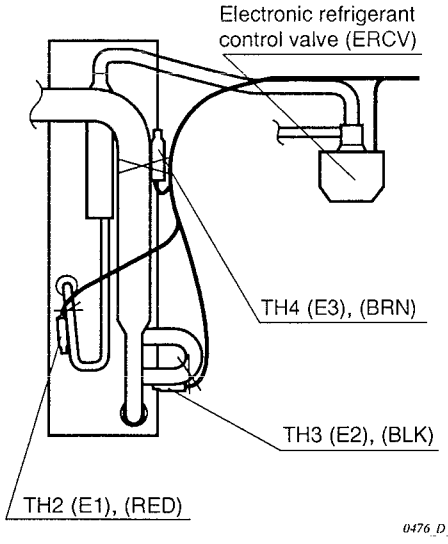
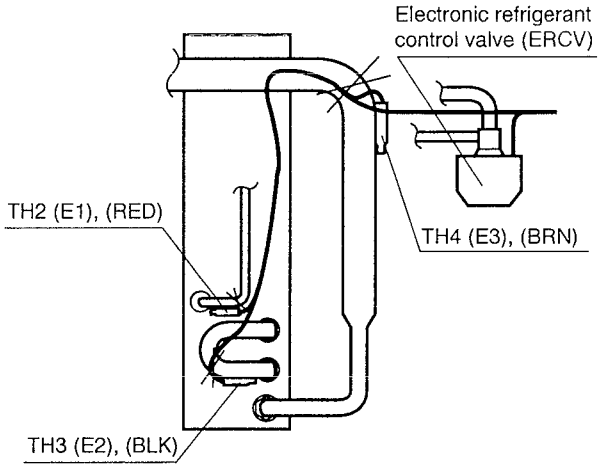
(4) Sensor and Solenoid Layout Diagram

