FAN COIL-CASSETTE

SF-08C, SF-12C, SF-16C

sinclair
AIR CONDITIONING

PRODUCT

Model Name	Cooling Capacity (W)	Air flow Volume (m³/h)	Power Supply (V, Ph, Hz)	Remarks
SF-08C	4600/7500	850	220-240V~ 50Hz	
SF-12C	6700/10500	1270	220-240V~ 50Hz	
SF-16C	8700/12900	1640	220-240V~ 50Hz	

Model			SF-08C	SF-12C	SF-16C
Power systém	Type	V-Ph-Hz	220-240V- 50Hz	220-240V- 50Hz	220-240V- 50Hz
	Input	W	100	150	160
Airflow volume	High	CFM	500	735	965
		m^3/h	850	1250	1640
	Medium	CFM	375	606	853
		m^3/h	638	1030	1450
	Low	CFM	303	538	781
		m^3/h	515	914	1328
Capacity	Cooling	W	4640	6700	8700
	Heating	W	7500	10500	12900
Electric heater rated power		W	1400	1400	1400
Water system	Water flow volume	m^3/h	0.81	1.18	1.53
	Pressure drop	kPa	15	25	27
Sound pressure level		dB(A)	46	47	53
Coil	Type	-	Aluminum fin-copper tube		
	Operating pressure	MPa	<1.6MPa	<1.6MPa	<1.6MPa
Motor	Type	-	FN35B	FN35B	FN50T
	Capacitor	uF	2.5	3.5	4.5
Connection pipe size	Water inlet &outlet	inch	3/4"	3/4"	3/4"
	Condensing water drain	mm	32	32	32
Outline dimension	Body	mm	840x840x240	840x840x240	840x840x320
	Panel	mm	960x960x60	960x960x60	960x960x60
Package dimension	Body	mm	960x960x310	960x960x310	960x960x394
	Panel	mm	1040x1025x115	1040x1025x115	1040x1025x115
Net weight	Body	kg	30	30	38
	Panel	kg	6.5	6.5	6.5
Gross weight	Body	kg	38	38	46
	Panel	kg	10	10	10
Wired remote controller			Z5K351/Z4E351B	Z5K351/Z4E351B	Z5K351/Z4E351B
Wireless remote controller			YB1F2(X-FAN)	YB1F2(X-FAN)	YB1F2(X-FAN)

Testing condition:

For 60Hz :

The FCU designed for installation indoor. The environmental temperature is from 5ºC to 43ºC, water working temperature is from 7ºC to 60ºC.

The temperature exchange efficiency and enthalpy exchange efficiency are tested under these testing conditions as below:

1). Cooling capacity: air : DB: 27ºC, WB: 19.5ºC, water temperature: intake : 7ºC, outlet:12ºC.

2).Heating capacity: air :DB:21ºC, Water temperature: intake 60ºC, the water-flow volume is same as Cooling capacity .

3).Freeze-up : air : DB: 27ºC, WB: 24ºC, water temperature: intake : 6ºC, outlet: 9ºC.

4).Sound power level according to ISO 5151.Sound pressure level are calculated at the below of air-outlet 1m and 1m distance. The noise are tested before leaving factory.

For 50 Hz :

The FCU designed for installation indoor. The environmental temperature is from 5ºC to 43ºC, water working temperature is from 7ºC to 60ºC.

The temperature exchange efficiency and enthalpy exchange efficiency are tested under these testing conditions as below:

1).Cooling capacity: air: DB: 27ºC, WB: 19ºC, water temperature: intake : 7ºC, outlet: 12ºC.

2).Heating capacity: air: DB: 21ºC , Water temperature: intake :50ºC, outlet: 40ºC.

3).Freeze-up : air : DB: 27ºC, WB: 24ºC, water temperature: intake : 6ºC, outlet: 10ºC.

4).Sound power level according to ISO 5151.Sound pressure level are calculated at the below of air-outlet 1m and 1m distance. The noise are tested before leaving factory.
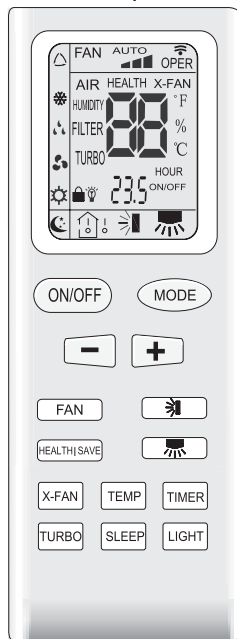
CONTROL
1. WIRELESS REMOTE CONTROLLER
1.1 YB1F2(X-FAN)

Note: Be sure that there are no obstructions between receiver and remote control; Don't drop or throw the remote control; Don't let any liquid in the remote control and put the remote control directly under the sunlight or any place where is very hot.

Signal transmitter

Remote control

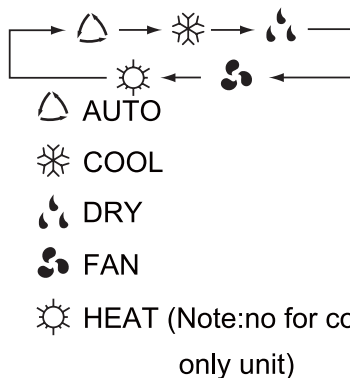**TEMP. $(+/-)$ button**

- When press +button , the setting temp. will be increased by 1℃ ,When press -button,the setting temp. will be decreased by 1 ℃ The temp. will be changed quickly by pressing the button continuously and setting temp. range is $16\sim30℃$。

FAN speed button

- Press this button once, fan speed will change as below:

Auto → ◢ → ◢◢ → ◢◢◢

◢ Low speed ◢◢ Middle speed

◢◢◢ High speed

Note:Under the Dry mode, the fan speed isn't adjustable, low fan speed is imperative, but when operating this button, the wireless remote control will send this signal.
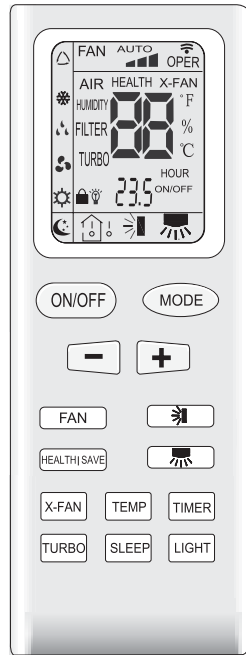
Swing up and down button

- Simpleness swing mode is defaulted for wireless remote control, in this mode, press this button, could turn on or turn off the Up and down swing function.
- When unit is turned off, synchronously press "+" and Up and down swing buttons, it could be switched between the simpleness swing mode and stationary swing mode, at this time, blinks 2 seconds.
- In Stationary swing mode, press this button,the angle for Up and down swing as show in below:

OFF
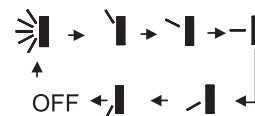
- When up and down swing louver is working, when turn off the unit, the siwng louver will immediately stop at current position. shows up and down swing louver swings back and forth as show in the above figure.

ON/OFF button

- Press this button, the unit will be started or stopped, which can clear the timer or sleeping function of last time.

Mode button

- Press this button, the running mode will change as below.

△ AUTO

❄ COOL

💧 DRY

❀ FAN

☼ HEAT (Note:no for coolling only unit)

NOTE: This Remote control is universal, it could be used formany units, some buttons of this control which are not available to this unit will not be described below.

Remote control

TIMER — Timer button

- On the status of the unit on, press this button to set timer off. On the status of the unit off, press this button to set timer off. Press this key once, words Hour on(off) will appear and flicker. In which case, press +/- button to adjust time (press+/- button continuously to change timing value quickly), the setting time range is from 0.5 to 24 hr.; press this key once again to fix the time, then remote controller will send out the signal immediately and hour on/off will stop flickering. If the time of that no press timer button under flickering status is above 5s,the timer setting will quit. If the timer has been set, press this button once again to quit it.

HEALTH | SAVE button

- HEALTH function:there is no this function for this unit. If press this key, the main unit will click, but it also runs under original status.

- Save energy function: this unit has no this function, press this button, the mian unit will click, "SE" will be displayed on the LCD of wireless remote control, fan speed automatically rotates, when repress this button, the fan speed will run at previous setting fan speed.

Left and right swing button

- Simpleness swing mode is defaulted for wireless remote control,in this mode, press this button, could turn on or turn off the Left and right swing function
- When unit is turned off, synchronously press "+" and Left and right swing buttons, it could be switched between the simpleness swing mode and stationary swing mode, at this time, blinks 2 seconds.
- In Stationary swing mode, press this button,the angle for Left and right swing as show in below:

- When left and right swing louver is working, when turn off the unit, the siwing louver will immediately stop at current position. shows left and right swing louver swings back and forth as show in the above figure.

TURBO — Turbo button

- Set turbo on or off(the characters of turbo will appear or disappear) by pressing this key under cooling or heating mode.Once energized, the unit will be defaulted to be turbo off. This function can not be set under auto, dehumidify or fan mode, and characters of turbo won't appear.
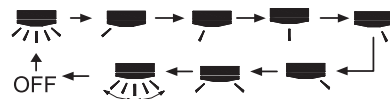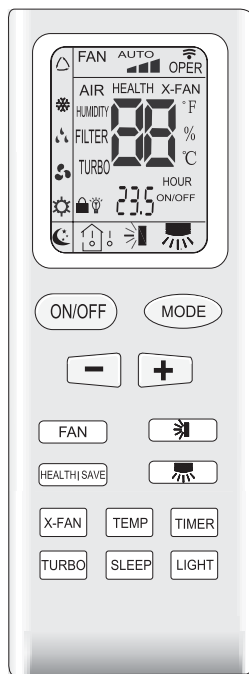
Remote control

SLEEP

Sleep button

- Press this button, enter into SLEEP state, when repressed, it will quit. The sleep function will be canceled with the stop of the unit. There is no SLEEP function under AUTO and FAN mode. ☾ is the icon for sleep function.

