Side Discharge Inverter

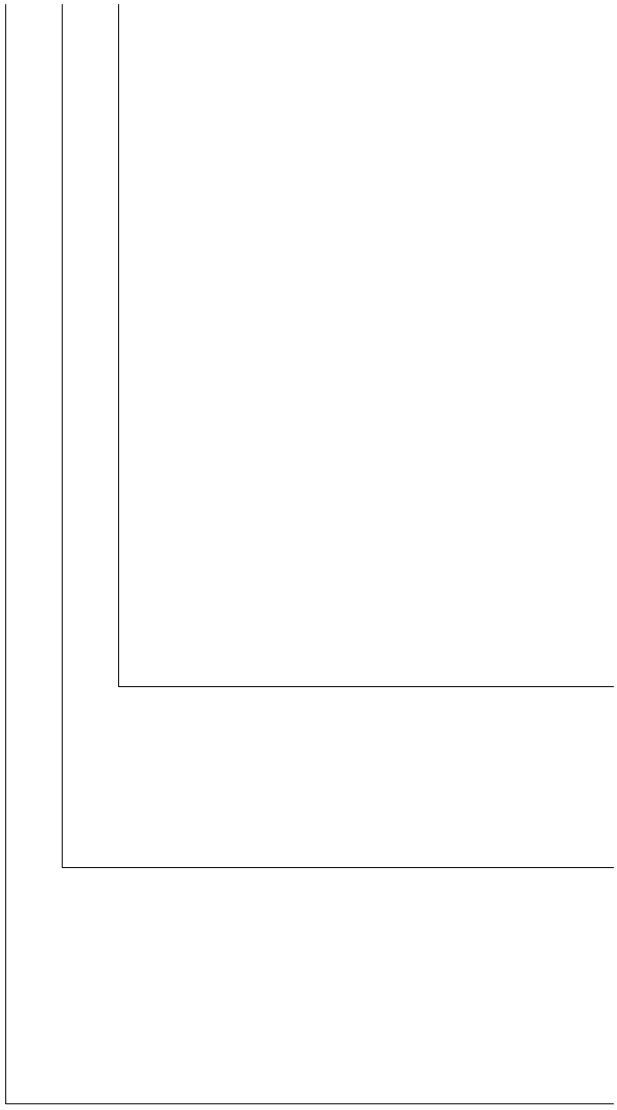
Condensing Unit

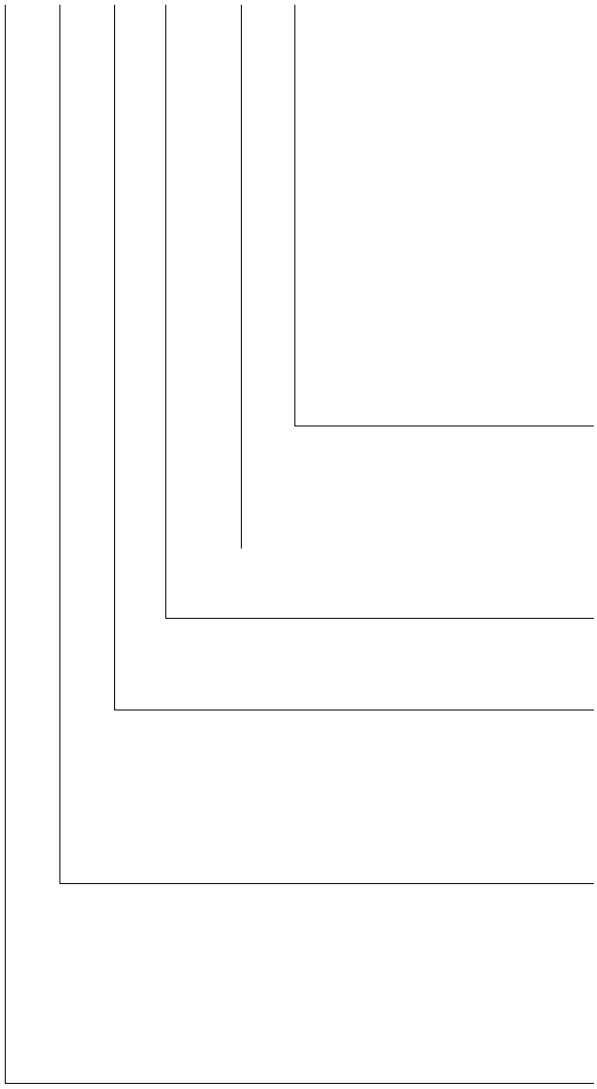
Technical Manual

Content

Side Discharge Inverter Condensing Unit

Part 1. General Information





2. Model Names of Indoor/Outdoor Units

2.1 Indoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight(kg)	Power supply
CCOVT36S	840×285×840	31/35	208~230V-1Ph-60Hz
CCOVT48S	840×285×840	31/35	208~230V-1Ph-60Hz
CCOVT60S	840×285×840	34/37.5	208~230V-1Ph-60Hz
CUVT36S	1250x690x245	36/42	208~230V-1Ph-60Hz
CUVT48S	1675x690x245	50/57	208~230V-1Ph-60Hz
CUVT60S	1675x690x245	50/57	208~230V-1Ph-60Hz

2.2 Outdoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight(kg)	Power supply
CRSVT36AS	1030x432x788	66/71	208~230V-1Ph-60Hz
CRSVT48AS	1054x399x994	81/91	208~230V-1Ph-60Hz
CRSVT60AS	907x400x1330	95/103	208~230V-1Ph-60Hz

3. External Appearance

3.1 Indoor unit

4-way Cassette	Floor & Ceiling
	

3.2 Outdoor unit

CRSVT36AS 	CRSVT48AS 
CRSVT60AS 	

4. Features

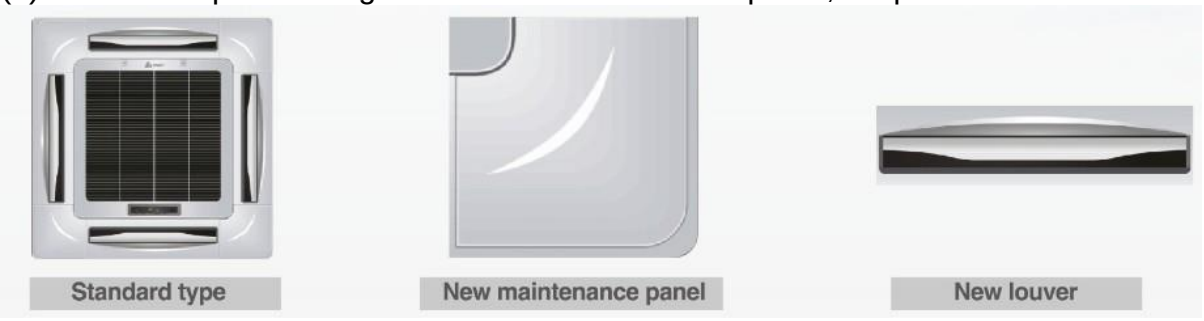
4.1 Wide operation range, down to -15 degree for cooling and heating.
4.2 Excellent in efficiency, SCOP higher than 3.8, meet the EU's new energy efficiency standards.
4.3 High quality coils
The coil is constructed of advanced inner grooved copper tube and aluminum fins.
4.4 Low operation sound level: Well-known stable and quiet running DC fan motor.
4.5 Well-known compressor, GMCC and Mitsubishi.
4.6 Universal design: convenient for market stock and spare parts stock.
4.8 R410A environment friendly refrigerant.
4.9 CE certification, ROHS certification.

Part 2. Indoor Unit

4-Way Cassette Type

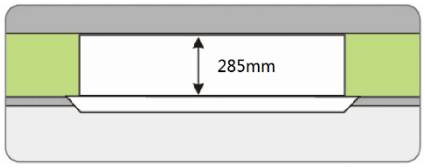
1. Features

(1) Brand-new panel design. Indoor unit use uniform panel, simple and convenient.



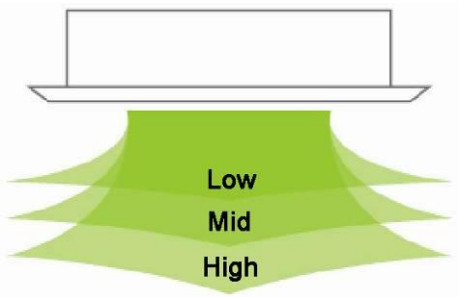
(2) Simple, featly and voguish appearance suit for different requirements, it's mostly used for office, shopping center, restaurant, meeting room and etc.
36kBtu/h~60kBtu/h, standard type, 950mm*950mm

(3) Ultra-thin body design, the min. height is only 285mm, save installation space.



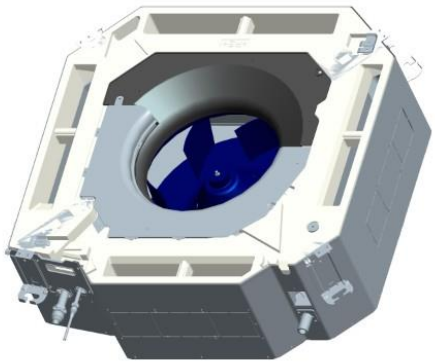
(4) 4-way air flow, cold air can reach each corner of the room, providing a stable and comfortable environment.

(5) 3 fan speed，meet for different requirement.

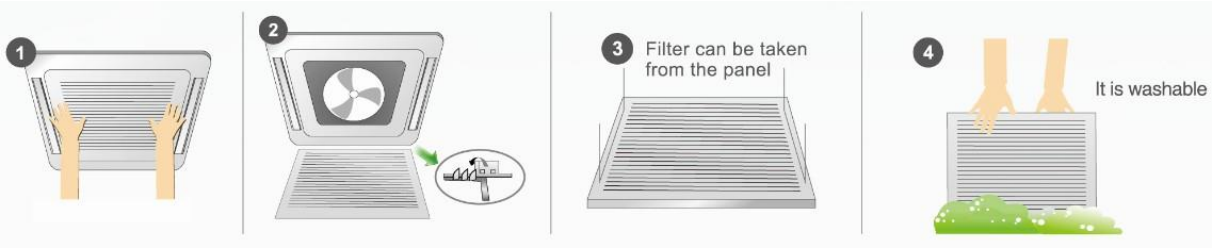


(6) New streamlined fan design.

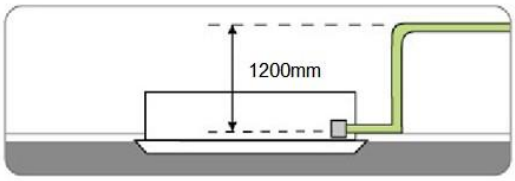
(7) Occupied a small installation space, saving interior space



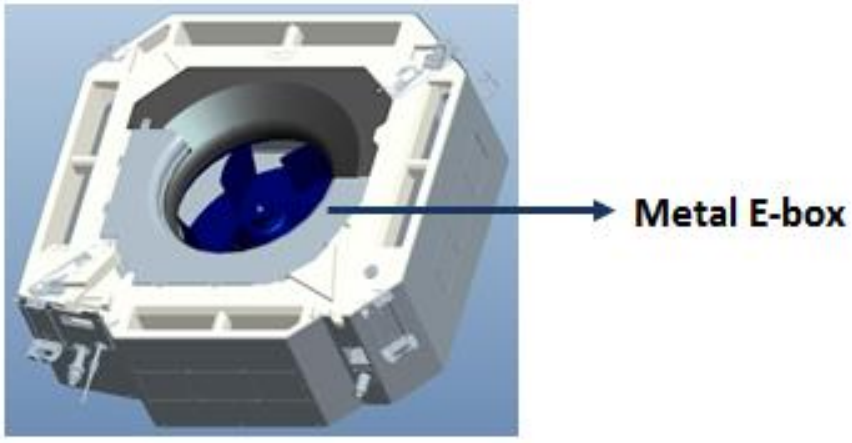
(8) Easy and convenient installation and maintenance, washable filter design.



(9) Built-in water pump, water head up to 1200mm.



(10) Integrated electric control box, The E-box is safely covered by metal plate, for better fire-resistance, save using.



(11) Add 4 interfaces in body, can be connected with duct to another room. Fresh air makes air quality more healthy and comfortable.

(12) Multi protection and auto-restart function.

(13) Low operation sound level: Well-known stable and quiet running DC fan motor.

(14) Standard for wireless controller; option for wired controller.

Standard optional

(15) DC inverter motor, operate in ultra-low frequency and to precisely control the indoor temperature.

2. Specification

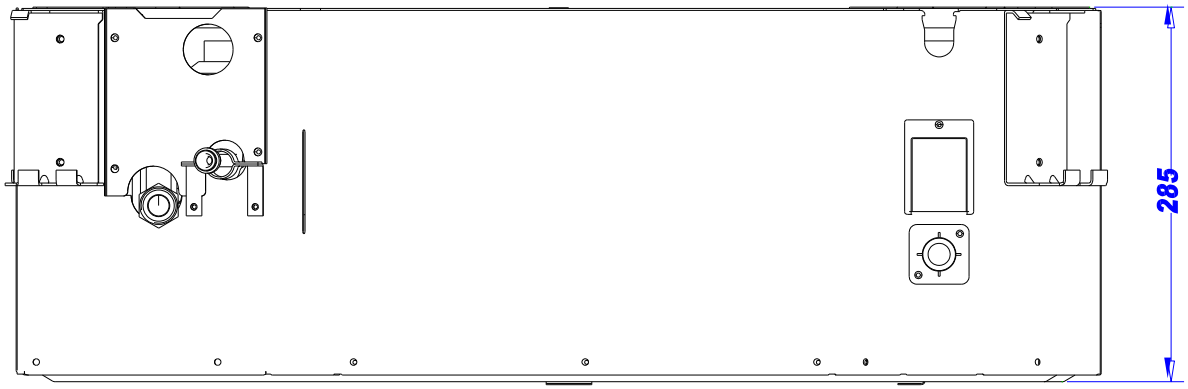
Model name	FACTORY	Unit	CCOVT36S	CCOVT48S	CCOVT60S
Power supply		V/Ph/Hz	208~230-1-60	208~230-1-60	208~230-1-60
Cooling	Capacity	Btu/h	36000	48000	60000
	Capacity	W	10500(3500~10500)	14000(4000~14000)	16000(6200~16000)
	Input(indoor)	W	180	220	220
	Rated current(indoor)	A	0.80	1.05	1.05
Max. input consumption		W	200	240	240
Max. current		A	0.90	1.21	1.21
Starting current		A	/	/	/
Operation Control(standard)			Wireless control		
Indoor coil	Number of row		2	2	3
	Fin spacing	mm	1.45	1.45	1.45
	Fin material		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
	Tube outside diameter	mm	Φ7	Φ7	Φ7
	Tube material		Inner grooved	Inner grooved	Inner grooved
	Coil length x height x width	mm	2000x252x26.7	2000x252x26.7	2000x252x26.7
	Number of circuit		12	12	12
Indoor fan motor	Brand		Chigo/Kaibang	Chigo/Kaibang	Chigo/Kaibang
	Model		YDK-75T-6C	YDK-75Q-6P2	YDK-75Q-6P2
	Input	W	75	75	75
	Output	W	150	150	150
	Running current	A	/	/	/
	Capacitor	μF	4UF/450V	4UF/450V	4UF/450V
	Speed (Hi/Me/Lo)	r/min	760/680/580	850/750/650	850/750/650
Indoor air flow (Hi/Me/Lo)		m^3/h	1500/1300/1100	1900/1700/1500	1900/1700/1500
Indoor noise level (Hi/Me/Lo)		dB(A)	48/45/43	57/53/51	57/53/51
Indoor body dimension	Unit (WxHxD)	mm	860x860x285	860x860x285	860x860x285
	Packing (WxHxD)	mm	920x920x375	920x920x375	920x920x375
Indoor panel dimension	panel(WxHxD)	mm	950x950x50	950x950x50	950x950x50
	Packing (WxHxD)	mm	1030x1030x105	1030x1030x105	1030x1030x105
Indoor weight	Net/Gross	kg	31/35	31/35	34/37.5
	panel Net/Gross	kg	5.4/8	5.4/8	5.4/8
Design pressure		MPa	4.5	4.5	4.5
Drainage water pipe dia.		mm	φ25	φ25	φ25
Refrigerant piping	Liquid side/ Gas side	mm	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")
Operation temperature	Cooling	℃	≥16	≥16	≥16
	Heating	℃	/	/	/