Indoor Unit

• SPW-D253GH56

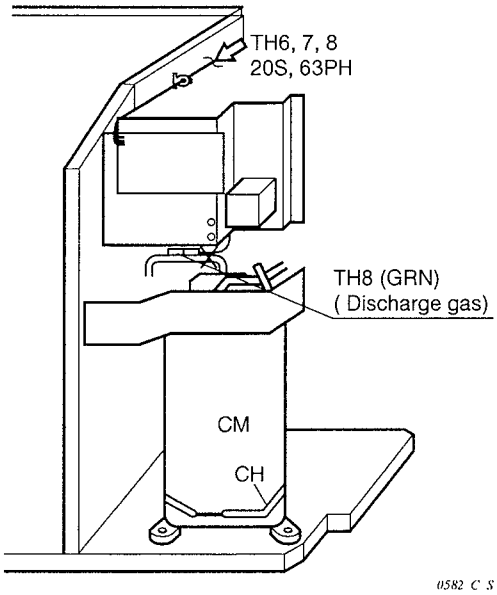


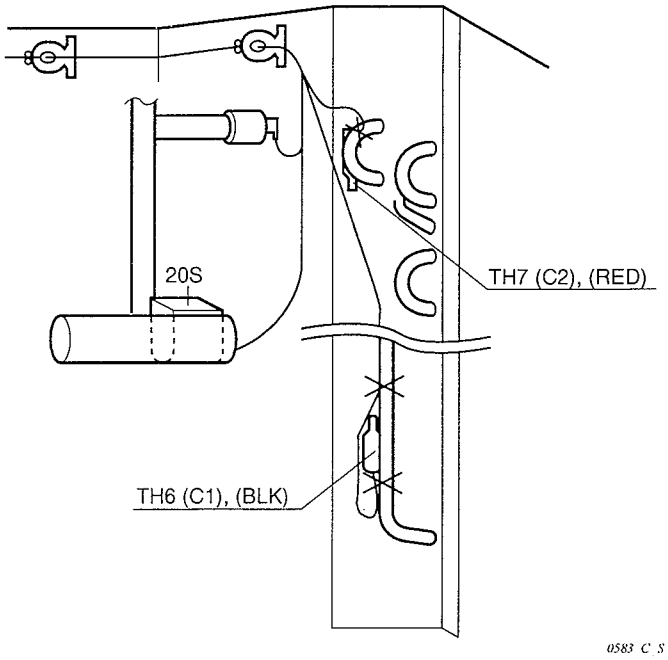
• SPW-D363GH56
• SPW-D483GH56



Outdoor Unit

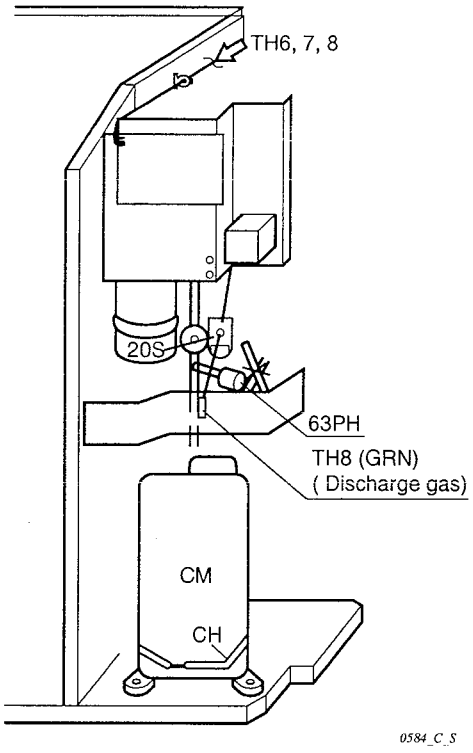
• SPW-C253GH5, SPW-C253GH8

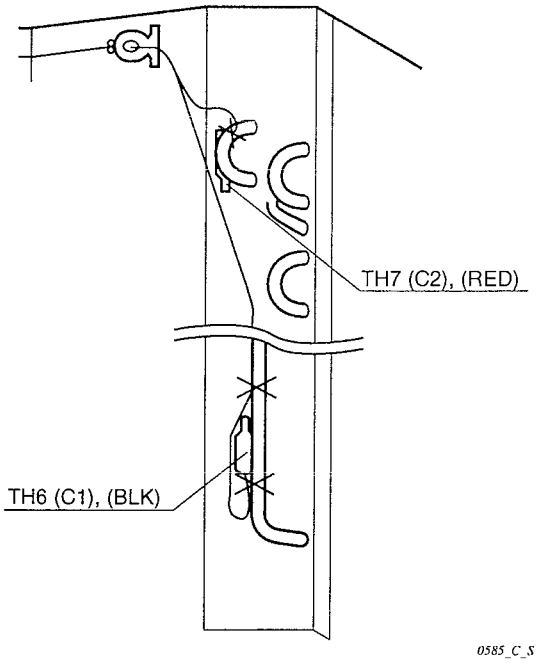




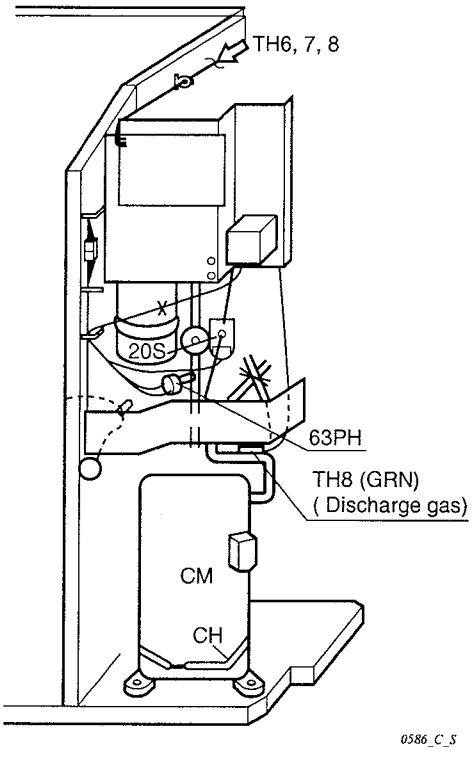
4

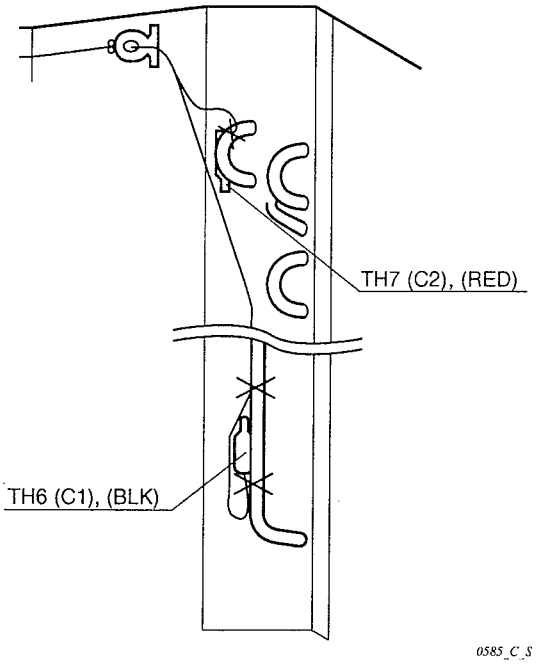
• SPW-C363GH8





• SPW-C483GH8

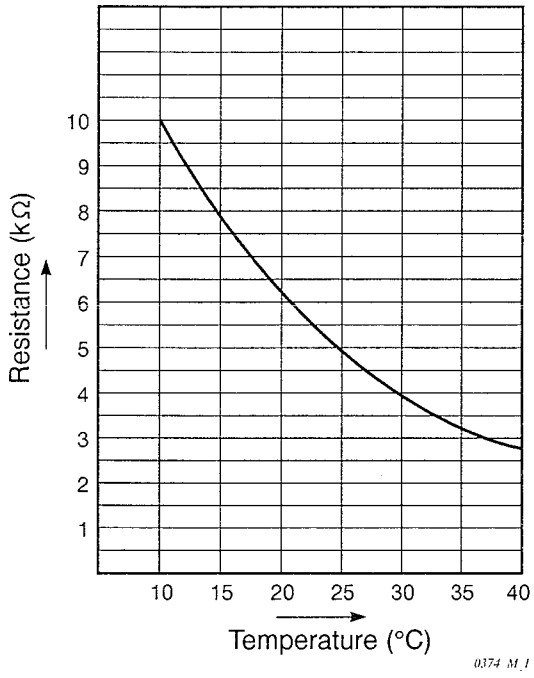




4

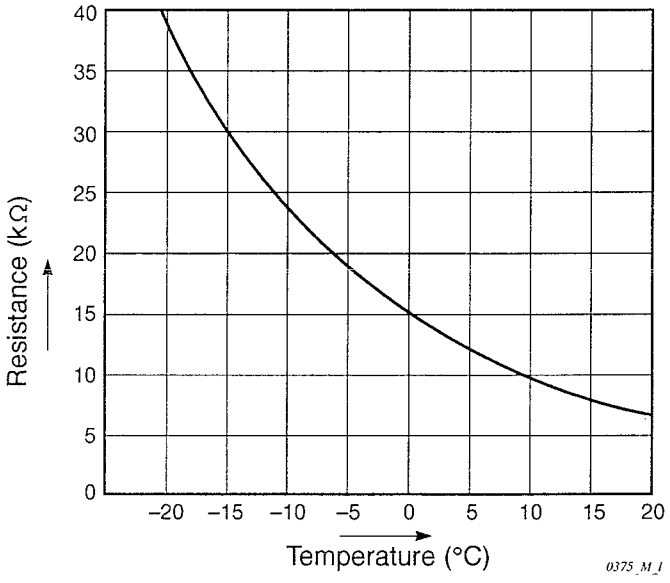
(5) Thermistor Characteristic Curve

(1) Room temp. sensor : TH1 (KTEC-35)

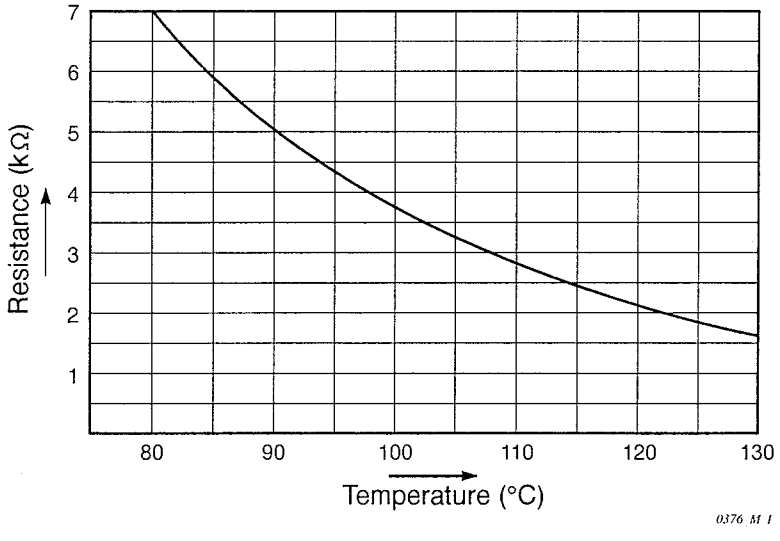


(2) Indoor heat exch. coil sensor : TH2(E1), TH3(E2), TH4(E3)
Outdoor heat exch. coil sensor : TH6(C1), TH7(C2)

(PBC-41E)



(3) Compressor discharge gas temp. sensor : TH8 (PTC-51H)



4

(6) PCB Setting

● Setting of outdoor control PCB

(A) Standard control (single outdoor unit)

In case of single outdoor unit installation, no indoor unit's setting is necessary for twin, triple or quartet types (2, 3 or 4 indoor units).
Keep R.C. address setting at "0" as factory shipment state.

In this case, auto. address operation is performed automatically for the first time when the power is switched on. This operation takes about a few minutes.

