R410A 50Hz Universal Outdoor Series

Inverter type

Technical Manual

LCAC/2018

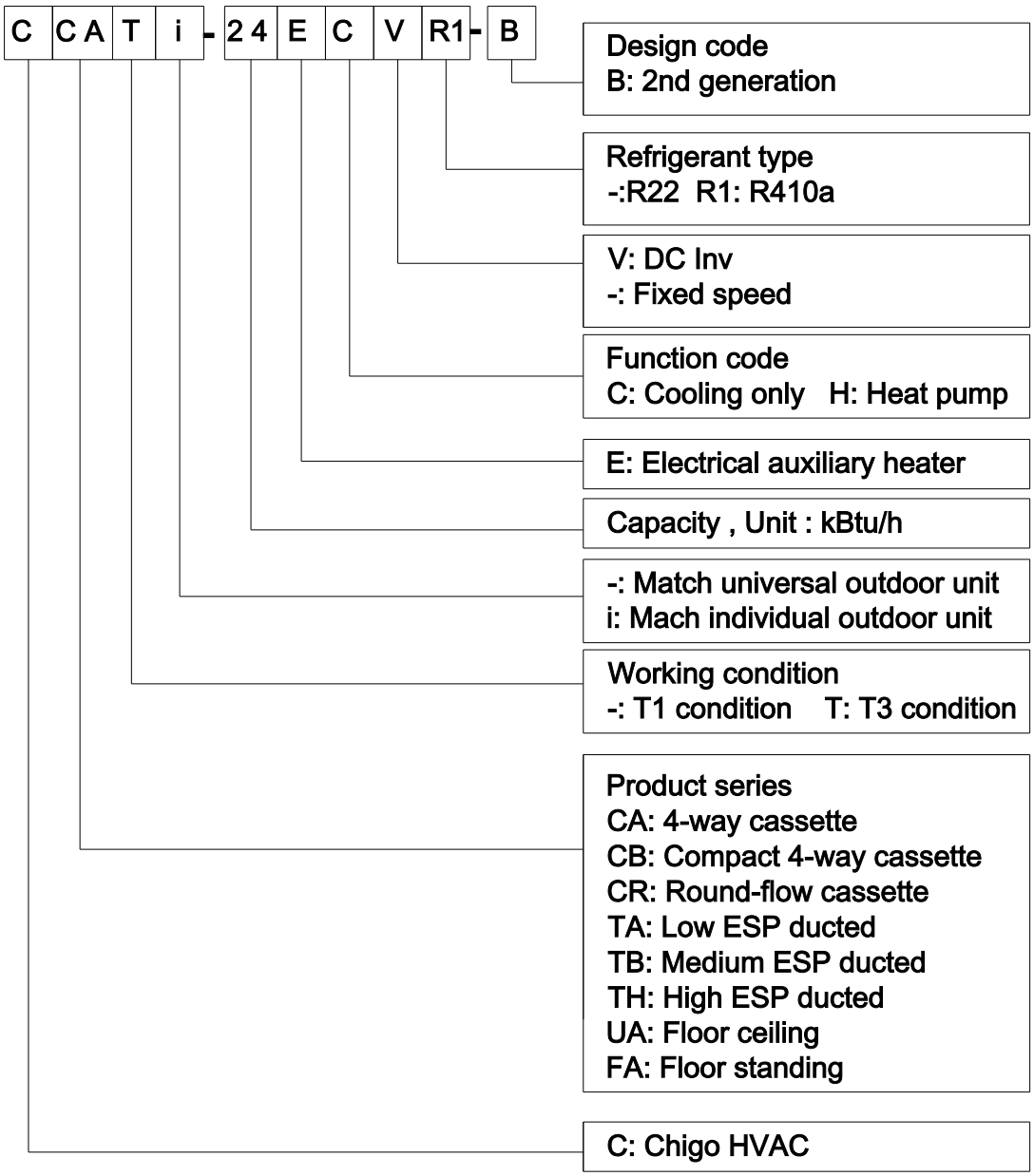
Content

R410A 50Hz Universal Outdoor series

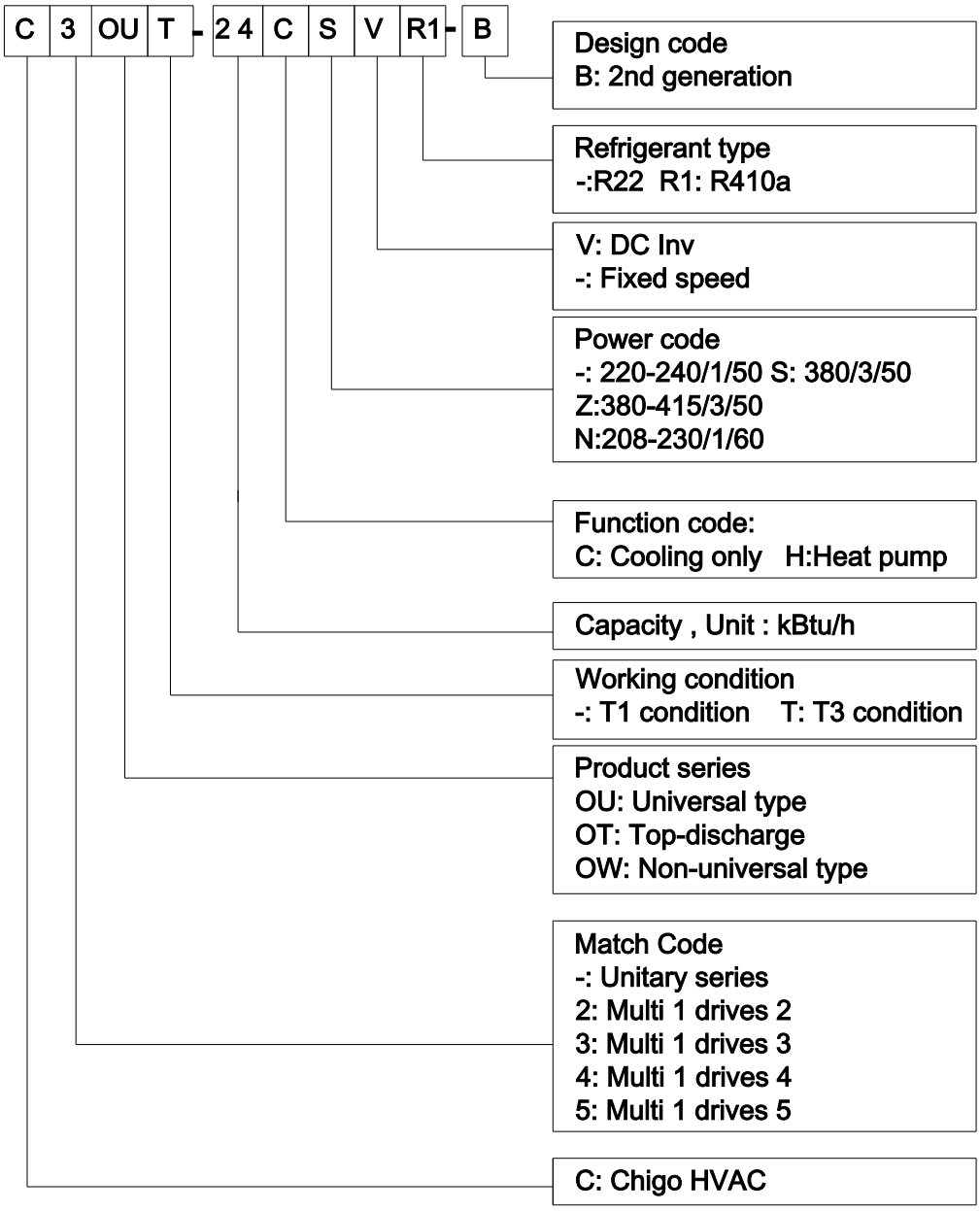
Part 1. General Information

1. Nomenclature

1.1 Indoor unit



1.2 Outdoor unit



2. Model Names of Indoor/Outdoor Units

2.1 Indoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight(kg)	Power supply
CCB-12HVR1	565×267×565	16.5/21.5	220~240V-1Ph-50Hz
CCB-18HVR1	565x267x565	16.5/21.5	220~240V-1Ph-50Hz
CCA-18HVR1	840×230×840	25/30	220~240V-1Ph-50Hz
CCA-24HVR1	840×230×840	25/30	220~240V-1Ph-50Hz
CCA-36HVR1-A	840×285×840	30.5/36	220~240V-1Ph-50Hz
CCA-36HVR1-B	840×285×840	30.5/36	220~240V-1Ph-50Hz
CCA-48HVR1	840×285×840	29.5/35	220~240V-1Ph-50Hz
CCA-60HVR1	840×285×840	29.5/35	220~240V-1Ph-50Hz
CTA-12HVR1	814×210×467	16/19	220~240V-1Ph-50Hz
CTA-18HVR1	1214×210×467	22.5/25.5	220~240V-1Ph-50Hz
CTA-24HVR1	1214×210×467	25/28	220~240V-1Ph-50Hz
CTB-36HVR1-A	1425×260×643	46/50	220~240V-1Ph-50Hz
CTB-36HVR1-B	1425×260×643	46/50	220~240V-1Ph-50Hz
CTB-48HVR1	1425×260×643	45/51	220~240V-1Ph-50Hz
CTB-60HVR1	1425×260×643	45/51	220~240V-1Ph-50Hz
CTH-48HVR1	1175×370×625	47/51	220~240V-1Ph-50Hz
CTH-60HVR1	1175×370×625	47/51	220~240V-1Ph-50Hz
CUA-18HVR1	1245×680×240	34/40	220~240V-1Ph-50Hz
CUA-24HVR1	1245×680×240	35/41	220~240V-1Ph-50Hz
CUA-36HVR1-A	1245×680×240	35/41	220~240V-1Ph-50Hz
CUA-36HVR1-B	1245×680×240	35/41	220~240V-1Ph-50Hz

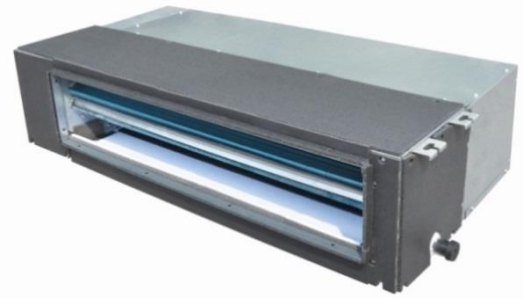
CUA-48HVR1	1670×680×240	49/55.5	220~240V-1Ph-50Hz
CUA-60HVR1	1670×680×240	49/55.5	220~240V-1Ph-50Hz

2.2 Outdoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight(kg)	Power supply
COU-12HDR1	880x540x305	41/44	220~240V-1Ph-50Hz
COU-18HDR1	925×700×366	45/48	220~240V-1Ph-50Hz
COU-24HDR1	958×843×392	59/69	220~240V-1Ph-50Hz
COU-36HDR1-A	1050×995×347	84/95.5	220~240V-1Ph-50Hz
COU-36HZDR1	1050×995×347	86.7/97.7	380~415V-3Ph-50Hz
COU-48HZVR1	950×1335×388	98.5/106.5	380~415V-3Ph-50Hz
COU-60HZVR1	950×1335×388	98.5/106.5	380~415V-3Ph-50Hz

3. External Appearance

3.1 Indoor unit

4-way Cassette 	Compact 4-way cassette 
Low ESP Duct 	Middle ESP Duct 

High ESP Duct 	Floor & Ceiling 

3.2 Outdoor unit

COU-12HDR1 	COU-18HDR1 
COU-24HDR1 	COU-36HDR1-A, COU-36HZDR1 
COU-48HZVR1, COU-60HZVR1 	

4. Features

4.1 Wide operation range, -15 for cooling and -15 for 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

Standard 4-way cassette

Compact 4-way cassette

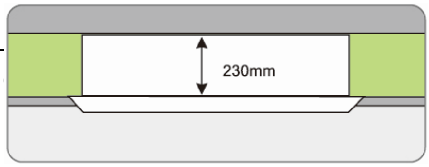
1.1 Standard 4-way cassette

(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.

18kBtu/h~60kBtu/h, standard type, 950mm*950mm

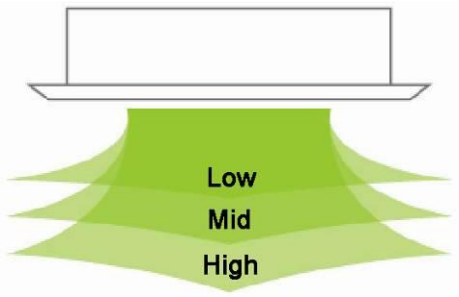
(3) Ultra-thin body design, the min. height is only 230mm, save



installation space.

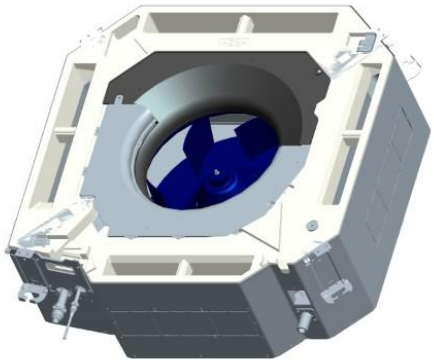
(4) 4-way air flow, cold air can reach each corner of the room, providing a stable and comfortable environment.

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

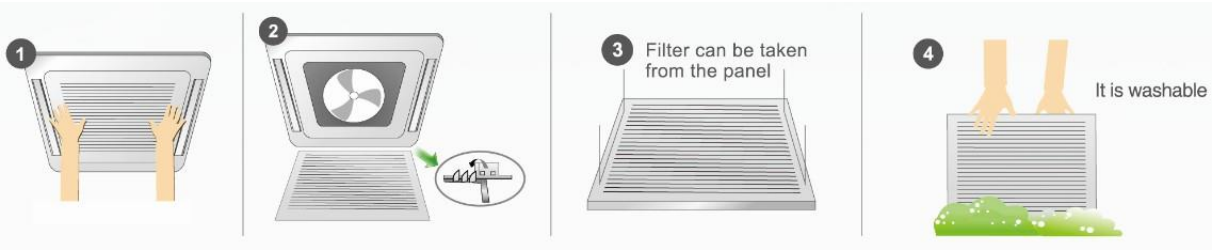


(6) New streamlined fan design.

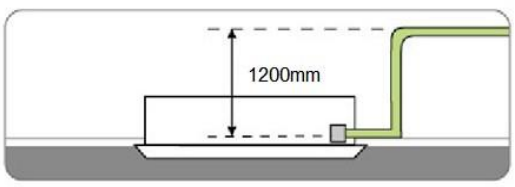
(7) Occupied a small installation space, saving interior space



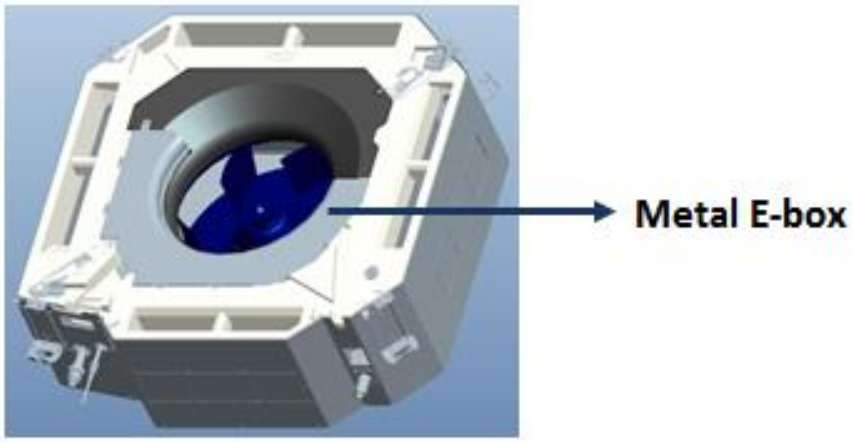
(8) Easy and convenient installation and maintenance, washable filter design.



(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.

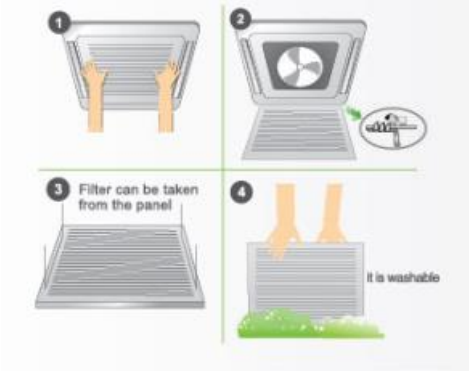
Standard optional

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

1.2 Compact 4-way cassette

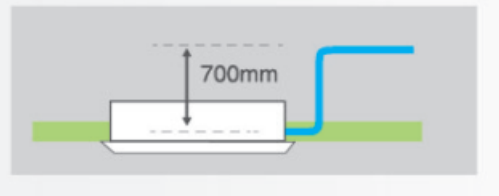
（1）Compact type , ultar-thin body design, the Min height is 275mm,saving installation space

（2）Washable filter, convenient to install and maintain

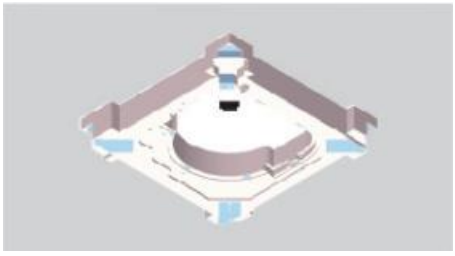


（3）Streamlined design and 3D spiral fan blade reduces air resistance and operation noise

（4）Built-in water pump, pump head up to 700mm



（5）Foam water tray coated with special plastic convenient to install, preventing the leakage of condensed water effectively.



2.1 Specification of standard 4-way cassette

Model			CCA-18HVR1	CCA-24HVR1
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	2.0-5.3-5.6	3.5-8.0
	Power input	W	420-1590-2100	600-3000
	Current input	A	2.1-10.1	2.5-13
	EER	W/W	3.33	3.26
	SEER	W/W	6.1	6.1
Heating	Capacity	KW	2.5-6.0	4.5-8.5
	Input	W	500-1940	1500-2600
	Rated current	A	2.5-9.2	5.5-11
	COP	W/W	4.12	3.72
	SCOP	W/W	4.0	4.0
Energy rate		Cooling	A++	A++
Energy rate		Heating	A+	A+
Max. power input		W	2400	3200
Max. current input		A	11.4	14
Indoor fan motor	Model		DR-310-60Q-8	DR-310-60Q-8
	Brand		Panasonic	Panasonic
	Power output	W	60	60
	Capacitor	μF	-	-
	Speed	r/min	850/790/600	850/790/600
	Insulation class		E	E
Indoor coil	Number of rows		2	2
	Tube pitch(a) x row pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.45	1.45
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved

	Coil length x height x width	mm	2000×168×26.74	2000×168×26.74
	Number of circuits		8	8
Indoor air flow (High speed)		m^3/h	900/800/650	1100/1000/850
Indoor noise level	power level	dB(A)	46~58	56～63
	pressure level		36/41/45	43/46/49
Indoor unit	Dimension (W*H*D)	Body(mm)	840×230×840	840×230×840
		Panel(mm)	950×50×950	950×50×950
	Packing (W*H*D)	Body(mm)	920×265×920	920×265×920
		Panel(mm)	1030×105×1030	1030×105×1030
	Net/Gross weight	Body(Kg)	25/30	25/30
		Panel(Kg)	5.4/8.0	5.4/8.0
Max pressure		MPa	4.2	4.2
Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ6.35/Φ12.7	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		°C	16～32	16～32
Ambient temp	cooling	°C	-15～50	-15～50
	heating	°C	-15～30	-15～30

Model			CCA-36HVR1-A	CCA-36HVR1-B
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	6.6-10.5-12.8	6.6-10.5-12.8
	Power input	W	740-3275-4600	740-3275-4600
	Current input	A	2.8-13.6-24.8	1.2-8.0-10
	EER	W/W	3.21	3.21
	SEER	W/W	5.1	5.1
Heating	Capacity	KW	7.35-11.5-13.2	7.35-11.5-13.2

	Input	W	1100-3200-4150	1100-3200-4150
	Rated current	A	4.2-14.7-21.4	1.5-7.8-9
	COP	W/W	3.59	3.59
	SCOP	W/W	4.0	4.0
Energy rate		Cooling	A	A
Energy rate		Heating	A+	A+
Max. power input		W	4800	4800
Max. current input		A	26	10.3
Indoor fan motor	Model		DR-310-100Q-8	DR-310-100Q-8
	Brand		Panasonic	Panasonic
	Power output	W	100	100
	Capacitor	μF	-	-
	Speed	r/min	840/750/650	840/750/650
	Insulation class		E	E
Indoor coil	Number of rows		2	2
	Tube pitch(a) x row pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.45	1.45
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length x height x width	mm	2000×252×26.74	2000×252×26.74
	Number of circuits		12	12
Indoor air flow (High speed)		m^3/h	1800/1700/1550	1800/1700/1550
Indoor noise level	power level	dB(A)	53～61	53～61
	pressure level		43/45/48	43/45/48
Indoor unit	Dimension (W*H*D)	Body(mm)	840×285×840	840×285×840
		Panel(mm)	950×50×950	950×50×950
	Packing (W*H*D)	Body(mm)	920×310×920	920×310×920
		Panel(mm)	1030×105×1030	1030×105×1030

	Net/Gross weight	Body(Kg)	30.5/36	30.5/36
		Panel(Kg)	5.4/8.0	5.4/8.0
Max pressure		MPa	3.8	3.8
Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		℃	16～32	16～32
Ambient temp	cooling	℃	-15～50	-15～50
	heating	℃	-15～30	-15～30

Model			CCA-48HVR1	CCA-60HVR1
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	14.0(7.15-15.6)	16.0(7.8-17.5)
	Power input	KW	4.78(1.22-5.58)	5.33(1.9-6.1)
	Current input	A	8.6	9.6
	EER	W/W	2.93	3
Heating	Capacity	KW	15.2(8.0-17.2)	17.6(8.5-19.5)
	Input	KW	4.23(1.2-5.28)	4.96(2.0-6.5)
	Rated current	A	7.7	9
	COP	W/W	3.59	3.55
Energy rate		Cooling	A	A
Energy rate		Heating	A	A
Max. power input		W	6100	6800
Max. current input		A	11.4	12.8
Indoor fan motor	Model		YDK-75Q-6P3-1	YDK-75Q-6P3-1
	Brand		Chigo	Chigo
	Power output	W	75	75
	Capacitor	μF	5	5
	Speed	r/min	850/750/650	850/750/650
	Insulation class		B	B
Indoor coil	Number of rows		3	3
	Tube pitch(a) x row pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.6	1.6
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length x height x width	mm	2000×252×26.74	2000×252×26.74
	Number of circuits		6	6

Indoor air flow (High speed)		m^3/h	1900	1900
Indoor noise level	power level	dB(A)	56-63	56-63
	pressure level		45~52	45~52
Indoor unit	Dimension (W*H*D)	Body(mm)	840×285×840	840×285×840
		Panel(mm)	950×50×950	950×50×950
	Packing (W*H*D)	Body(mm)	920×310×920	920×310×920
		Panel(mm)	1030×105×1030	1030×105×1030
	Net/Gross weight	Body(Kg)	29.5/35	29.5/35
		Panel(Kg)	5.4/8.0	5.4/8.0
Max pressure		MPa	4.5	4.5
Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		°C	16～32	16～32
Ambient temp	cooling	°C	-15～50	-15～50
	heating	°C	-15～30	-15～30

2.2 Specification of compact 4-way cassette

Model			CCB-12HVR1	CCB-18HVR1
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	1.4-3.5-3.8	2.0-5.6
	Power input	W	300-1400	420-2100
	Current input	A	1.5-6.6	2.1-10.1
	EER	W/W	3.3	3.33
	SEER	W/W	6.1	6.1
Heating	Capacity	KW	1.6-3.3-4.1	2.5-6.0
	Input	W	350-1300	500-1940
	Rated current	A	1.7-6.2	2.5-9.2
	COP	W/W	3.59	4.12
	SCOP	W/W	4	4
Energy rate		Cooling	A++	A++
Energy rate		Heating	A+	A+
Max. power input		W	1600	2400
Max. current input		A	7.2	11.4
Indoor fan motor	Model		DR-310-35Q-8-1	DR-310-35Q-8-1
	Brand		Shibaura	Shibaura
	Power output	W	35	35
	Speed	r/min	790	790
	Insulation class		E	E
Indoor coil	Number of rows		2	2
	Tube pitch(a) x row pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length x height x width	mm	1317x210x26.74	1317x210x26.74

	Number of circuits		4	4
Indoor air flow (High speed)		m^3/h	560	650
Indoor noise level	power level	dB(A)	44-52	46-55
	pressure level		32/36/40	36/39/43
Indoor unit	Dimension (W*H*D)	Body(mm)	565x267x565	565x267x565
		Panel(mm)	650x29.8x650	650x29.8x650
	Packing (W*H*D)	Body(mm)	745x375x675	745x375x675
		Panel(mm)	750x95x750	750x95x750
	Net/Gross weight	Body(Kg)	21.5/16.5	21.5/16.5
		Panel(Kg)	4.0/2.7	4.0/2.7
Max pressure		MPa	4.2	4.2
Refrigerant type			R410A	R410A
Refrigerant piping	Φ6.35/Φ12.7	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7
Drainage pipe		DN25	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		°C	16～32	16～32
Ambient temp	cooling	°C	-15～50	-15～50
	heating	°C	-15～30	-15～30

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)

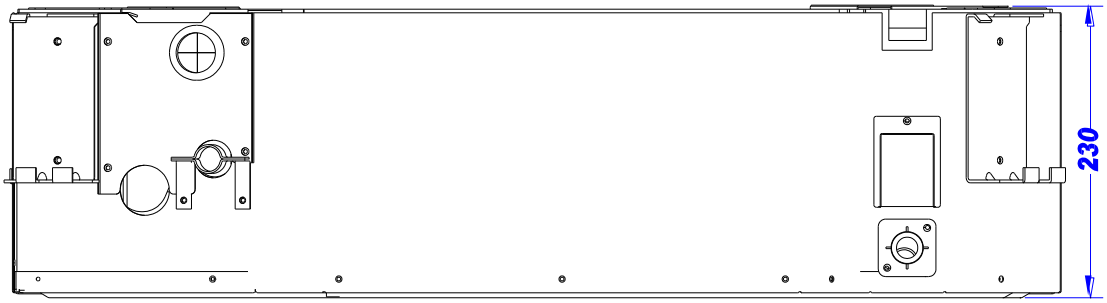
2. Nominal heating capacities are based on the following conditions:

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 CCA-18HVR1, CCA-24HVR1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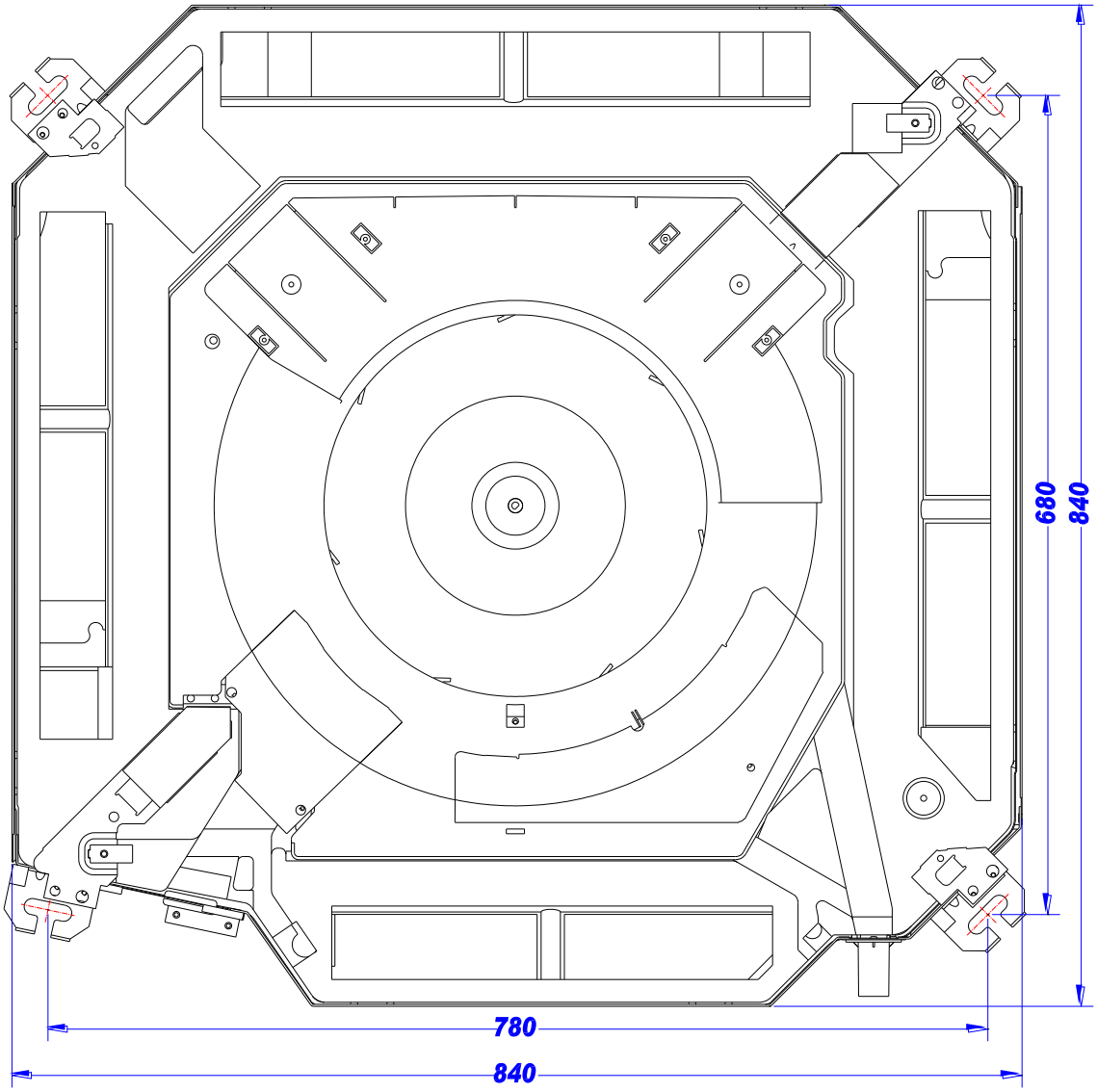
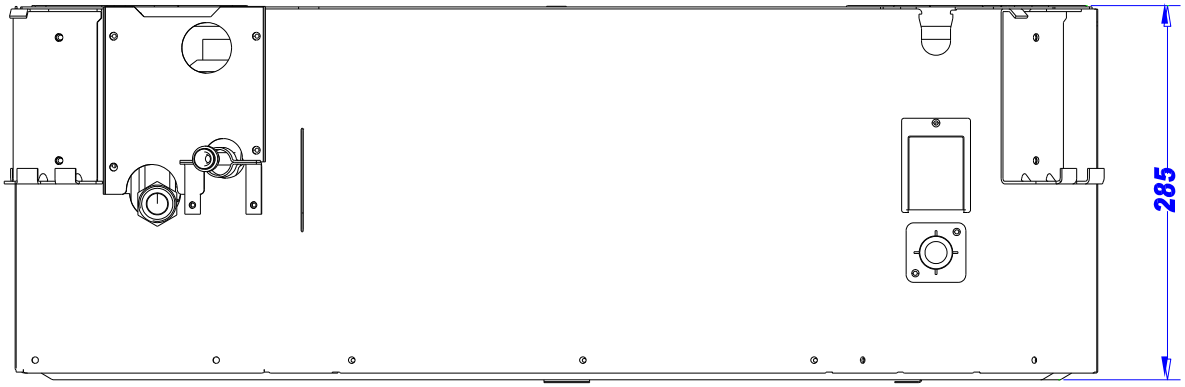
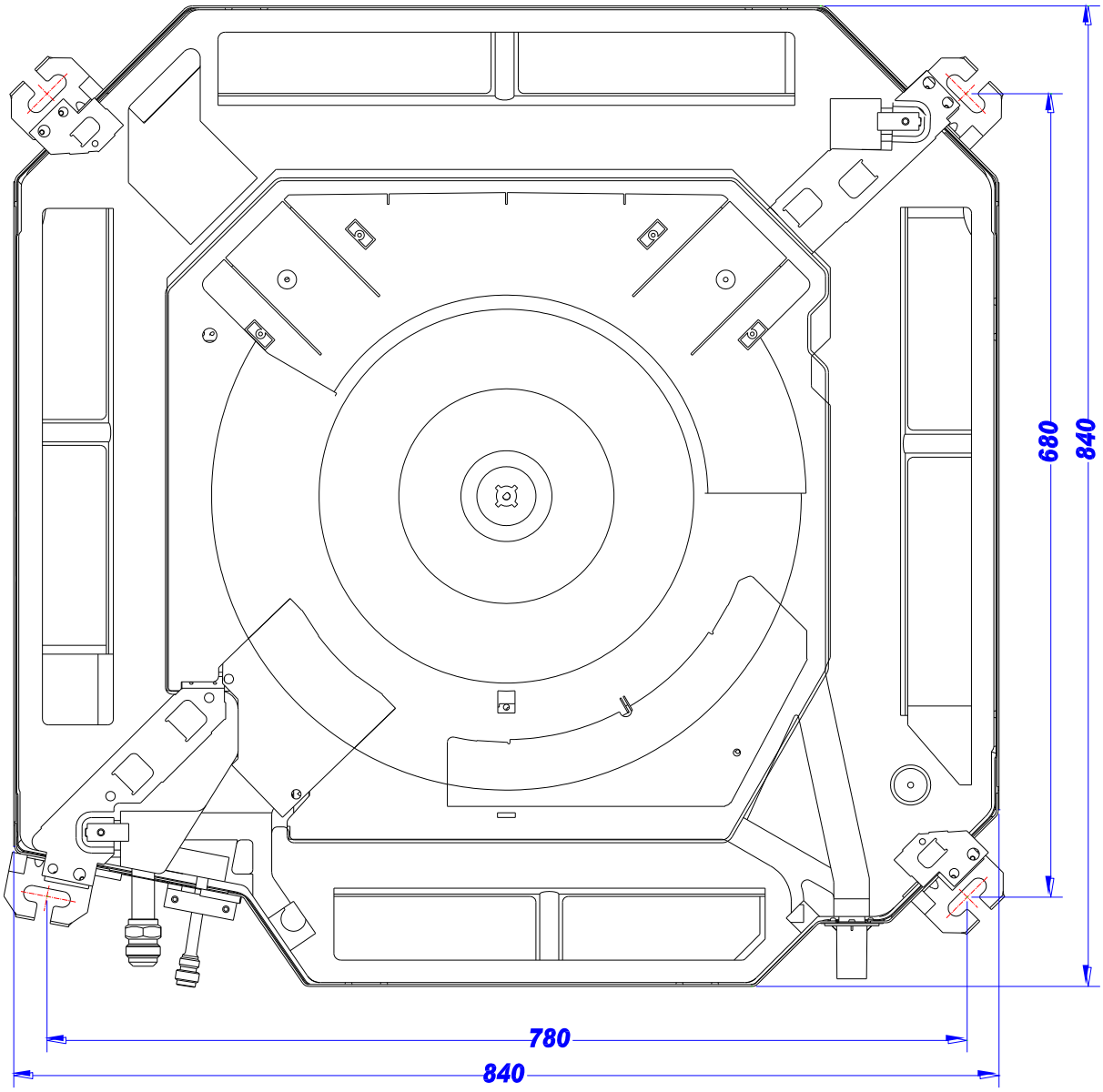
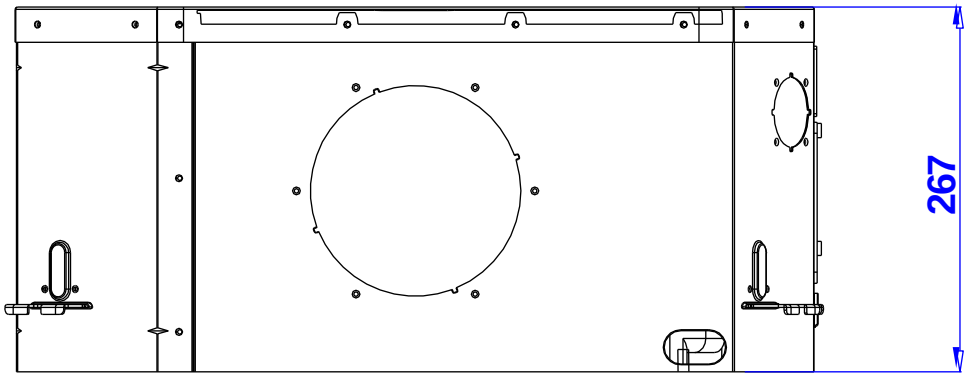

680
840
780
840

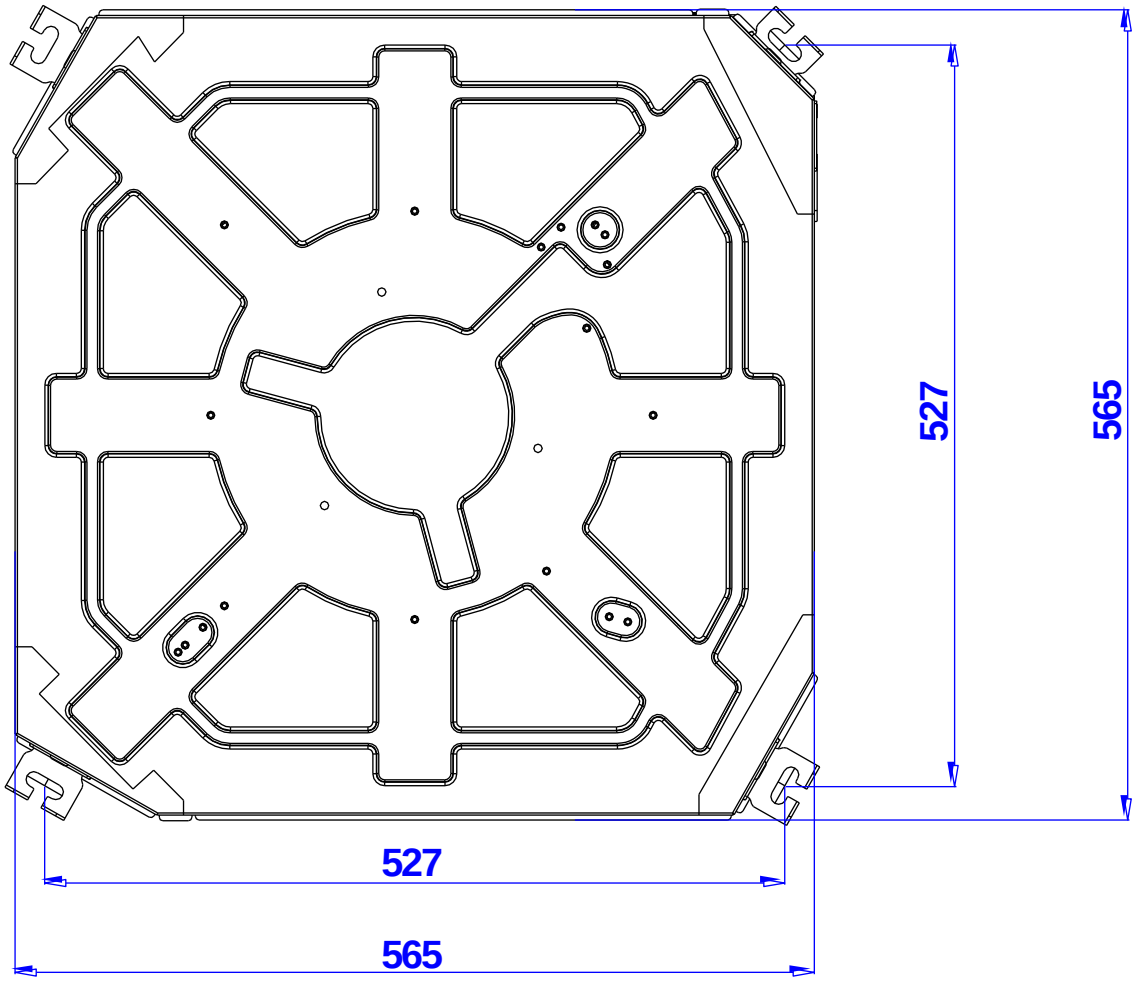
3.2 CCA-36HVR1-A, CCA-36HVR1-B, CCA-48HVR1, CCA-60HVR1





3.3 CCB-12HVR1, CCB-18HVR1


267


527
565
527
565

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.