- At COOL, X-FAN mode: the SLEEP mode runs after 1hour, the setting temp. will be increased by 1℃, 2 hour later, setting temp. will be increased by 2℃ and then will run at this setting temperature.

- At HEAT mode: the SLEEP mode runs after 1hour, the setting temp will be decreased by 1℃, 2 hours later setting temp. will be decreased by 2℃, then it will run at setting temperature.

X-FAN

X-FAN button

- Pressing X-FAN button in COOL or DRY mode, the icon "X-FAN" is displayed and the indoor fan will continue operation for 10 minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN and HEAT mode.
 Note: X-FAN is the alternative expression of BLOW for the purpose of understanding.

LIGHT

Light button

- Press this button to select LIGHT on or off in the displayer. When the LIGHT on is set, the icon ☼ will be displayed and the indicator light in the displayer will be on. When the LIGHT off is set, the icon ☼ will be displayed and the indicator light in the displayer will be off.

TEMP

Temp. display button

- After powered on, displaying presetting temperature is defaulted, (According to customer requirements to display, if there are no requirements, the presetting temperature displaying is defaulted, there is no signal display on the remote control). Press this button, (display ⌂), display the presetting temperature; (display 🌡), display indoor ambient temperature, ⌂🌡 will not change current display status. If current display status is indoor ambient temp. when received other remote control sginal, then will display presetting temp., 5s later return to ambient temp. display.
  Other models haven't this function. But pressing this button, the main unit will click and keep the original status.

1.1.1 Guide for operation-general operation

① . Press ON/OFF button to start the unit after poweringthe main unit on.(Note: Power the unit on every time,the big-guide louver and small-guide louver will beclosed firstly.)

② . Press MODE button to select desired running mode.

③ . Press +/ - button to set the desired temperature.(It is unnecessary to set the temperature at AUTO mode)

④ . Press FAN button to set fan speed, the AUTO FAN,LOW, MID or HIGH could be selected.

⑤ . Press ⧆ and 🕸 button to set swing mode.
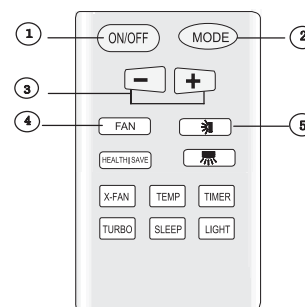
1.1.2 Guide for operation-optional operation

① . Press SLEEP button, set the sleep mode.

② . Press TIMER button, then press +/- button, to set the cheduled timer on or timer off.

③ . Press light button to control displayer light on or off.

④ . Press X-FAN button to set X-FAN function on or off.

⑤ . Press turbo button to set this function on or off.
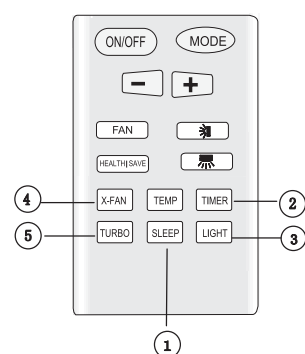
1.1.3 Introduction for special function

● About X-FAN function

This function indicates that moisture on evaporator of indoor unit will be blowed after the unit About X-FAN functionis stopped to avoid mould.

Having set X-FAN function on: After turning off the unit by pressing ON/OFF buttonindoor fan will continue running for about 10 min. at low speed. In this period,   press X-FAN button to stop indoor fan directly.2. Having set X-FAN function off: After turning off the unit by pressing ON/OFF button, the complete unit will be off directly.

● About AUTO RUN

When AUTO RUN mode is selected, the setting temperature will not be displayed on the LCD, the unit will be in accordance with the room temp. automatically to select the suitable running method and to make ambient comfortable.

● About turbo function

If start this function, the unit will run at super-high fan speed to cool or heat quickly so that the ambient temp. approachs the preset temp. as soon as possible.

● About lock

Press +and - buttons simultaneously to lock or unlock the keyboard. If the remote controller is locked, the icon 🔒 will be displayed on it, in which case, press any button, the mark will flicker for three times. If the keyboard is unlocked, the mark will disappear.

● About switch between Fahrenheit and Centigrade

Under status of unit off, press MODE and - buttons simultaneously to switch ºC and ºF.

● About new function of defrosting

It indicates: after starting this function by remote controller and the unit has been under defrost status, If turn off the unit by remote controller, the unit will not stop defrosting until it is finished; if change setting mode by remote controller, the function ,which is set last time, won't be carried out until defrosting finished.

Operation of this function on or off: If remote controller is under off status, press mode button and X-FAN button simultaneously in order to enter or cancel this new function. If the unit is under defrost mode, dual eight position on remote controller will display H1.If switch to heat mode, the position will display H1, which flickers for 5s, in which case, press +/- button, H1 will disappear and setting temp. be displayed.

After remote controller is powered on, the new defrost function will be defaulted to be closed.

3.4 Changing batteries and notices

① . Slightly to press the place with 🔽 along the arrowhead direction to push the back cover of remote control.(As shown in Fig. ①)

② . Take out the old batteries, insert two AAA alkaline cells.(AS shown in Fig ②③ .).

③ . Attach the back cover of remote control.(Fig ④)
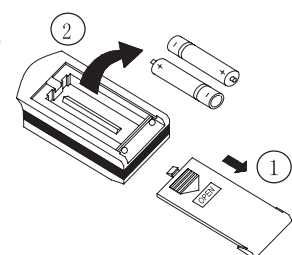
NOTE:

♦ When changing the batteries, do not use the old ordifferent batteries, otherwise, it can cause the malf-unction of the wireless remote control.

♦ If the wireless remote control will not be used for along time, please take them out, and don't let the leakage liquid damage the wireless remote control.

♦ The operation should be in its receiving range.

♦ It should be placed where is 1m away from the TVset or stereo sound sets.

♦ If the remote control cannot operate normally, please take the batteries out, and then reinsert it 30s later; ifit is also abnormal ,please replace the batteries.

♦ If the main unit needs to be remote controlled, please aim remote control at the receiver of main unit in orderto improve the receiving sensitivity of the main unit.When the remote control sends out signal, a mark will flicker for about 1s. The bell will ring if the main unit receives effective signal.

♦ When the remote control sends out signal, a mark 🛜 will flicker for about 1s. The bell will ring if the main unit receives effective signal.
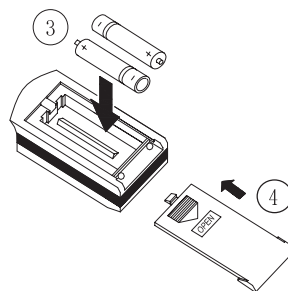
1.2 YB1FA(X-FAN)

Note:

♦ Be sure that there are no obstructions between receiver and remote control; Donot drop or throw the remote control; Don't let any liquid drop into the remote control or leave the remote control under the sunlight or place where is very hot.

♦ This is a general remote control, it could be used for multiple types (functions) of air conditioners. For some models without the functions specified here, we preserve the right to not to inform exclusively.

△ AUTO
※ COOL
⋰ DRY
🍃 FAN
☼ HEAT
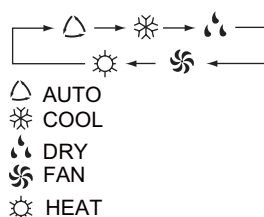
● ON/OFF button

Press ON/OFF button to turn on/off the unit. When the unit is turned off, the Timer, Sleep function will not be retained in memory, but the time will be retained and is still displaying.

● MODE button

Press this button, Auto, Cool, Dry, Fan Heat mode can be selected circularly.

Auto mode is not available in this mode.

● SLEEP button

Press this button to select Sleep On/Sleep Off. If power is on, Sleep Off is default. If the unit is turned off, the Sleep function setting will be not retained in memory. If Sleep function is on, the mark of Sleep will display. In this mode, the time of timer can be adjusted. Under Fan and Auto modes, this function is not available.

● FAN button

Press this button, Auto, Low, Medium, High-speed can be circularly selected. After powered on, Auto fan speed is default. Under Dehumidify mode, Low fan speed is default.

AUTO → ◢ → ◢◖ → ◢◖◗

◢ Low   ◢◖ Medium

◢◖◗ High
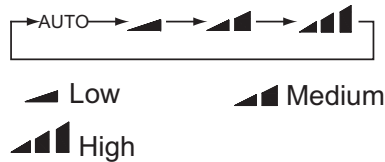
Note: Under the Dry mode, the fan speed isn't adjustable, low fan speed is default.

● CLOCK button

Press Clock button to set the time of clock. When ⊙ blinks and displays, you can set the time by pressing + or - button. If no button is pressed within 10 seconds the remote will revert back to the normal display. Press ⊙ again to accept the setting. If it is set the first time, 12:00 is the initial value. Note: If mark ⊙ displays on the LCD, it means it is the time of clock, if not, it is the time of timer.

● LIGHT button

Press this button to select LIGHT On/Off in the displayer. When the LIGHT On is set,the mark ☿ will be displayed and the indicator light in the displayer will be on. When the LIGHT Off is set, the mark ☿ will disappear and the indicator light will be off.The function is not available for this mode.

● X-FAN button

Press this button to turn on/off the X-FAN function.

The function is not available for this mode.

● - button

Presetting temperature can be decrease the temperature by 1 degree Celsius once. press and hold for more than two seconds so that we can change the temperature continuously. The minimum and maximum setting range of the temperature is 16 to 30 degree Celsius.