(B) Group control (Multiple outdoor units)

In case of group control (up to 8 indoor units can be connected with one remote controller), before turning on the power supply, set the R.C. address with S2, S3 on the outdoor control PCB.

R.C. address: Refrigerant circuit address 1 ~ 30.

Regarding the example of R.C. address for group control, please refer to R.C. Address Setting Method.

(C) Central control (when using the system controller)

In case of central control (when using the system controller,that is, when linking outdoor units in a network),

(a) Before turning the power supply on, set the R.C. address with S2, S3 on the outdoor control PCB.
(b) Remove the short plug (CN4, 2P Black) from all outdoor units except one outdoor unit.

Regarding the example of R.C. address for central control and the position of CN4, please refer to R.C. Address Setting Method.

4

● **Setting of indoor control PCB**

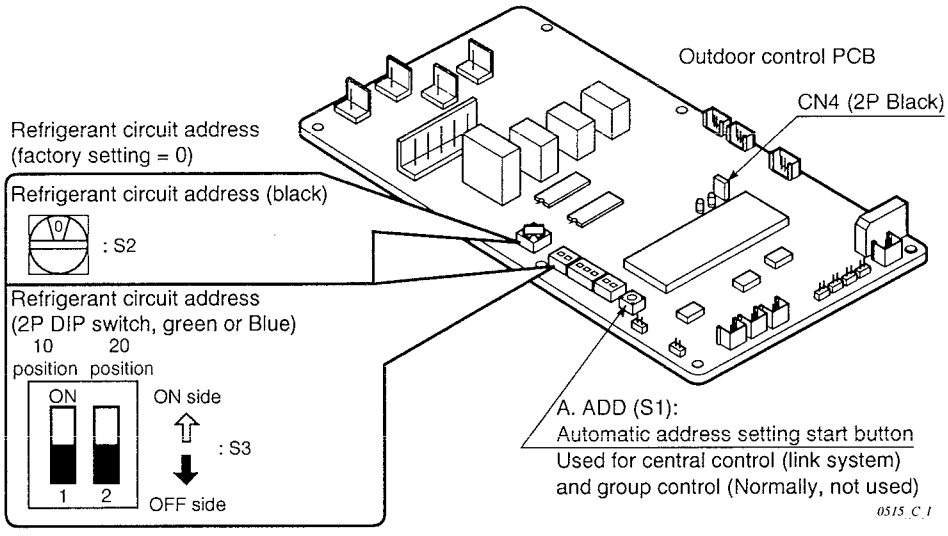
No setting is necessary.
Each indoor unit address (UNIT No.: R.C. – No.) is decided after auto. address operation.
└ Indoor unit No.
└ Refrigerant Circuit No. (R.C. address)

Manual setting for indoor unit address can be performed also by remote controller.

(7) R.C. Address Setting Method

Outdoor unit R.C. address setting method

In case of group control or central control, set the R.C. address to 1, 2, 3, ... according to the No. of outdoor units.



R.C. address	R.C. address (S3: 2P dip switch, green or Blue)	R.C. address (S2: Rotary switch, Black)
00 auto address ("0" when shipped from factory)	Both OFF	Set to 0
02 (In case of No. 2 outdoor unit)	Both OFF	Set to 2
03 (In case of No. 3 outdoor unit)	Both OFF	Set to 3
11 (In case of No. 11 outdoor unit)	10's SW is ON	Set to 1
21 (In case of No. 21 outdoor unit)	20's SW is ON	Set to 1
30 (In case of No. 30 outdoor unit)	Both 10's and 20's switches are ON	Set to 0

4

(8) Automatic Address Setting Method

— For group control and central control with multiple outdoor units —

Carry out automatic address setting with the remote controller.

1) All auto. address operation
   ① Press the **TEST / CHK** and ▲ (⏲) buttons at the same time for more than 4 seconds.
   ② Press the **SET** button after confirming the CODE No. AA (CODE No. AA: All Auto. address operation).
   After addresses are automatically set in order for the outdoor units from No. 1 to No. 30, the system returns to the normal stopped state.

2) Individual auto. address operation for each refrigerant circuit
   ① To select each refrigerant circuit individually and set addresses automatically, press the **TEST / CHK** and ▲ (⏲) buttons at the same time for more than 4 seconds, then press the ▲ , ▼ (SET TEMP) button once to set CODE No. A1. (CODE No. A1: Auto. address operation)
   ② Select R.C. No. which you want to execute the auto. address operation with **UNIT** button.
   ③ Press the **SET** button. The auto. address operation will start. CODE No. changes from flashing to ON state.
   ④ If the error occurred during the operation, the alarm message will be displayed. Check and remove the cause. If you want to interrupt the operation, press the **CL** button then the unit stands in waiting mode (Press the **SET** button).
   ⑤ If the auto. address operation finishes, the display will disappear.
   ⑥ Execute the operation of the other R.C. line in the same way by following the above steps ② to ③.
   ⑦ Complete the auto. address operation by pressing the **TEST / CHK** button.

NOTE

Required time for auto. address operation:
In case of group control : a few minutes for each R.C.
In case of central control : max. about 20 min. for each R.C.

(9) Displaying Indoor / Outdoor Unit Combination Numbers

Display the indoor / outdoor unit address after automatic address setting.

1) When installing multiple units, match the indoor unit address numbers and the outdoor R.C. address numbers and display them at an easy-to-check location (near the nameplate) with an oil-based magic marker or other indelible marker so that the individual indoor and outdoor unit combinations can be checked.
   Example:
   Outdoor Unit 1 – Indoor Units 1-1, 1-2, 1-3, ...
   Outdoor Unit 2 – Indoor Units 2-1, 2-2, 2-3, ...

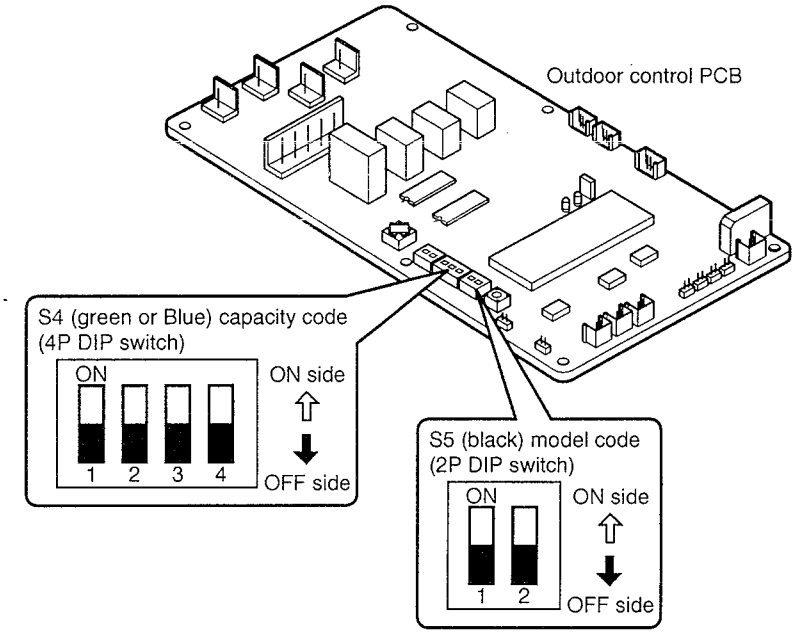
2) Displaying indoor / outdoor unit address is necessary for maintenance. Always label numbers. *Check indoor unit address with the remote controller. Press the **TEST / CHK** button for at least 4 seconds and check the indoor unit address with the **UNIT** button. (Each time you press the **UNIT** button, the address changes 1-1, 1-2, ... 2-1, 2-2, ...) The fan for only the selected indoor unit turns on at high speed, so check which indoor unit runs and label the indoor unit address.
   (If there is 1 outdoor unit, the addresses are 1-1, 1-2, ...)
   When you press the **TEST / CHK** button again, the system returns to normal remote control mode.

