

# Operation Details

## (1) The function of main control

### 1. Time delay Safety Control

- 3min.; The compressor operation is delayed for 3 minutes to balance the pressure of cycle.  
(Protection of compressor)
- 5sec.; The indoor fan is delayed for 5 seconds, when operating initially, to prevent noises occurred by the vertical louver and wind.
- 2min.; The reversing valve is delayed for 2 minutes to prevent the refrigerant-gas for abnormal noise when the heating operation is OFF or switched to the other operation mode while compressor is off.  
While compressor is running, it takes 3~5 seconds to switch.

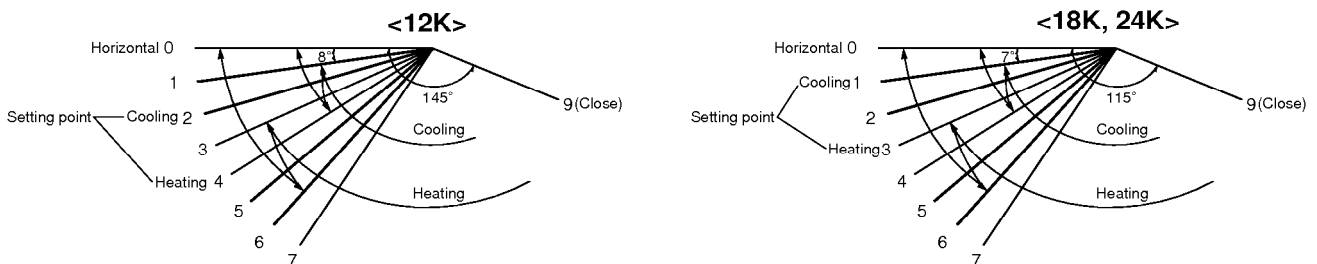
### 2. Airflow Direction Control

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

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

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

3rd ; Reprress the Airflow Direction Control Button to set the vertical louver at a fixed position.



### 3. Cooling Operation Mode

- When selecting the Cooling( \* ) Mode Operation, the unit will operate according to the setting by the remote controller and the operation diagram is shown below.

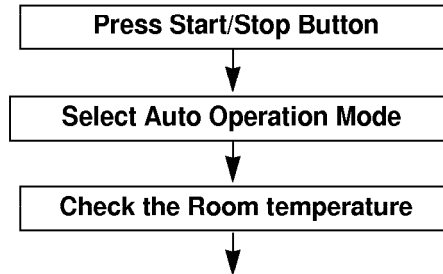
INTAKE AIR TEMP.					
SETTING TEMP. +1 °F (Compressor ON)					
SETTING TEMP. -1 °F (Compressor OFF)					
		← More than 3 minutes →		← More than 3 minutes →	
INDOOR FAN SPEED	Selecting fan speed	Low	Selecting fan speed	Low	Selecting fan speed
COMPRESSOR	ON	OFF	ON	OFF	ON

### ■ Protection of the indoor heat exchanger from frosting

- Compressor and outdoor fan stop when indoor pipe temperature is below 32°F and restart at the pipe temperature is above 45°F.

#### 4. Auto Operation (Electronic control mode)

- The operation procedure is shown below. (Cooling & Heating Model)

