Operation Details

(1) The function of main control

1. Time Delay Safety Control

- 3min... The compressor is ceased for 3 minutes to balance the pressure in the refrigeration cycle. (Protection of compressor)
- 2sec... The indoor fan is ceased for 2 sec. to prevent relay noise. (Protection of fan relay and micro chip)
- 30sec... The 4-way valve is ceased for 30 sec. to prevent the refrigerant-gas abnormal noise when the Heating operation is OFF or switched to the other operation mode.

2. Airflow Direction Control

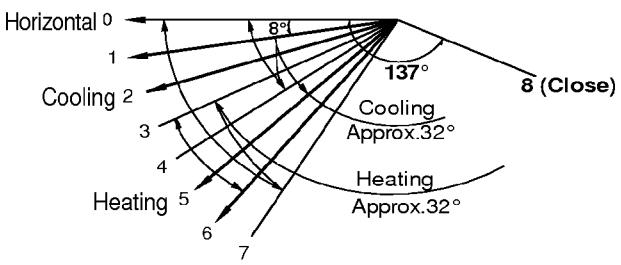
- This function is to swing the louver up and down automatically and to set it at the desired position.
- The procedure is as the following.

  1st ; Press the ON/OFF Button to operate the product.

  2nd ; Press the Airflow Direction Control Button to swing the louver up and down automatically.

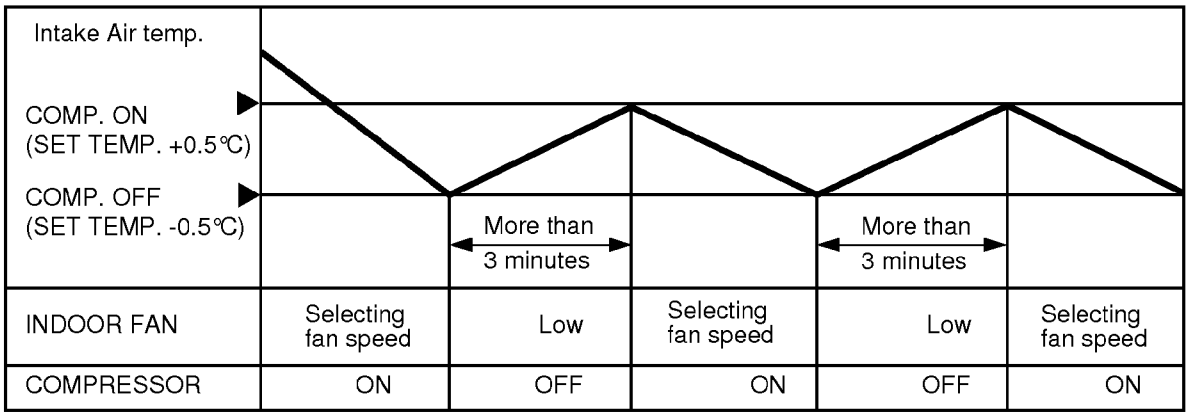
  3rd ; Repress the Airflow Direction Control Button to set the louver as the desired position.

Operating Mode		Louver Position
Cooling	Start	2
	Auto. Swing	1~4
Heating	Start	5
	Auto. Swing	3~6



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.

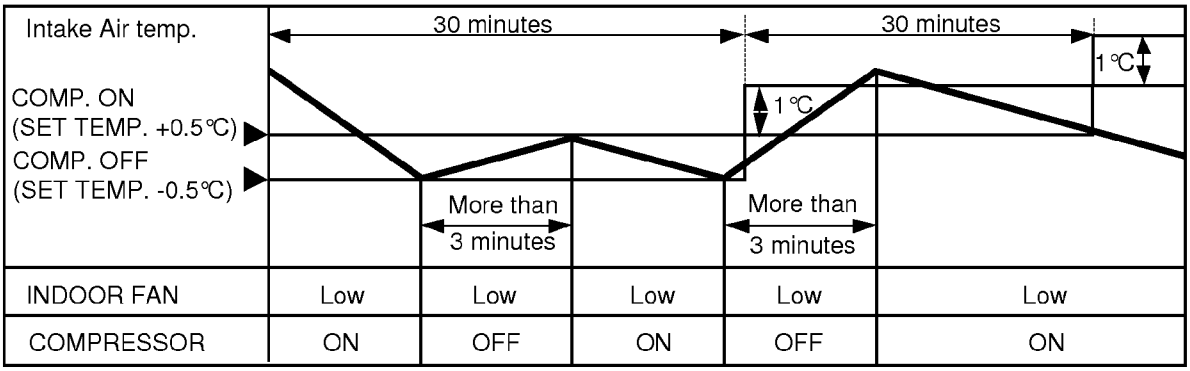


4. Cooling or Heating Mode with Sleep Mode Auto Operation

- When selecting the Cooling(❄) or the Heating(☼) combined with the Sleep Mode Auto Operation(☆), the operation diagram is as following.