4

(10) Items to Check Prior to Test Run

1) Turn on the power supply switch more than 5 hours before in order to charge the crank case heater.
2) Fully open the outdoor service valve after making the leak inspection of field connected tubing, vacuuming, and gas charging if necessary.
3) Check the capacity code and model code setting.
   * The factory setting is as shown in the table.
   * The capacity code is set by S4 (green or Blue 4P DIP switch) on outdoor control PCB.

   The model code is set by S5 (black, 2P DIP switch) on outdoor control PCB.



0510 C 1

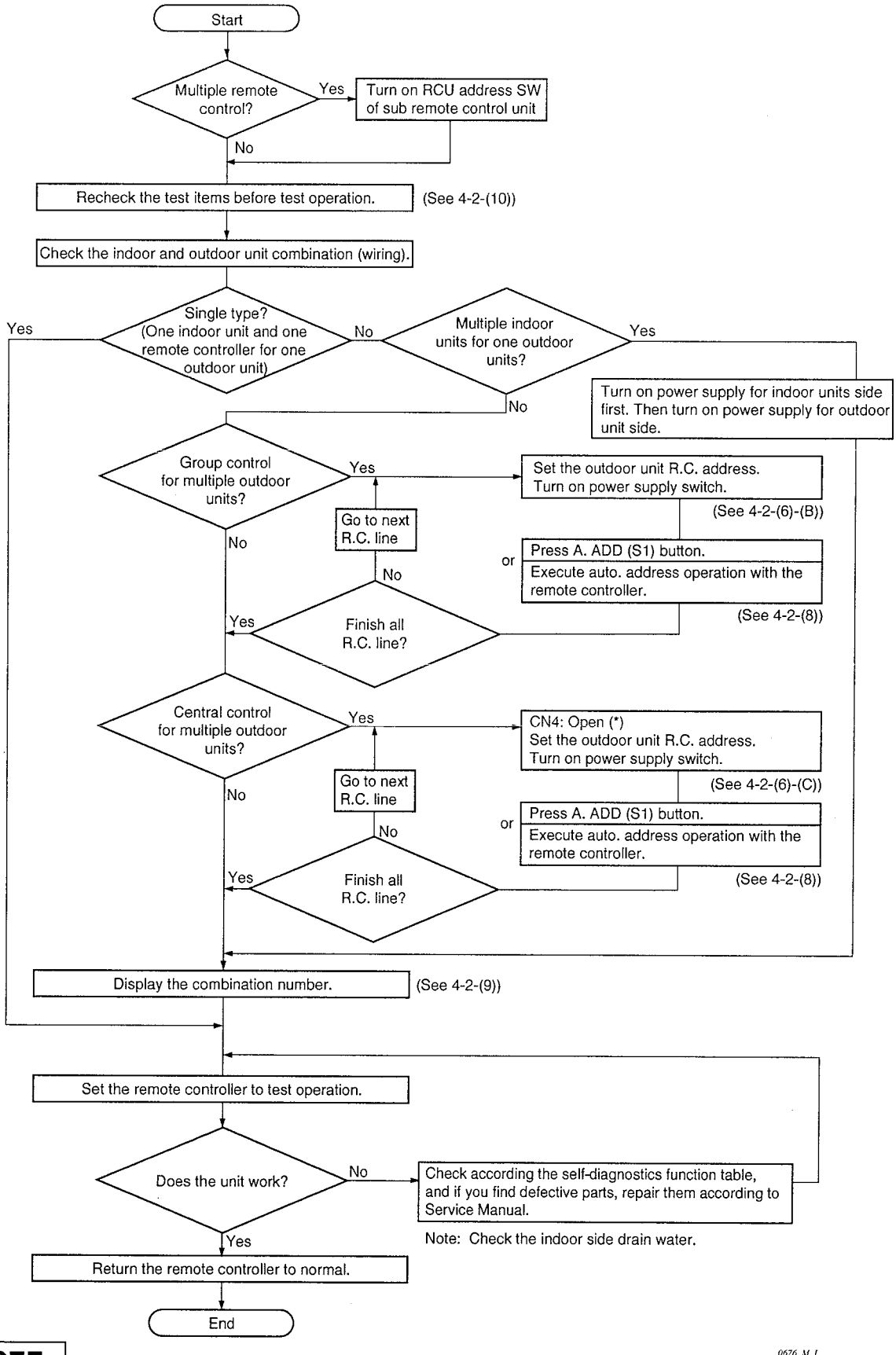
S4. Capacity code

No. / Model No.	Outdoor PCB 1	2	3	4
25 type (1 phase)	ON	ON	ON	OFF
25 type (3 phase)	ON	ON	ON	OFF
36 type (3 phase)	OFF	ON	OFF	ON
48 type (3 phase)	OFF	OFF	ON	ON

S5. Model code

No. / Model No.	Outdoor PCB 1	2
25 type (1 phase)	ON	OFF
25 type (3 phase)	OFF	OFF
36 type (3 phase)	OFF	OFF
48 type (3 phase)	OFF	ON

(11) Test Run Procedure



0676_M_1

NOTE

1) One of CN4 of all linked outdoor units shold be short.
2) In case of using system controller, zone registration is required after finishing Test run.
   Regarding the zone registration, please refer to Installation Instructions attached with system controller.

5. INSTRUCTION MANUAL

Product Information

If you have problems or questions concerning your Air Conditioner, you will need the following information. Model and serial numbers are on the nameplate on the bottom of the cabinet.

Model No. _____ Serial No. _____

Date of purchase _____

Dealer's address _____

Phone number _____

DECLARATION OF CONFORMITY

This product is marked «CE» as it satisfies EEC Directive No. 89/336/EEC, 92/31/EEC and 93/68/EEC, and conforms with following standards.

EN55014	(1993)	EN50082-1	(1992)
EN60555-2	(1987)	EN60335-1	(1988)
EN60555-3	(1987)	EN60335-2-40	(1993)

This declaration will become void in case of misusage and/or from non observance though partial of Manufacturer's installation and/or operating instructions.