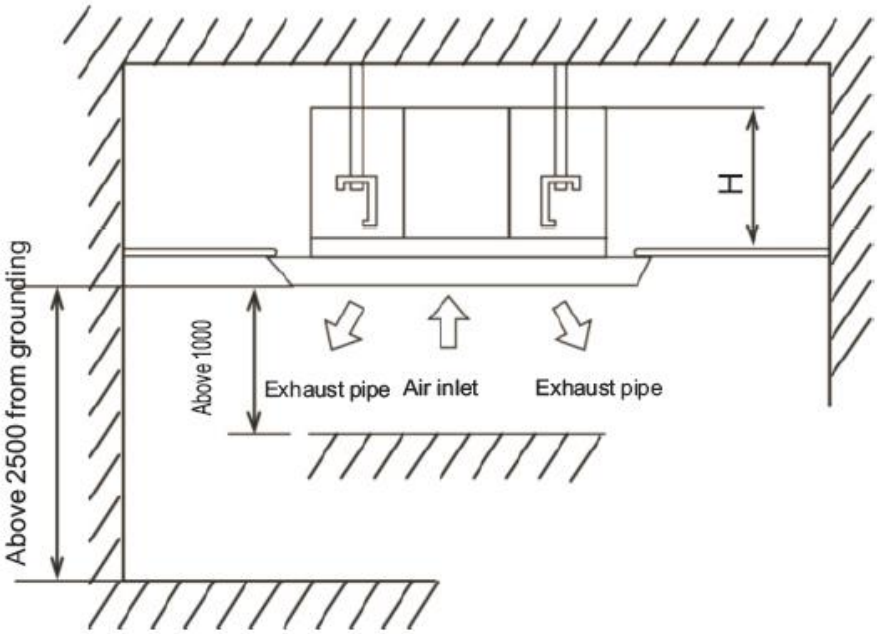
4.3 The outlet and the inlet are not impeded, and the influence of external air is the least.

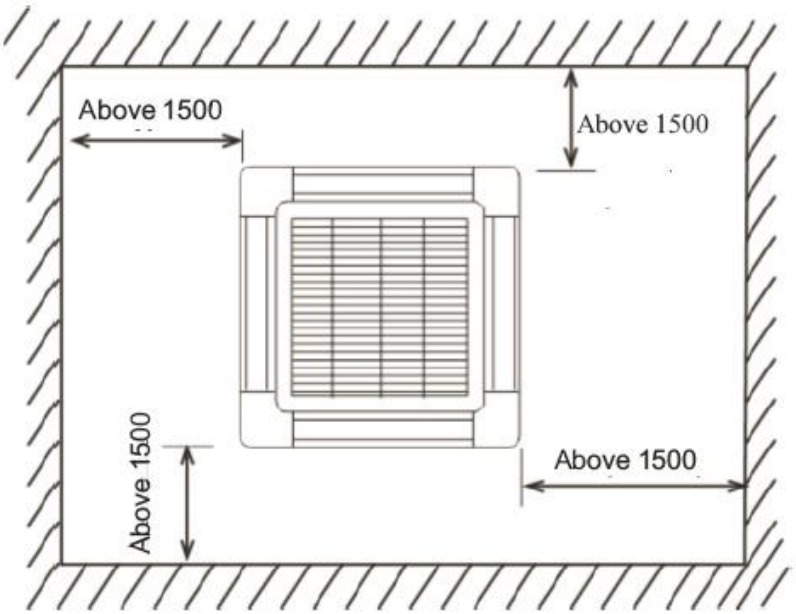
4.4 The air flow can reach throughout the room.

4.5 The connecting pipe and drainpipe could be extracted out easily.

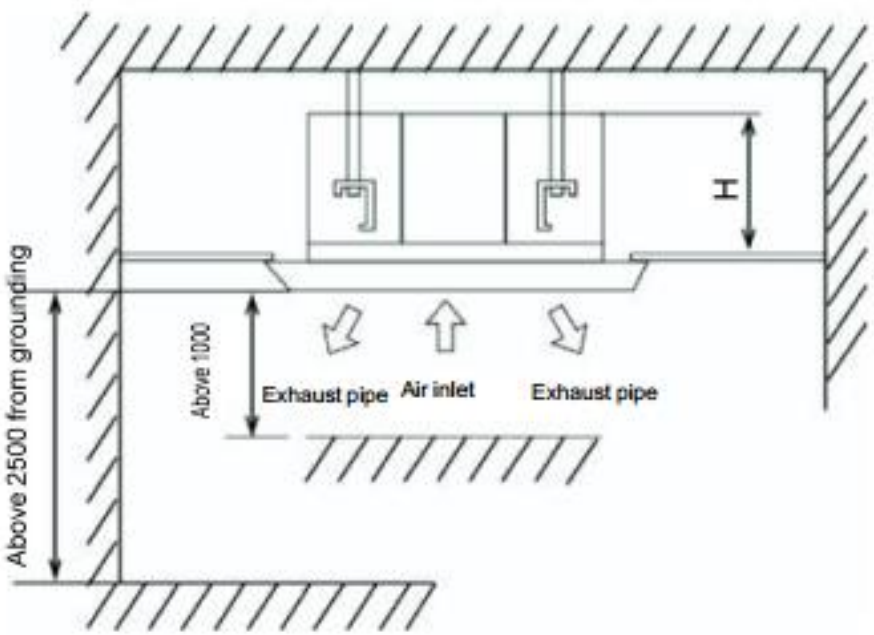
4.6 There is no direct radiation from heaters.

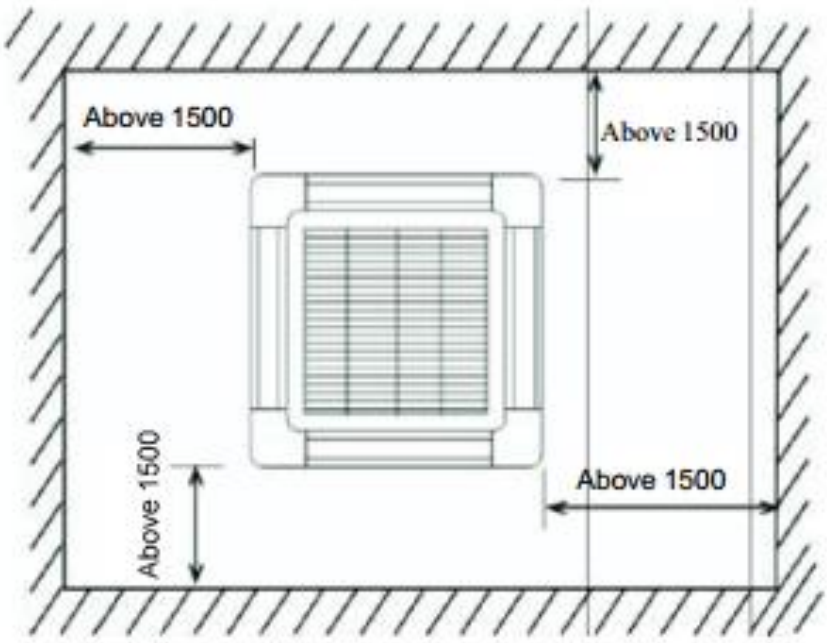
Standard 4-way cassette:





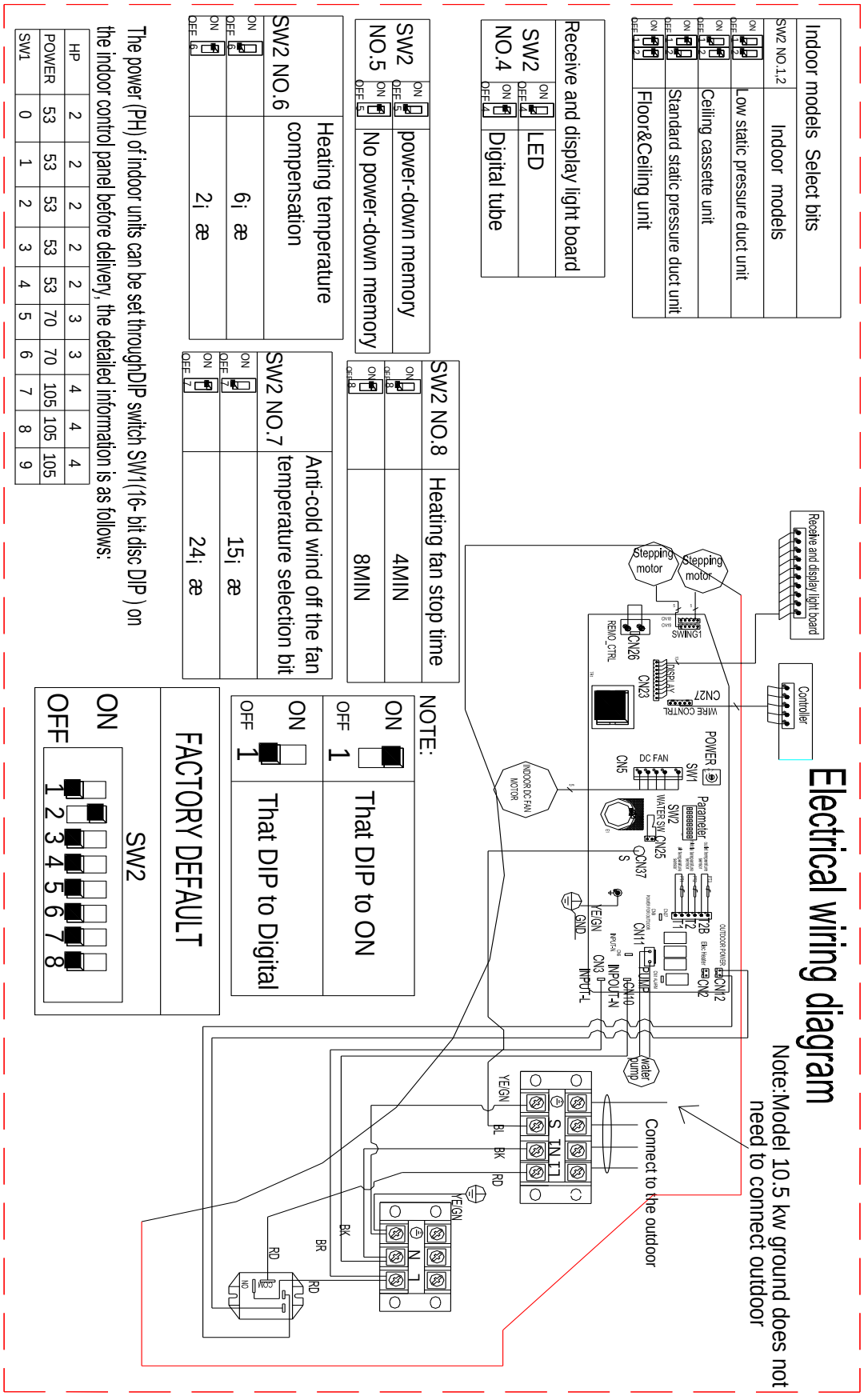
Compact 4-way cassette





Model	Height (mm)
3.5kW,5.6kW	267
5.3kW, 7.0kW	230
10.5kW, 14kW, 16kW	285

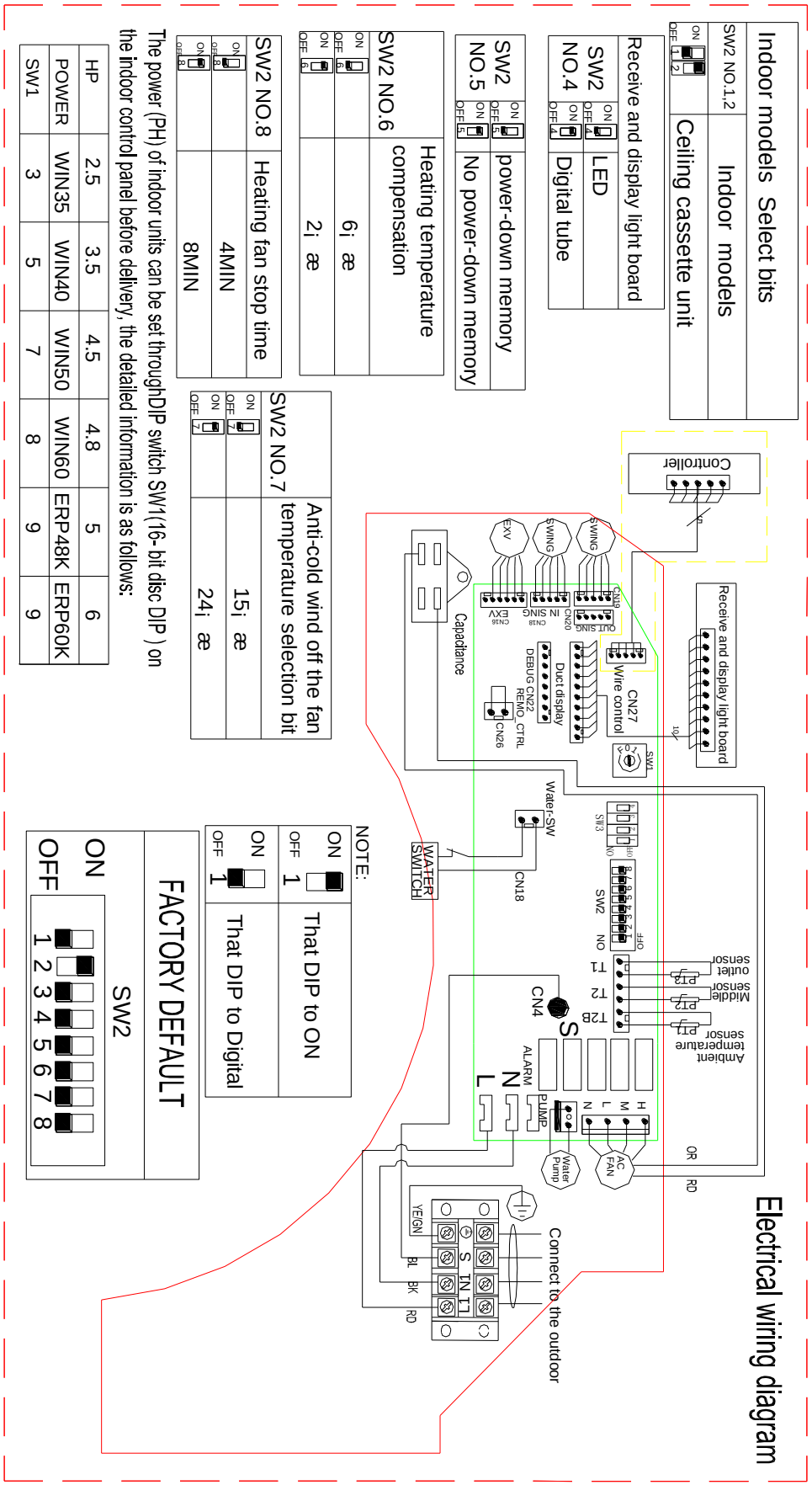
5. Wiring Diagrams
CCA-18HVR1, CCA-24HVR1, CCA-36HVR1-A, CCA-36HVR1-B



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	2	2	2	2	2	3	3	4	4	4
POWER	53	53	53	53	53	70	70	105	105	105
SW1	0	1	2	3	4	5	6	7	8	9

CCA-48HVR1, CCA-60HVR1



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	2.5	3.5	4.5	4.8	5	6
POWER	WIN35	WIN40	WIN50	WIN60	ERP48K	ERP60K
SW1	3	5	7	8	9	9

NOTE:

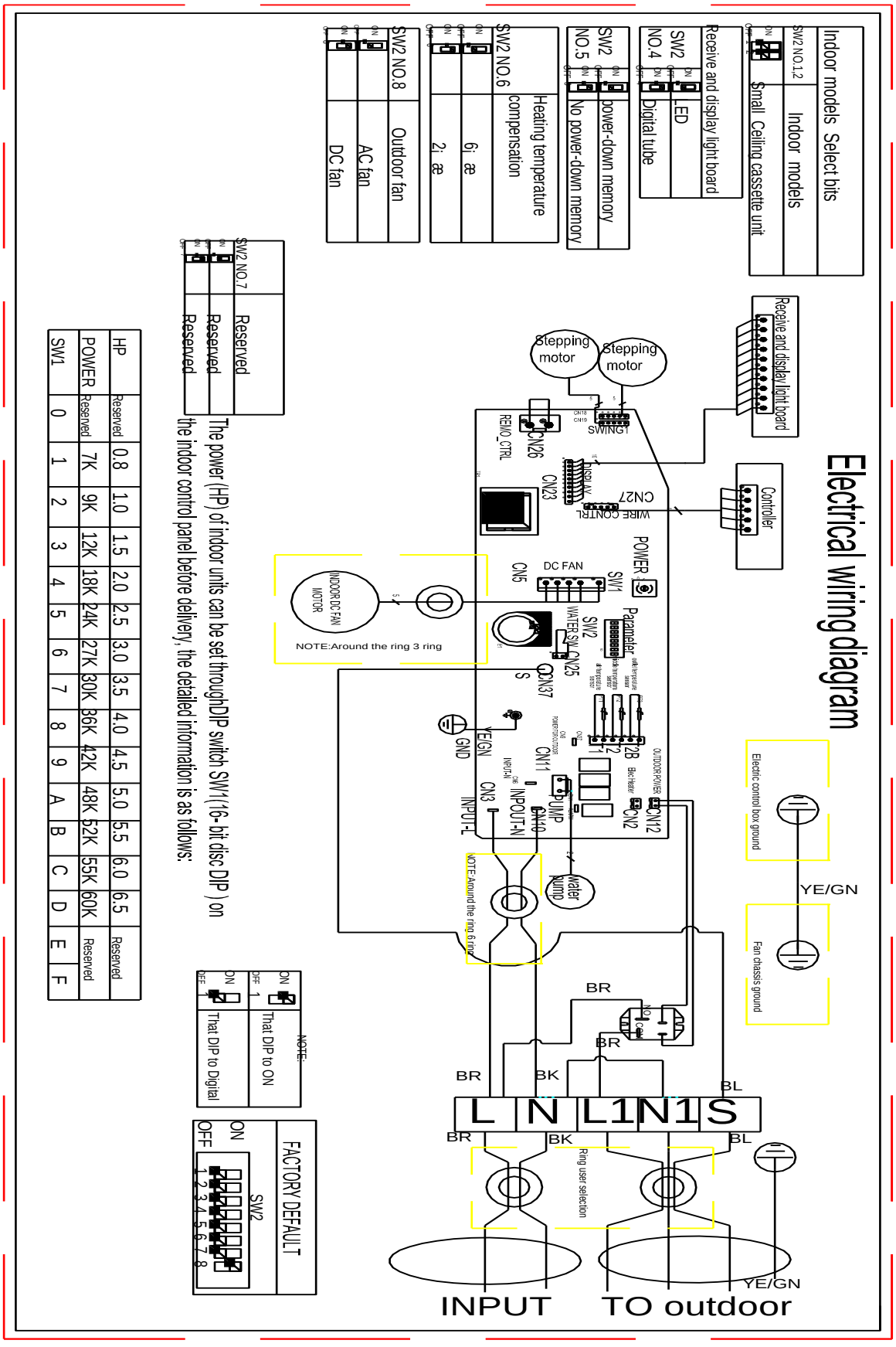
ON OFF 1	That DIP to ON
ON OFF 1	That DIP to Digital

FACTORY DEFAULT

SW2

ON
OFF
1 2 3 4 5 6 7 8

CCB-12HVR1, CCB-18HVR1



6. Capacity Table

Cooling

6.1CCA-18HVR1

MODEL		CCA-18HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	5.09	5.06	5.04	5.01	4.99	4.93	4.88
	Input kW.	1.50	1.51	1.52	1.54	1.55	1.63	1.71
24ºC D 17ºC W	Total capacity kW	5.25	5.22	5.20	5.17	5.15	5.09	5.03
	Input kW.	1.52	1.53	1.54	1.56	1.57	1.65	1.73
27ºC D 19ºC W	Total capacity kW	5.41	5.38	5.36	5.32	5.30	5.24	5.18
	Input kW.	1.54	1.55	1.56	1.58	1.59	1.67	1.75
29ºC D 21ºC W	Total capacity kW	5.48	5.44	5.42	5.39	5.36	5.30	5.24
	Input kW.	1.56	1.58	1.59	1.61	1.62	1.70	1.78
32ºC D 23ºC W	Total capacity kW	5.58	5.55	5.52	5.49	5.47	5.40	5.34
	Input kW.	1.57	1.58	1.60	1.61	1.62	1.70	1.79

6.2CCA-24HVR1

MODEL	CCA-24HVR1

COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	6.82	6.78	6.75	6.71	6.68	6.61	6.35
	Input kW.	2.03	2.05	2.06	2.08	2.10	2.20	2.31
24ºC D 17ºC W	Total capacity kW	7.04	7.00	6.97	6.92	6.89	6.82	6.74
	Input kW.	2.05	2.07	2.09	2.11	2.12	2.23	2.34
27ºC D 19ºC W	Total capacity kW	7.25	7.21	7.17	7.13	7.00	7.02	6.94
	Input kW.	2.08	2.10	2.11	2.13	2.15	2.26	2.37
29ºC D 21ºC W	Total capacity kW	7.34	7.29	7.26	7.22	7.19	7.11	7.03
	Input kW.	2.11	2.13	2.15	2.17	2.19	2.30	2.41
32ºC D 23ºC W	Total capacity kW	7.48	7.43	7.40	7.35	7.32	7.24	7.16
	Input kW.	2.12	2.14	2.16	2.18	2.19	2.30	2.42

6.3CCA-36HVR1-A, CCA-36HVR1-B

MODEL		CCA-36HVR1						
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	Total capacity kW	11.06	10.99	10.94	10.88	10.83	10.71	10.59

23ºC W	Input kW.	3.23	3.26	3.29	3.32	3.34	3.51	3.69

6.4CCA-48HVR1

MODEL		CCA-48HVR1						
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

6.5CCA-60HVR1

MODEL		CCA-60HVR1						
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

6.6CCB-12HVR1

MODEL		CCB-12HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	3.36	3.34	3.33	3.31	3.30	3.26	3.22
	Input kW.	0.7	0.72	0.75	0.80	0.83	0.84	0.91
24ºC D 17ºC W	Total capacity kW	3.47	3.45	3.44	3.42	3.40	3.36	3.04
	Input kW.	0.8	0.83	0.85	0.88	0.90	0.98	1.00
27ºC D 19ºC W	Total capacity kW	3.57	3.55	3.54	3.51	3.50	3.46	3.13
	Input kW.	0.82	0.85	0.87	0.92	0.95	1.00	1.05
29ºC D 21ºC W	Total capacity kW	3.62	3.59	3.58	3.56	3.54	3.50	3.16
	Input kW.	0.84	0.86	0.9	0.95	0.98	1.06	1.1
32ºC D 23ºC W	Total capacity kW	3.69	3.67	3.65	3.63	3.61	3.57	3.22
	Input kW.	0.90	0.94	0.98	1.02	1.08	1.12	1.21

6.7CCB-18HVR1

MODEL		CCB-18HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	5.09	5.06	5.04	5.01	4.99	4.93	4.88
	Input kW.	1.50	1.51	1.52	1.54	1.55	1.63	1.71
24ºC D 17ºC W	Total capacity kW	5.25	5.22	5.20	5.17	5.15	5.09	5.03
	Input kW.	1.52	1.53	1.54	1.56	1.57	1.65	1.73
27ºC D 19ºC W	Total capacity kW	5.41	5.38	5.36	5.32	5.30	5.24	5.18
	Input kW.	1.54	1.55	1.56	1.58	1.59	1.67	1.75
29ºC D 21ºC W	Total capacity kW	5.48	5.44	5.42	5.39	5.36	5.30	5.24
	Input kW.	1.56	1.58	1.59	1.61	1.62	1.70	1.78
32ºC D 23ºC W	Total capacity kW	5.58	5.55	5.52	5.49	5.47	5.40	5.34
	Input kW.	1.57	1.58	1.60	1.61	1.62	1.70	1.79

Heating

6.8CCA-18HVR1

MODEL		CCA-18HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	6.05	6.00	5.98	5.81	5.55	5.47	4.93
	Input kW.	1.51	1.42	1.39	1.37	1.34	1.33	1.27
18ºC	Capacity kW	5.99	5.96	5.94	5.77	5.52	5.43	4.90
	Input kW.	1.54	1.45	1.41	1.39	1.36	1.35	1.29

20ºC	Capacity kW	5.96	5.92	5.90	5.73	5.48	5.40	4.86
	Input kW.	1.56	1.48	1.44	1.42	1.39	1.38	1.31
22ºC	Capacity kW	5.93	5.88	5.86	5.69	5.44	5.36	4.83
	Input kW.	1.59	1.50	1.46	1.44	1.41	1.40	1.33
27ºC	Capacity kW	5.80	5.84	5.82	5.65	5.40	5.32	4.79
	Input kW.	1.62	1.53	1.49	1.47	1.44	1.43	1.36

6.9CCA-24HVR1

MODEL		CCA-24HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	7.95	7.83	7.81	7.58	7.25	7.14	6.34
	Input kW.	2.10	2.05	2.00	1.97	1.93	1.91	1.81
18ºC	Capacity kW	7.90	7.78	7.75	7.53	7.20	7.09	6.30
	Input kW.	2.13	2.09	2.03	2.00	1.96	1.95	1.84
20ºC	Capacity kW	7.86	7.73	7.70	7.47	7.15	7.04	6.25
	Input kW.	2.19	2.13	2.07	2.04	2.00	1.98	1.88
22ºC	Capacity kW	7.82	7.67	7.65	7.42	7.10	6.99	6.21
	Input kW.	2.23	2.16	2.10	2.07	2.03	2.02	1.91
27ºC	Capacity kW	7.73	7.62	7.59	7.37	7.05	6.94	6.16
	Input kW.	2.28	2.20	2.14	2.11	2.07	2.05	1.94

6.10 CCA-36HVR1-A, CCA-36HVR1-B

MODEL		CCA-36HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	12.11	11.70	11.66	11.32	10.83	10.67	9.61
	Input kW.	3.24	3.17	3.08	3.04	2.97	2.95	2.81
18ºC	Capacity kW	12.08	11.62	11.58	11.24	10.75	10.59	9.54
	Input kW.	3.28	3.22	3.13	3.09	3.03	3.00	2.86
20ºC	Capacity kW	12.04	11.54	11.50	11.16	10.68	10.52	9.48
	Input kW.	3.33	3.28	3.19	3.14	3.08	3.06	2.91
22ºC	Capacity kW	12.00	11.46	11.42	11.09	10.60	10.44	9.41
	Input kW.	3.39	3.33	3.24	3.20	3.13	3.11	2.96
27ºC	Capacity kW	11.73	11.38	11.34	11.01	10.53	10.37	9.35
	Input kW.	3.48	3.40	3.30	3.26	3.19	3.17	3.02

6.11 CCA-48HVR1

MODEL		CCA-48HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	15.59	15.46	15.41	14.97	14.30	14.09	12.70
	Input kW.	4.44	4.17	4.08	4.02	3.94	3.91	3.73
18ºC	Capacity kW	15.43	15.35	15.30	14.87	14.22	13.99	12.62
	Input kW.	4.52	4.26	4.14	4.08	4.00	3.97	3.79
20ºC	Capacity kW	15.35	15.25	15.20	14.76	14.12	13.91	12.52
	Input kW.	4.58	4.35	4.23	4.17	4.08	4.05	3.85
22ºC	Capacity kW	15.28	15.15	15.10	14.66	14.01	13.81	12.44

	Input kW.	4.67	4.41	4.29	4.23	4.14	4.11	3.91
27ºC	Capacity kW	14.94	15.05	14.99	14.56	13.91	13.71	12.34
	Input kW.	4.76	4.49	4.38	4.32	4.23	4.20	4.00

6.12 CCA-60HVR1

MODEL		CCA-60HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	18.05	17.90	17.84	17.33	16.56	16.32	14.71
	Input kW.	5.20	4.89	4.79	4.72	4.62	4.58	4.37
18ºC	Capacity kW	17.87	17.78	17.72	17.21	16.47	16.20	14.62
	Input kW.	5.30	4.99	4.86	4.79	4.68	4.65	4.44
20ºC	Capacity kW	17.78	17.66	17.60	17.09	16.35	16.11	14.50
	Input kW.	5.37	5.10	4.96	4.89	4.79	4.75	4.51
22ºC	Capacity kW	17.69	17.54	17.48	16.97	16.23	15.99	14.41
	Input kW.	5.48	5.17	5.03	4.96	4.86	4.82	4.58
27ºC	Capacity kW	17.30	17.42	17.36	16.85	16.11	15.87	14.29
	Input kW.	5.58	5.27	5.13	5.06	4.96	4.93	4.68

6.13 CCB-12HVR1

MODEL		CCB-12HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	4.37	4.33	4.32	4.20	4.01	3.95	3.56
	Input kW.	1.23	1.22	1.22	1.19	1.15	1.14	1.03
18ºC	Capacity kW	4.33	4.31	4.29	4.17	3.99	3.92	3.54
	Input kW.	1.23	1.22	1.22	1.18	1.14	1.13	1.02

20ºC	Capacity kW	4.31	4.28	4.26	4.14	3.96	3.90	3.51
	Input kW.	1.22	1.21	1.21	1.18	1.13	1.12	1.01
22ºC	Capacity kW	4.28	4.25	4.23	4.11	3.93	3.87	3.49
	Input kW.	1.20	1.20	1.20	1.17	1.12	1.11	1.01
27ºC	Capacity kW	4.19	4.22	4.20	4.08	3.90	3.84	3.46
	Input kW.	1.18	1.19	1.19	1.16	1.11	1.10	1.00

6.14 CCB-18HVR1

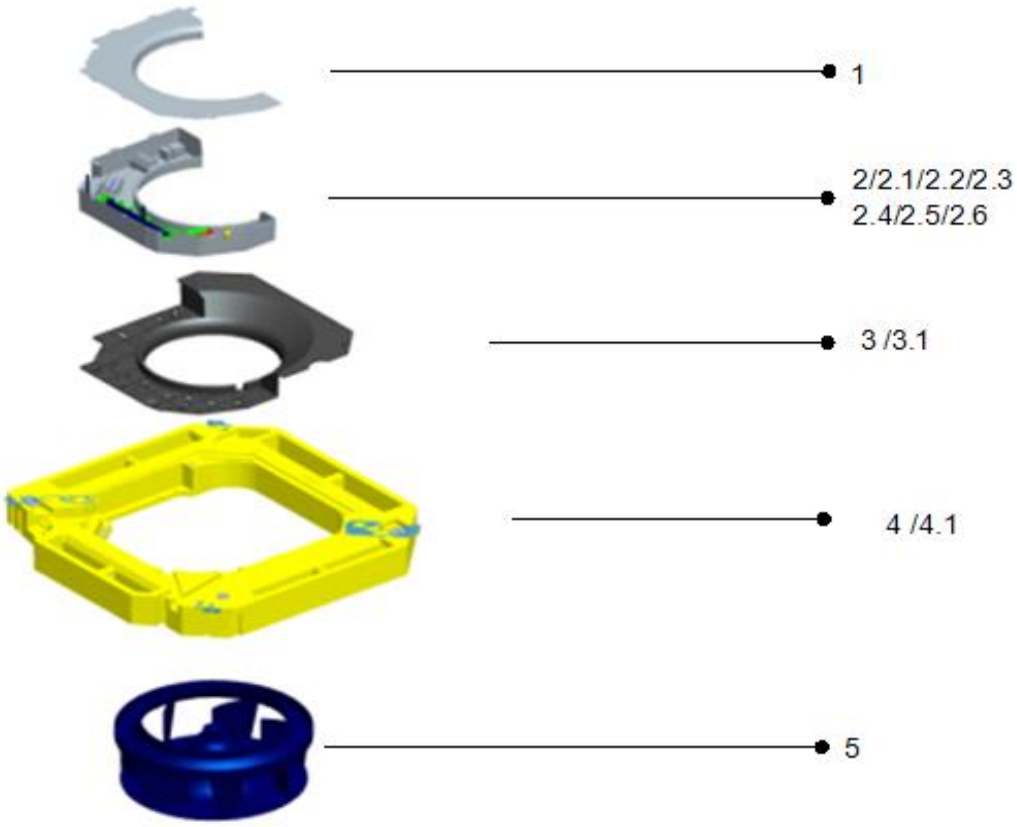
MODEL		CCB-18HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	6.05	6.00	5.98	5.81	5.55	5.47	4.93
	Input kW.	1.51	1.42	1.39	1.37	1.34	1.33	1.27
18ºC	Capacity kW	5.99	5.96	5.94	5.77	5.52	5.43	4.90
	Input kW.	1.54	1.45	1.41	1.39	1.36	1.35	1.29
20ºC	Capacity kW	5.96	5.92	5.90	5.73	5.48	5.40	4.86
	Input kW.	1.56	1.48	1.44	1.42	1.39	1.38	1.31
22ºC	Capacity kW	5.93	5.88	5.86	5.69	5.44	5.36	4.83
	Input kW.	1.59	1.50	1.46	1.44	1.41	1.40	1.33
27ºC	Capacity kW	5.80	5.84	5.82	5.65	5.40	5.32	4.79
	Input kW.	1.62	1.53	1.49	1.47	1.44	1.43	1.36

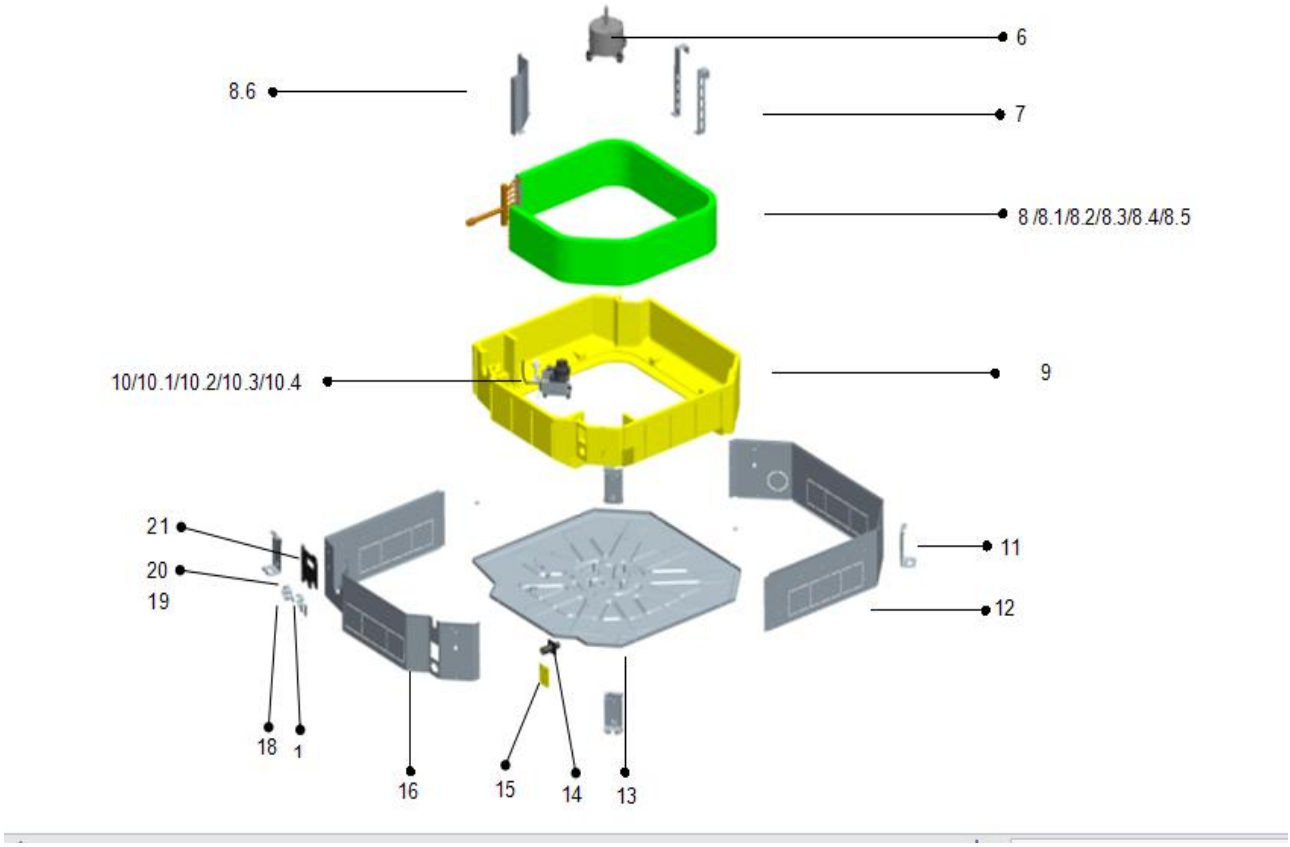
7. Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CCB-12HVR1	50	220-240V	198V	254V	0.035
CCB-18HVR1	50	220-240V	198V	254V	0.035
CCA-18HVR1	50	220-240V	198V	254V	0.06
CCA-24HVR1	50	220-240V	198V	254V	0.06
CCA-36HVR1-A	50	220-240V	198V	254V	0.10
CCA-36HVR1-B	50	220-240V	198V	254V	0.10
CCA-48HVR1	50	220-240V	198V	254V	0.075
CCA-60HVR1	50	220-240V	198V	254V	0.075

