Operation Details

(1) The function of main control

1. Time Delay Safety Control

ƒU3min¡ƒ The compressor is ceased for 3minutes to balance the pressure in the refrigeration cycle.
(Protection of compressor)

ƒU5sec¡ƒ Vertical air flow direction control louvers open in 5 seconds to prevent noise between louvers and wind.

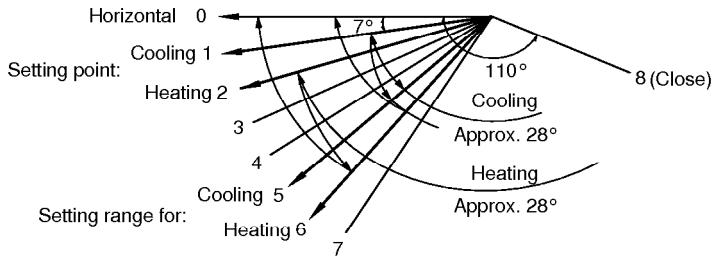
ƒU30sec¡ƒ The 4-way valve is ceased for 30sec. to prevent the refrigerant-gas abnormal noise when the Heating operation is OFF or switched to the other operation mode while compress is off.
While compressor is running, it takes 3~5 seconds to switch.

2. Airflow Direction Control

ƒU This function is to swing the louver up and down automatically and to set it at the desired position.

ƒU The procedure is as the following.

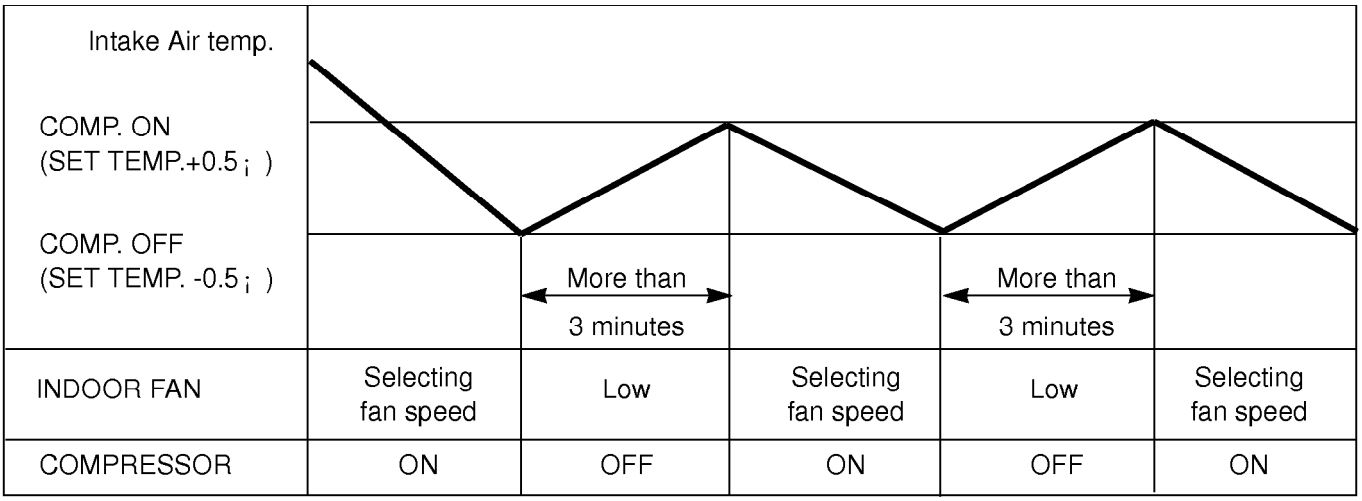
1st ; Press the ON/OFF Button to operate the product.
2nd ; Press the Airflow Direction Control Button to swing the louver up and down automatically.
3nd ; Repress the Airflow Direction Control Button to set the louver as the desired position.