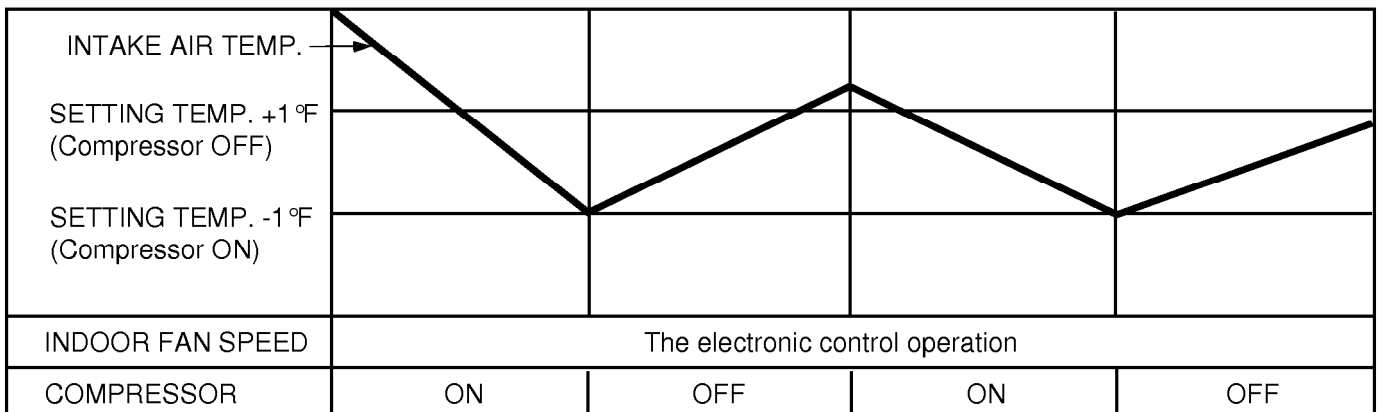


Operation mode Indoor fan speed Setting temperature				are decided automatically by the unit electronic control.
Intake-air temperature	below 70°F	Over 70°F ~ below 76°F	Over 76°F	
Operation Mode	Heating	Soft Dry	Cooling	

\* If initial mode is decided, that mode is continued without the room temperature changing.

#### ■ Auto Operation for Cooling

Operation Condition	Intake-air Temperature	Setting Temperature	Fan Speed	Air Direction Control
When Auto Operation initial start	Over 78°F	77°F	Controlled by the electronic control	In this mode, when pressing the vertical air direction control button, vertical louver swings up and down automatically.
	Over 76°F~below 78°F	Intake air -1°C		
	Over 72°F~below 76°F	Intake air -0.5°C		
	Over 68°F~below 72°F	Intake air temperature		
	below 64°F	64°F		
When pressing room temperature setting button during Auto Operation	Over 64°F~below 86°F	Electronic control		
	below 64°F	64°F		
	over 86°F	86°F		



■ **Auto Operation for Soft Dry(only Heating Model)**

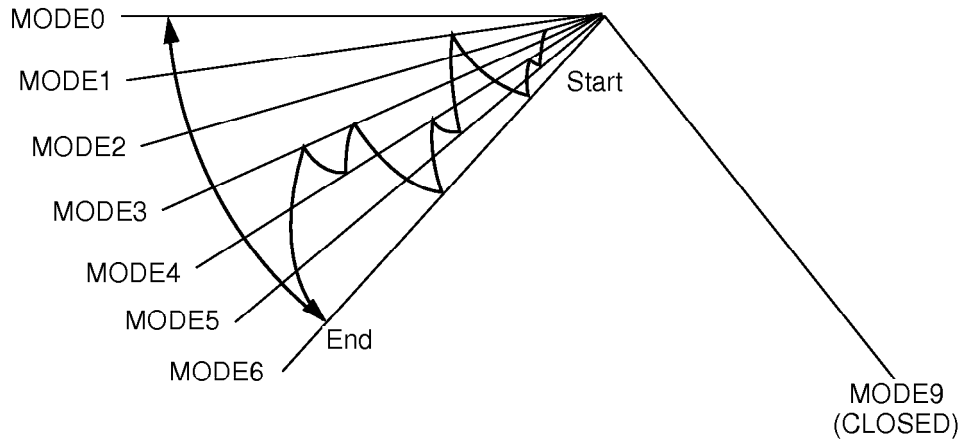
- The Setting temperature will be same that of the auto operation for cooling.
  - Compressor ON temperature; Setting temperature +2°F
  - Compressor OFF temperature; Setting temperature -1°F