Alert Symbols

The following symbols used in this manual, alert you to potentially dangerous conditions to users, service personnel or the appliance:

WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

5

Installation Location

- **We recommend that this air conditioner be installed properly by qualified installation technicians in accordance with the Installation Instructions provided with the unit.**
- Before installation, check that the voltage of the electric supply in your home or office is the same as the voltage shown on the nameplate.

WARNING

- **Do not install this air conditioner where there are fumes or flammable gases, or in an extremely humid space such as a greenhouse.**
- **Do not install the air conditioner where excessively high heat-generating objects are placed.**

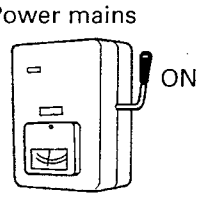
Avoid: To protect the air conditioner from heavy corrosion, avoid installing the outdoor unit where salty sea water can splash directly onto it or in sulphurous air near a spa.

Electrical Requirements

1. All wiring must conform to the local electrical codes. Consult your dealer or a qualified electrician for details.
2. Each unit must be properly grounded with a ground (or earth) wire or through the supply wiring.
3. Wiring must be done by a qualified electrician.

CAUTION

To warm up the system, the power mains must be turned on at least five (5) hours before operation. Leave the power mains ON unless you will not be using this appliance for an extended period.



Safety Instructions

- **Read this Instruction Manual carefully before using this air conditioner. If you still have any difficulties or problems, consult your dealer for help.**
- **This air conditioner is designed to give you comfortable room conditions. Use this only for its intended purpose as described in this Instruction Manual.**

WARNING

- **Never touch the unit with wet hands.**
- **Never use or store gasoline or other flammable vapor or liquid near the air conditioner — it is very dangerous.**
- **This air conditioner has no ventilator for intaking fresh air from outdoors. You must open doors or windows frequently when you use gas or oil heating appliances in the same room, which consume a lot of oxygen from the air. Otherwise there is a risk of suffocation in an extreme case.**

CAUTION

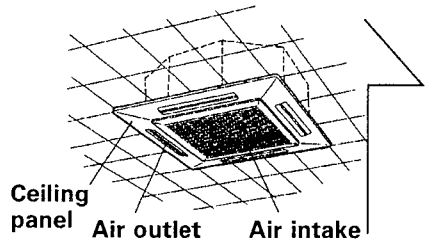
- **Do not turn the air conditioner on and off from the power mains switch. Use the ON/OFF operation button.**
- **Do not stick anything into the air outlet of the outdoor unit. This is dangerous because the fan is rotating at high speed.**
- **Do not let children play with the air conditioner.**
- **Do not cool or heat the room too much if babies or invalids are present.**

Names of Parts

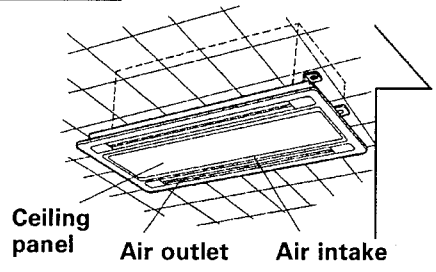
INDOOR UNIT

SEMI-CONCEALED

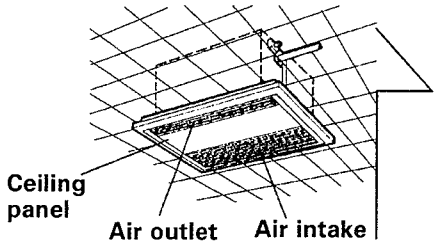
X type (4-WAY)



S type (2-WAY)

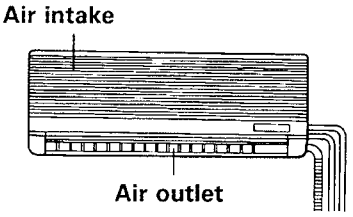


AS type (1-WAY)



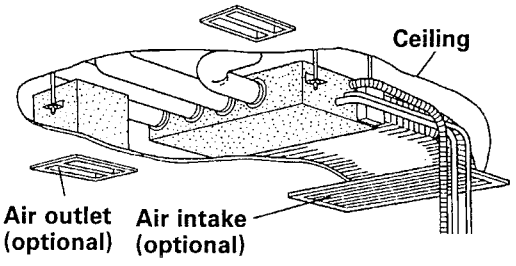
WALL-MOUNTED

K type

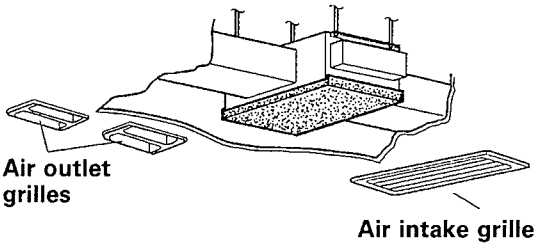


CONCEALED DUCT

U type (standard static pressure)

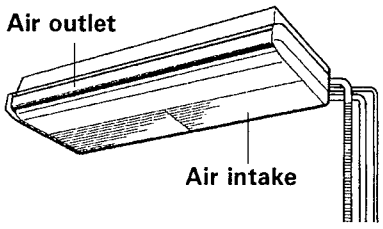


D type (high static pressure)

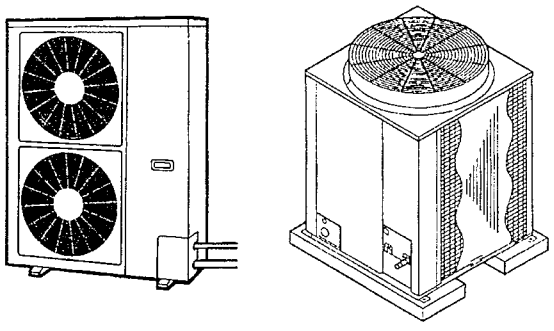


CEILING-MOUNTED

T type

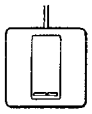


OUTDOOR UNIT

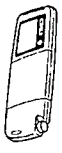


REMOTE CONTROL UNITS (optional)

(Wired type: available for all indoor units)



(Wireless type: available only for X and T.)