Vertical airflow direction

3. Cooling Mode Operation

ƒU 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



INDOOR FAN	Selecting fan speed	Low	Selecting fan speed	Low	Selecting fan speed
COMPRESSOR	ON	OFF	ON	OFF	ON

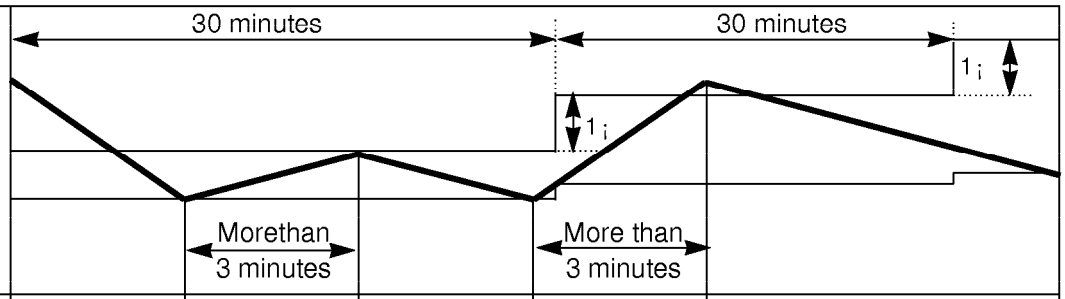
4. Cooling or Heating Mode with Sleep Mode Auto Operation

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

¡Æ Cooling Mode with the Sleep Mode

ƒU The setting temperature will be raised by 1¡ 30minutes later and by 2¡ 1 hour later.

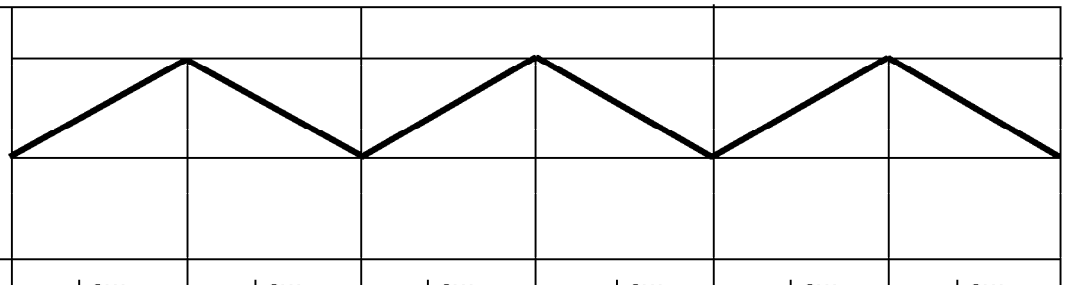
ƒU The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



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

¡Æ Heating Mode with the Sleep Mode.

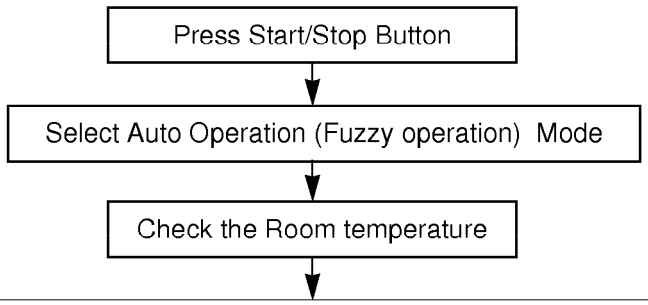
ƒU The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



Indoor Fan	Low	Low	Low	Low	Low	Low
Compressor	ON	OFF	ON	OFF	ON	OFF

5. Auto Operation (Fuzzy Operation)

ƒU The operation procedure is as following. (Cooling & Heating Model)



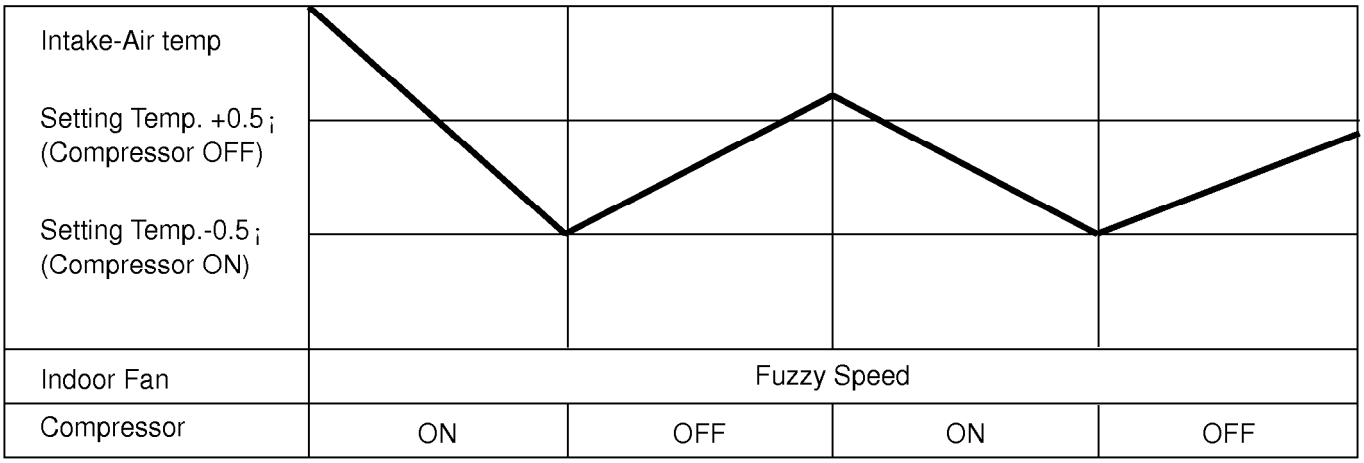
Operation mode
Indoor fan speed
Setting temperature
are automatically decided by Fuzzy rule.