Intake-air temp.	below 68°F	Over 68°F~below 70°F	over 86°F
Setting temp.	68°F	Intake air temperature +1°F	86°F

■ **Auto Operation for Heating(only Heating Model)**

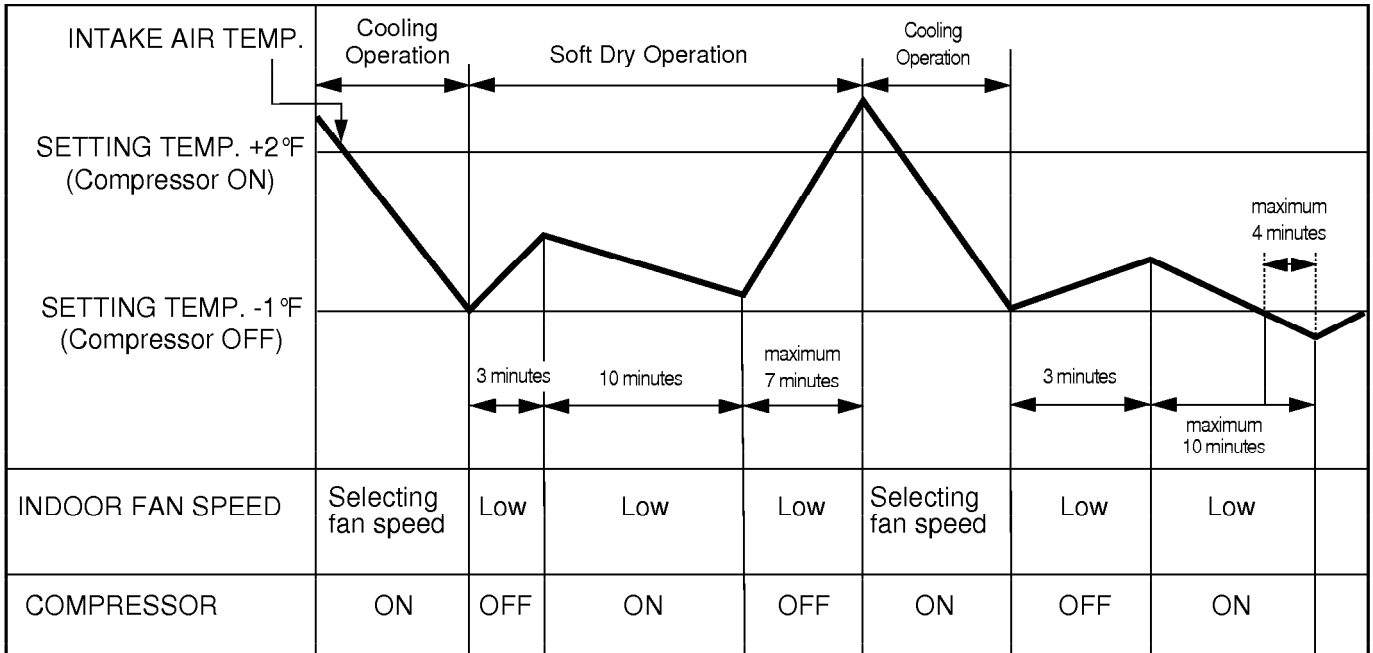
- Compressor ON temperature; Setting temperature
- Compressor OFF temperature; Setting temperature +6°F

■ **Vertical louver auto operation** : In Auto operation mode, when pressing the vertical airflow direction control button, vertical louver moves as shown below.



