Introduction 2

Part 1 General Information. 3

Part 2 Indoor Units. 8

Part 3 Installation 54

Part 4 Controller. 81

Introduction

Fan coil unit is a kind of compound device which assemble fan and surface-type coil heating-exchanger together. Fan coil with fresh air supply system is a main type of center air-conditioner system, so it is an important component of AC devices. Fan coil has horizontal type, vertical type, etc. A cooling (heating) supply system usually consists of fan coil terminals and chilled water system (heated water system).

C&H commercial AC fan coil is designed and manufactured on the base of advanced technology, and utilize qualified galvanized iron as material. Due to its supper-thin design, it has such advantages: beautiful outlook, space saving, easy installation, etc. And the most obvious advantage is that it can decrease the outlet air Temp-difference as low as possible to make room more comfortable, as well as don't decrease cooling capacity output. For the large air flow volume design, it can increase room ventilation frequency, supply more flesh air, and balance room temperature distribution. Benefiting from adoption of advanced material and technology, it can effectively decrease the running noise and keep running smoothly. With the advantages above, it can be widely applied in market, hospital, office building, hotel airport, etc.

Part 1
General Information

Product Schedule 4

External Appearance 5

Nomenclature 6

Features 7

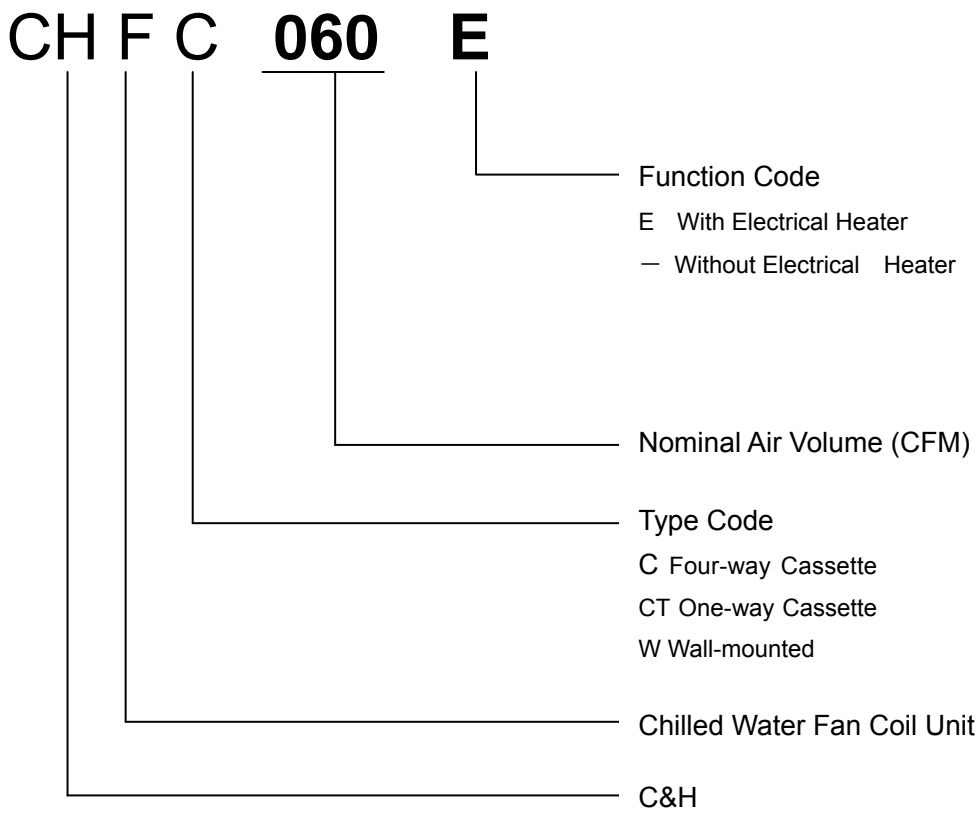
Product Schedule

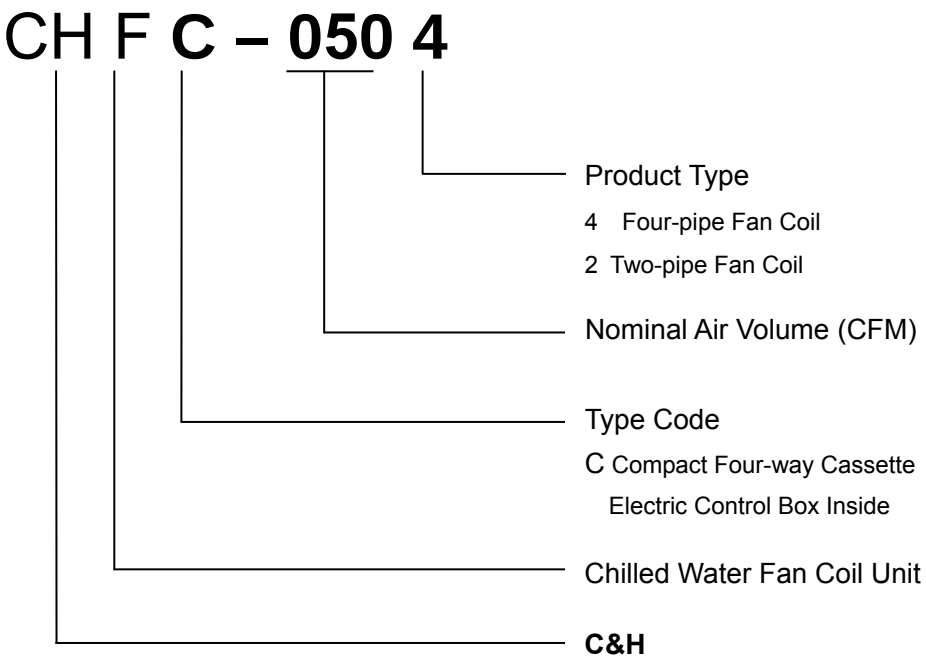
No	Type	Auxiliary Electrical Heater	Model	Power source
1	Compact Four-way Cassette Type	Without	CH-FC030K2	220-240V~,1Ph, 50Hz
2			CH-FC040K2	
3			CH-FC050K2	
4			CH-FC030K4	
5			CH-FC040K4	
6			CH-FC050K4	
7	Four-way Cassette Type	Without	CH-FC060K2	
8			CH-FC075K2	
9			CH-FC085K2	
10			CH-FC100K2	
11			CH-FC120K2	
			CH-FC150K2	
12		With	CH-FC060K2E	
13			CH-FC075K2E	
14			CH-FC085K2E	
15			CH-FC100K2E	
16			CH-FC120K2E	
17	One-way Cassette Type	Without	CH-FCT030K2	
18			CH-FCT040K2	
19		With	CH-FCT030K2E	
20			CH-FCT040K2E	

External Appearance

Four-way Cassette Type	Compact Four-way Cassette Type(2-pipe)
	
Compact Four-way Cassette Type(4-pipe)	**One way Cassette Type**
	

Nomenclature





Features

- ✧ Chilled water/Hot water (2 pipes)
- ✧ Low height for easy installation
- ✧ Low noise fan direct driven by single phase, 3 speed permanent split capacitor motor.
- ✧ Copper tube/aluminum fin coils
- ✧ Hydrophilic aluminum fin coils coated (optional)
- ✧ Unit constructed by electrostatic galvanized sheet, providing maximum protection against corrosion
- ✧ Heavy gauge zinc coated steel drainage pan with good insulation processing, avoiding sweating and corrosion

Part 2
Indoor Units

Four-way Cassette Type. 9

Compact Four-way Cassette Type 25

One-way Cassette Type. 40

Four-way Cassette Type

Features 10

Specification. 12

Dimensions. 14

Service Spaces. 15

Wiring Diagram. 16

Capacity Tables 18

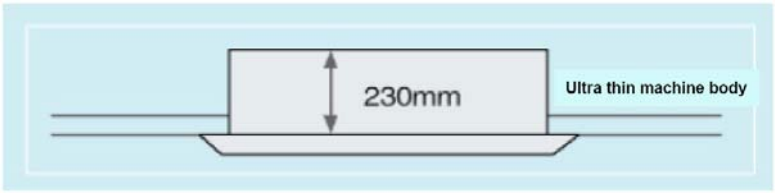
Sound Levels. 20

Exploded View. 21

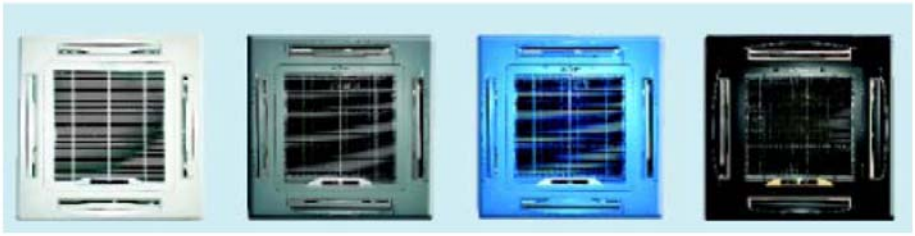
Troubleshooting. 24

Features

1) Ultra thin machine body to easy installation and maintenance: 600~750CFM: 230mm, 850~1500CFM: 300mm.



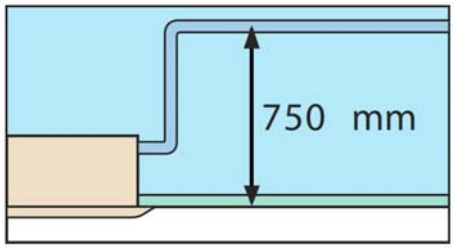
2) Different color panels for choose: White、Gray、Blue、Black



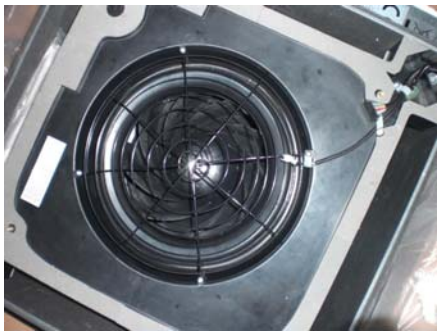
White Gray (optional) Blue (optional) Black (optional)

3) Adding digital tube displaying on the display board. LED can display the Error Code to make the malfunction checking easier.

4) Drainage pump can take up the condenser water to 750mm.



5) Protection grill is standard for safety maintenance.



6) 3 Pre-cut and air outlet stopple make the air blow to other rooms.

7) Vertical water inlet and outlet are in the same line making the installation easier.

8) Electrical heater is optional.
9) A full series of controller give you the most suitable solution according to the different requirement from different customers.
10) New 4-speed motor provides more choices
11) Optimized structure makes the air volume and capacity improved rapidly.

Specification

Model No.			CH-FC060K2(E)	CH-FC075K2(E)	CH-FC085K2(E)
Airflow	High	m^3/h	1000	1250	1400
	Medium		850	1060	1190
	Low		720	900	1010
Cooling Capacity (Hi-speed)		W	5700	7000	7270
		Btu/h	19510	23840	24800
Heating Capacity (Hi-speed)		W	9660	11550	12420
		Btu/h	32970	39420	42360
Noise (Hi-speed)		dB(A)	45	46	47
Water Flow		l/min	16.4	20	20.8
Water Pressure Drop		kPa	23.8	25.2	27
Indoor Coil	Number Of Rows		2		
	Tube Pitch(A)×Row Pitch(B)	mm	21×13.37		
	Fin Spacing	mm	1.5		
	Fin Type		Hydrophilic aluminum		
	Tube Outside Dia. And Type	mm	φ7，bare tube		
	Coil dimension (L×H)	mm	1960×168		1960×252
	Number Of Circuits		8		12
Fan Motor	Type		Low noise 4-speed fan motor		
	Number		1		
	Model		YDK80-6E		YDK90-6E
	Input	W	120	125	145
	Capacitor	uF	3uF/450V	3.5uF/450V	2.5uF/450V
Auxiliary Electrical Heater		kW	2.1	2.1	2.85
Indoor Unit	Net Dimension (W×H×D)	mm	840×230×840		840×300×840
	Packing Dimension (W×H×D)	mm	955×260×955		955×330×955
	Net/Gross Weight (with EAH)	kg	25/31(27/33)		30.5/37.2(33/40)
Panel	Net Dimension (W×H×D)	mm	950×46×950		
	Packing Dimension (W×H×D)	mm	1035×90×1035		
	Net/Gross Weight	kg	6/9		
Control Mode			wired controller(optional), remote controller (standard)		
Pipe	Water-Inlet Pipe		RC3/4” internal thread		
	Water-Return Pipe		RC3/4” internal thread		
	Condensation Water-Outlet Pipe		EVA+LDPE 3/4” external thread		

Remark: 1. All performance data above is based upon 0Pa external static pressure.

2. Cooling capacity test condition: air inlet Temp. : 27DB℃/19WB℃, water inlet Temp. 7℃, water Temp. difference 5℃.
3. Heating capacity test condition:

   Air inlet Temp. 21DB℃, water inlet Temp. 60 DB℃

   The volume of air and water is same as cooling.
4. Noise level is tested in full-anechoic room.
5. The auxiliary electrical heater is only available for CH-FCXXXK2 series.

Model No.			CH-FC100K2(E)	CH-FC120K2(E)	CH-FC150K2(E)
Airflow	High	m^3/h	1600	2000	2550
	Medium		1360	1700	2170
	Low		1150	1440	1840
Cooling Capacity (Hi-speed)		W	8220	10390	12900
		Btu/h	28050	35450	44010
Heating Capacity (Hi-speed)		W	13850	17580	17600
		Btu/h	47240	60000	60050
Noise (Hi-speed)		dB(A)	48	49	50
Water Flow		l/min	23.6	29.8	36.9
Water Pressure Drop		kPa	31.2	44	40
Indoor Coil	Number Of Rows		2		
	Tube Pitch(A)×Row Pitch(B)	mm	21×13.37		
	Fin Spacing	mm	1.5		
	Fin Type		Hydrophilic aluminum		
	Tube Outside Dia. And Type	mm	φ7，bare tube		
	Coil dimension (L×H)	mm	1960×252	1960×252	2080×252
	Number Of Circuits		12		
Fan Motor	Type		Low noise 4-speed fan motor		
	Number		1		
	Model		YDK90-6E		
	Input	W	150	185	185
	Capacitor	uF	3uF/450V	3.5uF/450V	3.5uF/450V
Auxiliary Electrical Heater		kW	2.85		
Indoor Unit	Net Dimension (W×H×D)	mm	840×300×840		
	Packing Dimension (W×H×D)	mm	955×330×955		
	Net/Gross Weight (with EAH)	kg	30.5/37.2(33/40)		35/42
Panel	Net Dimension (W×H×D)	mm	950×46×950		
	Packing Dimension (W×H×D)	mm	1035×90×1035		
	Net/Gross Weight	kg	6/9		
Control Mode			wired controller(optional), remote controller (standard)		
Pipe	Water-Inlet Pipe		RC3/4” internal thread		
	Water-Return Pipe		RC3/4” internal thread		
	Condensation Water-Outlet Pipe		EVA+LDPE 3/4” external thread		

Remark:

1. All performance data above is based upon 0Pa external static pressure.
2. Cooling capacity test condition: air inlet Temp. : 27DB℃/19WB℃, water inlet Temp. 7℃, water Temp. difference 5℃.
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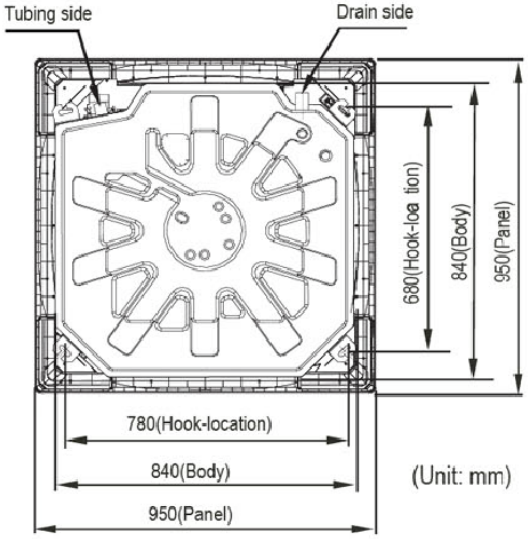
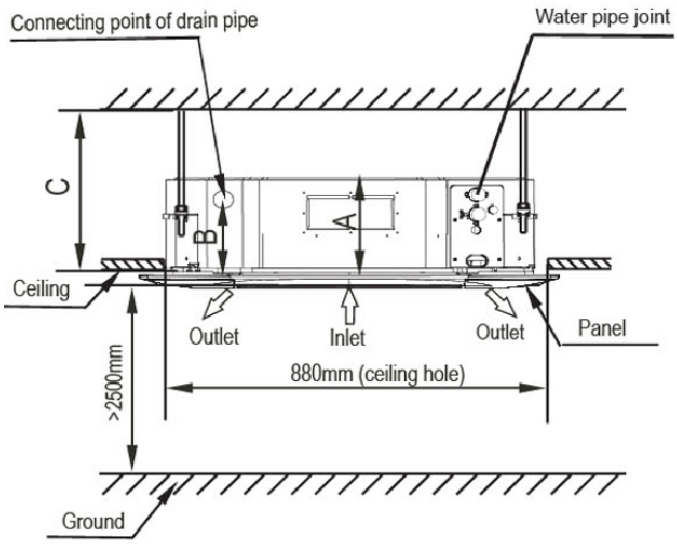
4. Noise level is tested in full-anechoic room.
5. The auxiliary electrical heater is only available for CH-FCXXXK2 series.