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

ƒN If initial mode is decided, that mode is continued without the room temperature changing.
ƒN For cooling operation mode over 24℃ setting temperature and fan speed are same as cooling only model.

ƒU Auto Operation (Fuzzy Operation) for Cooling. (Cooling only Model)

Operation Condition	Intake-air Temperature	Setting temperature	Fan speed	Air Direction Control
When Auto Operation initial start	Over 26℃	25℃	Controlled by Fuzzy logic	In this mode, when pressing the vertical air diretion control. Button, louvers moves to 1/f rhythm (refer to page 17)
	Over 24¡ ~below 26℃	Intake air -1℃		
	Over 22¡ ~below 24℃	Intake air -0.5℃		
	Over 20℃~below 22℃	intake air temperture		
	below 20℃	20℃		
When pressing room temperature setting button during Auto Operation	Over 20℃~below 30℃	Fuzzy control		
	below 20℃	20℃		
	over 30℃	30℃		



Indoor Fan	Fuzzy Speed			
Compressor	ON	OFF	ON	OFF

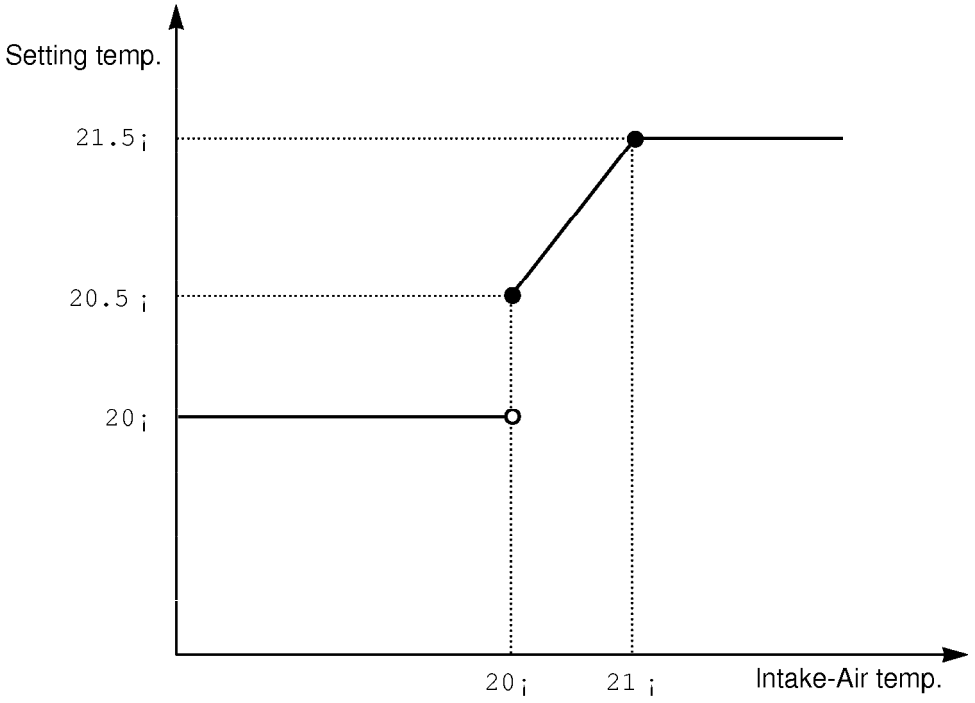
ƒU **Auto Operation (Fuzzy Operation) for Soft Dry.**