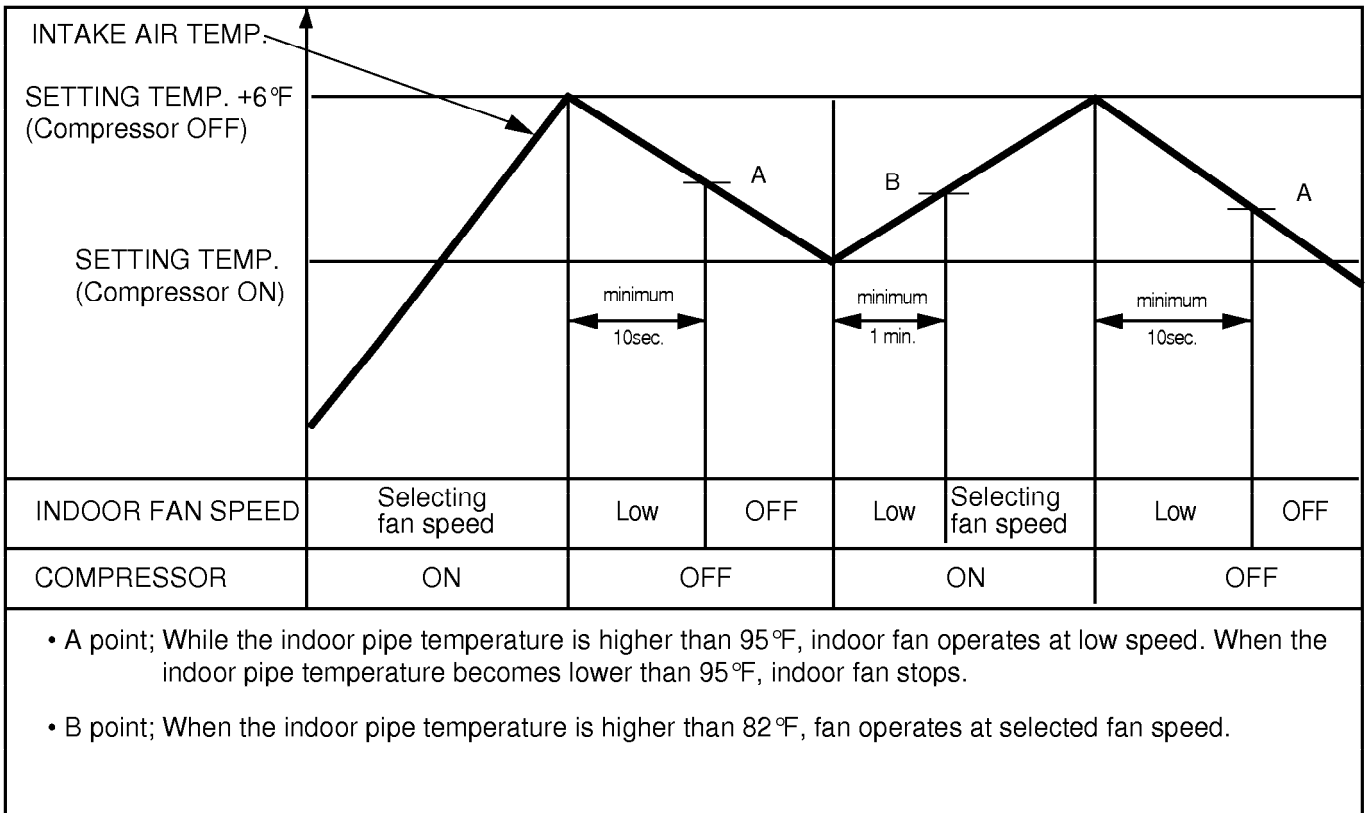
## 5. Soft Dry Operation Mode

- During Soft Dry Operation, the compressor ON temperature is the setting temperature plus 2°F, the compressor OFF temperature is the setting temperature minus 1°F.
- When the room temperature rises over the compressor ON temperature, the operation mode is switched to the Cooling operation.
- When the room temperature falls between the compressor ON temperature and OFF temperature, the operation mode is switched to the Soft Dry Operation.
- The operation diagram is shown below.