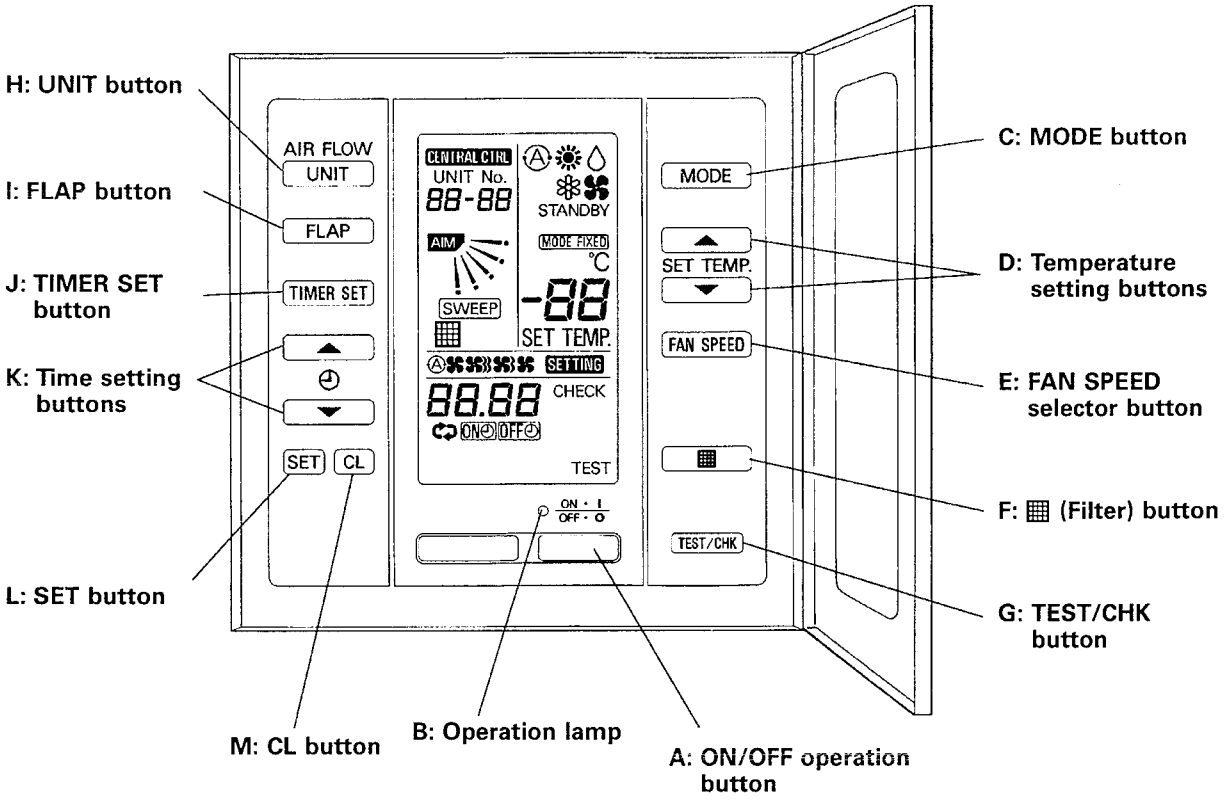


NOTE This illustration is based on the external appearance of a standard model. Consequently, the appearance may differ from that of the air conditioner you have selected.

5

SM830036

Remote Control Unit



A: ON/OFF operation button	This button is for turning the air conditioner on and off.
B: Operation lamp	This lamp lights when the air conditioner is turned on.
C: MODE button	Use this button to select one of the following five operating modes.
(AUTO)	Ⓐ : Used to automatically set cooling or heating operation. Only for single heat pump type (temperature range: 17 ~ 27°C)
(HEAT)	☼ : Used for normal heating operation. Only for heat pump type (temperature range: 16 ~ 26°C)
(DRY)	◊ : Used for dehumidifying without changing the room temperature. (temperature range: 18 ~ 30°C)
(COOL)	❄ : Used for normal cooling operation. (temperature range: 18 ~ 30°C)
(FAN)	: Used to run the fan only, without heating or cooling operation.
D: Temperature setting buttons	▲ : Press this button to increase the temperature setting. ▼ : Press this button to decrease the temperature setting.
E: FAN SPEED selector button	
(AUTO)	Ⓐ : The air conditioner automatically decides the fan speed.
(HI.)	: High fan speed
(MED.)	: Medium fan speed
(LO.)	: Low fan speed
F: ▦ button (Filter)	Use this button to reset the filter sign ▦ (timer). The air conditioner has a timer for the filter and informs you when the filter needs cleaning.

5

Remote Control Unit (continued)

G: TEST/CHK button ⚠ CAUTION	This button is used only when servicing the air conditioner. **Do not use the TEST/CHK button for normal operation.**
H: UNIT button	When more than one indoor unit is connected, this button is used to select a unit when adjusting the airflow direction. If no unit is selected, the airflow direction of all units can be adjusted concurrently using the FLAP button.
I: FLAP button (AIM)	1. Use this button to set the airflow direction to a specific angle. The airflow direction is displayed on the remote control unit. Operation mode — Number of airflow direction settings ❄(COOL) or ◊(DRY): 3 ☀(HEAT) or ✿ (FAN): 5 Ⓐ(AUTO) Cooling mode: 3 Heating mode: 5
⚠ CAUTION	• **In the cool mode and dry mode, if the flaps are set in a downward position, condensation may form and drip around the vent.** • **Do not move the flap with your hands.**
NOTE	This function is available only for models X, S and T.
(SWEEP)	2. Use this button to make the airflow direction sweep up and down automatically. Press this button several times until the SWEEP symbol appears on the display.
NOTE	This function is available only for models X, S, T and K.
J: TIMER SET button **(OFF Timer)** **(OFF Cycle Timer)** **(ON Timer)**	Use this button while the unit is operating to switch between timer settings. OFF : The air conditioner stops after the length of time set. ↻ OFF : The air conditioner stops after the same set time every time. ON : The air conditioner starts after the length of time set.
K: Time setting buttons	▲ : Press this button to increase the time. ▼ : Press this button to decrease the time.
L: SET button	Use this button to set the timer.
M: CL button	Use this button to clear the timer setting.

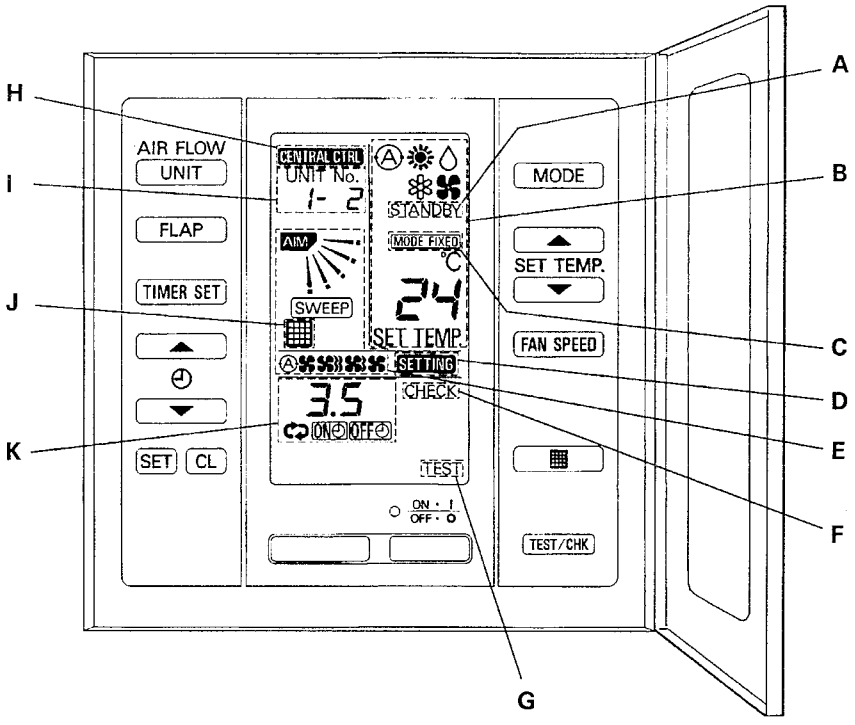
NOTE

1) When two remote control units are being used in one group control* system,
   a) the most recent button that is pressed on any remote control unit is effective.
   b) either a main-remote control unit or a sub-remote control can set the timer.
   * Group control means that maximum up to 8 indoor units can be concurrently controlled with a remote control unit.