The Setting temperature will be same as that of the current intake-air temperature.
- Compressor ON temperature; Setting temperature +1¡
- Compressor OFF temperature; Setting temperature -0.5¡

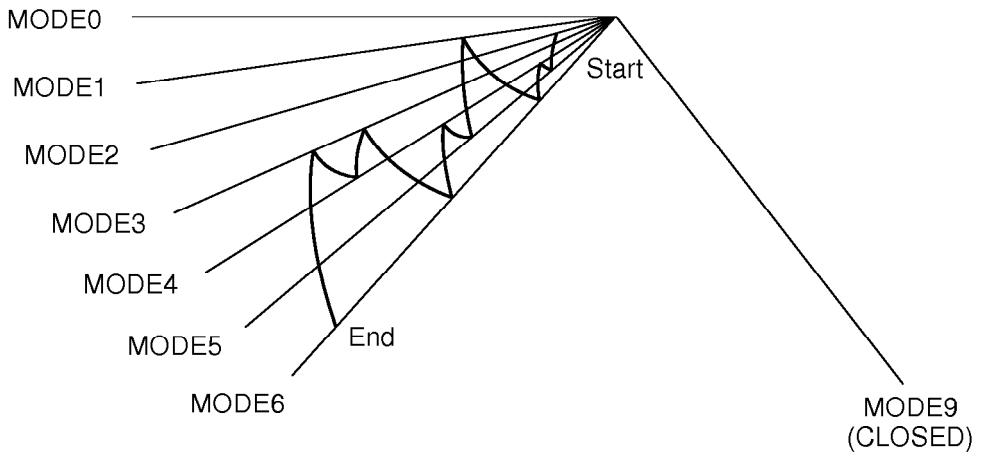
ƒU **Auto Operation (Fuzzy Operation) for Heating.**

Intake Air temp.	below 20℃	over 20¡ ~below 21℃
Setting temp.	20℃	Intake air temp. +0.5℃

- Compressor ON temperature; Setting temperature
- Compressor OFF temperature; Setting temperature +3¡



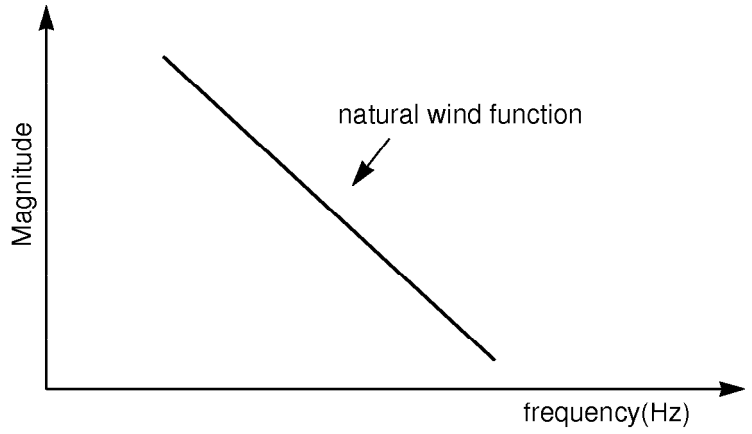
ƒU 1/f rhythm louver operation : In Auto operation mode, when pressing the vertical air direction control button, louver moves as following cycle.



6. Natural Wind by CHAOS logic

There are common rules in the irregular changes amid the breeze of highlands and valleys, the sound of streams, the songs of birds in the forest and brain waves of relaxation.
Mmm... the breath-taking and touchy feeling of wind from the deep mountains and dark valleys.
Through analysis in its chaos simulator, Goldstar has successfully created such a feeling of freshness and serenity by analyzing the frequency of natural wind.