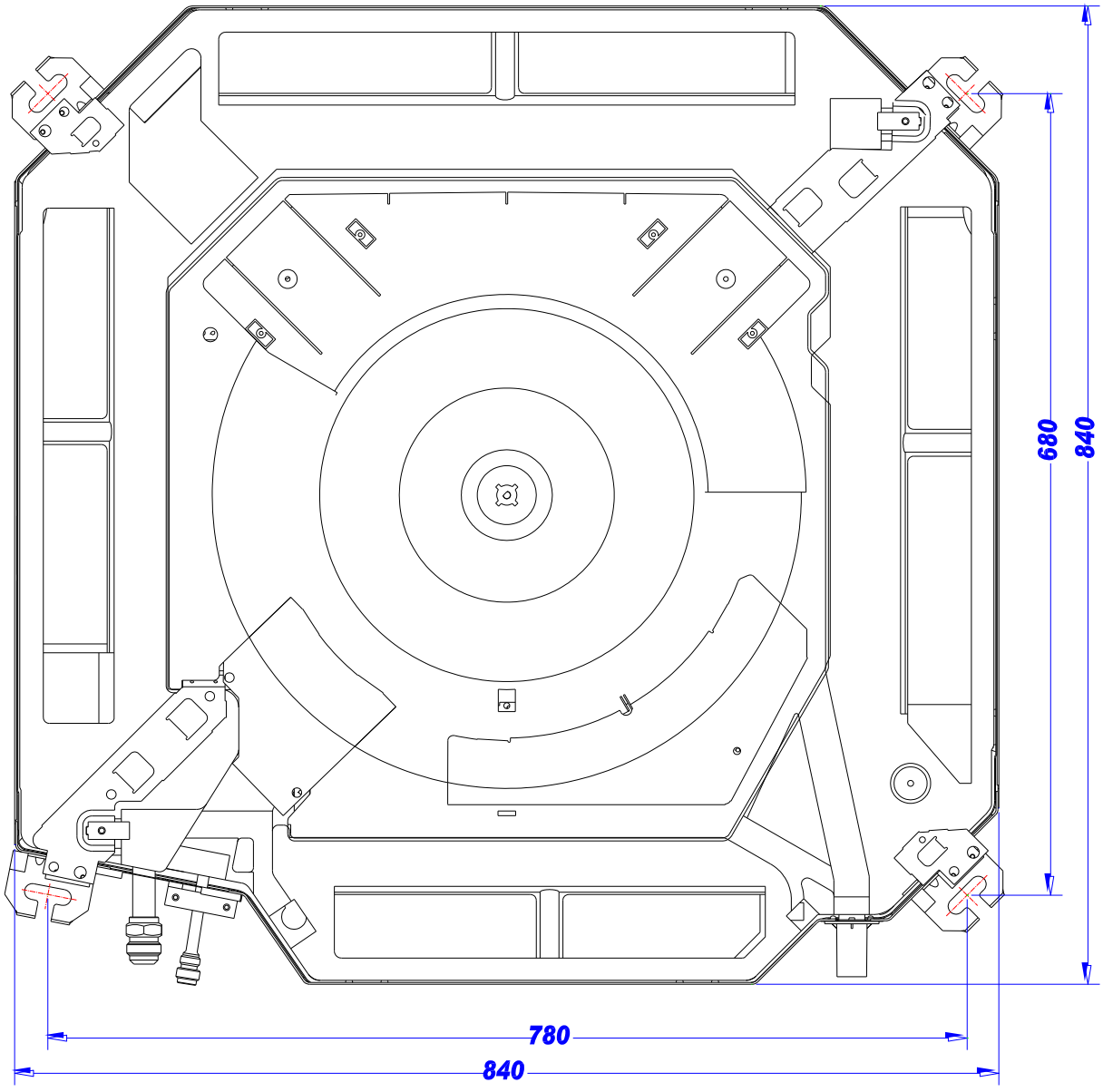
Notes:

1. Nominal cooling capacities are based on the following conditions:
Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. piping: 5m (horizontal)
2. Nominal heating capacities are based on the following conditions:
Indoor temp: 20°CDB; Outdoor temp: 7°CDB, 6°CWB; Equivalent ref. piping: 5m (horizontal)
3. Actual noise level may differ, depending on the room structure, etc., since these noise values are from an anechoic room.

3. Dimension

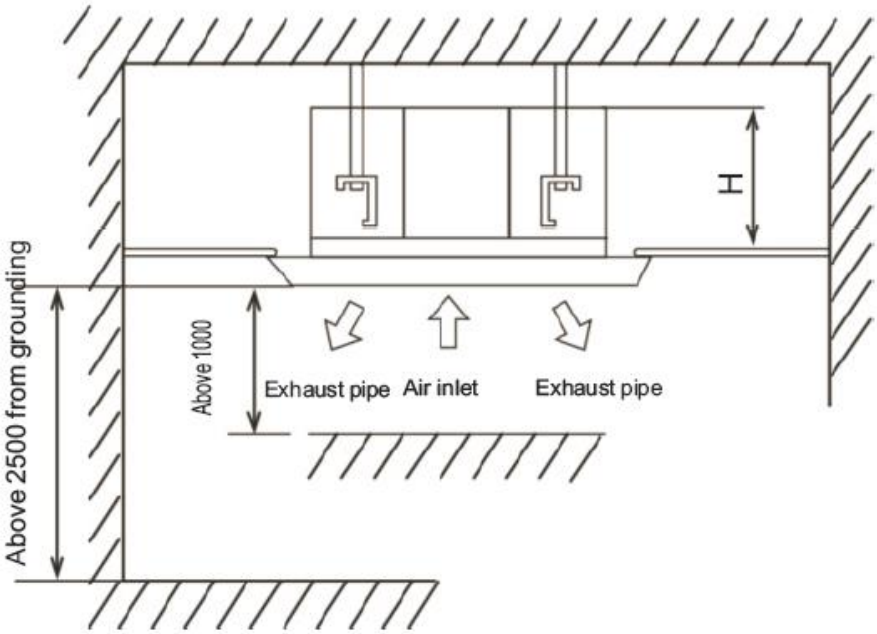
3.1 CCOVT36S, CCOVT48S, CCOVT60S

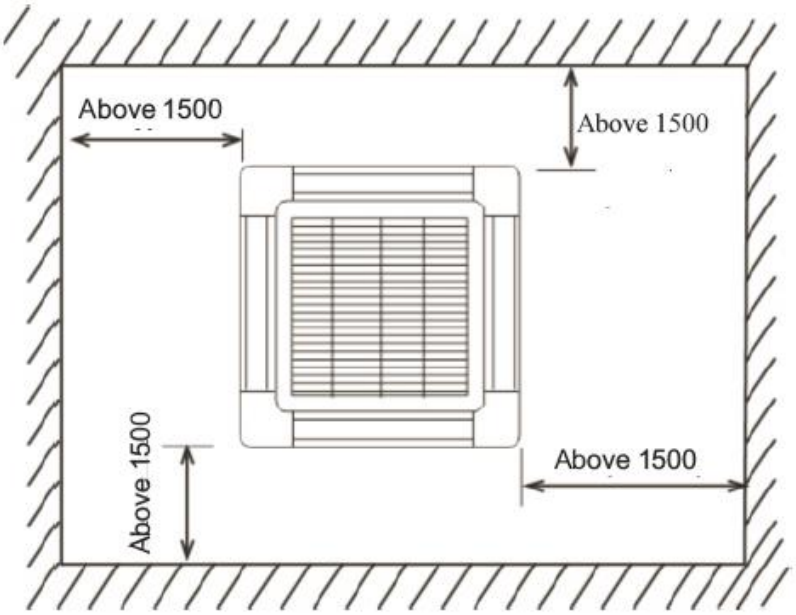




4. Service Space

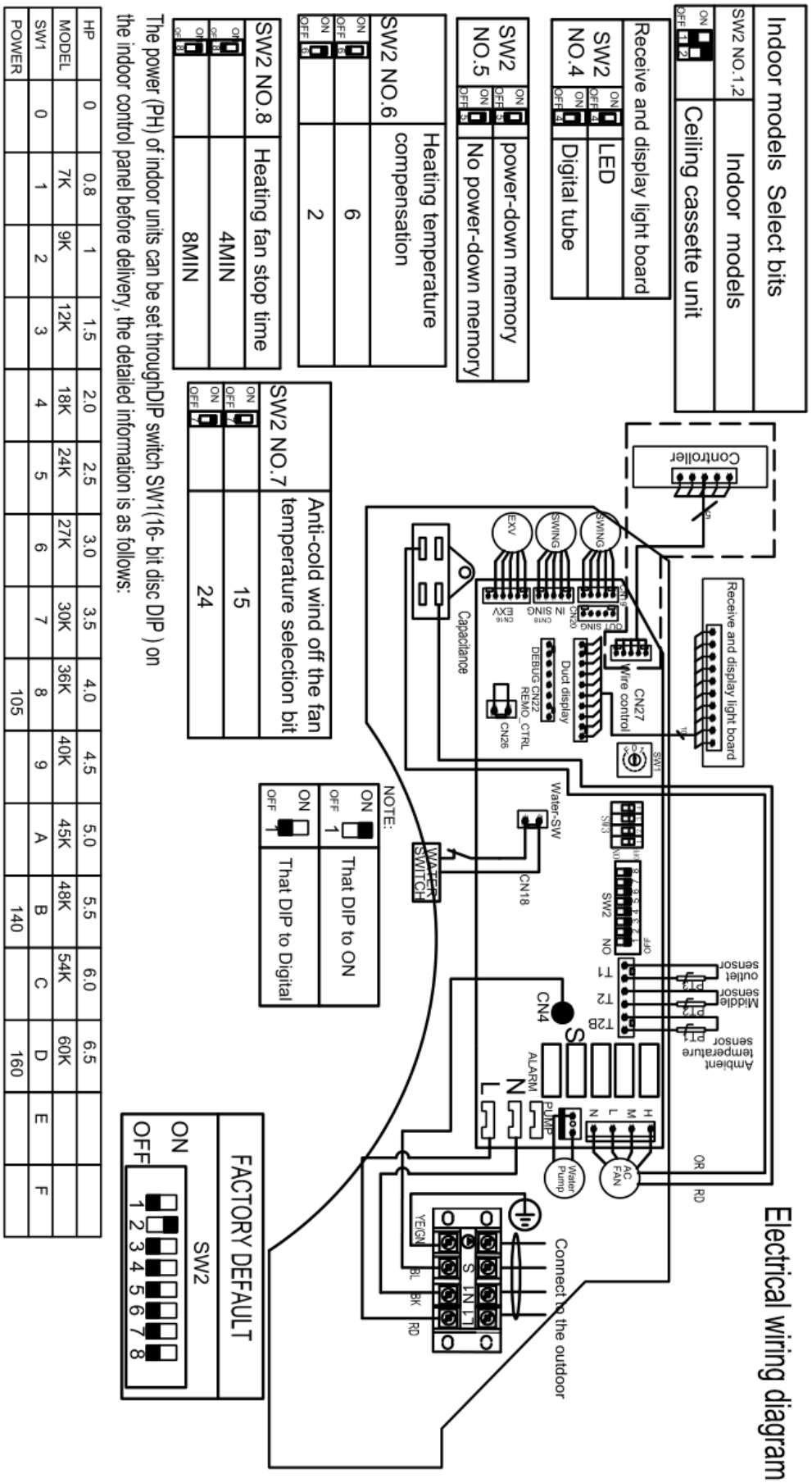
The indoor unit should be installed in a location that meets the following requirements:
4.1 There is enough interspace for installation and maintenance.
4.2 The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
4.3 The outlet and the inlet are not impeded, and the influence of external air is the least.
4.4 The air flow can reach throughout the room.
4.5 The connecting pipe and drainpipe could be extracted out easily.
4.6 There is no direct radiation from heaters.





Model	Height (mm)
5.3kW, 7.0kW	230
10.5kW, 14kW, 16kW	285

5. Wiring Diagrams
CCOVT36S, CCOVT48S, CCOVT60S



The power (PH) of indoor units can be set throughDIP switch SW1(16- bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	0	0.8	1	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5		
MODEL		7K	9K	12K	18K	24K	27K	30K	36K	40K	45K	48K	54K	60K		
SW1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
POWER									105			140		160		

6. Capacity Table

Cooling

CCOVT36S

MODEL		CCOVT36S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	10.09	10.03	9.99	9.93	9.88	9.77	9.66
	Input kW.	3.09	3.12	3.14	3.17	3.19	3.35	3.52
24ºC D 17ºC W	Total capacity kW	10.41	10.35	10.30	10.24	10.19	10.08	9.97
	Input kW.	3.13	3.16	3.18	3.21	3.23	3.40	3.57
27ºC D 19ºC W	Total capacity kW	10.72	10.56	10.61	10.55	10.50	10.38	10.27
	Input kW.	3.17	3.20	3.22	3.25	3.28	3.44	3.61
29ºC D 21ºC W	Total capacity kW	10.85	10.79	10.79	10.67	10.63	10.51	10.39
	Input kW.	3.22	3.25	3.27	3.31	3.33	3.50	3.67
32ºC D 23ºC W	Total capacity kW	11.06	10.99	10.94	10.88	10.83	10.71	10.59
	Input kW.	3.23	3.26	3.29	3.32	3.34	3.51	3.69

6.2 CCOVT48S

MODEL		CCOVT48S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	13.45	13.37	13.31	13.23	13.18	13.02	12.89
	Input kW.	4.58	4.62	4.65	4.71	4.74	4.98	5.23
24ºC D 17ºC W	Total capacity kW	13.87	13.79	13.74	13.66	13.60	13.45	13.29
	Input kW.	4.65	4.68	4.71	4.77	4.80	5.04	5.29
27ºC D 19ºC W	Total capacity kW	14.29	14.21	14.16	14.05	14.00	13.84	13.68
	Input kW.	4.71	4.74	4.77	4.83	4.86	5.10	5.35
29ºC D 21ºC W	Total capacity kW	14.48	14.37	14.32	14.24	14.16	14.00	13.84
	Input kW.	4.77	4.83	4.86	4.92	4.95	5.20	5.44
32ºC D 23ºC W	Total capacity kW	14.74	14.66	14.58	14.50	14.45	14.26	14.11
	Input kW.	4.80	4.83	4.89	4.92	4.95	5.20	5.47