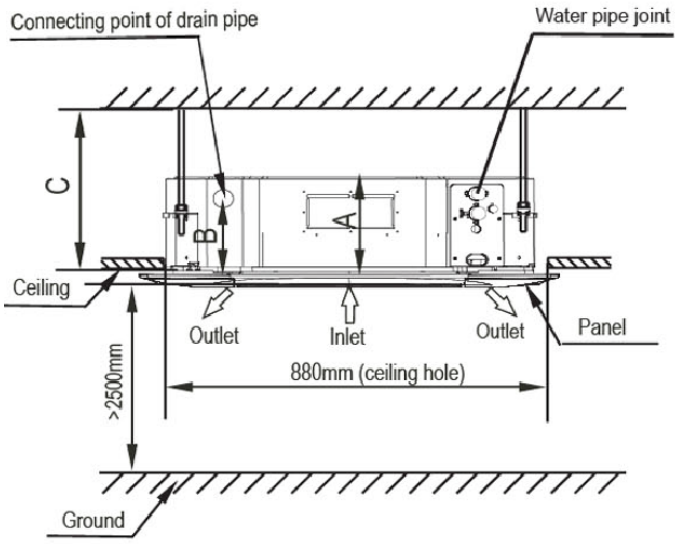
Dimensions

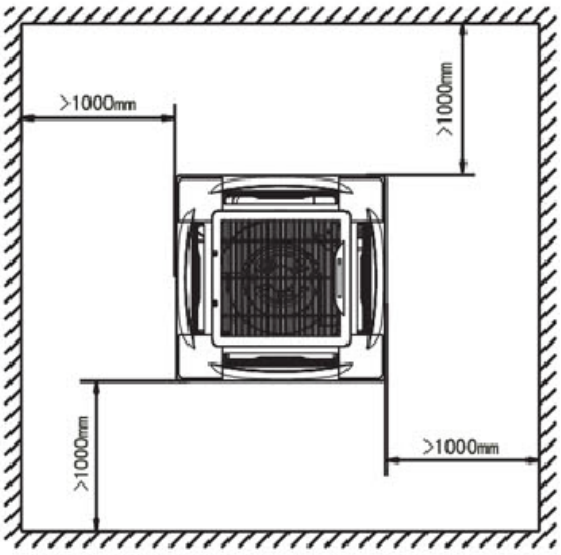


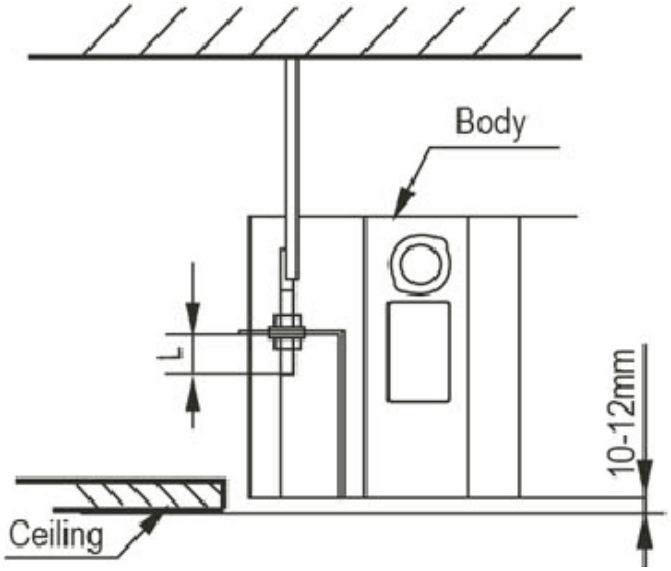


Model	A	B	C
600CFM, 750CFM	230	170	>260
850CFM, 100CFM, 1200CFM, 1500CFM	300	190	>330

Service Spaces



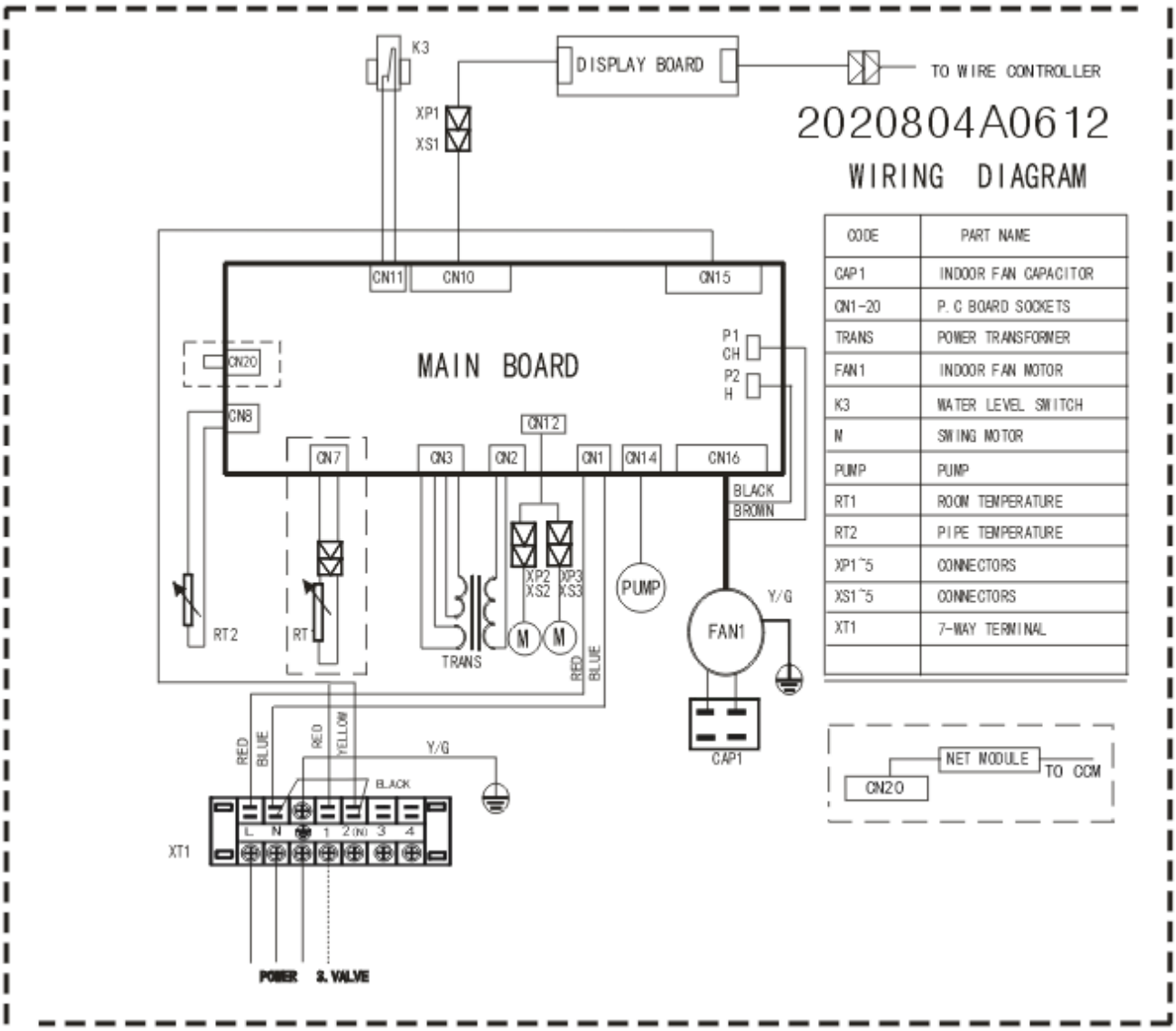




Model	A	B	C
600CFM, 750CFM	230	170	>260
850CFM, 1000CFM, 1200CFM, 1500CFM	300	190	>330

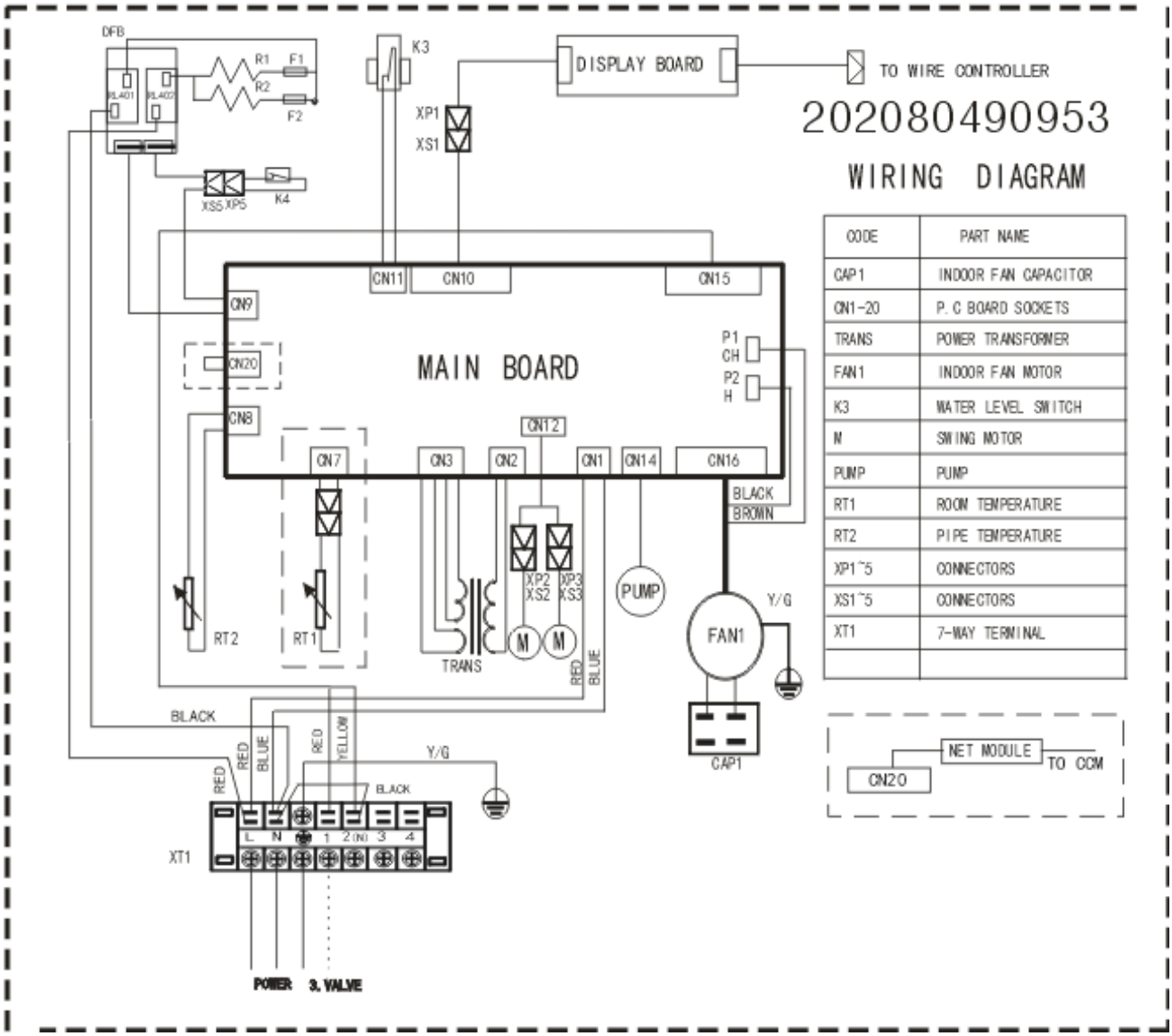
Wiring Diagram

CH-FC060K2、CH-FC075K2、CH-FC085K2、CH-FC100K2、CH-FC120K2、CH-FC150K2



CODE	PART NAME
CAP1	INDOOR FAN CAPACITOR
CN1-20	P.C BOARD SOCKETS
TRANS	POWER TRANSFORMER
FAN1	INDOOR FAN MOTOR
K3	WATER LEVEL SWITCH
M	SWING MOTOR
PUMP	PUMP
RT1	ROOM TEMPERATURE
RT2	PIPE TEMPERATURE
XP1~5	CONNECTORS
XS1~5	CONNECTORS
XT1	7-WAY TERMINAL

CH-FC060K2(E)、CH-FC075K2(E)、CH-FC085K2(E)、CH-FC100K2(E)、CH-FC120K2(E)、CH-FC150K2(E)



CODE	PART NAME
CAP1	INDOOR FAN CAPACITOR
CN1-20	P.C BOARD SOCKETS
TRANS	POWER TRANSFORMER
FAN1	INDOOR FAN MOTOR
K3	WATER LEVEL SWITCH
M	SWING MOTOR
PUMP	PUMP
RT1	ROOM TEMPERATURE
RT2	PIPE TEMPERATURE
XP1~5	CONNECTORS
XS1~5	CONNECTORS
XT1	7-WAY TERMINAL

Capacity Tables

Cooling Capacity:

Remark:
DB: Dry Bulb Temp.; **WB:** Wet Bulb Temp.; **EWT:** Enter Water Temp.; **LWT:** Leaving Water Temp.;
TC: Total Cooling Capacity; **SC:** Sensible Cooling Capacity;

Model	Speed	Air On FCU		Water		Delta Water Temp	Capacity		Water Flow	Water Pressure Drop
		DB	WB	EWT	LWT		TC	SC		
		℃	℃	℃	℃	℃	kW	kW	m3/h	kPa
CH-FC060K2(E)	High	26.7	19.4	7	12	5	5.63	4.7	16.2	25.37
				5.5	14.5	9	3.1	2.59	8.2	12.68
		27	19	7	12	5	5.7	4.81	16.4	23.8
				5.5	14.5	9	2.93	2.69	7.7	11.9
		29	21	7	12	5	7.2	5.4	20.7	32.43
				5.5	14.5	9	3.96	2.97	10.3	16.22
CH-FC075K2(E)	High	26.7	19.4	7	12	5	6.87	5.87	19.7	26.55
				5.5	14.5	9	3.78	3.23	9.8	13.28
		27	19	7	12	5	7	6.01	20	25.2
				5.5	14.5	9	3.58	3.37	9.3	12.6
		29	21	7	12	5	8.84	6.74	25.3	34.2
				5.5	14.5	9	4.86	3.71	12.7	17.1
CH-FC085K2(E)	High	26.7	19.4	7	12	5	7.14	5.94	20.5	28.63
				5.5	14.5	9	3.93	3.27	10.3	14.31
		27	19	7	12	5	7.27	6.07	20.8	27
				5.5	14.5	9	3.72	3.39	9.7	13.5
		29	21	7	12	5	9.13	6.81	26.2	36.54
				5.5	14.5	9	5.02	3.75	13.2	18.27
CH-FC100K2(E)	High	26.7	19.4	7	12	5	8.09	6.8	23.2	31.59
				5.5	14.5	9	4.45	3.74	11.7	15.8
		27	19	7	12	5	8.22	6.95	23.6	31.2
				5.5	14.5	9	4.21	3.89	11.0	15
		29	21	7	12	5	10.37	7.8	29.7	40.45
				5.5	14.5	9	5.7	4.29	14.8	20.23
CH-FC120K2(E)	High	26.7	19.4	7	12	5	10.18	8.75	29.2	46.67
				5.5	14.5	9	5.6	4.81	14.7	23.33
		27	19	7	12	5	10.39	8.96	29.8	44
				5.5	14.5	9	5.3	5.02	13.8	22
		29	21	7	12	5	13.12	10.05	37.7	60.27
				5.5	14.5	9	7.22	5.53	18.8	30.13
CH-FC150K2(E)	High	26.7	19.4	7	12	5	12.63	11.11	36.2	48.69
				5.5	14.5	9	6.95	6.11	18.2	24.35
		27	19	7	12	5	12.9	11.37	36.9	40
				5.5	14.5	9	6.57	6.37	17.2	23
		29	21	7	12	5	16.36	12.76	46.8	63.05
				5.5	14.5	9	9	7.02	23.5	31.53

Cooling capacity modification coefficient table**:**

Speed	CH-FC060K2(E)		CH-FC075K2(E)		CH-FC085K2(E)		CH-FC100K2(E)		CH-FC120K2(E)		CH-FC150K2(E)	
	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
Mid	0.92	0.88	0.92	0.88	0.93	0.89	0.92	0.88	0.93	0.89	0.94	0.9
Lo	0.85	0.81	0.84	0.8	0.85	0.81	0.84	0.81	0.84	0.8	0.85	0.81

Heating Capacity:

Remark:

TH: Total Heating Capacity.

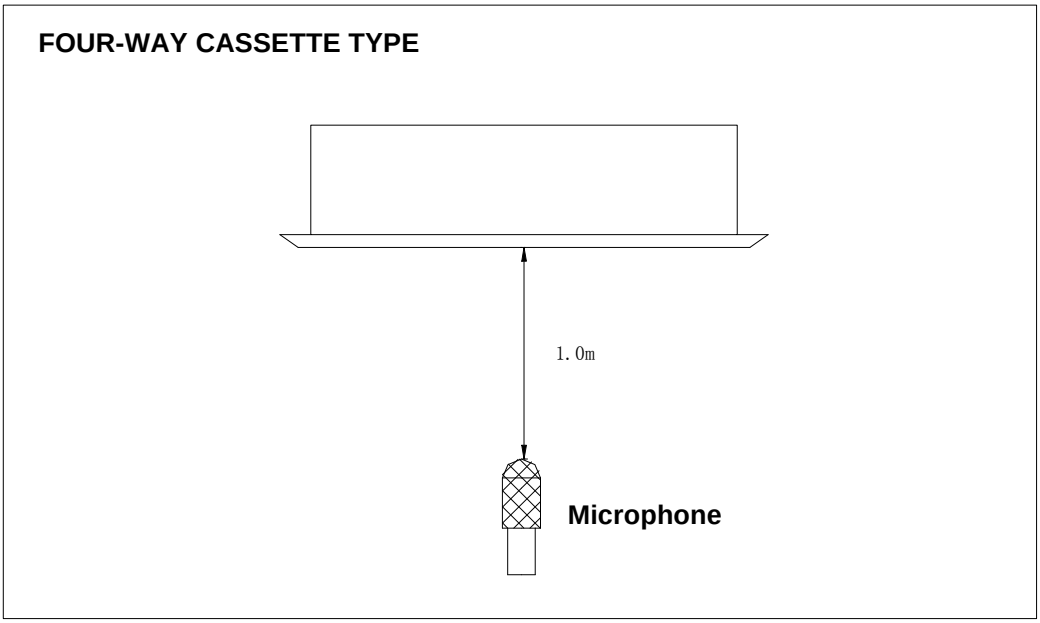
Model	Speed	Water temp. change	Air inlet temp. (21℃ DB)							
			Water inlet temp. (℃)							
			35	40	45	50	55	60	65	70
			TH	TH	TH	TH	TH	TH	TH	TH
		℃	kW	kW	kW	kW	kW	kW	kW	kW
CH-FC060K2(E)	High	10	1.06	2.31	3.53	4.74	5.95	7.15	8.36	9.57
		8	1.55	2.77	3.98	5.19	6.4	7.61	8.81	10.02
		7	1.79	3	4.21	5.42	6.63	7.83	9.04	10.25
		6	2.02	3.23	4.44	5.64	6.85	8.06	9.27	10.48
		5	2.25	3.46	4.66	5.87	7.08	8.29	9.5	10.71
CH-FC075K2(E)	High	10	1.22	2.7	4.16	5.61	7.06	8.51	9.96	11.42
		8	1.81	3.27	4.72	6.17	7.62	9.07	10.53	11.98
		7	2.1	3.55	5	6.45	7.9	9.36	10.81	12.27
		6	2.38	3.83	5.28	6.73	8.19	9.64	11.1	12.55
		5	2.66	4.11	5.56	7.02	8.47	9.93	11.39	12.85
CH-FC085K2(E)	High	10	1.54	3.32	5.07	6.8	8.53	10.26	11.99	13.71
		8	2.23	3.99	5.72	7.45	9.18	10.9	12.63	14.36
		7	2.57	4.31	6.04	7.77	9.5	11.22	12.95	14.68
		6	2.9	4.64	6.36	8.09	9.82	11.55	13.28	15.01
		5	3.23	4.96	6.65	8.41	10.04	11.87	13.6	15.34
CH-FC100K2(E)	High	10	1.65	3.6	5.51	7.41	9.3	11.2	13.09	14.98
		8	2.41	4.33	6.23	8.12	10.02	11.91	13.81	15.7
		7	2.79	4.69	6.59	8.48	10.37	12.27	14.17	16.06
		6	3.15	5.05	6.94	8.84	10.73	12.63	14.53	16.43
		5	3.51	5.41	7.3	9.2	10.09	12.99	14.89	16.8
CH-FC120K2(E)	High	10	1.91	4.24	6.54	8.84	11.13	13.42	15.72	18.01
		8	2.83	5.15	7.44	9.73	12.02	14.32	16.62	18.92
		7	3.29	5.59	7.88	10.18	12.47	14.77	17.07	19.37
		6	3.74	6.04	8.11	10.63	12.92	15.22	17.53	19.83
		5	4.19	9.48	8.78	11.08	13.38	15.68	17.99	20.3
CH-FC150K2(E)	High	10	2.18	4.95	7.7	10.44	13.19	15.94	18.69	21.44
		8	3.3	6.05	8.79	11.54	14.29	17.04	19.8	22.56
		7	3.85	6.6	9.34	12.09	14.84	17.6	20.36	23.13
		6	4.4	7.14	9.89	12.65	15.4	18.17	20.93	23.7
		5	4.95	7.69	10.45	13.2	15.97	18.74	21.51	24.28

Cooling capacity modification coefficient table:

Speed	CH-FC060K2(E)	CH-FC075K2(E)	CH-FC085K2(E)	CH-FC100K2(E)	CH-FC120K2(E)	CH-FC150K2(E)
Mid	0.86	0.86	0.87	0.86	0.86	0.88
Lo	0.79	0.78	0.79	0.78	0.78	0.79

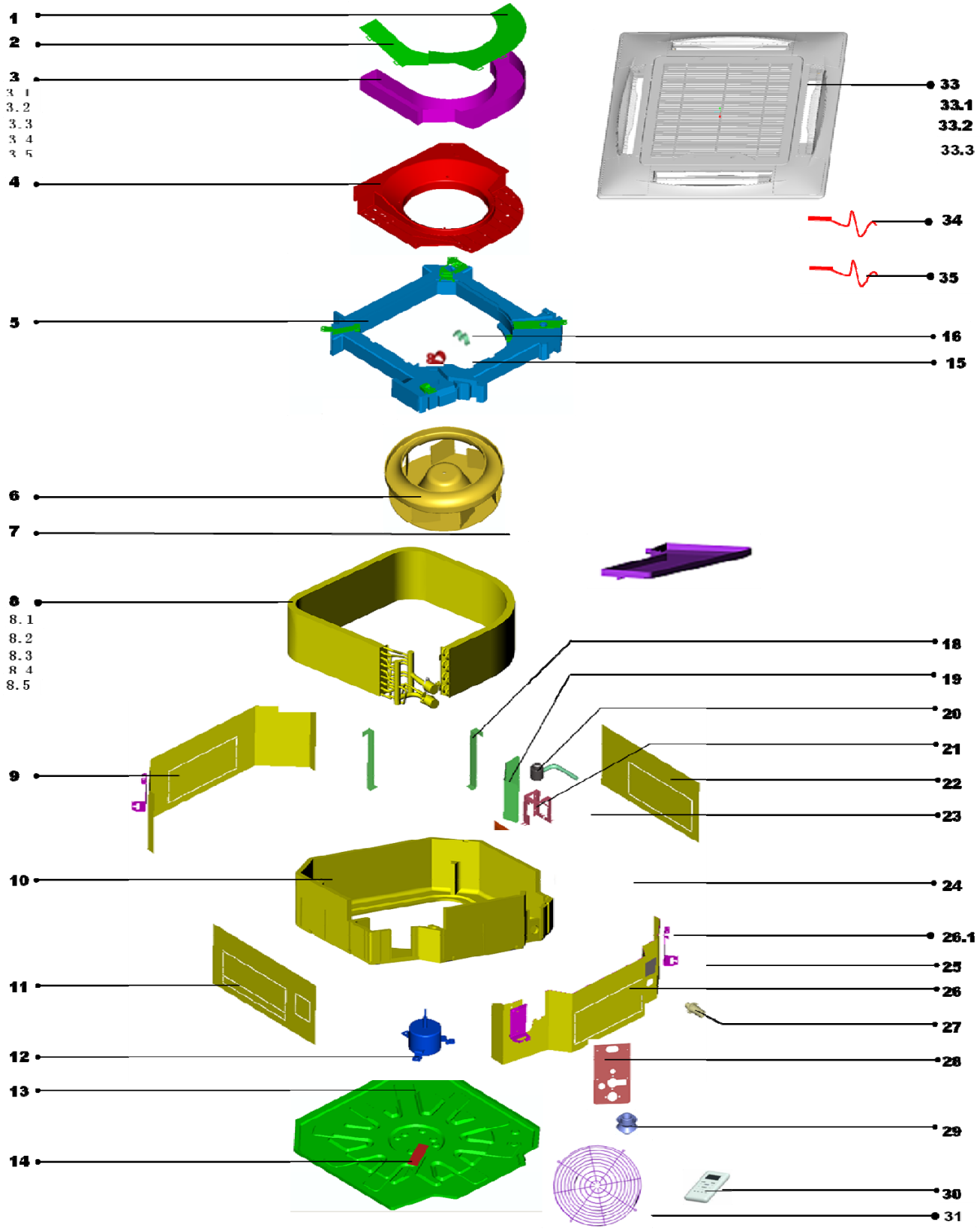
Sound Levels

TYPE		CH-FC060K2(E)	CH-FC075K2(E)	CH-FC085K2(E)	CH-FC100K2(E)	CH-FC120K2(E)	CH-FC150K2(E)
Noise	dB(A)	45	46	47	48	49	50



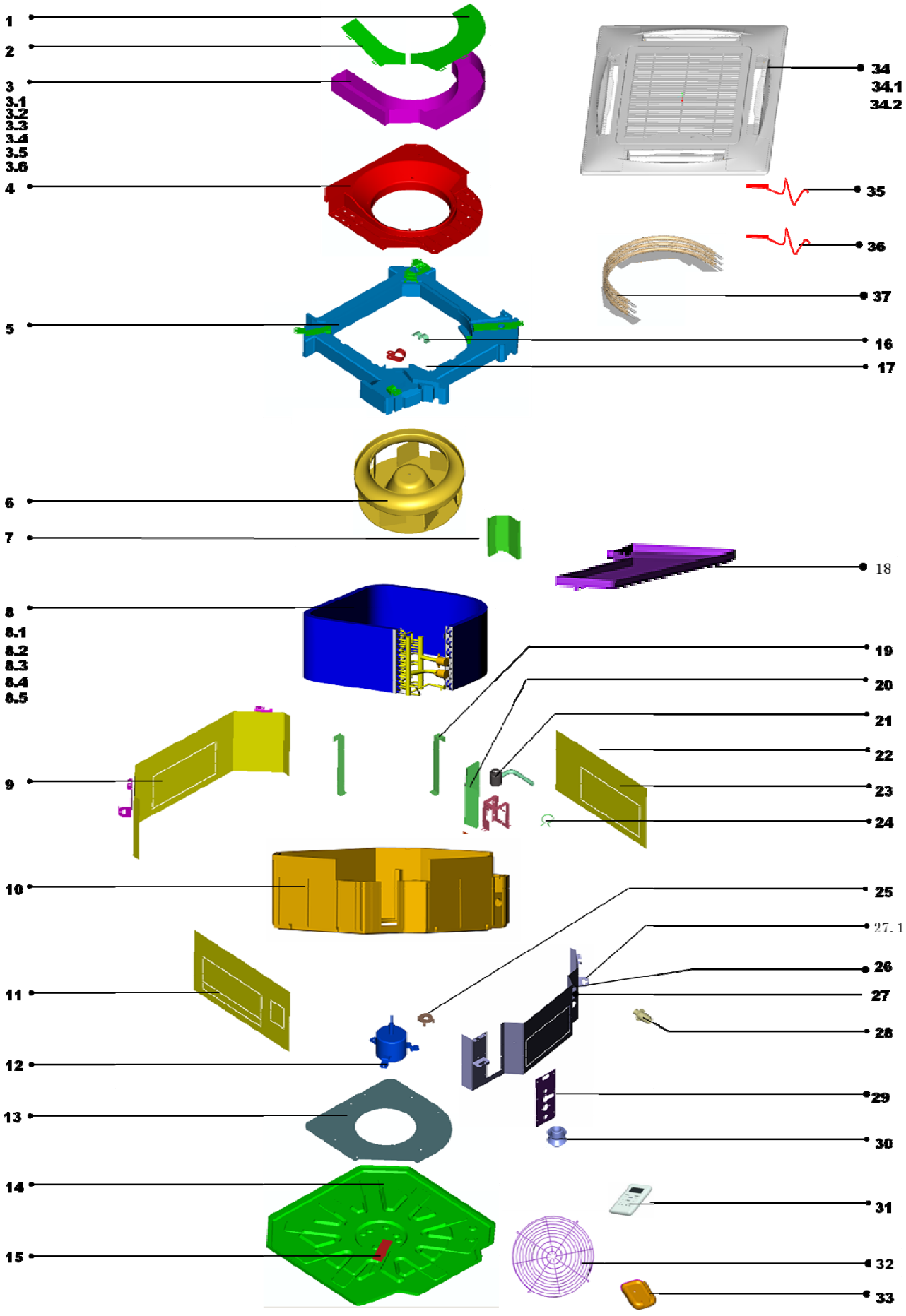
Exploded View

CH-FC060K2、CH-FC075K2、CH-FC085K2、CH-FC100K2、CH-FC120K2、CH-FC150K2



No.	Part Name	Qty		No.	Part Name	Qty
1	Electric control box head cover I	1		16	Wire clip	1
2	Electric control box head cover II	1		17	Drip tray assembly	1
3	Electric control box assembly of indoor unit	1		18	Evaporator fixing hook	3
3.1	Electric control box welded assembly	1		19	Water pump baffle plate	1
3.2	Transformer	1		20	Water drain pump subassembly	1
3.3	Capacitor	1		21	Water pump installation bracket subassembly	1
3.4	Four sides air outlet indoor main control plate	1		22	Front barrier IV subassembly	1
3.5	7-hole wiring terminal	1		23	Water pump pumping pipe grommet	1
4	Air inducting coils subassembly	1		24	Fan fixer	1
5	Foam subassembly, drain tray	1		25	Water finder cover subassembly	1
6	Fan assembly	1		26	Front barrier III subassembly	1
7	Evaporator fixing board	1		26.1	Install lifting lug	4
8	Evaporator assembly	1		27	Water pumping connect pipe	1
8.1	Evaporator	1		28	Exhalant tube seal plate subassembly	1
8.2	Evaporator output tube assembly	1		29	Water pump's rubber pad	1
8.3	Evaporator filter assembly	1		30	Remote controller	1
8.4	Barrel	1		31	Fan protecting net	1
8.5	Discharge assembly	1		32	Bracket, remote controller	1
9	Front barrier I subassembly	1		33	Front panel	1
10	Foam seat subassembly	1		33.1	Panel assembly	1
11	Front barrier II subassembly	1		33.2	Swing motor	2
12	Asynchronous dynamo	1		33.3	Room temperature sensor	1
13	Base pan welded assembly	1		34	Evaporator temperature sensor	1
14	Plate, wire	1		35	Drain water level sensor	1
15	Tandem, wire	1				

CH-FC060K2(E)、CH-FC075K2(E)、CH-FC085K2(E)、CH-FC100K2(E)、CH-FC120K2(E)



No	Part Name	Qty		No	Part Name	Qty
1	Electric control box head cover I	1		16	Tandem, wire	1
2	Electric control box head cover II	1		17	Wire clip	1
3	Electric control box assembly of indoor unit	1		18	Drip tray assembly	1
3.1	Electric control box welded assembly	1		19	Evaporator fixing hook	3
3.2	Voltage transformer	1		20	Water pump baffle plate	1
3.3	Supporter of electrical heater	1		21	Water drain pump subassembly	1
3.4	Capacitor	1		22	Water pump installation bracket subassembly	1
3.5	Four sides air outlet indoor main control plate	1		23	Front barrier IV subassembly	1
3.6	7-hole wring terminal	1		24	Water pump pumping pipe grommet	1
4	Air inducting coils subassembly	1		25	Fan fixer	1
5	Foam subassembly, drain tray	1		26	Water finder cover subassembly	1
6	Fan assembly	1		27	Front barrier III subassembly	1
7	Evaporator fixing board	1		27.1	Install lifting lug	4
8	Evaporator assembly	1		28	Water pumping connect pipe	1
8.1	Evaporator	1		29	Exhalant tube seal plate subassembly	1
8.2	Evaporator output tube assembly	1		30	Water pump's rubber pad	1
8.3	Evaporator input tube assembly	1		31	Remote controller	1
8.4	Discharge assembly	1		32	Fan protecting net	1
8.5	Barrel	1		33	Bracket, remote controller	1
9	Front barrier I subassembly	1		34	Front panel	1
10	Foam seat subassembly	1		34.1	Swing motor	2
11	Front barrier II subassembly	1		34.2	Panel	1
12	Asynchronous dynamo	1		35	Evaporator temperature sensor	1
13	Base pan seat	1		36	Drain water level sensor	1
14	Base pan welded assembly	1		37	Auxiliary electrical heater assembly	1
15	Plate, wire	1				

Troubleshooting

No.	Malfunction	Operation lamp	Timer lamp	Defrosting lamp	Alarm lamp	Error code
1	Room temp. sensor checking channel is abnormal	X	☆	X	X	E2
2	Evaporator pipe temp. sensor checking channel is abnormal	☆	X	X	X	E3
3	EEPROM malfunction	☆	☆	X	X	E7
4	Water-level switch malfunction	X	X	X	☆	E8

Compact Four-way Cassette Type

Features 26

Specification. 27

Dimensions. 29

Wiring Diagram. 30

Capacity Tables 34

Explored View. 38

Features

- Four-way air distribution gives individual comfort.
- Electric control box is inside the body, which is convenient to maintain.
- The unique design of the centrifugal fan ensures extra-quiet operation.
- Four speeds indoor unit.
- With the function of auto-restart.
- High capacity of cooling / heating performance, high efficiency and energy-saving.
- New panel.