■ **Cooling Mode with the Sleep Mode.**

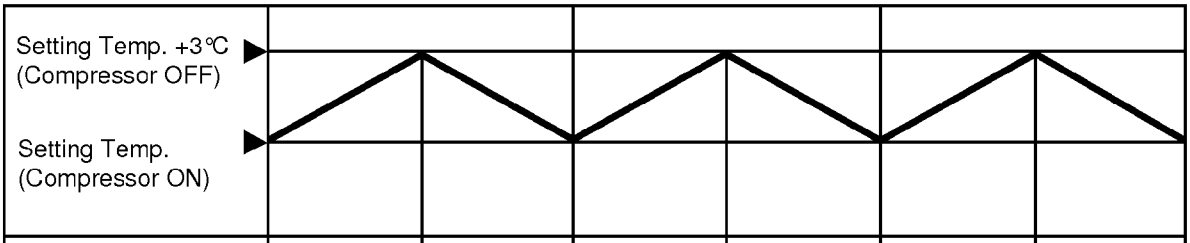
- The setting temperature will be raised by 1℃ 30minutes later and by 2℃ 1 hour later.
- The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



INDOOR FAN	Low	Low	Low	Low	Low
COMPRESSOR	ON	OFF	ON	OFF	ON

■ **Heating Mode with the Sleep Mode.**

- The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



INDOOR FAN	Med.	Med.	Med.	Med.	Med.	Med.
COMPRESSOR	ON	OFF	ON	OFF	ON	OFF

5. Fuzzy Operation

•The operation procedure is as following.

Press Start/Stop Button

↓

Select Fuzzy Operation Mode

↓

Check the Room temperature

↓

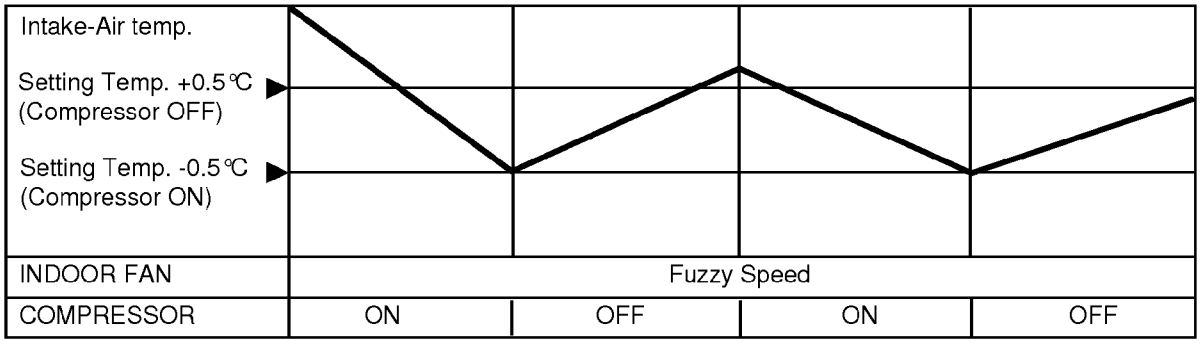
Operation mode, Indoor fan speed, Setting temperature — are automatically decided by Fuzzy rule.

Intake-air temperature	below 21℃	Over 21℃ ~ below 24℃	Over 24℃
Operation Mode	Heating	Soft Dry	Cooling

※ If initial mode is decided, that mode is continued despite of the room temperature changing.

■ Fuzzy Operation for Cooling

Operation condition	Intake-air Temperature	Setting Temperature	Fan speed	Air DirectionControl
When Fuzzy Operation initial start	Over 26℃	25℃	Controlled by Fuzzy logic	1/f rhythm
	Over 24℃~below 26℃	Intake air -1℃		
	Over 22℃~below 24℃	Intake air -0.5℃		
	Over 20℃~below 22℃	Intake air temperature		
	below 20℃	20℃		
When Switch to Fuzzy Operation	Over 20℃~below 30℃	Fuzzy control		
	below 20℃	20℃		-
	over 30℃	30℃		-