6.3 CCOVT60S

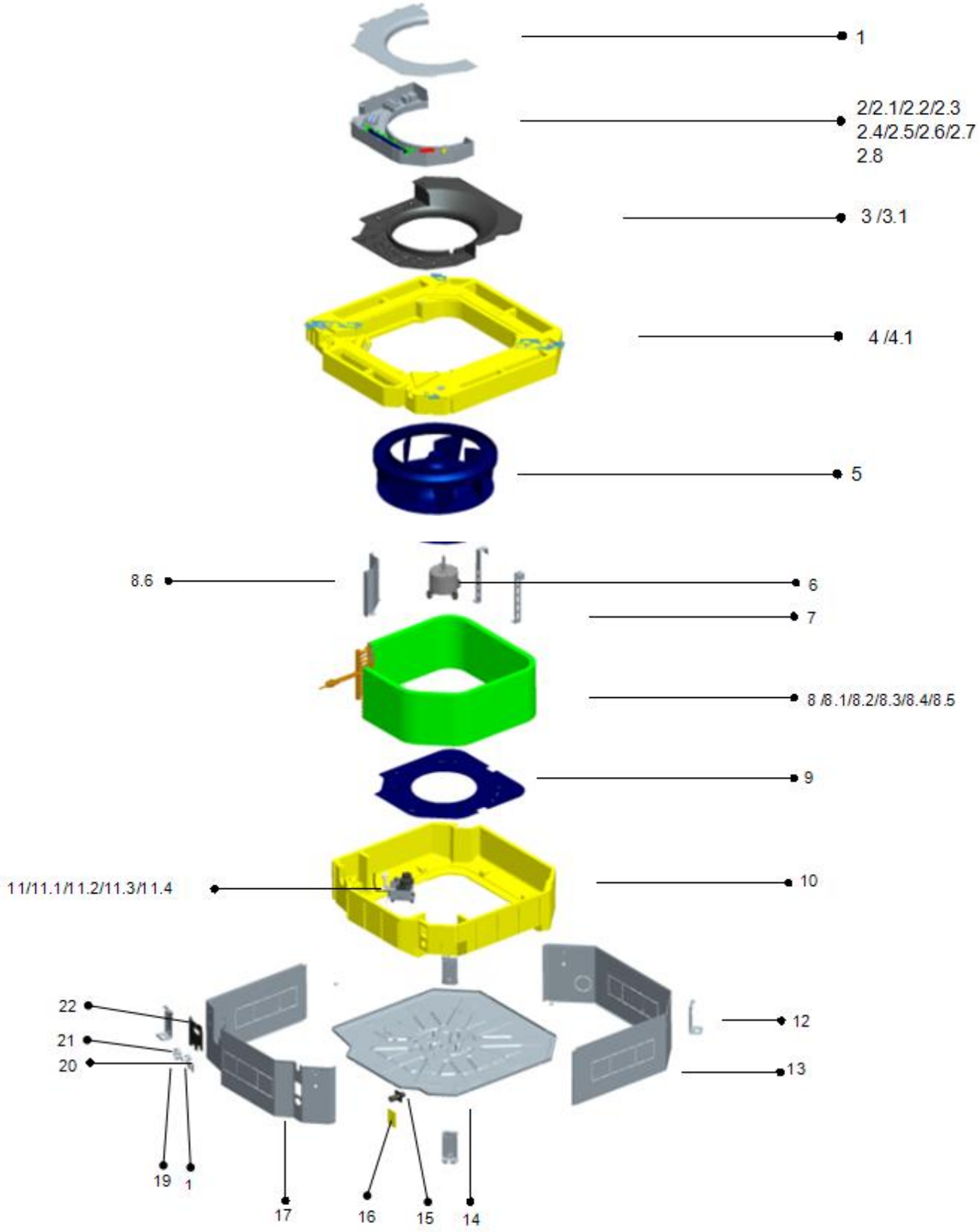
MODEL		CCOVT60S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	15.37	15.28	15.22	15.12	15.06	14.88	14.73
	Input kW.	5.12	5.16	5.19	5.26	5.29	5.57	5.84
24ºC D 17ºC W	Total capacity kW	15.85	15.76	15.70	15.61	15.55	15.37	15.18
	Input kW.	5.19	5.23	5.26	5.33	5.36	5.63	5.91
27ºC D 19ºC W	Total capacity kW	16.33	16.24	16.18	16.06	16.00	15.82	15.64
	Input kW.	5.26	5.29	5.33	5.40	5.43	5.70	5.98
29ºC D 21ºC W	Total capacity kW	16.54	16.42	16.36	16.27	16.18	16.00	15.82
	Input kW.	5.33	5.40	5.43	5.50	5.53	5.81	6.08
32ºC D 23ºC W	Total capacity kW	16.85	16.75	16.66	16.57	16.51	16.30	16.12
	Input kW.	5.36	5.40	5.46	5.50	5.53	5.81	6.11

7. Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CCOVT36S	60	208-230V	187V	244V	0.18
CCOVT48S	60	208-230V	187V	244V	0.22
CCOVT60S	60	220-240V	187V	244V	0.22

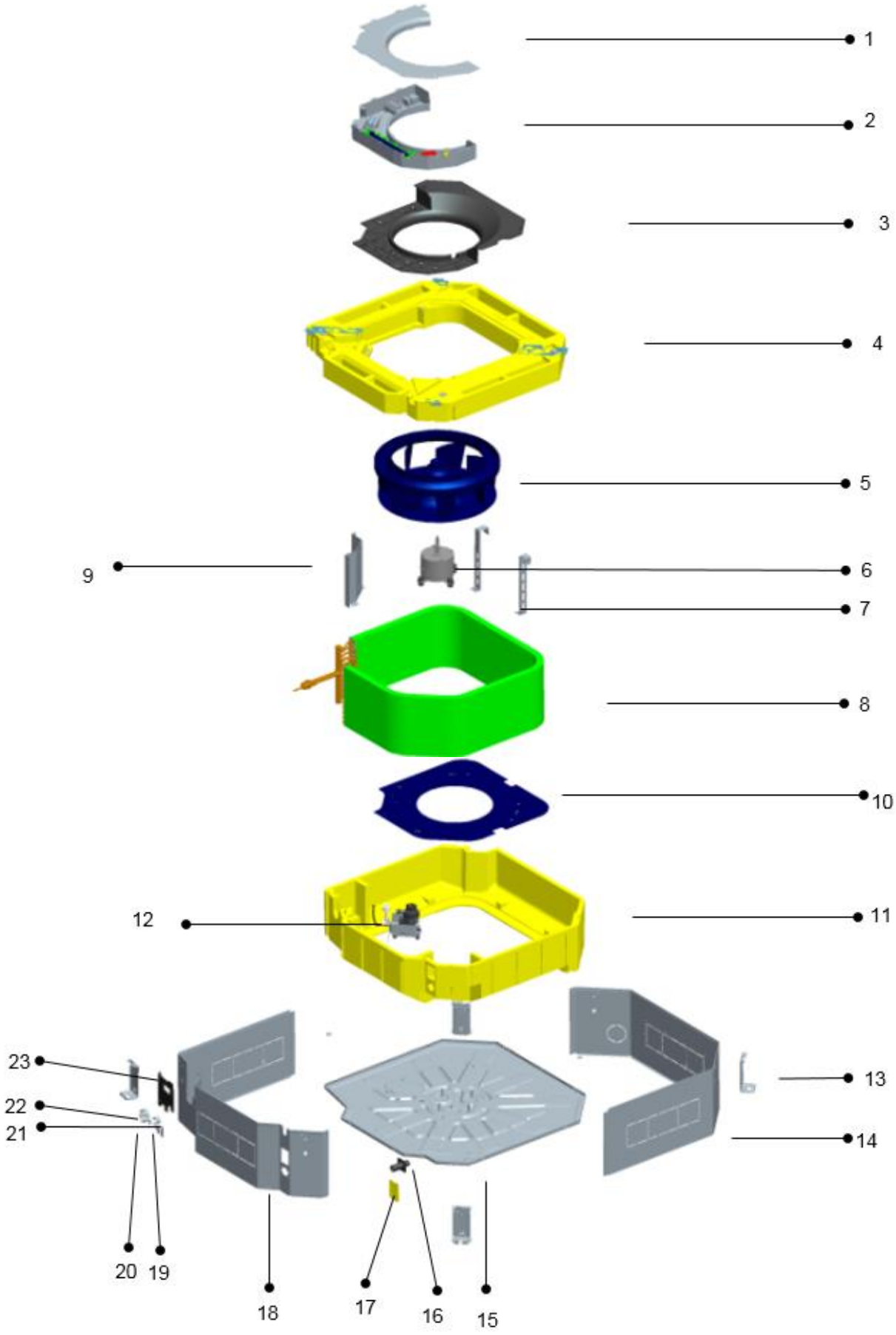
8. Exploded View

8.1 CCOVT36S



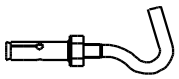
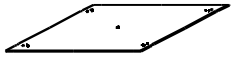
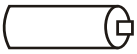
No.	Part Name	No.	Part Name
1	E-parts box cover	8.4.2	Evaporator
2	Electric control components for indoor unit	8.4.3	Collecting pipe welding assy
2.1	The electric control board base	8.4.4	Current divider capillary assy
2.2	Relay	8.5	Main fixing board
2.3	Terminal	9	The chassis plate
2.4	Terminal	10	Upper foam components
2.5	E-parts board for indoor unit	11	Pre-assembling assy for water pump
2.6	Temperature sensor	11.1	Water pump support
2.7	Temperature sensor	11.2	Water pump
2.8	Welded chassis for E-parts box	11.3	Liquid-level sensor
3	Wind inlet guide assy	11.4	Underlay for water pump support
3.1	Wind inlet guide	12	Hanger
4	Water pan components	13	Rear brattice
4.1	Foam pendant	14	Chassis assy
5	Centrifugal fan	15	Discharge pipe joint
6	Fan motor for indoor unit	16	Side maintenance board for water pump
7	Auxiliary fixing board for evaporator	17	Front brattice
8	Evaporator components	18	Lower pipe clamp
8.1	Insulating pipe	19	Lower pipe clamp(φ35)
8.2	Insulating pipe	20	Upper pipe clamp
8.3	Evaporator attached cotton	21	Upper pipe clamp(φ35)
8.4	Evaporator welding assy	22	Valve panel
8.4.1	Installation tube for probe		

8.3 CCOVT36S, CCOVT60S



No.	Part Name	No.	Part Name
1	E-parts box cover	9	Main fixing board
2	Electric control components for indoor unit	10	The chassis plate
2.1	Fan motor capacitor	11	Upper foam components
2.2	Temperature sensor	12	Pre-assembling assy for water pump
2.3	E-parts board base	12.1	Water pump support
2.4	E-parts board for indoor unit	12.2	Water pump
2.5	Terminal	12.3	Liquid-level sensor
2.6	Welded chasis for E-parts box	12.4	Underlay for water pump support
3	Wind inlet guide assy	12.5	Water pump base
3.1	Wind inlet guide	13	Hanger
4	Water pan components	14	Rear brattice
5	Centrifugal fan	15	Chassis assy
6	Fan motor for indoor unit	16	Discharge pipe assy
7	Auxiliary fixing board for evaporator	17	Maintenance board components
8	Evaporator components	18	Front brattice
8.4	Evaporator welding assy	19	Lower pipe clamp
8.4.1	Installation tube for probe	20	Lower pipe clamp(φ35)
8.4.2	Evaporator	21	Upper pipe clamp
8.4.3	Collecting pipe welding assy	22	Upper pipe clamp(φ35)
8.4.4	Current divider capillary assy	23	Valve board components
8.4.5	Evaporator connection plate		

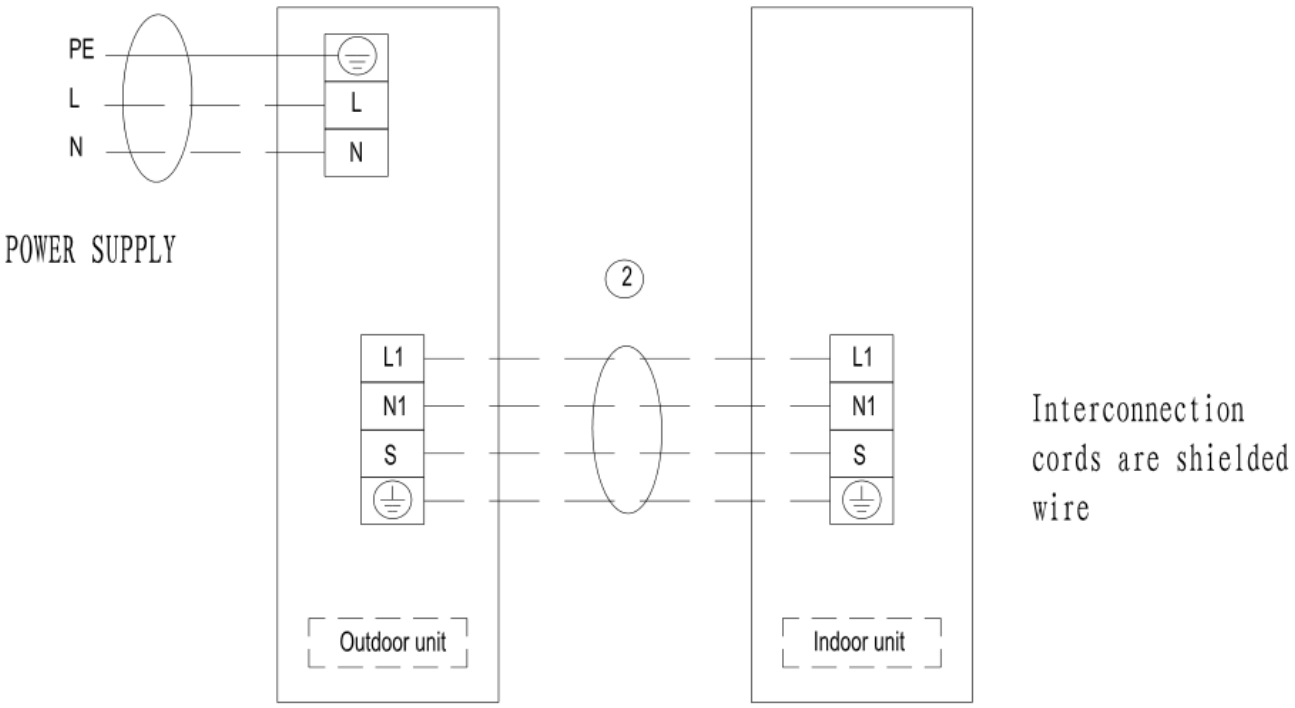
9. Accessories

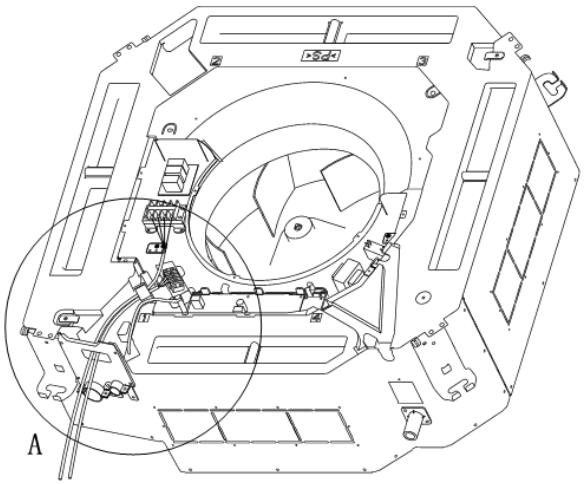
	Name	Shape	Quantity
Installation Fittings	Expansible hook		4
	Installation hook		4
	Installation paper board		1
	Bolt M5		4
Drainpipe Fittings	Out-let pipe sheath		1
	Tightening band		5
Remote controller	Remote controller		1
	Mounting screw(ST2.9×10-C-H)		2
	Alkaline dry batteries (AM4)		2
Others	Operation & installation instruction manual		1

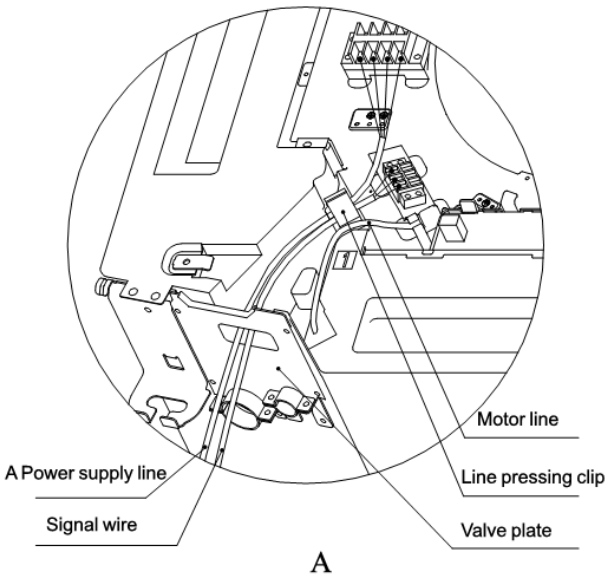
10. The Specification of Wiring

Model			36kBtu/h	48kBtu/h	60kBtu/h
Indoor power supply		V/Ph/Hz	208~230/1/60		
Outdoor power supply		V/Ph/Hz	208~230/1/60		
Wiring connection	Power wiring	mm^2	3×4mm	3×6mm	
	Signal wiring	mm^2	1×1mm		

11. Field Wiring







12. Trouble shooting

Fault codes table

Failure description	4LED failure indication	Digital tube display	Line controller display
3-phase electric phase sequence failure		E0	E0
Communication failure of indoor and outdoor units	Fast flashing of timing light	E1	E1
Room temperature sensor (T1) failure	Fast flashing of operation light	E2	E2
Failure of middle pipe temperature sensor (T2)	Fast flashing of operation light	E3	E3
Failure of middle pipe temperature sensor (T2B)	Fast flashing of operation light	E4	E4
Failure of outdoor unit		E5	E5
EEPROM failure of indoor unit	Slow flashing of defrosting light	E7	E7
Water fill protection	Fast flashing of alarm light	EE	EE
Communication failure of indoor unit and line controller		E9	E9
Stalling protection of indoor fan		F0	F0
Note: The fast flashing frequency of above indication lamps is 2.5Hz and the slow flashing frequency is 1Hz.			

Floor & Ceiling

1 Features

1. Flexible installation, ceiling suspended and floor standing.

2. Adopting centrifugal fans, higher ESP and longer air flow distance.

3. Two way auto-swing function, built-in two louver motor, vertical and horizontal air-flow adjustment.

4. Washable air filter

5. LED display optional.

6. High efficiency DC fan motor, low noise and more comfortable.

7. New upper and lower buckle type wheel case, the upper plastic wheel case can be removed alone, which is convenient adjust the wheel motor.