● + button

Press this button increase the temperature by 1 degree Celsius once. Press and hold for more than two seconds so that we can change the temperature continuously. The minimum and maximum setting range of the temperature is 16 to 30 degree.

● TEMP button

Press this button to select the display of either indoor setting temperature or indoor ambient temperature. When the indoor unit powered on firstly, setting temperature display is default. Change status to⌂to display the ambient temperature. If received control signal in 5 seconds, the display temp.will revert back to setting temperature. When unit is off, indoor setting temperature display is default. Note: This function is only available for certain models.

● TURBO button

In Cool or Heat mode, press this button to turn on/off the Turbo function.

Note: This is a general remote control, it could be used for multiple types (functions) of air conditioners. For some models without the functions specified here, we preserve the right to not to inform exclusively.

● SWING UP AND DOWN button

Press this button to adjust swing angle, which circularly changes as below:

This is a universal wireless remote controller; however, the unit covered in this manual is only of the simplified SWING function. As a result, when the wireless remote controller is energized initially with the unit under the OFF status, this simplified function should be set by pressing the + button and the SWING button simultaneously, with the symbol ⇶ blinking twice. Then, after the unit is turned on, this function can be activated or deactivated simply by pressing the SWING button, with the displayed symbol ⇶ indicating this function is on and without this displayed symbol indicating this function is off.

● TIMER ON button

Press the TIMER ON button to set the timed On. Press +/- once to increase or decrease the minute by 1 minute. If pressed and held for 2 seconds, the minute will increase or decrease constantly by 1 minute. If held constantly for more than 5 seconds, the minute will begin to change in every 10 minutes. Press TIMER ON again to accept the setting and ON will show besides the time of clock meaning the setting succeeds. Press the

TIMER ON again to cancel the setting.

TIMER OFF button

Press the TIMER OFF button to set the timed off. The procedures are similar as above.

1.2.1 Operation of wireless remote control

1). Guide for operation – General operation

a. Press SLEEP button to set the sleep state.

b. Press TIME ON and TIME OFF button to scheduled the unit ON/OFF.

c. Press LIGHT button to control on and off the indicator board.(This function maybe not available for some units.)

2). Guide for operation-Optional operation

a. After powered on, press ON/OFF button, the unit will start to run.

(Note: When it is powered off , the guide louver of main unit will close automatically.)

b. Press MODE button, select desired running mode ,or press COOL or HEAT mode to enter the corresponding operation directly.

c. Press + or-button to set the desired temperature.

d. Press FAN button to set fan speed from AUTOFAN , LOW , MID and HIGH.

e. Press ⇥▌ button to select SWING mode.

f.Press +and - buttons simultaneously to lock or unlock the wireless remote control. If it is locked, the mark will display; when pressing any button, the mark 🔒 will blink for three times but the air conditioner has no respondence. If unlocked, the mark will disappear.

g. Switch between Fahrenheit and Centigrade.

When unit is under Off state, press MODE and – button simultaneously to switch between ºC and ºF.

1.2.2 Changing batteries and notices.

Slightly to press the place with 🔽OPEN , along the arrowhead direction to push the back cover of wireless remote control. (As show in figure)

Take out the old batteries. (As show in figure.)

Insert two new AAA1.5V dry batteries, and pay attention to the polarity. (As show in figure)

Attach the back cover of wireless remote control. (As show in figure)

NOTE:

♦ The design of this unit conforms to the requirements of ISO5151 standard.

♦ The air volume is measured at the 0Pa external static pressure.

♦ Cooling (heating) capacity stated above is measured under nominal working conditions corresponding to 0Pa external static pressure. The parameters are subject to change with the improvement of products, in which case the values on the nameplate will prevail.
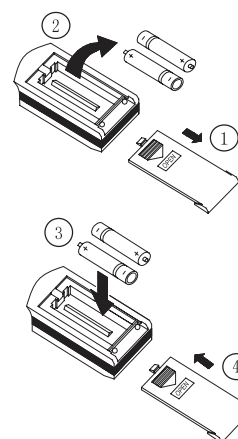
Sketch map for changing batteries

2. WIRED REMOTE CONTROLLER
2.1 Introduction to Z5K351(optional)

NOTE: Never install the wired remote controller in a place where there is water leakage.
Avoid bumping, throwing, tossing or frequently opening the wired remote controller.
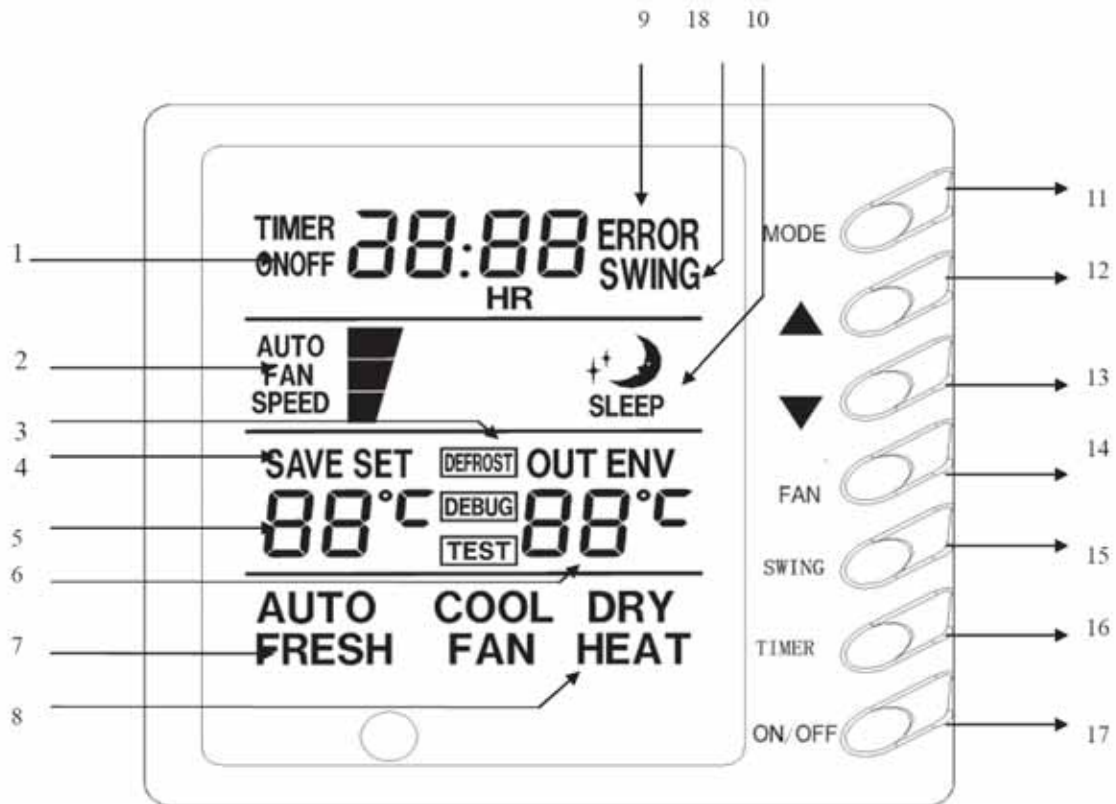
1	Time display	10	Sleep display
2	Fan speed display(Auto, High, Middle, Low)	11	MODE button
3	Defrosting display	12	Button for temp. increase
4	Saving state display	13	Button for temp. decrease
5	Set temp. display	14	FAN button
6	Ambient temp. display	15	SWING button
7	Fresh air display	16	TIMER button
8	Mode(COOL, DRY, FAN, AUTO)	17	ON/OFF button
9	Malfunction display	18	Display of Swing state

2.2 Introduction to Z4E351B (optional)
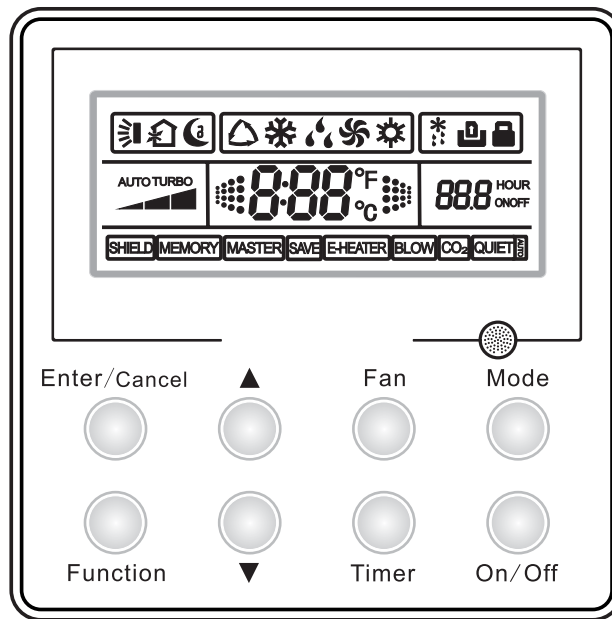
2.2.1 Symbols on the LCD
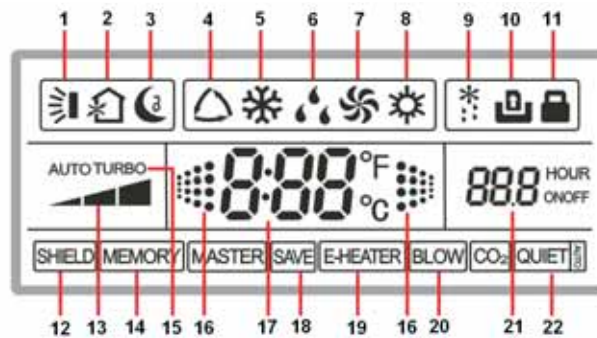
Introduction to the Symbols on the LCD.