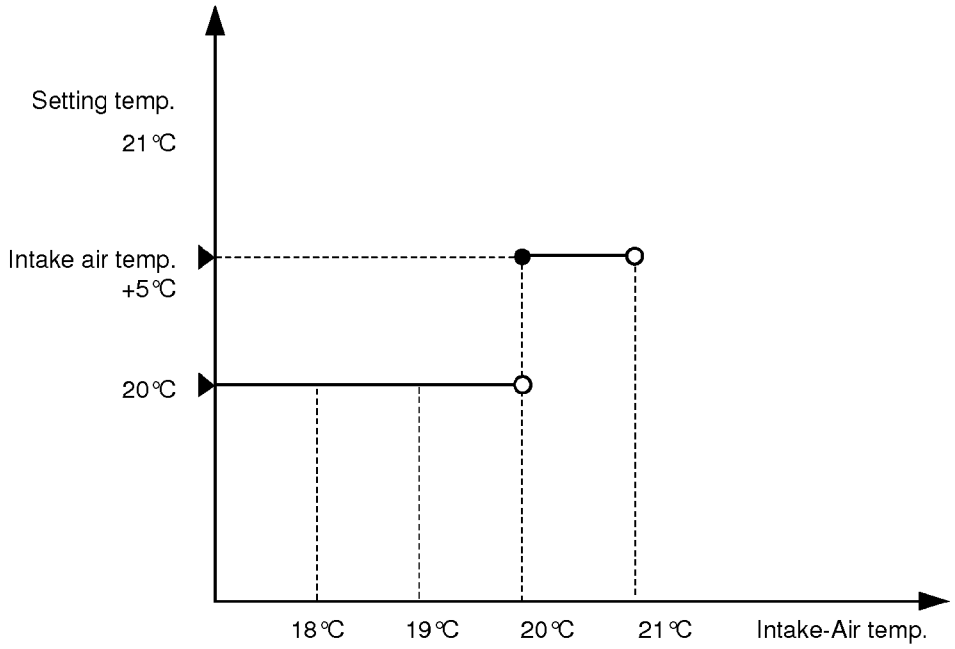
INDOOR FAN	Fuzzy Speed			
COMPRESSOR	ON	OFF	ON	OFF

■ **Fuzzy Operation for Soft Dry**

• The Setting temperature will be set to the same that of the current intake-air temperature.
  - Compressor ON temperature; Setting temperature +1℃
  - Compressor OFF temperature; Setting temperture -0.5℃