2) If a power failure occurs in timer mode, the time counted up to that point will be stored in memory.
   After power is restored, the timer starts again counting up to the set time.

5

Display (Remote Control Unit)



Description

A: When the unit is in the heating standby mode, the STANDBY indicator appears. (Refer to the description of the special remarks)

B: The currently selected operation mode is displayed.

C: This is displayed if a different operation mode was selected already by another remote control unit and indicates that the mode cannot be changed.

D: When the TIMER SET button is pressed to set the timer, the SETTING indicator flashes.

E: The currently selected FAN SPEED, fan AIM and SWEEP status are displayed.

F: This is displayed only if an abnormality occurs within a unit.

G: When the TEST/CHK button is pressed, the TEST indicator appears.

H: This is displayed to indicate that the system controller is being used for control.
When CENTRAL CTRL is flashing on the display, the operation is not accepted by the system controller.

I: This indicates the indoor unit address in case of group control.

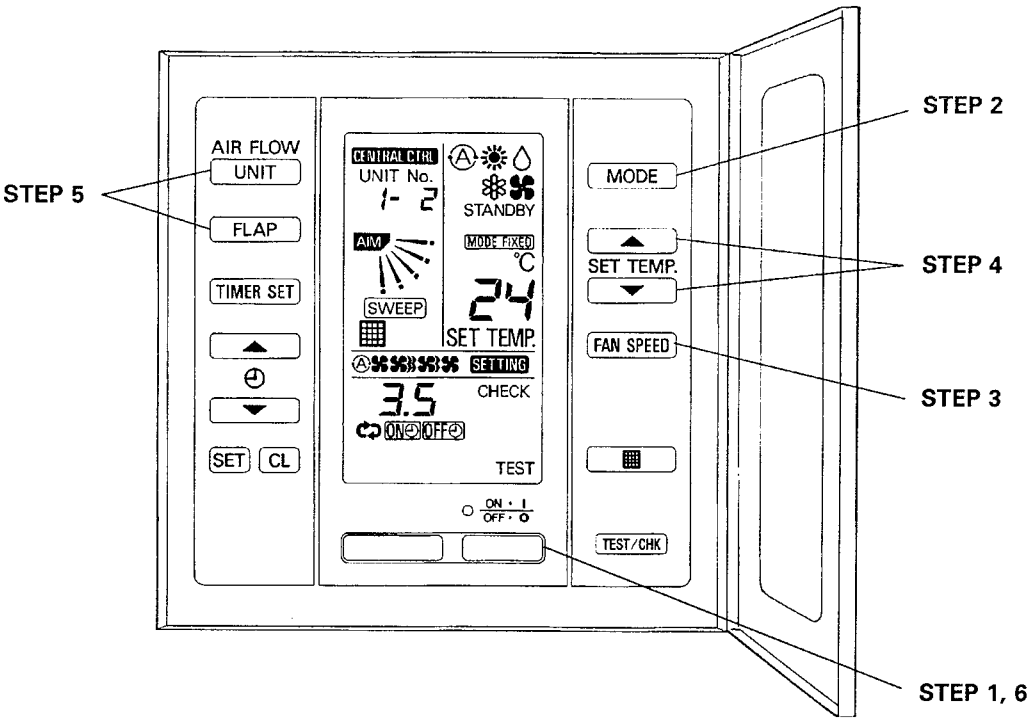
Unit No.
1 — 2
↑ ↑
↑ └— Indoor unit No.
└— Refrigerant circuit No.

J: This is displayed if it is time to clean the filter.

K: When setting the timer, the selected timer mode is displayed.

5

Operation



NOTE To warm up the system, the power mains must be turned on at least five (5) hours before operation.

STEP 1 **To start the air conditioner**
Press the operation button (ON/OFF button).

STEP 2 **Setting the mode**
Press the MODE button to select the mode of your choice.
[Ⓐ(AUTO), ☀(HEAT), ◊(DRY), ❄(COOL) or ✿ (FAN)]

STEP 3 **Setting the fan speed**
Press the FAN SPEED button to select the fan speed of your choice.
[Ⓐ✿ (AUTO), ✿))) (HI.), ✿)) (MED.) or ✿ (LO.)]

If AUTO is selected, the fan speed switches automatically.

STEP 4 **Setting the temperature**
Use the ▼ or ▲ button as appropriate to change the temperature setting as desired.
(▼ reduces the temperature, and ▲ increases the temperature.)

STEP 5 **Setting the airflow direction**
When more than one indoor unit is connected, the UNIT button is used first to select a unit. Then use the FLAP button to set the airflow direction to a specific angle or to sweep. (Refer to the description of the remote control unit.)

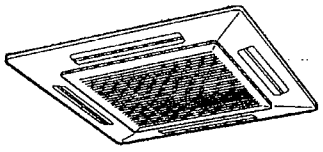
STEP 6 **To stop the air conditioner**
Press the operation button (ON/OFF button) again.

5

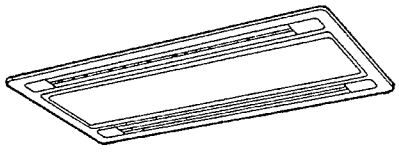
Adjusting the Airflow Direction

■ **Semi-concealed type**

4-way type (X)



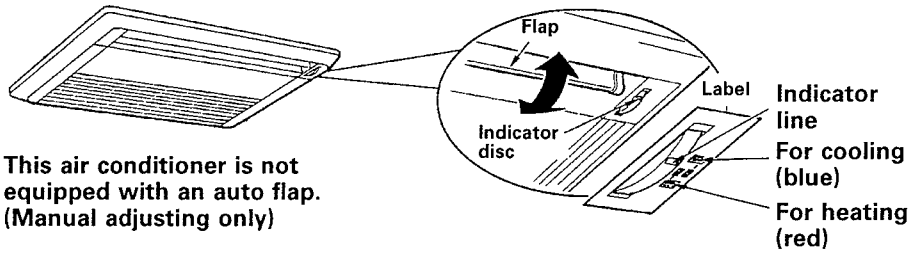
2-way type (S)



This air conditioner is equipped with auto flaps.
You can set the airflow direction to a specific angle or to the sweep mode using the remote control unit. (Refer to the description of the remote control unit.)