8. Exploded View

8.1 CCA-18HVR1，CCA-24HVR1

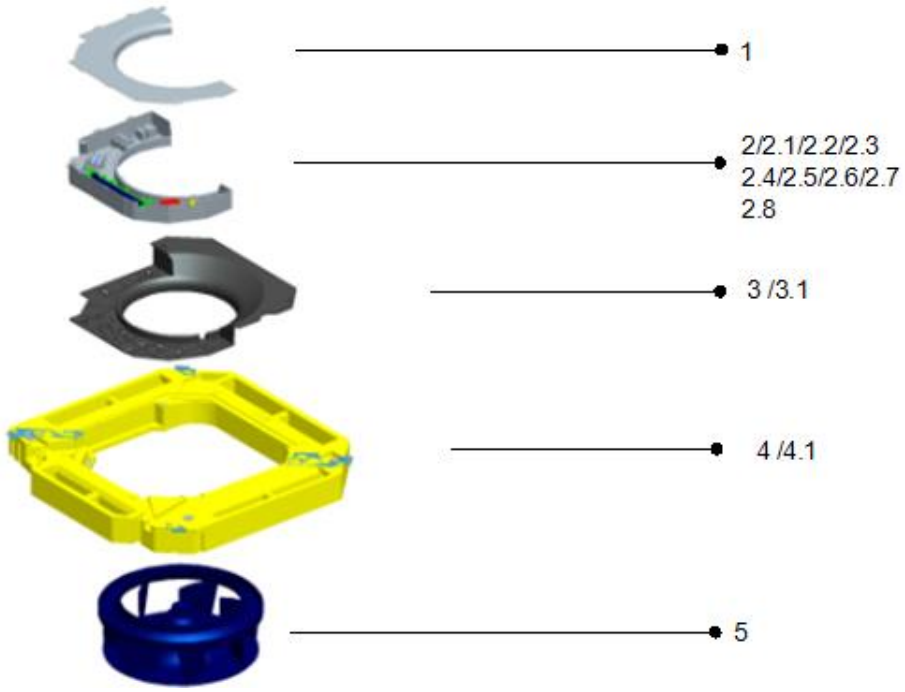


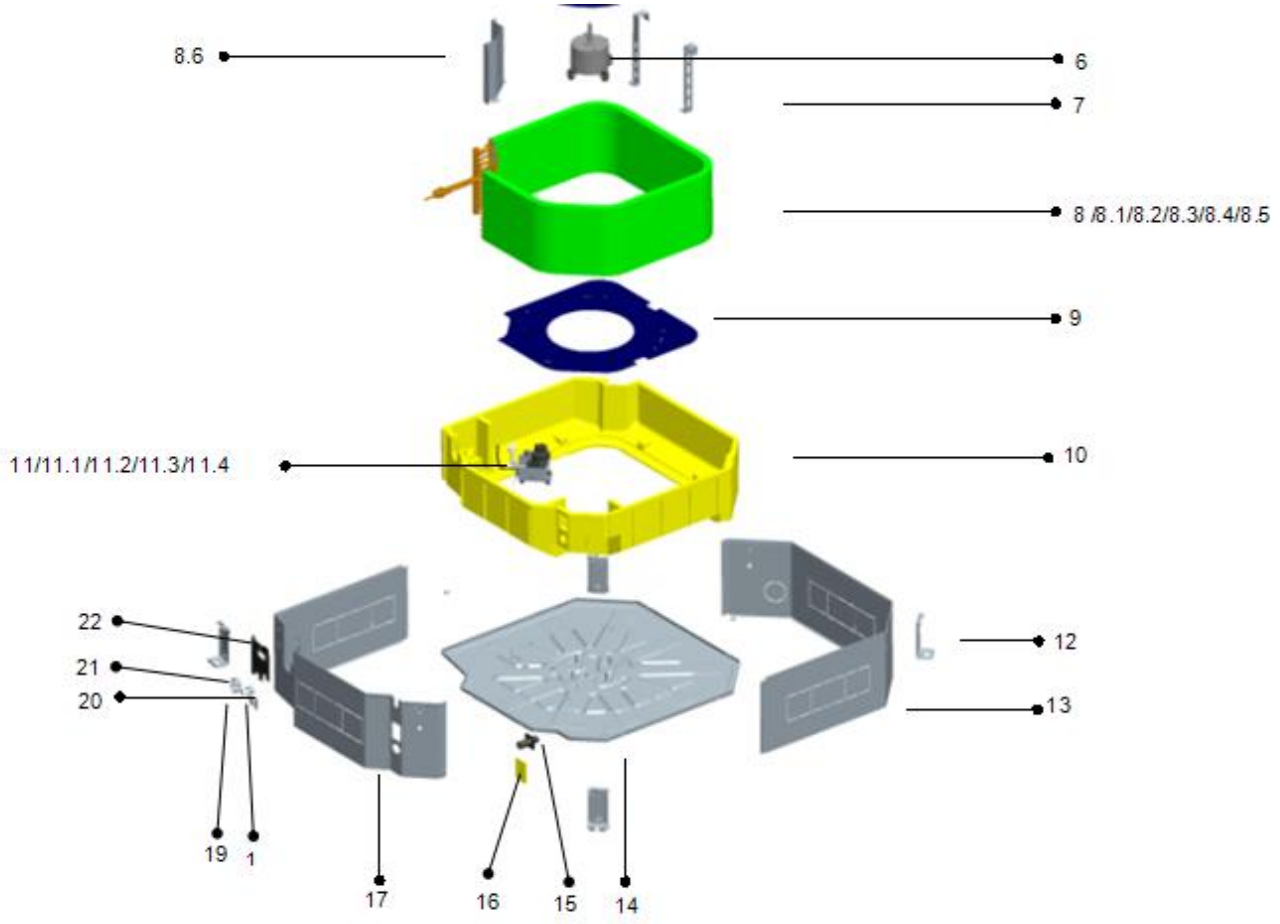


No.	Part Name	No.	Part Name
1	E-parts box cover	8.4.2	Evaporator
2	Electric control components for indoor unit	8.4.3	Collecting pipe welding assy
2.1	E-parts board for indoor unit	8.4.4	Current divider capillary assy
2.2	Temperature sensor	8.5	Main fixing board
2.3	Terminal	9	Upper foam components
2.4	Terminal	10	Pre-assembling assy for water pump
2.5	Relay	10.1	Water pump support
2.6	Welded chassis for E-parts box	10.2	Water pump
3	Wind inlet guide assy	10.3	Liquid-level sensor
3.1	Wind inlet guide	10.4	Underlay for water pump support
4	Water pan components	11	Hanger

4.1	Foam pendant	12	Rear brattice
5	Centrifugal fan	13	Chassis assy
6	Fan motor for indoor unit	14	Discharge pipe joint
7	Auxiliary fixing board for evaporator	15	Side maintenance board for water pump
8	Evaporator components	16	Front brattice
8.1	Insulating pipe	17	Lower pipe clamp
8.2	Insulating pipe	18	Lower pipe clamp(φ35)
8.3	Evaporator attached cotton	19	Upper pipe clamp
8.4	Evaporator welding assy	20	Upper pipe clamp(φ35)
8.4.1	Installation tube for probe	21	Valve panel

8.2 CCA-36HVR1-A, CCA-36HVR1-B

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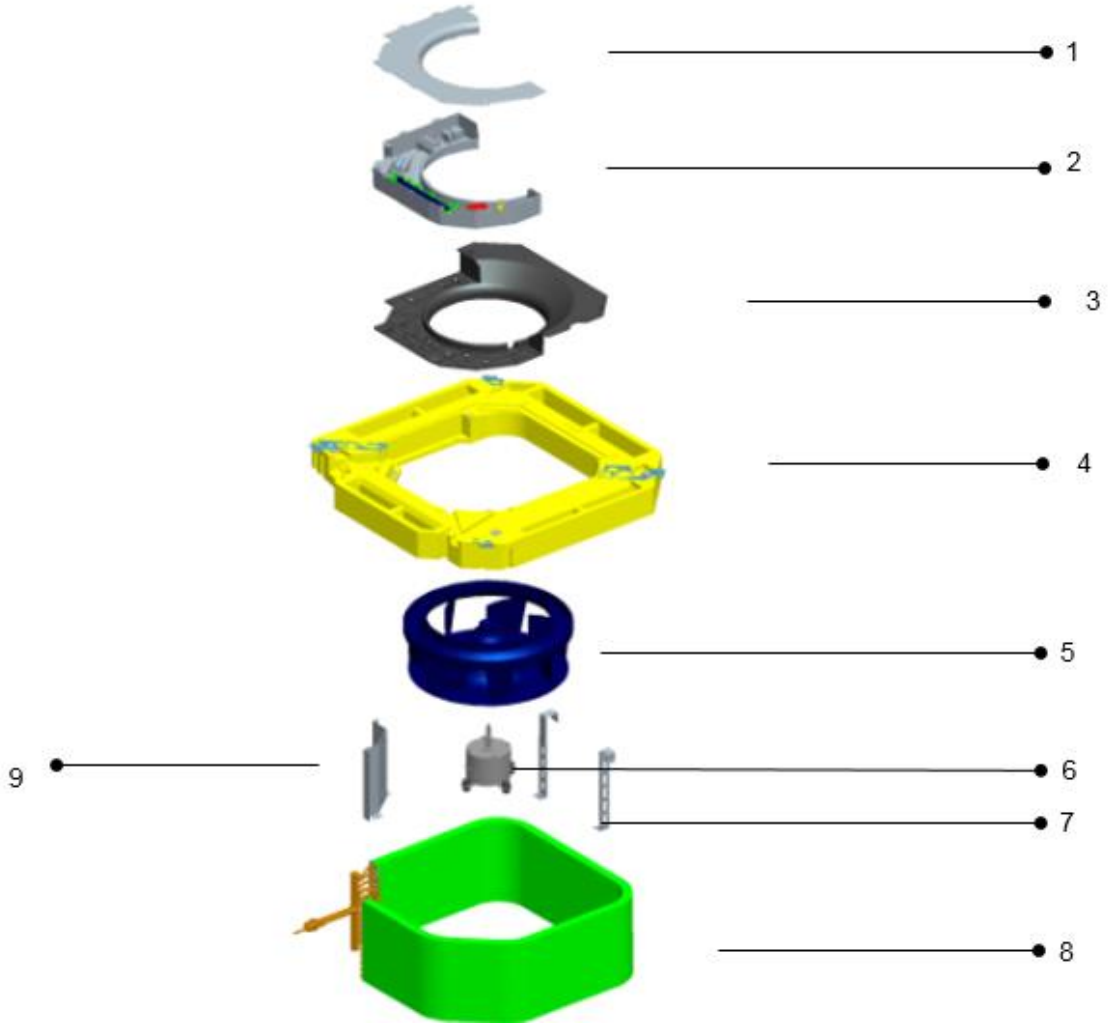
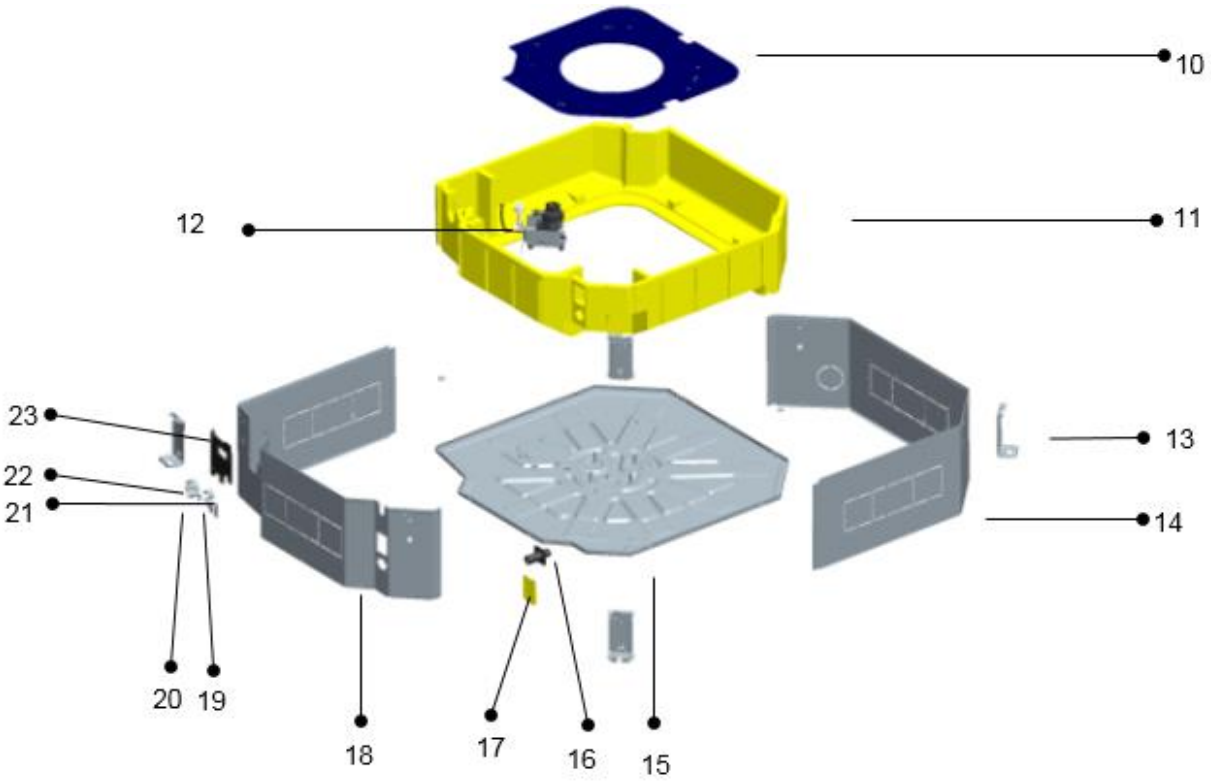
No.	Part Name	No.	Part Name
1	E-parts box cover	8.4.2	Evaporator
2	Electric control components for indoor unit	8.4.3	Collecting pipe welding assy
2.1	The electric control board base	8.4.4	Current divider capillary assy
2.2	Relay	8.5	Main fixing board
2.3	Terminal	9	The chassis plate
2.4	Terminal	10	Upper 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 CCA-48HVR1, CCA-60HVR1

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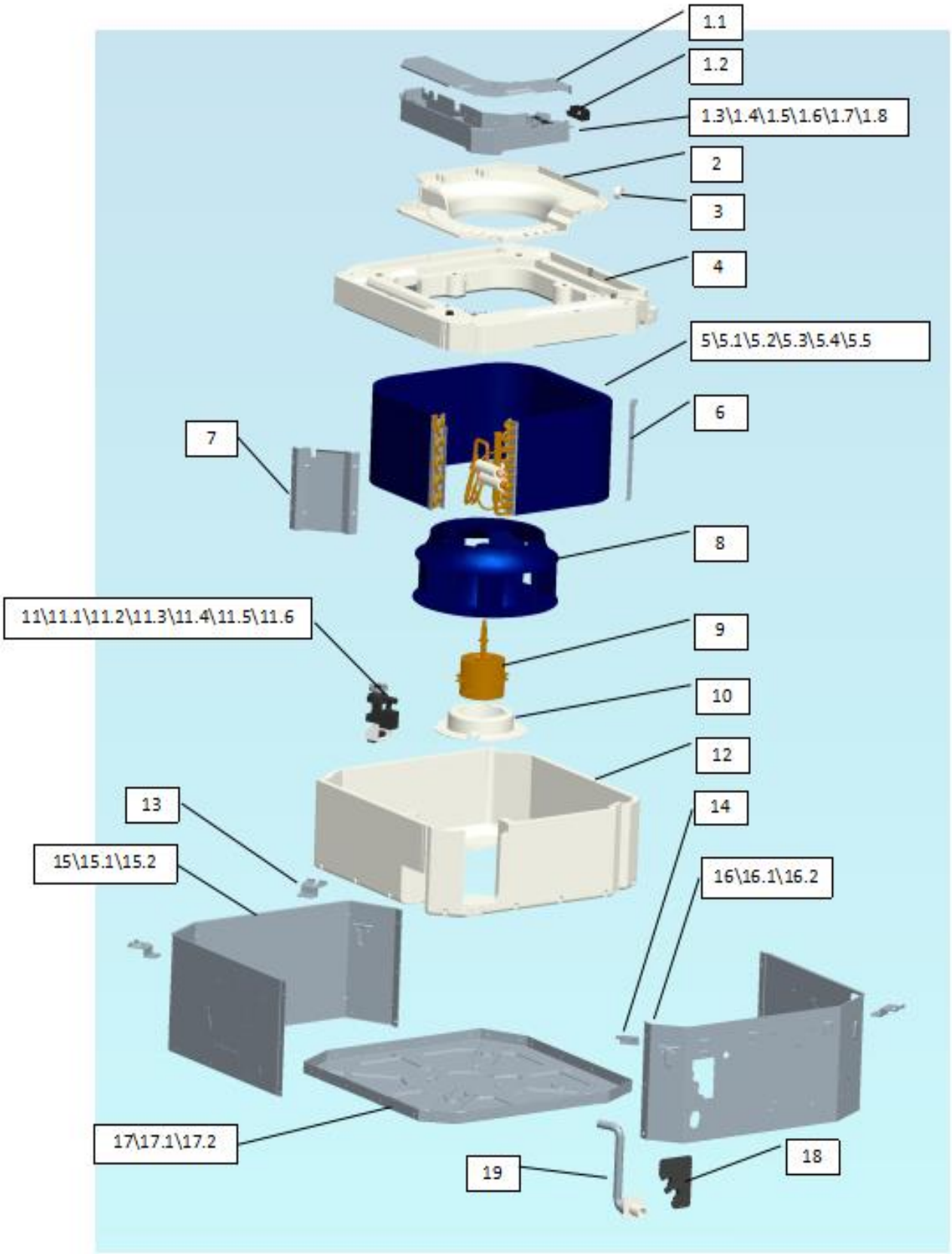
No.	Part Name	No.	Part Name
1	E-parts box cover	9	Main fixing board
2	Electric control components for indoor unit	10	The chassis plate
2.1	Fan motor capacitor	11	Upper foam components
2.2	Temperature sensor	12	Pre-assembling assy for water pump
2.3	E-parts board base	12.1	Water pump support
2.4	E-parts 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		

8.4 CCB-12HVR1, CCB-18HVR1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16\16.1\16.2
17\17.1\17.2
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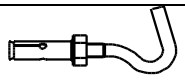
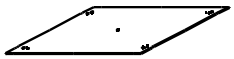
19

No.	Part Name	No.	Part Name
1	Eletric control components	10	Motor bracket
1.1	E-parts box cover assembly	11	Pump parts
1.2	Pressure line buckle	11.1	Water pump
1.3	Electrical box welding components	11.2	Water pump support frame
1.4	Fan motor capacitor	11.3	Water pump filter
1.5	Terminal	11.4	Water pump gasket 1
1.6	E-parts board for indoor unit	11.5	Water pump gasket 2
1.7	Temperature sensor	11.6	Water level switch
1.8	Temperature sensor	12	Chassis foam components
2	Wind inlet guide	13	Hanging ear 1
3	Pressure line buckle	14	Hanging ear 2
4	Water pan components	15	Rear panel assembly
5	Evaporator components	15.1	Rear panel
5.1	Insulating pipe	15.2	Rear panel insulation cotton
5.2	Insulating pipe	16	Front panel assembly
5.3	attached cotton	16.1	Front panel
5.4	Damping glue	16.2	Front cover insulation cotton
5.5	Evaporator	17	Chassis parts
6	Evaporator tightening	17.1	Chassis welding components
7	End plate fixing plate	17.2	Chassis external insulation cotton
8	Centrifugal leaves	18	Refrigerant tube support plate assembly
9	Main fixing board	19	Drain pipe assembly

	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

9. Accessories

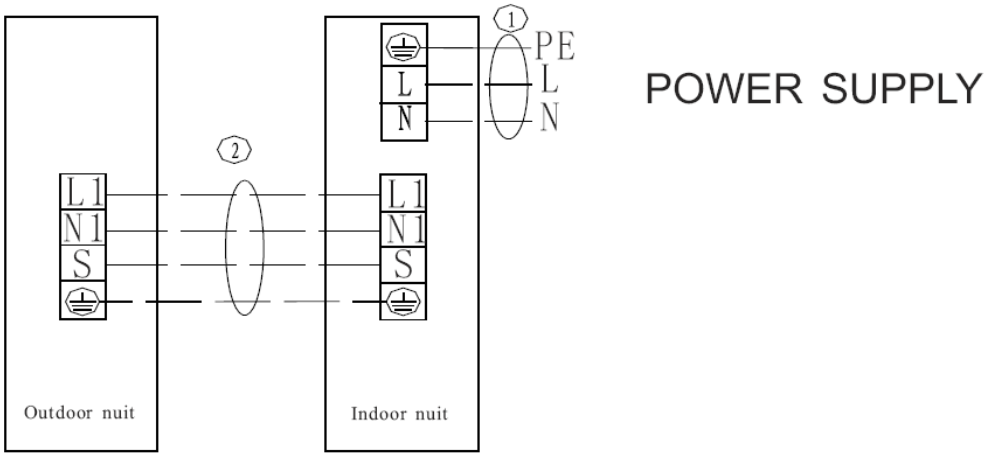
Remote controller	Remote controller		1
	Mounting screw(ST2.9×10-C-H)		2
	Alkaline dry batteries (AM4)		2
Others	Operation & installation instruction manual		1

10. The Specification of Wiring

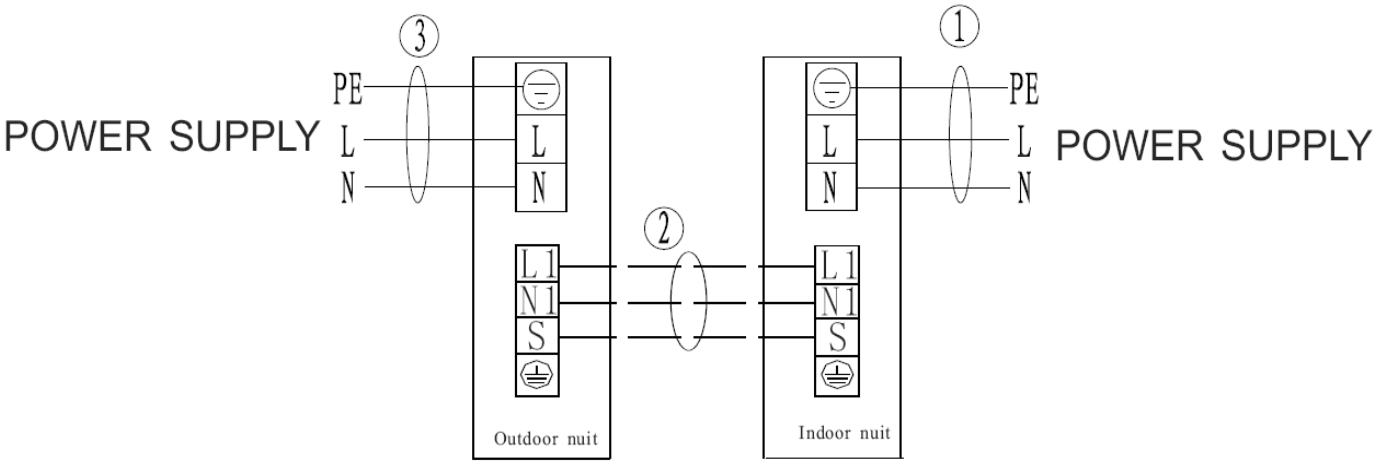
Model			12kBtu/h	18kBtu/h	24kBtu/h	36kBtu/h(1 phase)
Indoor power supply		V/Ph/Hz	220~240/1/50			
Outdoor power supply		V/Ph/Hz	220~240/1/50			
Connection wiring	Power Supply		From indoor unit	From indoor unit	From indoor unit	Power supply individually
	Power wiring	mm^2	3×2.5	3×2.5	3×2.5	3×1.5 / 3×4.0
	Signal wiring	mm^2	4×2.5	4×2.5	4×2.5	3×1.0

Model			36kBtu/h(3 phase)	48kBtu/h	60kBtu/h
Indoor power supply		V/Ph/Hz	220~240/1/50		
Outdoor power supply		V/Ph/Hz	380~415/3/50		
Connection wiring	Power Supply		Power supply individually for indoor and outdoor		
	Power wiring	mm^2	3×1.5 / 5×2.5		
	Signal wiring	mm^2	3×1.0		

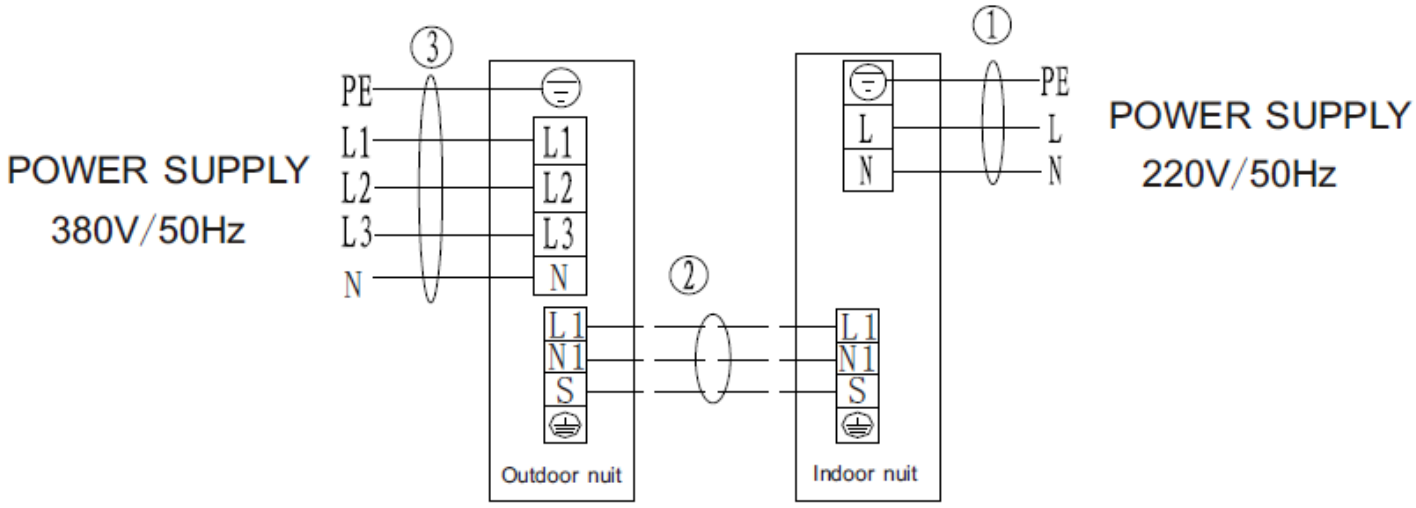
11. Field Wiring



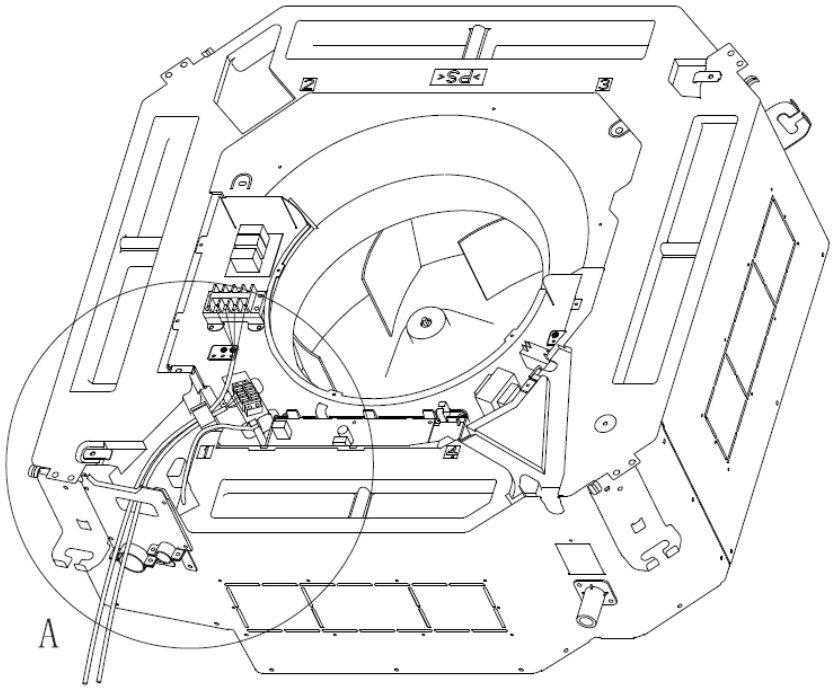
Applicable for 3.5kW 5.3kW and 7.1kW

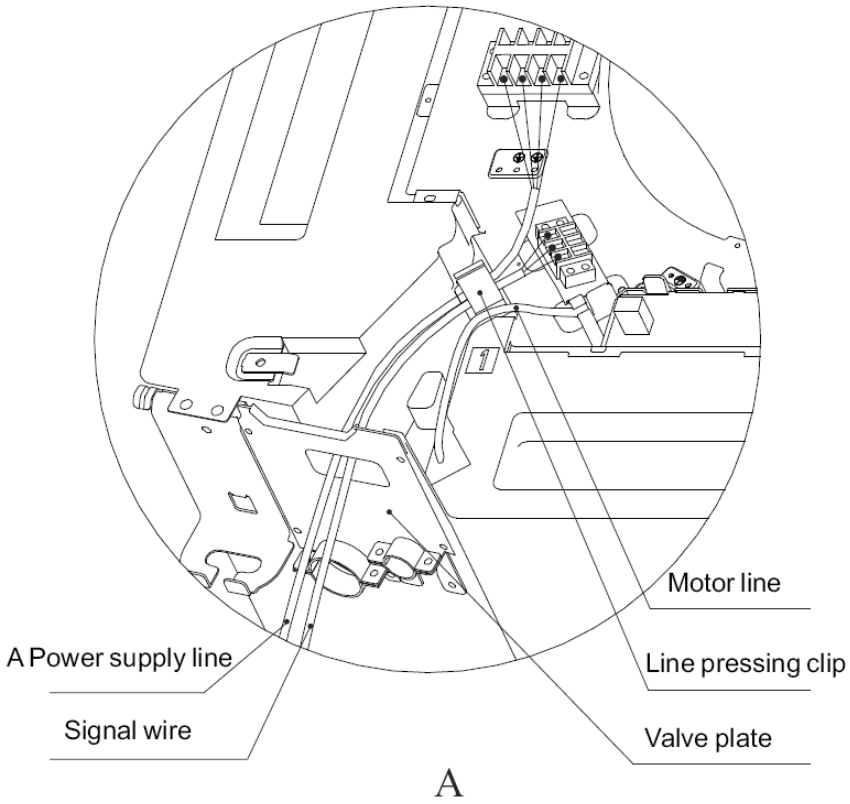


Applicable for (220V/50Hz) 10.5kW model



Applicable for (380V/50Hz) ⩾10.5kW model




Motor line
A Power supply line
Line pressing clip
Signal wire
Valve plate

A

12. Trouble shooting

Fault codes table

Fault Description	4LED fault indication	Digital display	Wired remote display
Indoor and outdoor unit communication failure	Timing lights flash	E1	E1
Temperature sensor(T1) fault	Running lights flash	E2	E2
Pipe temperatures 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
Indoor fan motor problem	Timer light flash slowly	E8	E8
Water over protection	Warming lights flash	EE	EE
Wire controller communication failure		E9	E9
Note: The flash frequency for each of the above indicator is 2.5Hz, slow flashing frequency is 1Hz			

Duct Type

1. Features

Low Static Pressure Duct

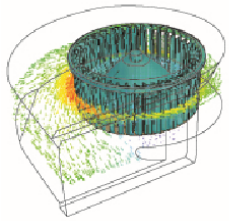
Medium Static Pressure Duct

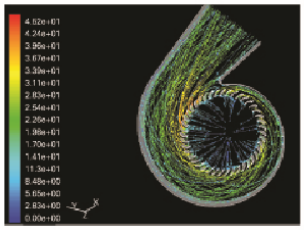
High Static Pressure Duct

1.1 Low ESP Ducted Unit

1. Short body, min 814mm width, easy to install.

2. Adopting aviation centrifugal fans, and CFD technology design, increasing air-volume and decreasing noise level.





3. Three fan speed, meet different requirement.

4. High efficiency DC fan motor, low noise and more comfortable. Operate in low frequency and control indoor temperature precisely.

5. E-box is body-side design, convenient installation and maintenance.

6. Standard for wireless remote controller, wired controller for option.

Standard optional

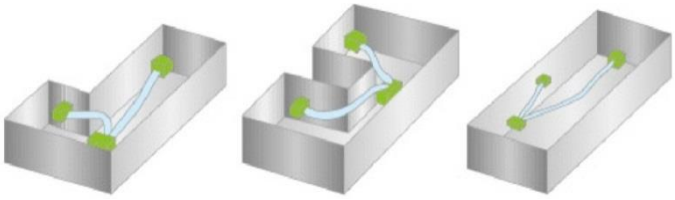
1.2 Medium ESP Ducted Unit

1. Ultra-thin body design.

2. Adopting aviation centrifugal fans, and CFD technology design, increasing air-volume and decreasing noise level.

3. Three fan speed, meet different requirement.

4. 30-50Pa ESP design for the medium static pressure duct type, duct connected installation meet for different room structure.

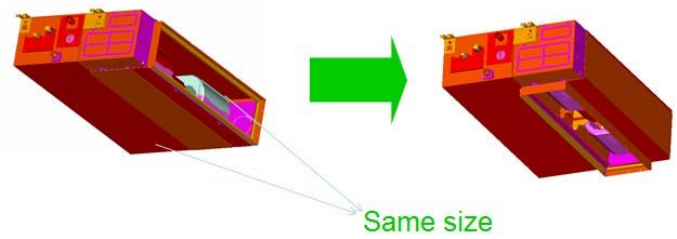


5. Filter can be taken out easily for clear. Easy maintenance.

6. E-box is body-side design, convenient installation and maintenance.

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

8. Two air return type option: air inlet from back is standard and from bottom is optional



9. Multi protection and auto-restart function.

10. For 36K , remote controller is standard , wired controller is optional ;

    For 48-60K ,wired controller is standard , remote controller is optional .