Specification

2 pipe units

TYPE			CH-FC030K2	CH-FC040K2	CH-FC050K2
Airflow	High	m^3/h	510	680	850
	Medium		440	580	730
	Low		360	480	600
Cooling Capacity		W	3000	3700	4500
		Btu/h	10236	12624	15354
Heating Capacity		W	4000	5100	6000
		Btu/h	13648	17401	20472
Noise		dB(A)	36	42	45
Water flow		l/min	8.7	10.7	12.9
Water resistance		kPa	14	15	16
Indoor coil	Number of rows		2		
	Tube pitch(a) × row pitch(b)	mm	21×13.37		
	Fin spacing	mm	1.3		
	Fin type		Hydrophilic aluminium		
	Tube outside dia. and type	mm	Φ7, bare pipe		
	Coil length × height	mm	1315×210		
	Number of circuits		5	6	7
Fan motor	Type		Low noise 4-speed fan motor		
	Number		YDK15-6P	YDK37-4P	YDK37-4P
	Model		1	1	1
	Input	W	35	60	75
	Capacitor	uF	1.5uF/450V	2uF/450V	2.5uF/450V
Indoor unit	Net Dimension (W×H×D)	mm	575×261×575		
	Packing Dimension (W×H×D)	mm	705×340×705		
	Net/Gross weight	kg	17.5/22.5		
Panel	Net Dimension (W×H×D)	mm	647×50×647		
	Packing Dimension (W×H×D)	mm	715×123×715		
	Net/Gross weight	kg	3/5		
Control mode			wired controller(optional), remote controller (standard)		
Pipe	Water-inlet pipe	Inch	G3/4		
	Water-return pipe	Inch	G3/4		
	Condensate outlet pipe	mm	ODΦ25		

Remark:

1. All performance data above is based upon 0Pa external static pressure.
2. Cooling conditions: 27°C DB /19°C WB entering air temperature, 7°C/12°C entering and leaving water temperature at high fan speed.
3. Heating conditions: 21°C entering air temperature, 60°C entering water temperature at high fan speed.
4. Noise level is tested in full-anechoic room.

4 pipe units

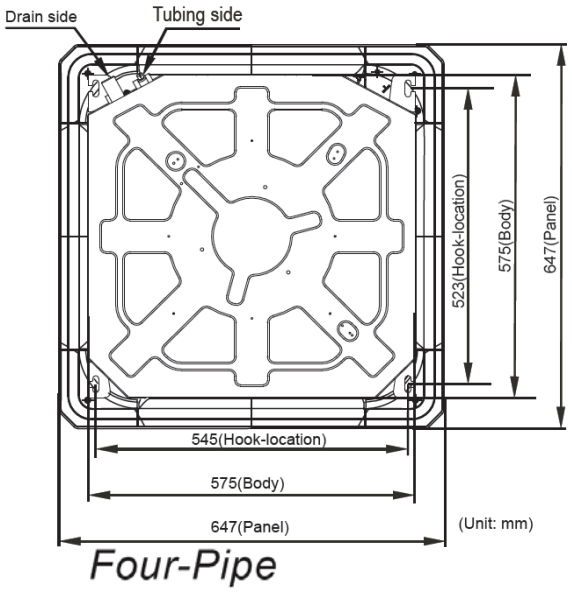
Model			CH-FC030K4	CH-FC040K4	CH-FC050K4
Air volume	High	m^3/h	510	680	850
	Medium		440	580	730
	Low		360	480	600
Cooling capacity		kW	2.5	2.9	3.5
Heating capacity		kW	3.7	4.6	5.1
Sound level		dB(A)	36	42	45
Cool water	Water flow	l/min	7.2	8.4	10
	Water pressure drop	kPa	22	16	24
Heat water	Water flow	l/min	8.7	12	16.4
	Water pressure drop	kPa	17	23	27
Fan	Type		Centrifugal fan		
	Quantity	Pieces	1	1	1
Fan Motor	Model		YDK15-6P	YDK37-4P	YDK37-4P
	Quantity	Pieces	1	1	1
	Capacitor	uF	1.5uF/450V	2uF/450V	2.5uF/450V
	Input	W	45	65	90
Coil	Number of rows		2		
	Tube pitch(a)x row pitch(b)	mm	21×13.37		
	Fin spacing	mm	1.3		
	Fin type (code)		Hydrophilic aluminium		
	Tube outside dia.	mm	Φ7		
	Tube type		bare pipe		
	Coil length × height	mm	1315×210		
	Number of circuits		3 for cool water, 3 for heat water	4 for cool water, 3 for heat water	
Connection pipe	Cool water inlet/outlet	Inch	G3/4		
	Heat water inlet/outlet	Inch	G1/2		
	Drainage	mm	ODΦ25		
Body	Net dimension (W×H×D)	mm	575×261×575		
	Packing dimension (W×H×D)	mm	655×290×655		
	Net weight	kg	17.5		
	Packing weight	kg	22.5		
Panel	Net dimension (W×H×D)	mm	647×50×647		
	Packing dimension (W×H×D)	mm	715×123×715		
	Net weight	kg	3		
	Packing weight	kg	5		
Control			wired controller(optional), remote controller (standard)		

Remark:

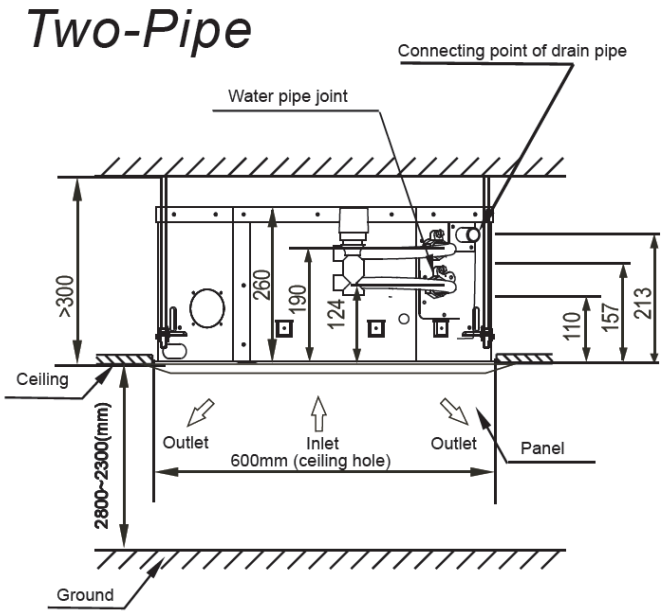
1. All performance data above is based upon 0Pa external static pressure.
2. Cooling conditions: 27°C DB /19°C WB entering air temperature, 7°C/12°C entering and leaving water temperature at high fan speed.
3. Heating conditions: 20°C entering air temperature, 70°C/60°C entering and leaving water temperature at high fan speed.
4. Noise level is tested in full-anechoic room.

Dimensions

Body



Four-Pipe



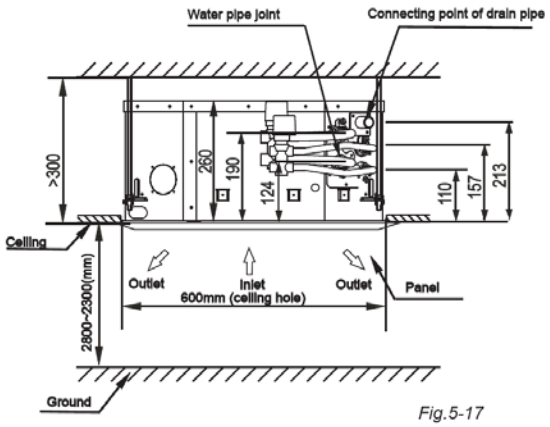
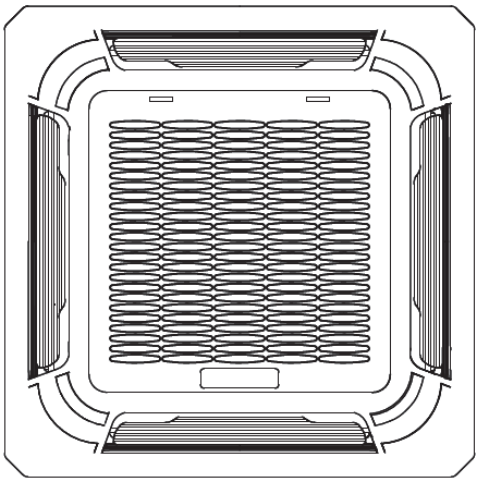
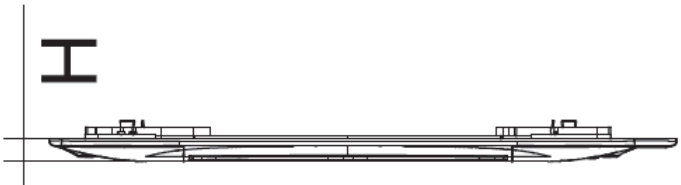


Fig.5-17

Panel (the 2-pipe and the 4-ipe are the same)

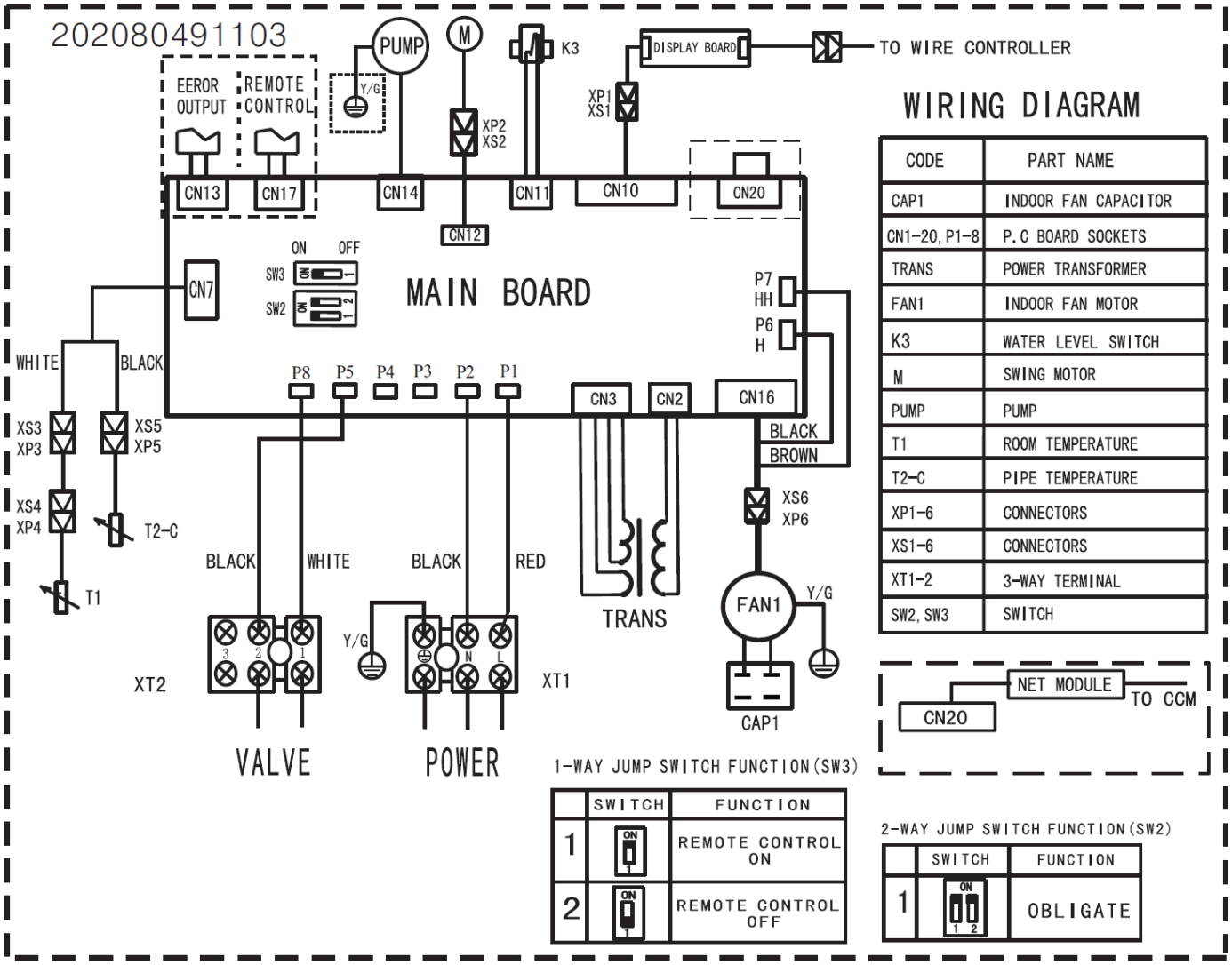




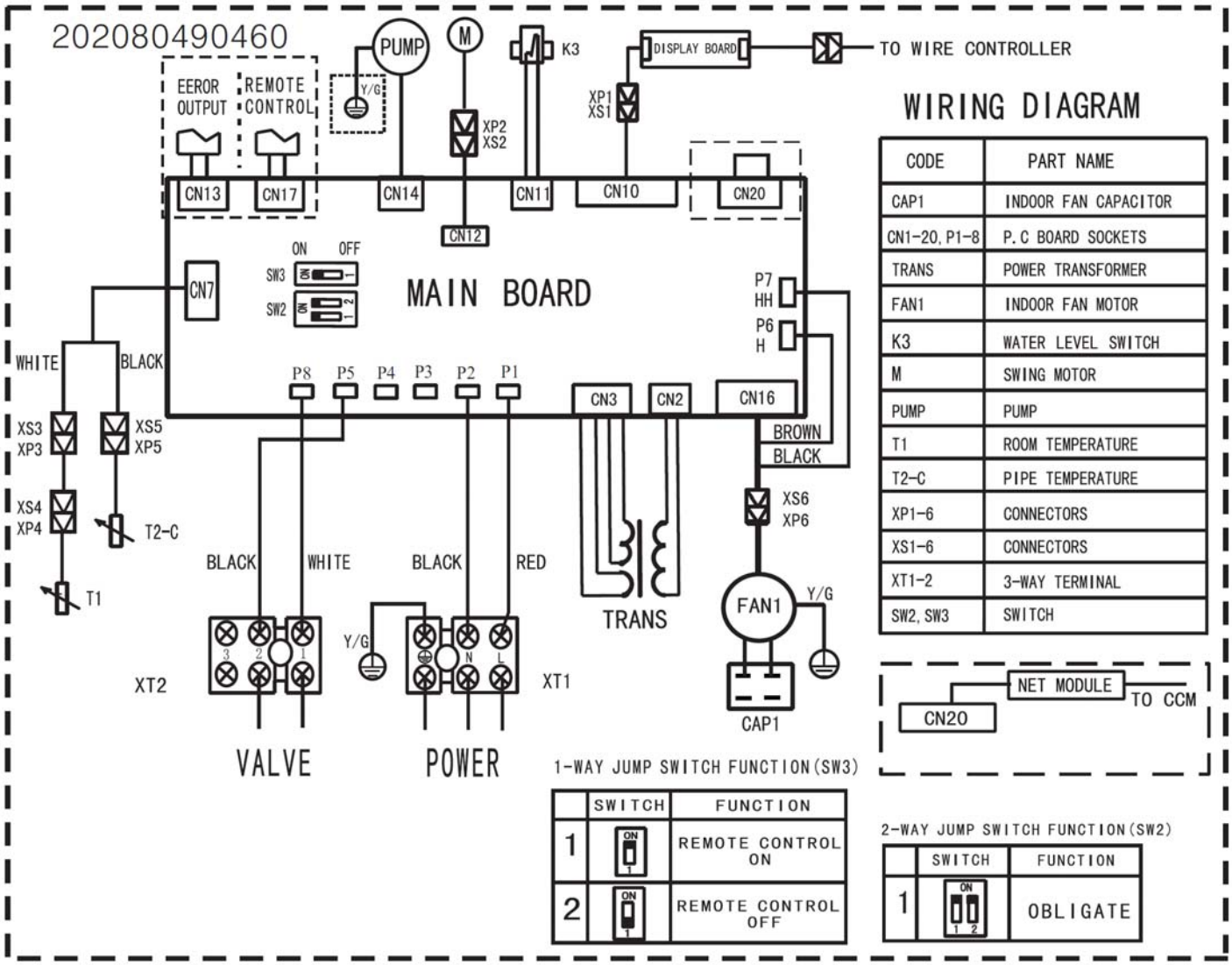
H(mm)	50

Wiring Diagram

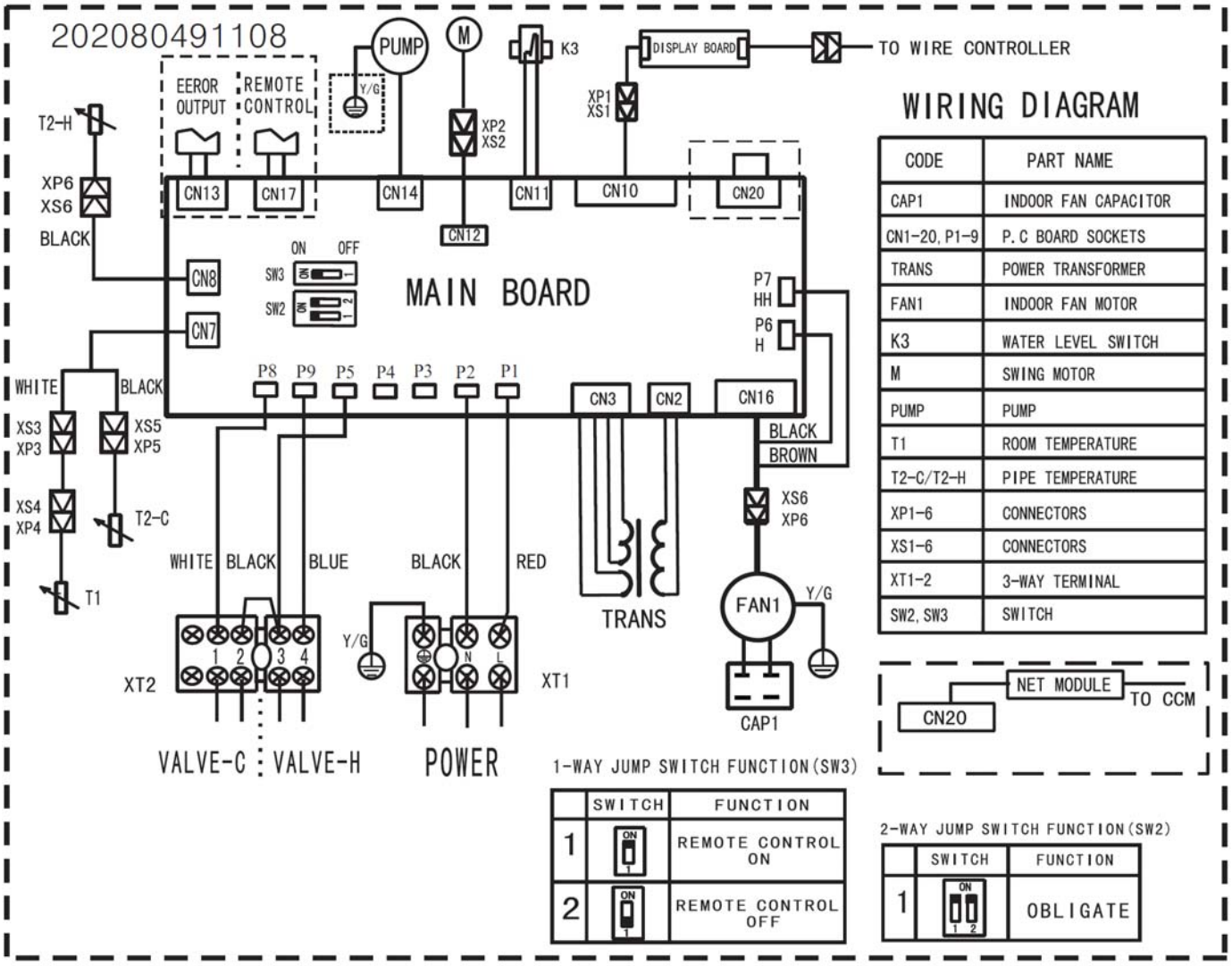
CH-FC030NK2 CH-FC040NK2



CH-FC050NK2


202080490460
PUMP
M
K3
DISPLAY BOARD
TO WIRE CONTROLLER
EERROR OUTPUT
REMOTE CONTROL
Y/G
XP2
XS2
XP1
XS1
CN13
CN17
CN14
CN12
CN11
CN10
CN20
ON
OFF
SW3
SW2
CN7
MAIN BOARD
P7
HH
P6
H
WHITE
BLACK
P8
P5
P4
P3
P2
P1
CN3
CN2
CN16
BROWN
BLACK
XS3
XP3
XS5
XP5
XS4
XP4
T2-C
T1
XS6
XP6
BLACK
WHITE
BLACK
RED
TRANS
FAN1
Y/G
Y/G
XT2
XT1
CAP1
VALVE
POWER
WIRING DIAGRAM
CODE
PART NAME
CAP1
INDOOR FAN CAPACITOR
CN1-20, P1-8
P.C BOARD SOCKETS
TRANS
POWER TRANSFORMER
FAN1
INDOOR FAN MOTOR
K3
WATER LEVEL SWITCH
M
SWING MOTOR
PUMP
PUMP
T1
ROOM TEMPERATURE
T2-C
PIPE TEMPERATURE
XP1-6
CONNECTORS
XS1-6
CONNECTORS
XT1-2
3-WAY TERMINAL
SW2, SW3
SWITCH
NET MODULE
TO CCM
CN20
1-WAY JUMP SWITCH FUNCTION(SW3)
SWITCH
FUNCTION
1
REMOTE CONTROL ON
2
REMOTE CONTROL OFF
2-WAY JUMP SWITCH FUNCTION(SW2)
SWITCH
FUNCTION
1
OBLIGATE