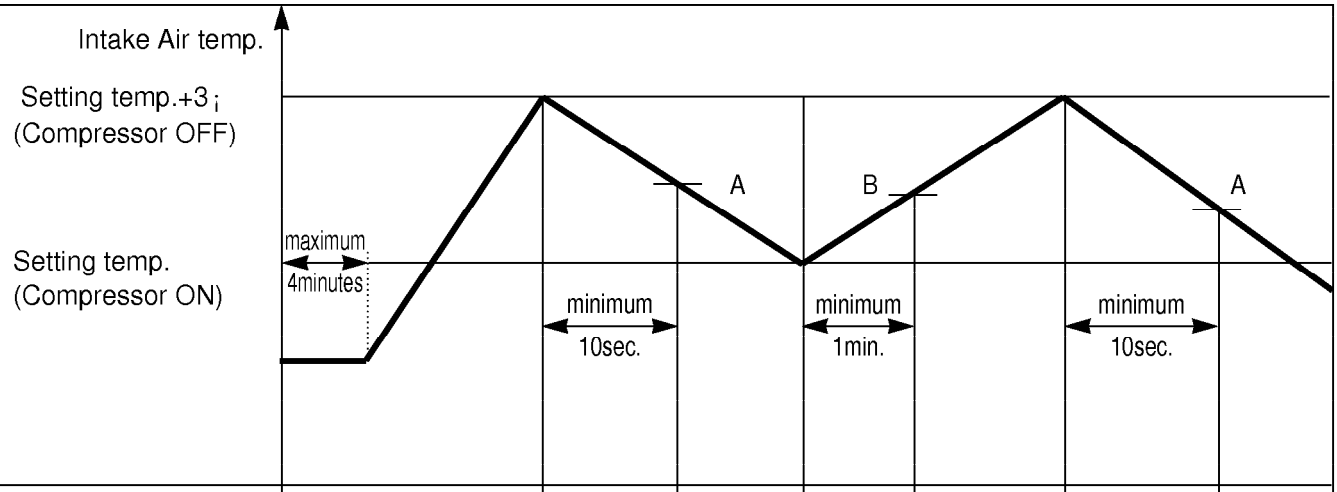
Generally natural wind has the following character (frequency-Magnitude), for example dark vally, sea, mountain wind.



So as to make a similar Natural wind function, Indoor fan speed is shifted to high from low or reversely according to the CHAOS logic.

7. Heating Mode Operation

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



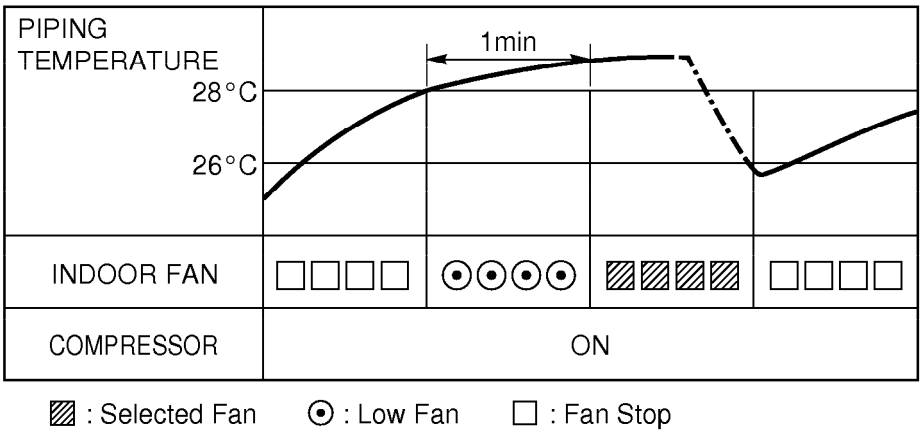
INDOOR FAN	Selecting fan speed	Low	OFF	Low	Selecting fan speed	Low	OFF
COMPRESSOR	ON	OFF		ON		OFF	

ƒU A point; While the indoor Heat-Exchanger temperature is higher than 35℃ fan operates at low speed, when it becomes lower than 35℃ fan stops.

ƒU B point; When the indoor Heat-Exchanger temperature is higher than 28℃, fan operates at seleted fan speed.