No.	Symbol	Function Description
1		It indicates the swing function.
2		It indicates the function of air exchange. (It is unavailable for this wired controller.)
3		It indicates the sleeping status.
4		It indicates each running mode of the indoor unit (AUTO mode). (It is unavailable for this wired controller.)
5		It indicates the " **Cool** " mode.
6		It indicates the " **Dry** " mode.
7		It indicates the " **Fan** " mode.
8		It indicates the " **Heat** " mode.
9		It indicates the defrosting mode. (It is unavailable for this wired controller.)
10		It indicates the gate control status.
11		It indicates the locking status.
12	SHIELD	It indicates the shield status. (It appears when all functions, or the function "**On/Off** ", " **Temp** ", " **Mode** ", or " **Save** " is shielded through the Long-distance monitoring System.)
13		It indicates the current fan speed.

14	MEMORY	It indicates the memory function is activated, that is, the unit will back to the previous set status after powered on again.
15	TURBO	It indicates the turbo status.
16	⠿⠿⠿	It flashes animatedly when the unit is started and the ambient temperature is displayed.
17	8:88℉℃	It indicates the ambient temperature/set temperature.
18	SAVE	It indicates the energy saving status.
19	E-HEATER	It indicates that the auxiliary electric heater can be activated.
20	BLOW	It indicates the blow function is activated.
21	88.8 HOUR ON/OFF	It indicates the timer status.
22	QUIET	It indicates the quiet operation status. (including two statuses, " **Quiet** " and " **Auto Quiet** ".)
Note: Symbols " MASTER " and " CO$_2$" will not displayed on the LCD of the wired controlled XK26.		

2.2.2 Introduction to the Functions of the Press Keys
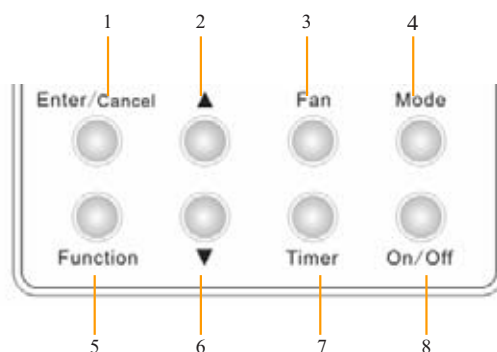
Introduction to the Functions of the Press Keys.

| No.	Press Bottoms	Function Description
1	Enter/Cancel	It is used to select the desired function or cancel the selected function.
2	▲	(1) It is used to adjust the running temperature of the indoor unit among16~30℃ . (2) It is used to adjust the temperature under the energy saving condition among16~30℃ . (3) It is used to adjust the timer among 0.5~24 hours.
6	▼	(4) It is used to switch between the modes of " **Quiet** " and "**Auto Quiet** ".
3	Fan	There are four fan speed options, High, Medium, Low and Auto.
4	Mode	(1) It is used to set the mode of " **Cool** "," **Dry** ", " **Fan** ", and " **Hea**t ". (2) When the "**Save**" function is being set, it is used to switch between the mode options of " **Heat** " and " **Cool** ". (3) When the " **Timer** " is being set, it is used to switch between the options of "**Unit On**" and "**Unit Off**".
5	Function	It is used to switch the functions of "**Swing**", "**Sleep**", "**Turbo**", "**Save**", "**E-Heater**", "**Blow**", "**Quiet**", etc.
7	Timer	It is used to set the timer.
8	On/Off	It is used to start/stop the indoor unit.
4 +2	Mode +▲ (MEMORY)	Under the " **Off** " status of the unit, press "**Mode**" and "▲" simultaneously for five seconds to activate or deactivate the "**MEMORY**" function. (once this function is activated, the unit with power failure will resume the previous set status after powered on again; otherwise it will go to the "**Off** " status.)
2 +6	▲+▼ (LOCK)	Press "▲" and "▼" simultaneously for five seconds to go to the lock status, in which case the press on any other key will get no response. And another press on "▲" and "▼" for five seconds will quit this status.
5+ 7	Function +Timer (Ambient Temperature Sensor; Anti Cold/ Hot Air)	Under the "**Off** " status of the unit, press " **Function** " and " **Timer** " simultaneously for five seconds to call out the debugging menu, after that press " **Mode** " to select the desired submenu and press "▲"/"▼" to set the parameter, finally press " **Enter/Cancel** " to save the setting and quit the setting status.
4 +6	Mode +▼	Under the "**Off** " status of the unit, press " **Mode** " and "▼"simultaneously for five seconds to switch the Celsius scale and Fahrenheit scale.

INSTALLTION
1. SELECTION THE MOUNTING POSITION

Especially, the installation place is very important for the fan coil unit because it is very difficult to move from placc aftr the first installation.

Decide the mounting position together with the customer as follows:

The discharge direction can be selected as shown below.

(4 directions)	(3 directions)	(2 directions)	(2 directions)
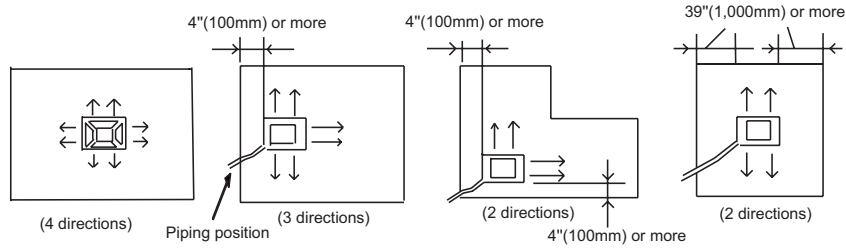
Since 2 -way outlet causes performance problems, do not set it .
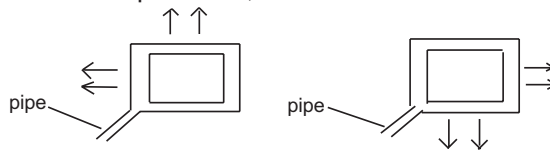
Install the indoor unit on a place having a sufficient strength so that it with stands against the weight of the indoor unit.

The inlet and outlet ports should not be obstructed; the air should be able to blow all over the room.

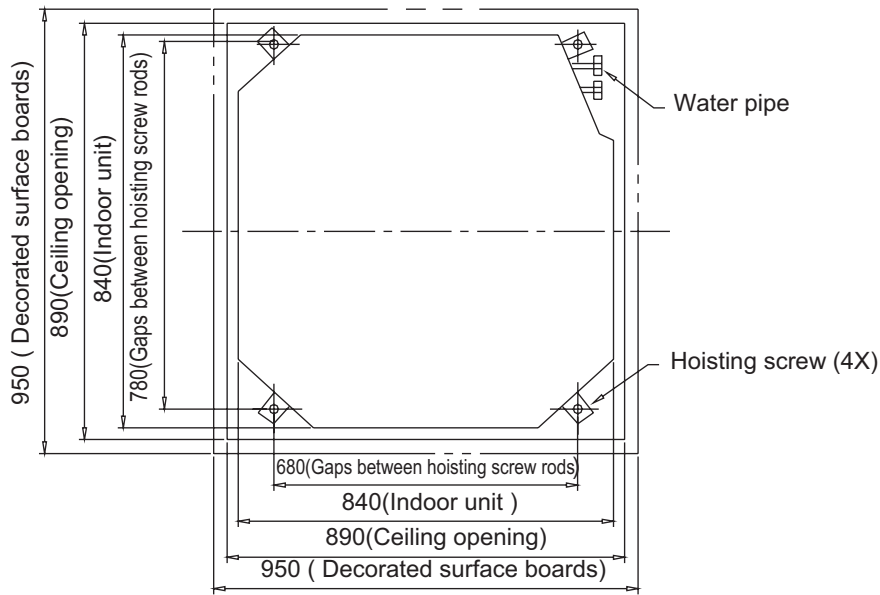Leave the space required to service the air conditioner.

The ceiling rear height is 9-3/8 " inches(250mm) or more.

A place from where the air can be distributed evenly throughout the room by the unit.

A place from where drainage can be extracted outdoor easily.
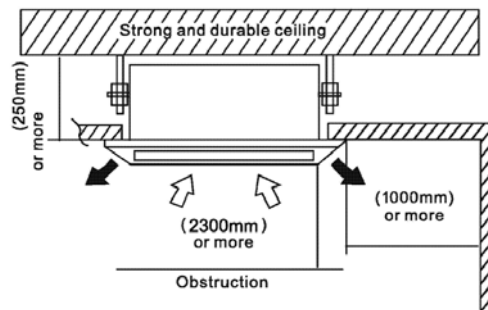
1.1Ceiling opening and suspension bolt (M I0) pitch flemension

950 (Decorated surface boards)
890(Ceiling opening)
840(Indoor unit)
780(Gaps between hoisting screw rods)

Water pipe

Hoisting screw (4X)

680(Gaps between hoisting screw rods)
840(Indoor unit)
890(Ceiling opening)
950 (Decorated surface boards)

Be suitable for:
SF-08C, SF-12C, SF-16C

2. DRAINAGE PIPE

The diameter of the drain pipe should be greater than of equal to the diameter of the connecting pipe [vinyl tube, pipe size: Outer diameter 25mm (outer dimension)].
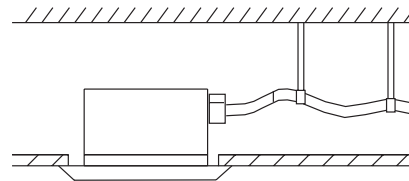
Keep the drainage pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming.

If the drainage hose cannot be sufficiently set on, add a drainage raising pipe.

To keep the drainage hose from sagging, keep space between hanging hooks at 1~1.5m.