2. Specification

Model			CTA-12HVR	CTA-18HVR1	CTA-24HVR1
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	1.4-3.5-3.8	2.0-5.3-5.6	3.5-7.0-8.0
	Power input	W	300-1400	420-1590-2100	650-3050
	Current input	A	1.5-6.6	2.1-10.1	2.8-9.7-13.3
	EER	W/W	3.3	3.33	3.26
	SEER	W/W	6.1	6.1	6.1
Heating	Capacity	KW	1.6-3.3-4.1	2.5-6.0	4.5-7.7-8.5
	Input	W	350-1300	500-1940	1500-2600
	Rated current	A	1.7-6.2	2.5-9.2	5.8-11.3
	COP	W/W	3.5	4.12	3.72
	SCOP	W/W	4	4	4
Energy rate		Cooling	A++	A++	A++
Energy rate		Heating	A+	A+	A+
Max. power input		W	1600	2400	3250
Max. current input		A	7.3	11.4	14.5
Indoor fan motor	Model		DR-310-27F-8	DR-310-68F-8	DR-310-68F-8
	Brand		Panasonic	Panasonic	Panasonic
	Power output	W	40	68	68
	Speed	r/min	1250/1140/1080/950	1275/1080/880/720	1275/1080/880/720
	Insulation class		E	E	E
Indoor coil	Number of rows		2*2	3*2	3*2
	Tube pitch(a) x row pitch(b)	mm	21x12.75	21×12.7	21×12.7
	Fin spacing	mm	1.4	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7	Φ7
			inner grooved	inner grooved	inner grooved
	Coil length x height x width	mm	515x147x38.1	920×200×46	920×200×46

	Number of circuits		6	6	6
Indoor air flow(High speed)		m^3/h	600	800/630/530	800/630/530
Static Pressure		Pa	0-30	0-30	0-30
Indoor noise level dB(A)		Power level	42-52	46~58	56～63
		Pressure level	31/35/40	36/40/45	43/45/47
Indoor unit	Dimension(W*H*D)	Body(mm)	814x210x467	1214×210×467	1214×210×467
	Packing(W*H*D)	Body(mm)	910x240x510	1310×240×510	1310×240×510
	Net/Gross weight	Body(Kg)	19/16	22.5/25.5	25/28
Max pressure		MPa	4.2	4.2	4.2
Refrigerant type			R410A	R410A	R410A
Refrigerant piping	Liquid side / Gas side	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)		
Operation temp of indoor		° C	16～32	16～32	16～32
Ambient temp	heating	° C	-15～30	-15～30	-15～30
	cooling	° C	-15～50	-15～50	-15～50

Model			CTB-36HVR1-A	CTB-36HVR1-B
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	6.6-10.5-12.8	6.6-10.5-12.8
	Power input	W	830-3270-4760	1150-3270-4760
	Current input	A	4.7-14.8-25.3	4.7-14.8-25.3
	EER	W/W	3.21	
	SEER	W/W	5.1	5.1
Heating	Capacity	KW	7.35-11.5-13.2	7.35-11.5-13.2
	Input	W	1200-3100-4250	1200-3100-4250
	Rated current	A	4.5-15.3-22	4.9-14.3-19
	COP	W/W	3.71	
	SCOP	W/W	4.0	4.0

Energy rate		Cooling	A	A
Energy rate		Heating	A+	A+
Max. power input		W	4800	4800
Max. current input		A	26	10.3
Indoor fan motor	Model		DR-310-150F-8 + DR-310-75F-8	DR-310-150F-8 + DR-310-75F-8
	Brand		Panasonic	Panasonic
	Power output	W	150+75	150+75
	Speed	r/min	1350/1240/1140/ 1040 + 1350/1270/1200/ 1130	1350/1240/1140/ 1040 + 1350/1270/1200/ 1130
	Insulation class		E	E
Indoor coil	Number of rows		3	3
	Tube pitch(a) x row pitch(b)	mm	22×19.05	22×19.05
	Fin spacing	mm	1.7	1.7
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7.94	Φ7.94
			inner grooved	inner grooved
	Coil length x height x width	mm	1136×240×57.15	1136×240×57.15
	Number of circuits		6	6
Indoor air flow(High speed)		m^3/h	1800/1500/1200	1800/1500/1200
Static Pressure		Pa	30-50	30-50
Indoor noise level dB(A)		Power level	55～63	55～63
		Pressure level		
Indoor unit	Dimension(W*H*D)	Body(mm)	1425×663×260	1425×663×260
	Packing(W*H*D)	Body(mm)	1490×720×325	1490×720×325
	Net/Gross weight	Body(Kg)	46/50	46/50
Max pressure		MPa	3.8	3.8
Refrigerant type			R410A	R410A
Refrigerant	Liquid side /	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88

piping	Gas side			
Drainage pipe		mm	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		° C	16～32	16～32
Ambient temp	heating	° C	-15～30	-15～30
Ambient temp	cooling	° C	-5～50	-5～50

Model			CTB-48HVR1	CTB-60HVR1	CTH-48HVR1	CTH-60HVR1
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	14.0(7.15-15.6)	16.0(7.8-17.5)	14.0(7.15-15.6)	16.0(7.8-17.5)
	Power input	W	4.94(1.22-5.58)	5.49(1.9-6.1)	5.1(1.22-5.58)	5.65(1.9-6.1)
	Current input	A	9.4	10.4	10.1	11.1
	EER	W/W	2.83	2.91	2.75	2.83
Heating	Capacity	KW	15.2(8.0-17.2)	17.6(8.5-19.5)	15.2(8.0-17.2)	17.6(8.5-19.5)
	Power Input	W	4.39(1.2-5.28)	5.12(2.0-6.5)	4.55(1.2-5.28)	5.28(2.0-6.5)
	Rated current	A	8.5	9.8	9.2	10.5
	COP	W/W	3.46	3.44	3.34	3.33
Energy rate		Cooling	A	A	A	A
Energy rate		Heating	A	A	A	A
Max. power input		W	6100	6800	6100	6800
Max. current input		A	11.4	12.8	11.4	12.8
Indoor fan motor	Model		YSK120-150F-4P3H105-2+YDK110-75F-4P3H105L-2	YSK120-150F-4P3H105-2+YDK110-75F-4P3H105L-2	YSK139-300F-4P3H95	YSK139-300F-4P3H95
	Brand		Kangbao	Kangbao	Kangbao	Kangbao
	Power output	W	150+75	150+75	300	300
	Capacitor	μF	6+5	6+5	15	15
	Speed	r/min	1320/1280/1200+1430/1370/1330	1320/1280/1200+1430/1370/1330	1050/830/720	1050/830/720
	Insulation class		B	B	B	B
Indoor coil	Number of rows		3	3	3	3
	Tube pitch(a) x row pitch(b)	mm	22×19.05	22×19.05	22×19.05	22×19.05
	Fin spacing	mm	1.7	1.7	1.6	1.6
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7.94	Φ7.94	Φ7.94	Φ7.94
			inner grooved	inner grooved	inner grooved	inner grooved
	Coil length x	mm	1136x308x83	1136x308x83	935x330x57.15	935x330x57.15

	height x width					
	Number of circuits		6	6	6	6
Indoor air flow (High speed)		m^3/h	2000	2000	2300	2300
Static Pressure		Pa	50	50	120	120
Indoor noise level	power level	dB(A)	55-65	55-65	56-66	56-66
	pressure level		40-52	40-52	44-52	44-52
Indoor unit	Dimension(W*H*D)	Body(mm)	1425x643x260	1425x643x260	1175x370x625	1175x370x625
	Packing(W*H*D)	Body(mm)	1490x720x325	1490x720x325	1245x445x655	1245x445x655
	Net/Gross weight	Body(Kg)	45/51	45/51	47/51	47/51
Max pressure		MPa	4.5	4.5	4.5	4.5
Refrigerant type			R410A	R410A	R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25	DN25	DN25
Standard controller						
Operation temp		°C	16～32	16～32	16～32	16～32
Ambient temp	cooling	°C	-15～50	-15～50	-15～50	-15～50
	heating	°C	-15～30	-15～30	-15～30	-15～30

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)

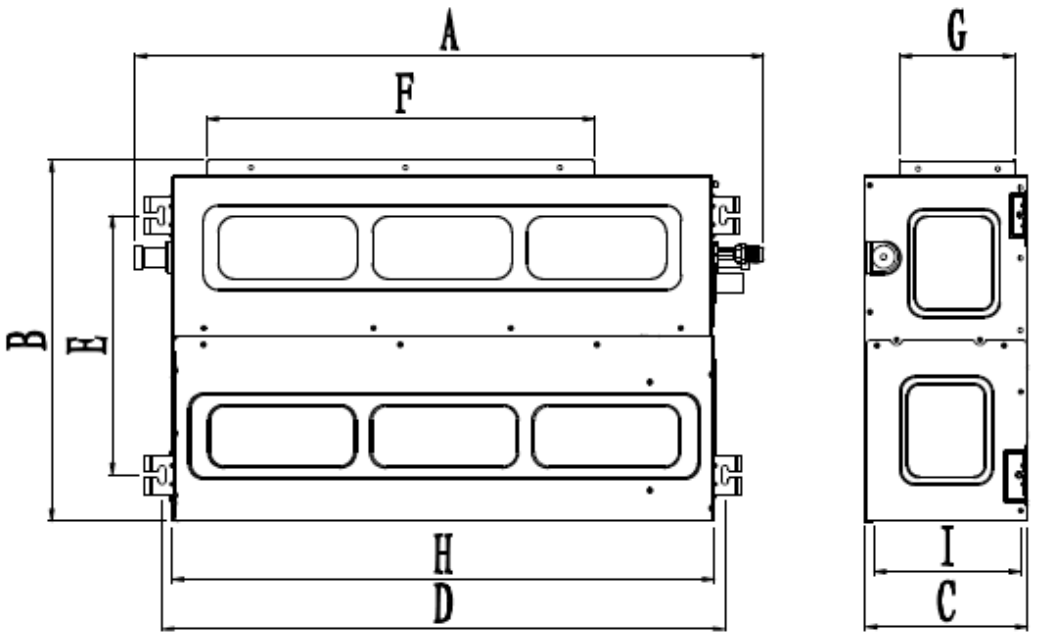
2.Nominal heating capacities are based on the following conditions:

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

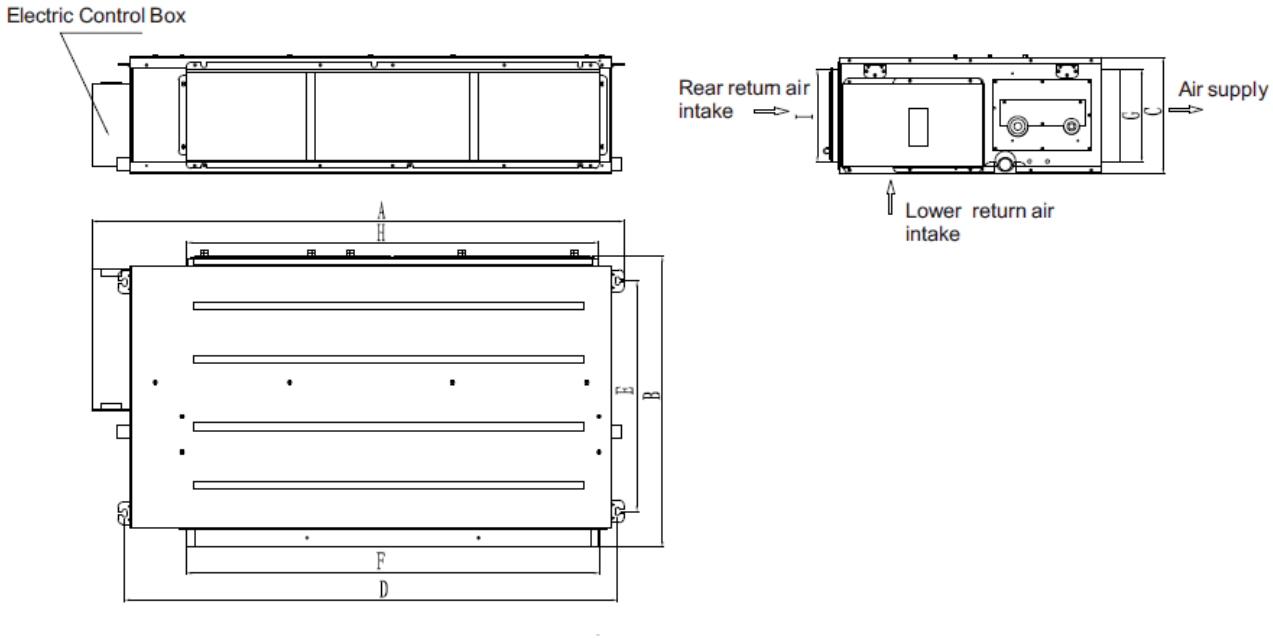
CTA-12HVR1 , CTA-18HVR1, CTA-24HVR1



Dimension

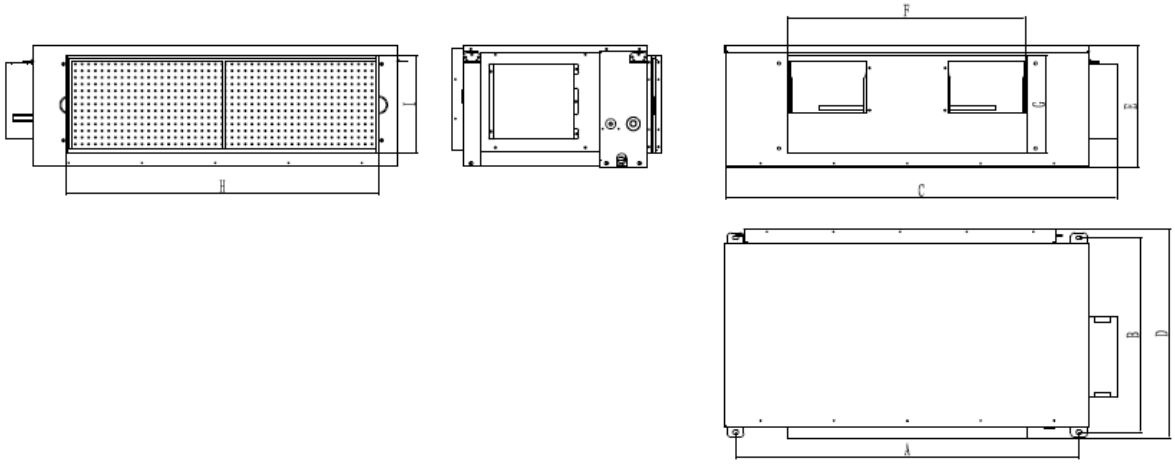
Dimension / Capacity	Device body dimension			Installation dimension		Air outlet dimension		Return air dimension	
	A	B	C	D	E	F	G	H	I
3.5kW	814	467	210	728	335	503	150	611	200
5.3kW	1214	467	210	1128	335	905	150	1011	200
7.1kW	1214	467	210	1128	335	905	150	1011	200

CTB-36HVR1-A, CTB-36HVR1-B, CTB-48HVR1, CTB-60HVR1



Dimension generation / Indoor unit capacity	Device body dimension			Installation Device body		Air outlet dimension		Return air intake dimension	
	A	B	C	D	E	F	G	H	I
⩾10.5kW	1425	643	260	1337	515	1156	197	1156	207

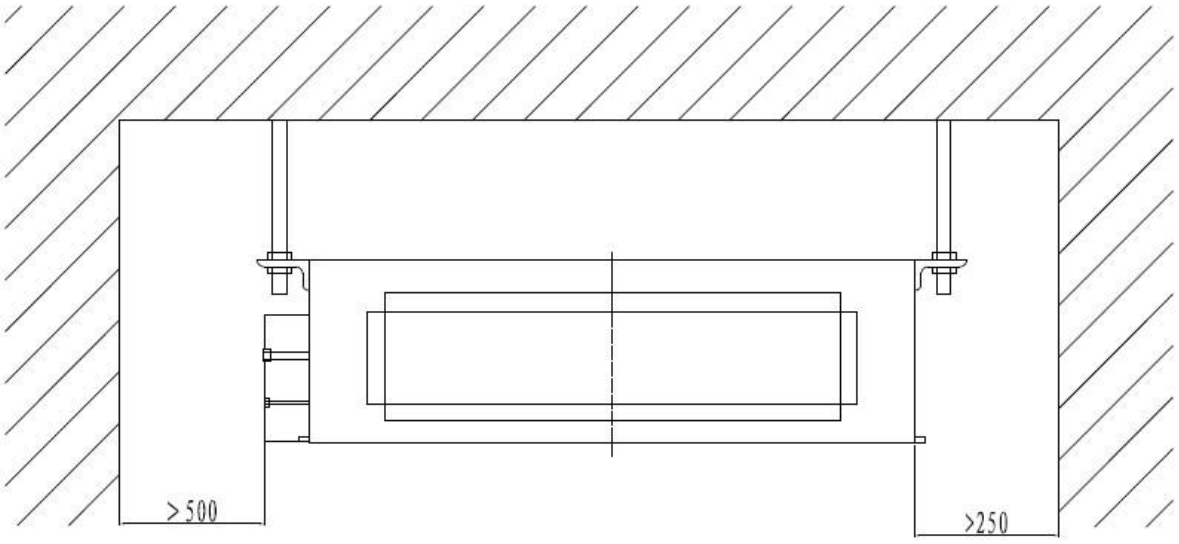
CTH-48HVR1, CTH-60HVR



Dimension generation / Indoor unit capacity	Device body dimension			Installation Device body		Air outlet dimension		Return air intake dimension	
	C	D	E	A	B	F	G	H	I
14kW 16kW	1175	621	370	1038	579	740	270	922	290

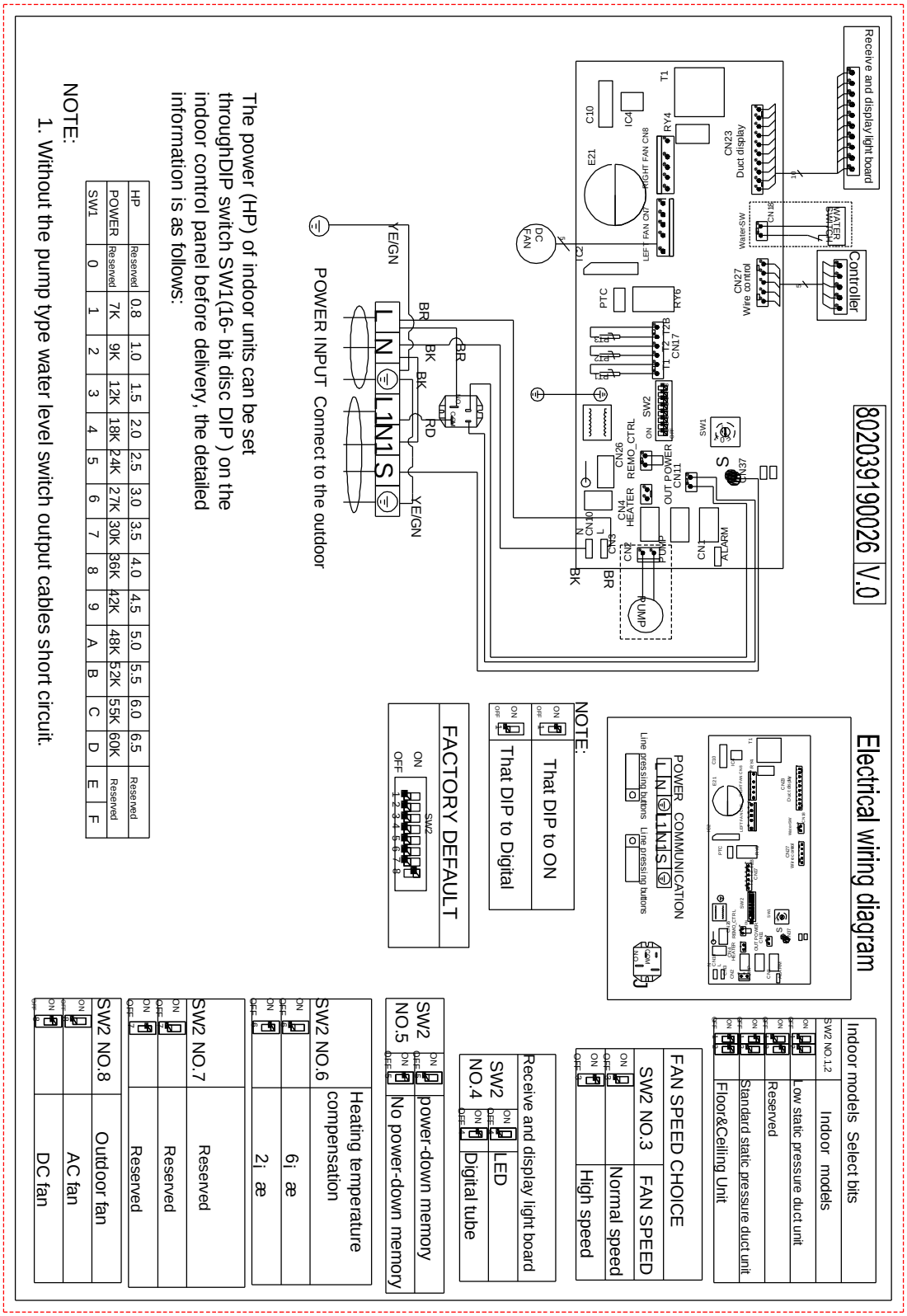
4. Service Space

Ensure enough space required for installation and maintenance.



5. Wiring Diagrams

5.1 CTA-12HVR1



The power (HP) 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:

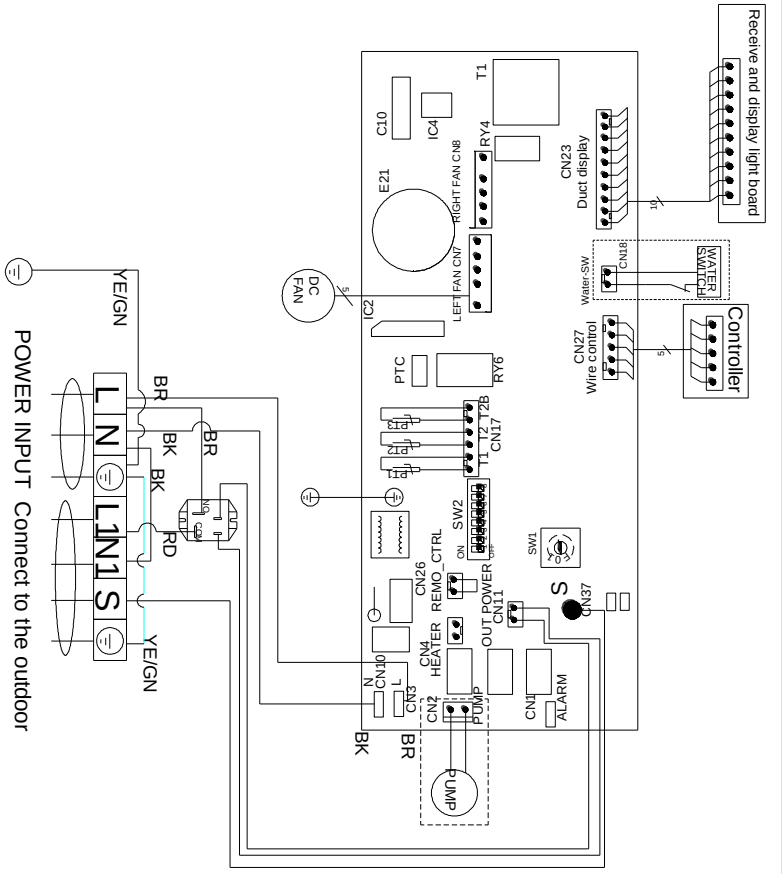
HP		Reserved	0.8	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved
POWER		Reserved	7K	9K	12K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved
SW1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

NOTE:

1. Without the pump type water level switch output cables short circuit.

5.2 CTA-18HVR1

Electrical wiring diagram



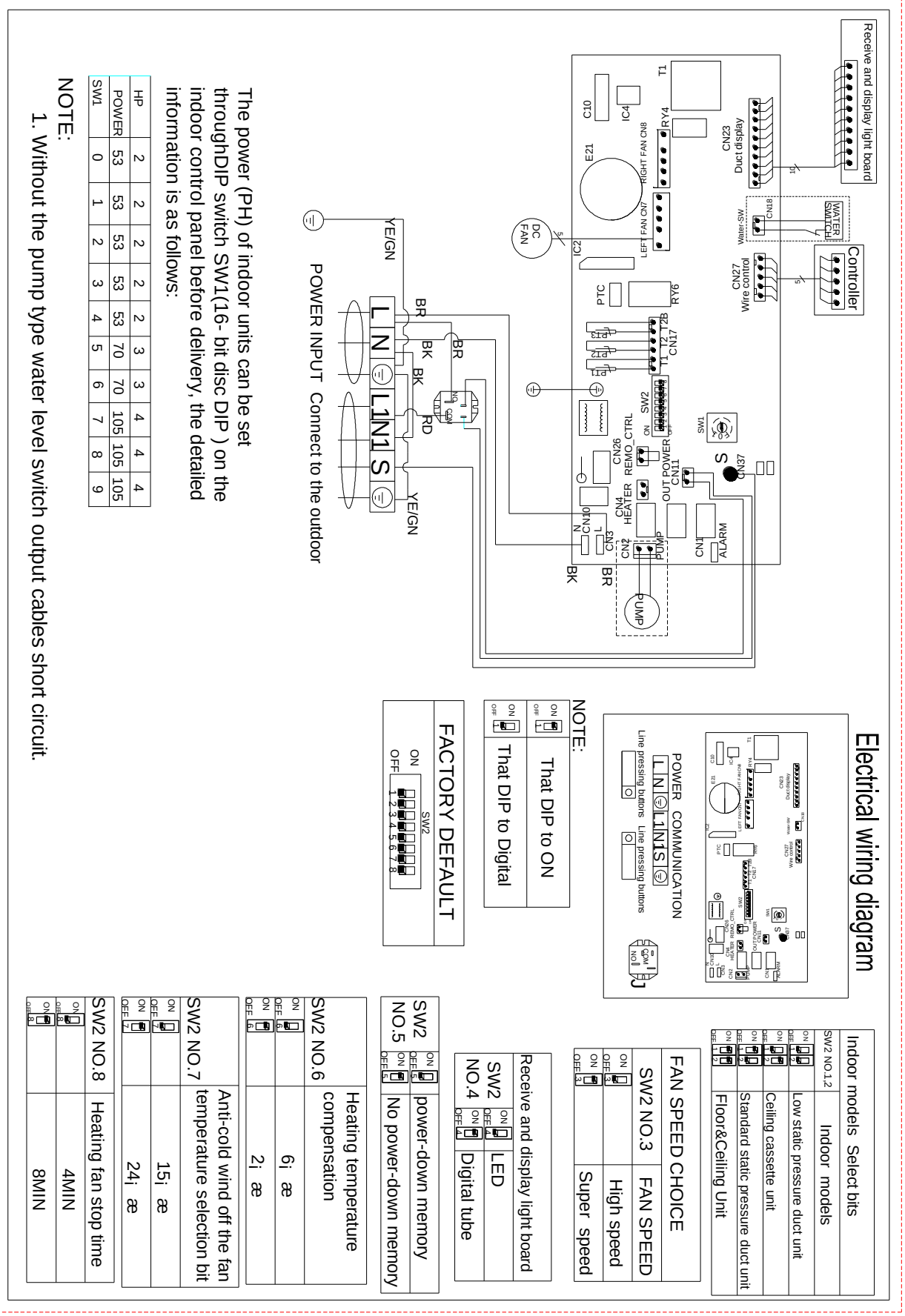
The power (PH) of indoor units can be set throughDIP switch SW1(16- bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	2	2	2	2	2	3	3	4	4	4
POWER	53	53	53	53	53	70	70	105	105	105
SW1	0	1	2	3	4	5	6	7	8	9

NOTE:

1. Without the pump type water level switch output cables short circuit.

5.3 CTA-24HVR1



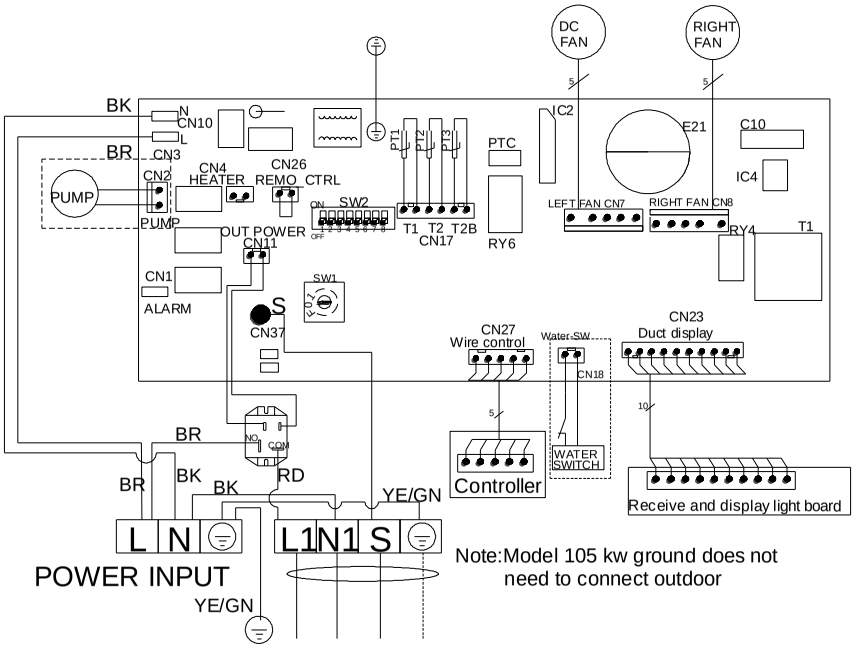
The power (PH) of indoor units can be set throughDIP switch SW1(16- bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	2	2	2	2	2	3	3	4	4	4
POWER	53	53	53	53	53	70	70	105	105	105
SW1	0	1	2	3	4	5	6	7	8	9

NOTE:

1. Without the pump type water level switch output cables short circuit.

5.4 CTB-36HVR1-A, CTB-36HVR1-B



Note:Model 105 kw ground does not need to connect outdoor

Connect to the outdoor

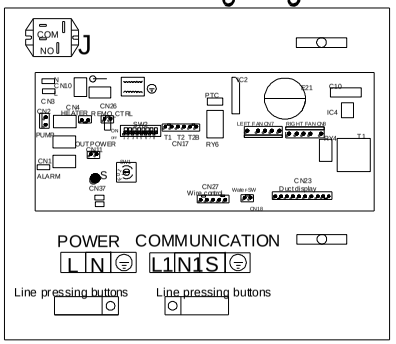
The power (PH) of indoor units can be set throughDIP switch SW1(16- bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	2	2	2	2	2	3	3	4	4	4
POWER	53	53	53	53	53	70	70	105	105	105
SW1	0	1	2	3	4	5	6	7	8	9

NOTE:

1. The factory default CN18 need cables short circuit
2. The water pump outlet are connected by a field installation

Electrical wiring diagram



NOTE:

ON OFF 1	That DIP to ON
ON OFF 1	That DIP to Digital

FACTORY DEFAULT

SW2 ON OFF 1 2 3 4 5 6 7 8

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON OFF 1 2	Low static pressure duct unit
ON OFF 1 2	Ceiling cassette unit
ON OFF 1 2	Standard static pressure duct unit
ON OFF 1 2	Floor&Ceiling unit

FAN SPEED CHOICE	
SW2 NO.3	FAN SPEED
ON OFF 3	High speed
ON OFF 3	Super speed

Receive and display light board		
SW2 NO.4	ON OFF 4	LED
	ON OFF 4	Digital tube

SW2 NO.5		
	ON OFF 5	power-down memory
	ON OFF 5	No power-down memory

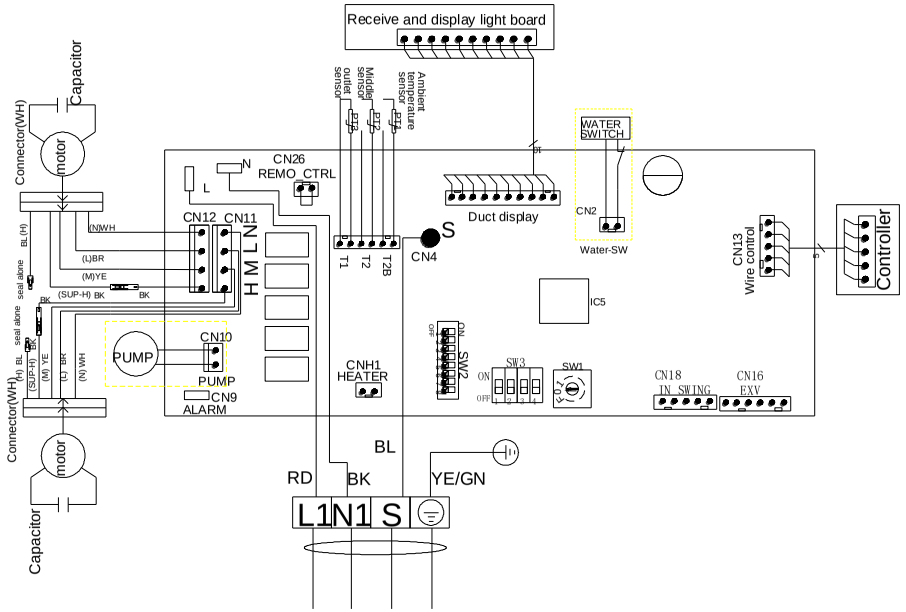
SW2 NO.6	Heating temperature compensation
ON OFF 6	6¡ æ
ON OFF 6	2¡ æ

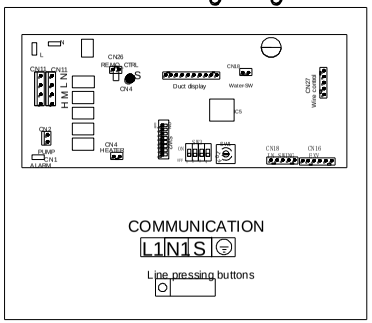
SW2 NO.7	Anti-cold wind off the fan temperature selection bit
ON OFF 7	15¡ æ
ON OFF 7	24¡ æ

SW2 NO.8	Heating fan stop time
ON OFF 8	4MIN
ON OFF 8	8MIN

5.5 CTB-48HVR1, CTB-60HVR1

Electrical wiring diagram





Receive and display light board		
SW2 NO.4	ON 4 OFF	LED
	ON 4 OFF	Digital tube

SW2 NO.5	ON 5 OFF	power-down memory
	ON 5 OFF	No power-down memory

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	2.5	3.5	4.5	4.8	5	6
POWER	WIN35	WIN40	WIN50	WIN60	ERP48K	ERP60K
SW1	3	5	7	8	9	9

NOTE:

ON 1 OFF	That DIP to ON
ON 1 OFF	That DIP to Digital

SW2 NO.6	Heating temperature compensation
ON 6 OFF	6¡ æ
ON 6 OFF	2¡ æ

SW2 NO.7	Anti-cold wind off the fan temperature selection bit
ON 7 OFF	15¡ æ
ON 7 OFF	24¡ æ

FACTORY DEFAULT

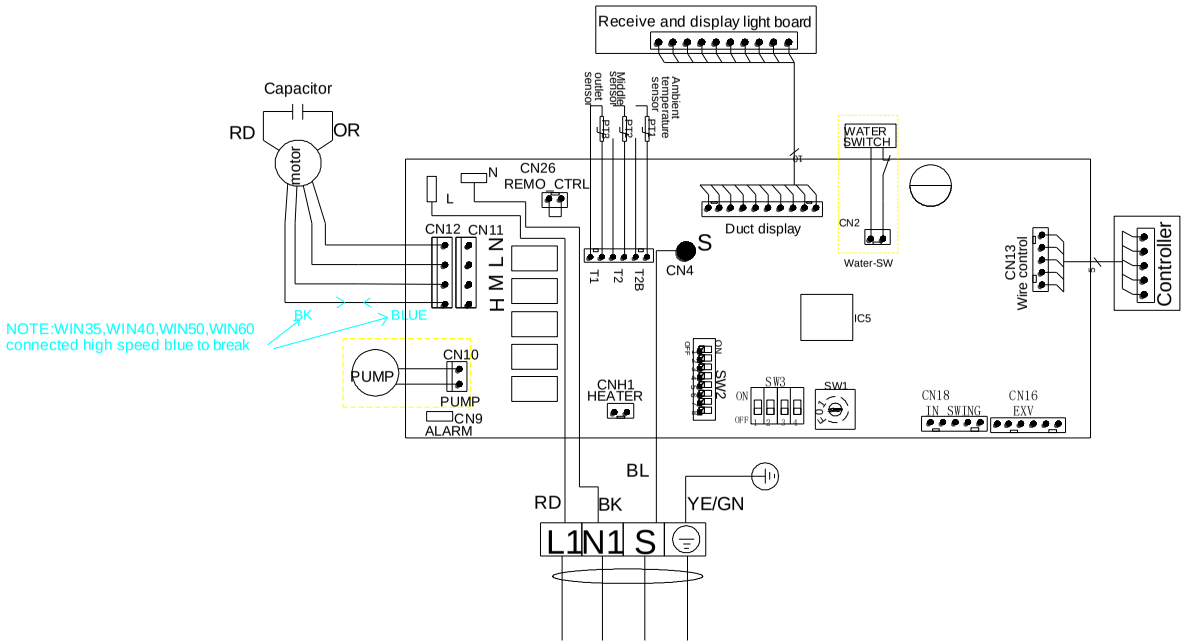
SW2 NO.8	Heating fan stop time
ON 8 OFF	4MIN
ON 8 OFF	8MIN

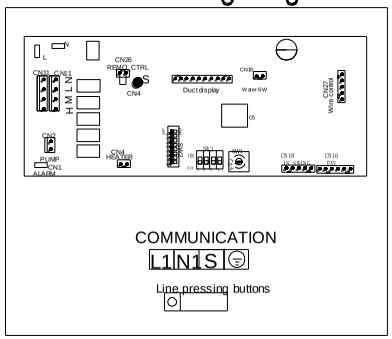
NOTE:

1. The factory default CN26 need cables short circuit
2¡ ¥When there is no water pump installation, WATER-SW needs to be short circuit

5.6 CTH-48HVR1, CTH-60HVR1

Electrical wiring diagram





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	2.5	3.5	4.5	4.8	5	6
POWER	WIN35	WIN40	WIN50	WIN60	ERP48K	ERP60K
SW1	3	5	7	8	9	9

NOTE:

1. The factory default WATER-SW CN2 need cables short circuit
2. The water pump outlet are connected by a field installation

NOTE:

ON 1 OFF	That DIP to ON
ON 1 OFF	That DIP to Digital

FACTORY DEFAULT

SW2: ON / OFF 1 2 3 4 5 6 7 8

SW3: ON / OFF 1 2 3 4

Receive and display light board		
SW2 NO.4	ON 4 OFF	LED
	ON 4 OFF	Digital tube

SW2 NO.5	ON 5 OFF	power-down memory
	ON 5 OFF	No power-down memory

SW2 NO.6	Heating temperature compensation
ON 6 OFF	6¡ æ
ON 6 OFF	2¡ æ

SW2 NO.7	Anti-cold wind off the fan temperature selection bit
ON 7 OFF	15¡ æ
ON 7 OFF	24¡ æ

SW2 NO.8	Heating fan stop time
ON 8 OFF	4MIN
ON 8 OFF	8MIN

6. Capacity Tables

Cooling

6.1 CTA-12HVR1

MODEL		CTA-12HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25	28ºC	32ºC	35ºC	42ºC	49 ºC
21ºC D 15ºC W	Total capacity kW	3.36	3.34	3.33	3.31	3.30	3.26	3.22
	Input kW.	0.7	0.72	0.75	0.80	0.83	0.84	0.91
24ºC D 17ºC W	Total capacity kW	3.47	3.45	3.44	3.42	3.40	3.36	3.04
	Input kW.	0.8	0.83	0.85	0.88	0.90	0.98	1.00
27ºC D 19ºC W	Total capacity kW	3.57	3.55	3.54	3.51	3.50	3.46	3.13
	Input kW.	0.82	0.85	0.87	0.92	0.95	1.00	1.05
29ºC D 21ºC W	Total capacity kW	3.62	3.59	3.58	3.56	3.54	3.50	3.16
	Input kW.	0.84	0.86	0.9	0.95	0.98	1.06	1.1
32ºC D 23ºC W	Total capacity kW	3.69	3.67	3.65	3.63	3.61	3.57	3.22
	Input kW.	0.90	0.94	0.98	1.02	1.08	1.12	1.21