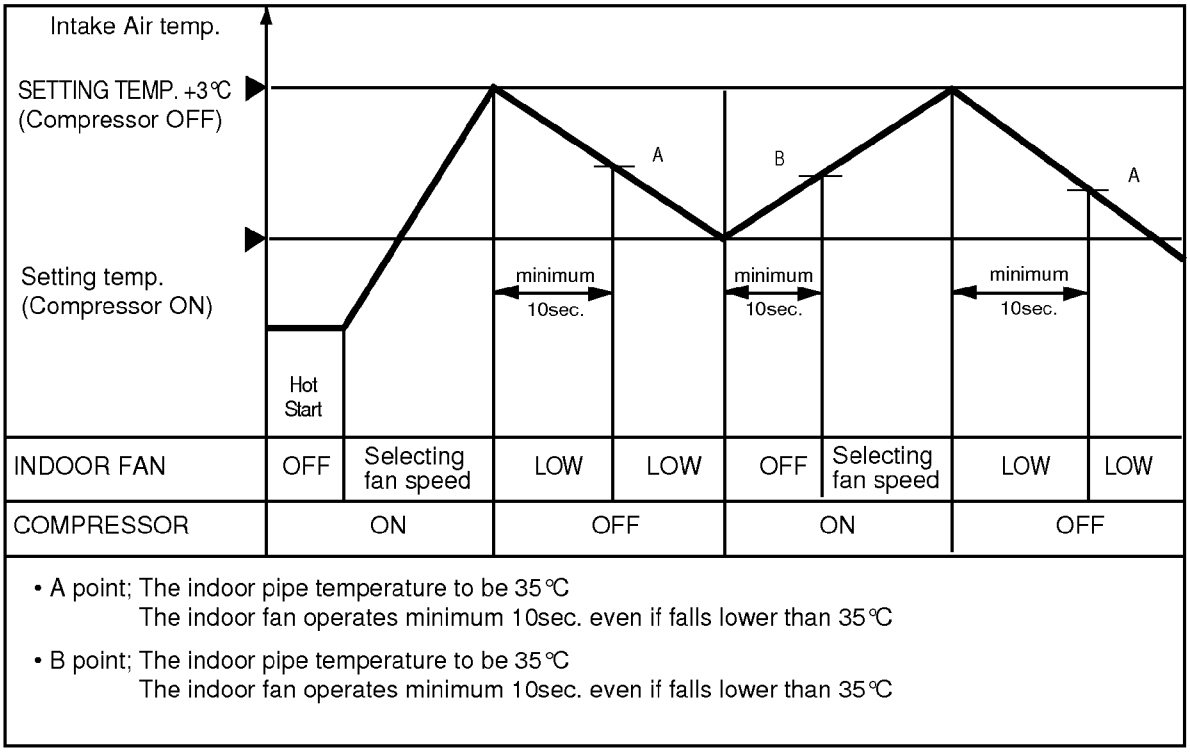
■ **Fuzzy Operation for Heating**

Intake Air temp.	Below 20℃	Over 20℃~below 21℃
Setting temp.	20℃	Intake air temperature +0.5℃



6. Heating Mode Operation

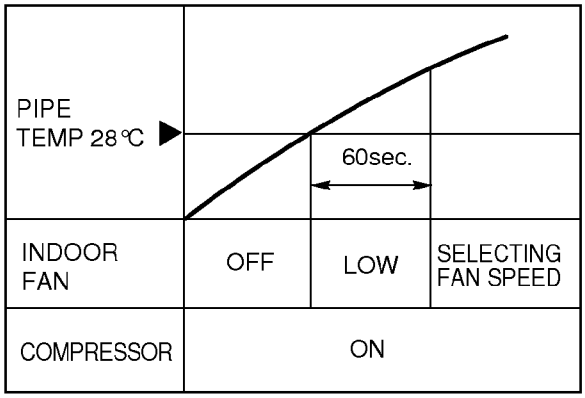
The unit will operate according to the setting by the remote controller and the operation diagram is shown as following.



- A point; The indoor pipe temperature to be 35℃
  The indoor fan operates minimum 10sec. even if falls lower than 35℃
- B point; The indoor pipe temperature to be 35℃
  The indoor fan operates minimum 10sec. even if falls lower than 35℃

7. Hot- Start Control

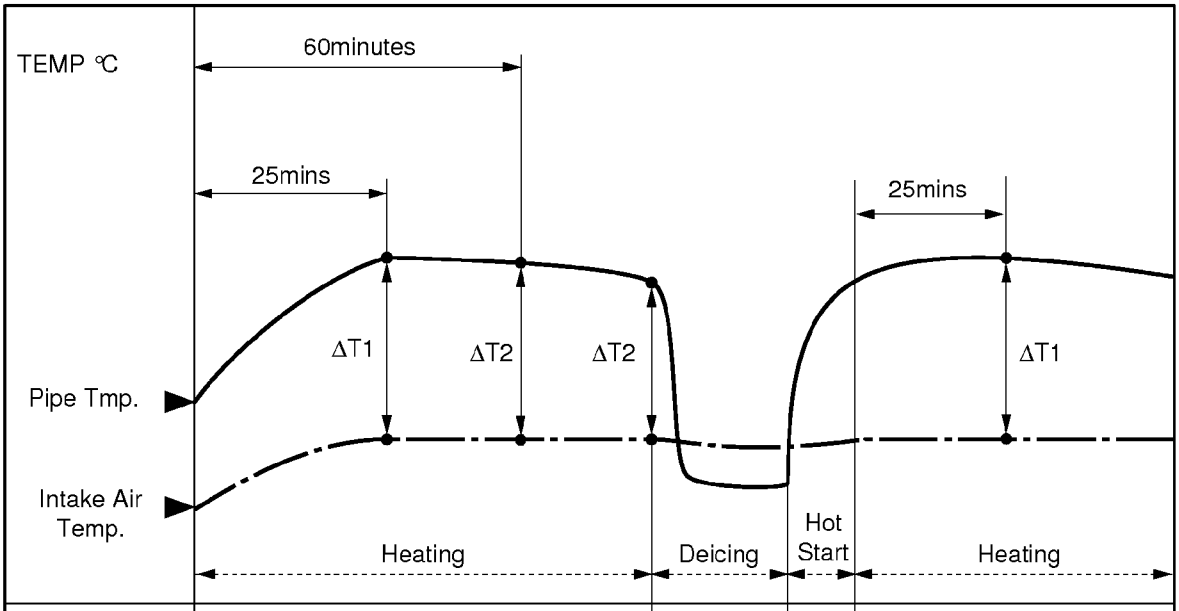
- The indoor fan stops until the evaporator piping temperature will be reached at 28℃.(BY TEMPERATURE)
- The operation diagram is as following.