1-1.5m
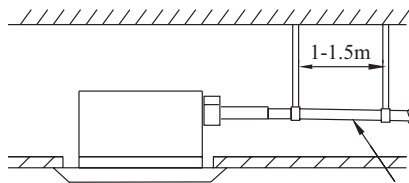
(Correct) 1/100 or more gradient

✕(Wrong)

Use the drain hose and clamp attached. Insert the drain hose to the drain vent, and then tighten the clamp.
Entwine the big sponge on the clamp of drain hose to insulate heat.
Heat insulation should be done to indoor drain hose.

Clamp

Sponge (gray)

Drain hose

Sponge(attachment)

Clamp(attachment)

Below 4mm
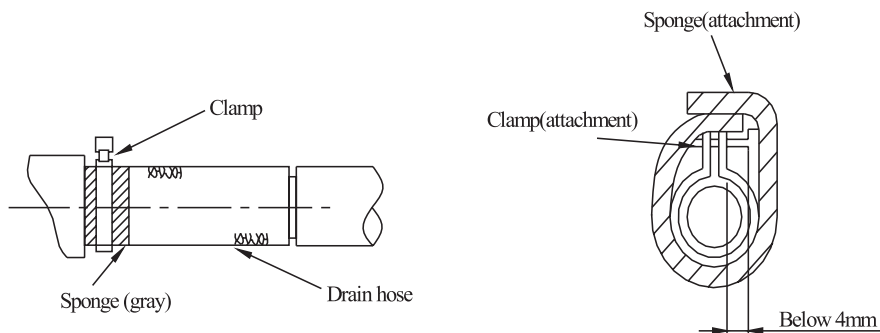
3. PRECAUTIONS FOR DRAINAGE RAISING PIPE

The install height of the drain raising pipe should less than 280mm.

The drain raising pipe should form a upright angle with the unit, and distance to unit should not beyond 300mm.

3.1 Instruction

♦ The slant gradient of the attached drain hose should be within 75mm so that the drain hole doesn't has to endure the unnecessary outside force.
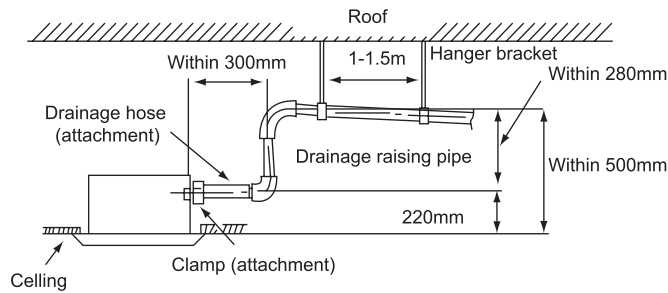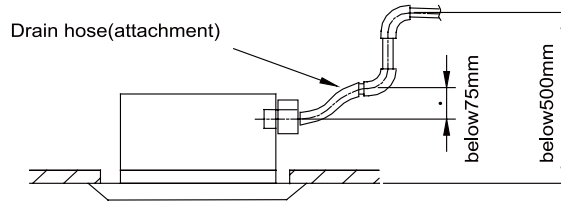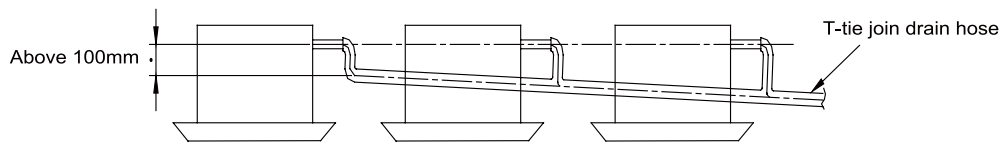
♦ Please install the drain hose according to the following process if several drain hoses join together.

The specs of the selected join drain hose should fits the running capacity of the unit

♦ The installation of the motorized valve should be done according as .Firstly connect one end of the tube joint with the water inlet tube of the unit, then connect the other end with the motorized valve, and lastly connect the motorized valve with the flare nut . During the installation, both the torque wrench and the spanner should be used and the moment of torque should be within 90 N.m. Besides, a secure connection should be guaranteed.
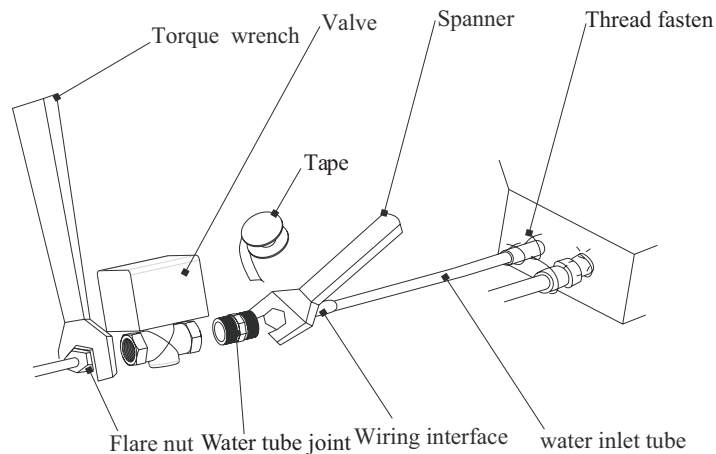
♦ Both the tube joint and the motorized valve are G3/4" threaded. Prior to the connection, it is recommended to wrap the tacky tape on the thread for two or three cycles for better sealing effects .

♦ After the tube joint, motorized valve, water inlet tube, water outlet tube are connected reliably, start the water pump of the outdoor unit to check if they leak or not.

♦ What should be done lastly is wrapping sponge around the motorized valve and the tube for heat insulation.

Body Vavle Intlet tube
HL-G3-3/4S Outlet tube
Powerr cord
(connecteddr with rther unit)

N — — N ⏚ PE
L — — L
WATER VALVE — — YV
— — YV

Pipe sleeve
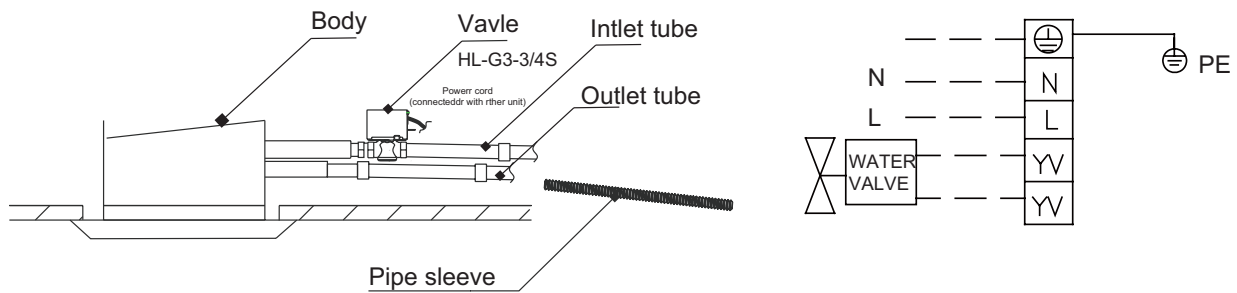
♦ Check the smoothness of drain after installation.
♦ Check the drain state by imitating 600cc water slowly from the outlet vent or test hole.
♦ Check the drain in the state of refrigerating after installation of the electric circuit.

Drain hose
Test hole cover
[Way of immiting]
Drain vent for repair use (plastic stopper is included) (drain the water in waterspout by this outlet vent)
Test hole
Above 100mm
< Immiting water from the rest hole>
Plastic water pot (The length of the pipe should be about 100mm.)
<Immiting water from the outlet vent terminal>
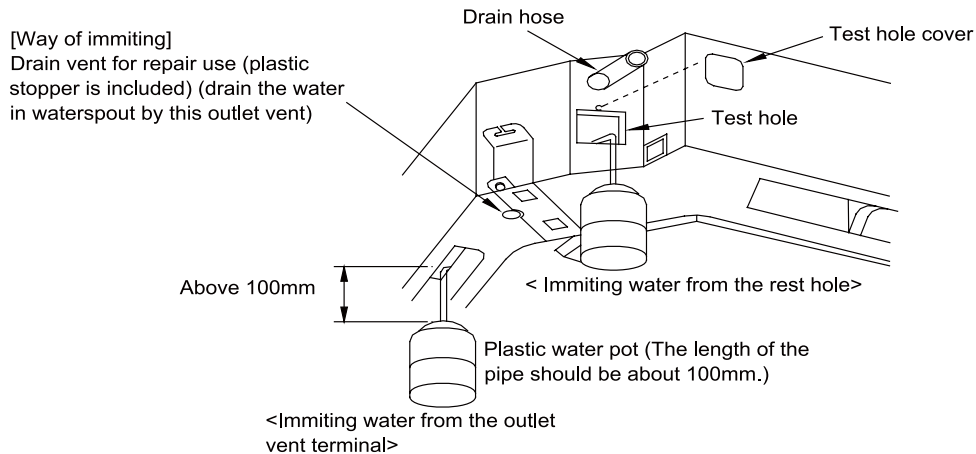
Warning: Before obtaining access to terminals, all supply circuits must be disconnected.

4. ELECTRIC WIRING

1. All field supplied parts and materials must conform to local laws and regulations.
2. For electric wiring, refer to WIRING DIAGRAM attached to the unit body.
3. All wiring must be performed by a skilled technician.
4. A circuit breaker capable of shutting down power supply to the entire system and which have at least mm contact separation in each jole must be installed in the fixed wiring.
5. Earth properly.
6. Wiring must conform to national laws and regulations.
7. The fixed wiring must be installed with a protector with no more that 30 mA leakage current.
8. If the supply cord is damaged, it must be replaced by the manufactory or its service agents or a similarity qualified person in order to avoid a hazard.