8. Water pump optional, pumping head is up to 1200mm.

9. Adopting waterproof plastic film on water collector, avoiding water leakage.

10. Self-diagnostic function and multi protection; Auto-restart function.

11. Standard for wireless controller; option for wired controller

Standard

Optional

2 Specifications

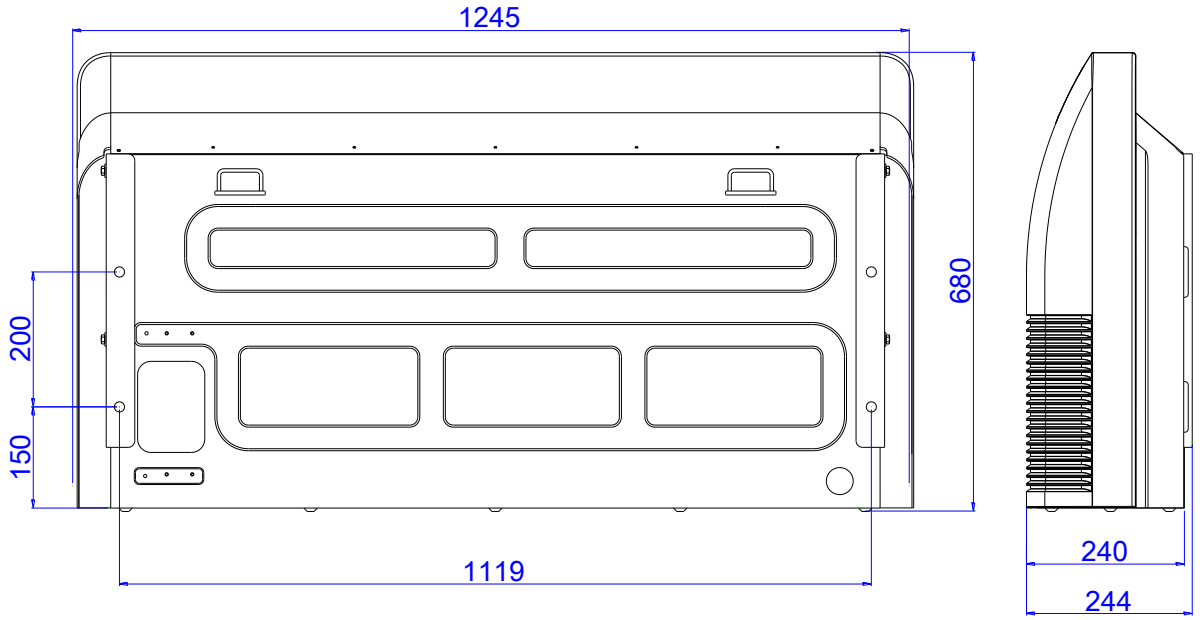
Model name	FACTORY	Unit	CUVT36S	CUVT48S	CUVT60S
Power supply		V/Ph/Hz	208~230-1-60	208~230-1-60	208~230-1-60
Cooling	Capacity	Btu/h	36000	48000	60000
	Capacity	W	10500(3500~10500)	14000(4000~14000)	16000(6200~16000)
	Input(indoor)	W	260	320	320
	Rated current(indoor)	A	1.18	1.45	1.45
Max. input consumption		W	300	350	350
Max. current		A	1.4	1.77	1.77
Starting current		A	/	/	/
Operation Control			Wireless control		
Indoor coil	Number of row		3	3	3
	Fin spacing	mm	1.4	1.7	1.7
	Fin material		Hydrophilic aluminium	Hydrophilic aluminium	Hydrophilic aluminium
	Tube outside diameter	mm	Φ7	Φ9.52	Φ9.52
	Tube material		Inner grooved tube	Inner grooved tube	Inner grooved tube
	Coil length x height x width	mm	1000x252x40.11	1378x250x40.11	1378x250x40.11
	Number of circuit		4	5	5
Indoor fan motor	Brand		Weiling	Weiling	Weiling
	Model		S.TB-DQ-YSK110-75LD-4P2	S.TB-DQ-YSK110-59LD-4P17	S.TB-DQ-YSK110-59LD-4P17
	Qty		1	2	2
	Input	W	/	/	/
	Output	W	180	83*2	83*2
	Running current	A	/	/	/
	Capacitor	μF	5UF/450V	3UF/450Vx2	3UF/450Vx2
	Speed (Hi/Me/Lo)	r/min	980/880/780	1310/1140/1016	1310/1140/1016
Indoor air flow (Hi/Me/Lo)		m^3/h	1300/1150/1000	2200/1700/1500	2200/1700/1500
Indoor noise level (Hi/Me/Lo)		dB(A)	48/43/39	57/54/51	57/54/51
Indoor dimension	Unit (WxHxD)	mm	1250x690x245	1675x690x245	1675x690x245
	Packing (WxHxD)	mm	1325x770x325	1750x770x325	1750x770x325
Indoor weight	Net/Gross	kg	36/42	50/57	50/57
Design pressure		MPa	4.5	4.5	4.5
Drainage water pipe diameter		mm	φ25	φ25	φ25
Refrigerant piping	Liquid side/Gas side	mm(inch)	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")
Operation temperature	Cooling	℃	≥16	≥16	≥16

Notes:

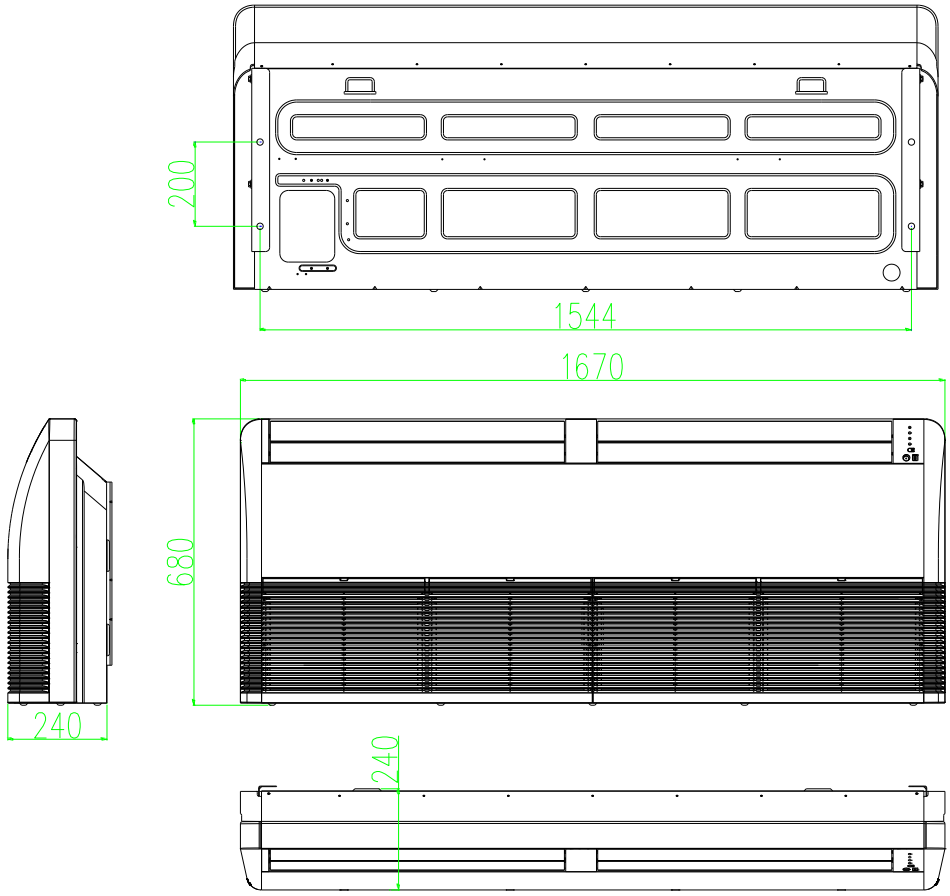
1. Nominal cooling capacities are based on the following conditions:
Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 5m (horizontal)
2.Nominal heating capacities are based on the following conditions:
Indoor temp: 20°CDB; Outdoor temp: 7°CDB, 6°CWB; Equivalent ref. Piping: 5m (horizontal)
3. Actual noise level may differ, depending on the room structure, etc, since these noise values are from an anechoic room.

3 Dimensions

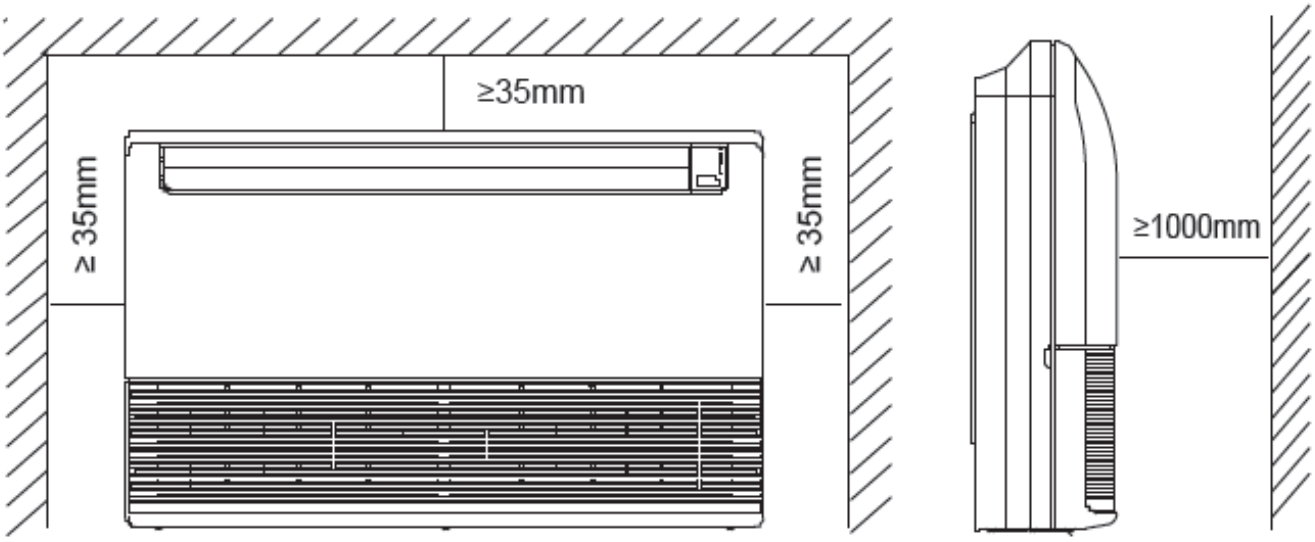
CUVT36S



CUVT48S, CUVT60S

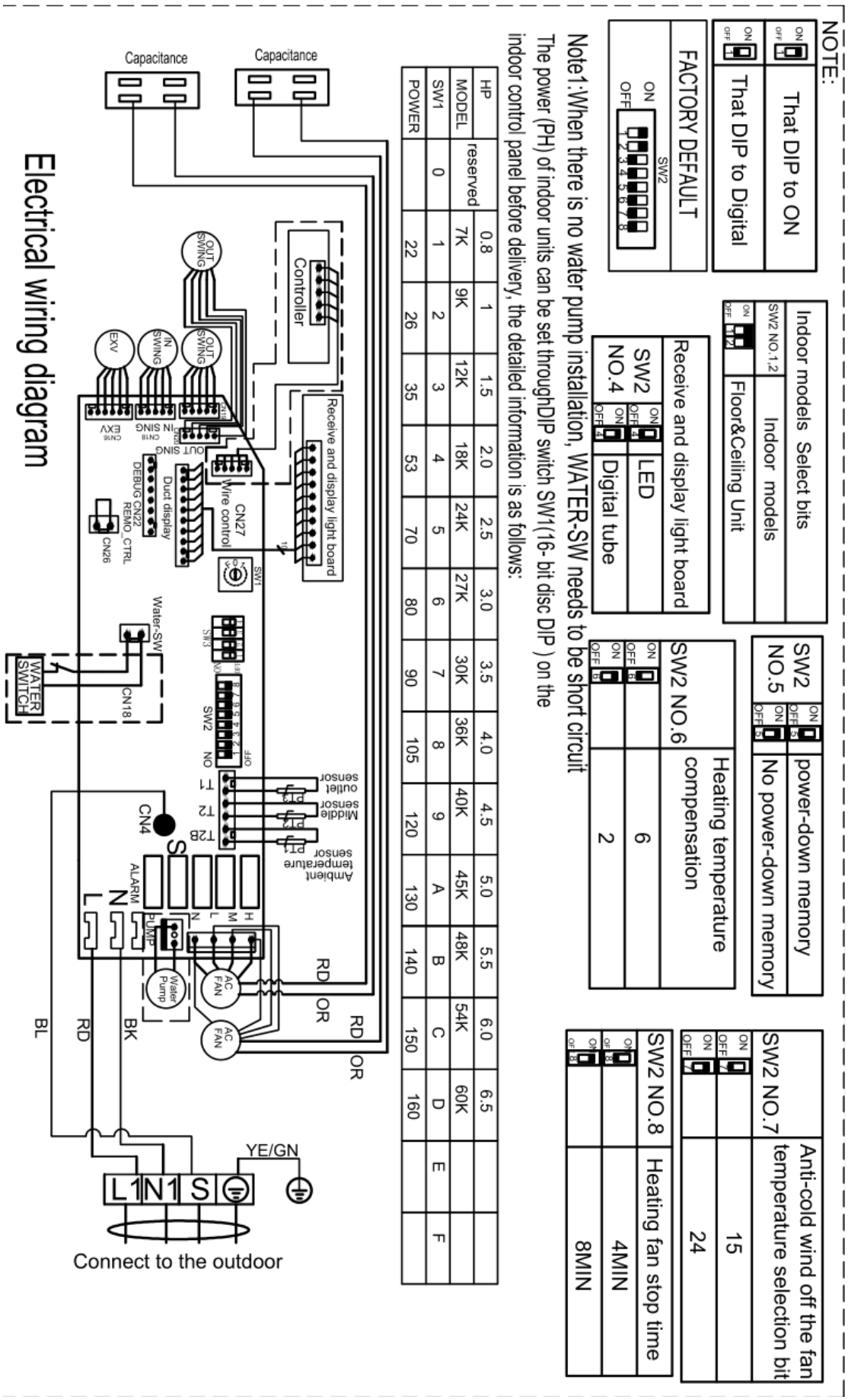


4 Service Space



5 Wiring Diagrams

CUVT36S, CUVT48S, CUVT60S



HP	0.8	1	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5		
MODEL	reserved	7K	9K	12K	18K	24K	27K	30K	36K	40K	45K	48K	54K	60K		
SW1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
POWER		22	26	35	53	70	80	90	105	120	130	140	150	160		

6. Capacity Table

Cooling

6.1 CUVT36S

MODEL		CUVT36S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49ºC
21ºC DB 15ºC WB	Total capacity kW	10.09	10.03	9.96	9.88	9.80	9.73	9.66
	Input kW.	3.09	3.12	3.15	3.19	3.31	3.42	3.52
24ºC DB 17ºC WB	Total capacity kW	10.41	10.35	10.27	10.19	10.11	10.03	9.97
	Input kW.	3.13	3.16	3.19	3.23	3.35	3.47	3.57
27ºC DB 19ºC WB	Total capacity kW	10.72	10.66	10.58	10.50	10.42	10.33	10.27
	Input kW.	3.17	3.20	3.24	3.28	3.39	3.51	3.61
29ºC D 21ºC W	Total capacity kW	10.85	10.79	10.71	10.63	10.54	10.46	10.39
	Input kW.	3.22	3.25	3.29	3.33	3.45	3.57	3.67
32ºC DB 23ºC WB	Total capacity kW	11.06	10.99	10.91	10.83	10.74	10.66	10.59
	Input kW.	3.23	3.26	3.30	3.34	3.46	3.59	3.69