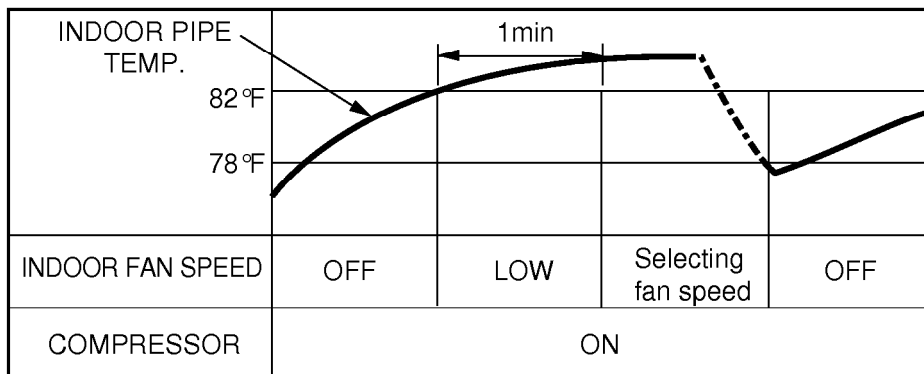
## 6. Heating Operation Mode(only Heating Model)

The unit will operate according to the setting conditions by the remote controller.  
The operation diagram is shown below.



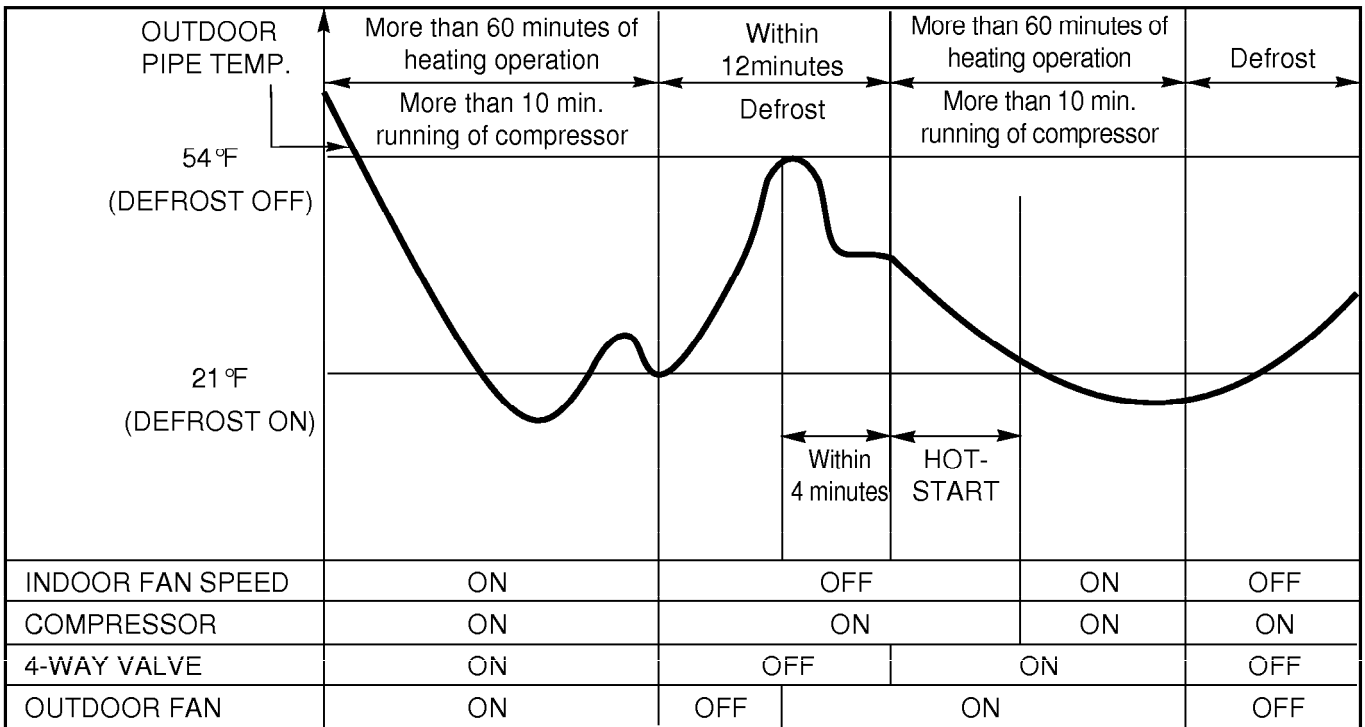
### ■ Hot-Start Control

- The indoor fan stops until the indoor pipe temperature will be reached at 82°F.
- During heating operation, if indoor pipe temperature falls below 78°F fan stops.
- The operation diagram is shown below.