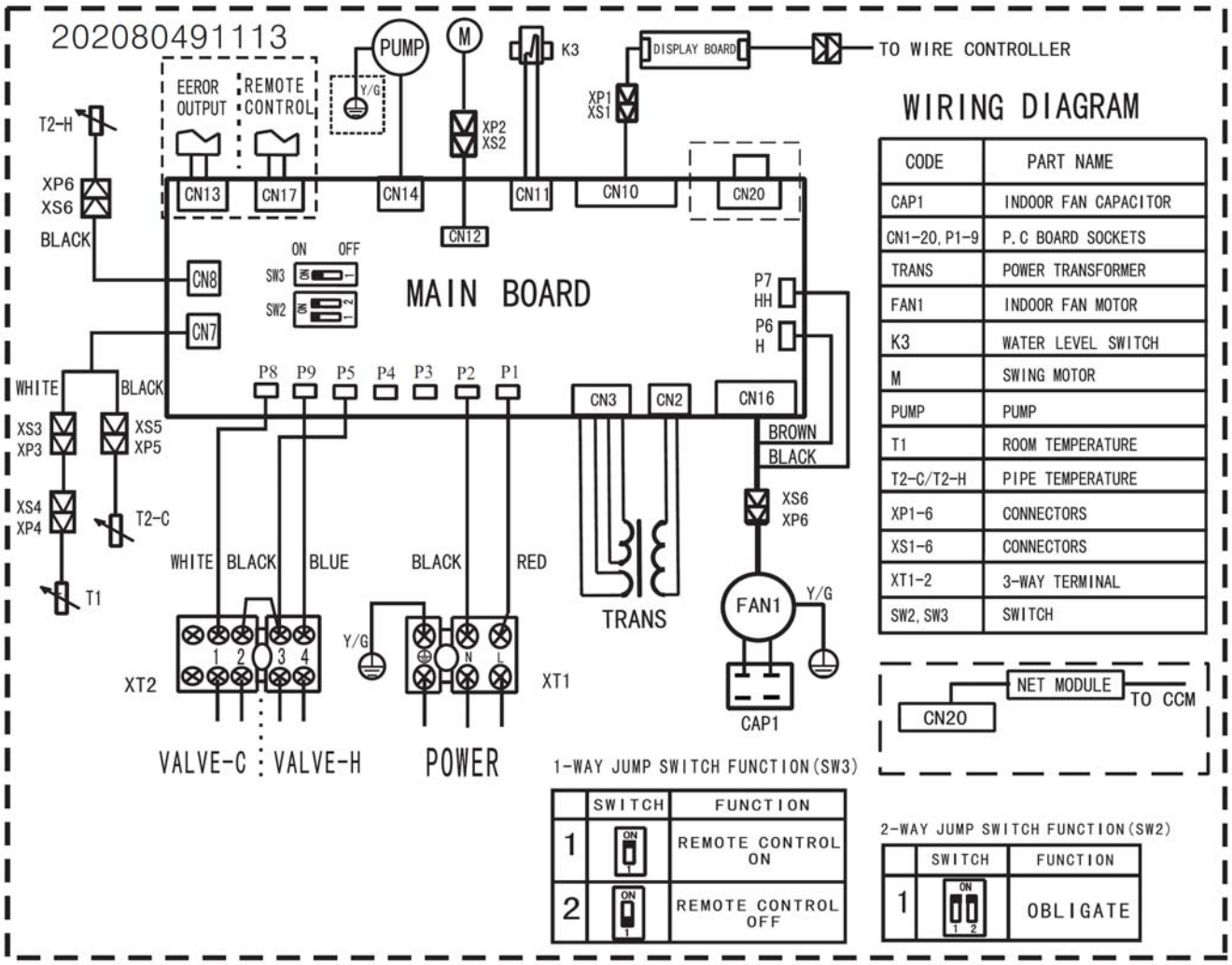
CH-FC030NK4 CH-FC040NK4



WIRING DIAGRAM

CODE	PART NAME
CAP1	INDOOR FAN CAPACITOR
CN1-20, P1-9	P.C BOARD SOCKETS
TRANS	POWER TRANSFORMER
FAN1	INDOOR FAN MOTOR
K3	WATER LEVEL SWITCH
M	SWING MOTOR
PUMP	PUMP
T1	ROOM TEMPERATURE
T2-C/T2-H	PIPE TEMPERATURE
XP1-6	CONNECTORS
XS1-6	CONNECTORS
XT1-2	3-WAY TERMINAL
SW2, SW3	SWITCH

CH-FC050NK4


202080491113
PUMP
M
K3
DISPLAY BOARD
TO WIRE CONTROLLER
EERROR OUTPUT
REMOTE CONTROL
Y/G
XP2
XS2
XP1
XS1
T2-H
XP6
XS6
BLACK
CN13
CN17
CN14
CN11
CN10
CN20
CN12
ON
OFF
SW3
SW2
CN8
CN7
MAIN BOARD
P7
HH
P6
H
WHITE
BLACK
P8
P9
P5
P4
P3
P2
P1
CN3
CN2
CN16
BROWN
BLACK
XS3
XP3
XS5
XP5
XS4
XP4
T2-C
T1
XS6
XP6
WHITE
BLACK
BLUE
BLACK
RED
TRANS
FAN1
Y/G
CAP1
XT2
XT1
VALVE-C
VALVE-H
POWER
NET MODULE
TO CCM
CN20
WIRING DIAGRAM
CODE
PART NAME
CAP1
INDOOR FAN CAPACITOR
CN1-20, P1-9
P.C BOARD SOCKETS
TRANS
POWER TRANSFORMER
FAN1
INDOOR FAN MOTOR
K3
WATER LEVEL SWITCH
M
SWING MOTOR
PUMP
PUMP
T1
ROOM TEMPERATURE
T2-C/T2-H
PIPE TEMPERATURE
XP1-6
CONNECTORS
XS1-6
CONNECTORS
XT1-2
3-WAY TERMINAL
SW2, SW3
SWITCH
1-WAY JUMP SWITCH FUNCTION(SW3)
SWITCH
FUNCTION
1
REMOTE CONTROL ON
2
REMOTE CONTROL OFF
2-WAY JUMP SWITCH FUNCTION(SW2)
SWITCH
FUNCTION
1
OBLIGATE

Capacity Tables

2-pipe units

Cooling Capacity:

Remark:

DB: Dry Bulb Temp.; **WB:** Wet Bulb Temp.; **EWT:** Enter Water Temp.; **LWT:** Leaving Water Temp.;
TC: Total Cooling Capacity; **SC:** Sensible Cooling Capacity;

Model	Speed	Air On FCU		Water		Delta Water Temp.	Capacity		Water Flow	Water Pressure Drop
		DB	WB	EWT	LWT		TC	SC		
		℃	℃	℃	℃	℃	kW	kW	l/min	kPa
CH-FC030NK2	High	26.7	19.4	7	12	5	3.1	2.48	8.8	14.5
				5.5	14.5	9	2.3	2.02	6.7	3
		27	19	7	12	5	**3**	**2.4**	8.7	**14**
				5.5	14.5	9	2.2	1.94	6.3	2.9
		29	21	7	12	5	3.21	2.57	9.2	15
				5.5	14.5	9	2.38	2.09	6.8	3.2
CH-FC040NK2	High	26.7	19.4	7	12	5	3.8	3.04	10.8	15.6
				5.5	14.5	9	2.66	2.34	7.7	4.1
		27	19	7	12	5	**3.7**	**3**	10.7	**15**
				5.5	14.5	9	2.6	2.38	7.5	3.8
		29	21	7	12	5	3.92	3.14	11.2	16
				5.5	14.5	9	2.79	2.46	8.0	4
CH-FC050NK2	High	26.7	19.4	7	12	5	4.62	3.7	13.2	16.5
				5.5	14.5	9	3.08	2.71	8.8	4.2
		27	19	7	12	5	**4.5**	**3.62**	12.9	**16**
				5.5	14.5	9	3	2.72	8.7	4
		29	21	7	12	5	4.7	3.76	13.5	16.9
				5.5	14.5	9	3.19	2.81	9.2	4.3

Cooling capacity modification coefficient table:

Speed	CH-FC030NK2		CH-FC040NK2		CH-FC050NK2	
	TC	SC	TC	SC	TC	SC
Mid	0.93	0.89	0.92	0.88	0.92	0.88
Lo	0.85	0.81	0.85	0.81	0.85	0.81

Heating Capacity:

Remark:

TH: Total Heating Capacity.

Model	Speed	Water temp. change	Air inlet temp. (21℃ DB)							
			Water inlet temp. (℃)							
			35	40	45	50	55	60	65	70
			TH	TH	TH	TH	TH	TH	TH	TH
		℃	kW	kW	kW	kW	kW	kW	kW	kW
CH-FC030NK2	High	10	0.8	1.75	2.69	3.59	4.5	5.41	6.36	7.25
		8	1.21	2.1	3.03	3.95	4.82	5.74	6.68	7.61
		7	1.37	2.28	3.22	4.09	5	5.9	6.87	7.83
		6	1.53	2.45	3.38	4.27	5.18	6.06	7.06	8.05
		5	1.69	2.63	3.54	4.45	5.36	6.22	7.25	8.27
CH-FC040NK2	High	10	1.02	2.22	3.41	4.55	5.71	6.87	8.07	9.2
		8	1.53	2.67	3.85	5.01	6.11	7.28	8.47	9.66
		7	1.73	2.89	4.09	5.19	6.34	7.48	8.72	9.94
		6	1.94	3.11	4.29	5.42	6.57	7.69	8.96	10.21
		5	2.14	3.33	4.5	5.65	6.8	7.9	9.2	10.49
CH-FC050NK2	High	10	1.2	2.61	4	5.35	6.71	8.06	9.47	10.8
		8	1.8	3.13	4.52	5.88	7.18	8.54	9.95	11.34
		7	2.04	3.39	4.8	6.1	7.45	8.79	10.23	11.66
		6	2.27	3.65	5.04	6.36	7.71	9.03	10.52	11.99
		5	2.51	3.91	5.28	6.63	7.98	9.27	10.8	12.31

Heating capacity modification coefficient table:

Model	CH-FC030NK2	CH-FC040NK2	CH-FC050NK2
Mid-speed	0.87	0.86	0.86
Low-speed	0.79	0.79	0.79

4-pipe units

Cooling Capacity:

Remark:

DB: Dry Bulb Temp.; **WB:** Wet Bulb Temp.; **EWT:** Enter Water Temp.; **LWT:** Leaving Water Temp.;
TC: Total Cooling Capacity; **SC:** Sensible Cooling Capacity;

Model	Speed	Air On FCU		Water		Delta Water Temp.	Capacity		Water Flow	Water Pressure Drop
		DB	WB	EWT	LWT		TC	SC		
		℃	℃	℃	℃	℃	kW	kW	l/min	kPa
CH-FC030NK4	High	26.7	19.4	7	12	5	2.6	2.2	7.5	22.6
				5.5	14.5	9	1.75	1.68	5.0	4.9
		27	19	7	12	5	**2.5**	**2.1**	**7.2**	**22**
				5.5	14.5	9	1.7	1.62	4.8	4.5
		29	21	7	12	5	2.74	2.25	7.8	23
				5.5	14.5	9	1.88	1.75	5.3	5.1
CH-FC040NK4	High	26.7	19.4	7	12	5	3	2.4	8.7	16.5
				5.5	14.5	9	2.15	1.98	6.2	9.4
		27	19	7	12	5	**2.9**	**2.3**	**8.4**	**16**
				5.5	14.5	9	2.1	1.92	6.0	9
		29	21	7	12	5	3.12	2.48	9.0	17.1
				5.5	14.5	9	2.2	2.14	6.3	9.7
CH-FC050NK4	High	26.7	19.4	7	12	5	3.58	2.95	10.3	24.6
				5.5	14.5	9	2.6	2.3	7.5	6.4
		27	19	7	12	5	**3.5**	**2.9**	**10**	**24**
				5.5	14.5	9	2.5	2.25	7.2	6
		29	21	7	12	5	3.74	3	10.7	25.2
				5.5	14.5	9	2.68	2.45	7.7	6.9

Cooling capacity modification coefficient table:

Speed	CH-FC030NK4		CH-FC040NK4		CH-FC050NK4	
	TC	SC	TC	SC	TC	SC
Mid	0.93	0.89	0.92	0.88	0.92	0.88
Lo	0.85	0.81	0.85	0.81	0.85	0.81

Heating Capacity:

Remark:

TH: Total Heating Capacity.

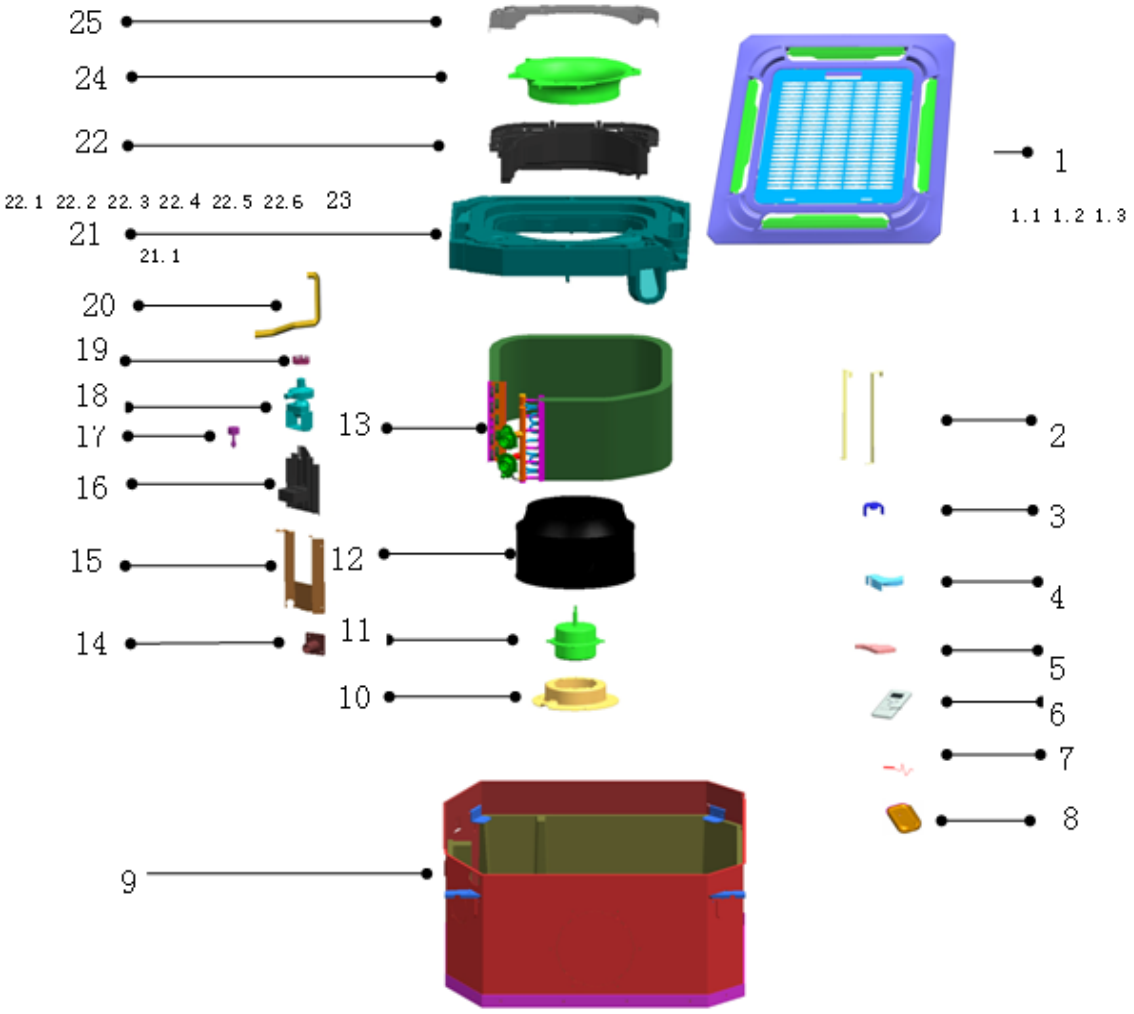
Model	Speed	Water temp. change	Air inlet temp. (20℃ DB)							
			Water inlet temp. (℃)							
			35	40	45	50	55	60	65	70
			TH	TH	TH	TH	TH	TH	TH	TH
		℃	kW	kW	kW	kW	kW	kW	kW	kW
CH-FC030NK4	High	10	0.41	0.89	1.37	1.83	2.3	2.76	3.25	**3.7**
		8	0.62	1.07	1.55	2.01	2.46	2.93	3.41	3.89
		7	0.7	1.16	1.64	2.09	2.55	3.01	3.51	4
		6	0.78	1.25	1.73	2.18	2.64	3.09	3.6	4.11
		5	0.86	1.34	1.81	2.27	2.73	3.18	3.7	4.22
CH-FC040NK4	High	10	0.51	1.11	1.7	2.28	2.86	3.43	4.04	**4.6**
		8	0.76	1.33	1.93	2.5	3.06	3.64	4.24	4.83
		7	0.87	1.44	2.04	2.6	3.17	3.74	4.36	4.97
		6	0.97	1.56	2.15	2.71	3.29	3.84	4.48	5.11
		5	1.07	1.67	2.25	2.82	3.4	3.95	4.6	5.24
CH-FC050NK4	High	10	0.57	1.23	1.89	2.52	3.17	3.81	4.47	**5.1**
		8	0.85	1.48	2.13	2.78	3.39	4.03	4.7	5.36
		7	0.96	1.6	2.27	2.88	3.52	4.15	4.83	5.51
		6	1.07	1.72	2.38	3	3.64	4.26	4.97	5.66
		5	1.19	1.85	2.49	3.13	3.77	4.38	5.1	5.81

Heating capacity modification coefficient table:

Model	CH-FC030NK4	CH-FC040NK4	CH-FC050NK4
Mid-speed	0.87	0.86	0.86
Low-speed	0.79	0.79	0.79

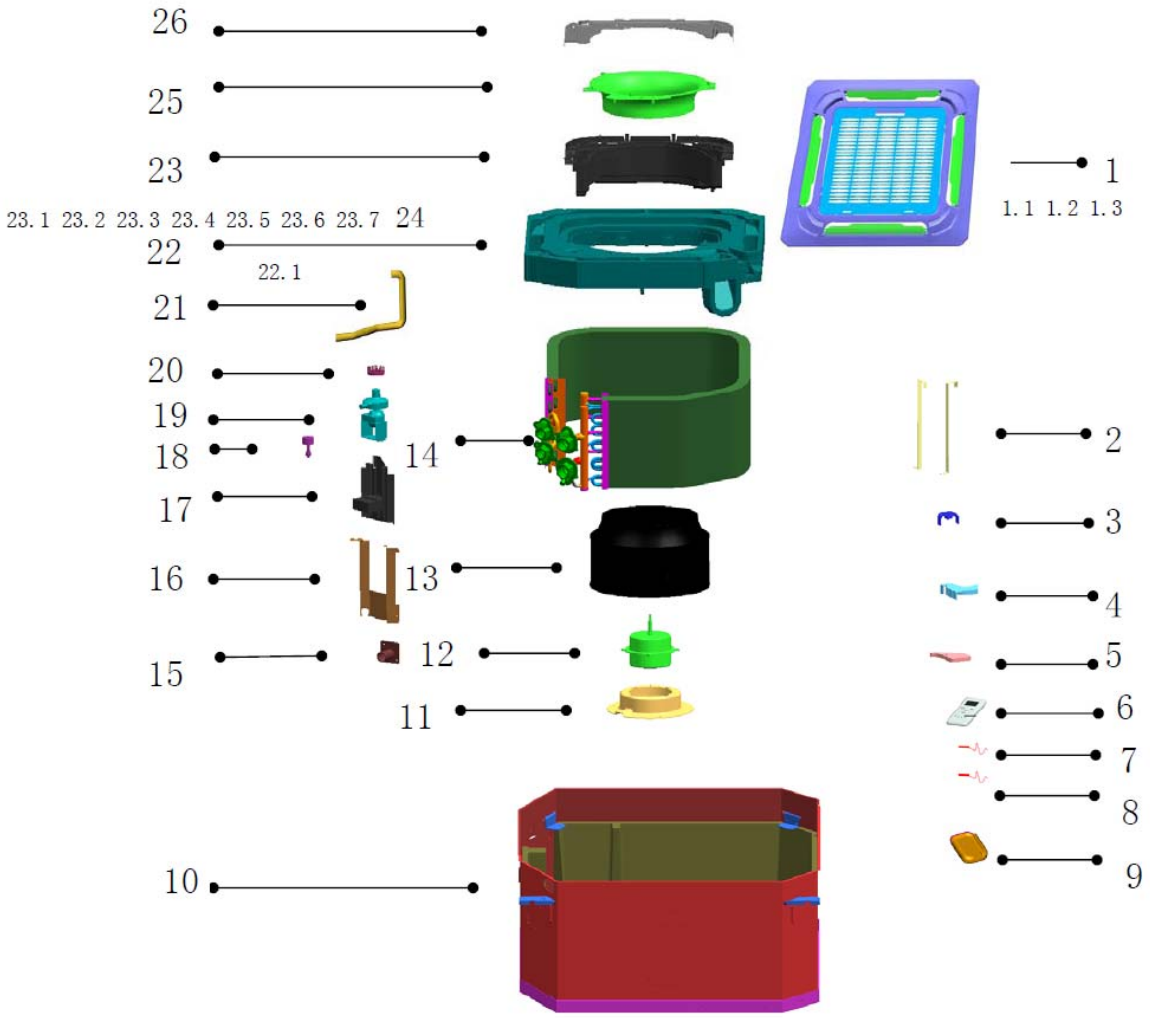
Explored View

CH-FC030NK2 CH-FC040NK2 CH-FC050NK2



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Panel	1	16	Drain pump installation base	1
1.1	Display board	1	17	Water level sensor ass'y	1
1.2	Swing motor	1	18	Drain pump	1
1.3	Room temp sensor ass'y	1	19	Guard against block up net	1
2	Evaporator hang board	2	20	Drain pipe	1
3	Wire clamp	1	21	Drainage pan ass'y	1
4	Wire box	1	21.1	Plug	1
5	Cover box	1	22	E-part box ass'y	1
6	Remote controller	1	22.1	Main control board ass'y	1
7	Temp. sensor ass'y	1	22.2	Transformer	1
8	Remote controller holder ass'y	1	22.3	Wire joint	2
9	Base ass'y	1	22.4	E-part box	1
10	Motor installation base	1	22.5	Wire joint installation base	1
11	Motor	1	22.6	Fixture clip	3
12	Centrifugal fan	1	23	Motor capacitor	1
13	Evaporator ass'y	1	24	Ring	1
14	Connecting pipe	1	25	E-Part box cover	1
15	Evaporator fixing board	1			

CH-FC030NK4 CH-FC040NK4 CH-FC050NK4



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Panel	1	17	Drain pump installation base	1
1.1	Display board	1	18	Water level sensor ass'y	1
1.2	Swing motor	1	19	Drain pump	1
1.3	Room temp. sensor ass'y	1	20	Guard against block up net	1
2	Evaporator hang board	2	21	Drain pipe	1
3	Wire clamp	1	22	Drainage pan ass'y	1
4	Wire box	1	22.1	Plug	1
5	Cover box	1	23	E-part box ass'y	1
6	Remote controller	1	23.1	E-part box	1
7	Temp. sensor ass'y	1	23.2	Wire joint installation base	1
8	Temp. sensor ass'y	1	23.3	Fixture clip	3
9	Remote controller holder ass'y	1	23.4	Main control board ass'y	1
10	Base ass'y	1	23.5	Transformer	1
11	Motor installation base	1	23.6	Wire joint	1
12	Motor	1	23.7	Wire joint, 5p	1
13	Centrifugal fan	1	24	Motor capacitor	1
14	Evaporator ass'y	1	25	Ring	1
15	Connecting pipe	1	26	E-Part box cover	1
16	Evaporator fixing board	1			

One-way Cassette Type

Feature 41

Specification 42

Dimensions 43

Service Space 44

Wiring Diagrams 45

Capacity Tables 47

Sound Levels 49

Explored View 50

Troubleshooting 53

Feature

235 mm-thick body features discreet, slim design and offers a wide variety of discharge methods and mounting such as in corners or in suspended ceilings, etc.

(1) Smoother air flow with less turbulence

--- Owing to the multiple-blade fan rotor and the air guide design, the airflow is getting smoother and more comfortable

(2) One direction air flow

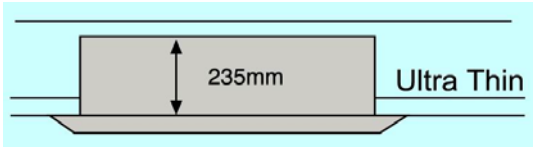
--- Quick cooling

(3) Stylish design

--- Be harmonious with any interior decoration and creates an elegant environment

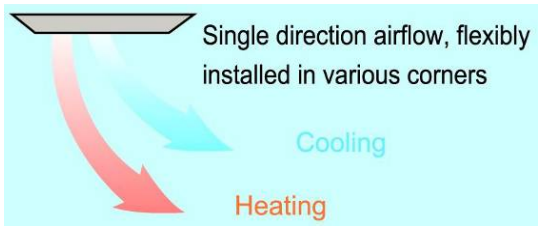
(4) Ultra thin body

--- Space saving



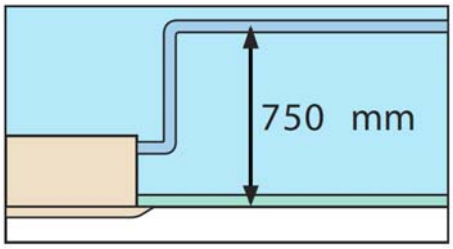
(5) Convenient installation

--- Able to be flexibly installed in various corners



--- Standardized sectional module

--- More flexible in routing the tube through the ceiling space due to the condensed water can be lift through the drain pump up to 750mm above the drain port



(6) A full series of controller give you the most suitable solution according to the different requirement from different customers.

(7) Easier to do cleaning and maintenance

--- Flat type suction grille of easy cleaning，removable high efficient air filter can keep air fresh.