6.4 CUVT48S

MODEL		CUVT48S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49ºC
21ºC D 15ºC W	Total capacity Kw	13.45	13.37	13.29	13.18	13.08	12.97	12.89
	Input kW.	4.59	4.62	4.68	4.74	4.89	5.07	5.22
24ºC D 17ºC W	Total capacity kW	13.87	13.79	13.68	13.60	13.47	13.37	13.29
	Input kW.	4.65	4.68	4.74	4.80	4.98	5.13	5.29
27ºC D 19ºC W	Total capacity kW	14.29	14.21	14.11	14	13.89	13.79	13.68
	Input kW.	4.71	4.74	4.80	4.86	5.04	5.22	5.35
29ºC D 21ºC W	Total capacity kW	14.48	14.37	14.26	14.16	14.05	13.95	13.84
	Input kW.	4.77	4.83	4.89	4.95	5.10	5.29	5.44
32ºC D 23ºC W	Total capacity kW	14.74	14.66	14.55	14.45	14.32	14.21	14.11
	Input kW.	4.80	4.83	4.89	4.95	5.13	5.32	5.47

6.5 CUVT60S

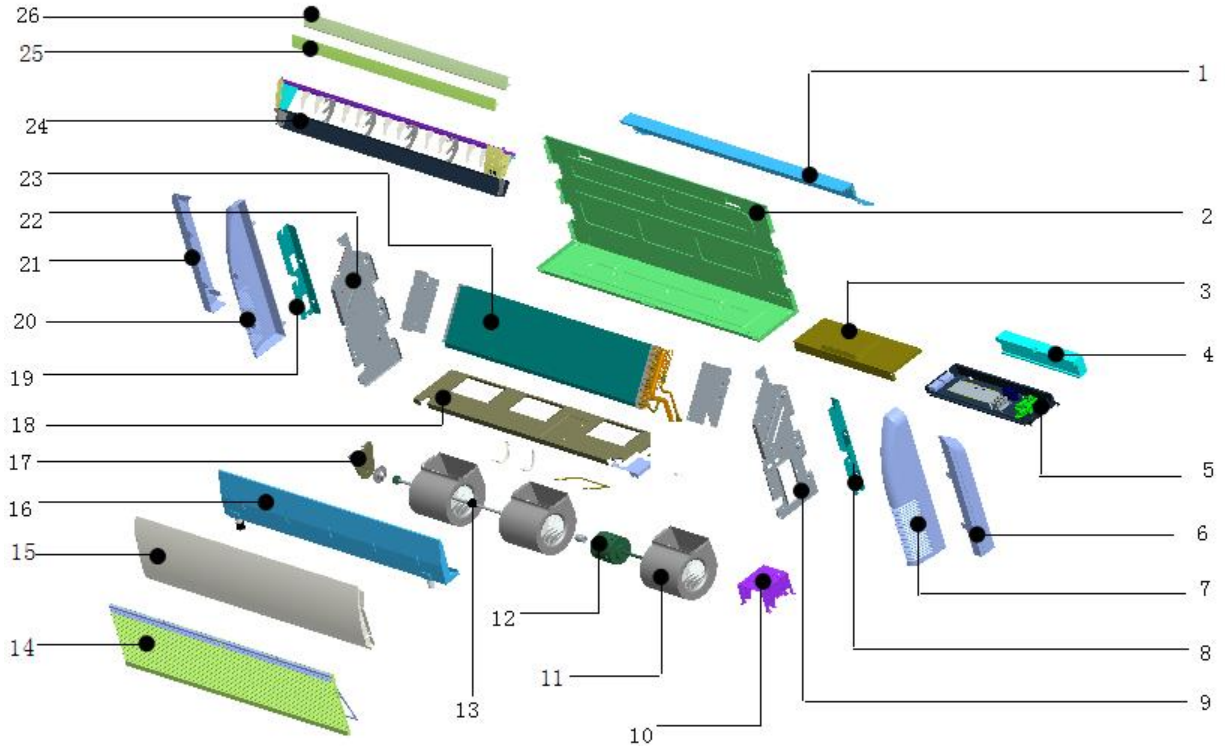
MODEL		CUVT60S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49ºC
21ºC D 15ºC W	Total capacity Kw	15.37	15.28	15.18	15.06	14.94	14.82	14.73
	Input kW.	5.12	5.16	5.23	5.29	5.46	5.67	5.84
24ºC D 17ºC W	Total capacity kW	15.85	15.76	15.64	15.55	15.40	15.28	15.18
	Input kW.	5.19	5.23	5.29	5.36	5.57	5.74	5.91
27ºC D 19ºC W	Total capacity kW	16.33	16.24	16.12	16	15.88	15.76	15.64
	Input kW.	5.26	5.29	5.36	5.43	5.63	5.84	5.97
29ºC D 21ºC W	Total capacity kW	16.54	16.42	16.30	16.18	16.06	15.94	15.82
	Input kW.	5.33	5.40	5.46	5.53	5.70	5.91	6.07
32ºC D 23ºC W	Total capacity kW	16.85	16.75	16.63	16.51	16.36	16.24	16.12
	Input kW.	5.36	5.40	5.46	5.53	5.74	5.94	6.11

7 Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CUVT36S	60	208-230V	187	244	0.26
CUVT48S	60	208-230V	187	244	0.16*2
CUVT60S	60	208-230V	187	244	0.16*2

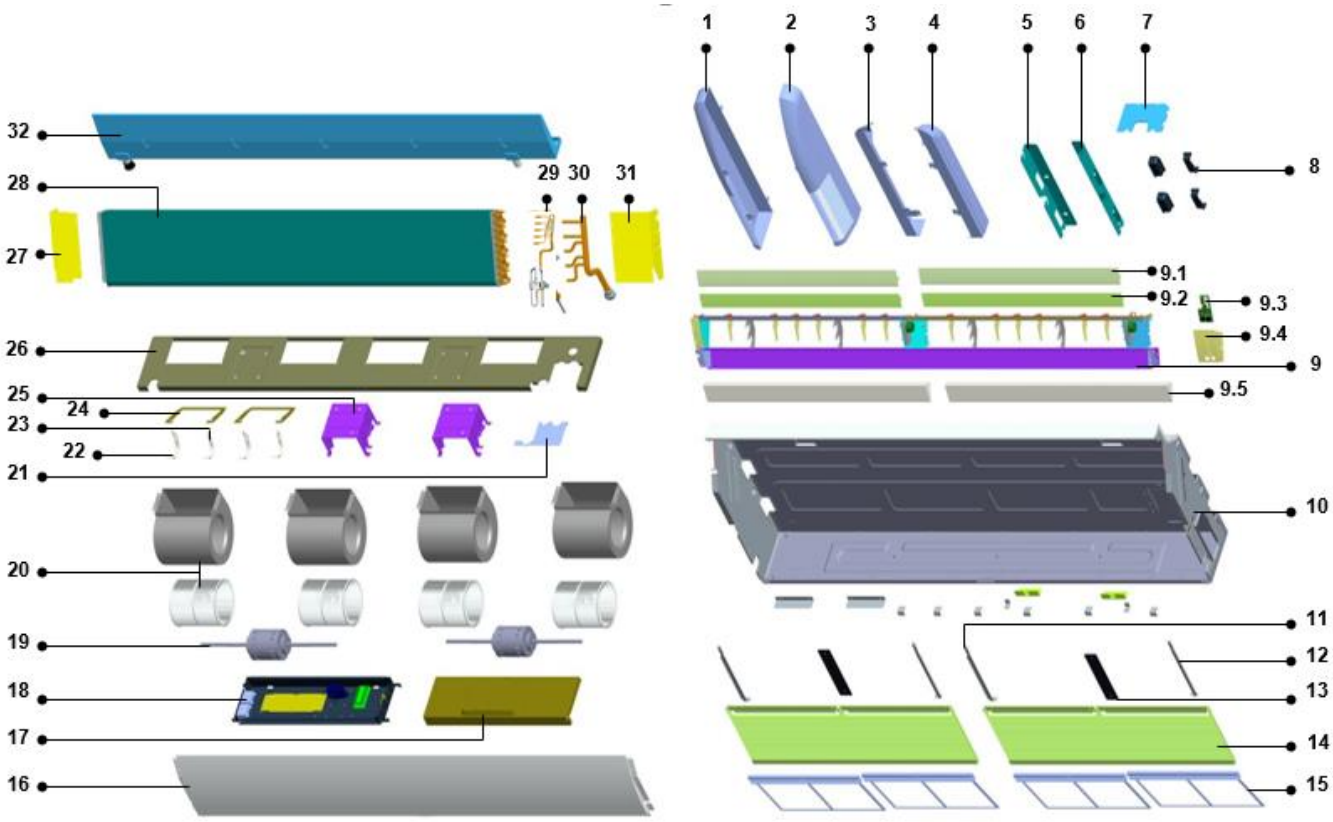
8. Exploded View

8.1 CUVT36S



No.	Part Name	No.	Part Name
1	Rear cover with cotton	17	Supporting board for motor
2	Chassis assembly	18	Weld assembly for intermediate transverse girder
3	Electric box cover	19	Right mounting plate of evaporator
4	E-part box mat	20	Right cover
5	Indoor PCB assembly	21	Right seal plate
5.1	E-part box	22	Right separating board
5.2	Indoor PCB	23	Evaporator component
5.3	Relay	23.1	Left mounting plate of evaporator
5.4	plastic base of Electric control board	23.2	Shunt capillary assembly
5.5	Terminal	23.3	Air inlet header pipe assembly of evaporator
6	Left seal plate	23.4	Evaporator assembly
7	Left cover	24	Air-out frame component
8	Left hoisting pate	24.1	Fixing board assembly for air-out frame
9	Left separating board Ⅰ	24.2	Display film
10	Motor holder	24.3	Display lamp panel
11	Wheel volute	24.4	Vertical step motor
12	Indoor fan motor	24.5	Horizontal step motor
13	Connecting shaft	24.6	End bearing of louver
14	Air inlet grille	24.7	Intermediate bearing of louver
15	Top Cover assembly	24.8	Guard vane
16	Weld assembly of Water drain pan	25	Upper horizontal louver
16.1	Water outlet rubber cover	26	Down horizontal louver

8.2 CUVT48S, CUVT60S



No.	Part Name	No.	Part Name
1	Right cover	18	E-parts assy
2	Left cover	18.1	Electric box
3	Right seal plate	18.2	Indoor PCB
4	Left seal plate	18.3	Fan capacitor
5	Right hoisting plate	18.4	Terminal
6	Left hoisting pate	19	Indoor fan motor
7	Rat guard	20	Wheel volute
8	Handle	21	Pipe clamp
9	Air out frame assy	22	Left gland for motor shaft sleeve
9.1	Upper horizontal louver	23	Right gland for motor shaft sleeve
9.2	Down horizontal louver	24	Motor separating board
9.3	Display lamp panel	25	Holder for fan motor
9.4	Installing box for display panel	26	Weld assembly for intermediate transverse girder
9.5	Foam for air outlet frame	27	Right mounting plate of evaporator
10	Chassis	28	Evaporator assembly
11	Left retaining plate	29	Shunt capillary assembly
12	Right retaining plate	30	Air inlet header pipe assembly of evaporator
13	Filter snap-gauge	31	Left mounting plate of evaporator
14	Air inlet grille	32	Weld assembly of water drain pan
15	Filter	32.1	Water outlet rubber cover
16	Top Cover assembly		
17	Electric box cover		

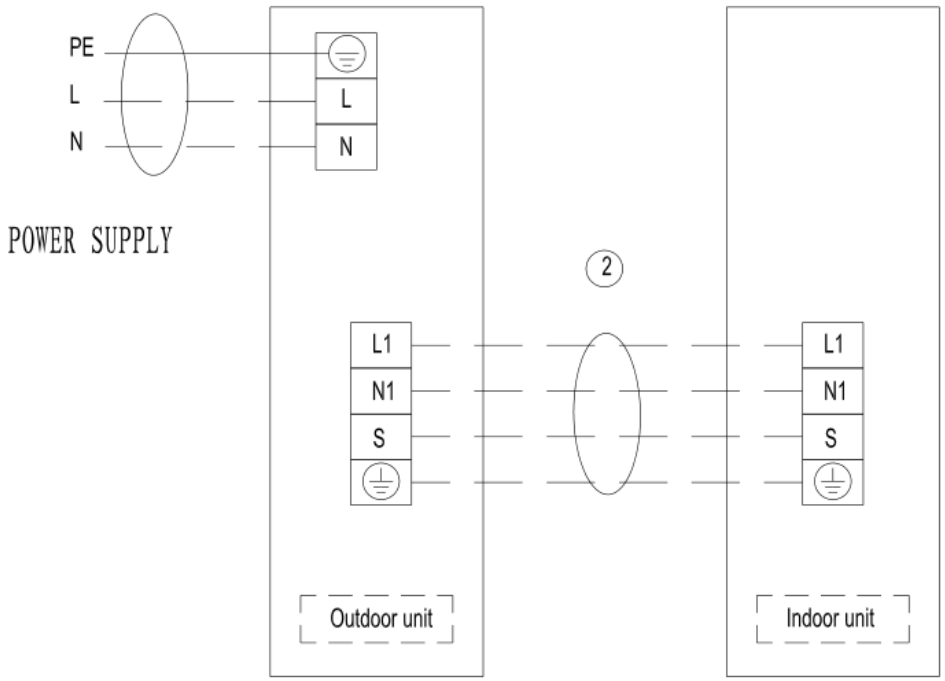
9 Accessories

Installation fittings	Name	Shape	Quantity
	1.Hanging arm		2
Controller	2. Remote controller		1
	3. Remote controller holder (optional)		1
	5. Mounting screw (ST2.9×10-C-H)		2
	6. Alkaline dry batteries (AM4)		2
Others	7. Installation & operation instruction manual		1

10 The Specification of Power

Model			36kBtu/h	48kBtu/h	60kBtu/h
Indoor power supply		V/Ph/Hz	208~230/1/60		
Outdoor power supply		V/Ph/Hz	208~230/1/60		
Wiring connection	Power wiring	mm^2	3×4.0	3×6.0	
	Signal wiring	mm^2	1.0		

11 Field Wiring



12 Troubleshooting

Fault code Table

Fault Description	4LED fault indication	Digital display	Wired controller display
Three-phase power phase sequence fault		E0	E0
Indoor and outdoor unit communication failure	Timing lights flash	E1	E1
Temperature sensor (T1) fault	Running lights flash	E2	E2
Pipe temperature sensor in the evaporator (T2) fault	Running lights flash	E3	E3
Pipe temperature sensor in the evaporator (T2B) fault	Running lights flash	E4	E4
Outdoor unit failure		E5	E5
The indoor unit EEPROM fault	Defrost lights flash slowly	E7	E7
Water over protection	Warning lights flash	EE	EE
Indoor unit with line controller communication failure		E9	E9
Indoor air blower stall protection		F0	F0
Note: The flash frequency for each of the above indicator is 2.5Hz, slow flashing frequency is 1Hz			