6.2 CTA-18HVR1

MODEL		**CTA-18HVR1**						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49 ºC
21ºC DB 15ºC WB	Total capacity kW	5.09	5.06	5.03	4.99	4.95	4.91	4.88
	Input kW.	1.50	1.51	1.53	1.55	1.60	1.66	1.71
24ºC DB 17ºC WB	Total capacity kW	5.25	5.22	5.18	5.15	5.10	5.06	5.03
	Input kW.	1.52	1.53	1.55	1.57	1.63	1.68	1.73
27ºC DB 19ºC WB	Total capacity kW	5.41	5.38	5.34	5.30	5.26	5.22	5.18
	Input kW.	1.54	1.55	1.57	1.59	1.65	1.70	1.75

29ºC DB 21ºC WB	Total capacity kW	5.48	5.44	5.40	5.36	5.32	5.28	5.24
	Input kW.	1.56	1.58	1.60	1.62	1.67	1.73	1.78
32ºC DB 23ºC WB	Total capacity kW	5.58	5.55	5.51	5.47	5.42	5.38	5.34
	Input kW.	1.57	1.58	1.60	1.62	1.68	1.74	1.79

6.3 CTA-24HVR1

MODEL		**CTA-24HVR1**						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49 ºC
21ºC DB 15ºC WB	Total capacity kW	6.82	6.78	6.73	6.68	6.63	6.58	6.53
	Input kW.	2.03	2.05	2.07	2.10	2.17	2.25	2.31
24ºC DB 17ºC WB	Total capacity kW	7.04	7.00	6.95	6.89	6.84	6.78	6.74
	Input kW.	2.05	2.07	2.10	2.12	2.20	2.28	2.34
27ºC DB 19ºC WB	Total capacity kW	7.25	7.21	7.15	7.00	7.04	6.99	6.94
	Input kW.	2.08	2.10	2.12	2.15	2.23	2.31	2.37
29ºC DB 21ºC WB	Total capacity kW	7.34	7.29	7.24	7.19	7.13	7.07	7.03
	Input kW.	2.11	2.13	2.16	2.19	2.26	2.34	2.41
32ºC DB 23ºC WB	Total capacity kW	7.48	7.43	7.38	7.32	7.26	7.21	7.16
	Input kW.	2.12	2.14	2.17	2.19	2.27	2.35	2.42

6.4 CTB-36HVR1-A, CTB-36HVR1-B

MODEL	**CTB-36HVR1**
COOLING	OUTDOOR TEMPERATURE DRY

Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49 ºC
21ºC DB 15ºC WB	Total capacity kW	10.09	10.03	9.96	9.88	9.80	9.73	9.66
	Input kW.	3.08	3.11	3.14	3.18	3.30	3.41	3.51
24ºC DB 17ºC WB	Total capacity kW	10.41	10.35	10.27	10.19	10.11	10.03	9.97
	Input kW.	3.12	3.15	3.19	3.22	3.34	3.46	3.55
27ºC DB 19ºC WB	Total capacity kW	10.72	10.66	10.58	10.50	10.42	10.33	10.27
	Input kW.	3.16	3.19	3.23	3.27	3.38	3.50	3.60
29ºC DB 21ºC WB	Total capacity kW	10.85	10.79	10.71	10.63	10.54	10.46	10.39
	Input kW.	3.21	3.24	3.28	3.32	3.44	3.56	3.66
32ºC DB 23ºC WB	Total capacity kW	11.06	10.99	10.91	10.83	10.74	10.66	10.59
	Input kW.	3.22	3.25	3.29	3.33	3.45	3.57	3.68

6.5 CTB-48HVR1

MODEL		**CTA-48HVR1**						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49 ºC
21ºC DB 15ºC WB	Total capacity kW	13.45	13.37	13.29	13.18	13.08	12.97	12.89
	Input kW.	4.66	4.69	4.75	4.82	4.97	5.16	5.31
24ºC DB 17ºC WB	Total capacity kW	13.87	13.79	13.68	13.60	13.47	13.37	13.29
	Input kW.	4.72	4.75	4.82	4.88	5.06	5.22	5.37
27ºC DB 19ºC WB	Total capacity kW	14.29	14.21	14.11	14.00	13.89	13.79	13.68
	Input kW.	4.78	4.82	4.88	4.94	5.13	5.28	5.44
29ºC DB 21ºC WB	Total capacity kW	14.48	14.37	14.26	14.16	14.05	13.95	13.84
	Input kW.	4.85	4.91	4.97	5.03	5.19	5.37	5.53
32ºC DB 23ºC WB	Total capacity kW	14.74	14.66	14.55	14.45	14.32	14.21	14.11
	Input kW.	4.88	4.91	4.97	5.03	5.22	5.41	5.56

6.6 CTB-60HVR1

MODEL		CTA-60HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49 ºC
21ºC DB 15ºC WB	Total capacity kW	15.37	15.28	15.18	15.06	14.94	14.82	14.73
	Input kW.	5.18	5.21	5.28	5.35	5.52	5.73	5.90
24ºC DB 17ºC WB	Total capacity kW	15.85	15.76	15.64	15.55	15.40	15.28	15.18
	Input kW.	5.25	5.28	5.35	5.42	5.63	5.80	5.97
27ºC DB 19ºC WB	Total capacity kW	16.33	16.24	16.12	16.00	15.88	15.76	15.64
	Input kW.	5.32	5.35	5.42	5.49	5.70	5.87	6.04
29ºC DB 21ºC WB	Total capacity kW	16.54	16.42	16.30	16.18	16.06	15.94	15.82
	Input kW.	5.39	5.46	5.52	5.59	5.77	5.97	6.15
32ºC DB 23ºC WB	Total capacity kW	16.85	16.75	16.63	16.51	16.36	16.24	16.12
	Input kW.	5.42	5.46	5.52	5.59	5.80	6.01	6.18

6.7 CTH-48HVR1

MODEL		CTA-60HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49 ºC
21ºC DB 15ºC WB	Total capacity kW	13.45	13.37	13.29	13.18	13.08	12.97	12.89
	Input kW.	4.81	4.84	4.91	4.97	5.13	5.32	5.48
24ºC DB 17ºC WB	Total capacity kW	13.87	13.79	13.68	13.60	13.47	13.37	13.29
	Input kW.	4.88	4.91	4.97	5.04	5.23	5.39	5.55
27ºC DB	Total capacity kW	14.29	14.21	14.11	14.00	13.89	13.79	13.68

19ºC WB	Input kW.	4.94	4.97	5.04	5.10	5.29	5.45	5.61
29ºC DB 21ºC WB	Total capacity kW	14.48	14.37	14.26	14.16	14.05	13.95	13.84
	Input kW.	5.00	5.07	5.13	5.20	5.36	5.55	5.71
32ºC DB 23ºC WB	Total capacity kW	14.74	14.66	14.55	14.45	14.32	14.21	14.11
	Input kW.	5.04	5.07	5.13	5.20	5.39	5.58	5.74

6.8 CTH-60HVR1

MODEL		**CTA-60HVR1**						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49 ºC
21ºC DB 15ºC WB	Total capacity kW	15.37	15.28	15.18	15.06	14.94	14.82	14.73
	Input kW.	5.33	5.37	5.44	5.51	5.69	5.90	6.08
24ºC DB 17ºC WB	Total capacity kW	15.85	15.76	15.64	15.55	15.40	15.28	15.18
	Input kW.	5.40	5.44	5.51	5.58	5.79	5.97	6.15
27ºC DB 19ºC WB	Total capacity kW	16.33	16.24	16.12	16.00	15.88	15.76	15.64
	Input kW.	5.47	5.51	5.58	5.65	5.86	6.04	6.22
29ºC DB 21ºC WB	Total capacity kW	16.54	16.42	16.30	16.18	16.06	15.94	15.82
	Input kW.	5.54	5.61	5.69	5.76	5.93	6.15	6.33
32ºC DB 23ºC WB	Total capacity kW	16.85	16.75	16.63	16.51	16.36	16.24	16.12
	Input kW.	5.58	5.61	5.69	5.76	5.97	6.18	6.36

Heating

6.9 CTA-12HVR1

MODEL	CCB-12HVR1
HEATING	OUTDOOR CONDITIONS

Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC DB 2ºC WB	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	4.37	4.33	4.32	4.20	4.01	3.95	3.56
	Input kW.	1.23	1.22	1.22	1.19	1.15	1.14	1.03
18ºC	Capacity kW	4.33	4.31	4.29	4.17	3.99	3.92	3.54
	Input kW.	1.23	1.22	1.22	1.18	1.14	1.13	1.02
20ºC	Capacity kW	4.31	4.28	4.26	4.14	3.96	3.90	3.51
	Input kW.	1.22	1.21	1.21	1.18	1.13	1.12	1.01
22ºC	Capacity kW	4.28	4.25	4.23	4.11	3.93	3.87	3.49
	Input kW.	1.20	1.20	1.20	1.17	1.12	1.11	1.01
27ºC	Capacity kW	4.19	4.22	4.20	4.08	3.90	3.84	3.46
	Input kW.	1.18	1.19	1.19	1.16	1.11	1.10	1.00

6.10 CTA-18HVR1

MODEL		**CTA-18HVR1**						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	6.05	6.00	5.98	5.81	5.55	5.47	4.93
	Input kW.	1.51	1.39	1.35	1.33	1.30	1.29	1.23
18ºC	Capacity kW	5.99	5.96	5.94	5.77	5.52	5.43	4.90
	Input kW.	1.54	1.41	1.37	1.35	1.32	1.32	1.25
20ºC	Capacity kW	5.96	5.92	5.90	5.73	5.48	5.40	4.86
	Input kW.	1.56	1.44	1.40	1.38	1.35	1.34	1.28
22ºC	Capacity kW	5.93	5.88	5.86	5.69	5.44	5.36	4.83
	Input kW.	1.59	1.46	1.42	1.40	1.37	1.36	1.30
27ºC	Capacity kW	5.80	5.84	5.82	5.65	5.40	5.32	4.79

	Input kW.	1.62	1.49	1.45	1.43	1.40	1.39	1.32

6.11 CTA-24HVR1

MODEL		**CTA-24HVR1**						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	7.95	7.83	7.81	7.58	7.25	7.14	6.43
	Input kW.	2.10	2.04	1.99	1.96	1.92	1.90	1.81
18ºC	Capacity kW	7.90	7.78	7.75	7.53	7.20	7.09	6.39
	Input kW.	2.13	2.08	2.02	1.99	1.95	1.94	1.85
20ºC	Capacity kW	7.86	7.73	7.70	7.47	7.15	7.04	6.35
	Input kW.	2.19	2.12	2.06	2.06	1.99	1.97	1.88
22ºC	Capacity kW	7.82	7.67	7.65	7.65	7.10	6.99	6.30
	Input kW.	2.23	2.15	2.09	2.09	2.02	2.01	1.91
27ºC	Capacity kW	7.73	7.62	7.59	7.59	7.05	6.94	6.26
	Input kW.	2.28	2.19	2.13	2.13	2.06	2.04	1.95

6.12 CTB-36HVR1-A, CTB-36HVR1-B

MODEL		**CTB-36HVR1**						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	12.11	11.70	11.66	11.32	10.83	10.67	9.61
	Input kW.	3.24	3.08	2.99	2.95	2.89	2.87	2.73
18ºC	Capacity kW	12.08	11.62	11.58	11.24	10.75	10.59	9.54

	Input kW.	3.28	3.13	3.04	3.00	2.94	2.92	2.78
20ºC	Capacity kW	12.04	11.54	11.50	11.16	10.68	10.52	9.48
	Input kW.	3.33	3.19	3.10	3.06	2.99	2.97	2.83
22ºC	Capacity kW	12.00	11.46	11.42	11.09	10.60	10.44	9.41
	Input kW.	3.39	3.24	3.15	3.11	3.04	3.02	2.88
27ºC	Capacity kW	11.73	11.38	11.34	11.01	10.53	10.37	9.35
	Input kW.	3.48	3.30	3.21	3.17	3.10	3.08	2.93

6.13 CTB-48HVR1

MODEL		**CTB-48HVR1**						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	15.59	15.46	15.41	14.97	14.30	14.09	12.70
	Input kW.	4.73	4.36	4.23	4.17	4.08	4.05	3.86
18ºC	Capacity kW	15.43	15.35	15.30	14.87	14.22	13.99	12.62
	Input kW.	4.83	4.42	4.30	4.23	4.14	4.14	3.92
20ºC	Capacity kW	15.35	15.25	15.2	14.76	14.12	13.91	12.52
	Input kW.	4.89	4.52	4.39	4.33	4.23	4.20	4.01
22ºC	Capacity kW	15.28	15.15	15.10	14.66	14.01	13.81	12.44
	Input kW.	4.99	4.58	4.45	4.39	4.30	4.26	4.08
27ºC	Capacity kW	14.94	15.05	14.99	14.56	13.91	13.71	12.34
	Input kW.	5.08	4.67	4.55	4.48	4.39	4.36	4.14

6.14 CTB-60HVR1

MODEL		CTB-60HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	18.05	17.90	17.84	17.33	16.56	16.32	14.71
	Input kW.	5.52	5.08	4.94	4.86	4.75	4.72	4.50
18ºC	Capacity kW	17.87	17.78	17.72	17.21	16.47	16.20	14.62
	Input kW.	5.63	5.16	5.01	4.94	4.83	4.83	4.57
20ºC	Capacity kW	17.78	17.66	17.6	17.09	16.35	16.11	14.50
	Input kW.	5.71	5.27	5.12	5.05	4.94	4.90	4.68
22ºC	Capacity kW	17.69	17.54	17.48	16.97	16.23	15.99	14.41
	Input kW.	5.81	5.34	5.19	5.12	5.01	4.97	4.75
27ºC	Capacity kW	17.30	17.42	17.36	16.85	16.11	15.87	14.29
	Input kW.	5.92	5.45	5.30	5.23	5.12	5.08	4.83

6.15 CTH-48HVR1

MODEL		CTH-48HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	15.59	15.46	15.41	14.97	14.30	14.09	12.70
	Input kW.	4.91	4.52	4.39	4.32	4.23	4.19	4.00
18ºC	Capacity kW	15.43	15.35	15.30	14.87	14.22	13.99	12.62
	Input kW.	5.01	4.58	4.45	4.39	4.29	4.29	4.06

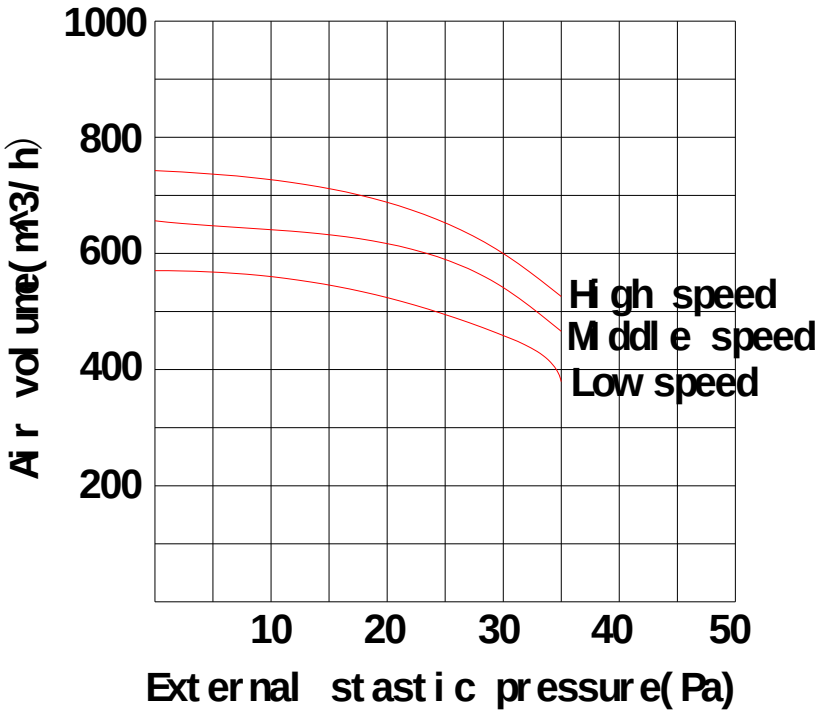
20ºC	Capacity kW	15.35	15.25	15.2	14.76	14.12	13.91	12.52
	Input kW.	5.07	4.68	4.55	4.49	4.39	4.36	4.16
22ºC	Capacity kW	15.28	15.15	15.10	14.66	14.01	13.81	12.44
	Input kW.	5.17	4.75	4.62	4.55	4.45	4.42	4.23
27ºC	Capacity kW	14.94	15.05	14.99	14.56	13.91	13.71	12.34
	Input kW.	5.27	4.84	4.71	4.65	4.55	4.52	4.29

6.16 CTH-60HVR1

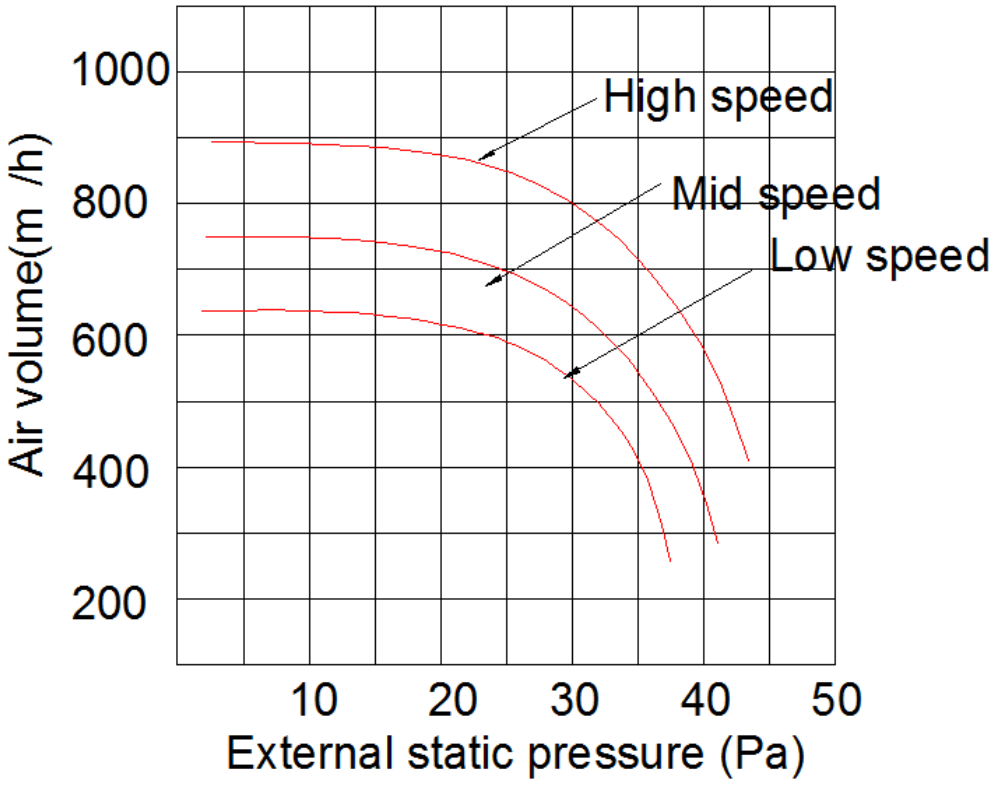
MODEL		**CTH-48HVR1**						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	18.05	17.90	17.84	17.33	16.56	16.32	14.71
	Input kW.	5.69	5.24	5.09	5.02	4.90	4.87	4.64
18ºC	Capacity kW	17.87	17.78	17.72	17.21	16.47	16.20	14.62
	Input kW.	5.81	5.32	5.17	5.09	4.98	4.98	4.71
20ºC	Capacity kW	17.78	17.66	17.6	17.09	16.35	16.11	14.50
	Input kW.	5.88	5.43	5.28	5.20	5.09	5.05	4.83
22ºC	Capacity kW	17.69	17.54	17.48	16.97	16.23	15.99	14.41
	Input kW.	6.00	5.51	5.36	5.28	5.17	5.13	4.90
27ºC	Capacity kW	17.30	17.42	17.36	16.85	16.11	15.87	14.29
	Input kW.	6.11	5.62	5.47	5.39	5.28	5.24	4.98

7. Static Pressure

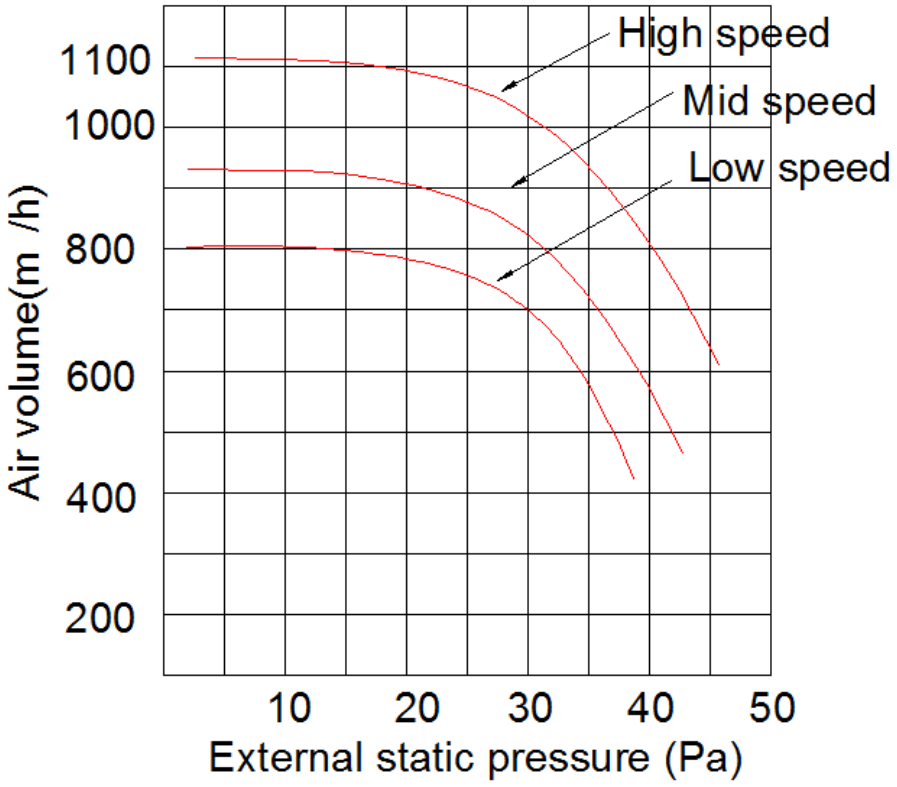
7.1 CTA-12HVR1



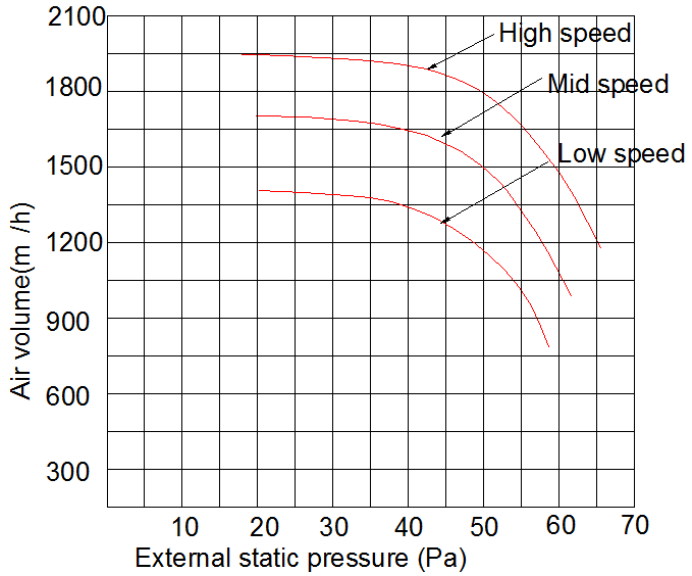
7.2 CTA-18HVR1



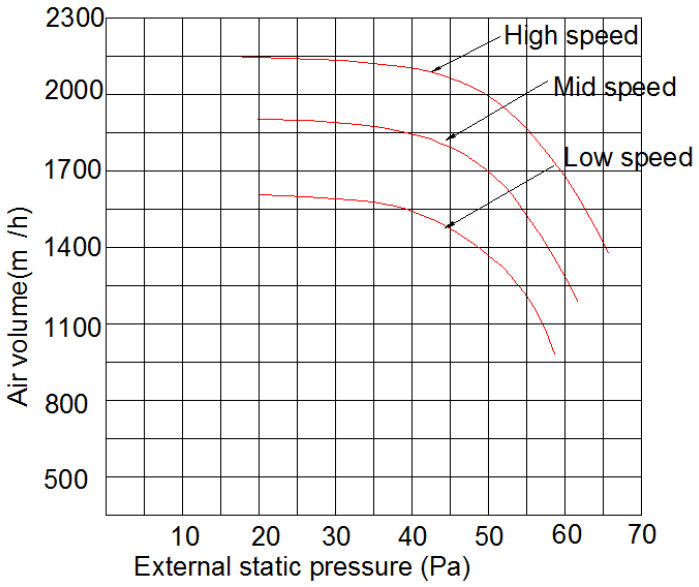
7.3 CTA-24HVR1



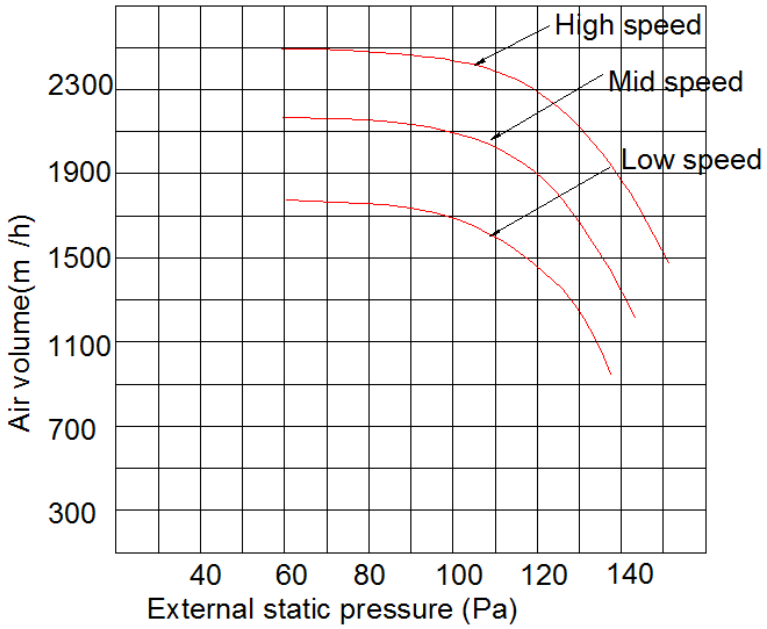
7.4 CTB-36HVR1-A, CTB-36HVR1-B



7.5 CTB-48/60HVR1



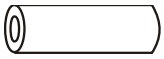
7.6 CTH-48/60HVR1



8 Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CTA-12HVR1	50	220-240V	198V	254V	0.040
CTA-18HVR1	50	220-240V	198V	254V	0.068
CTA-24HVR1	50	220-240V	198V	254V	0.068
CTB-36HVR1-A	50	220-240V	198V	254V	0.225
CTB-36HVR1-B	50	220-240V	198V	254V	0.225
CTB-48HVR1	50	220-240V	198V	254V	0.225
CTB-60HVR1	50	220-240V	198V	254V	0.225
CTH-48HVR1	50	220-240V	198V	254V	0.3
CTH-60HVR1	50	220-240V	198V	254V	0.3

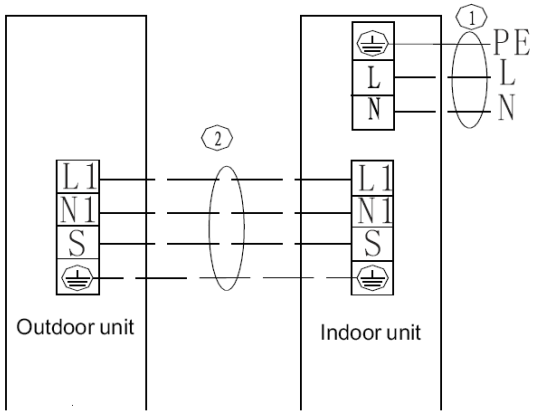
9 Accessories

	Name	Shape	Quantity
Tubing & Fittings	Soundproof/insulation sheath		2
	Binding tape		1
	Seal sponge		1
Drainpipe Fittings	Seal ring		1
Controllers	Remote controller (optional)		1
others	Operation & installation instruction manual		1

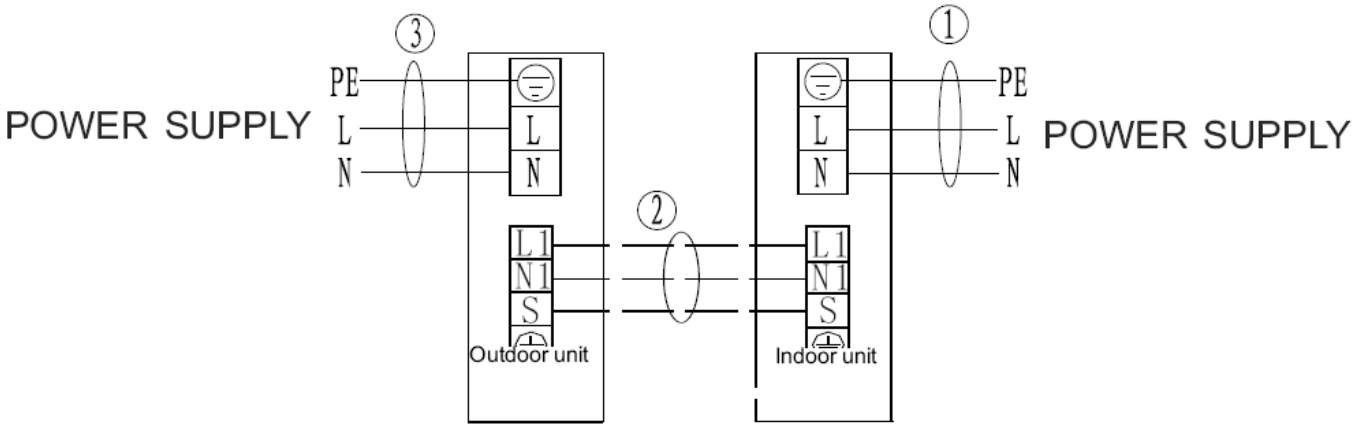
10 The Specification of Wiring

Model			12kBtu/h	18kBtu/h	24kBtu/h	36kBtu/h	36kBtu/h,48kBtu/h, 60kBtu/h
Indoor power supply		V/Ph/Hz	220~240/1/50				
Outdoor power supply		V/Ph/Hz	220~240/1/50				380~415/3/50
Connection wiring	Outdoor Power Supply		From indoor unit	From indoor unit	From indoor unit	Power supply individually for indoor and outdoor	Power supply individually for indoor and outdoor
	Power wiring	mm^2	3×2.5	3×2.5	3×2.5	3×1.5 / 3×4.0	3×1.5 / 5×2.5
	Signal wiring	mm^2	4×2.5	4×2.5	4×2.5	3×1.0	3×1.0

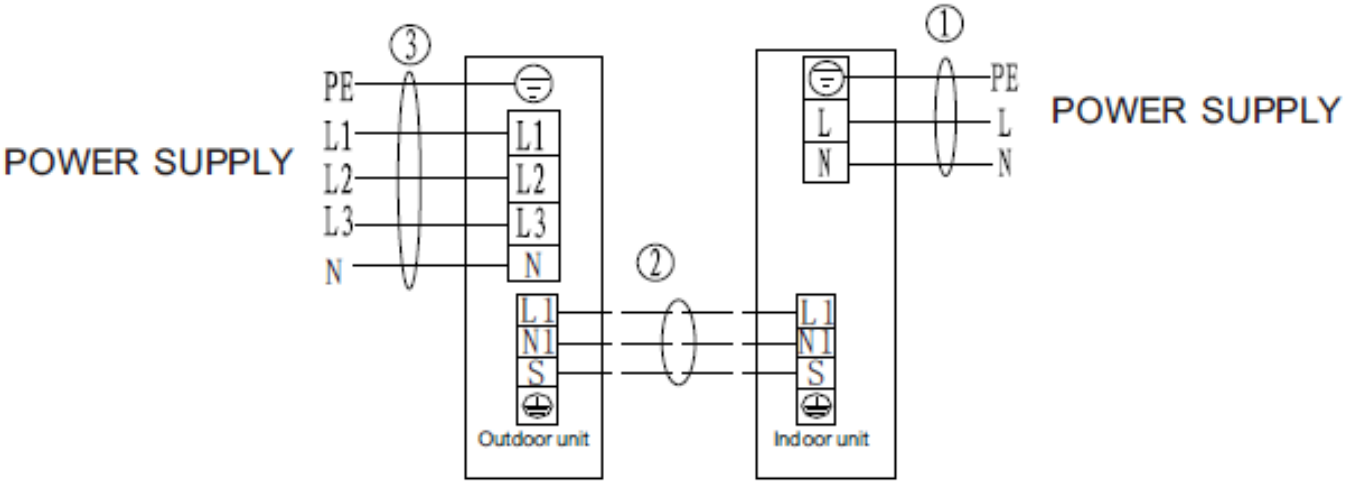
11 Field Wiring



Applies to (220V/50Hz)3.5kW,5.3kW,7.1kW



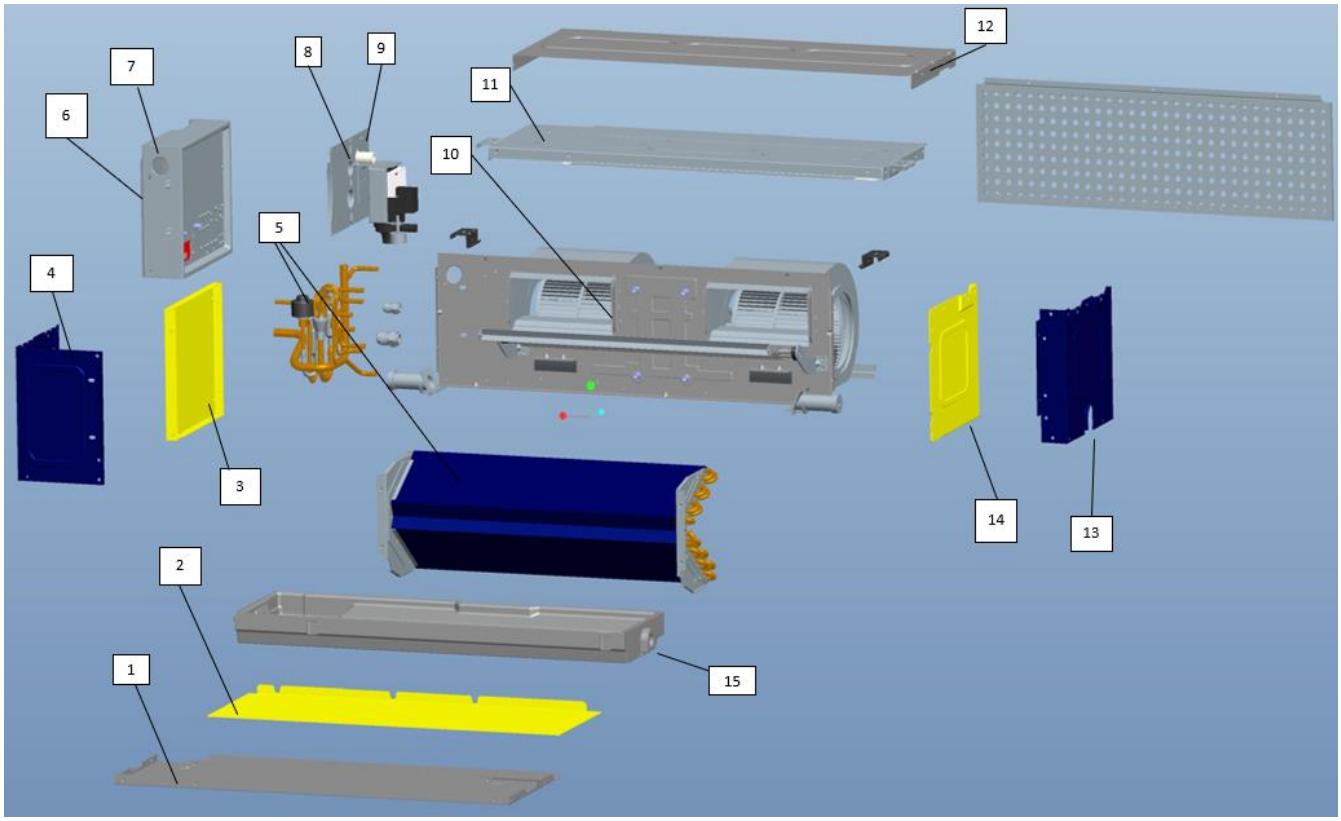
Applies to (220V/50Hz) 10.5kW model



Applies to (380V/50Hz) ⩾10.5kW model

12 Exploded View

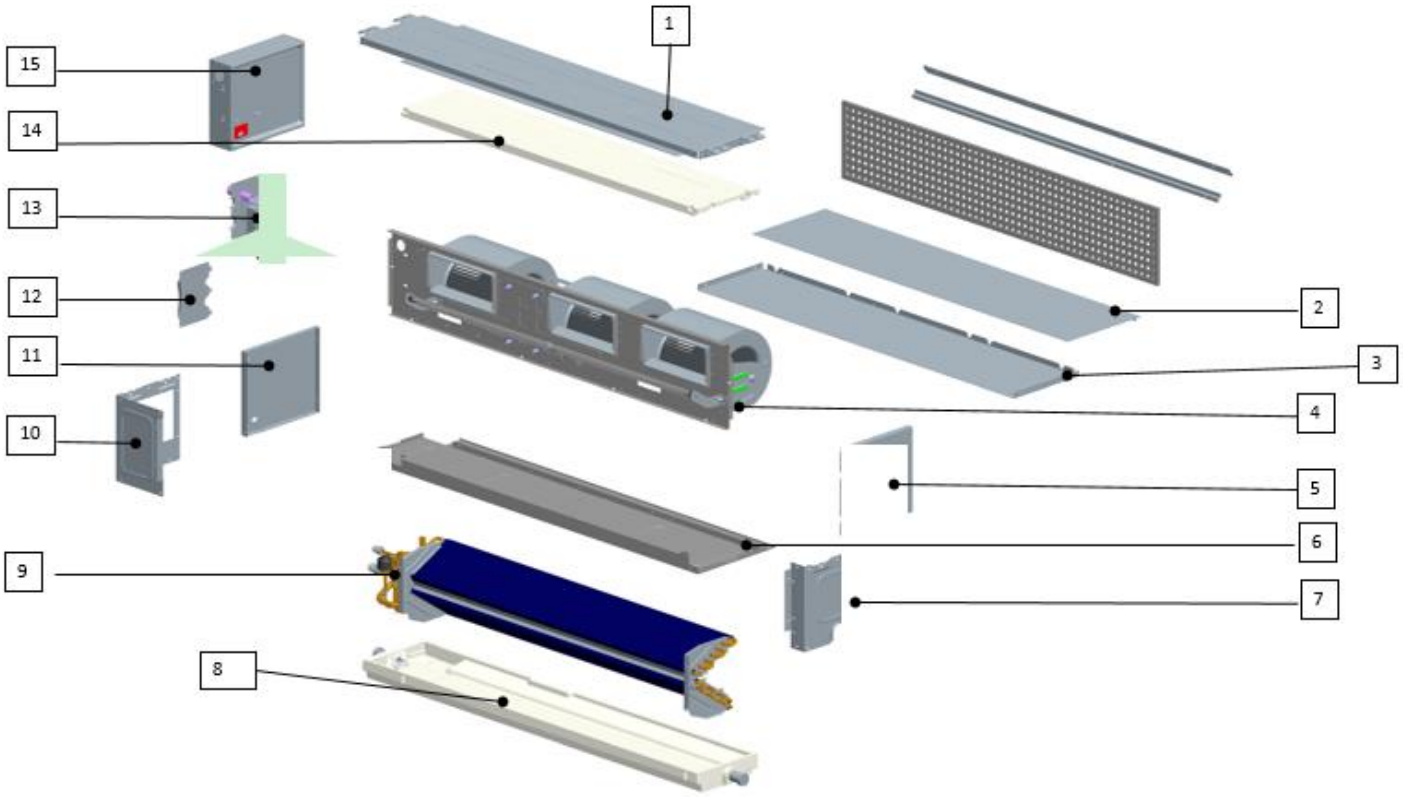
12.1 CTA-12HVR1



No.	Part Name	No.	Part Name
1	bottom plate	7.4	Terminal
2	bottom plate of air return box	7.5	Relay
3	left plate of air return box	7.6	Indoor PCB
4	Left cover	8	Outlet cover applicator assembly
5	Evaporator component	9	Fixed plate cotton component
5.1	Evaporator	10	Fan motor