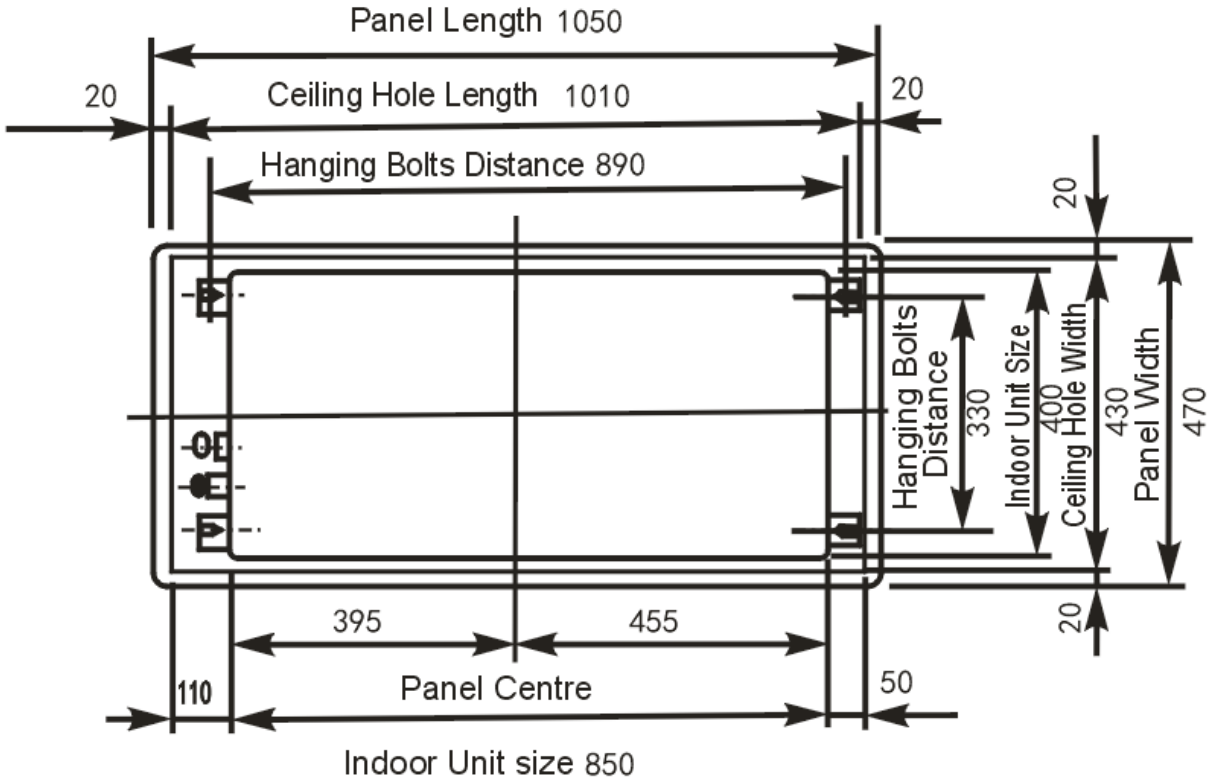
Specification

Model			CH-FCT030K2(E)	CH-FCT040K2(E)
Air Volume	High	m^3/h	500	630
	Medium		450	560
	Low		400	500
Cooling Capacity		W	3040	3790
		Btu/h	10350	12900
Heating Capacity		W	5130	6410
		Btu/h	17500	21850
Auxiliary Electrical Heater		kW	1	1
Noise (high speed)		dB(A)	38	40
Water flow		l/min	8.7	10.9
Water resistance		kPa	10.1	14.5
Indoor Coil	Number of rows		3	
	Tube pitch(a)×row pitch(b)	mm	25.4×22	
	Fin spacing	mm	1.8	
	Fin type		Hydrophilic aluminum	
	Tube outside dia. and type	mm	Φ9.52	
			Bare tube	
	Coil (L×H×W)	mm	600×229	
	Number of circuits		3	
Fan motor	Type		Low Noise 4-speed AC motor	
	Quantity		1	1
	Model		YSK20-4	YSK20-4
	Input	W	45	50
	Capacitor	uF	1.2uF/450V	1.5uF/450V
Indoor unit	Net dimension g(W×H×D)	mm	850x235x400	
	Packing (W×H×D)	mm	1080x310x460	
	Net/Gross weight (with EAH)	kg	22.5/25(23/27)	
panel	Net dimension g(W×H×D)	mm	1050×18×470	
	Packing (W×H×D)	mm	1120×172×540	
	Net/Gross weight	kg	4/7	
Control mode			Remote controller (standard) wire controller (optional)	
Pipe	Water-inlet pipe		RC3/4” internal thread	
	Water-return pipe		RC3/4” internal thread	
	Drain water-outlet pipe		EVA+LDPE 3/4” external thread	

Remark:
1. All performance data above is based upon 0Pa external static pressure.
2. Cooling capacity test condition: air inlet Temp. : 27DB℃/19WB℃, water inlet Temp. 7℃, water Temp. difference 5℃.
3. Heating capacity test condition:
   Air inlet Temp. 21DB℃, water inlet Temp. 60 DB℃
   The volume of air and water is same as cooling.
4. Noise level is tested in full-anechoic room.
5. The auxiliary electrical heater is only available for CH-FCTXXXK2 series.

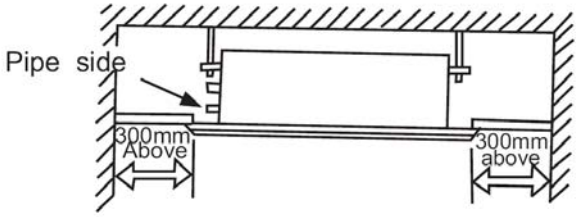
Dimensions

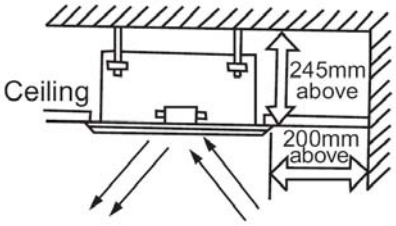
CH-FCT030K2(E), CH-FCT040K2(E)



Service Space

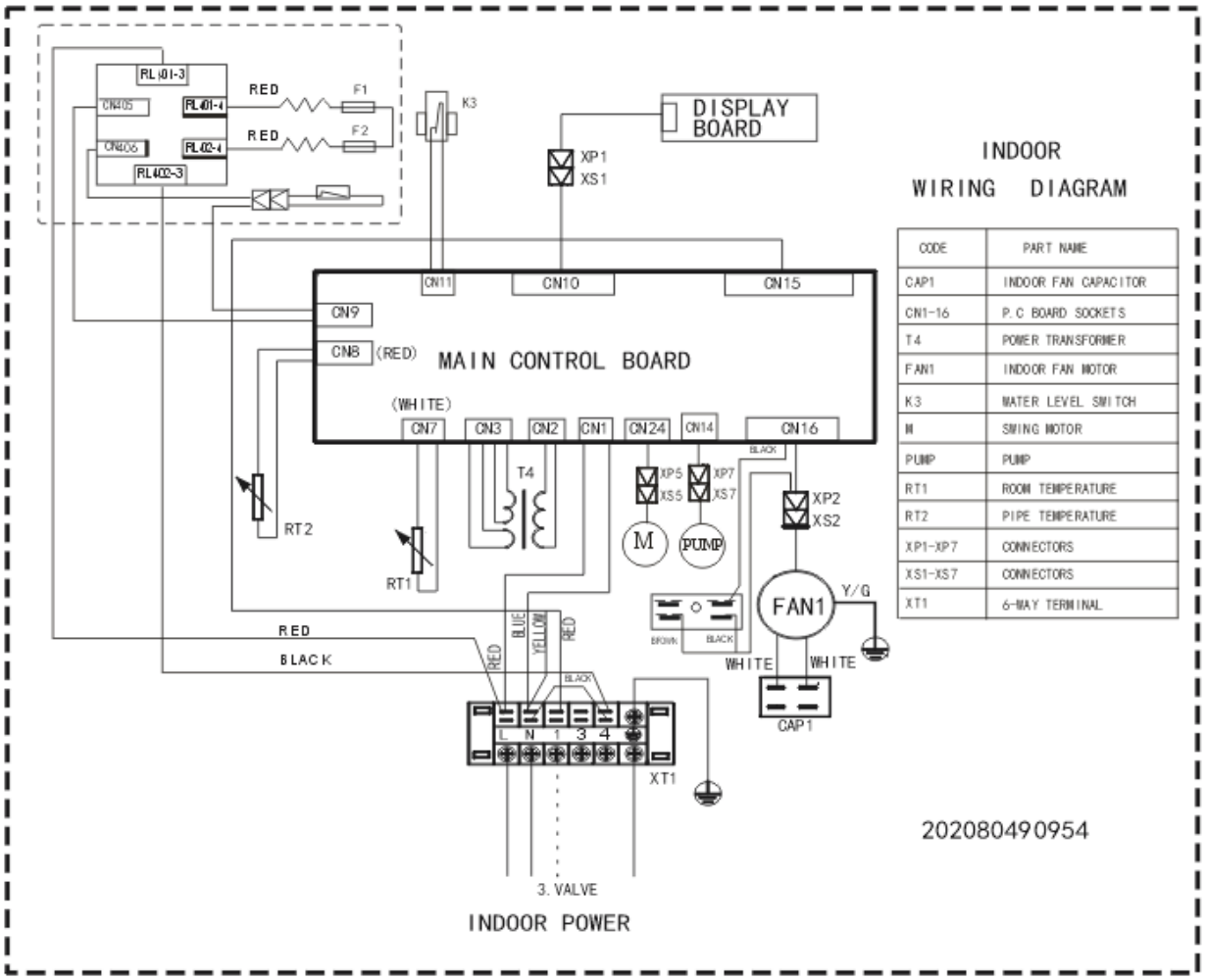
CH-FCT030K2(E), CH-FCT040K2(E)



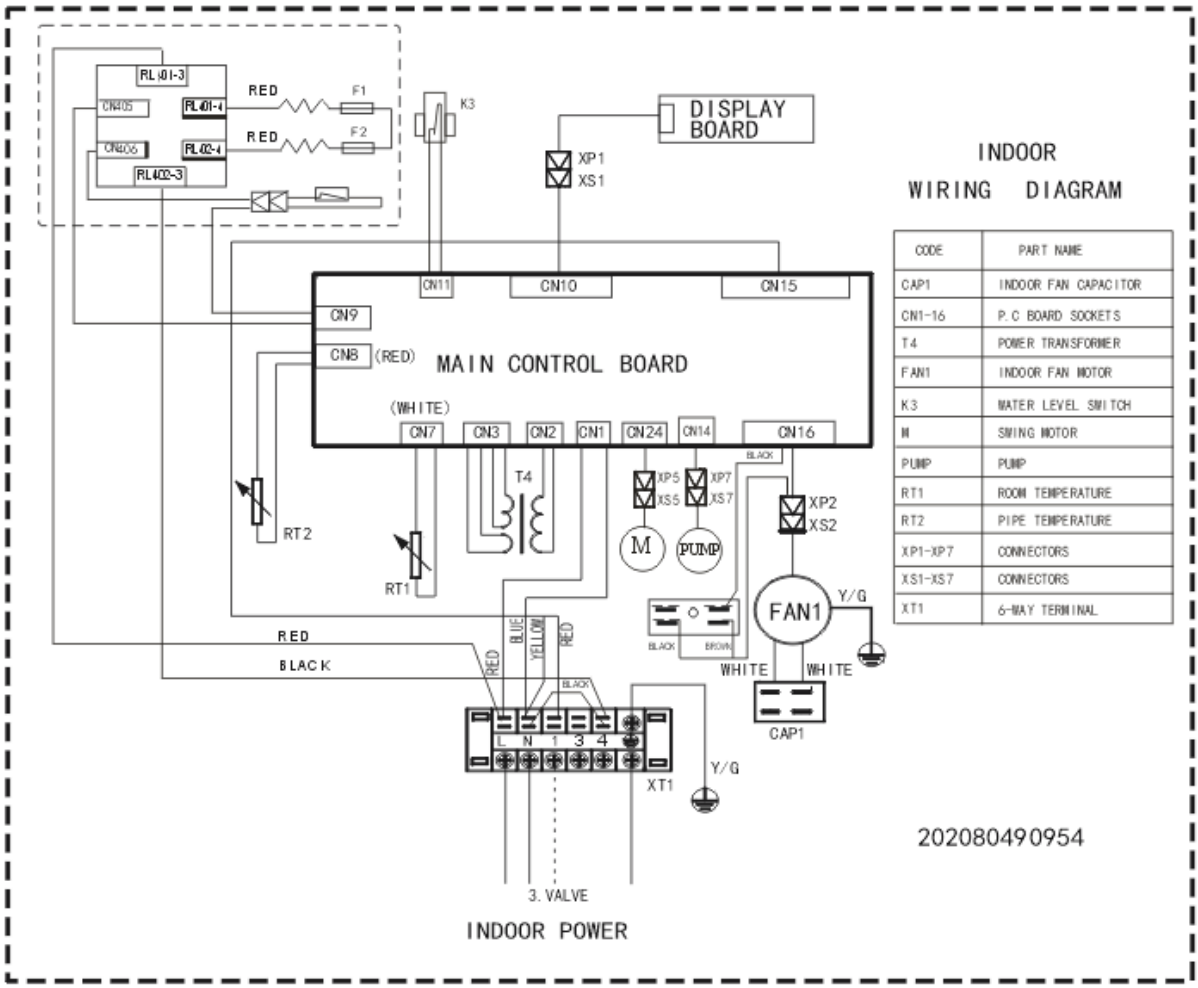


Wiring Diagrams

CH-FCT030K2, CH-FCT030K2E



CH-FCT040K2, CH-FCT040K2E



CODE	PART NAME
CAP1	INDOOR FAN CAPACITOR
CN1-16	P.C BOARD SOCKETS
T4	POWER TRANSFORMER
FAN1	INDOOR FAN MOTOR
K3	WATER LEVEL SWITCH
M	SWING MOTOR
PUMP	PUMP
RT1	ROOM TEMPERATURE
RT2	PIPE TEMPERATURE
XP1-XP7	CONNECTORS
XS1-XS7	CONNECTORS
XT1	6-WAY TERMINAL

Capacity Tables

Cooling Capacity:

Remark:

DB: Dry Bulb Temp.; **WB:** Wet Bulb Temp.; **EWT:** Enter Water Temp.; **LWT:** Leaving Water Temp.;
TC: Total Cooling Capacity; **SC:** Sensible Cooling Capacity;

Model	Speed	Air On FCU		Water		Delta Water	Capacity		Water Flow	Water Pressure Drop
		DB	WB	EWT	LWT	Temp.	TC	SC		
		℃	℃	℃	℃	℃	kW	kW	l/min	kPa
CH-FCT030K2(E)	High	26.7	19.4	7	12	5	2.96	2.13	8.5	12
				5.5	14.5	9	1.63	1.17	4.3	5
		27	19	7	12	5	3.04	2.17	8.7	10.1
				5.5	14.5	9	1.66	1.19	4.3	4.2
		29	21	7	12	5	3.64	2.42	10.5	14
				5.5	14.5	9	2	1.33	5.3	6.3
CH-FCT040K2(E)	High	26.7	19.4	7	12	5	3.72	2.74	10.7	17.16
				5.5	14.5	9	2.05	1.51	5.3	7.15
		27	19	7	12	5	3.79	2.8	10.9	14.5
				5.5	14.5	9	2.08	1.54	5.5	6.01
		29	21	7	12	5	4.61	3.12	13.2	20.02
				5.5	14.5	9	2.54	1.72	6.7	9.01

Cooling capacity modification coefficient table**:**

Speed	CH-FCT030K2(E)		CH-FCT040K2(E)	
	TC	SC	TC	SC
Mid	0.95	0.91	0.94	0.9
Lo	0.9	0.86	0.89	0.85

Heating Capacity:

Remark:

TH: Total Heating Capacity.

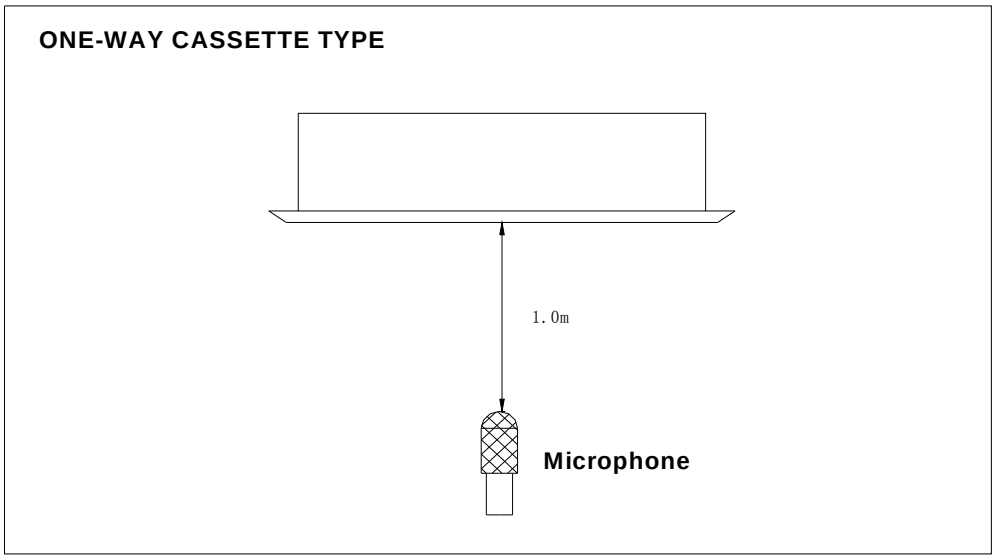
Model	Speed	Water temp. change	Air inlet temp. (21℃ DB)							
			Water inlet temp. (℃)							
			35	40	45	50	55	60	65	70
			TH	TH	TH	TH	TH	TH	TH	TH
		℃	kW	kW	kW	kW	kW	kW	kW	kW
CH-FCT030K2(E)	High	10	0.94	1.83	2.66	3.47	4.27	5.07	5.86	6.65
		8	1.26	2.1	2.91	3.71	4.5	5.29	6.07	6.86
		7	1.4	2.22	3.02	3.82	4.61	5.39	6.18	6.96
		6	1.53	2.34	3.14	3.93	4.71	5.5	6.28	7.06
		5	1.66	2.46	3.25	4.03	4.82	5.6	6.38	7.16
CH-FCT040K2(E)	High	10	1.13	2.24	3.29	4.32	5.34	6.36	7.37	8.37
		8	1.53	2.59	3.62	4.64	5.65	6.66	7.66	8.67
		7	1.72	2.76	3.78	4.79	5.8	6.81	7.81	8.81
		6	1.89	2.92	3.94	4.94	5.95	6.95	7.95	8.95
		5	2.06	3.08	4.09	5.09	6.09	7.09	8.1	9.1

Heating capacity modification coefficient table:

Model	CH-FCT030K2(E)	CH-FCT040K2(E)
Mid-speed	0.89	0.88
Low-speed	0.84	0.83

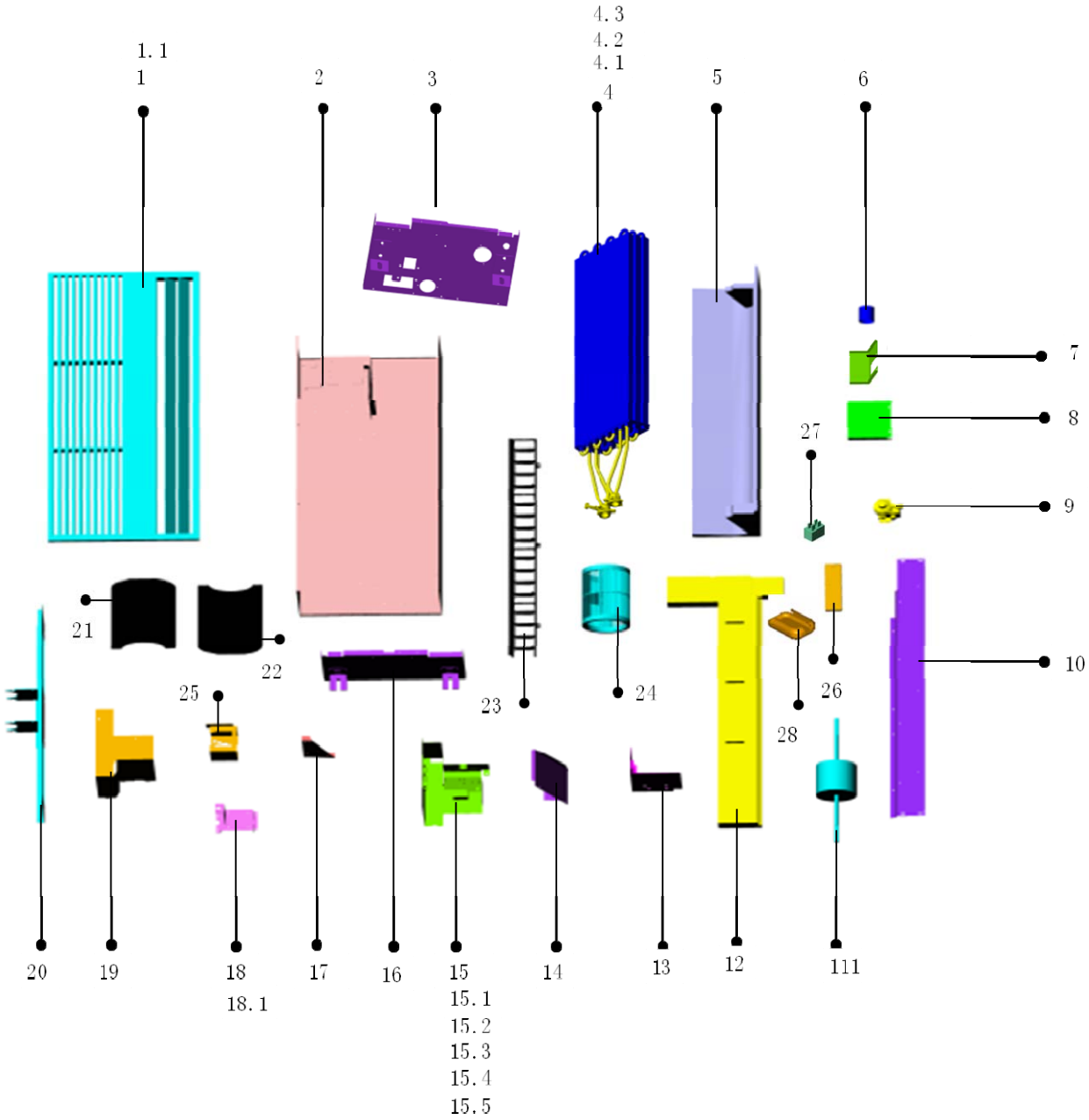
Sound Levels

TYPE		CH-FCT030K2(E)	CH-FCT040K2(E)
Noise	dB(A)	38	40



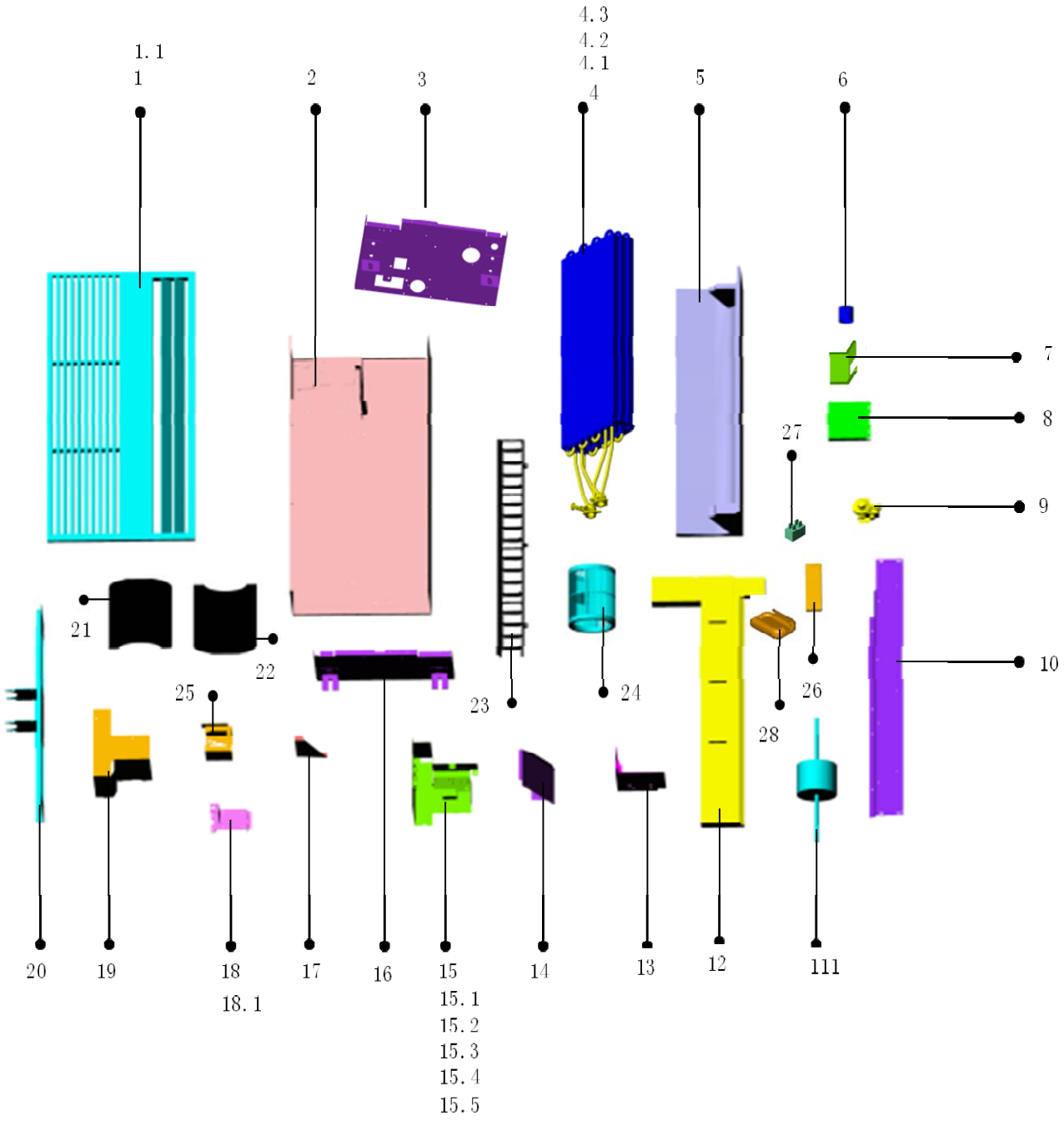
Explored View

CH-FCT030K2, CH-FCT040K2



No.	Part Name	Quantity		No.	Part Name	Quantity
1	Panel	1		15.1	Wiring box	1
1.1	Swing motor	1		15.2	Transformer	1
2	Base	1		15.3	Main PCB	1
3	Right side plate	1		15.4	Wiring terminal	1
4	Evaporator assembly	1		15.5	6-hole terminal	1
4.1	Tube temperature sensor	1		16	Left side plate	1
4.2	Indoor temperature sensor	1		17	Right cover of evaporator	1
4.3	Evaporator	1		18	Supporter of water level switch	1
5	Air leading foam	1		18.1	Water level sensor	1
6	Heat insulation of drain pipe	1		19	cover	1
7	Water leading plate	1		20	Supporter of motor	1
8	Small cover	1		21	Lower volute	2
9	Drain pump	1		22	Upper volute	2
10	Middle cover	1		23	Air louver	1
11	Fan motor	1		24	Fan wheel	2
12	Drain pan	1		25	Isolation panel of drain pump	1
13	Isolation panel of drain pump	1		26	Remote controller	1
14	Right cover of evaporator	1		27	Fan motor capacitor	1
15	Control box assembly	1		28	Supporter of remote controller	1