(HOT-START BY TEMPERATURE)

8. Deice Control

- Deicing operation is controlled by timer and sensing the indoor pipe temperature.
- Temperature difference ΔT1 of the indoor pipe temperature and the indoor intake air temperature are checked after 25 minutes passed starting of heating operation.(ΔT1)
- Temperature difference ΔT2 of the indoor pipe temperature and the indoor intake air temperature are checked after 60 minutes passed starting of heating operation.(ΔT2)
- Deicing time is controlled by difference ΔTd of ΔT1 and ΔT2.
- The deicing time and the operation diagram are as following.



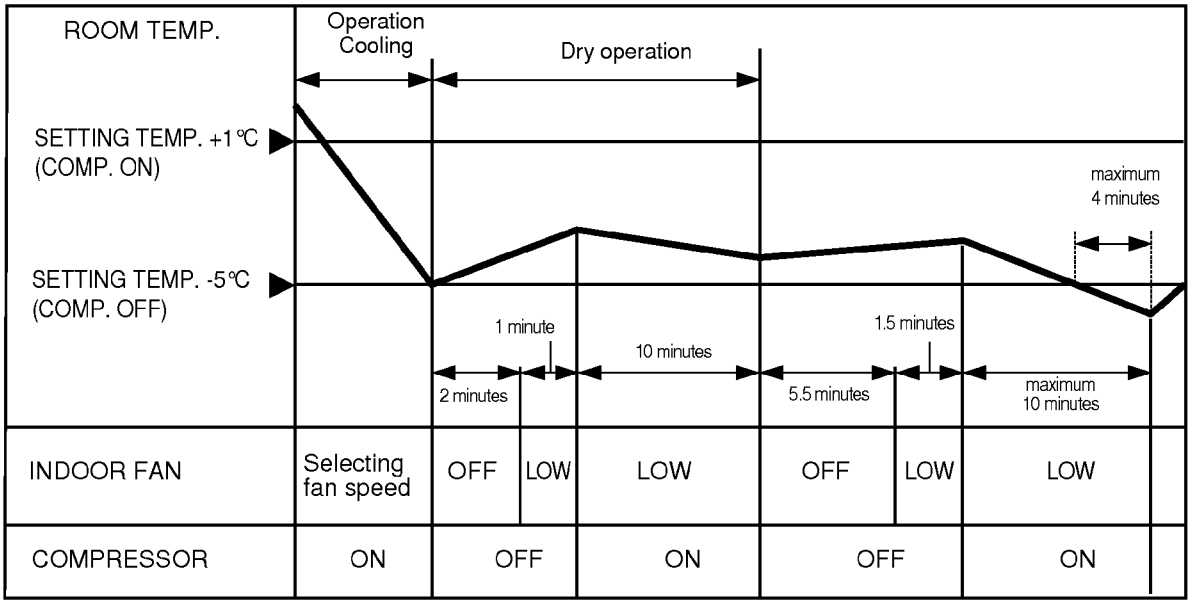
COMPRESSOR	ON	ON	ON	ON
4-WAY VALVE	ON(Heating Operation)	OFF	ON	ON
OUTDOOR FAN	ON	OFF	ON	ON
INDOOR FAN	ON	OFF		ON
DEICE LED	OFF	ON		OFF

(DEICING DIAGRAM)

ΔT1-ΔT2=ΔTd	Over 3.5℃	3.0~3.5℃	2.5~3.0℃	2.0~2.5℃	below 2.0℃
Deicing Time	12 mins	11 mins	10 mins	9 mins	Heating Operation

9. Soft Dry Operation

- During Soft Dry Operation, the compressor ON temperature is the setting temperature plus 1℃, the compressor OFF temperature is the setting temperature minus 0.5℃.
- When the room temperature rises over the compressor ON temperature, the operation mode is switched to the cooling mode.
- When the room temperature falls between the compressor ON temperature and OFF temperature, the operation mode is switched to the Soft Dry Operation.
  In this temperature range, 10min. Dry Operation, 5.5min operation OFF, 1.5min. only fan operation repeat.
  During 10min Dry operation, even if the room temperature falls below compressor OFF temperature, 10min(MAX) Compressor ON from starting of Dry operation which includes 4 min. Compressor ON operation below the comperssor OFF temperature.
- In micom dehumidify mode, control of fan speed is as following.



10. Forced Operation.

- If you lose wireless remote controller, you can operate the unit with forced operation switch.
- The standand conditions are as following.

	Cooling Model	Heat pump Model		
		Room Temp ≥ 24℃	21℃ ≤ Room Temp < 24℃	Room temp < 21℃
Operation Mode	Cooling	Cooling	Soft Dry	Heating
FAN Speed	High	High	Low	High
Setting Temp.	24℃	24℃	Room Temp.	22℃