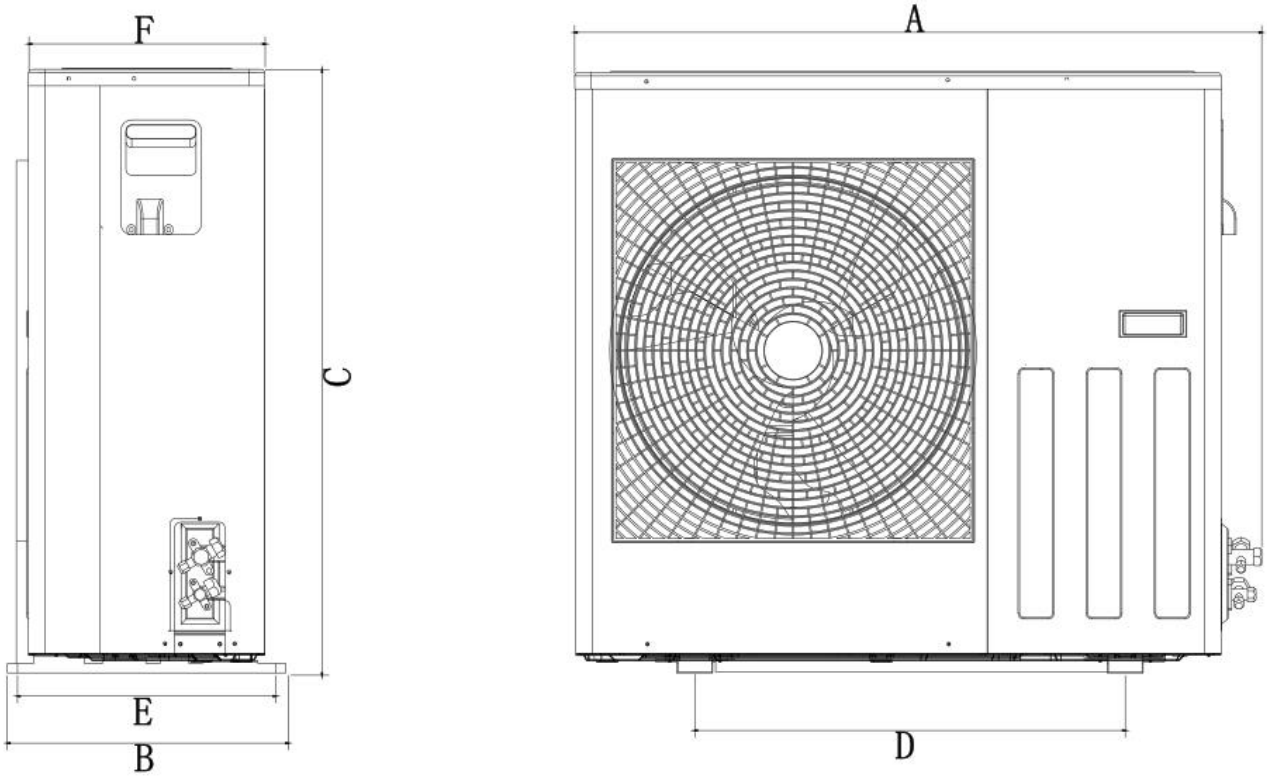
Part 3 Outdoor Units

1 Specification

Model name	FACTORY	Unit	CRSVT36AS	CRSVT48AS	CRSVT60AS
Code		Outdoor code	821039000016	821039000017	821039000018
Power supply		V/Ph/Hz	208~230-1-60	208~230-1-60	208~230-1-60
Input consumption		W	600-4000	600-5000	600-6000
Current		A	2.5-18	2.5-24	2.5-30
Outdoor coil	Number of row		2	3	2
	Fin spacing	mm	1.6	1.6	1.6
	Fin material		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
	Tube outside diameter	mm	Φ9.52	Φ7	Φ9.52
	Tube material		Inner grooved	Inner grooved	Inner grooved
	Coil length x height x width	mm	1000x750x43	874x945x40.1	794x1276x38.1
	Number of circuit		4	7	7
Compressor	Brand		Mitsubishi	GMCC	GMCC
	Model		TNB220FFEMC	DA250S2C-30MT	ATQ420D1UMT
	Type		Twin-rotary	Twin-rotary	Twin-rotary
	Capacity	W/h	6940	7690	12960
	Input	W	2150	2120	3520
	Rated current(RLA)	A	8.7	8.85	7.05
	Locked rotor Amp(LRA)	A	/	/	/
	Thermal protector		/	/	/
	Capacitor	μF	/	/	/
	Refrigerant oil	ml	520	1000	1400
Outdoor fan motor	Brand		Chigo	Chigo	Kaibang
	Qty		**1**	**1**	**2**
	Model		YDK-150-6CH F	YDK-200-8CF	YDK-60-6P2
	Input	W	300	400	190*2
	Running current	A	/	/	/
	Capacitor	μF	5	10	5
	Speed	r/min	800	800	830
Outdoor air flow		m^3/h	4500	5000	6000
Outdoor noise level		dB(A)	57	60	60
Outdoor dimension	Unit (WxHxD)	mm	1030x432x788	1054x399x994	907x400x1330
	Packing (WxHxD)	mm	1120x485x900	1145×475×1120	964x402x1445
Net/Gross weight		kg	66/71	81/91	95/103
Refrigerant	Type		R410A	R410A	R410A
	Charge	kg	2.8	3.6	4
Refrigerant pipe	Liquid side/ Gas side	mm(inch)	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")
	Max. refrigerant pipe length	m	25	25	30
	Max. difference in level	m	20	20	20
Operation temperature range		℃	16～32	16～32	16～32
Ambient temperature range		℃	16～50	16～50	16～50