CH-FCT030K2E, CH-FCT040K2E



No.	Part Name	Quantity		No.	Part Name	Quantity
1	Panel	1		15.2	Transformer	1
1.1	Swing motor	1		15.3	Main PCB	1
2	Base	1		15.4	Wiring terminal	1
3	Right side plate	1		15.5	6-hole terminal	1
4	Evaporator assembly	1		15.6	Control PCB of electrical heater	1
4.1	Tube temperature sensor	1		16	Left side plate	1
4.2	Indoor temperature sensor	1		17	Right cover of evaporator	1
4.3	Evaporator	1		18	Supporter of water level switch	1
5	Air leading foam	1		18.1	Water level sensor	1
6	Heat insulation of drain pipe	1		19	Cover	1
7	Water leading plate	1		20	Supporter of motor	1
8	Small cover	1		21	Lower volute	2
9	Drain pump	1		22	Upper volute	2
10	Middle cover	1		23	Air louver	1
11	Fan motor	1		24	Fan wheel	2
12	Drain pan	1		25	Isolation panel of drain pump	1
13	Isolation panel of drain pump	1		26	Remote controller	1
14	Right cover of evaporator	1		27	Fan motor capacitor	1
15	Control box assembly	1		28	Supporter of remote controller	1
15.1	Wiring box	1				

Troubleshooting

No.	Malfunction	Operation lamp	Timer lamp	Defrosting lamp	Alarm lamp
1	Room temp. sensor checking channel is abnormal	X	☆	X	X
2	Evaporator pipe temp. sensor checking channel is abnormal	☆	X	X	X
3	EEPROM malfunction	☆	☆	X	X
4	Water-level switch malfunction	X	X	X	☆

Part 3
Installation

The Installation of CH-FCT030-040.....55

The Installation of CH-FC060-150.....63

The Installation of CH-FC030-050.....73

The Installation of **CH-FCT030-040**

Installation Attention. 56

Install the Main Body. 57

Install the Panel. 59

Install Drain Pipe. 60

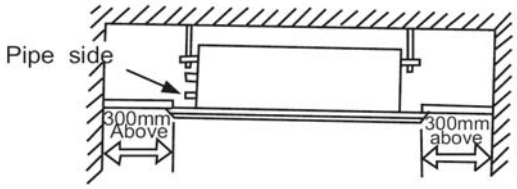
Wring. 62

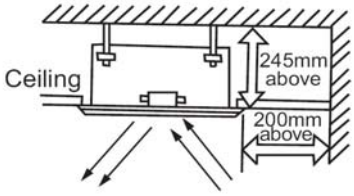
Installation Attention

Installation place

There is enough room for installation and maintenance.
The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
The air outlet and the air inlet are not impeded, and the influence of external air is the least.
The air flow can reach throughout the room.
The connecting pipe and drainpipe could be extracted out easily.
There is no direct radiation from heaters

Service space:





CH-FCT030NK2(E) CH-FCT040NK2(E)

Caution

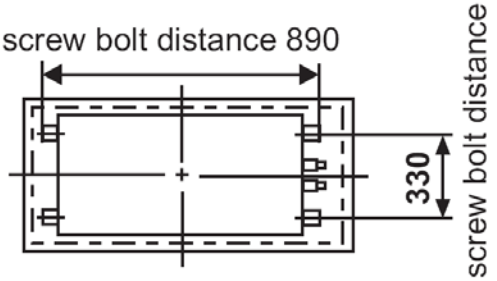
Location in the following places may cause malfunction of the machine. (If unavoidable, please consult your local dealer.)

a. There exists petrolatum.
b. There is salty air surrounding (near the coast).
c. There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
d. The Volt vibrates violently (in the factories)

Install the Main Body

- Please refer to the following figure for the hanging screw bolts.
- Please install with Ø10 hanging screw bolts.
- The handling to the ceiling varies from the constructions, consult the construction person for the specific condition.

1. The size of the ceiling to be handled------ Do keep the ceiling flat. Consolidate the roof beam for possible vibration.
2. Cut off the roof beam.
3. Strengthen the place that has been cut off, and consolidate the roof beam.
4. Connect wires and pipes ins anged.

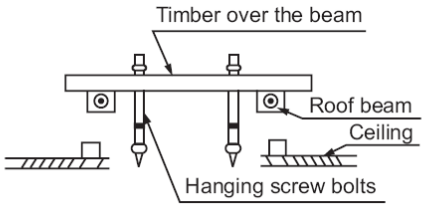


CH-FCT030NK2(E) CH-FCT040NK2(E)

- After the selection of installation location, position the water pipes, drain pipes, indoor & outdoor wires to the connection places before hanging up the machine.
- The installation of hanging screw bolts.

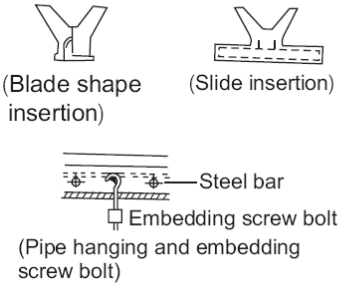
WOODEN CONSTRUCTION

Put the square timber over the roof beam, then install the hanging screw bolts.



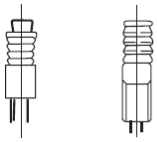
NEW CONCRETE BRICKS

Inlaying or embedding the screw bolts.



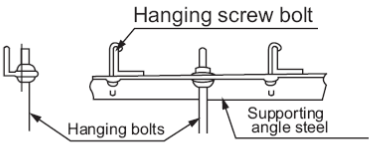
FOR ORIGINAL CONCRETE BRICKS

Install the hanging hook with expansible bolt into the concrete deep to 45~50mm to prevent loose.



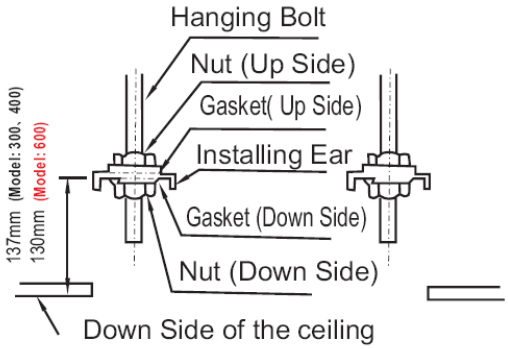
STEEL ROOF BEAM STRUCTRUE

Install and use directly the supporting angle steel.

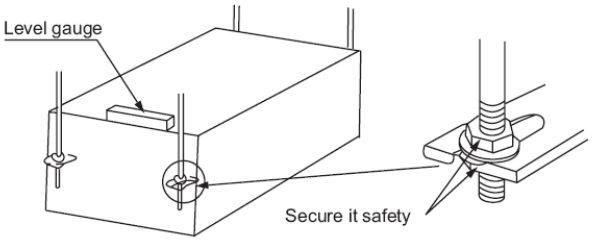


OVERHANGING THE INDOOR UNIT

Adjust the gasket (down side)

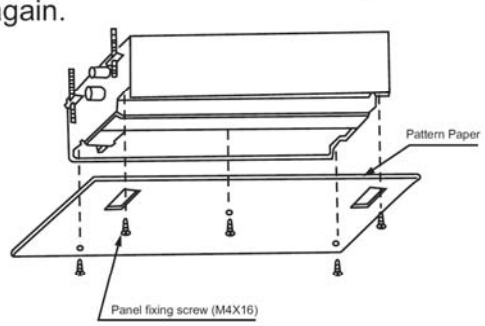


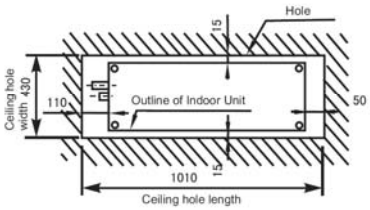
Fasten the upside nut



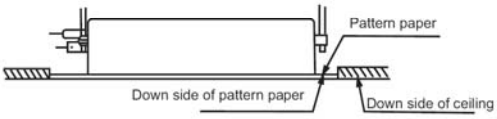
- Install the hanging bolt into U groove of the hanging tool. Overhang the indoor unit and ensure it is level using a level gauge.

- Adjust the relative position between indoor unit and ceiling hole with the pattern paper again.

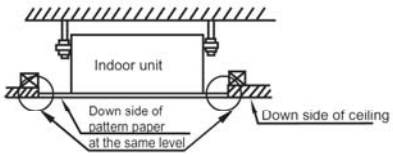




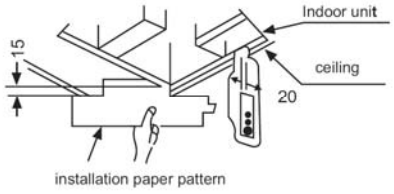
- Fix the pattern paper to the down side of indoor unit with panel fixing screw.
  Adjust the size of ceiling hole according to pattern paper.

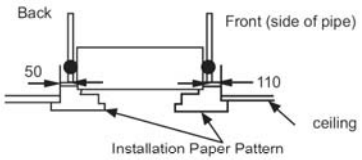


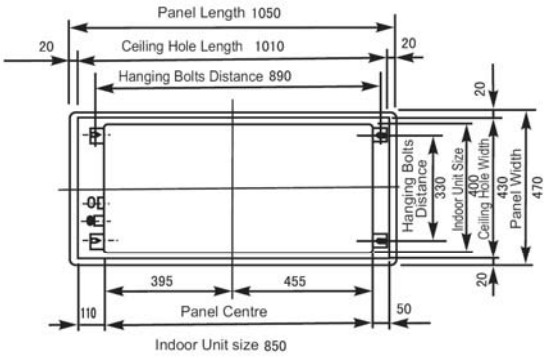
- Down side of ceiling must be level with down side of the pattern paper.



- Use the installation paper pattern to confirm the position between the body and the ceiling opening
- Please refer to the following figure to install.







Model: 300、400

Install the Panel

Note:

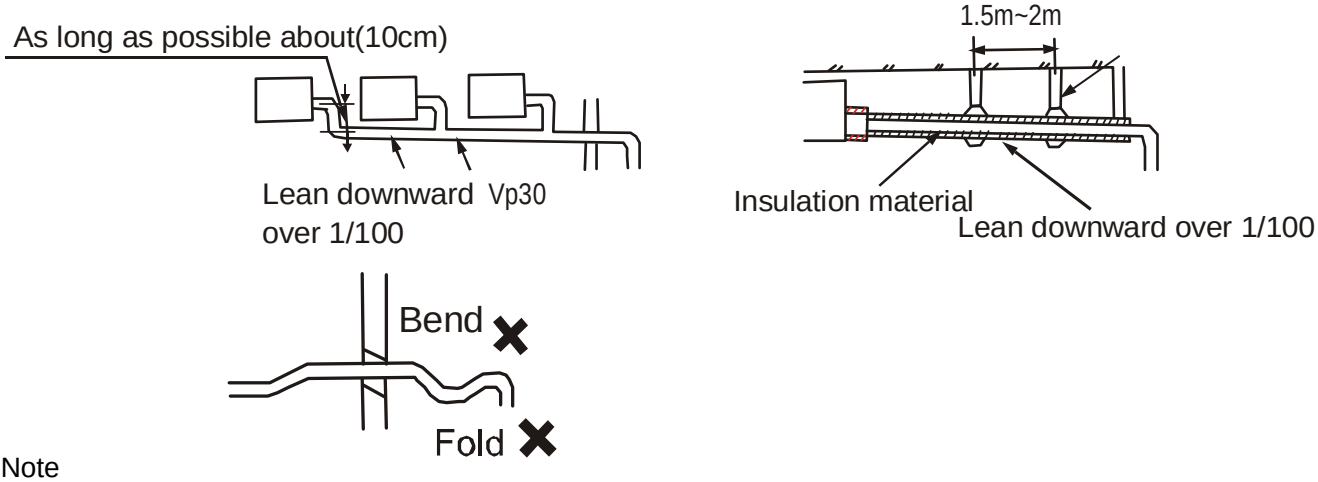
- The panel and the ceiling, the panel and the unit body should be connected closely, or air leakage, water leakage and condensate dew will be caused.
- Please refer to the panel installation manual to install the panel.
- Please confirm if the installation places of unit body and panel are proper.

Install Drain Pipe

When connecting the pipe, please use the sealing material and pipe glove.

Caution:

- The drain pipe of indoor unit must be heat insulated, or it will condense dew, as well as the connections of the indoor unit.
- Hard PVC binder must be used for pipe connection, and make sure there is no leakage.
- With the connection part to the indoor unit, please note not to impose pressure on the side of indoor unit pipes.
- When the declivity of the drain pipe downwards is over 1/100, there should not be any winding.
- The total length of the drain pipe when pulled out breadth wise shall not exceed 20m. When the pipe is over long, a bracket must be installed to prevent winding.
- Refer to the following figures to install the pipes.

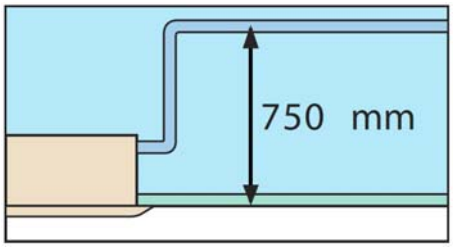


Note

1. Injury means causing from the harm, burn and electrical shock, but not serious for the hospitalization.
2. The damage of material means the disrepair of property and material.

Upward drainage:

- To make sure that the drainage pipe would not slant downward. Lead it upward to a height 750mm maximum, then downward lead it.
- When the drainage is upward, the upward drain pipe and elbow of the accessories must be adopted and the height is less than 750mm, otherwise the drain pump water level switch malfunction will be caused.

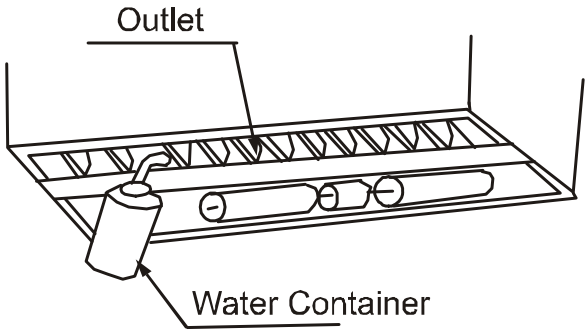


- After upward piping, the lead drain pipe must slant downward immediately. (Over 1/100)

Drainage test

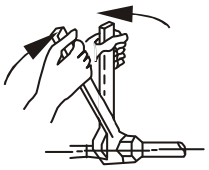
- Check whether the drainpipe is unhindered
- New built house should have this test done before paving the ceiling.

1) Stow 600-800cc water with pot or hose from outlet slowly.
2) Turn on the power, and operate the air conditioner under the "COOLING" mode. The drainage test is doing during checking the drain pump motor running sound.
3) Turn off the power, drain the water away.



Pipe connection

1. The water vent is with the air outlet valve; the other side is water inlet.
2. When connecting the water collecting box, the torque is 60~75N·m.
3. Put the connecting tubing at the proper position, wrench the nuts with hands, then fasten it with a wrench.(Refer to Chart)



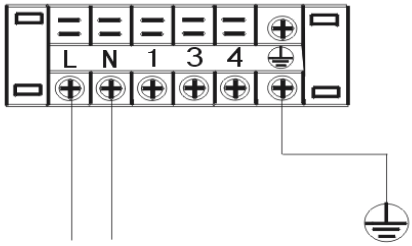
Wring

Caution:

1. The air conditioner should use separate power supply with rated voltage; the voltage of power supply must be within90%~110% of rated value.
2. The wiring work should be done by qualified persons according to circuit drawing.
3. A disconnection device having an air gap contact separation in all active conductors should incorporated in the fixed wiring according to the National wiring regulation.
4. Be sure to locate the power wiring and the signal wiring well to avoid cross-disturbance and their contact with connecting pipe or stop valve body.
5. The wiring (5-core shield cable) attached between the signal receiving board and the wire controller is not more than 2m. Be sure to prolong it with wiring of the same type and proper length if necessary. Generally, do not twist two wiring together unless .the joint is soldered well and covered with insulator tape.
6. Do not turn on the power until you have checked carefully after wiring.
7. The yellow and green wire can only be used to link to the ground wiring.

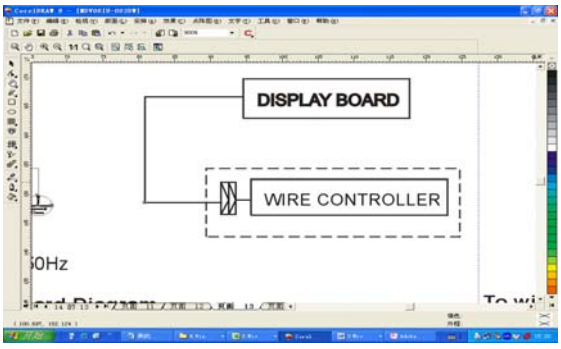
Terminal Board Diagram

Please refer to the indoor unit wiring diagram for the wiring.



Power:
220V-240V~ 50Hz

To wire controller



The reserved wire control function is indicated in broken line table, users can purchase the wire controller when necessary.

The Installation of CH-FC060-150

1. Before Installation 64

2. Installation space. 64

3. Installation procedures for fresh air intake duct connection. 64

4. Install the Main Body. 65

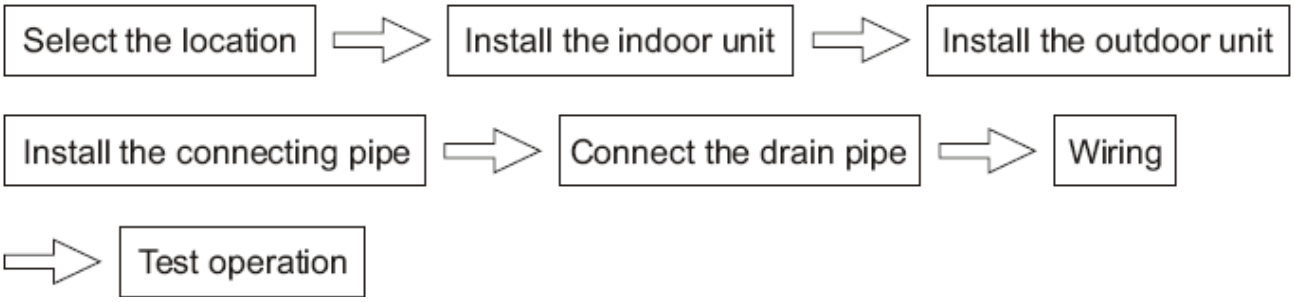
5. Install the Panel 68

6. Connect the Drain Pipe. 70

7. Wiring. 72

1. Before Installation

Please check whether the accessories are of full scope. If there are some fittings free from use, please restore them carefully.



2. Installation space

(refer to fig.1,fig.2,fig.3 and table 1 for specification.)

The indoor unit should be installed in a location that meets the following requirements:

- There is enough room for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting water pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.

Caution:

Keep indoor unit, outdoor unit, power supply wiring and transmission wiring at least 1 meter away from televisions and radios. This is to prevent image interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if 1 meter is kept.)

3. Installation procedures for fresh air intake duct connection

- Preparing the connection hole
- Cut off the knockout hole on the side plate with a nipper.
- Cut the inner insulation of the hole portion with a cutter.
- Placing the insulation
- Put the insulation tightly around the hole of the unit as shown. The ends of the side plate and the inner insulation must be completely adhered without leaving any clearance along the circumference of the hole. Make sure the inner surface of insulation tightly contacts the inner insulation edge and the side plate. (refer to fig.5)

4. Install the Main Body

A. The existing ceiling (to be horizontal)

a. Cut a quadrangular hole of 880×880mm in the ceiling according to the shape of the installation paper board.

- The center of the hole should be at the same position of that of the air conditioner body.
- Determine the lengths and outlets of the connecting pipe, drain pipe and cables.
- To balance the ceiling and to avoid vibration, please enforce the ceiling when necessary.

b. Select the position of installation hooks according to the hook holes on the installation board.

- Drill four holes of Ø12mm, 50~55mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).
- Face the concave side of the installation hooks toward the expansible hooks. Determine the length of the installation hooks from the height of ceiling, and then cut off the unnecessary part.
- If the ceiling is extremely high, please determine the length of the installation hook according to facts.

c. Adjust the hexangular nuts on the four installation hooks evenly, to ensure the balance of the body.

- If the drainpipe is awry, leakage will be caused by the malfunction of the water-level switch.
- Adjust the position to ensure the gaps between the body and the four sides of ceiling are even. The body's lower part should sink into the ceiling for 10~12 mm (refer to fig.6).
- In general, L is half of the screw length of the installation hook. (refer to fig.6)
- Locate the air conditioner firmly by wrenching the nuts after having adjusted the body's position well. (refer to fig.7)

B. New built houses and ceilings

a. In the case of new built house, the hook can be embedded in advance (refer to the A.b mentioned above). But it should be strong enough to bear the indoor unit and will not become loose because of concrete shrinking.

b. After installing the body, please fasten the installation paper board onto the air conditioner with bolts (M6*12) to determine in advance the sizes and positions of the hole opening on ceiling. (refer to fig. 8)

- Please first guarantee the flatness and horizontal of ceiling when installing it.
- Refer to the A.a mentioned above for others.

c. Refer to the A.c mentioned above for installation.

d. Remove the installation paper board.

Caution:

After installing the body, the four bolts(M6x12)must be fastened to the air conditioner onto ensure the body is grounded well.