■ Defrost Control

- Defrost operation is controlled by timer and sensing temperature of outdoor pipe.
- The first defrost starts only when the outdoor pipe temperature falls below 21°F after 60 minutes passed from starting of heating operation and more than 10 minutes operation of compressor.
- Defrost ends after 12 minutes passed from starting of defrost operation or when the outdoor fan operates within 4 minutes after the outdoor pipe temperature rises over 54°F even if before 12 minutes.
- The second defrost starts only when the outdoor pipe temperature falls below 21°F after 60 minutes passed from ending of the first defrost and more than 10 minutes operation of compressor.

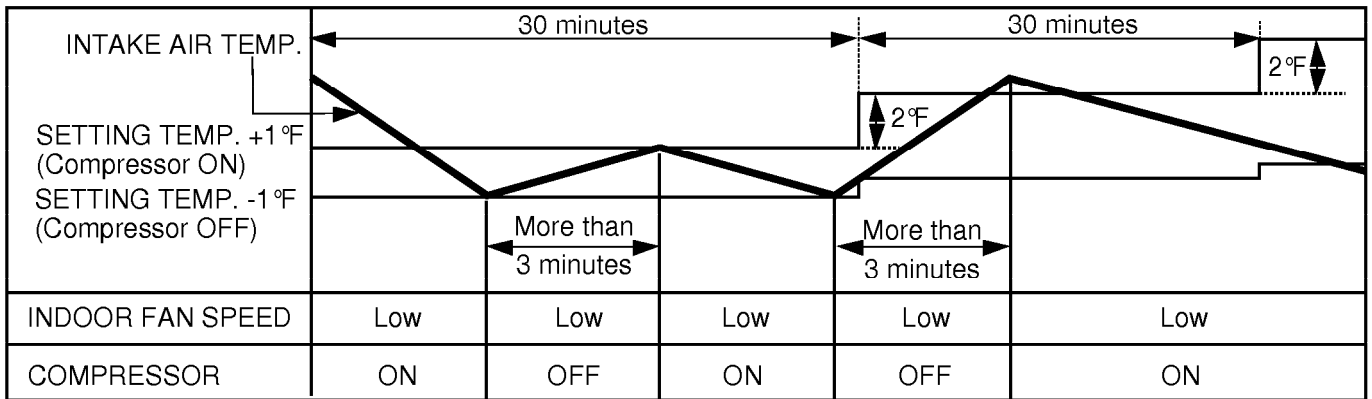


## 7. Cooling or Heating Mode with Sleep Mode Auto Control

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

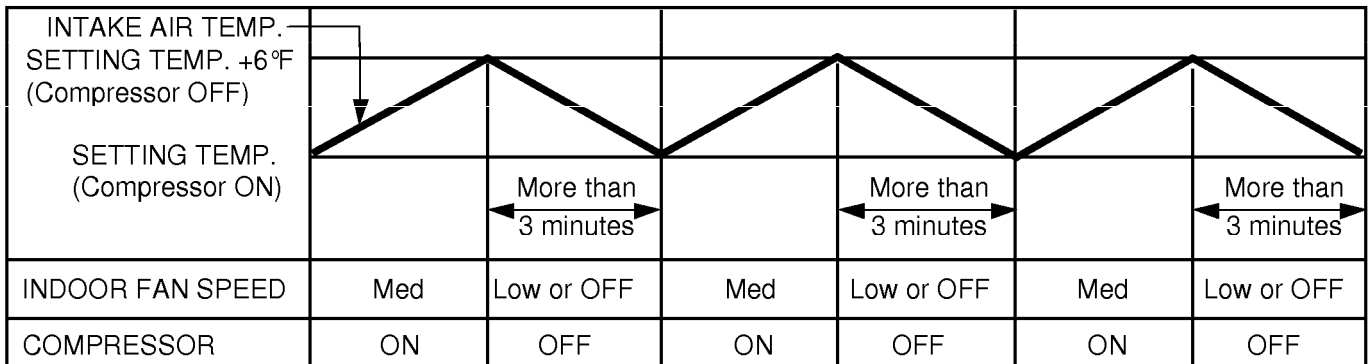
### ■ Cooling Mode with the Sleep Mode

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



### ■ Heating Mode with the Sleep Mode(only Heating Model)

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