2 Dimensions 2.1

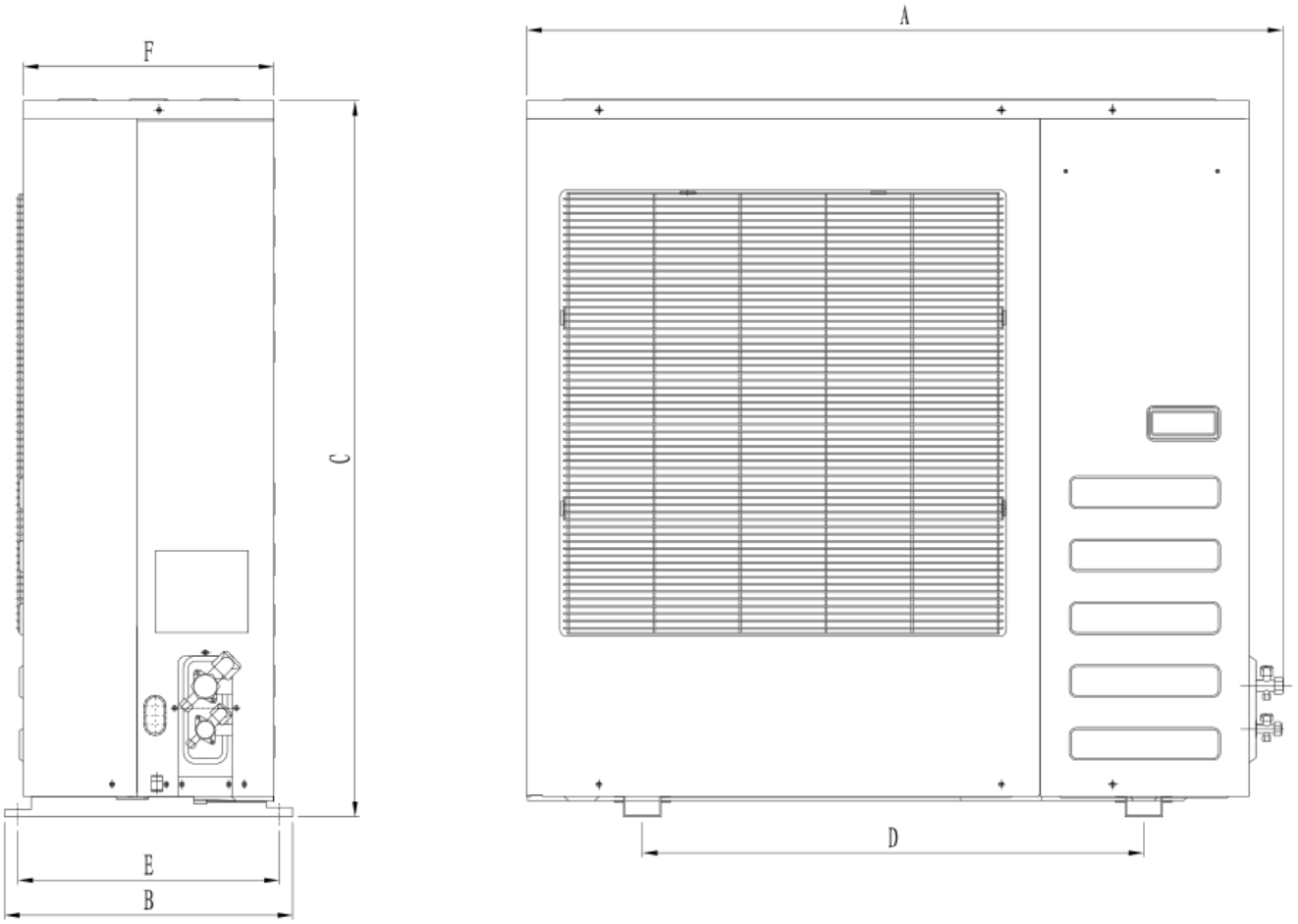
CRSVT36AS



Unit: mm

Project / Machine capacity	A	B	C	D	E	F
10.5KW	1030	432	788	707	389	370

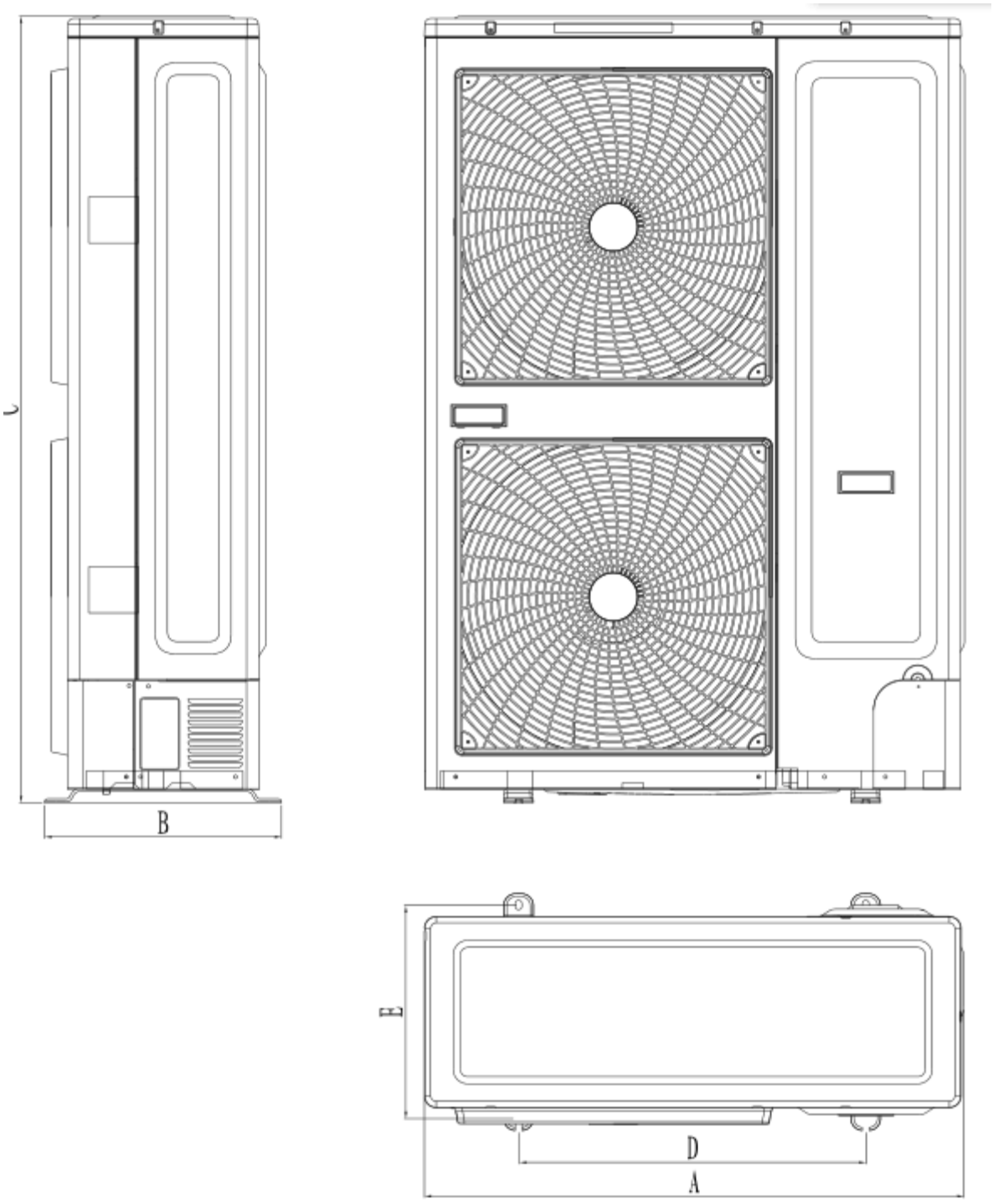
2.2 CRSVT48AS



Unit: mm

Project / Machine capacity	A	B	C	D	E	F
14KW	1055	400	995	694	372	347

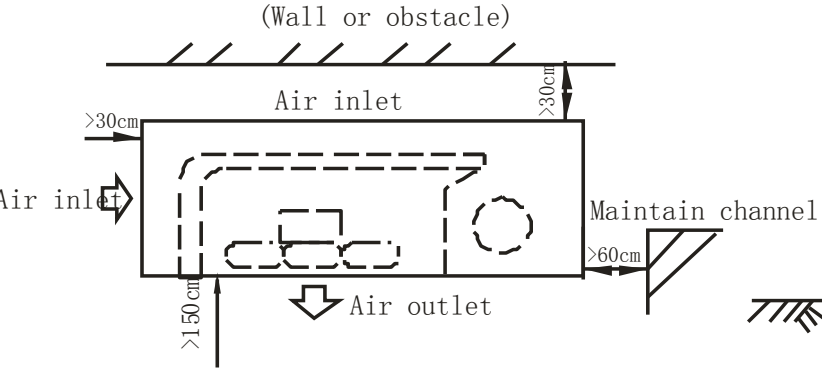
2.3 CRSVT60AS

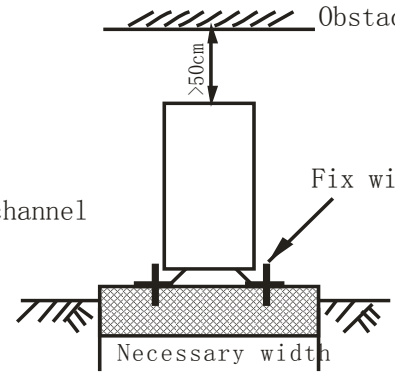


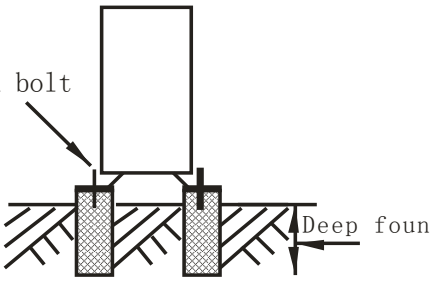
Unit: mm

Project / Machine capacity	A	B	C	D	E
16kW	907	400	1330	585	362

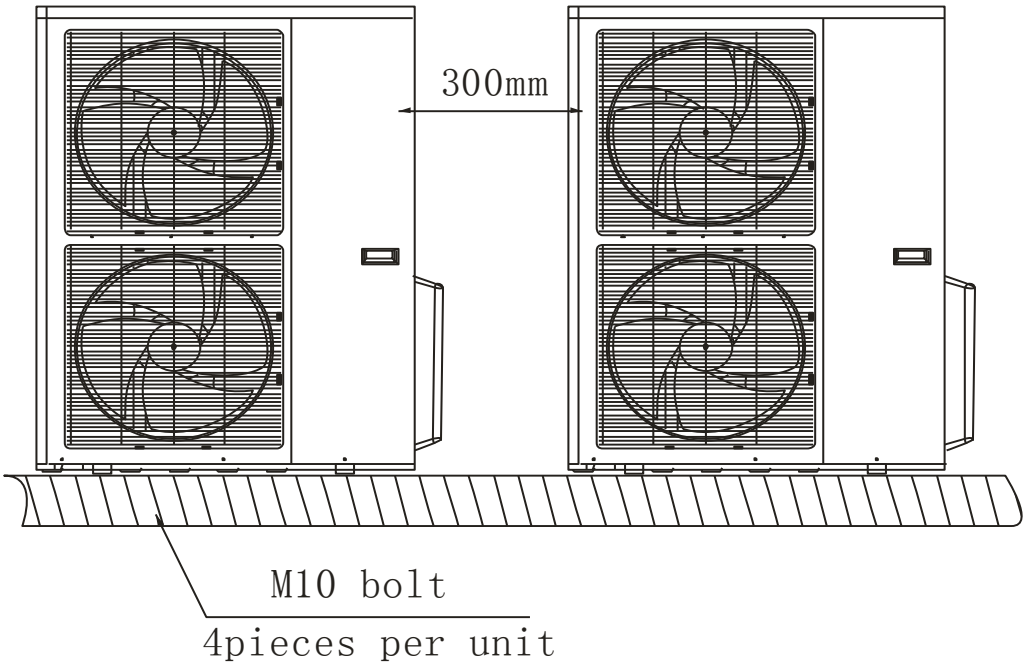
3 Service Space





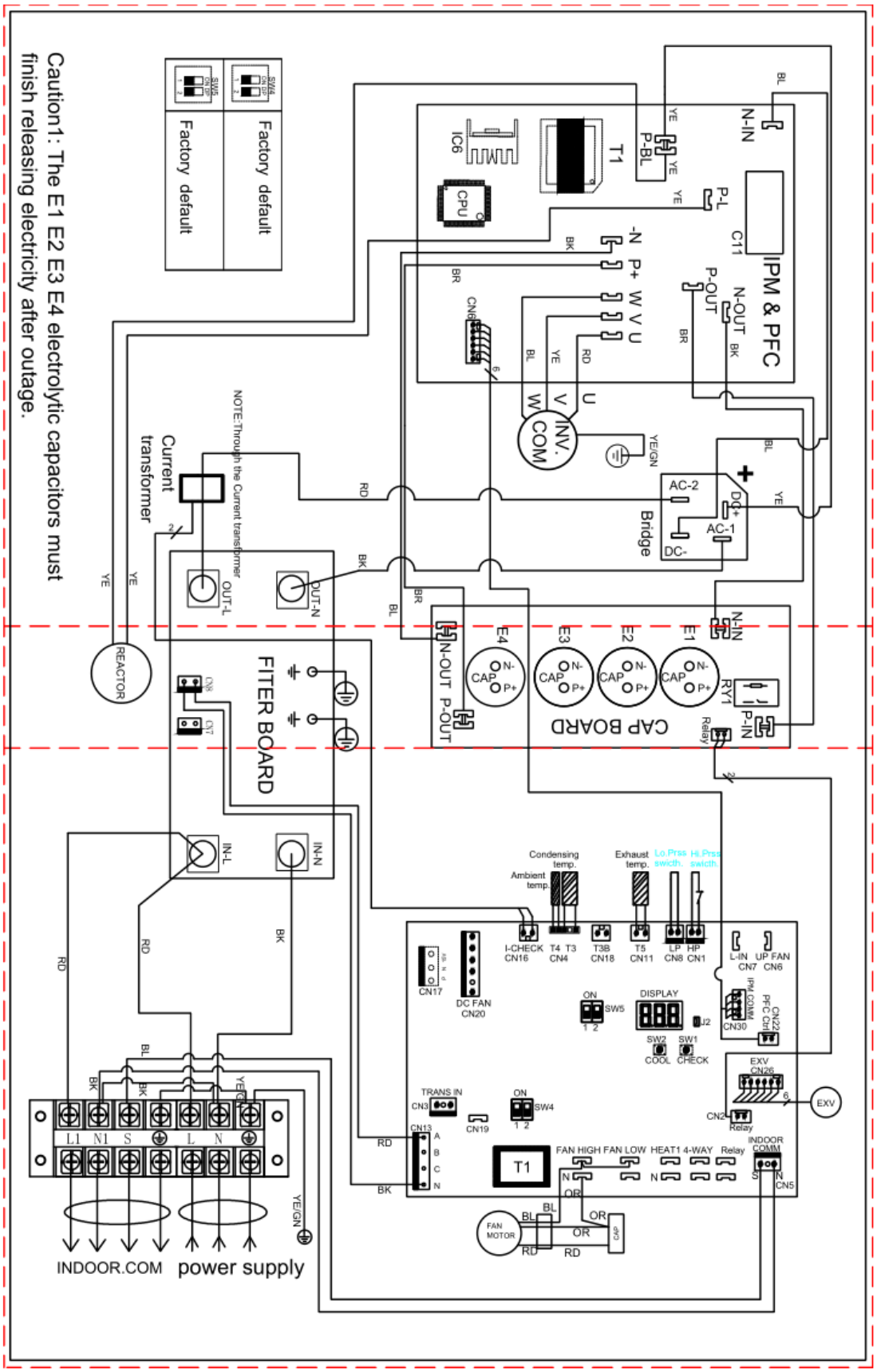


300mm is necessary between 2 outdoor units

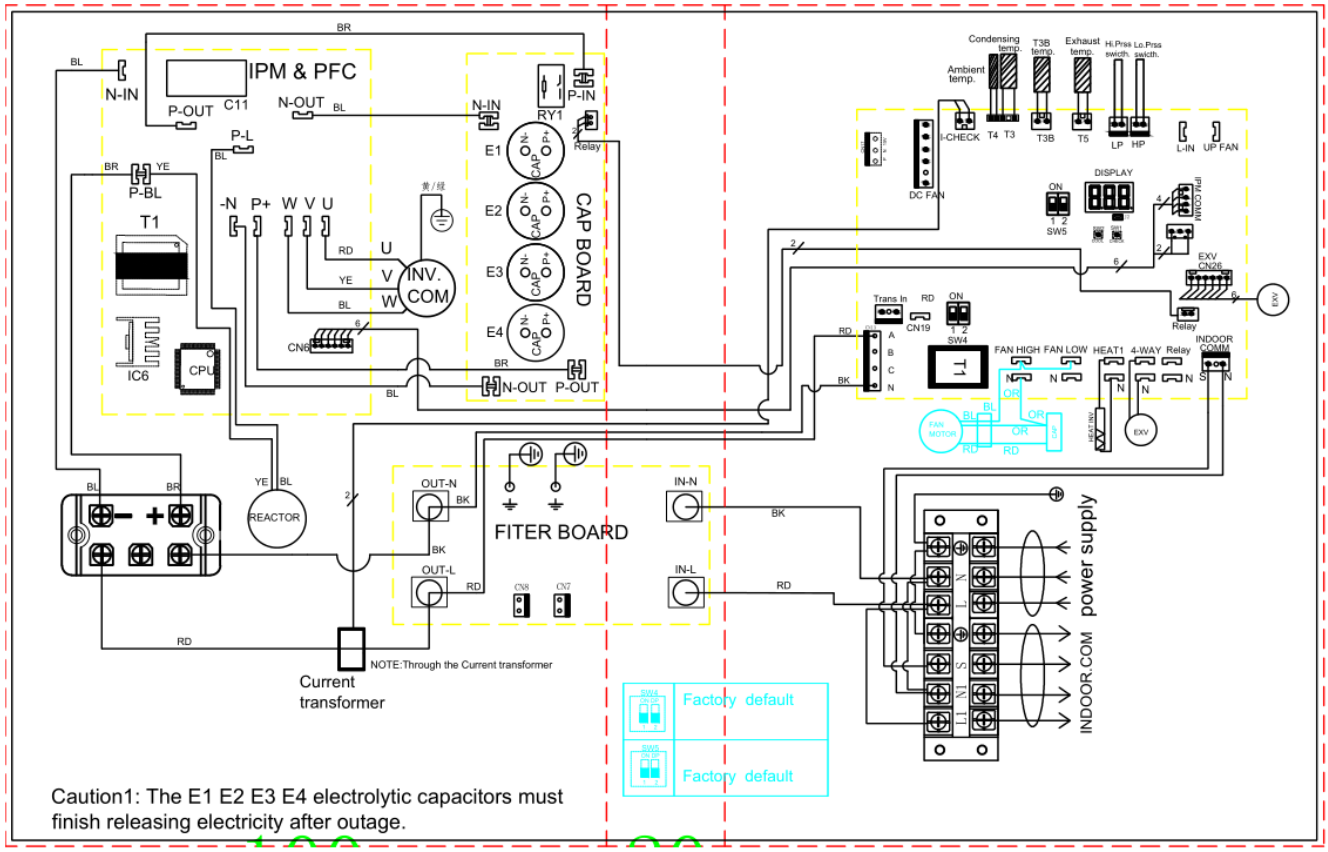


4 Wiring Diagrams

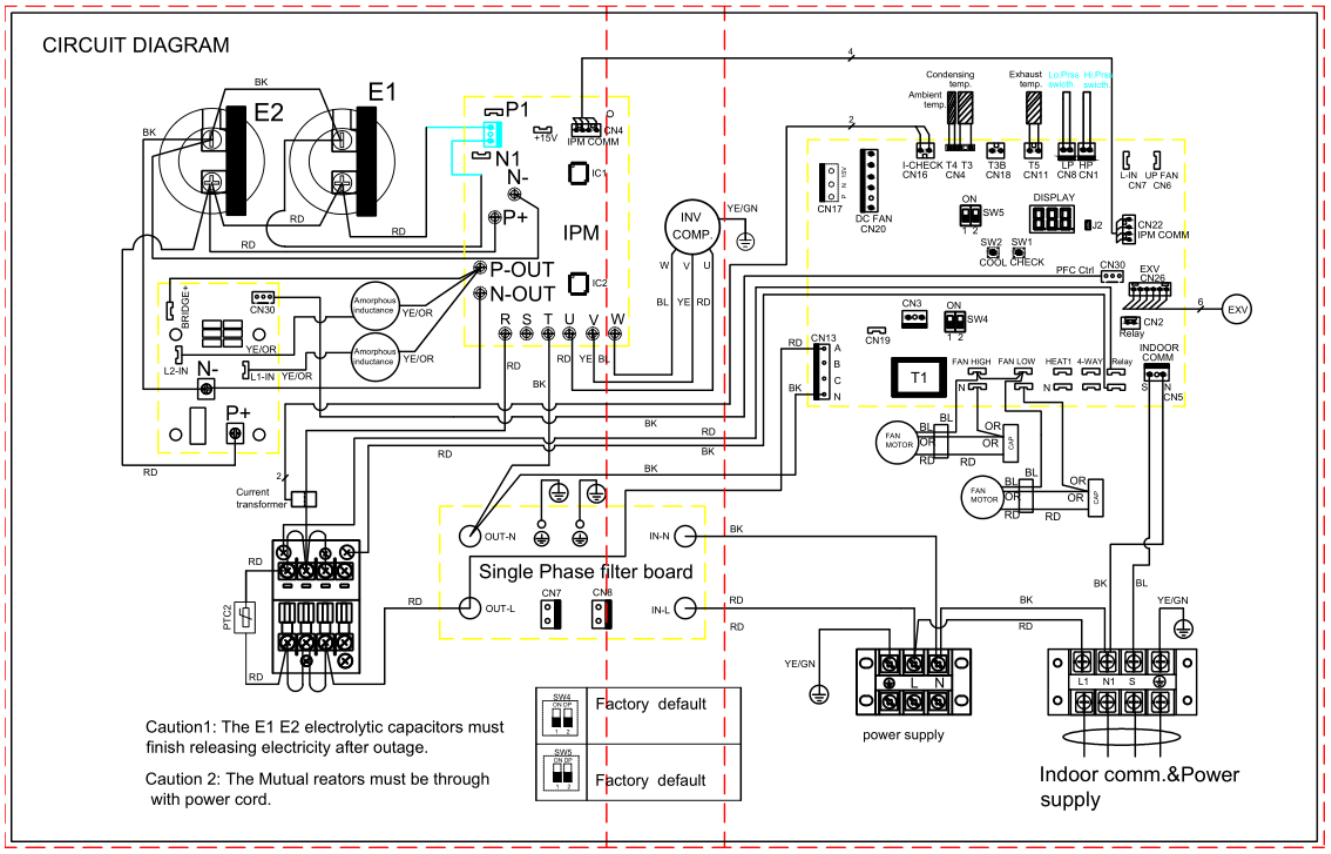
4.1 CRSVT36AS



4.2 CRSVT48AS



4.3 CRSVT60AS



5 Electric Characteristics

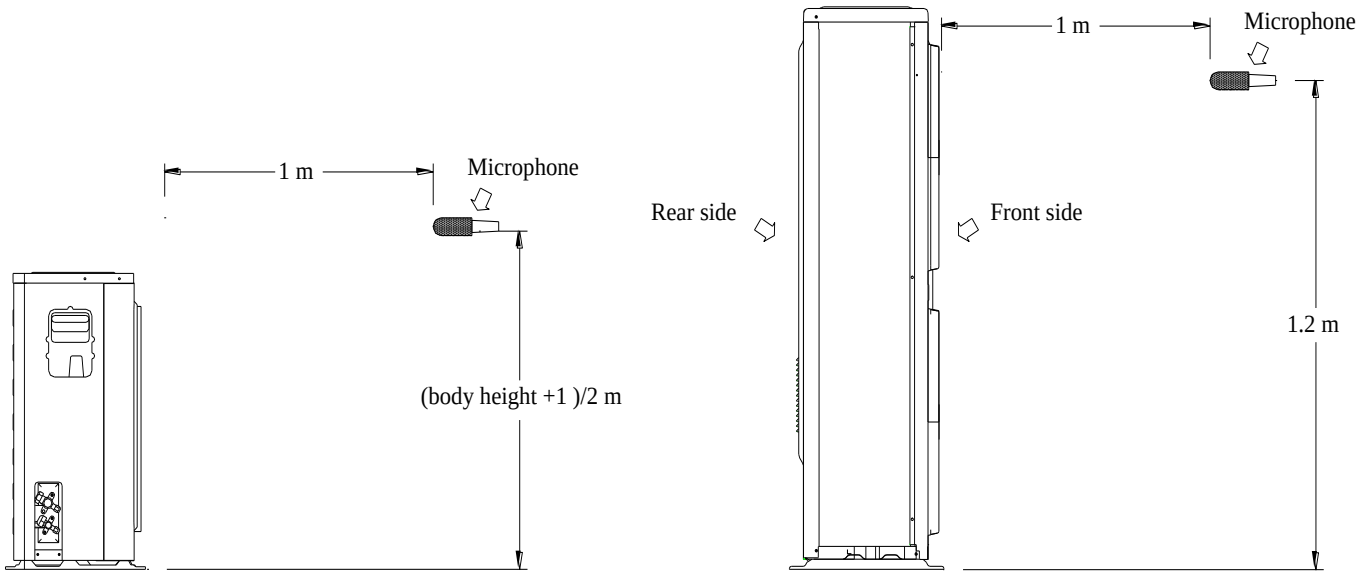
Model	Outdoor Unit				
	Hz	Voltage	Min.	Max.	Outdoor motor (kw)
CRSVT36AS	60	208~230V	187	244	0.3
CRSVT48AS	60	208~230V	187	244	0.4
CRSVT60AS	60	208~230V	187	244	0.38

6 Operation Limits

Operation mode	Outdoor temperature(℃)	Room temperature(℃)
Cooling operation	-5～50	16~32
Heating operation	-15～30	16~32

1. Sound Levels

36kBtu/h-60kBtu/h

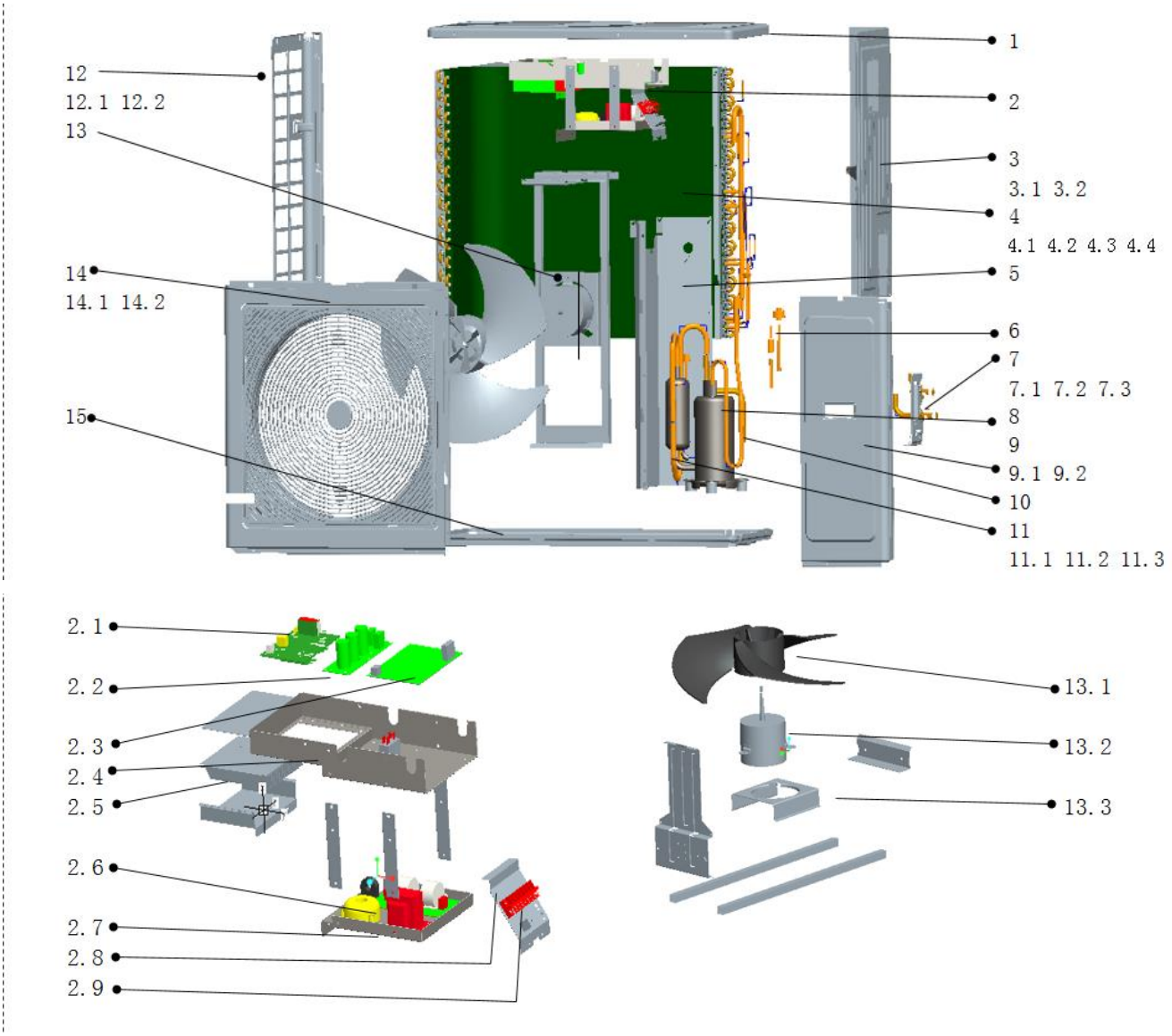


Model	Pressure level
CRSVT36AS	57
CRSVT48AS	60
CRSVT60AS	60

Note: Sound level is measured at a point 1 m in front of the unit, at a height of (Unit body height +1)/2 m.