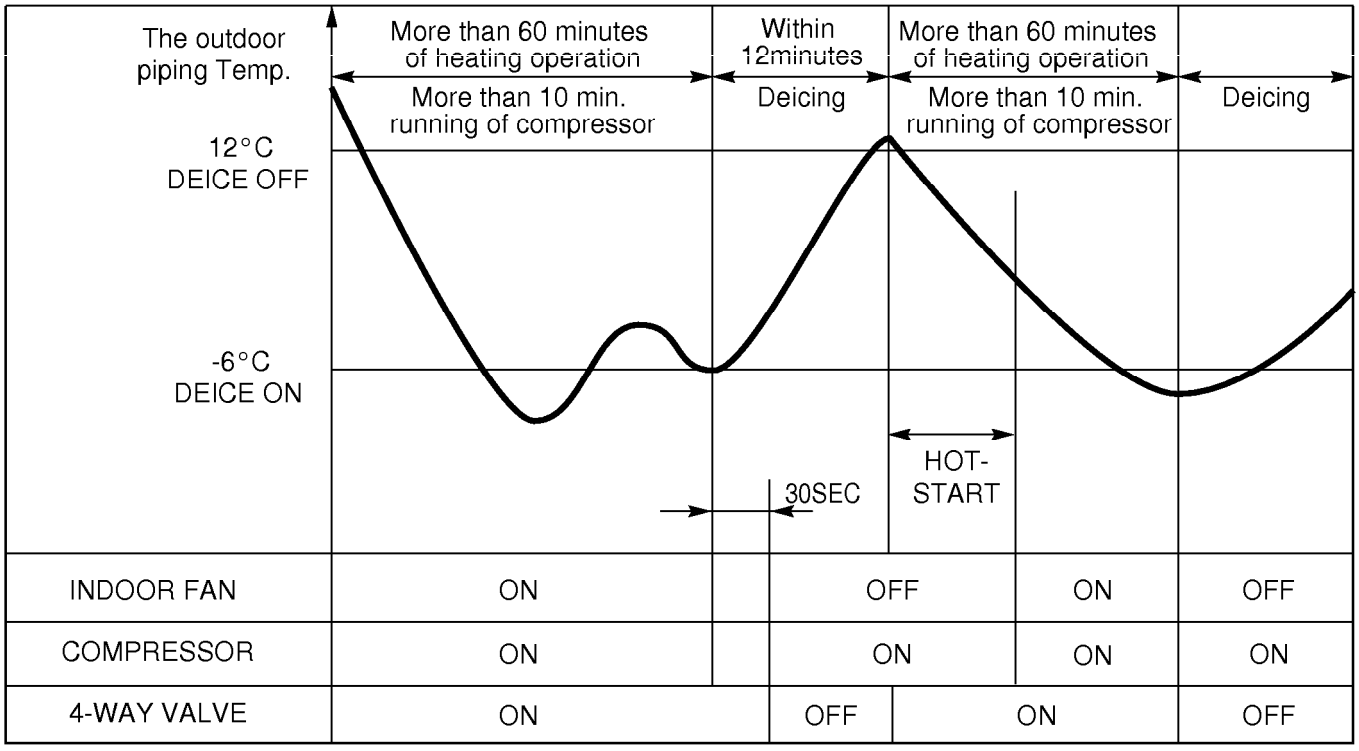
8. Hot-Start Control

ƒU The indoor fan stops until the evaporator piping temperature will be reached to 28¡ .
ƒU During heating operation, if piping temperatures falls below 26℃ fan stops.
(But, in case of LS-D2460HL/2660HL, it stops below 25℃)
ƒU The operation diagram is as following.