FIGURES 1

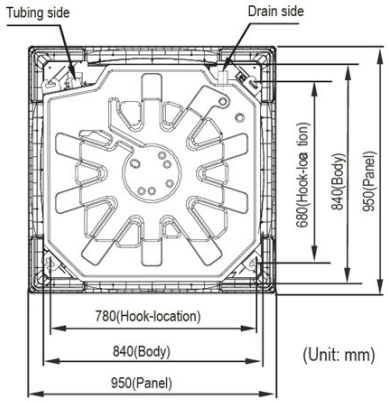


fig.1

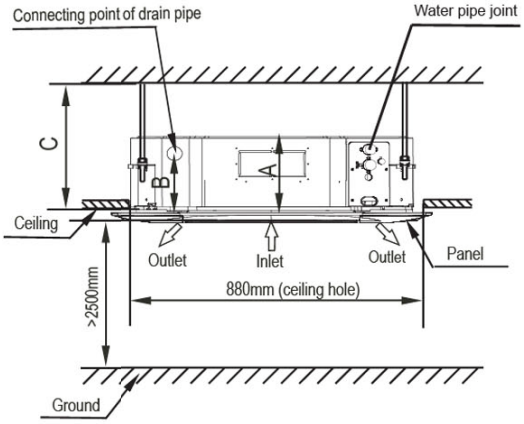


fig.2

Table 1 mm

MODEL	A	B	C
12.5	230	170	>260
16/20	300	190	>330

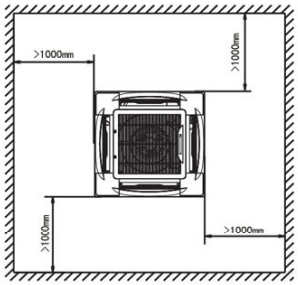
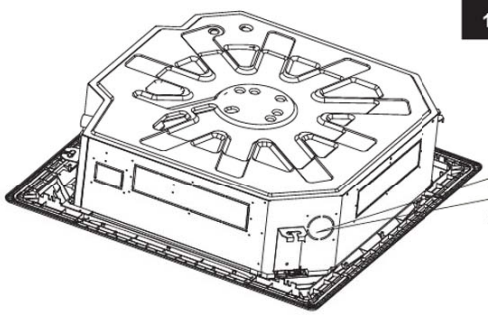


fig.3



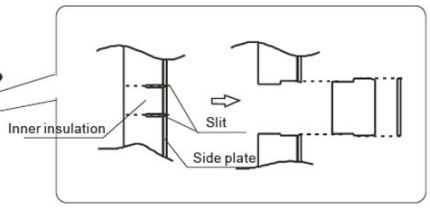


fig.4

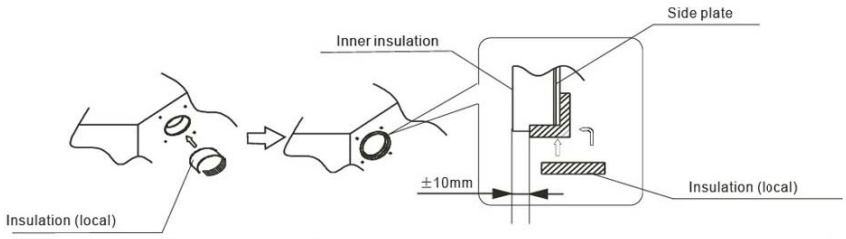


fig.5

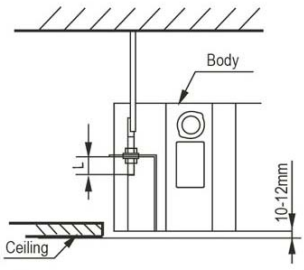


fig.6

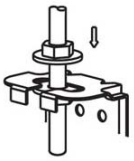


fig.7

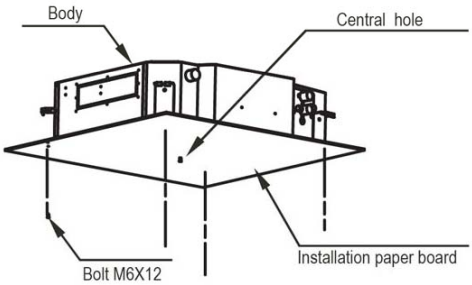


fig.8

fig.9

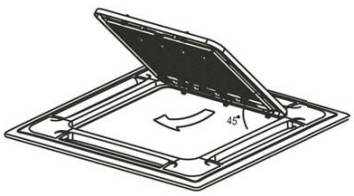


fig.10

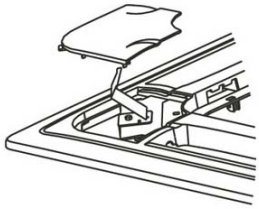
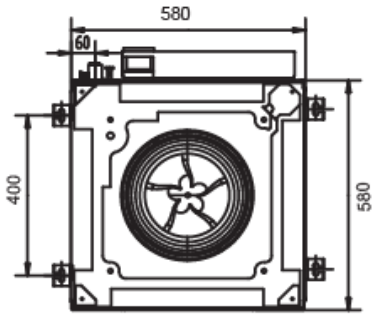
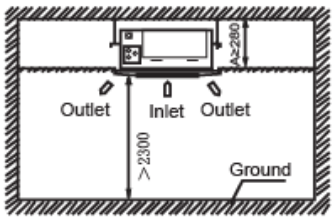


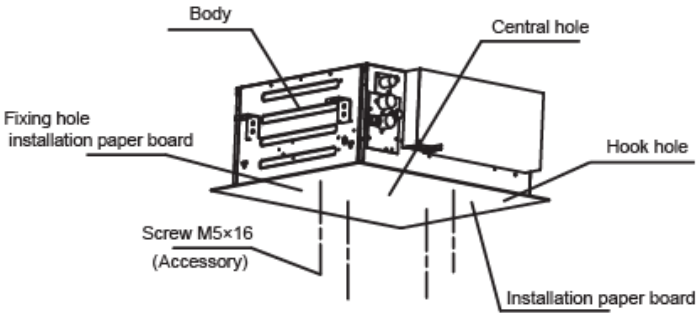
fig.11

FIGURES 2

Installation sketch for slim four-way cassette

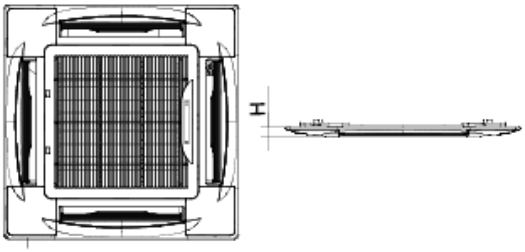




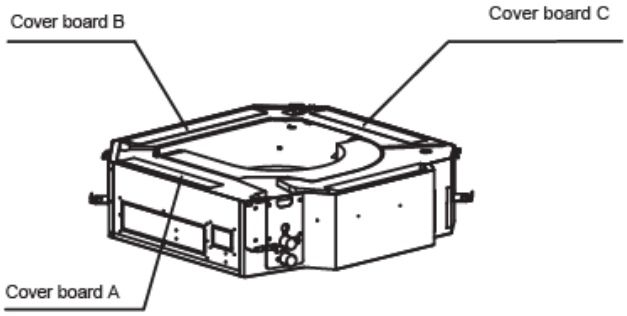


Height of the front panel:

Type	H(mm)
Four-way cassette	46
Slim four-way cassette	20

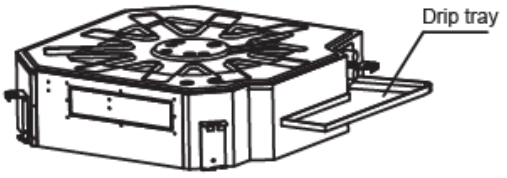


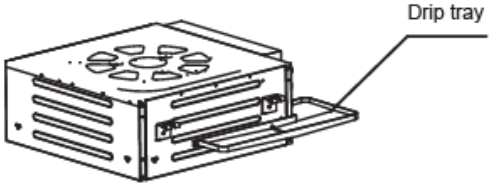
FIGURES 3



Name	Model
Cover board A	CE-FP-12.5KBM-Z-D.2
Cover board B	CE-FP-12.5KBM-Z-D.3
Cover board C	CE-FP-12.5KBM-Z-D.4

Note: the cover board is only owned by four-way cassette type, not for slim four-way cassette type.





Type	Model
300/400/450/500	CE-FP-8KBM-Z-D.1
600/750/850/950/1200/1500	CE-FP-12.5KBM-Z-D.5

Note: the cover boards and the drip tray are accessories just for the customers to choose.

5. Install the Panel

Caution:

Never put the panel face down on floor or against the wall, or on bulgy objects.

Never crash or strike it.

(1) Remove the air inlet grill.

a. Slide two grid switches toward the middle at the same time, and then pull them up. (Refer to fig. 9)

b. Draw the grid up to an angle of about 45o, and remove it. (Refer to fig. 10)

(2) Remove the installation covers at the four corners.

Wrench off the bolts, loose the rope of the installation covers, and remove them. (Refer to fig. 11)

(3) Install the panel

a. Align the swing motor on the panel to the tubing joints of the body properly.

b. Fix hooks of the panel at swing motor and its opposite sides to the hooks of corresponding water receiver. Then hang the other two panel hooks onto corresponding hangers of the body.

Cautions

Do not coil the wiring of the swing motor into the seal sponge.

c. Adjust the four panel hook screws to keep the panel horizontal, and screw them up to the ceiling evenly. (Refer to chart 12)

d. Regulate the panel in the direction of the arrow in Chart12 slightly to fit the panel's center to the center of the ceiling's opening. Guarantee that hooks of four corners are fixed well.

e. Keep fastening the screws under the panel hooks, until the thickness of the sponge between the body and the panel's outlet has been reduced to about 4~6mm. The edge of the panel should contact with the ceiling well. (Refer to chart 13)

Malfunction described in Chart14 can be caused by inappropriate tightness the screw.

If the gap between the panel and ceiling still exists after fastening the screws, the height of the indoor unit should be modified again. (Refer to chart 15-left)

You can modify the height of the indoor unit through the openings on the panel's four corners; if the lift of the indoor unit and the drainpipe is not influenced (refer to chart 15-right).

(4) Hang the air-in grid to the panel, and then connect the lead terminator of the swing motor and that of the control box with corresponding terminators on the body respectively.

(5) Relocate the air-in grid in the procedure of reversed order.

(6) Relocate the installation cover.

a. Fasten the rope of installation cover on the bolt of the installation cover. (Refer to chart 16-left)

b. Press the installation cover into the panel slightly. (Refer to chart 16-right)

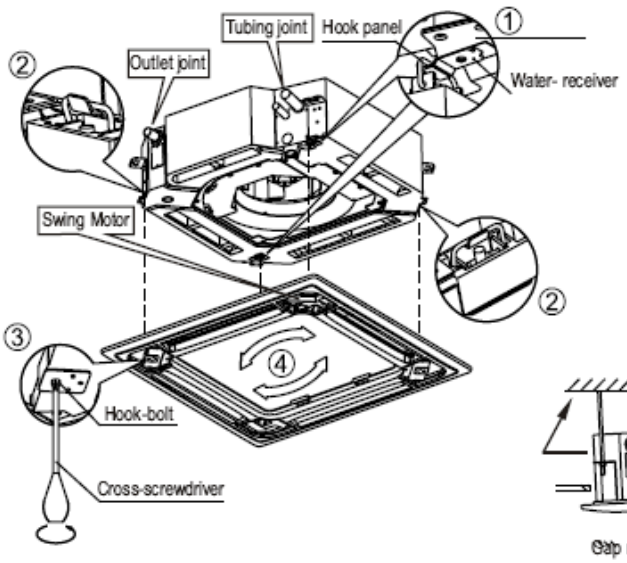


Chart 12

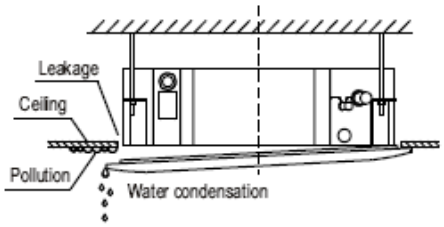


Chart 14

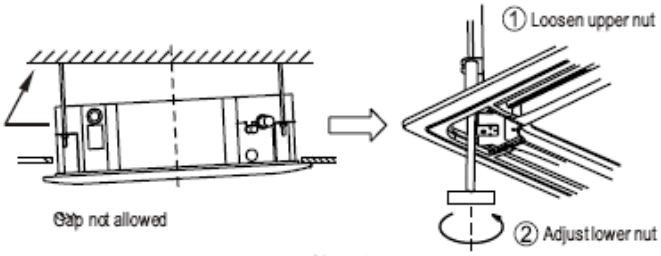


Chart 15

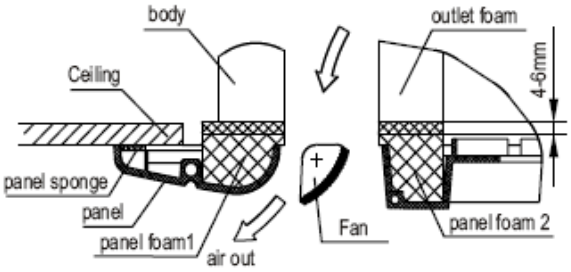


Chart 13

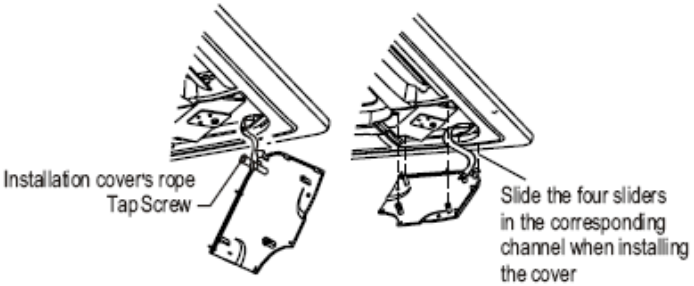


Chart 16

6. Connect the Drain Pipe

Install the drainpipe of the indoor unit

- You can use a polyethylene tube as the drainpipe (out-dia. 37~39mm, in-dia. 32mm). It could be bought at local market or from your dealer.
- Set the mouth of the drainpipe onto the root of the body's pump-pipe, and clip the drainpipe and the out-let pipe sheath (fittings) together firmly with the out-let pipe clasp (fitting).

Cautions: Use your strength carefully to prevent the pump-pipe from breaking.

- The body's pump pipe and the drainpipe (especially the indoor part) should be covered evenly with the out-let pipe sheath (fittings) and be bound tightly with the constrictor to prevent condensation caused by entered air.
- To prevent water from flowing backwards into the air conditioner while the air conditioner stops, please lean the drainpipe down toward outdoor (outlet-side) at a degree of over 1/50. And please avoid any bulge or water deposit. (Refer to Chart a)
- Do not drag the drainpipe violently when connecting to prevent the body from being pulled.
- Meanwhile, one support-point should be set every 1~1.5m to prevent the drainpipe from yielding (Refer to Chart b). Or you can tie the drainpipe with the connecting pipe to fix it. (Refer to Chart.c)
- In the case of prolonged drainpipe, you had better tighten its indoor part with a protection tube to prevent it from loosing.
- If the outlet of the drainpipe is higher than the body's pump joint, the pipe should be arranged as vertically as possible. And the lift distance must be less than 750mm, otherwise the water will overflow when the air conditioner stops. (Refer to Chart d)
- The end of the drainpipe should be over 50mm higher than the ground or the bottom of the drainage chute, and do not immerse it in water. If you discharge the water directly into sewage is sure to make a U-form aqua seal by bending the pipe up to prevent the smelly gas entering the house through the drain pipe.

Cautions: All the joints of the drain system must be sealed to prevent water leakage.

1. All field piping must be provided by a licensed water technician and must comply with the relevant local and national codes.
2. Do not let air, dust, or other impurities fall in the pipe system during the time of installation.
3. The connecting pipe should not be installed until the indoor and outdoor units have been fixed already.
4. Keep the connecting pipe dry, and do not let moisture in during installation.

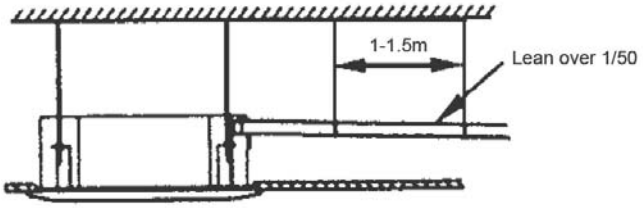


Chart a

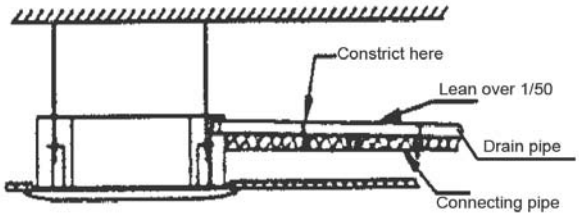


Chart c

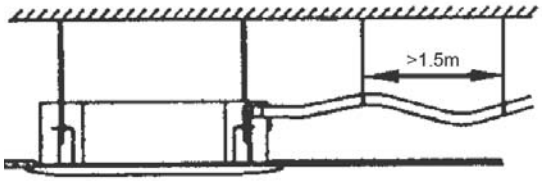


Chart b

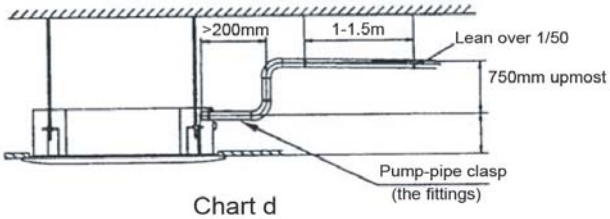


Chart d

Note: All the pictures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased(depend on model).The actual shape shall prevail.

1. Drainage test

- Check whether the drainpipe is unhindered
- New built house should have this test done before paving the ceiling.

1. Remove the test cover, and stow water of about 2000ml to the water receiver through the stow tube. (Refer to Chart 19)

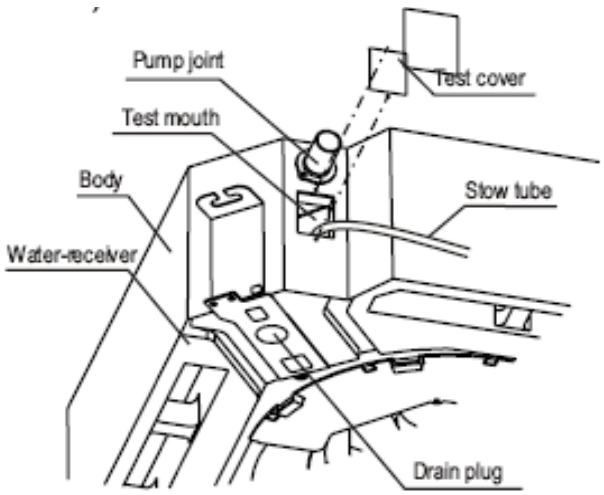


Chart 19

2. Turn on the power, and operate the air conditioner under the "COOLING" mode. Listen to the sound of the drain pump. Check whether the water is discharged well (a lag of 1min is allowed before discharging, according to the length of the drain pipe), and check whether water leaks from the joints.

Cautions: If there is any malfunction, please resolve it immediately.

3. Stop the air conditioner for there minutes, check if everything is ok. If the drain hose is located unreasonable, water overflow will cause the Alarm indicator lamp flashing (For both cooling and heating type or cooling only type), even the water leak out from the water receiver.
4. Check the drain pump whether drain water immediately when alarm sound for the high water lever. If the water lever can't come down below to the limited water lever, the air conditioner will stop. Restart it until turn off the power and drain off all the water.
5. Turn off the power, drain the water away.

- The drain plug is used to empty the water-receiver for maintenance of the air conditioner. Please stuff it imposition at all times during operation to avoid leakage.

7. Wiring

Caution:

1. The air conditioner should use separate power supply with rated voltage.
2. The external power supply to the air conditioner should have ground wiring, which is linked to the ground wiring of the indoor and outdoor unit.
3. The wiring work should be done by qualified persons according to circuit drawing.
4. An all-pole disconnection switch having a contract separation of at least 3mm in a pole should be connected in fixed wiring.
5. Be sure to locate the power wiring and the signal wiring well to avoid cross-disturbance.
6. Do not turn on the power until you have checked carefully after wiring.

Note:

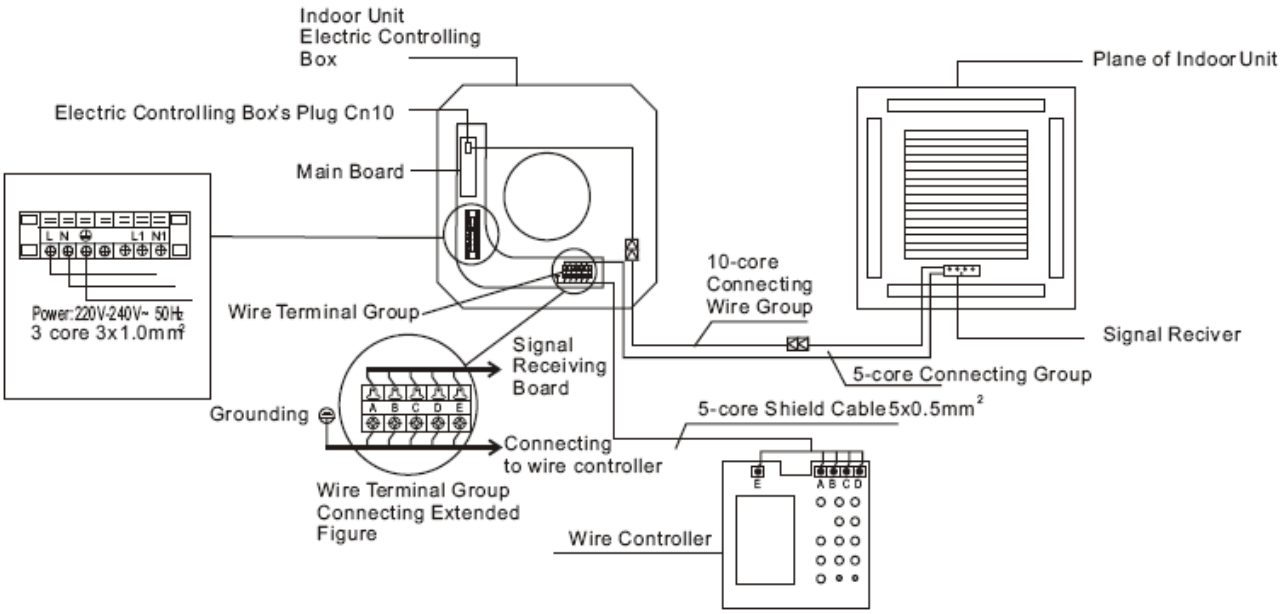
Remark per EMC Directive 89/336/EEC to prevent flicker impressions during the start of the compressor (technical process), following installation conditions do apply.

1. The power connection for the air conditioner has to be done at the main power distribution. The distribution has to be of a low impedance, normally the required impedance reaches at a 32 A fusing point.
2. No other equipment has to be connected with this power line.
3. For detailed installation acceptance please refer to your power supplier, if restrictions do apply for products like washing machines, air conditioners or electrical ovens.
4. For power details of the air conditioner refer to the rating plate of the product.
5. For any question contact your local dealer.

1. Connect the cable

- Dissemble the bolts from the cover.(If there isn't a cover on the outdoor unit, disassemble the bolts from the maintenance board, and pull it in the direction of the arrow to remove the protection board.)
- Connect the connective cables to the terminals as identified with their respective mached numbers on the terminal block of indoor and outdoor units.
- Re-install the cover or the protection board.

2. Wiring figure



Note: If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a haza

The Installation of **CH-FC030-050**

1 Installation space 74

2 Install the main body 74

3 Install the Panel. 75

4 Connect the Drain Pipe 76

5 Wiring 78

6 Test operation 80

Installation

1 Installation space

The indoor unit should be installed in a location that meets the following requirements:

- There is enough room for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting water pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.

Caution:

Keep indoor unit, outdoor unit, power supply wiring and transmission wiring at least 1 meter away from televisions and radios. This is to prevent image interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if 1 meter is kept.)

2 Install the main body

A. The existing ceiling (to be horizontal)

a. Cut a quadrangular hole of 880×880mm in the ceiling according to the shape of the installation paper board.

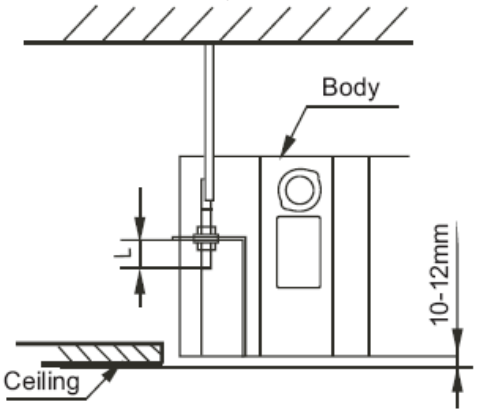
- The center of the hole should be at the same position of that of the air conditioner body.
- Determine the lengths and outlets of the connecting pipe, drain pipe and cables.
- To balance the ceiling and to avoid vibration, please enforce the ceiling when necessary.

b. Select the position of installation hooks according to the hook holes on the installation board.

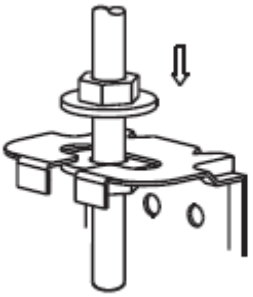
- Drill four holes of Ø12mm, 50~55mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).
- Face the concave side of the installation hooks toward the expansible hooks. Determine the length of the installation hooks from the height of ceiling, and then cut off the unnecessary part.
- If the ceiling is extremely high, please determine the length of the installation hook according to facts.

c. Adjust the hexangular nuts on the four installation hooks evenly, to ensure the balance of the body.

- If the drainpipe is awry, leakage will be caused by the malfunction of the water-level switch.
- Adjust the position to ensure t sides of ceiling are even. The body's lower part should sink



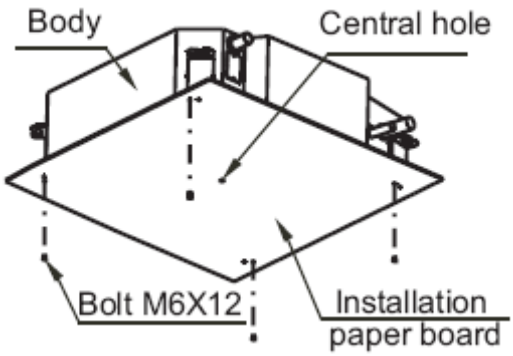
- In general, L is half of the screw length of the installation hook.
- Locate the air conditioner firmly by wrenching the nuts after having adjusted the body's position well.



B. New built houses and ceilings

a. In the case of new built house, the hook can be embedded in advance (refer to the A.b mentioned above). But it should be strong enough to bear the indoor unit and will not become loose because of concrete shrinking.

b. After installing the body, please fasten the installation paper board onto the air conditioner with bolts (M6*12) to determine in advance the sizes and positions of the hole opening on ceiling.



- Please first guarantee the flatness and horizontal of ceiling when installing

it. ● Refer to the A.a mentioned above for others.

c. Refer to the A.c mentioned above for installation.

d. Remove the installation paper board.