5.1.1	Evaporator fix plate 1	10.1	Fan fixing plate assembly
5.1.2	Evaporator fix plate 2	10.2	Motor bushing right gland
5.1.3	top evaporator	10.3	Motor bushing left gland
5.1.4	down evaporator	10.4	Wind turbine volute
5.1.5	Distributing component	10.5	Saddle type clamping sleeve
5.1.6	Interflow component	10.6	Fan motor connecting plate
5.1.7	Single joint welding assembly	10.7	Fan motor support
5.1.8		10.8	DC Fan motor
5.1.9	Evaporator fixing hook	11	Top cover
6	Electric control box cover	12	top cover of air return box
7	Electronic control unit	13	right cover plate
7.1	Electric control box bottom plate	14	right cover of air return box
7.2	Electric control board plastic base	15	Foam water tray
7.3	Crimping button		

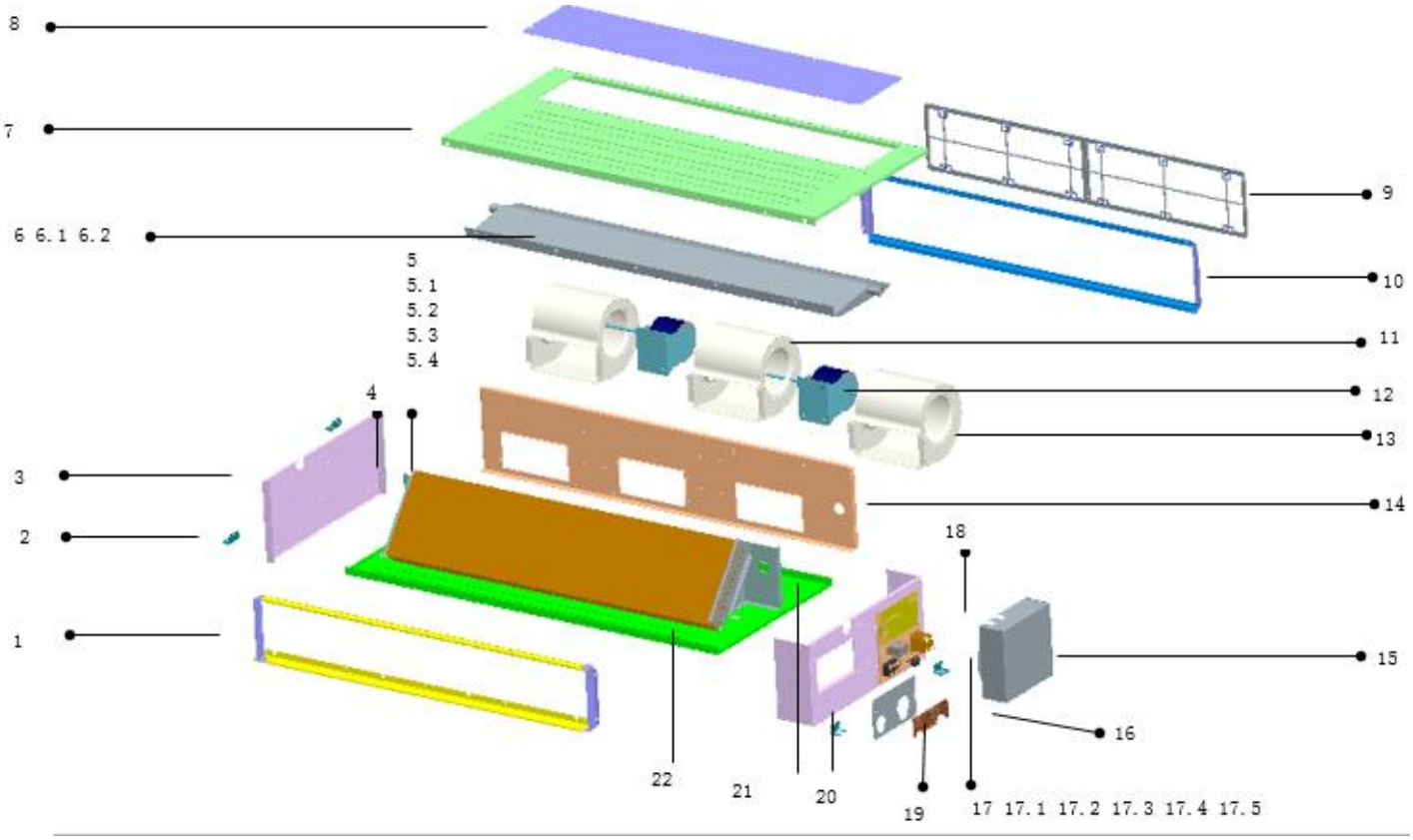
12.2 CTA-18HVR1, CTA-24HVR1



No.	Part Name	No.	Part Name
1	Cover attached cotton assay	9	Evaporator
1.1	Cover plate assay	9.1	Evaporator assy
1.1.1	Cover	9.1.1	Up evaporator
1.1.2	Hook	9.1.2	Down evaporator
1.2	Cover cotton	9.1.3	Collecting pipe assy
1.3	Cotton on outlet	9.1.4	Shunt assy
1.4	Cotton on the cover	9.2	Damped rubber
2	Panel upper air inlet channel	9.3	Damped rubber
3	Panel bellow air inlet channel	9.4	sheath insulation
4	Motor assy	9.5	sheath insulation
4.1	Cotton on fan fixing board assy	10	Left clapboard attached cotton assy
4.2	Holder for fan motor	10.1	Left clapboard
4.3	Wind turbine volute	10.2	Left clapboard cotton
4.4	Biaxial indoor DC	10.3	Left and right outlet cotton
4.5	Motor support joint	11	Left inlet clapboard attached cotton assy
4.6	Right fixing clamp for motor	11.1	Left clapboard of air inlet channel
4.7	Left fixing clamp for motor	11.2	The right plate of air inlet channel
4.8	Axis	12	Cotton posted a pipe cover assy
4.9	Bearing holder	12.1	Output pipe of left clapboard
4.10	The holder of axis assy	12.2	Cotton posted a pipe cover

5	The right plate of air inlet channel	13	Pump holder attached cotton assy
6	Panel bellow attached cotton assy	13.1	Pump holder
6.1	Down Panel assy	13.2	Pump cover sponge
6.1.1	Down Panel	14	Up foam
6.1.2	Fan fixed plate	15	E-parts assy
6.2	Down outlet cotton	15.1	Base for electric control
6.3	Down panel cotton	15.2	Electric control cover
7	Right clapboard cotton assy	15.3	Plastic base for PCB
7.1	Right clapboard	15.4	Electronic control board for indoor unit
7.2	Right clapboard cotton	15.5	Terminal
8	Bubble water pan	15.6	Relay

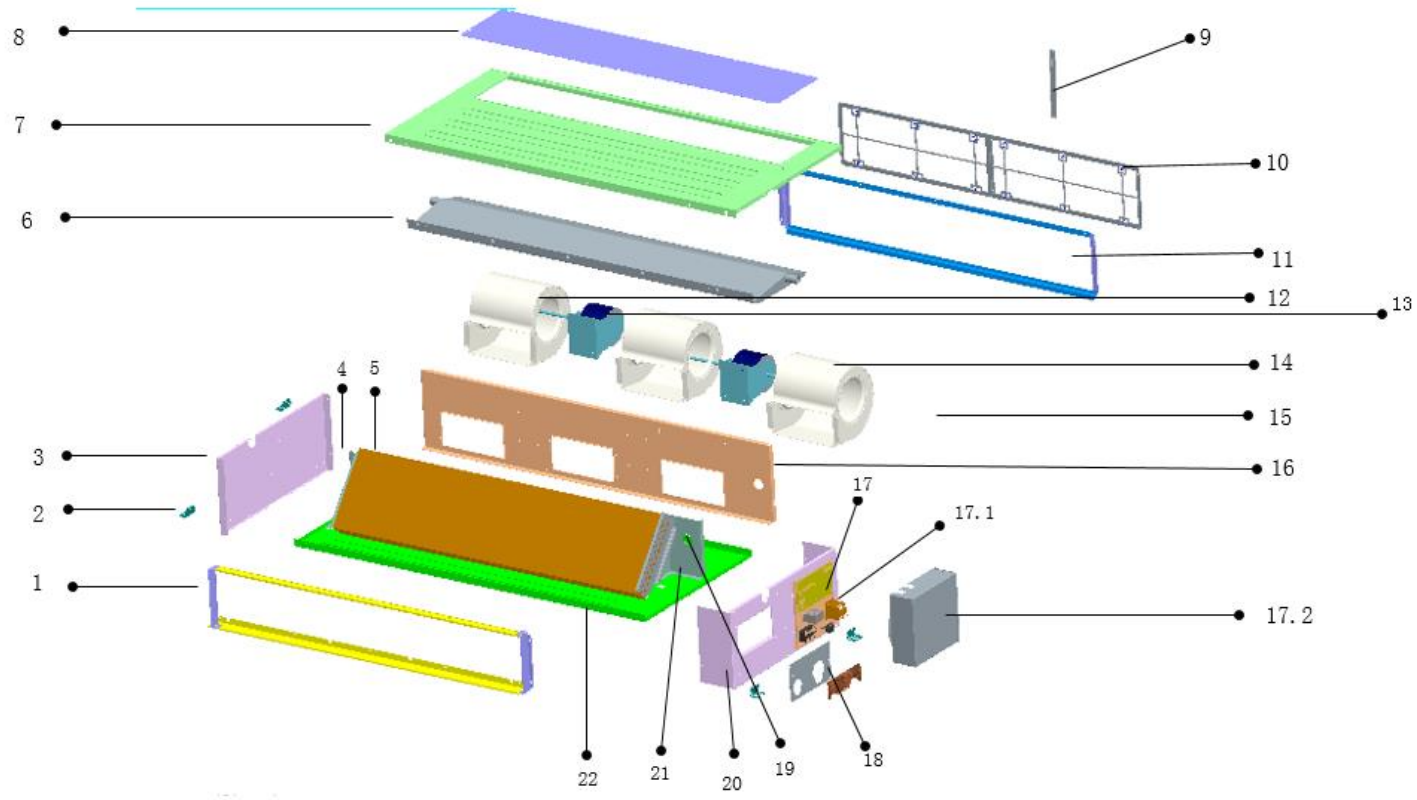
12.2 CTB-36HVR1-A, CTB-36HVR1-B



No.	Part Name	No.	Part Name
1	Air outlet assy	12	Indoor motor1
2	Hanger	12.1	Indoor motor2
3	Left side board	13	Right scroll case
4	Left connecting panel for evaporator	14	Fixing board assy for fan
5	Evaporator components	15	E- parts box cover
5.1	Transitron	16	Small cover
5.2	Current dividing assy	17	Electronic control components
5.3	Collecting pipe assy	17.1	Electronic control board for indoor unit

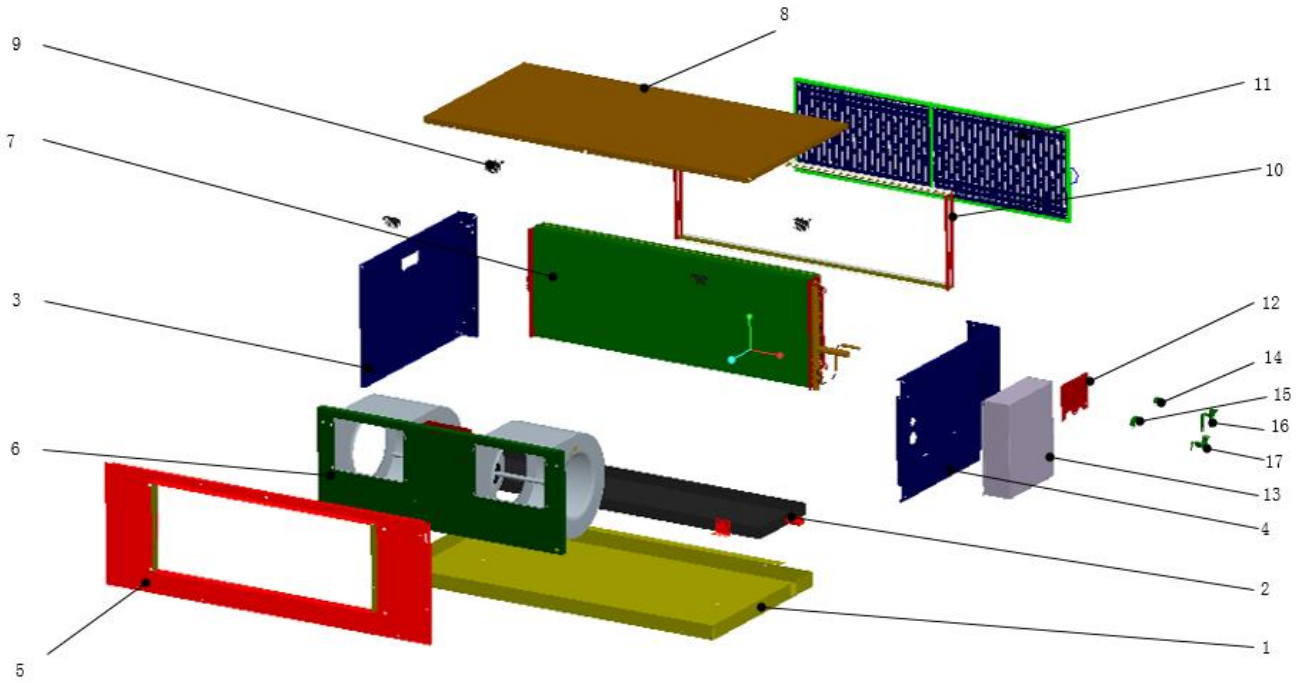
5.4	Evaporator assy	17.2	Temp sensor
5.5	Installation tube for probe	17.3	Terminal
6	Water pan assy	17.4	Terminal
6.1	Discharge pipe assy	17.5	Groove clamp 7
6.2	Rubber cover for water outlet joint	18	E- parts box base
7	Lower panel	19	Big cover
8	Air return baffle	20	Right side board
9	Air filter	21	Right connecting panel for evaporator
10	Air return assy	22	Upper panel
11	Left scroll case		

12.3 CTB-48HVR1, CTB-60HVR1



No.	Part Name	No.	Part Name
1	Air outlet cotton assy	15	Right wind wheel scroll case
2	Hanger	16	Fixing board assy for fan
3	Left side board	17	Electronic control components
4	Left connecting panel for evaporator	17.1	E- parts cover
5	Evaporator component	17.2	E- parts box chassis
5.1	Current dividing assy	17.3	Electronic control board for indoor unit
5.2	Collecting pipe assy	17.4	Temperature sensor group
5.3	Evaporator	18	Cover panel cotton assy
5.4	Installation tube for probe	19	Evaporator seal board
6	Water pan	20	Right side panel cotton assy
7	Bottom panel cotton assy	21	Right connecting panel for evaporator
8	Air return cotton assy	22	Upward side panel cotton assy
9	Upright		
10	Air filter		
11	Air return assy		
12	Left wind wheel scroll case		
13	Motor for indoor unit		
14	Motor for indoor unit		

12.4 CTH-48HVR1, CTH-60HVR1



No.	Part Name	No.	Part Name
1	Chassis assy	8.1	Upper cover
1.1	Chassis welded assembly	9	Hanger
2	Water pan assy	10	Return air welding assy
2.1	Water pan welded assembly	10.1	Upper fixed board for air returning
2.2	water outlet rubber cover	10.2	Lower fixed board for air returning
3	Left side board assy	10.3	Filter guide groove
3.1	Left side board	10.4	Air baffle
3.2	Handle	11	Filter
4	Right side board assy	12	Valve plate assy
4.1	Right side board	12.1	Valve plate
5	Front panel assy	13	E-parts assy
5.1	Front panel welded assembly	13.1	Electric box base plate

6	Fan assy	13.2	Electric box cover
6.1	Fan mounting plate welded assembly	13.3	Temperature sensor assy
6.2	Motor	13.4	Terminal
6.3	Left scroll case	13.5	Electric control board
6.4	Right scroll case	13.6	Compressor capacitor
7	Evaporator assy	13.7	Capacitor clamp
7.1	Evaporator welded assembly	14	Φ20 upper pipe clamp
7.1.1	Evaporator assembly	15	Φ35 upper pipe clamp
7.1.2	Current dividing assy	16	Φ20 lower pipe clamp
7.1.3	Air inlet header pipe assembly of evaporator	17	Φ35 lower pipe clamp
8	Upper cover assy		

12.Trouble shooting

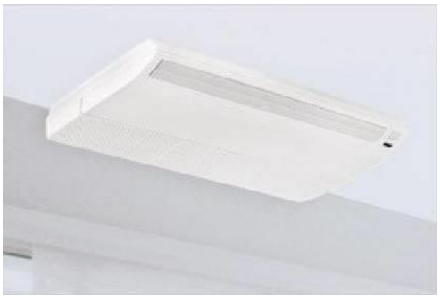
Fault code table(12-18Kbtu/h)

Fault Description	4LED fault indication	Digital display	Wired remote display
Indoor and outdoor unit communication failure	Timing lights flash	E1	E1
Temperature sensor(T1) fault	Running lights flash	E2	E2
Pipe temperatures 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
Indoor fan motor problem	Timer light flash slowly	E8	E8
Water over protection	Warming lights flash	EE	EE
Wire controller communication failure		E9	E9
Note: The flash frequency for each of the above indicator is 2.5Hz, 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			CUA-18HVR1	CUA-24HVR1
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	2.0-5.3-5.6	3.5-7.0-8.0
	Power input	W	420-2100	600-2150-3000
	Current input	A	2.1-10.1	2.5-9.8-13
	EER	W/W	3.33	3.26
	SEER	W/W	6.1	6.1
Heating	Capacity	KW	2.5-6.0	4.5-7.7-8.5
	Input	W	500-1940	1500-2000-2600
	Rated current	A	2.5-9.2	5.5-9.2-11
	COP	W/W	4.12	3.72
	SCOP	W/W	4.0	4.0
Energy rate		Cooling	A++	A++
Energy rate		Heating	A+	A+
Max. power input		W	2400	3200
Max. current input		A	11.4	14
Indoor fan motor	Model		DR-310-120LD-8	DR-310-120LD-8
	Brand		Panasonic	Panasonic
	Power output	W	120	120
	Speed	r/min	1400	1400
	Insulation class		E	E
Indoor coil	Number of rows		2	3
	Tube pitch(a)xrow pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved

	Coil length x height x width	mm	1000x252x26.74	1000x252x40.11
	Number of circuits		2	4
Indoor air flow (High speed)		m^3/h	900/800/650	1150/1000/850
Indoor noise level	power level	dB(A)	46～58	53～60
	pressure level		36/42/47	43/46/49
Indoor unit	Dimension (W*H*D)	Body(mm)	1245×680×240	1245×680×240
	Packing (W*H*D)	Body(mm)	1325×770×325	1325×770×325
	Net/Gross weight	Body(Kg)	34/40	35/41
Max pressure		MPa	4.2	4.2
Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ6.35/Φ12.7	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		℃	16～32	16～32
Ambient temp	cooling	℃	-15～50	-15～50
	heating	℃	-15～30	-15～30

Model			CUA-36HVR1-A	CUA-36HVR1-B
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	6.6-10.5-12.8	6.6-10.5-12.8
	Power input	W	1050-3275-4660	1050-3275-4660
	Current input	A	4.2-14.8-24.8	1.2-8-10
	EER	W/W	3.21	3.21
	SEER	W/W	5.1	5.1
Heating	Capacity	KW	7.35-11.5-13.2	7.35-11.5-13.2
	Input	W	1100-3050-4150	1100-3050-4150

	Rated current	A	4.2-14.5-21.4	1.5-7.8-9
	COP	W/W	3.77	3.77
	SCOP	W/W	4.0	4.0
Energy rate		Cooling	A	A
Energy rate		Heating	A+	A+
Max. power input		W	4800	4800
Max. current input		A	26	10.3
Indoor fan motor	Model		DR-310-120LD-8	DR-310-120LD-8
	Brand		Panasonic	Panasonic
	Power output	W	120	120
	Capacitor	μF	-	-
	Speed	r/min	1400	1400
	Insulation class		E	E
Indoor coil	Number of rows		3	3
	Tube pitch(a)xrow pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length x height x width	mm	1000x252x40.11	1000x252x40.11
	Number of circuits		4	4
Indoor air flow (High speed)		m^3/h	1800/1650/1500	1800/1650/1500
Indoor noise level	power level	dB(A)	56～65	56～65
	pressure level		45/48/51	45/48/51
Indoor unit	Dimension (W*H*D)	Body(mm)	1245×680×240	1245×680×240
	Packing (W*H*D)	Body(mm)	1325×770×325	1325×770×325
	Net/Gross weight	Body(Kg)	35/41	35/41
Max pressure		MPa	3.8	3.8

Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		℃	16～32	16～32
Ambient temp	cooling	℃	-15～50	-15～50
	heating	℃	-15～30	-15～30

Model			CUA-48HVR1	CUA-60HVR1
Indoor power supply		V/Ph/Hz	220~240V/1Ph/50Hz	220~240V/1Ph/50Hz
Cooling	Capacity	KW	14.0(7.15-15.6)	16.0(7.8-17.5)
	Power input	kW	4.86(1.22-5.58)	5.43(1.9-6.1)
	Current input	A	8.95	9.95
	EER	W/W	2.88	2.95
Heating	Capacity	KW	15.2(8.0-17.2)	17.6(8.5-19.5)
	Input	W	4.31(1.2-5.28)	5.06(2.0-6.5)
	Rated current	A	8.05	9.35
	COP	W/W	3.53	3.48
Energy rate		Cooling	A	A
Energy rate		Heating	A	A
Max. power input		W	6100	6800
Max. current input		A	11.4	12.8
Indoor fan motor	Model		YSK110-85LD-4P2	YSK110-85LD-4P2
	Brand		Yong'an	Yong'an
	Power output	W	85	85
	Capacitor	μF	5	5
	Speed	r/min	1560/1430/1300	1560/1430/1300
	Insulation class		B	B
Indoor coil	Number of rows		4	4
	Tube pitch(a) x row pitch(b)	mm	22x19.1	22x19.1
	Fin spacing	mm	1.7	1.7
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7.94	Φ7.94
			inner grooved	inner grooved
	Coil length x height x width	mm	1382x242x76.2	1382x242x76.2

	Number of circuits		4	4
Indoor air flow (High speed)		m^3/h	2000	2000
Indoor noise level	power level	dB(A)	56-67	57-67
	pressure level		45-52	46-52
Indoor unit	Dimension (W*H*D)	Body(mm)	1670x680x240	1670x680x240
	Packing (W*H*D)	Body(mm)	1750x765x330	1750x765x330
	Net/Gross weight	Body(Kg)	49/55.5	49/55.5
Max pressure		MPa	4.5	4.5
Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Standard controller			Standard for remote controller(wired controller for option)	
Operation temp		°C	16～32	16～32
Ambient temp	cooling	°C	-15～50	-15～50
	heating	°C	-15～30	-15～30

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)

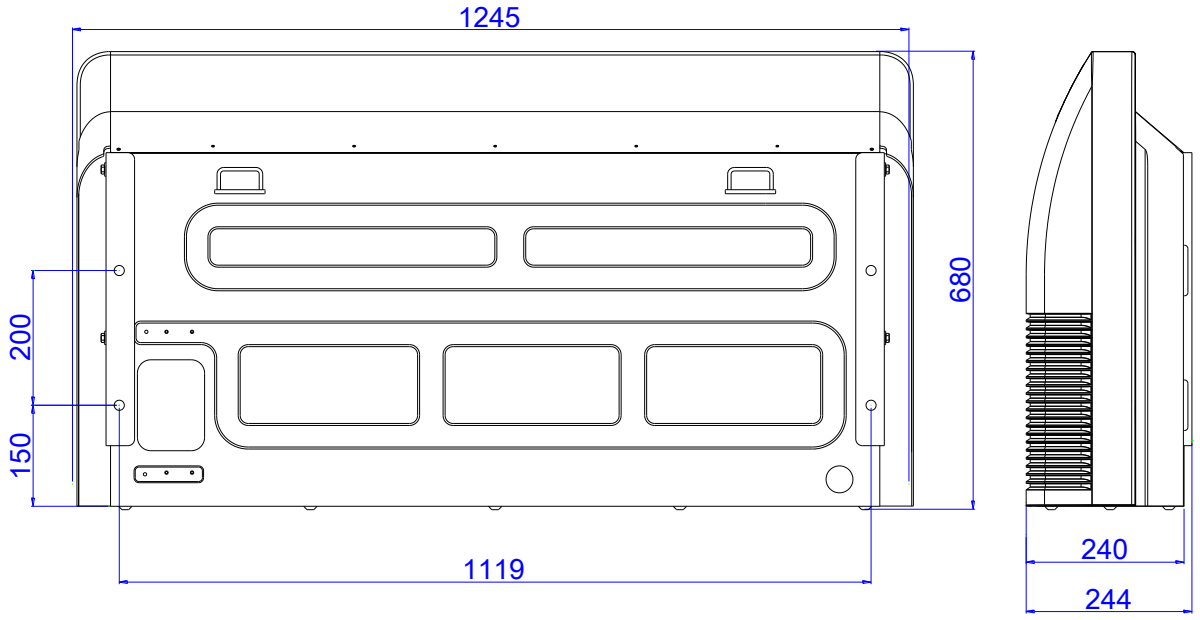
2.Nominal heating capacities are based on the following conditions:

Indoor temp: 20°CDB; Outdoor temp: 7°CDB, 6°CWB; Equivalent ref. Piping: 5m (horizontal)

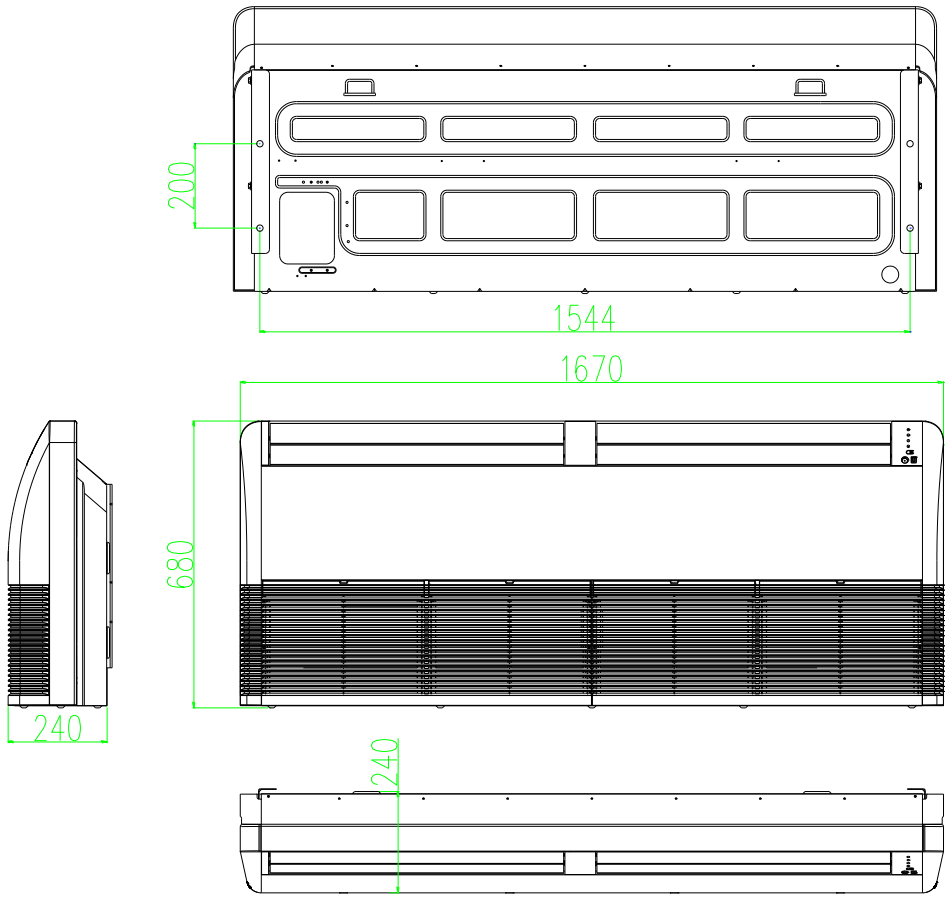
3. Actual noise level may differ, depending on the room structure, etc, since these noise values are from an anechoic room.

3 Dimensions

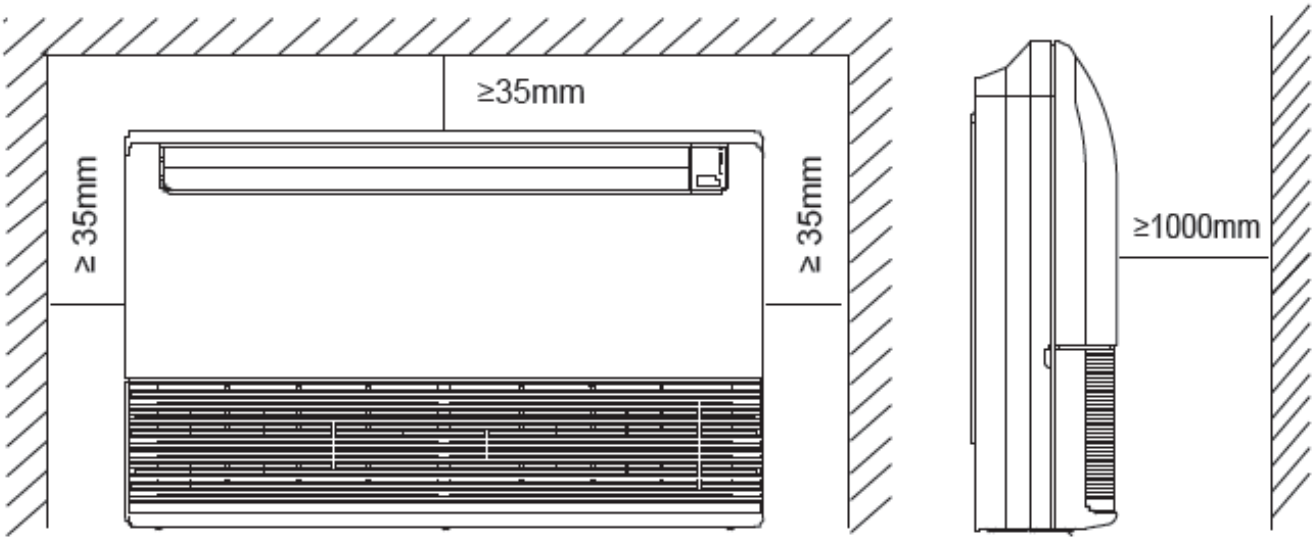
CUA-18HVR1, CUA-24HVR1, CUA-36HVR1-A, CUA-36HVR1-B



CUA-48HVR1, CUA-60HVR1



4 Service Space



5 Wiring Diagrams
5.1 CUA-18HVR1

NOTE:

That DIP to ON	
That DIP to Digital	
FACTORY DEFAULT	

Indoor models Select bits

SW2 NO.1.2	Indoor models
	Floor&Ceiling Unit

Note1:if there is no water pump, CN18 need to short answer.