4.1 Wiring of unit and the controller

4.1.1 Wiring of the indoor unit

Remove the control box lid, pull the wires inside through rubber bush and wiring according to the WIRING DIAGRAM, then tighten it with clamp.

Wiring of the controller
♦ Remove the control box lid, pull wires inside through rubber bush and connect to the controller.
♦ Wrap the wire with sealing pad.
♦ After wiring, tighten it with clamp and fix the control box lid.
♦ Heating and cooling: connect the rubber wire (5-cords) to the power supply terminal board in properly.
♦ Cooling: connect the rubber wire (3-cords) to the power supply terminal board properly.

Power supply
terminal board

Clamp

Clamp

Rubber ring II

Electric box cover (2)

Seal here to avoid leakage

Electric box
cover (1)

Rubber ring I
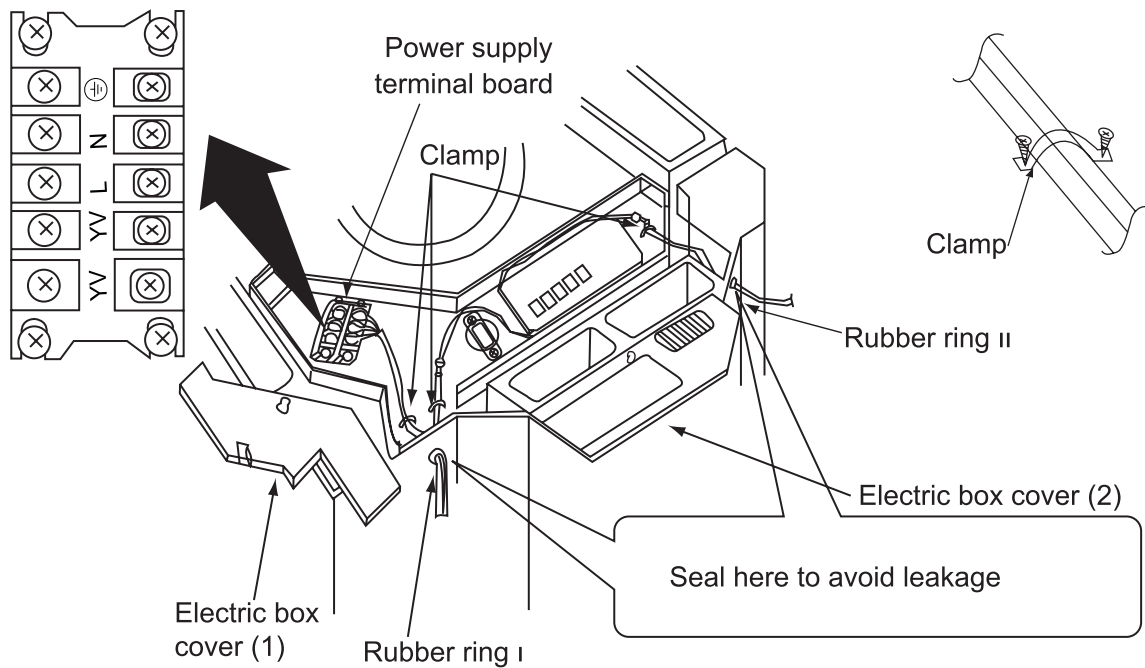
Precautions: Be sure to connect the indoor unit and outdoor unit at right poles.

5. INSTALLATION OF PANEL

Set the panel to the indoor unit body by matching the position of the swing flap motor of the decoration panel to the piping position of the indoor unit as shown as below.

Install the decoration panel.

1. Hang the latch, which is located on the opposite side of the swing flap motor on the panel, temporarily to the hook of the indoor unit. (2 Positions)

2. Temporarily hang the remaining 2 latches to the hooks on the sides of the indoor unit.(be careful not to let the swing motor lead wire get caught in the sealing material.)

3. Screw all 4 hexagon head screws located right beneath the latches in approximately 15mm.(panel will rise)

4. Adjust the panel by turning it to the arrowed direction in Fig.4 so that the ceiling opening is completely covered.

5. Tighten the screws until the thickness of the sealing material between the panel and the indoor unit.

6. Body is reduced to 5~8 mm.

Hook
Latch
Piping position
Swing flap motor

Indoor unit
Ceiling
Sealing material
5~8mm
Air outlet
Panel
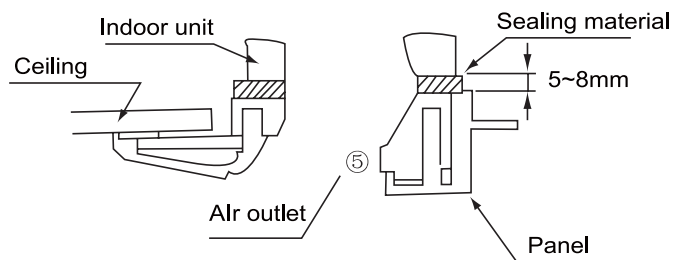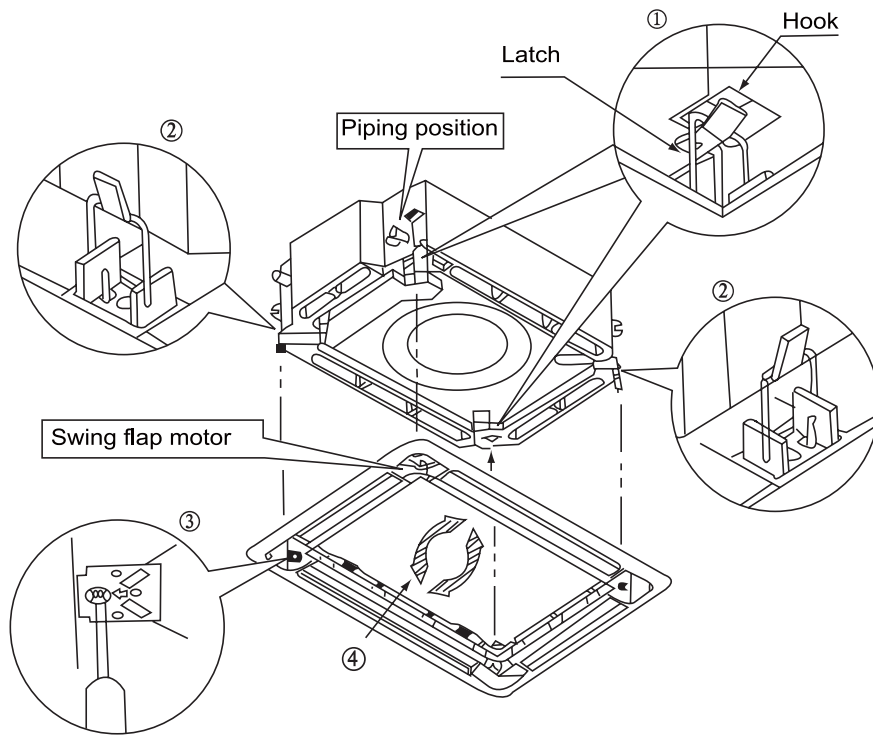
5.1 Precautions

Improper screwing of the screws may cause the troubles.

Air leak
Air leak from ceiling
Contamination dew condensation, dew dripping
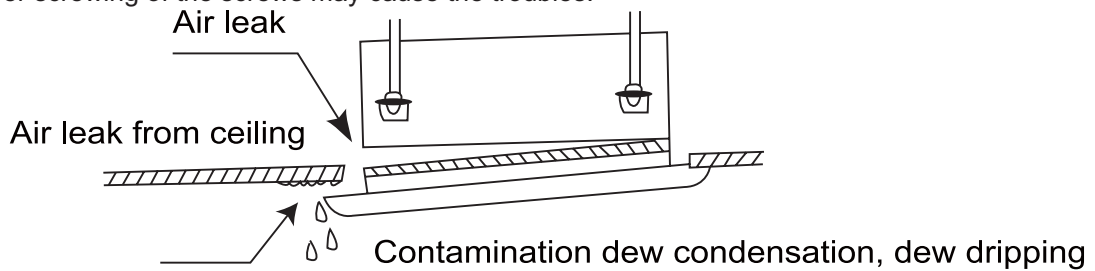
If gap is still left between the ceiling and the panel after screwing the screws, readjust the height of the indoor unit body.

No gap is allowed

Adjustment of the indoor unit body from the holes in the corner of the panel is possible if the indoor unit is kept leveled and the drainage pipe piping etc unaffected.
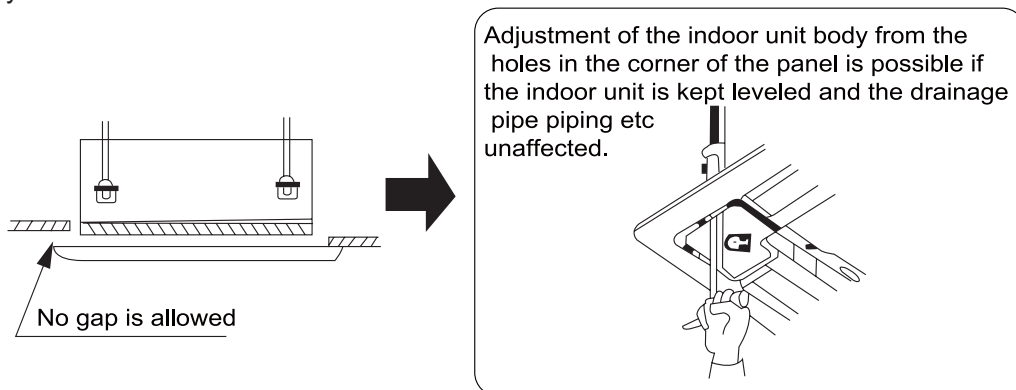
5.2 After fixing be sure no gap left between the ceiling and the panel