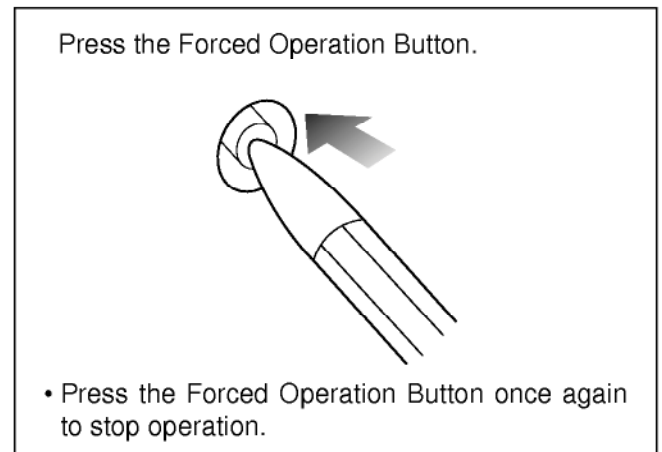
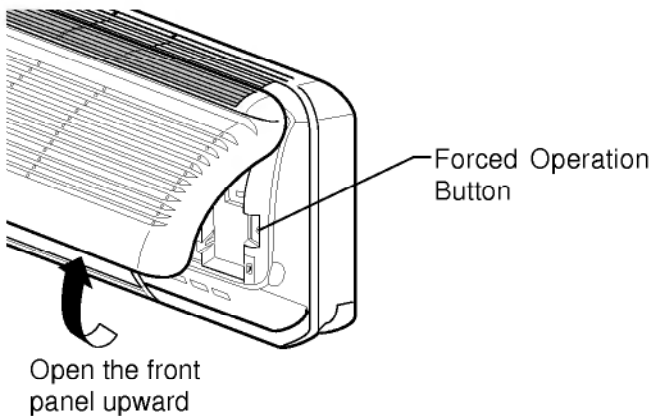


## 8. Forced Operation

- If you lose wireless remote controller, you can operate the unit with forced operation button.
- The standard conditions are shown below.

	Cooling Model	Heating Model		
		Room Temp $\geq 76^{\circ}\text{F}$	$70^{\circ}\text{F} \leq \text{Room Temp} < 76^{\circ}\text{F}$	Room temp $< 70^{\circ}\text{F}$
Operation Mode	Cooling	Cooling	Soft Dry	Heating
Indoor Fan Speed	High	High	Soft Dry Rule	High
Setting Temp.	$72^{\circ}\text{F}$	$72^{\circ}\text{F}$	$74^{\circ}\text{F}$	$76^{\circ}\text{F}$

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



## 9. Crank Case Heater Coil Control(only Heating model)

- When the power is applied to the set, the heater operates unconditionally.
- Except for the heating mode operation, the heater is always to be off.
- During the heating mode operation, the heater and compressor are operated by turns.  
(Compressor ON ; Heater OFF, Compressor OFF ; Heater ON)