The power (HP) 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		Reserved	0.8	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved
POWER		Reserved	7K	9K	12K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved
SW1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

FAN SPEED CHOICE

SW2 NO.3	FAN SPEED
	Normal speed
	High speed

Receive and display light board

SW2 NO.4	
	LED
	Digital tube

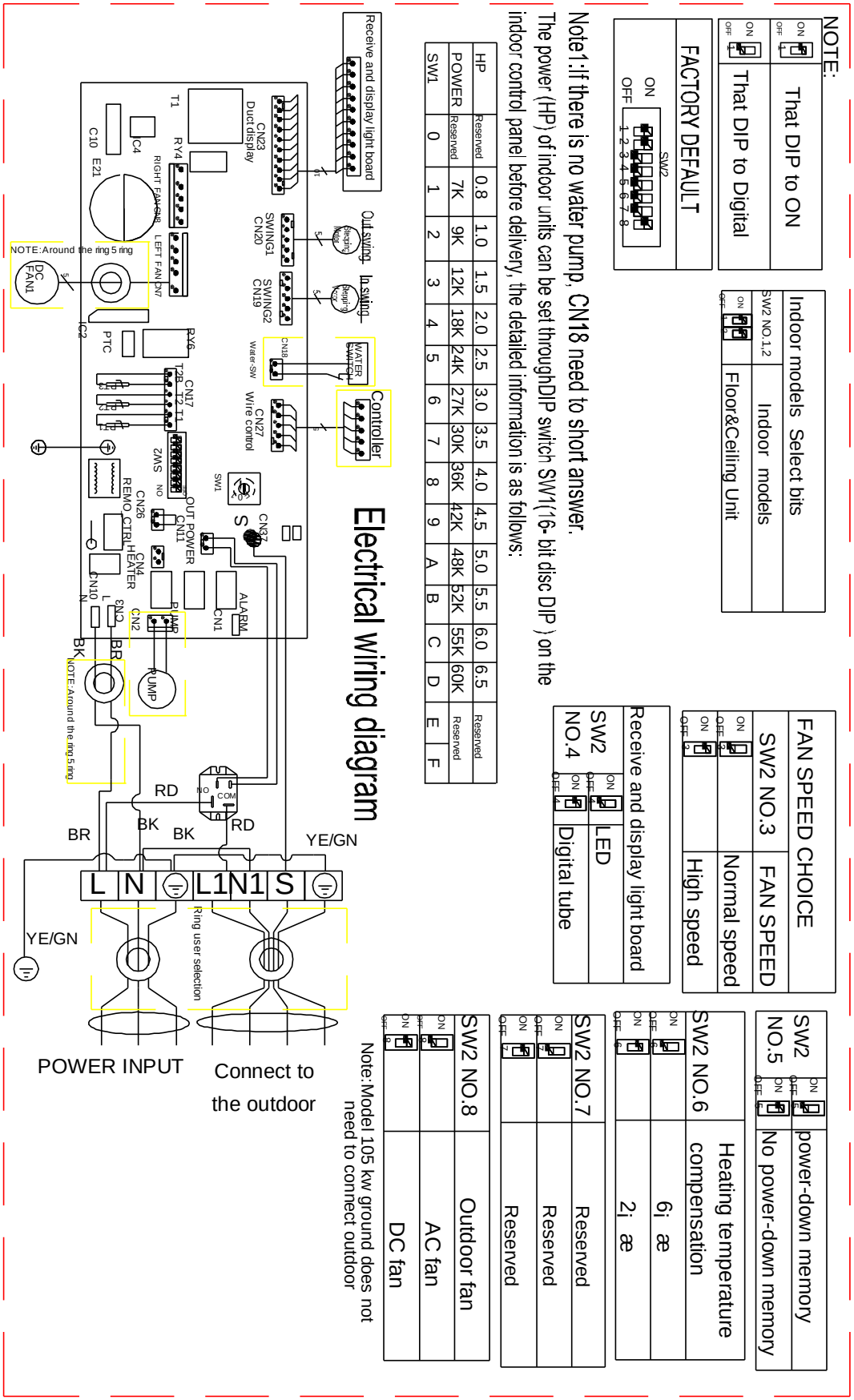
SW2 NO.5	
	power-down memory
	No power-down memory

SW2 NO.6	Heating temperature compensation
	6¡ æ
	2¡ æ

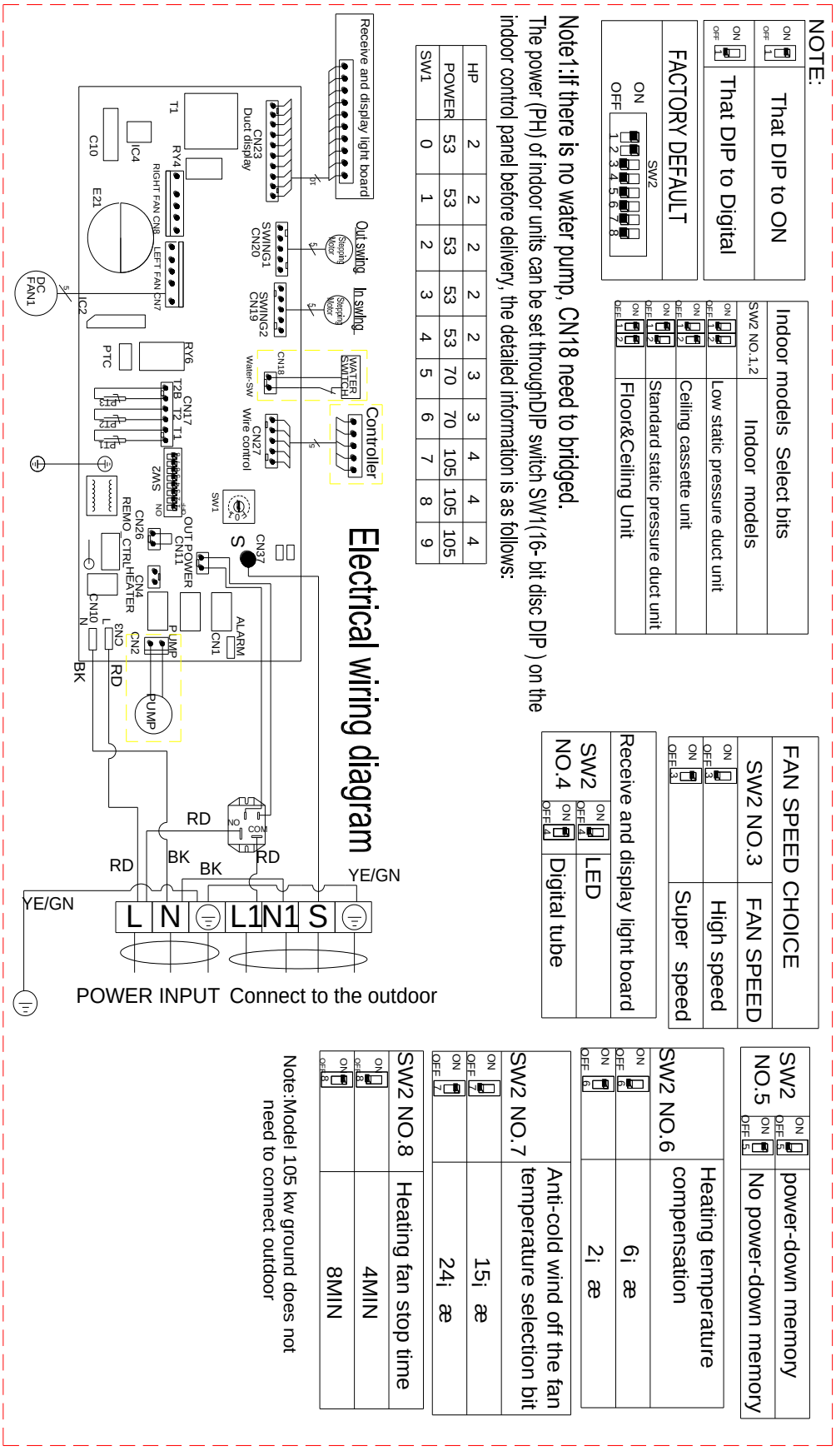
SW2 NO.7	Reserved
	Reserved
	Reserved

SW2 NO.8	Outdoor fan
	AC fan
	DC fan

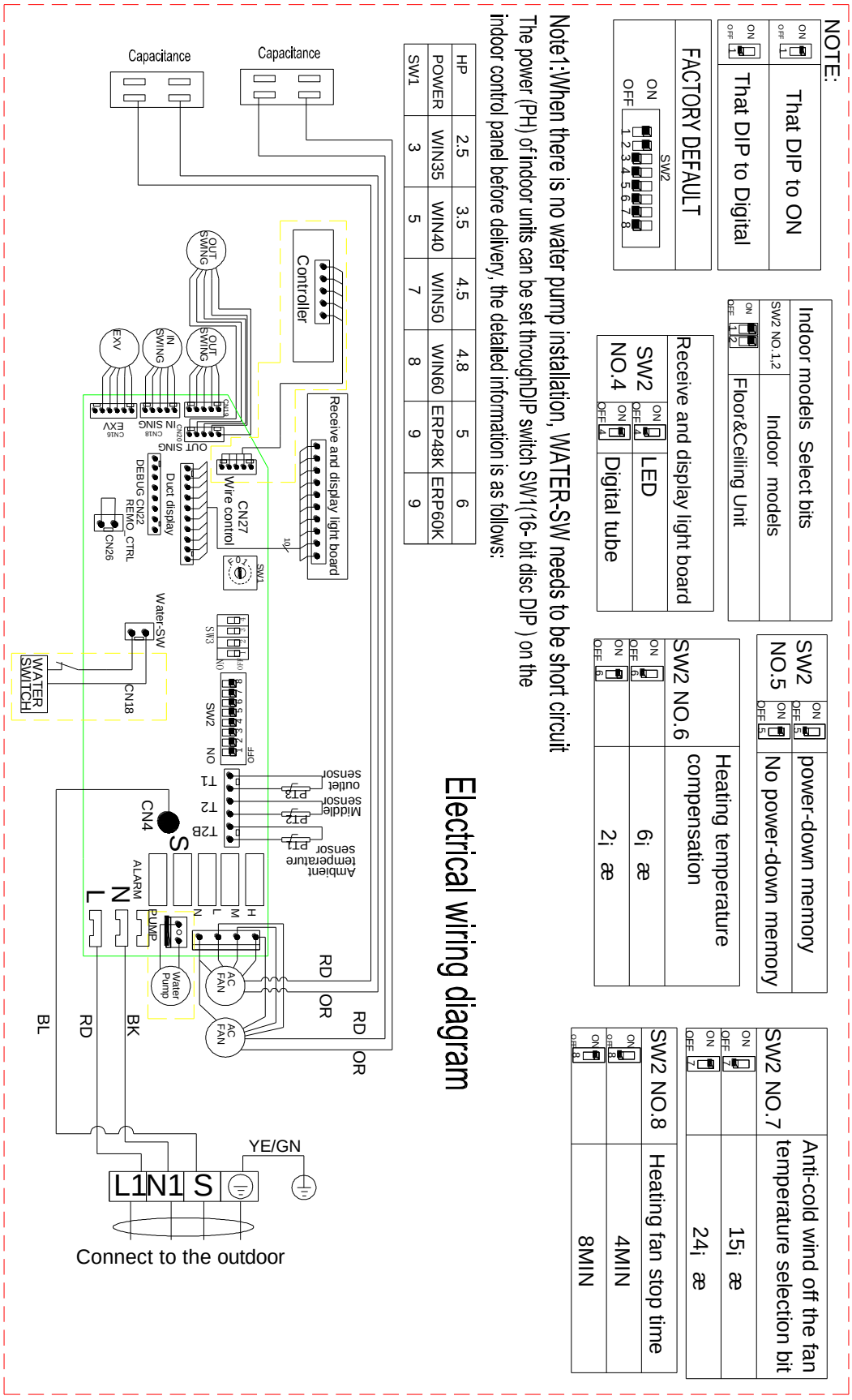
Note:Model 105 kw ground does not need to connect outdoor



5.2 CUA-24HVR1, CUA-36HVR1-A, CUA-36HVR1-B



5.3 CUA-48HVR1, CUA-60HVR1


NOTE:
That DIP to ON
That DIP to Digital
FACTORY DEFAULT
SW2
Indoor models Select bits
Indoor models
Floor&Ceiling Unit
SW2 NO.1,2
Receive and display light board
SW2 NO.4
LED
Digital tube
SW2 NO.5
power-down memory
No power-down memory
SW2 NO.6
Heating temperature compensation
6℃
2℃
SW2 NO.7
Anti-cold wind off the fan temperature selection bit
15℃
24℃
SW2 NO.8
Heating fan stop time
4MIN
8MIN
Note1:When there is no water pump installation, WATER-SW needs to be short circuit
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 2.5 3.5 4.5 4.8 5 6
POWER WIN35 WIN40 WIN50 WIN60 ERP48K ERP60K
SW1 3 5 7 8 9 9
Electrical wiring diagram
Capacitance
Capacitance
Controller
Receive and display light board
Wire control
Duct display
Water-SW
WATER SWITCH
Ambient temperature sensor
Middle sensor
Tube sensor
Water Pump
AC FAN
AC FAN
RD
OR
BL
RD
BK
YE/GN
L1 N1 S
Connect to the outdoor

6. Capacity Table

Cooling

6.1 CUA-18HVR1

MODEL		CUA-18HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49ºC
21ºC D 15ºC W	Total capacity Kw	5.09	5.06	5.03	4.99	4.95	4.91	4.88
	Input kW.	1.51	1.52	1.54	1.56	1.61	1.67	1.72
24ºC D 17ºC W	Total capacity kW	5.25	5.22	5.18	5.15	5.10	5.06	5.03
	Input kW.	1.53	1.54	1.56	1.58	1.64	1.69	1.74
27ºC D 19ºC W	Total capacity kW	5.41	5.38	5.34	5.30	5.26	5.22	5.18
	Input kW.	1.55	1.56	1.58	1.60	1.66	1.72	1.76
29ºC D 21ºC W	Total capacity kW	5.48	5.44	5.40	5.36	5.32	5.28	5.24
	Input kW.	1.57	1.59	1.61	1.63	1.68	1.74	1.79
32ºC D 23ºC W	Total capacity kW	5.58	5.55	5.51	5.47	5.42	5.38	5.34
	Input kW.	1.58	1.59	1.61	1.63	1.69	1.75	1.80

6.2 CUA-24HVR1

MODEL		CUA-24HVR1						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21ºC	25ºC	30ºC	35ºC	40ºC	45ºC	49ºC
21ºC DB 15ºC WB	Total capacity kW	6.82	6.78	6.73	6.68	6.63	6.58	6.53
	Input kW.	2.03	2.05	2.07	2.10	2.17	2.25	2.31
24ºC DB 17ºC WB	Total capacity kW	7.04	7.00	6.95	6.89	6.84	6.78	6.74
	Input kW.	2.05	2.07	2.10	2.12	2.20	2.28	2.34

27ºC DB 19ºC WB	Total capacity kW	7.25	7.21	7.15	7.00	7.04	6.99	6.94
	Input kW.	2.08	2.10	2.12	2.15	2.23	2.31	2.37
29ºC D 21ºC W	Total capacity kW	7.34	7.29	7.24	7.19	7.13	7.07	7.03
	Input kW.	2.11	2.13	2.16	2.19	2.26	2.34	2.41
32ºC DB 23ºC WB	Total capacity kW	7.48	7.43	7.38	7.32	7.26	7.21	7.16
	Input kW.	2.121	2.14	2.17	2.19	2.27	2.35	2.42

6.3 CUA-36HVR1-A, CUA-36HVR1-B

MODEL		CUA-36HVR1						
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 CUA-48HVR1

MODEL		CUA-18HVR1						
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 CUA-60HVR1

MODEL		CUA-18HVR1						
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	Total capacity kW	16.33	16.24	16.12	16	15.88	15.76	15.64

19ºC W	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

Heating

6.6 CUA-18HVR1

MODEL		CUA-18HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	6.05	6.00	5.98	5.81	5.55	5.47	4.86
	Input kW.	1.51	1.37	1.34	1.32	1.29	1.28	1.22
18ºC	Capacity kW	5.99	5.96	5.94	5.77	5.52	5.43	4.90
	Input kW.	1.54	1.40	1.36	1.34	1.31	1.30	1.24
20ºC	Capacity kW	5.96	5.92	5.90	5.73	5.48	5.40	4.86
	Input kW.	1.56	1.42	1.39	1.37	1.34	1.33	1.27
22ºC	Capacity kW	5.93	5.88	5.86	5.69	5.44	5.36	4.83
	Input kW.	1.59	1.45	1.41	1.39	1.36	1.35	1.29
27ºC	Capacity kW	5.80	5.84	5.82	5.65	5.40	5.32	4.79
	Input kW.	1.62	1.47	1.43	1.41	1.39	1.38	1.31

6.7 CUA-24HVR1

MODEL		CUA-24HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	7.95	7.83	7.81	7.58	7.25	7.14	6.43
	Input kW.	2.10	1.99	1.94	1.91	1.87	1.86	1.77
18ºC	Capacity kW	7.90	7.78	7.75	7.53	7.20	7.09	6.39
	Input kW.	2.13	2.03	1.97	1.94	1.90	1.89	1.80
20ºC	Capacity kW	7.86	7.73	7.70	7.47	7.15	7.04	6.35
	Input kW.	2.19	2.06	2.00	1.98	1.94	1.92	1.83
22ºC	Capacity kW	7.82	7.67	7.65	7.42	7.10	6.99	6.30
	Input kW.	2.23	2.10	2.04	2.01	1.97	1.96	1.86
27ºC	Capacity kW	7.73	7.62	7.59	7.37	7.05	6.94	6.26
	Input kW.	2.28	2.14	2.08	2.05	2.01	1.99	1.90

6.8 CUA-36HVR1-A, CUA-36HVR1-B

MODEL		CUA-36HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	12.11	11.70	11.66	11.32	10.83	10.67	9.61
	Input kW.	3.24	3.04	2.95	2.91	2.85	2.83	2.70
18ºC	Capacity kW	12.08	11.62	11.58	11.24	10.75	10.59	9.54
	Input kW.	3.28	3.09	3.01	2.97	2.90	2.88	2.75

20ºC	Capacity kW	12.04	11.54	11.50	11.16	10.68	10.52	9.48
	Input kW.	3.33	3.15	3.05	3.02	2.96	2.94	2.80
22ºC	Capacity kW	12.00	11.46	11.42	11.09	10.60	10.44	9.41
	Input kW.	3.39	3.20	3.11	3.07	3.01	2.99	2.84
27ºC	Capacity kW	11.73	11.38	11.34	11.01	10.53	10.37	9.35
	Input kW.	3.48	3.26	3.17	3.13	3.06	3.04	2.90

6.9 CUA-48HVR1

MODEL		CUA-18HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	15.59	15.46	15.41	14.97	14.30	14.09	12.52
	Input kW.	4.68	4.25	4.15	4.09	4.00	3.97	3.78
18ºC	Capacity kW	15.43	15.35	15.30	14.87	14.22	13.99	12.62
	Input kW.	4.78	4.34	4.22	4.15	4.06	4.03	3.84
20ºC	Capacity kW	15.35	15.25	15.2	14.76	14.12	13.91	12.52
	Input kW.	4.84	4.40	4.31	4.25	4.15	4.12	3.94
22ºC	Capacity kW	15.28	15.15	15.10	14.66	14.01	13.81	12.44
	Input kW.	4.93	4.50	4.37	4.31	4.22	4.19	4.00
27ºC	Capacity kW	14.94	15.05	14.99	14.56	13.91	13.71	12.34
	Input kW.	5.02	4.56	4.43	4.37	4.31	4.28	4.06

6.10 CUA-60HVR1

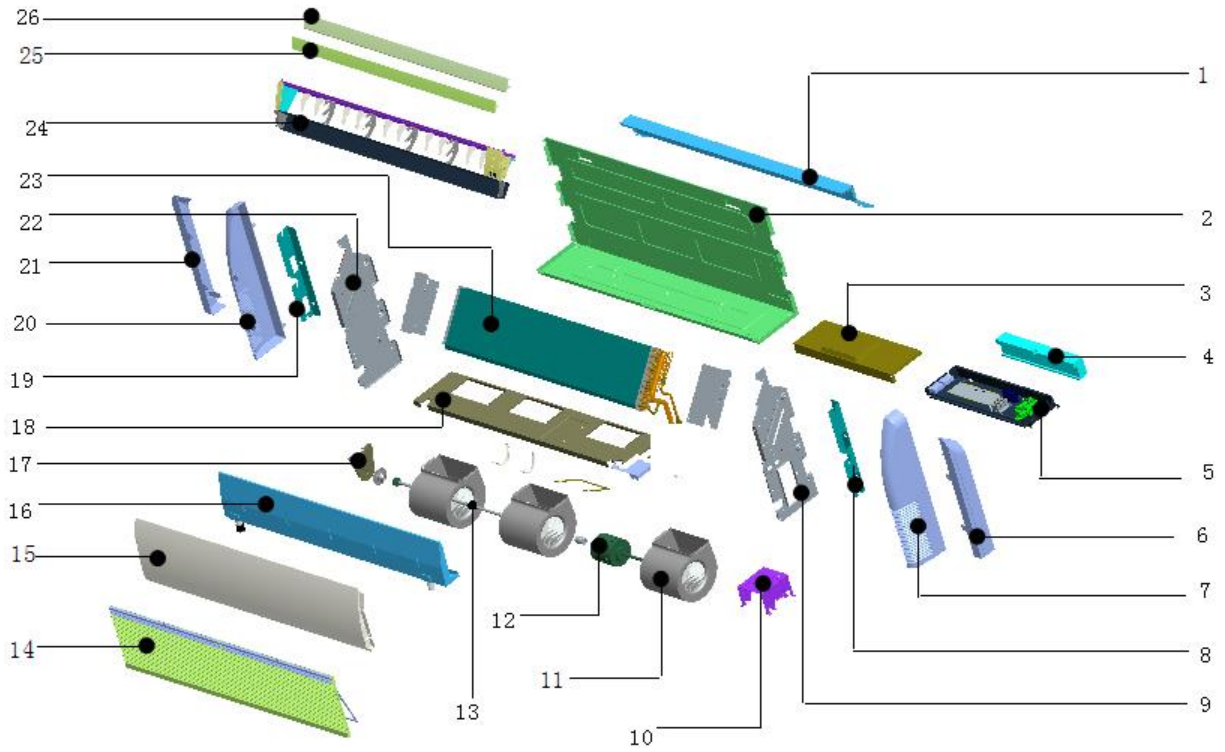
MODEL		CUA-18HVR1						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24ºC D 18ºC W	15ºC D 14ºC W	7ºC D 6ºC W	3ºC D 2ºC W	-5ºC D -6ºC W	-7ºC D -8ºC W	-14ºC D -15ºC W
15ºC	Capacity kW	18.05	17.90	17.84	17.33	16.56	16.32	14.50
	Input kW.	5.50	4.99	4.88	4.81	4.70	4.66	4.44
18ºC	Capacity kW	17.87	17.78	17.72	17.21	16.47	16.20	14.62
	Input kW.	5.61	5.10	4.95	4.88	4.77	4.73	4.51
20ºC	Capacity kW	17.78	17.66	17.6	17.09	16.35	16.11	14.50
	Input kW.	5.68	5.17	5.06	4.99	4.88	4.84	4.62
22ºC	Capacity kW	17.69	17.54	17.48	16.97	16.23	15.99	14.41
	Input kW.	5.79	5.28	5.13	5.06	4.95	4.91	4.70
27ºC	Capacity kW	17.30	17.42	17.36	16.85	16.11	15.87	14.29
	Input kW.	5.90	5.35	5.21	5.13	5.06	5.02	4.77

7 Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CUA-18HVR1	50	220-240V	198	254	0.12
CUA-24HVR1	50	220-240V	198	254	0.12
CUA-36HVR1-A	50	220-240V	198	254	0.12
CUA-36HVR1-B	50	220-240V	198	254	0.12
CUA-48HVR1	50	220-240V	198	254	0.085*2
CUA-60HVR1	50	220-240V	198	254	0.085*2

8. Exploded View

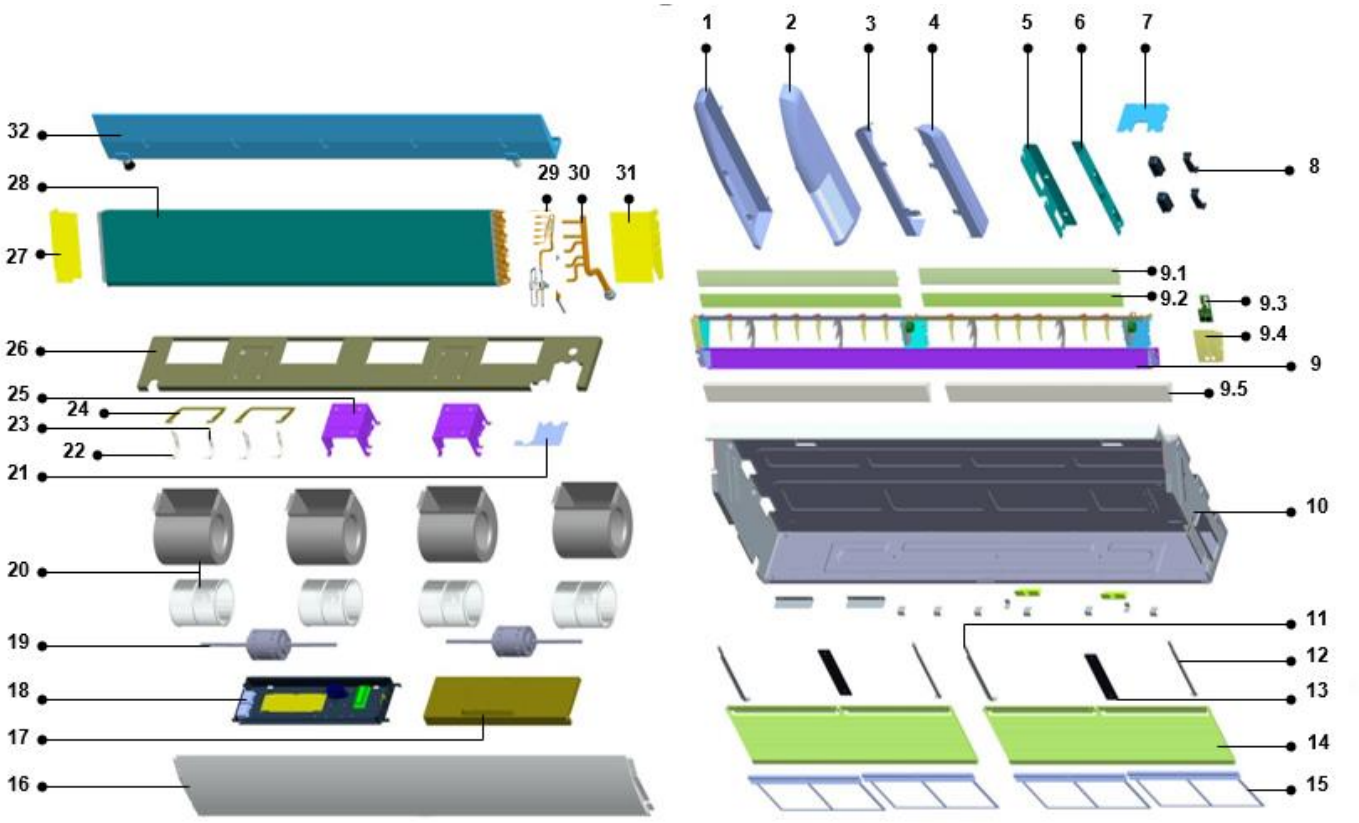
8.1 CUA-18HVR1, CUA-24HVR1, CUA-36HVR1-A, CUA-36HVR1-B



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 CUA-48HVR1, CUA-60HVR1



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

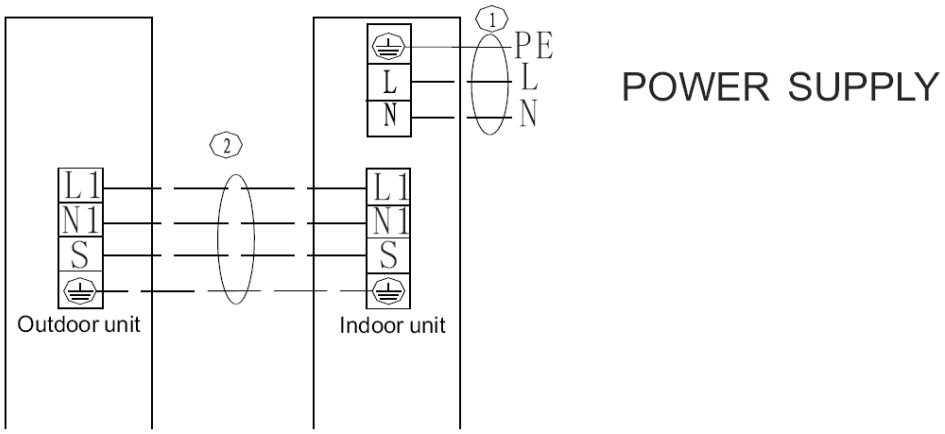
Installation fittings	Name	Shape	Quantity
	1.Hanging arm		2
Controller	2. Remote controller		1
	3. Remote controller holder (optional)		1
	5. Mounting screw (ST2.9×10-C-H)		2
	6. Alkaline dry batteries (AM4)		2
Others	7. Installation & operation instruction manual		1

10 The Specification of Power

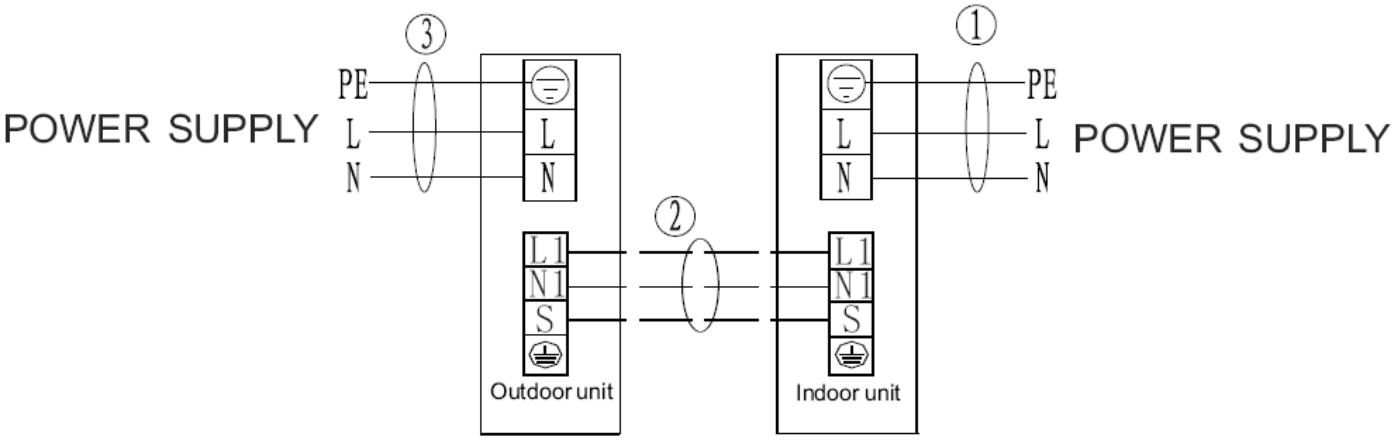
Model			18kBtu/h	24kBtu/h	36kBtu/h
Indoor power supply		V/Ph/Hz	220~240/1/50		
Outdoor power supply		V/Ph/Hz	220~240/1/50		
Connection wiring	Outdoor Power Supply		From indoor unit	From indoor unit	Power supply individually for indoor and outdoor
	Power wiring	mm^2	3×2.5	3×2.5	3×1.5 / 3×4.0
	Signal wiring	mm^2	4×2.5	4×2.5	3×1.0

Model			36kBtu/h	48kBtu/h	60kBtu/h
Indoor power supply		V/Ph/Hz	220~240/1/50		
Outdoor power supply		V/Ph/Hz	380-415/3/50		
Connection wiring	Outdoor Power Supply		Power supply individually for indoor and outdoor		
	Power wiring	mm^2	3×1.5 / 5x2.5		
	Signal wiring	mm^2	3×1.0		

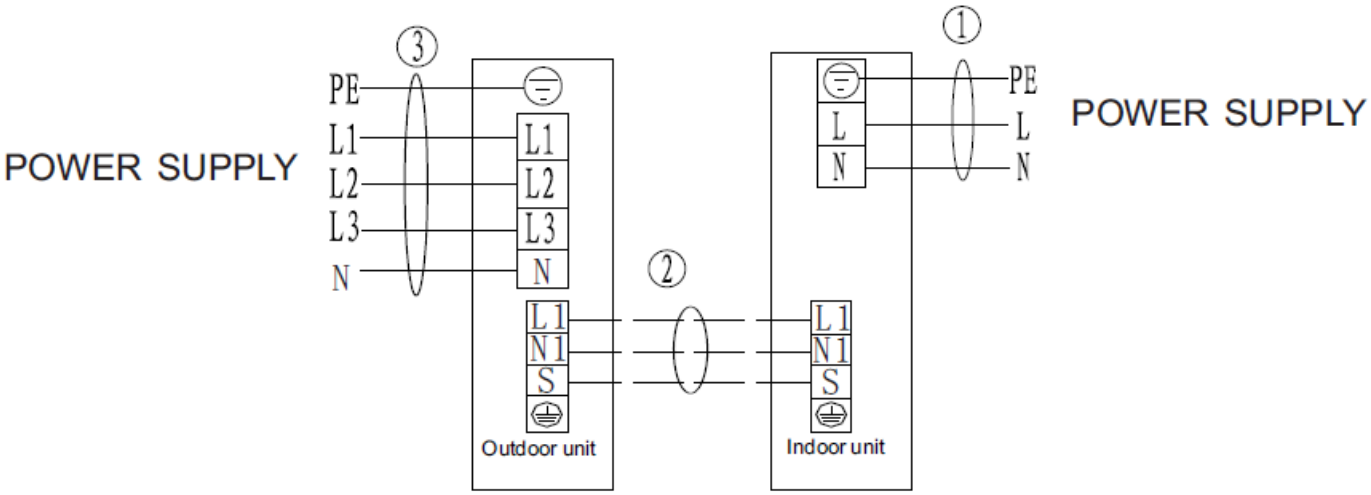
11 Field Wiring



Applies to (220V/50Hz) 5.3 kw,7.0kW models



Applies to (220V/50Hz) 10.5kW model



Applies to (380V/50Hz) 10.5kW,14.0kw,16.0kw models

12 Troubleshooting

Fault Description	4LED fault indication	Digital display	Wired remote display
Indoor and outdoor unit communication failure	Timing lights flash	E1	E1
Temperature sensor(T1) fault	Running lights flash	E2	E2
Pipe temperatures 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
Indoor fan motor problem	Timer light flash slowly	E8	E8
Water over protection	Warming lights flash	EE	EE
Wire controller communication failure		E9	E9
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			COU-12HDR1	COU-18HDR1	COU-24HDR1
Outdoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	1.4-3.5-3.8	2.0-5.3-5.6	4.5-7.0-8.0
	Power input	W	240-1240	340-2020	540-2940
	Current input	A	1.2-6.3	1.7-9.7	2.2-12.7
Heating	Capacity	KW	1.6-3.3-4.1	3.0-5.9-6.0	4.5-7.7-8.5
	Power input	W	290-1140	550-1550	1440-2540
	Current input	A	1.4-5.9	2.4-7.0	5.2-10.7
Compressor	Model		KNB102FEEMC	DA131S1B-28FZ	TNB220FFEMC
	Type		DC/Twin-rotory	DC/ROTARY	DC/ROTARY
	Brand		Mitsubishi	GMCC	Mitsubishi
	Frequency range	Hz	10-120	12-120	20-220
	Capacity	W	3270	3925	6940
	Input	W	960	1005	2150
	Current(RLA)	A	3.4	7.1	8.7
	Refrigerant oil	ml	270	450	520
Outdoor fan motor	Model		DR-310-60-8	DR-310-50-8	DR-310-72-8
	Brand		Panasonic	Panasonic	Panasonic
	Power output	W	60	50	72
	Speed	r/min	800	800	800
	Insulation class		E	E	E
Outdoor coil	Number of rows		2	2	2
	Tube pitch(a)xrow pitch(b)	mm	22×19.05	22×19.05	25×21.65
	Fin spacing	mm	1.6	1.6	1.8
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	7.94	7.94	9.52
			inner grooved	inner grooved	inner grooved
	Coil length x height x	mm	871x550x38.1	623×660×38.1	626×800×43.3

	width				
	Number of circuits		4	4	4
Outdoor air flow(High speed)		m^3/h	3800	4000	5000
Outdoor noise level dB(A)		Power Level	62	63	67
		Pressure Level	51	52	54
Outdoor unit	Dimension(W*H*D)	mm	900x610x352	925×700×366	958×843×392
	Packing(W*H*D)	mm	990×670×410	990×770×410	1025×880×430
	Net/Gross weight	kg	44/41	45/49	59/69
Refrigerant type/quantity		g	R410A/1200	R410A/1200	R410A/2400
Throttle part			EXV	EXV	EXV
Design pressure		MPa	4.2/1.6	4.4/1.1	4.4/1.1
Max pressure		MPa	4.2	3.8	3.8
Connection wire	Power wiring	mm^2	3×2.5	3×2.5	3×2.5
	Signal wiring	mm^2	4×2.5	4×2.5	4×2.5
Refrigerant piping	Liquid side/Gas side	mm	ф6.35/φ12.7	φ6.35/φ12.7	Φ9.52/Φ15.88
	Max. pipe length	m	15(30)	15	20
	Max. high drop	m	8(20)	8	10
Ambient temp	cooling	°C	-15～50	-15～50	-15～50
	heating	°C	-15～30	-15～30	-15～30

Model			COU-36HDR1-A	COU-36HZDR1
Outdoor power supply		V/Ph/Hz	220~240/1/50	380~415/3/50
Cooling	Capacity	KW	6.6-10.5-12.8	6.6-10.5-12.8
	Power input	W	650-4560	650-4560
	Current input	A	2.5-24	1-9.8
Heating	Capacity	KW	7.35-11.5-13.2	7.35-11.5-13.2
	Power input	W	1000-4050	1000-4050
	Current input	A	3.7-17.8	1.5-8.7
Compressor	Model		ATF310D43UMT	ATF310D43UMT

	Type		DC/Twin-rotary	DC/Twin-rotary
	Brand		GMCC	GMCC
	Frequency range	Hz	12-120	12-120
	Capacity	W	9435	9435
	Input	W	2575	2575
	Current(RLA)	A	5.05	5.05
	Refrigerant oil	ml	1000	1000
Outdoor fan motor	Model		DR-310-180-8	DR-310-180-8
	Brand		NIDEC	NIDEC
	Power output	W	180	180
	Speed	r/min	750	750
	Insulation class		E	E
Outdoor coil	Number of rows		2	2
	Tube pitch(a) x row pitch(b)	mm	21×13.4	21×13.4
	Fin spacing	mm	1.6	1.6
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length x height x width	mm	856×945×40.1	856×945×40.1
	Number of circuits		11	11
Outdoor air flow(High speed)		m3/h	6700	6700
Outdoor noise level	power level	dB(A)	68	68
	pressure level		55	55
Outdoor unit	Dimension(W*H*D)	mm	1050×995×347	1050×995×347
	Packing(W*H*D)	mm	1145×1120×475	1145×1120×475
	Net/Gross weight	kg	80/92	80/92
Refrigerant type/quantity		g	R410A/3800	R410A/3800
Throttle part			EXV	EXV
Design pressure		MPa	4.4/1.1	4.4/1.1

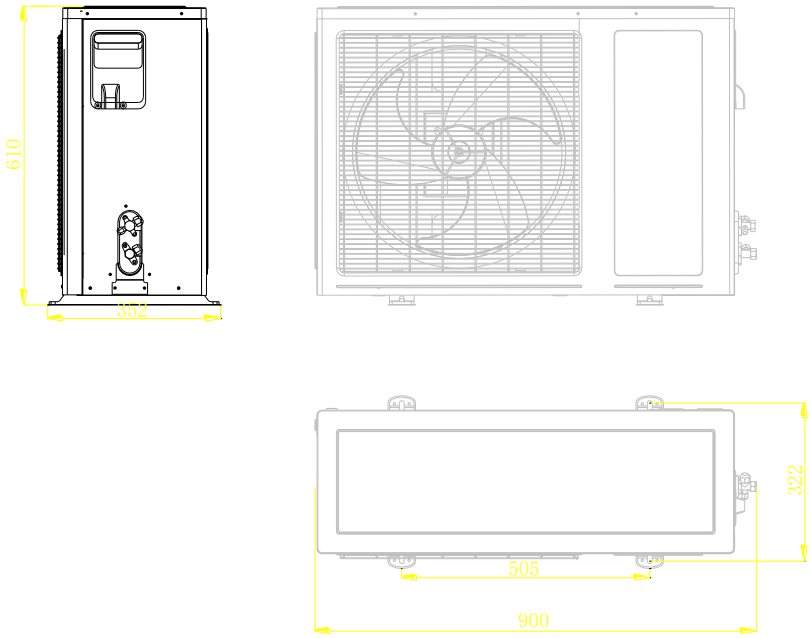
Max pressure		MPa	3.8	3.8
Connection wire	Power wiring	mm2	3×4.0	3×4.0
	Signal wiring	mm2	3×1.0	3×1.0
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
	Max. pipe length	m	50	50
	Max. high drop	m	20	20
Ambient temp	cooling	°C	-15～50	-15～50
	heating	°C	-15～30	-15～30
Stuffing Quantity		20'/40'/40'HQ	32/64/64	32/64/64

Model			COU-48HZVR1	COU-60HZVR1
Outdoor power supply		V/Ph/Hz	380~415/3/50	380~415/3/50
Cooling	Capacity	KW	14.0(7.15-15.6)	16.0(7.8-17.5)
	Power input	W	4600	5150
	Current input	A	7.8	8.8
Heating	Capacity	KW	15.2(8.0-17.2)	17.6(8.5-19.5)
	Power input	W	4050	4780
	Current input	A	6.9	8.2
Compressor	Model		ATQ420D2UMT	ATQ420D2UMT
	Type		Hermetic Rotary	Hermetic Rotary
	Brand		GMCC	GMCC
	Frequency range	Hz	12-120	12-120
	Capacity	W	12960	12960
	Input	W	3430	3430
	Current(RLA)	A	6.85	6.85
	Refrigerant oil	ml	1400	1400
Outdoor fan motor	Model		YDK-80-6P3-1	YDK-80-6P3-1
	Brand		Weiling	Weiling
	Power output	W	77	77
	Speed	r/min	780/630	780/630
	Insulation class		B	B
Outdoor coil	Number of rows		2	2
	Tube pitch(a) x row pitch(b)	mm	25×21.65	25×21.65
	Fin spacing	mm	1.6	1.6
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	9.52	9.52
			inner grooved	inner grooved
	Coil length x height x width	mm	1275x802x43.3	1275x802x43.3