Wiring of the decoration panel.
Connect the joints for swing flap motor lead wire (at 2 places) installed on the panel.
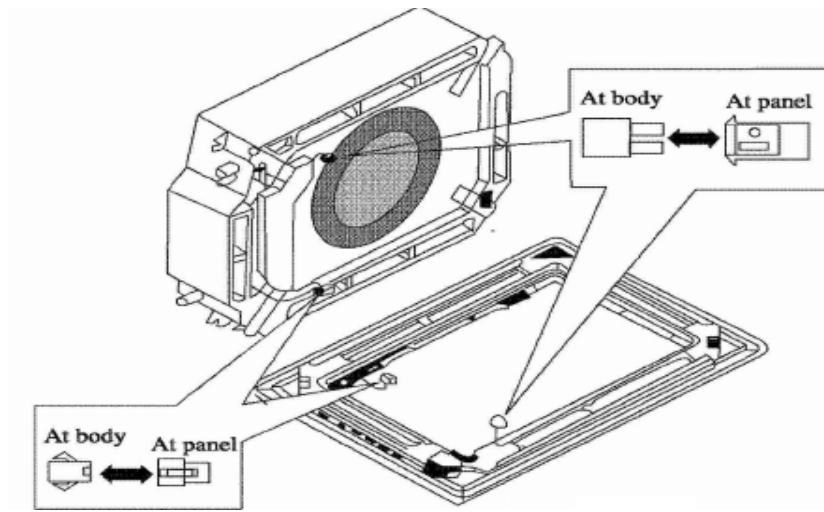
MAINTENANCE
1.TROUBLESHOOTING

Panel TB03 displaying the error code :

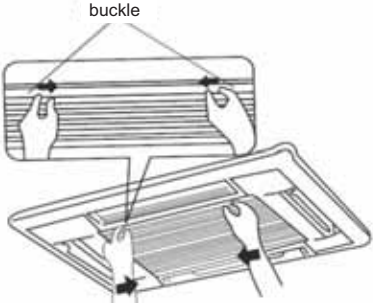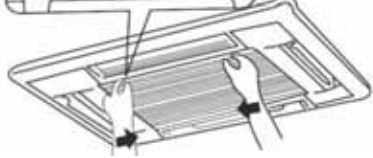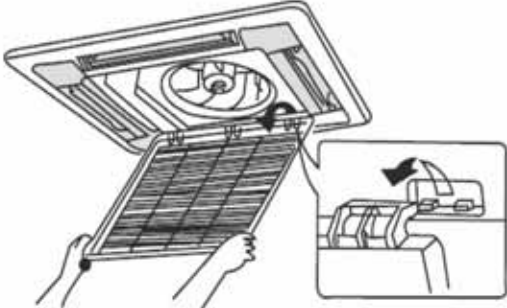| Error code	Error
E0	Water pump error
E6	Communications error
F0	Indoor temperature sensor error at the return air inlet
F1	Evaporator temp. sensor error
F5	Indoor temperature sensor error at the wire controller
E9	Full water protection
FE	Entering cooling temp. sensor error of the evaporator

2.CARE AND MAINTENANCE
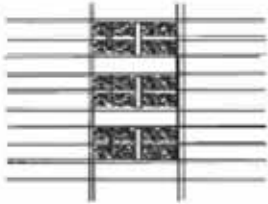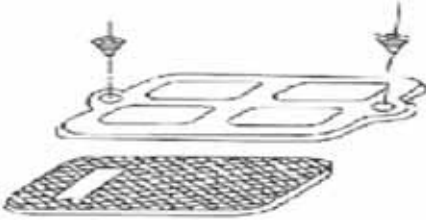
Please pull out the power plug after you used the air condition.

Warning:

1. Pull out the power plug before cleaning.
2. Do not splash water directly.

How to clean the air filter	
1. Open the suction grille. 2. Slide both knobs simultaneously as shown and then pull them downward slowly.	buckle
1. Remove the air filters. 2. Slide knobs on the back of the suction grille out ward and remove the air filter. 3. Then remove three air cleaners on it.	
● Clean the filter Use vacuum or wash the air filter with water when the air filter is very dirty, use neutral detergent and water. Let the filter dry naturally at shady place. **Note:** 1. Do not clean with hot water. 2. Do not dry over fire. 3. Do not run the air condition without the air filter. 4. The suction grille must be opened by skilled personnel.	
● Fix the air filters 1. Fix three air-cleaner on the air filter and then fix the air filter to the suction grille by hanging it to the projected portion above suction grille. 2. Set air filter by sliding the knob on the back of the suction grille inward.	
Shut the suction grille.	Refer to step.1

How to clean to the suction grille	
1. Open the suction grille	See step 1 of "How to clean the air filter".
2. Remove the air filters	See step 2 of "How to clean the air filter".
3. Remove the suction grille Open the suction grille at 45°and then lift.	
4. Wash with water. When the suction grille is very dirty, use soft brush and neutral detergent. Shake water and dry in a shady place.	
5. Fix the suction grille.	Refer to step 3.
6. Fix air filter.	See step 4 of "How to clean the air filter".
7. Close the suction grille.	Refer to step 1.

Changing air cleaner	
1. Open the suction grille	See step 1 of "How to clean the air filter"
2.Remove the air cleaner Remove the air filter and remove the air cleaner after unscrewing.	
3. Take off packing bag and put in new static electricity fiber filter, then fix them on the air filter.	
4. Fix the air filter	See step 4 of "How to clean the air filter"
Air cleaner functions and service cycle time.	
Absorbs bad smell in air such as carbon monoxide carbon dioxide, benzyl, gasoline and so on. Absorbs harmful objects bigger than 1.0 um in air such as dust, germ, virus and so on. It can be used for about half a year to one year.	

How to clean the air outer and case.
● Clean with soft cloth or use water and neutral detergent.
● Do not use gasoline, benzene, thinner, polishing powder, liquid insecticide, which may cause discoloring or warping.
● If the air flow flap is very dirty, you may remove it to clean as shown below.

Detach and fix the flap.	
1. Detach the flap Loosen the screws on the sides of the flap clean with soft cloth.	
2. Fix the flap Set the ribs on the sides of the air outlet to the slit of the flap and then screw together to fix the flap.	
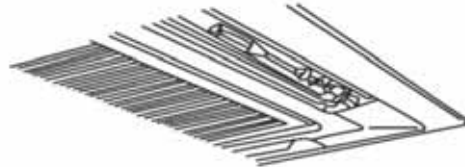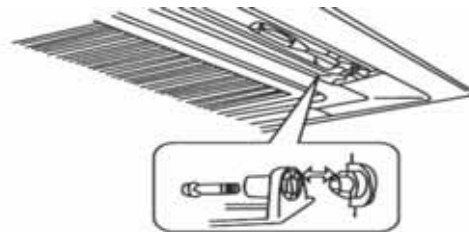
Before starting the air conditioner for the first time in the season.	
1. Check to make sure no objects obstructing the intake and outlets parts on both the indoor and outdoor units. 2. Check to make sure ground wire is connected and that is not damaged. 3.Check to make sure air filter has been cleaned. 4. Turn on the power 6 hours before starting the air conditioner.	
End of season cleaning	
1. Clean the filter and the body of the unit. 2. Turn off power. 3. Clear outdoor of dust. 4. If there is any rust in the outdoor unit, this should be painted over to prevent the rust from spreading.	
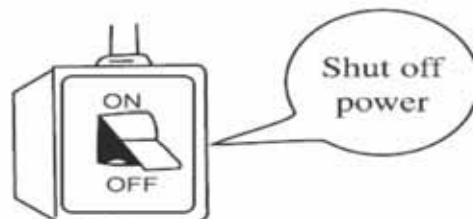
3. WIRING DIAGRAM

SF-08C, SF-12C, SF-16C

POWER:

WATER
VALVE

XT W9

FUT 10A 77℃

BU KM RD EH1 RD FUT1 98℃ WH
W8 BK EH2 BK FUT2 98℃
W7 LIMIT KM W15
SWITCH A1 A2

SA2

Evaporator W10

X2 W6 SA1
W13 W14 LIQUID
CN11 X5(HEAT) CN1 SWITCH

X8 X2 X1 X4 RT2 PIPE TEMP
X6 AC-N AC-N AC-L CN8 SENSOR

Manual Panel CN4 RT1 ROOM TEMP
CN6 SENSOR

CN15 X201
COMMUNICATION CORD
CN5 CN2 AP2

CN14 CN16 CN13 CN7 CN3 X7 X3
3 5 7 1 W12 W11
X1
BK YE BU RD RD WH
YE/GN SAT Attention:The Manal Panel
E M1 C WH WH M2 M3 is the optional accessory
WH WH 1 2 WH
FANM OTOR Temperature limiter PUMP MOTOR POWER TRANSFORMER

AP1

4. DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

Model;SF-08C, SF-12C, SF-16C

Disassembly Procedures of Indoor Unit (Panel T01)		
Remark: Make sure that the unit is stopped running and power supply is cut off before removal of the motor.		
Process	Pictorial View	Handling Description
1.Disassemble the grille of the front panel	Left buckle Right buckle	Push the left and right buckles on the grille of the front panel toward the center and meanwhile pull it upward until it forms a 45℃ angle, after that pull the grille backward.
2. Disassemble the front panel.	Electric Box Cover I Electric Box Cover II Six-Core Plug Cover Screw	Disconnect the power cord of the fan motor and the plug of the limit switch. Open the cover II of the electric box and disconnect the six-cord plug, then remove covers on four corners away, after that, loosen the screws to the right position and turn the front panel counter clockwise and lastly pull it out upward.
3. Disassemble the drain pan.	Screw Electrical Box Cover	Loosen the screws on the cover I of the electrical box and then open the cover.
4.Disassemble the electrical box	Screw	Loosen two screws fixing the electric box and then disconnect each wiring terminals, after that take the electric box out upward.