CAUTION **Do not move the flap with your hands.**

1-way type (AS)



This air conditioner is not equipped with an auto flap. (Manual adjusting only)

Hold the flap and move it up and down to adjust the direction of the airflow.
When the flap moves, the line engraved on the rim of the disc will move up and down.

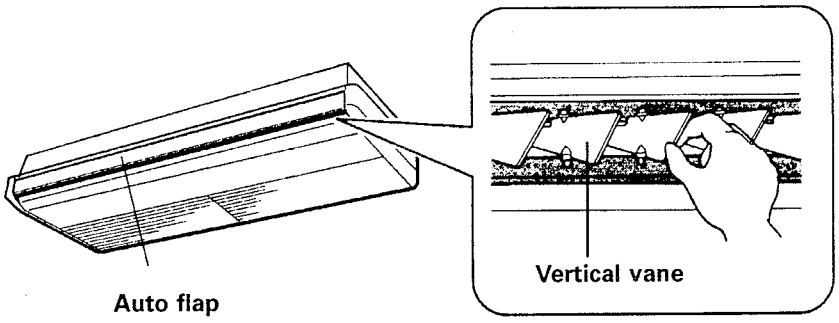
In the cool mode, manually adjust the angle of the flap so that the indicator is in line with the blue rectangular mark on the label. Otherwise, condensation may drip onto the floor.

In the heat mode, adjust the flap so that the indicator is in line with the red rectangular mark.

5

Adjusting the Airflow Direction (continued)

■ Ceiling mounted type (T)

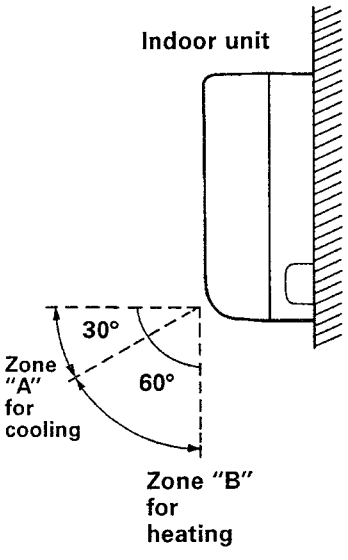


A. Vertical directions (automatic)
This air conditioner is equipped with an auto flap. You can set the airflow direction to a specific angle or to the sweep mode using the remote control unit. (Refer to the description of the remote control unit.)

CAUTION **Do not move the flap with your hands.**

B. Horizontal directions (manual)
The horizontal airflow direction can be adjusted manually by moving the vertical vanes to the left or right.

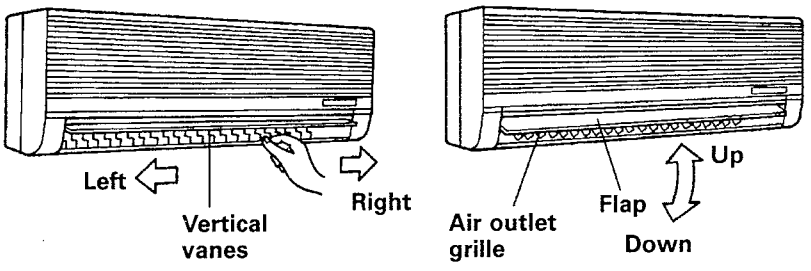
■ Wall mounted type (K)



A. Vertical directions (automatic)
Confirm that the remote control unit has been turned on. Press the FLAP button to start the flap moving up and down. If you want to stop the flap movement and to direct the air in the desired direction, press the FLAP button again. In the cool mode, don't direct the flap down more than 30°, otherwise, condensation may drip on to the floor. Zone "A" is the recommended flap position for cooling.

CAUTION **Do not move the flap with your hands.**

B. Horizontal directions (manual)
The horizontal airflow can be adjusted manually by moving the vertical vanes to the left or right.



■ Concealed duct type (U or D)

This air conditioner is not equipped with air outlet parts. These must be obtained locally. Please refer to the manual of the locally adopted air outlet parts.

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Special Remarks

"DRY" Operation

How it works?

- Once the room temperature reaches the level that was set, the unit repeats the cycle of turning on and off automatically.
- In order to prevent the humidity in the room from rising again, the indoor fan also turns off when the unit stops operating.
- The fan speed is set to "LO." automatically, and cannot be adjusted.
- "DRY" operation is not possible if the outdoor temperature is 15 °C or less.

Heating Operation

Heating performance

- Because this appliance heats a room by utilizing the heat of the outside air (heat pump system), the heating efficiency will fall off when the outdoor temperature is very low. If sufficient heat cannot be obtained with this heat pump, use another heating appliance in conjunction with this unit.

Defrosting

- When the outdoor temperature is low, frost or ice may form on the outdoor heat exchanger coil, reducing the heating performance. When this happens, a microcomputer-controlled defrosting system operates. At the same time, the fan on the indoor unit stops (or runs at very low speed in some cases) and the "STANDBY" indicator appears on the display until defrosting is completed. Heating operation then restarts after several minutes. (This interval will vary slightly depending upon the outdoor temperature and the way in which frost forms.)

"STANDBY" on the display

- For several minutes after the start of heating operation, the indoor fan will not start running (or it will run at very low speed in some cases) until the indoor heat exchanger coil has warmed up sufficiently. This is because a cold draft prevention system is operating. During this period, the "STANDBY" indicator remains displayed.
- "STANDBY" remains displayed during defrosting or when the compressor has been turned off (or when the unit is running at very low speed) by the thermostat when the system is in the heating mode.
- Upon completion of defrosting and when the compressor is turned on again, "STANDBY" will turn off automatically as heating operation resumes.

NOTE

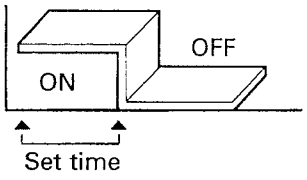
Should the power fail while the unit is running

If the power supply for this unit is temporarily interrupted the unit will automatically resume operation (once the power is restored) with the same settings that were in effect before the power was interrupted.

5

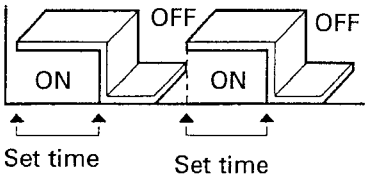
Setting the Timer

OFF timer



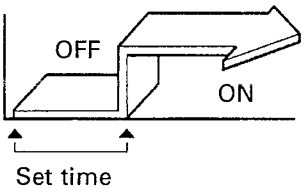
Use this mode to turn off the appliance automatically after the length of time set.

OFF cycle timer



Use this mode to turn the appliance off automatically after the same set time every time.

ON timer



Use this mode to start the appliance automatically after the length of time set.

NOTE When two remote control units are being used either a main-remote control unit or a sub-remote control unit can be used for timer operations. (Refer to the description of the remote control unit.)

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