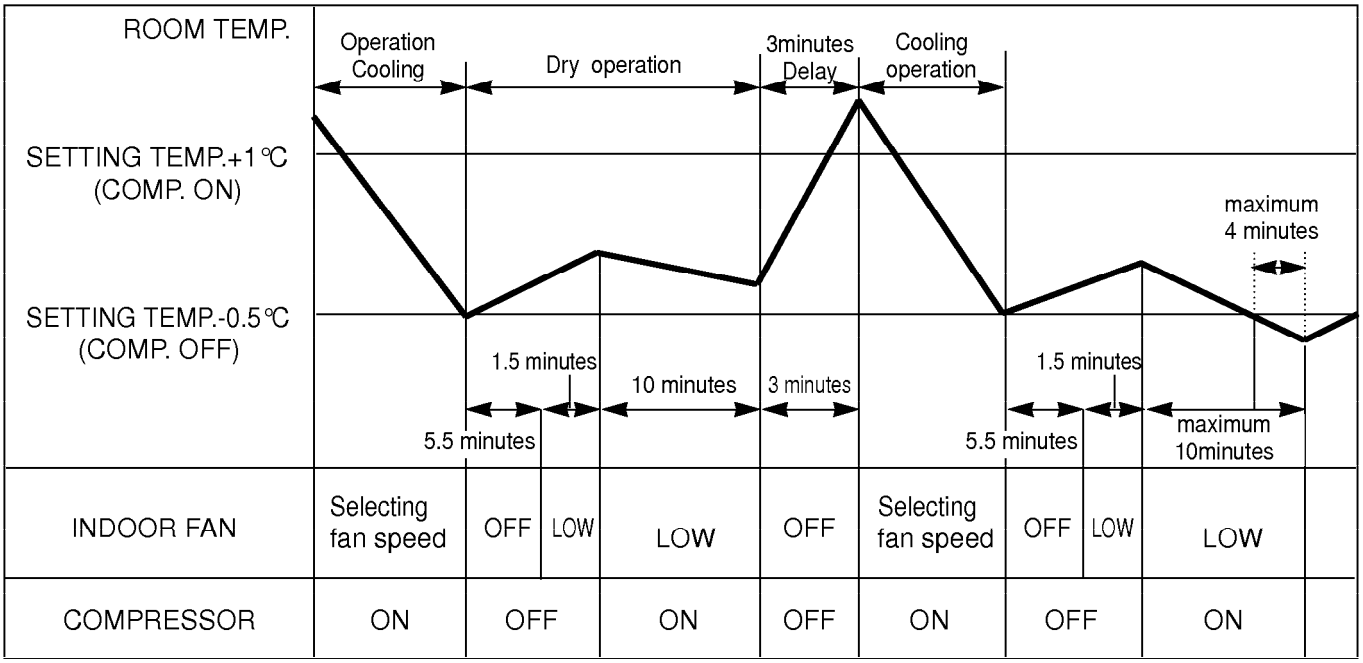
9. Deice Control

ƒU Deicing operation is controlled by timer and sensing the outdoor piping temperature.
ƒU The first deicing starts only when the outdoor pipe temperature falls below -6¡ after 60 minutes passed from starting of heating operation and more than 10 minute operation of compressor.
ƒU Deicing ends after 12 minutes passed from starting of deice operation or when the outdoor pipe temperature rises over 12¡ even if before 12 minutes.
ƒU The second deicing starts only when the outdoor pipe temperture falls below -6¡ after 60 minutes passed from ending of the first deicing and more than 10 minute operation of compressor.



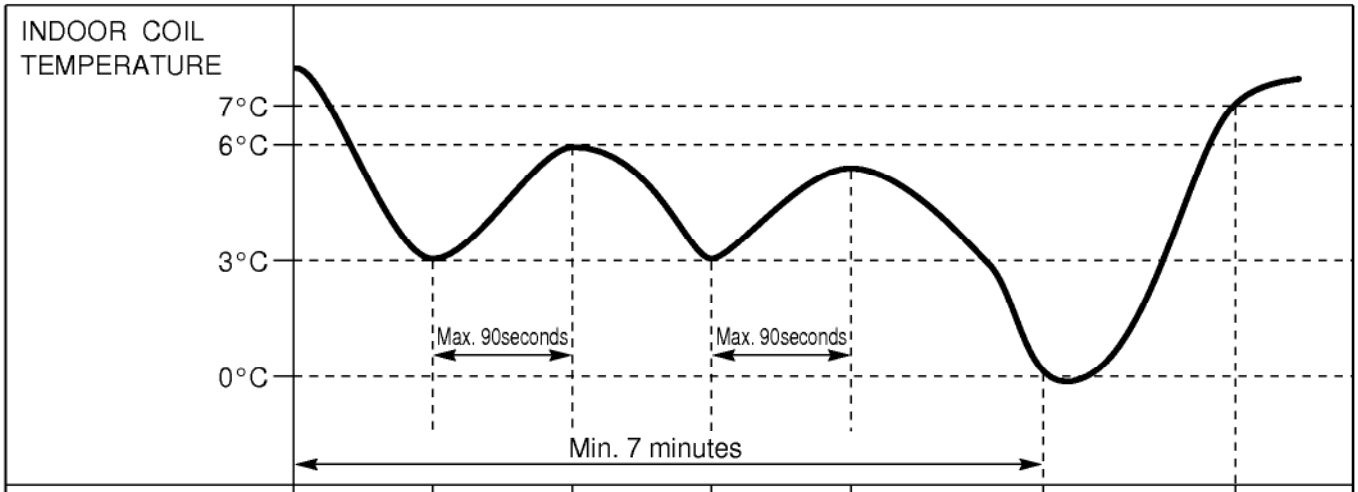
10. Soft Dry Operation.