5.Disassemble the flow-guide loop	Flow-Guide Loop Screw	Loosen the screws fixing the flow-guide loop and then turn it counter clockwise.
6.Disassemble the drain pan	Screw	Loose the screws on the drain pan and take it out upward.
7.Disassemble the fan blade	Nut with Washer Fan Blade	Loosen the screws on the fan blade and then take it out upward.

8. Disassemble the evaporator	Screw Mounting Plate — — Baffle Screw Connection Board Clamp Screw Fixed Mount Evaporator	Loosen the screws on the mounting plate and take it out. Loosen the screws on the baffle of the pipe outlet, and then press it downward to pull out the buckles on both side, after that, take the baffle away. Loosen the screws and clamps on the connection board of the evaporator, disconnect the earth lead, and then take the power cord of the motor, electric heater and earth lead out through the wire-cross hole, after that loosen the screws on the fixed mount and remove it away, finally take the evaporator out upward.
9. Disassemble the motor	Motor Retaining Plate Screw	Loosen the screws on the retaining plate and the screw bolts on the motor, after that, take the motor out.
10. Disassemble the water pump and the drain pipe	Screw Drain Pipe Screw	Loosen four screws fixing the water pump, disconnect the water pipe of the pump, take the mounting bracket away, then loosen these two screws fixing the water pipe, after that, take the water pipe away.

5. EXPLODED VIEWS AND SPARE PART LISTS

Model: SF-08C, SF-12C, SF-16C
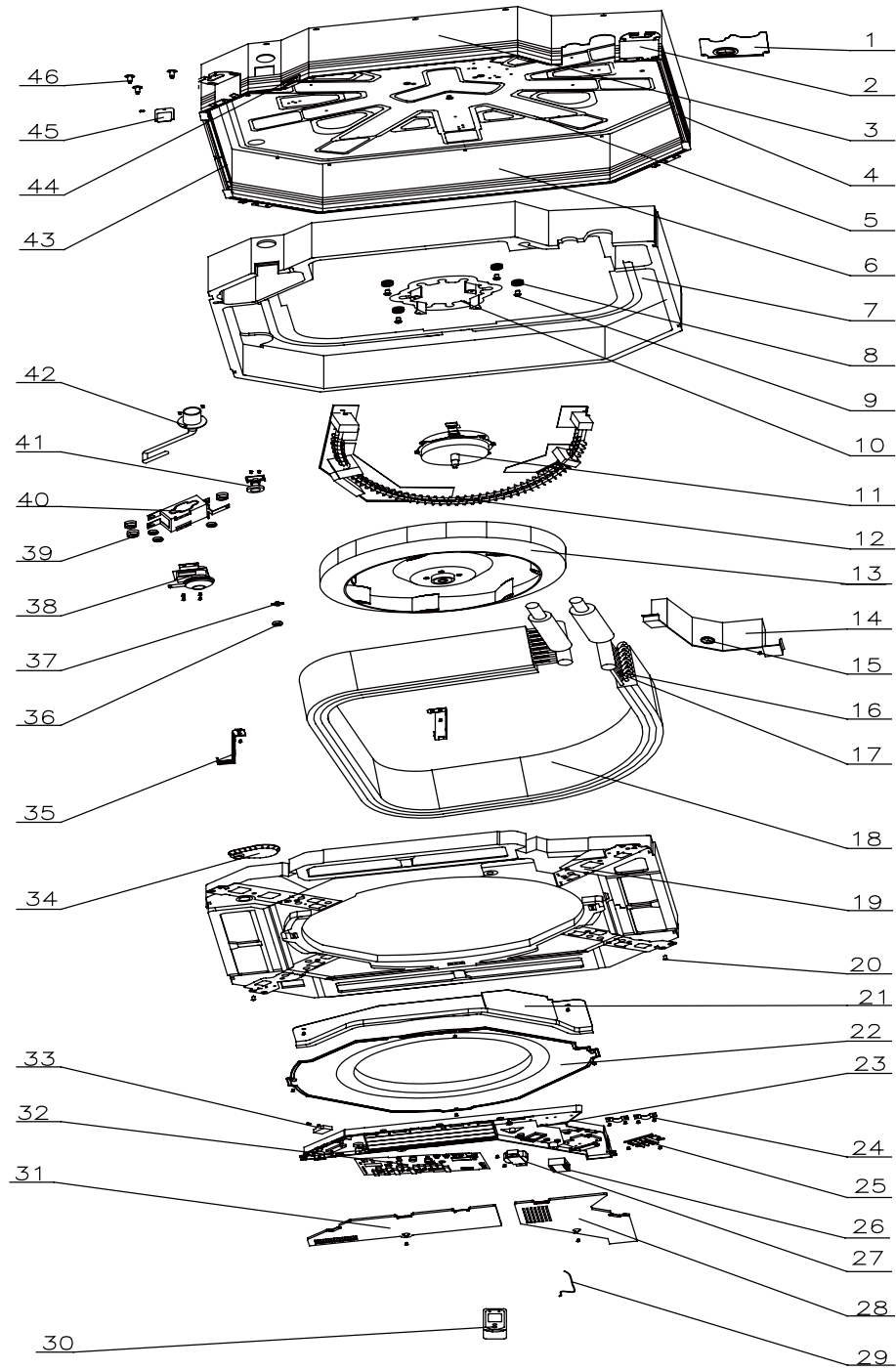
NO.	Discription	SF-08C	SF-12C	Quantity
	Name of Parts	Part Code	Part Code	
1	Tube Exit plate	02217102	02217102	1
2	Body Fixing Plate	01332701	01332701	4
3	Front Side Plate	01302718	01302718	1
4	Left Side Plate	01302715	01302715	1
5	Base Plate	01222701	01222701	1
6	Rear Side Plate	01302714	01302714	1
7	Bottom Foam	52012722	52012722	1
8	Motor Gasket	76712711	76712711	4
9	Bolt M6	70212711	70212711	4
10	Motor Support	01702701	01702701	1
11	Motor	15012703	15012703	1
12	Electric Heater	32002701	32002701	1
13	Centrifugal Fan	10312705	10312705	1
14	Evaporator Linkage	01074042	01074042	1
15	Cable-cross Loop	76512701	76512701	1
16	Tube sensor	3900012125	3900012125	1
17	sensor insert B	42020063	42020063	1
18	Heat exchanger	01127104	01127104	1
19	Water Tray Assy	20182701	20182701	1
20	Rubber Stem	76712701	76712701	1
21	Electric Base Plate	01412722	01412721	1
22	Flow-guide Loop	10372701	10372701	1
23	Electric Box	20102701	20102701	1
24	Wire Clamp	71010102	71010102	4
25	Terminal Board	42011142	42011142	1
26	relay	44010206	44010206	1
27	Transformer	43110170	43110170	1
28	Electric Box Cover I	20102702	20102702	1
29	Room sensor	39000110	39000110	1
30	Remote Controller	30512506	30512506	1
31	Electric Box Cover II	20102703	20102703	1
32	Main	30225904	30225904	1
33	Capacitor	33010026	33010010	1
34	Drainage Plastic	06122702	06122702	1
35	Evap Support	01072703	01072703	1
36	Nut with Washer M6	70310012	70310012	1
37	Fan Fixer	10312701	10312701	1
38	Water Pump	43130324	43130324	1
39	Pump Gasket	76712702	76712702	3
40	Pump Support	01332702	01332702	1
41	Water Level Switch	45010201	45010201	1
42	Pump Drainpipe	05230026	05230026	1
43	Right Side Plate	01302716	01302716	1
44	Cable-cross Block	76512702	76512702	1
45	Pump Cover Plate	01252713	01252713	1
46	Bolt	70212701	70212701	3

NO.	Discription	SF-16C EM52000080	Quantity
	Name of Parts	Part Code	
1	Tube-exit Plate	02217102	1
2	Body Fixing Plate	01332701	4
3	Front Side Plate	01302713	1
4	Left Side Plate	01302711	1
5	Base Plate	01222732	1
6	Rear Side Plate	01302709	1
7	Bottom Foam	52012721	1
8	Motor Gasket	76712711	4
9	Bolt	70210012	4
10	Motor Support	01702701	1
11	Motor FN50T	15012710	1
12	Electric Heater	32002701	1
13	Centrifugal Fan	10310101	1
14	Evap Connection	01072735	1
15	Cable-cross Loop	76515202	1
16	Tube sensor	3900012125	1
17	sensor insert B	42020063	1
18	Heat exchanger	01187104	1
19	Water Tray	20182701	1
20	Screw	70140032	4
21	Electric Plate	01412721	1
22	Flow-guide Loop	10372722	1
23	Electric Box	20102701	1
24	Wire Clamp	71010103	3
25	Terminal Board	42011142	1
26	relay	44010206	1
27	Transformer	43110170	1
28	Electric Box Cover I	20102702	1
29	Room sensor	39000110	1
30	Remote Controller	30505004	1
31	Electric Box Cover II	20102703	1
32	Main	30225904	1
33	Capacitor	33010013	1
34	Drainage Plastic	06122702	1
35	Evap Support	01072705	2
36	Nut with Washer	70310012	1
37	Fixer	10312701	1
38	Water Pump	43130324	1
39	Pump Gasket	76712702	3
40	Pump Support	01332721	1
41	Water Level Switch	45010201	1
42	Pump Drainpipe	05230026	1
43	Right Side Plate	01302712	1
44	Cable-cross Block	76512702	1
45	Pump Cover Board	01252713	1
46	Bolt	70212701	3