8. Exploded View

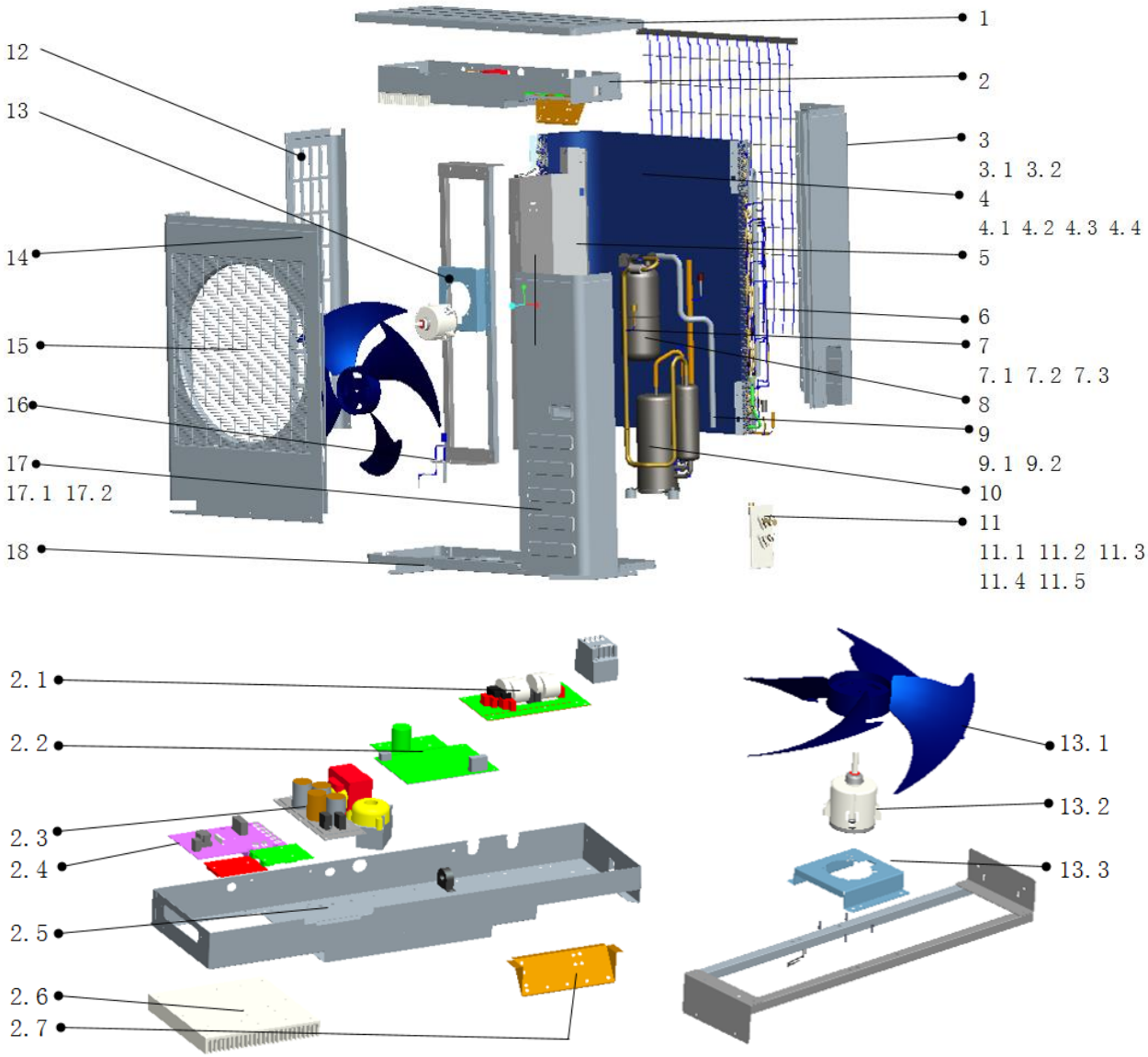
8.1 CRSVT36AS



No	Part Name	Quantity	No.	Part Name	Quantity
1	Cover	1	7.2	stop valve	1
2	electric control assy	1	7.3	stop valve	1
2.1	electric control module plate	1	8	compressor	1
2.2	the capacitor plate	1	9	the maintenance board component	1
2.3	outdoor PCB	1	9.1	Maintenance board	1

2.4	up part of E-box	1	9.2	Handle	1
2.5	cooling fin	1	10	the discharge pipe component	1
2.6	single phase filter board	1	11	the return pipe component	1
2.7	bottom of E-box	1	11.1	the return pipe A	1
2.8	the terminal plate	2	11.2	the return pipe B	1
2.9	Terminal	1	11.3	the return pipe C	1
3	Right clapboard assy	1	12	Left clapboard assy	1
3.1	Right clapboard	1	12.1	Left clapboard	1
3.2	big handle	1	12.2	Small handle	1
4	Condenser assy	1	13	Holder for fan motor assy	1
4.1	Condenser	1	13.1	Propeller fan	1
4.2	the elbow	1	13.2	Fan motor	1
4.3	the left palte of condenser	1	13.3	Holder for fan motor	1
4.4	the right plate of condenser	1	14	Front panel assy	1
5	Separating board	1	14.1	Panel	1
6	the EXV component	1	14.2	Plastic front net	1
7	the value seat plate component	1	15	Chassis assy	1
7.1	the value seat plate	1			

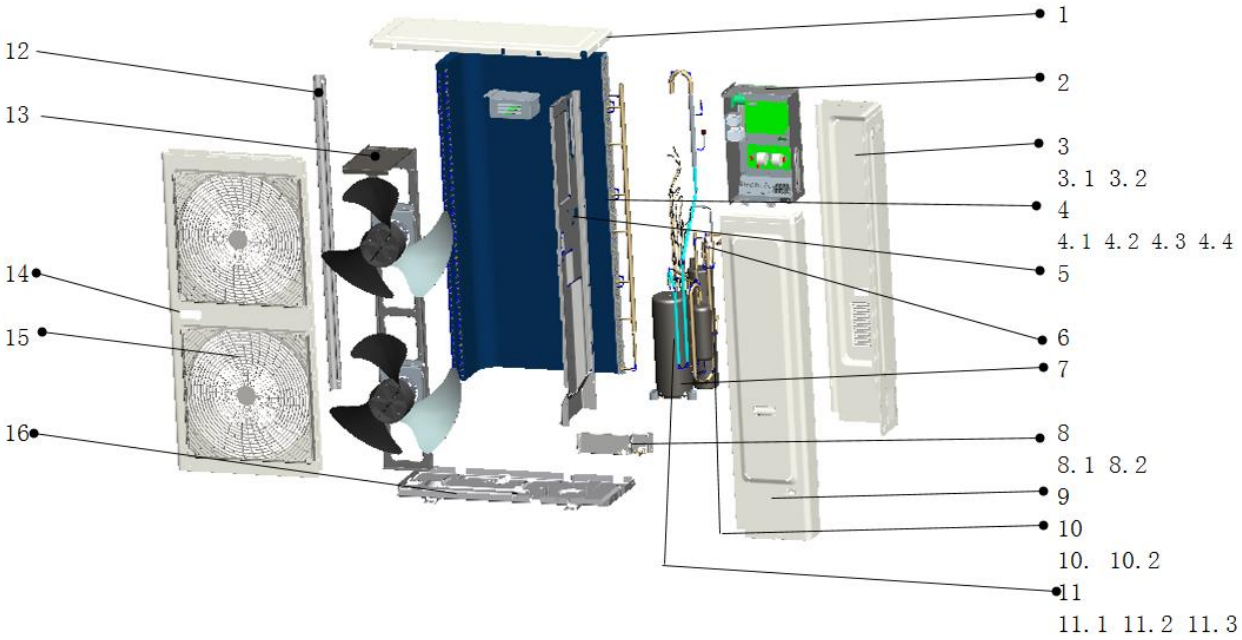
8.2 CRSVT48AS

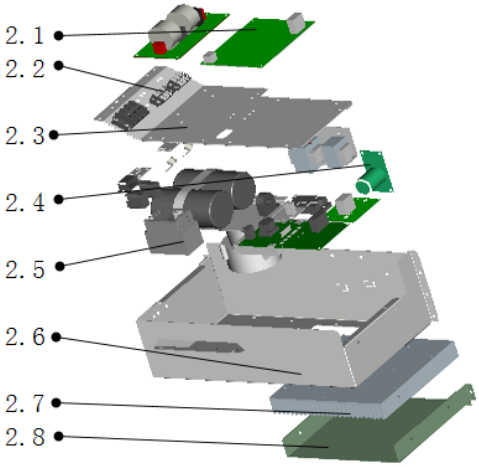


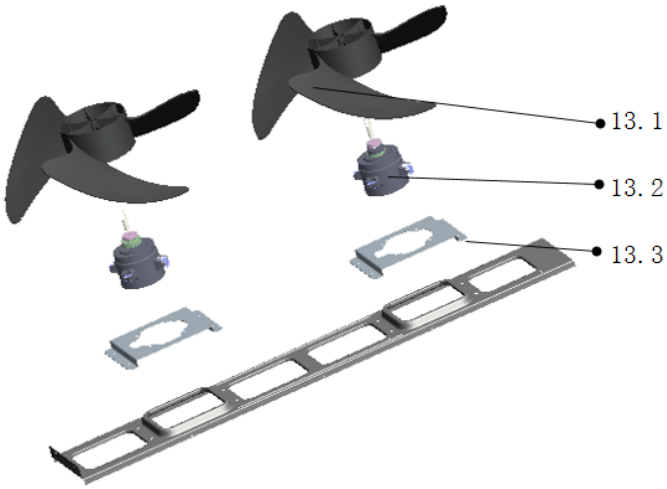
No	Part Name	Quantity	No.	Part Name	Quantity
1	Cover	1	7.2	the return pipe B	1
2	electric control assy	1	7.3	the return pipe C	1
2.1	single phase filter board	1	8	the gas-liquid separator	1
2.2	outdoor PCB	1	9	the discharge pipe component	1
2.3	the capacitor plate	1	9.1	the discharge pipe A	1

2.4	electric control module	1	9.2	the discharge pipe B	1
2.5	electric control box component	1	10	comprossor	1
2.6	cooling fin	1	11	the value seat plate component	1
2.7	the terminal plate	1	11.1	stop valve	1
3	Right clapboard assy	1	11.2	stop valve	1
3.1	Right clapboard	1	11.3	the value seat plate	1
3.2	Handle	1	11.4	the value seat plate	1
4	Condenser assy	1	11.5	the value seat plate	1
4.1	outside condenser	1	12	Left clapboard	1
4.2	inside condensser	1	13	Holder for fan motor assy	1
4.3	the left outside plate	1	13.1	Propeller fan	1
4.4	the lefe middle plate	1	13.2	Fan motor	1
4.5	the lefe inside plate	1	13.3	Holder for fan motor	1
4.6	the right inside plate	1	14	Panel	1
4.7	the right outside plate	1	15	Plastic front net	1
4.8	the elbow	1	16	the EXV	1
4.9	the elbow	1	17	the maintenance board component	1
5	Separating board	1	17.1	Handle	1
6	the net	1	17.2	Maintenance board	1
7	the return pipe component	1	18	Chassis assy	1
7.1	the return pipe A	1			

8.3 CRSVT60AS







No	Part Name	Quantity	No.	Part Name	Quantity
1	Cover	1	8.1	DN13 stop valve	1
2	E-parts assy	1	8.2	DN8 stop valve	1
2.1	outdoor PCB	1	9	Right clapboard	1
2.2	terminal	1	10	the discharge pipe component	1
2.4	the fixed board capacitor	1	10.1	the discharge pipe A	1
2.5	AC contactor	1	10.2	the discharge pipe B	1
2.6	electric control box	1	11	the return pipe component	1
2.7	cooling fin	1	11.1	the return pipe A	1
2.8	the cover of cooling fin	2	11.2	the return pipe B	1
3	the back plate	1	11.3	the return pipe C	1
4	Condenser assy	1	12	the stand column	1
4.1	Condenser	1	13	Holder for fan motor assy	1
4.2	the elbow	1	13.1	Propeller fan	2
4.3	the left palte of condenser	1	13.2	Fan motor	2
4.4	the right plate of condenser	1	13.3	Holder for fan motor	1
5	Separating board	1	14	Panel	1
6	the EXV component	1	15	the net	2
7	compressor	1	16	Chassis assy	1
8	the value seat plate	1			

9 Troubleshooting

9.1 Fault display

Display	Definition of fault or protection	Remark
E1	Three-phrase power phase sequence fault	
E2	Communication fault between the outdoor unit and the mast	Communication is interrupted for more than 2 minutes , 20 minutes after the initial power-on or within 20 minutes
E4	Temperature sensor fault	
E6	Condenser tube temperature sensor fault	
E9	AC over-voltage/under- voltage protection	
E10	EEPROM fault	
H0	0513 and DSP communication fault	
H4	Display P6 protection for 3 times within 30 minutes	Unable to restore unless a second power-on
H5	Display P2 protection for 3 times within 30 minutes	Unable to restore unless a second power-on
H6	Display P4 protection for 3 times within 100 minutes	Unable to restore unless a second power-on
H9	Display P9 protection for 2 times within 10 minutes	Unable to restore unless a second power-on
H10	3 times of P3 protection occurs within 60 minutes	Unable to restore unless a second power-on
P1	High pressure protection	
P2	Low-pressure protection	Display H5 after 3 times of P2 protection within 30 minutes
P3	Primary/secondary overcurrent protection	
P4	Exhaust overheating protection	3 time of P4 protection appears within 100 minutes and then H6 occurs
P5	High temp. protection	
P6	Module protection	3 times of P6 protection appears within 30 minutes and then H4 occurs
P9	DC fan fault	Display H9 after 2 times of P9 protection within 10 10 minutes
P10	Anti-typhoon protection	
P11	Refrigeration T2 overheating protection	
P12	5 minutes continuous fault on hot air system at area A	
L0	DC compressor module fault	
L1	DC bus low voltage protection	
L2	DC bus high voltage protection	
L4	MCE fault/sync/closed loop	
L5	Zero speed protection	
L7	Phase sequence error protection	
L8	15Hz protection	
L9	Hz Protection	

9.2 Parameter table for spot inspection of outdoor unit

No.		Display content	Remark
0	Normal display	Current frequency indoor unit amount	Display the starting amount when standby
1	1-	Outdoor unit local capacity	120, 140, 160
2	2-	Total capacity needs of indoor unit	
3	3-	Total capacity demands after outdoor unit	
4	4-	Operation mode	1:Power OFF/air supply; 2:Cooling; 3:Heating; 4:Forced cooling
5	5-	Actual running ability of outdoor unit	
6	6-	Fan status	0-7
7	7-	T2/T2B on average	
8	8-	T3 pipe temperature	
9	9-	T4 environmental temperature	
10	10-	T5 exhaust temperature	
11	11-	Opening of the electronic expansion valve	Actual value = spot inspection display value x 8
12	12-	Primary side current	
13	13-	Secondary circuit current	
14	14-	Primary side voltage	
15	15-	Secondary side voltage	Actual value = spot inspection display value x 4
16	16-	Sets of indoor units	
17	17-	Number of working indoor units	
18	18-	Last fault or protection code	No protection of fault display
19	19-	…	Spot check over