Caution:

After installing the body, the four bolts(M6x12) must be fastened to the air conditioner onto ensure the body is grounded well.

3 Install the Panel

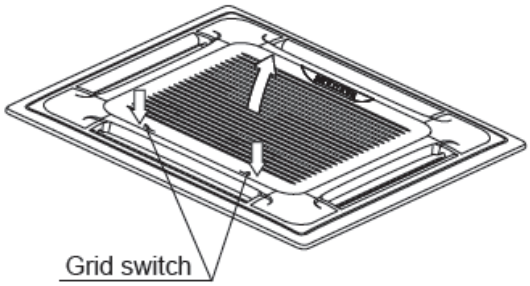
Caution:

Never put the panel face down on floor or against the wall, or on bulgy objects.

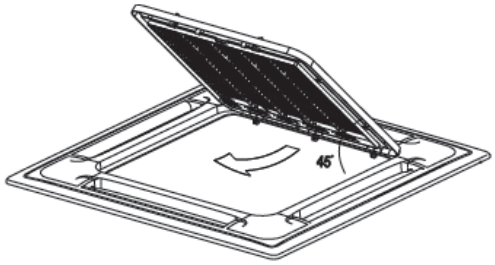
Never crash or strike it.

(1) Remove the air inlet grill.

a. Slide two grid switches toward the middle at the same time, and then pull them up.

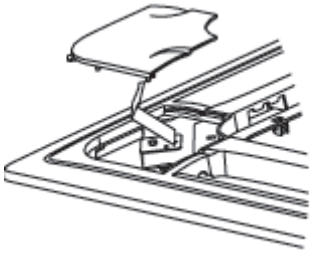


b. Draw the grid up to an angle of about 45°, and remove it.



(2) Remove the installation covers at the four corners.

Wrench off the bolts, loose the rope of the installation covers, and remove them.



(3) Install the panel

a. Align the swing motor on the panel to the tubing joints of the body properly.

b. Fix hooks of the panel at swing motor and its opposite sides to the hooks of corresponding water receiver. Then hang the other two panel hooks onto corresponding hangers of the body.

Cautions

Do not coil the wiring of the swing motor into the seal sponge.

c. Adjust the four panel hook screws to keep the panel horizontal, and screw them up to the ceiling evenly.

d. Regulate the panel in the direction of the arrow slightly to fit the panel's center to the center of the ceiling's opening. Guarantee that hooks of four corners are fixed well.

e. Keep fastening the screws under the panel hooks, until the thickness of the sponge between the body and the panel's outlet has been reduced to about 4~6mm. The edge of the panel should contact with the ceiling well.

If the gap between the panel and ceiling still exists after fastening the screws, the height of the indoor unit should be modified again.

You can modify the height of the indoor unit through the openings on the panel's four corners; if the lift of the indoor unit and the drainpipe is not influenced.

(4) Hang the air-in grid to the panel, and then connect the lead terminator of the swing motor and that of the control box with corresponding terminators on the body respectively.

(5) Relocate the air-in grid in the procedure of reversed order.

(6) Relocate the installation cover.

a. Fasten the rope of installation cover on the bolt of the installation cover. (Refer to chart 16-left)

b. Press the installation cover into the panel slightly. (Refer to chart 16-right)

4 Connect the Drain Pipe

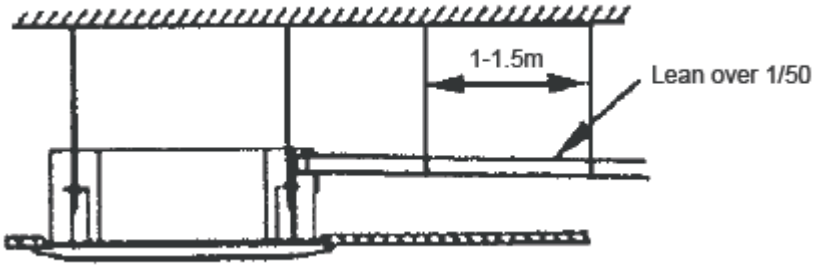
4.1 Install the drainpipe

- You can use a polyethylene tube as the drainpipe (out-dia. 37~39mm, in-dia. 32mm). It could be bought at local market or from your dealer.
- Set the mouth of the drainpipe onto the root of the body's pump-pipe, and clip the drainpipe and the out-let pipe sheath (fittings) together firmly with the out-let pipe clasp (fitting).

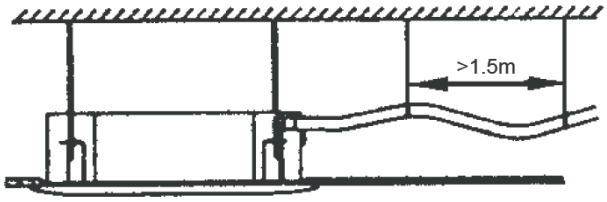
Cautions:

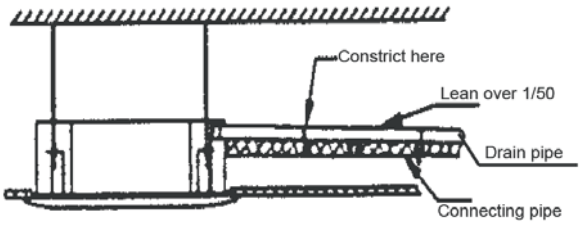
Use your strength carefully to prevent the pump-pipe from breaking.

- The body's pump pipe and the drainpipe (especially the indoor part) should be covered evenly with the out-let pipe sheath (fittings) and be bound tightly with the constrictor to prevent condensation caused by entered air.
- To prevent water from flowing backwards into the air conditioner while the air conditioner stops, please lean the drainpipe down toward outdoor (outlet-side) at a degree of over 1/50. And please avoid any bulge or water deposit. (Refer to the following)

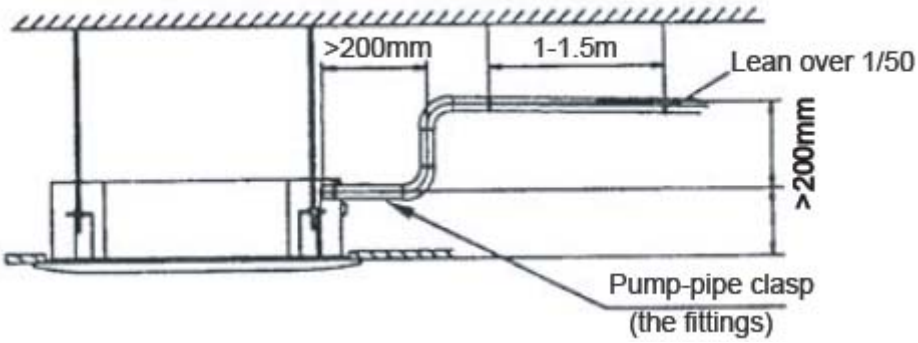


- Do not drag the drainpipe violently when connecting to prevent the body from being pulled.
- Meanwhile, one support-point should be set every 1~1.5m to prevent the drainpipe from yielding. Or you can tie the drainpipe with the connecting pipe to fix it.





- In the case of prolonged drainpipe, you had better tighten its indoor part with a protection tube to prevent it from loosing.
- If the outlet of the drainpipe is higher than the body's pump joint, the pipe should be arranged as vertically as possible. And the lift distance must be less than 500mm, otherwise the water will overflow when the air conditioner stops.



- The end of the drainpipe should be over 50mm higher than the ground or the bottom of the drainage chute, and do not immerse it in water. If you discharge the water directly into sewage is sure to make a U-form aqua seal by bending the pipe up to prevent the smelly gas entering the house through the drain pipe.

Cautions:

All the joints of the drain system must be sealed to prevent water leakage.

5. All field piping must be provided by a licensed water technician and must comply with the relevant local and national codes.
6. Do not let air, dust, or other impurities fall in the pipe system during the time of installation.
7. The connecting pipe should not be installed until the indoor and outdoor units have been fixed already.
8. Keep the connecting pipe dry, and do not let moisture in during installation.

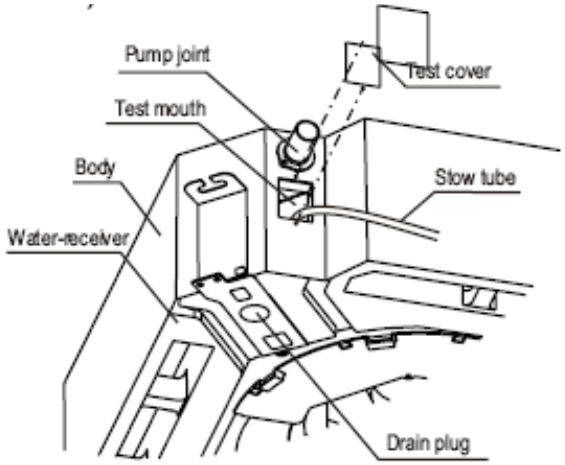
Note:

All the pictures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased (depend on model).The actual shape shall prevail.

4.2 Drainage test

- Check whether the drainpipe is unhindered.
- New built house should have this test done before paving the ceiling.

1. Remove the test cover, and stow water of about 2000ml to the water receiver through the stow tube.



2. Turn on the power, and operate the air conditioner under the "COOLING" mode. Listen to the sound of the drain pump. Check whether the water is discharged well (a lag of 1min is allowed before discharging, according to the length of the drain pipe), and check whether water leaks from the joints.

Cautions: If there is any malfunction, please resolve it immediately.

3. Stop the air conditioner for there minutes, check if everything is ok. If the drain hose is located unreasonable, water overflow will cause the Alarm indicator lamp flashing (For both cooling and heating type or cooling only type), even the water leak out from the water receiver.
4. Check the drain pump whether drain water immediately when alarm sound for the high water lever. If the water lever can't come down below to the limited water lever, the air conditioner will stop. Restart it until turn off the power and drain off all the water.
5. Turn off the power, drain the water away.

- The drain plug is used to empty the water-receiver for maintenance of the air conditioner. Please stuff it imposition at all times during operation to avoid leakage.

5 Wiring

Caution:

1. The air conditioner should use separate power supply with rated voltage.
2. The external power supply to the air conditioner should have ground wiring, which is linked to the ground wiring of the indoor and outdoor unit.
3. The wiring work should be done by qualified persons according to circuit drawing.
4. An all-pole disconnection switch having a contract separation of at least 3mm in a pole should be connected in fixed wiring.
5. Be sure to locate the power wiring and the signal wiring well to avoid cross-disturbance.
6. Do not turn on the power until you have checked carefully after wiring.

Note:

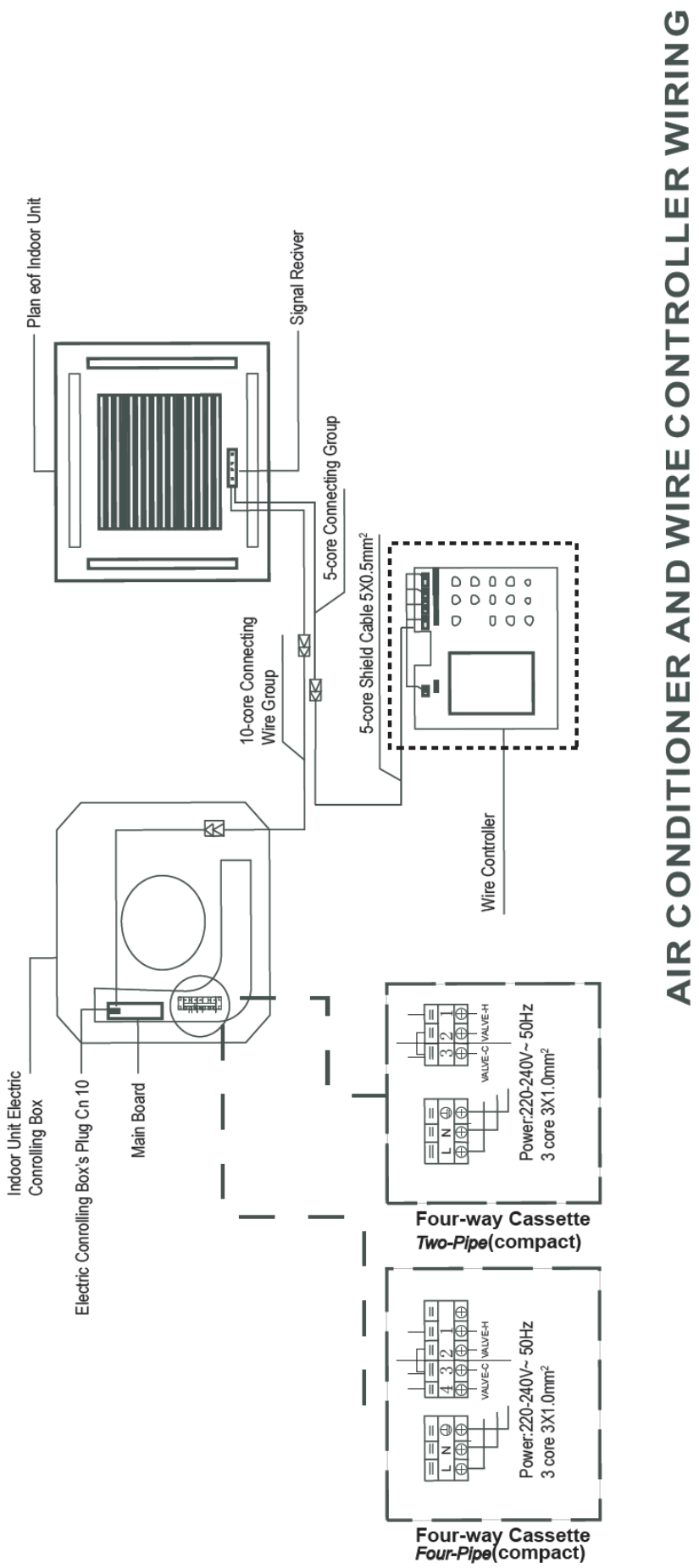
Remark per EMC Directive 89/336/EEC to prevent flicker impressions during the start of the compressor (technical process), following installation conditions do apply.

6. The power connection for the air conditioner has to be done at the main power distribution. The distribution has to be of a low impedance, normally the required impedance reaches at a 32A fusing point.
7. No other equipment has to be connected with this power line.
8. For detailed installation acceptance please refer to your power supplier, if restrictions do apply for products like washing machines, air conditioners or electrical ovens.
9. For power details of the air conditioner refer to the rating plate of the product.
10. For any question contact your local dealer.

5.1 Connect the cable

- Dissemble the bolts from the cover.(If there isn't a cover on the outdoor unit, disassemble the bolts from the maintenance board, and pull it in the direction of the arrow to remove the protection board.)
- Connect the connective cables to the terminals as identified with their respective matched numbers on the terminal block of indoor and outdoor units.
- Re-install the cover or the protection board.

5.2 Wiring figure



6 Test operation

(1) The test operation must be carried out after the entire installation has been completed.
(2) Please confirm the following points before the test operation.
The indoor unit and outdoor unit are installed properly.
Tubing and wiring are correctly completed.
The refrigerant pipe system is leakage-checked.
The drainage is unimpeded.
The ground wiring is connected correctly.
The length of the tubing and the added stow capacity of the refrigerant have been recorded.
The power voltage fits the rated voltage of the air conditioner.
There is no obstacle at the outlet and inlet of the outdoor and indoor units.
The gas-side and liquid-side stop values are both opened.
The air conditioner is pre-heated by turning on the power.
(3) According to the user's requirement, install the remote controller when the remote controller's signal can reach the indoor unit smoothly.
(4) Test operation
Set the air conditioner under the mode of "COOLING" with the remote controller, and check the following points.
● Whether the switch on the remote controller works well.
● Whether the buttons on the remote controller works well.
● Whether the air flow louver moves normally.
● Whether the room temperature is adjusted well.
● Whether the indicator lights normally.
● Whether the temporary buttons works well.
● Whether the drainage is normal.
● Whether there is vibration or abnormal noise during operation.
● Whether the air conditioner heats well in the case of the HEATING/COOLING type.

Part 4
Controller

Wireless remote controller R51/E 82

Wireless remote controller R05/BGE 84

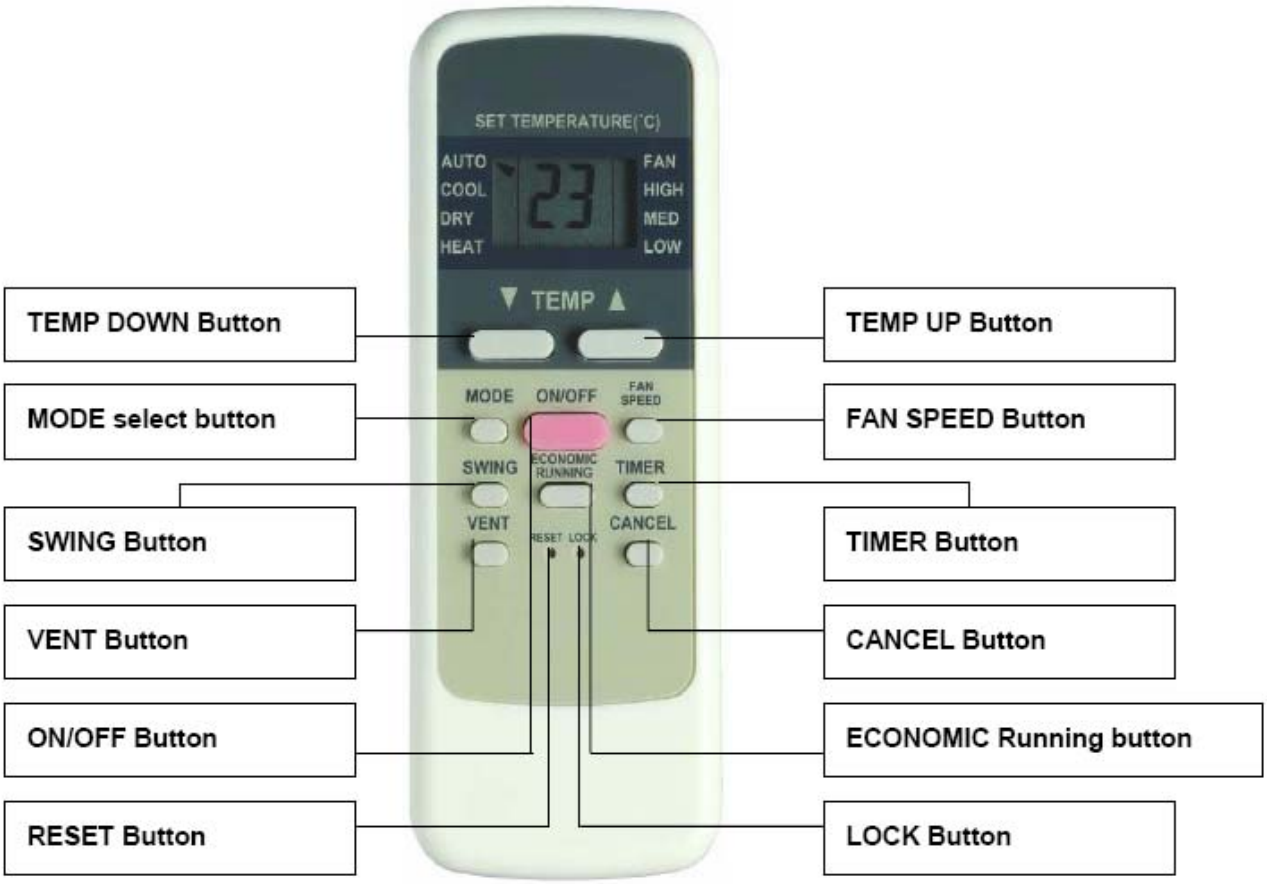
Wireless remote controller R51/E

Suitable for One-way Cassette type, Compact Four-way Cassette type and Wall-mounted type:

Remote Controller Specifications

Model	R51/E
Rated Voltage	3.0V
Lowest Voltage of CPU Emitting Signal	2.0V
Reaching Distance	8m (when using 3.0 voltage, it can get 11m)
Environment Temperature Range	-5℃～60℃

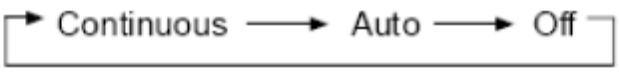
Introduction of Function Buttons on the Remote Controller



1. **TEMP DOWN Button:** Push the TEMP DOWN button to decrease the indoor temperature setting or to adjust the timer in a counter-clockwise direction.
2. **MODLE SELECT Button:** Each time you push the button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, HEAT and FAN as the following figure indicates:

⚠**NOTE:** *HEAT only for Heat Pump*

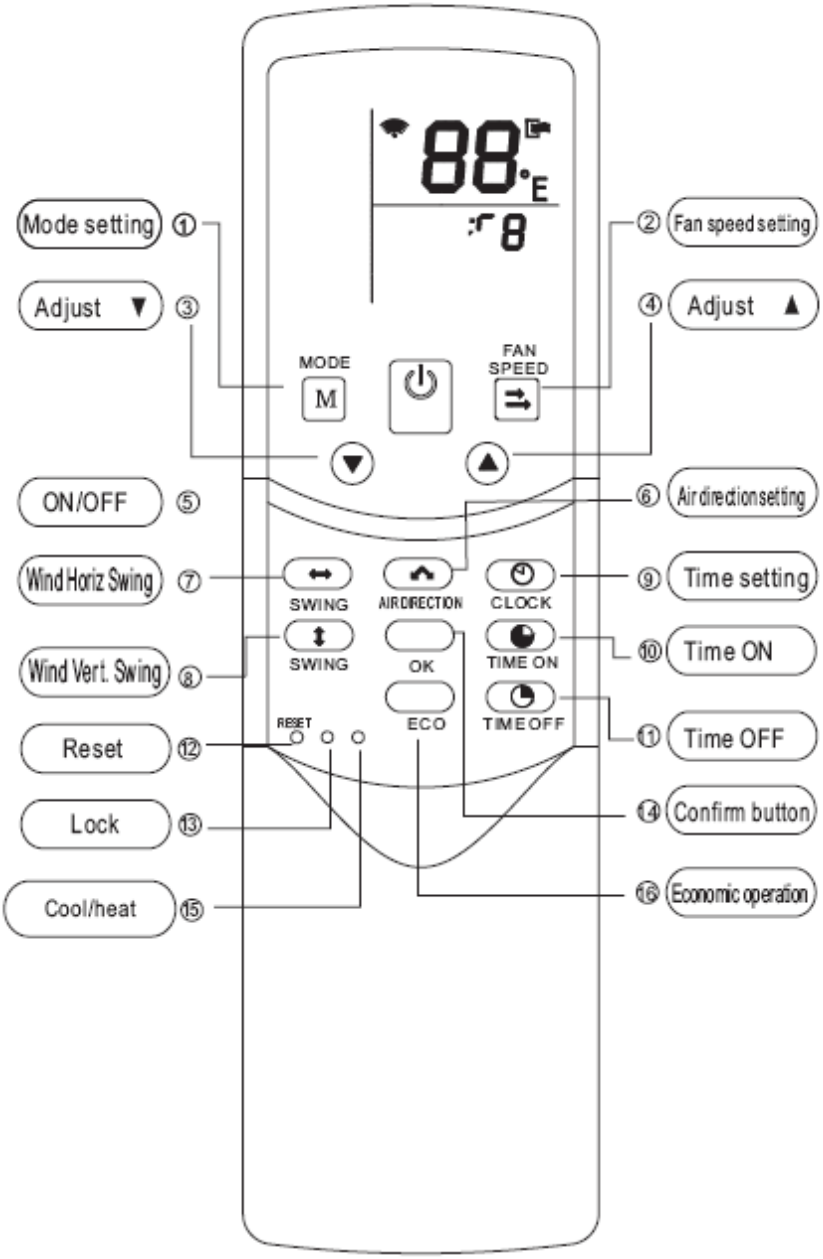
3. **SWING Button:** Push this switch button to change the louver angle.
4. **RESET Button:** When the RESET button is pushed, all of the current settings are cancelled and the control will return to the initial settings.
5. **ECONOMIC RUNNING Button:** Push this button to go into the Energy-Saving operation mode.
6. **LOCK Button:** Push this button to lock in all the current settings. To release settings, push again.
7. **CANCEL Button:** Push this button to cancel the TIMER settings.
8. **TIMER Button:** This button is used to preset the time ON (start to operate) and the time OFF (turn off the operation)
9. **ON/OFF Button:** Push this button to start the unit operation. Push the button again to stop the unit operation.
10. **FAN SPEED Button:** This button is used for setting fan speed in the sequence that goes from AUTO, LOW, MED to HIGH, and then back to Auto.
11. **TEMP UP Button:** Push this button to increase the indoor temperature setting or to adjust the timer in a counter-clockwise direction.
12. **VENT Button:** Push this button to set the ventilating mode. The ventilating mode will operate in the following sequence:



Ventilation Function is available for the Fresh Star Series.

Wireless remote controller R05/BGE

Suitable for Four-way Cassette type:



Visual photo

Note:

1. The outline figure on cover is for reference only, which may differ from what you purchased.
2. Make sure to read chapter PRECAUTIONS before you operate the air conditioner.
3. The content is available for model R05/BG.
4. R05/BGE can be applicable for cool only type and cool & heat type air conditioners.