- 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(MAX). Compressor ON operation below the comperssor OFF temperature.
- In micom dehumidify mode, control of fan speed is as following.



11. Protection of the evaporator pipe from frosting

- Same as item(1) except that outdoor fan motor stops when indoor coil temperature is below 3℃ and restarts at the coil temperature above 6℃ or after 90 secconds, if the coil temperature does not rise to 6℃, outdoor fan motor runs continuously at even below 3℃.



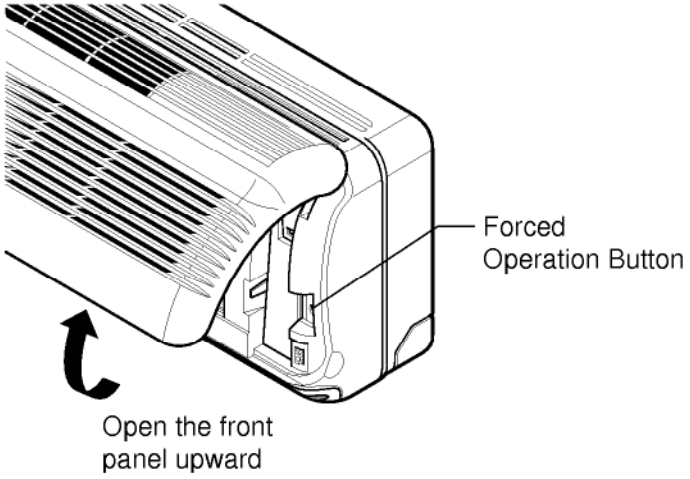
COMPRESSOR	ON	ON	ON	ON	ON	OFF	ON
OUTDOOR FAN	ON	OFF	ON	OFF	ON	OFF	ON

12. Forced operation

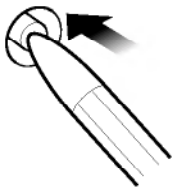
- If you lose wireless remote controller, you can operate the unit with forced operation switch.
- The standard conditions are as following.

	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	Soft Dry Rule	High
Setting Temp.	24℃	24℃	Air Intake Temperature	22℃

- Unit operates in low fan mode for first 15 seconds, then switched to proper operation mode according to intake Air temperature.



Press the Forced Operation Button.



ƒ ÚPress the Forced Operation Button once again to stop operation.

13. Test Operation

- When pressing forced operation switch about 3 seconds, the unit operates in cooling mode at high speed fan regardless of room temperature and resets in 18 min.
- During test operation, if remote controller signal is received, the unit operates as remote controller sets.

Test Mode

Test operation will be setted by pushing the "Testkey" in the main P.C.B ASM. Each test operation by pushing Count of "Testkey" is as well as the following.
(In the case of power cord is plugged and Air Conditioner is not operating.)

1) Indoor

- 1 Time push : Ignore communication error.
- 2 Times push : Shorten the proceeding time. (1min ¡ 1sec)
- 3 Times push : Shorten the proceeding time. (1hour ¡ 1sec)
- 4 Times push : All LED ON
- 5 Times push : Indoor Fan Check. (Fan : Hi)
  Up/Down Step Motor ON.
- 6 Times push : Right Step Motor ON. (Not on alll Models)
- 7 Times push : Left Step Motor ON. (Not on all Models)
- 8 Times push : Negative Ion ON. (Not on all Models)
- 9 Times push : Reset.

Note)

For normal operation after checking by test mode, you should press "Testkey" nine times for resetting or reconnect the power cord.

2) Outdoor

- 1 Time push : Ignore Communication error.
- 2 Times push : Comp. ON,
  Outdoor Fan ON
  Reversing Valve Coil ON
- 3 Times push : Reversing Valve Coil OFF
  Comp. ON
  Outdoor Fan ON
- 4 Times push : Comp. OFF
  Outdoor Fan ON
- 5 Times push : Reset.

Note)

For normal operation afterchecking by test mode, you should press "Testkey" five times for resetting or reconnect the power cord.