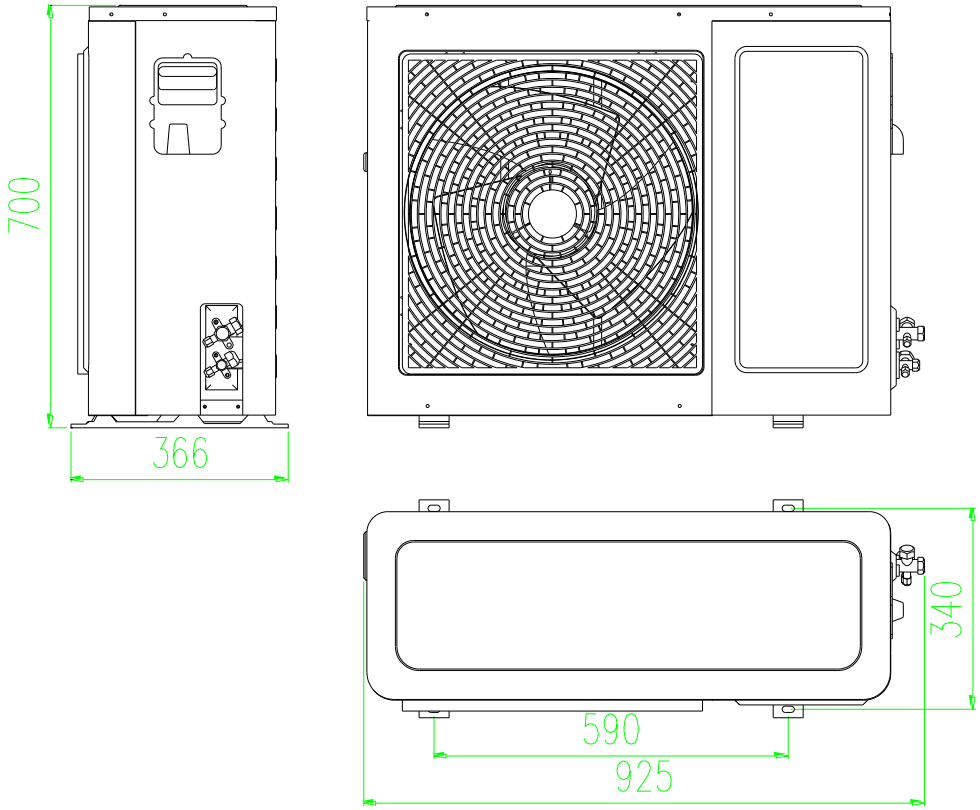
	Number of circuits		7	7
Outdoor air flow(High speed)		m3/h	7200	7200
Outdoor noise level	power level	dB(A)	70	70
	pressure level		58	58
Outdoor unit	Dimension(W*H*D)	mm	911×1330×400	911×1330×400
	Packing(W*H*D)	mm	964x1445x402	964x1445x402
	Net/Gross weight	kg	96/104	96/104
Refrigerant type/quantity		g	R410A/4100	R410A/4100
Throttle part			EXV	EXV
Design pressure		MPa	4.5/1.6	4.5/1.6
Max pressure		MPa	4.5	4.5
Connection wire	Power wiring	mm2	5×2.5	5×2.5
	Signal wiring	mm2	3×1.0	3×1.0
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
	Max. pipe length	m	50	50
	Max. high drop	m	20	20
Ambient temp	cooling	°C	-15～50	-15～50
	heating	°C	-15～30	-15～30
Stuffing Quantity		20'/40'/40'HQ	30/62/69	30/62/69

2 Dimensions

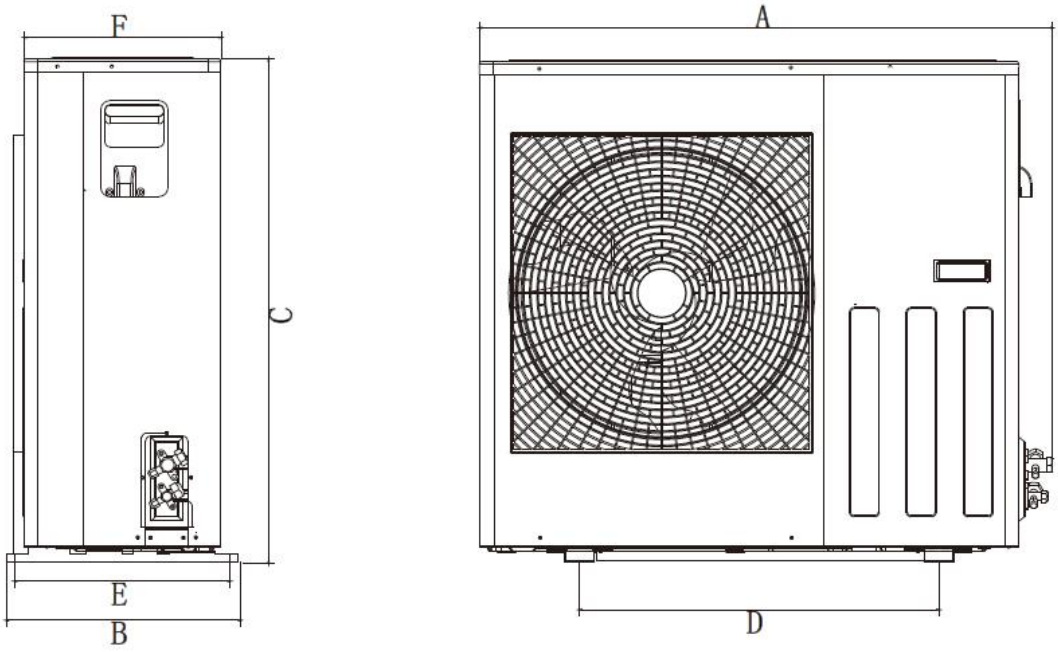
2.1 COU-12HDR1



2.2 COU-18HDR1

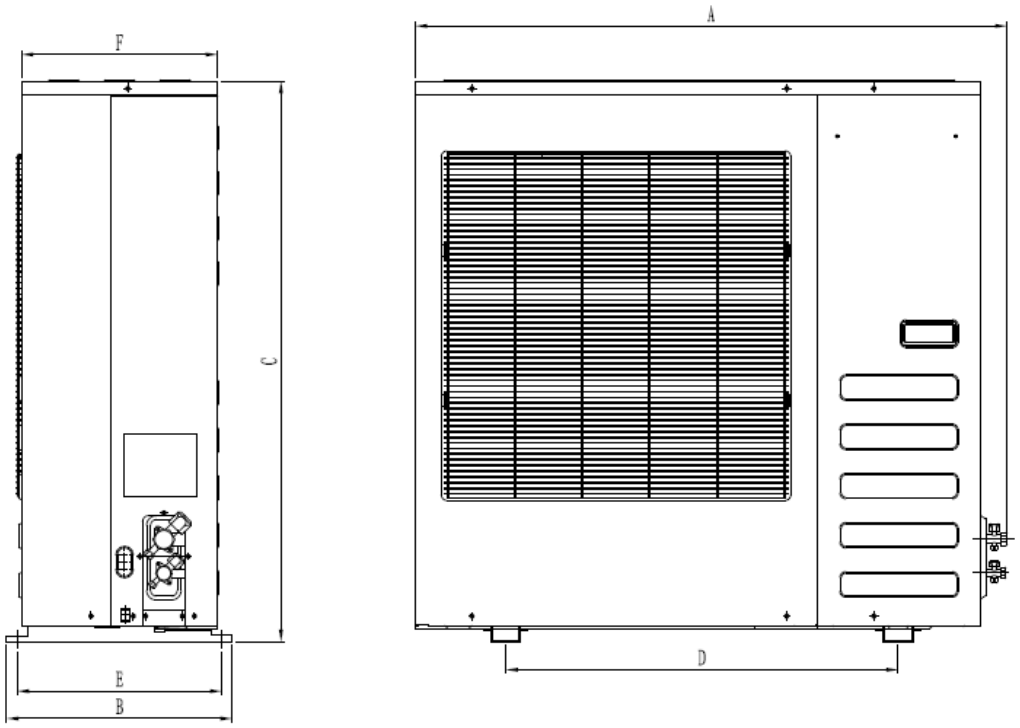


2.3 COU-24HDR1



Project / Machine capacity	A	B	C	D	E	F
7.0KW	958	392	843	600	360	330

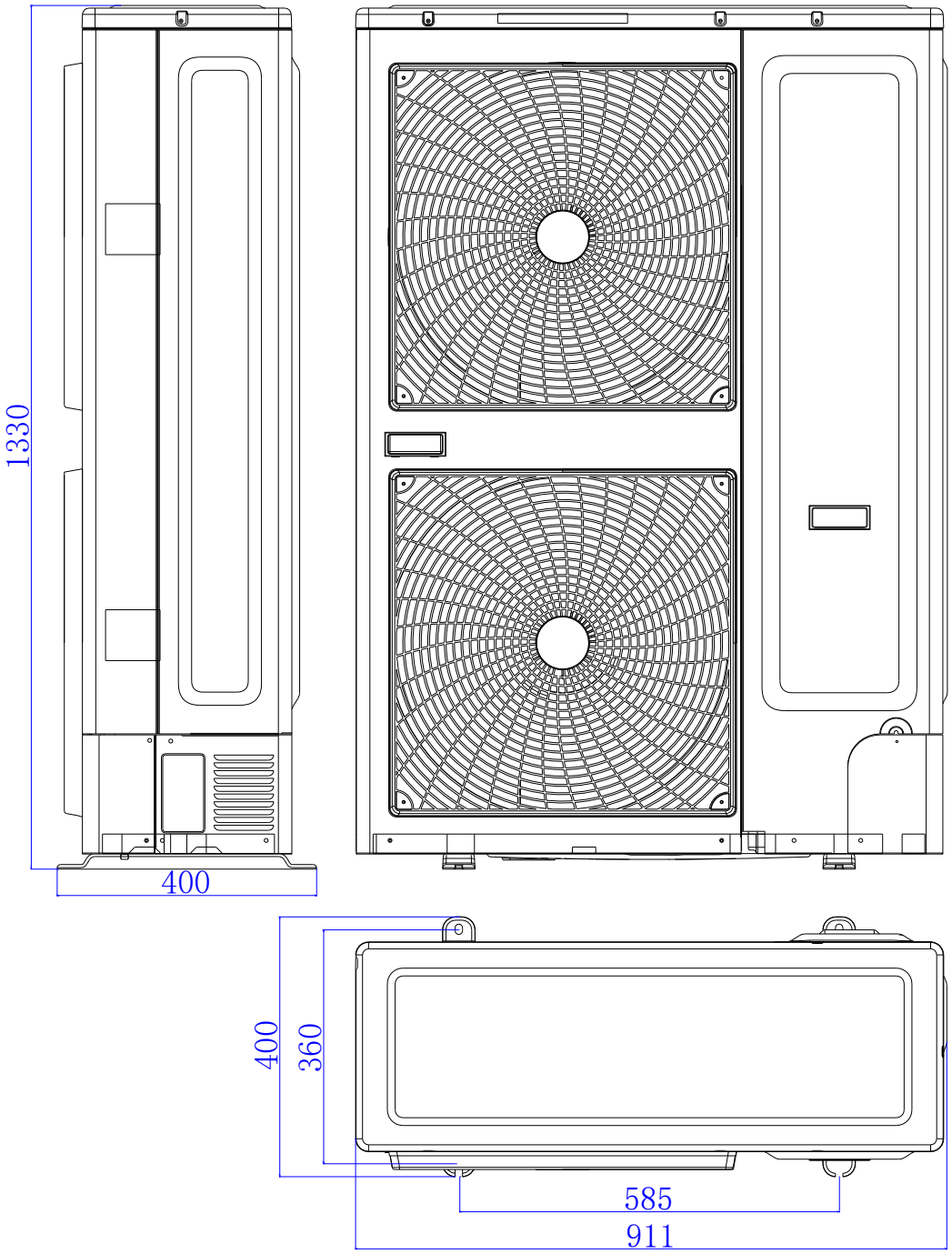
2.4 COU-36HDR1-A, COU-36HZDR1



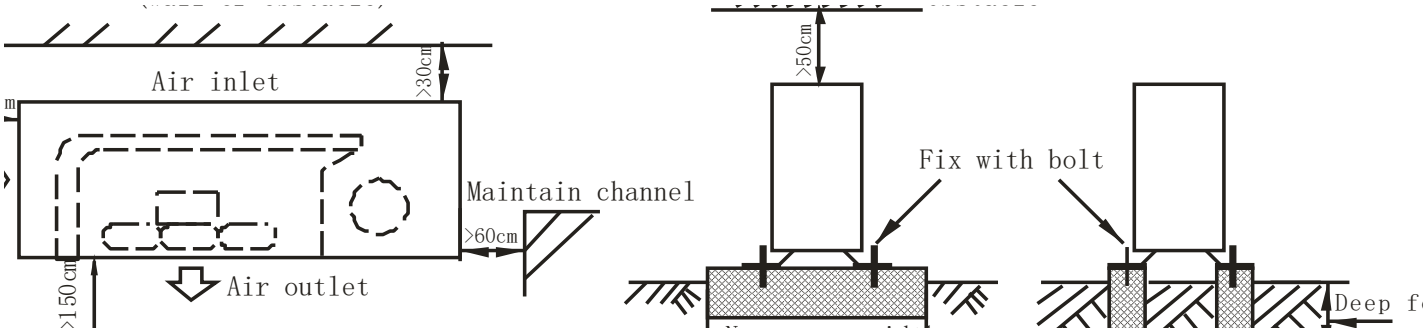
Unit: mm

Project / Machine capacity	A	B	C	D	E	F
10.5KW	1050	400	995	700	380	347

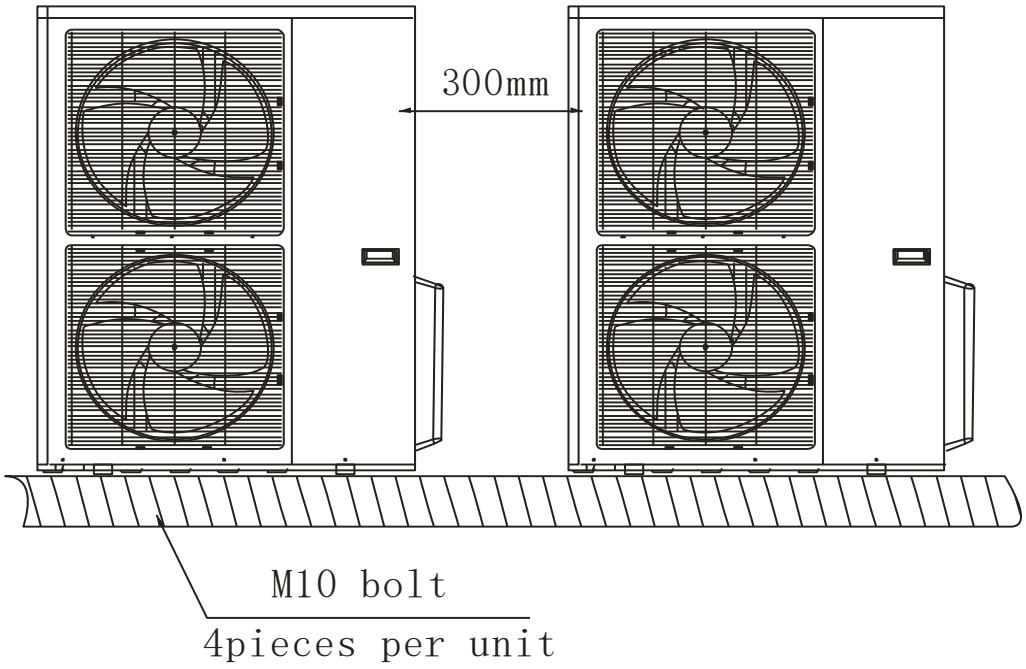
2.5 COU-48HZVR1, COU-60HZVR



3 Service Space

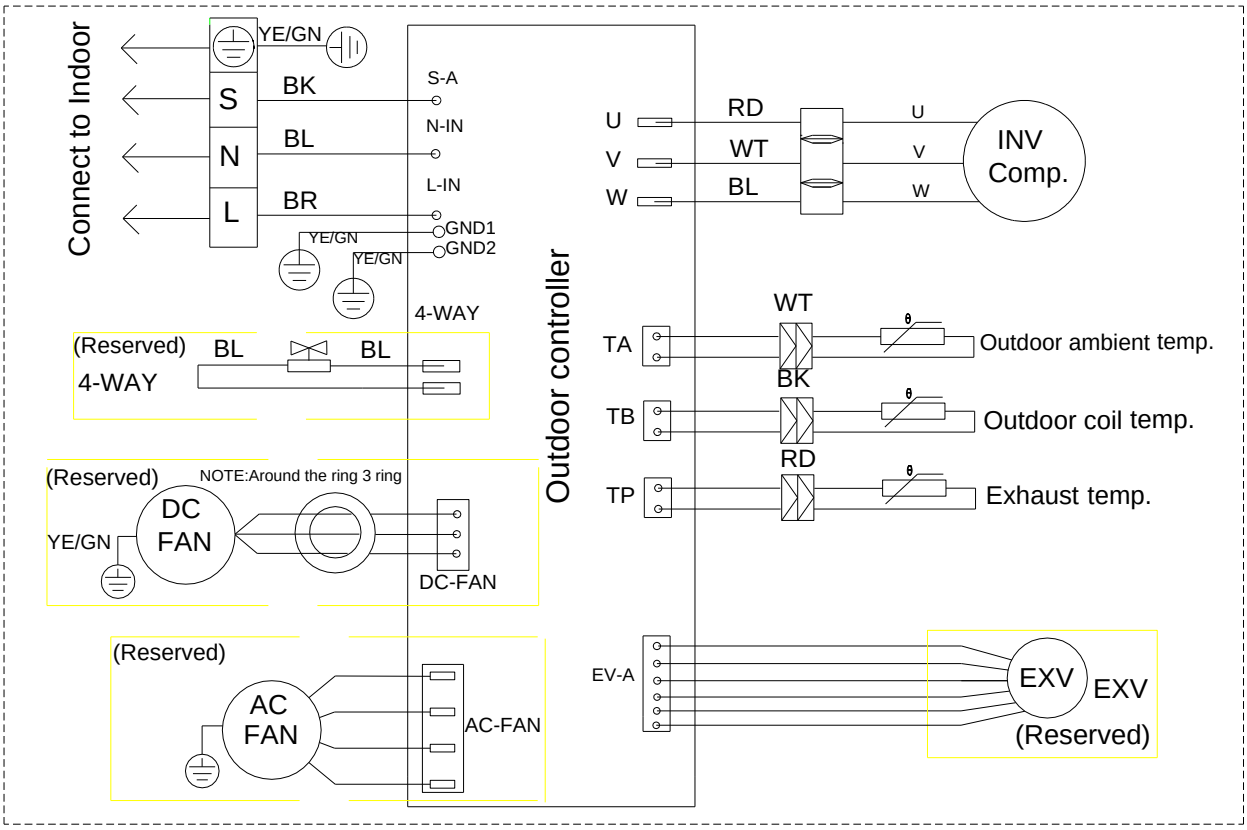


300mm is necessary between 2 outdoor units

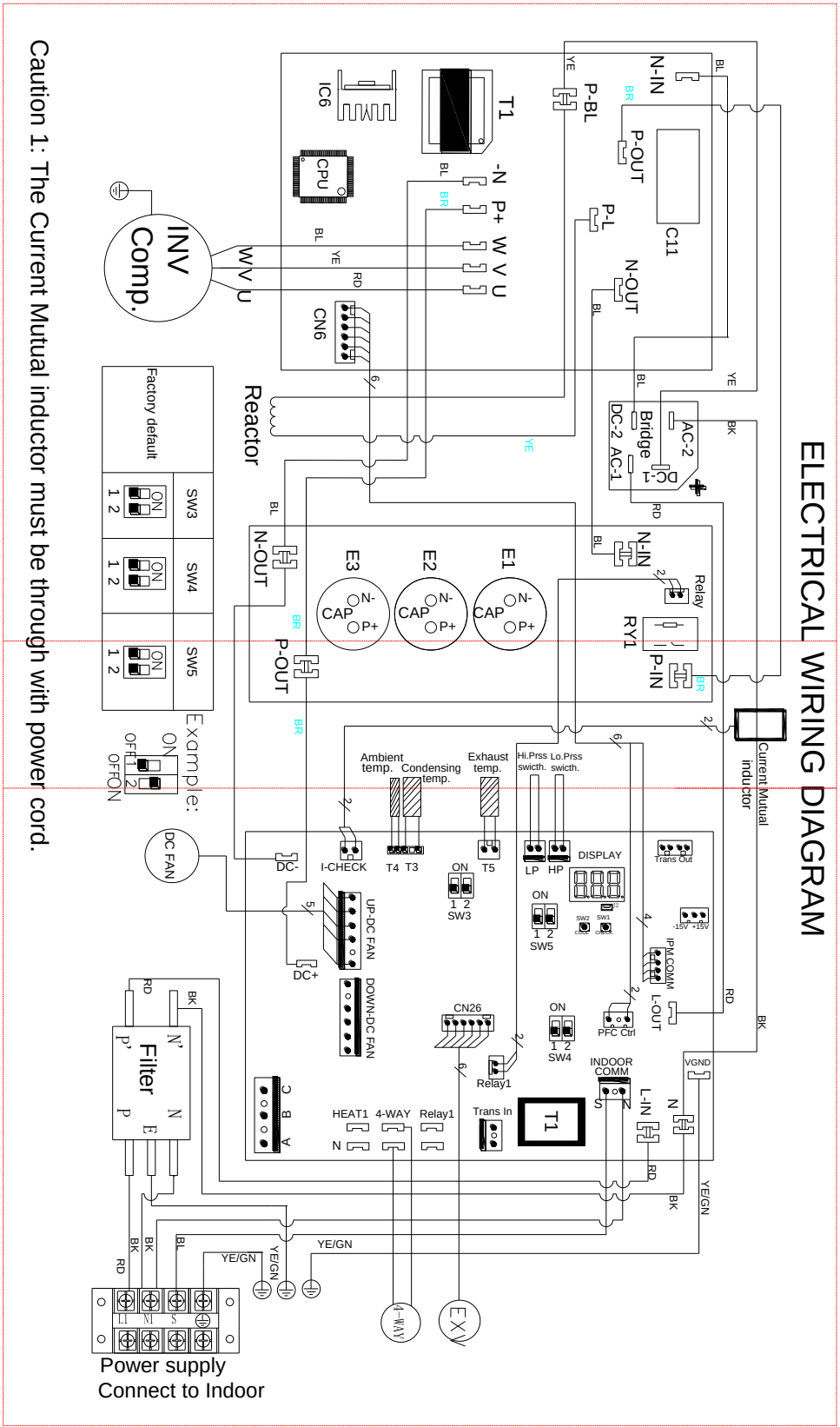


4 Wiring Diagrams

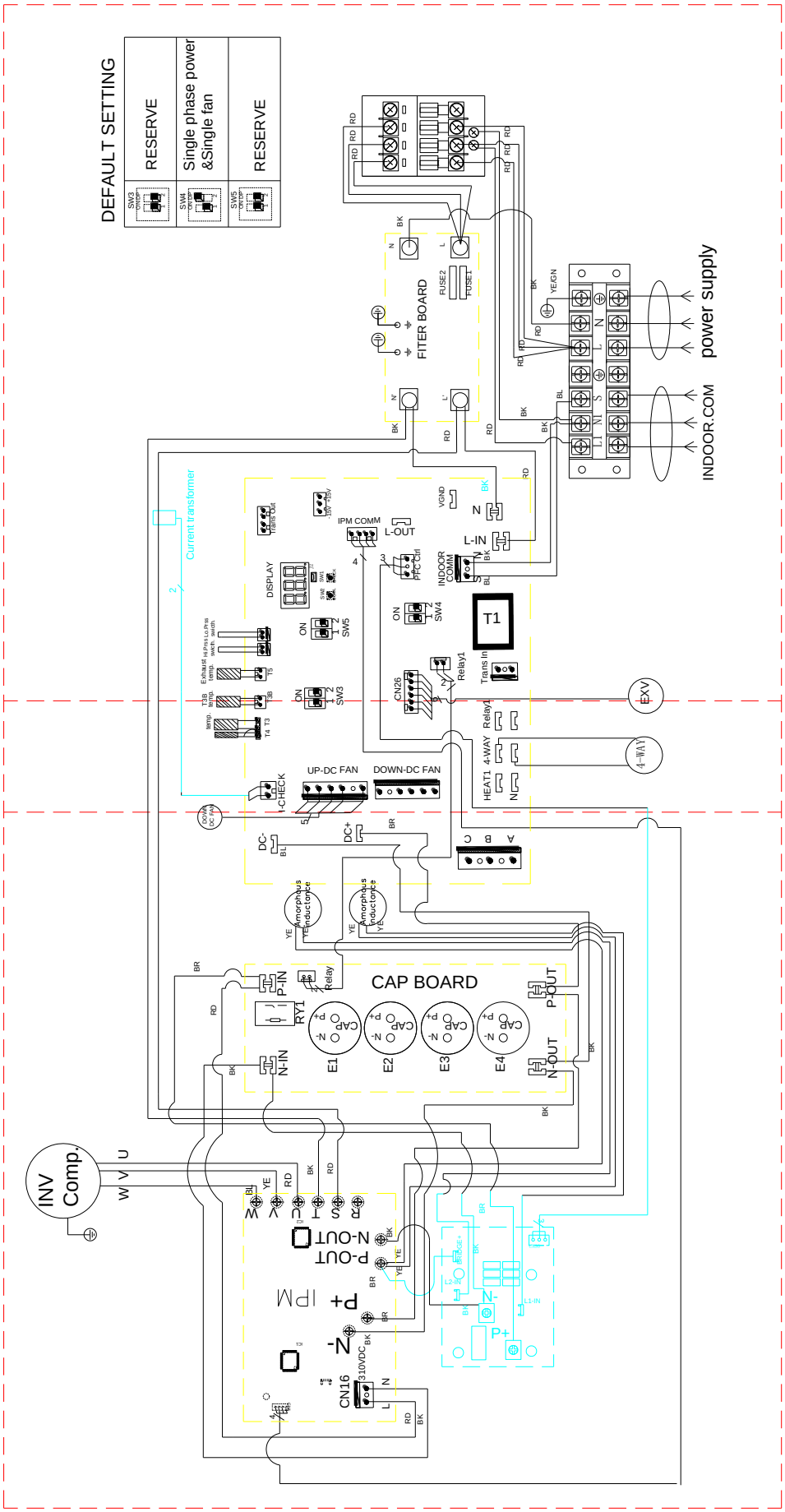
4.1 COU-12HDR1, COU-18HDR1



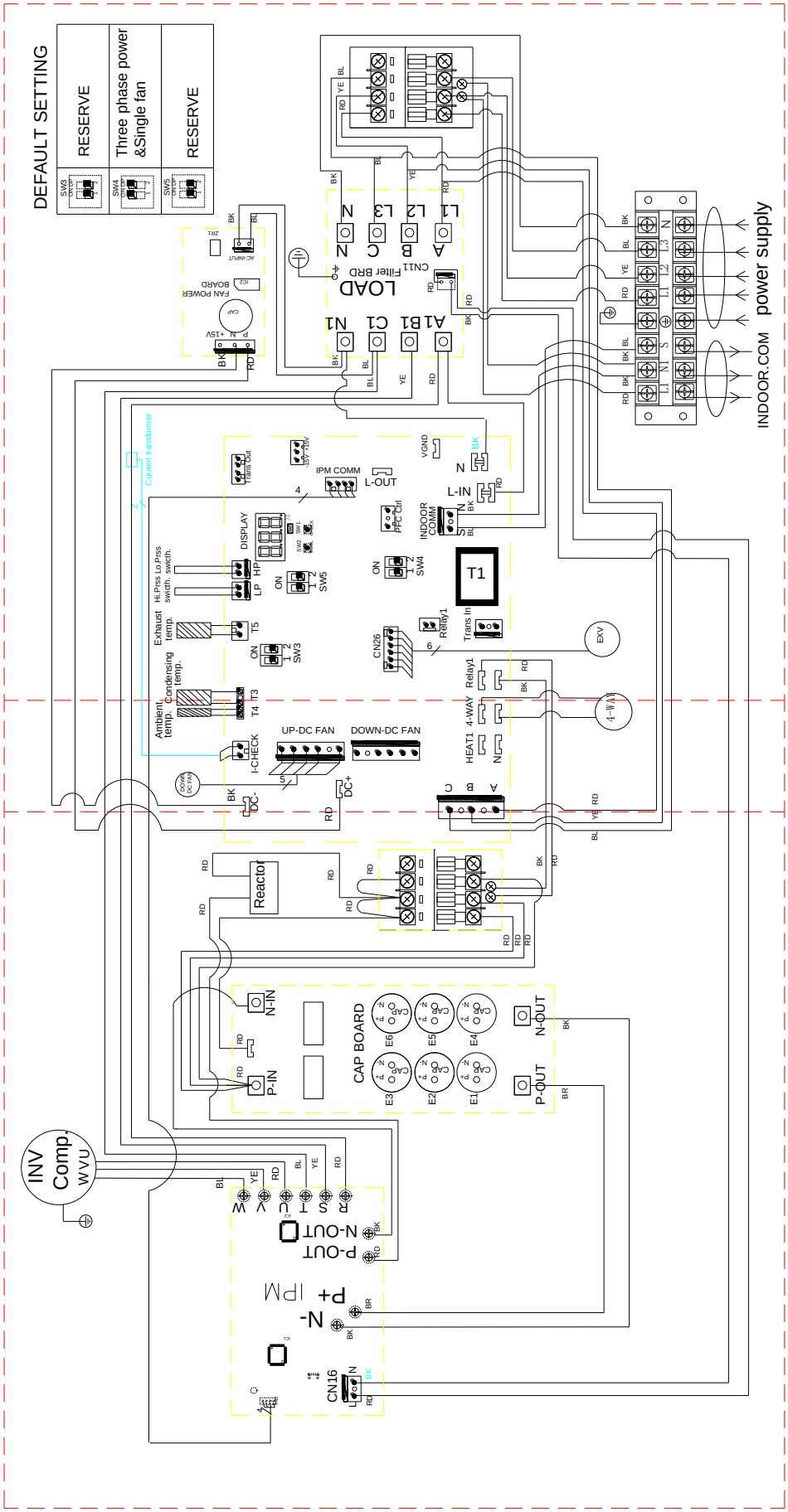
4.2 COU-24HDR1 (Power supply from indoor unit)


ELECTRICAL WIRING DIAGRAM
Caution 1: The Current Mutual inductor must be through with power cord.
INV Comp.
W V U
CN6
IC6
CPU
T1
-N P+ W V U
N-IN
P-BL
P-OUT
P-L
C11
N-OUT
Bridge
DC-1 DC-2 AC-1 AC-2
Reactor
Factory default
SW3
SW4
SW5
ON
1 2
Example:
N-OUT
P-OUT
E3
E2
E1
CAP
N-
P+
N-IN
Relay
RY1
P-IN
Current Mutual inductor
Ambient temp.
Condensing temp.
Exhaust temp.
Hi.Prss swicth.
Lo.Prss swicth.
DC FAN
DC-
I-CHECK
T4 T3
T5
LP HP
DISPLAY
Trans Out
SW3
SW5
UP-DC FAN
DOWN-DC FAN
DC+
IPM.COMM
-15V +15V
L-OUT
CN26
PFC Ctrl
SW4
INDOOR COMM
VGND
Relay1
Trans In
T1
HEAT1 4-WAY Relay1
L-IN
N
A B C
Filter
N' P' P N E
YE/GN
4-WAY
EXV
Power supply
Connect to Indoor

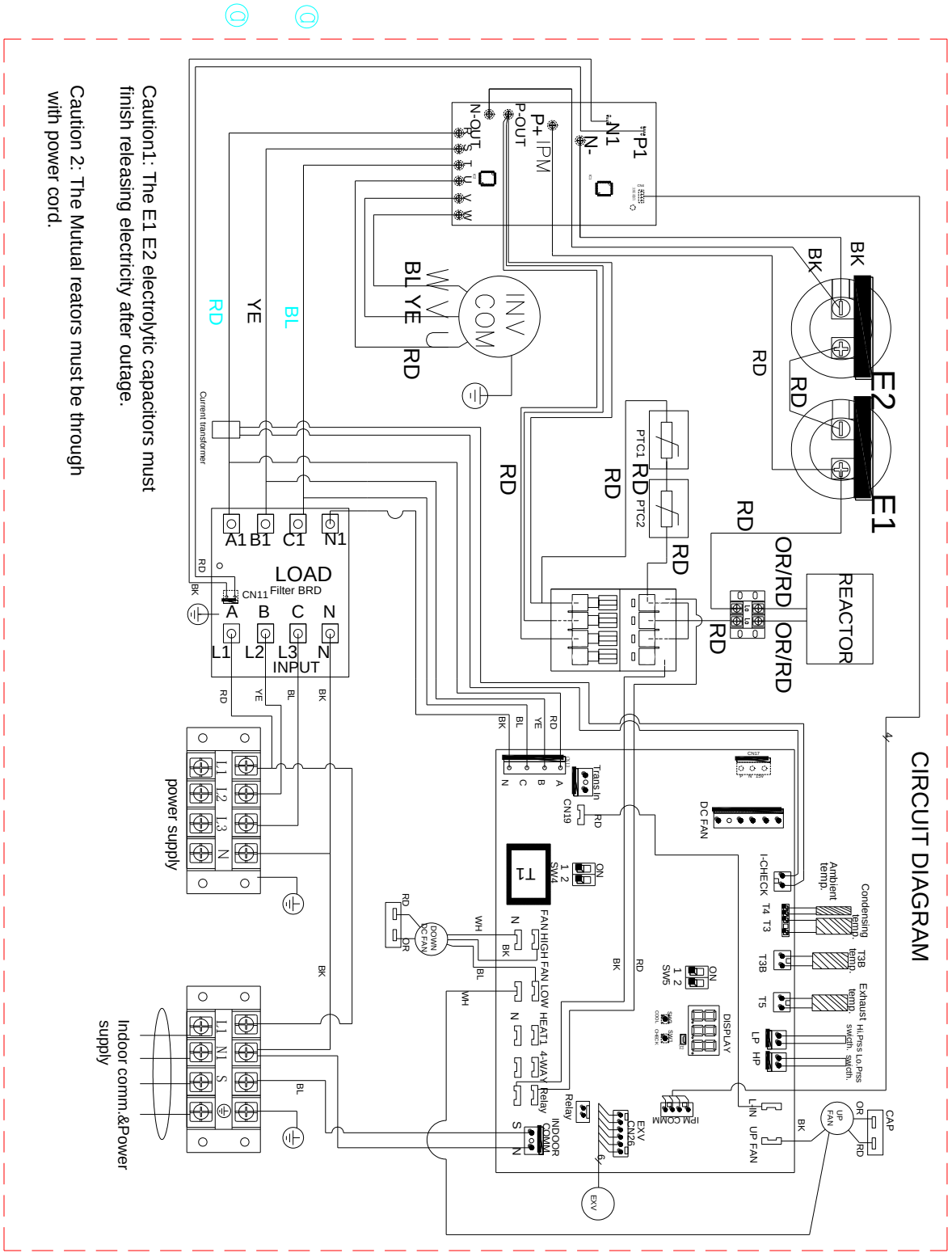
4.2 COU-36HDR1-A (Power supply independently)


DEFAULT SETTING
RESERVE
Single phase power &Single fan
RESERVE
SW3
SW4
SW5
FITER BOARD
FUSE2
FUSE1
power supply
INDOOR.COM
Current transformer
IPM COMM
L-OUT
L-IN
INDOOR COMM
DISPLAY
T1
Relay1
Trans In
4-WAY
HEAT1
EXV
UP-DC FAN
DOWN-DC FAN
I-CHECK
DC-
DC+
Amorphous Inductance
CAP BOARD
P-IN
N-IN
P-OUT
N-OUT
RY1
E1
E2
E3
E4
INV Comp.
U
V
W
CN16
310VDC
IPM
P+
N-

4.3 COU-36HZDR1 (Power supply independently)


DEFAULT SETTING
RESERVE
Three phase power &Single fan
RESERVE
SW3
SW4
SW5
power supply
INDOOR.COM
LOAD
Filter BRD
CN11
L1 L2 L3 N
A B C N
A1 B1 C1 N1
FAN POWER BOARD
AC-INPUT
ZH1
CAP
+15V
Current transformer
IPM COMM
L-OUT
L-IN
VGND
INDOOR COMM
PFC Ctrl
DISPLAY
Hi.Pass Lo.Pass switch. switch.
HP
LP
SW5
SW4
T1
Exhaust temp.
T5
SW3
Condensing temp.
Ambient temp.
T4
T3
CN26
Relay1
Trans In
EXV
4-WAY
HEAT1
UP-DC FAN
DOWN-DC FAN
I-CHECK
DC-
DC+
Reactor
CAP BOARD
E6
E5
E4
E3
E2
E1
N-IN
P-IN
N-OUT
P-OUT
INV Comp
U V W
R S T
IPM
P+
N-
CN16

4.4 COU-48HZVR1, COU-60HZVR1 (Power supply independently)


CIRCUIT DIAGRAM
Caution1: The E1 E2 electrolytic capacitors must finish releasing electricity after outage.
Caution 2: The Mutual reators must be through with power cord.
power supply
Indoor comm.&Power supply
LOAD
Filter BRD
INPUT
REACTOR
INV COM
IPM
DC FAN
DISPLAY
Ambient temp.
Condensing temp.
Exhaust temp.
Hi.Press Switch
Lo.Press Switch
Current transformer
Trans.In
4-WAY Valve
Relay
EXV
CAP
UP FAN

5 Electric Characteristics

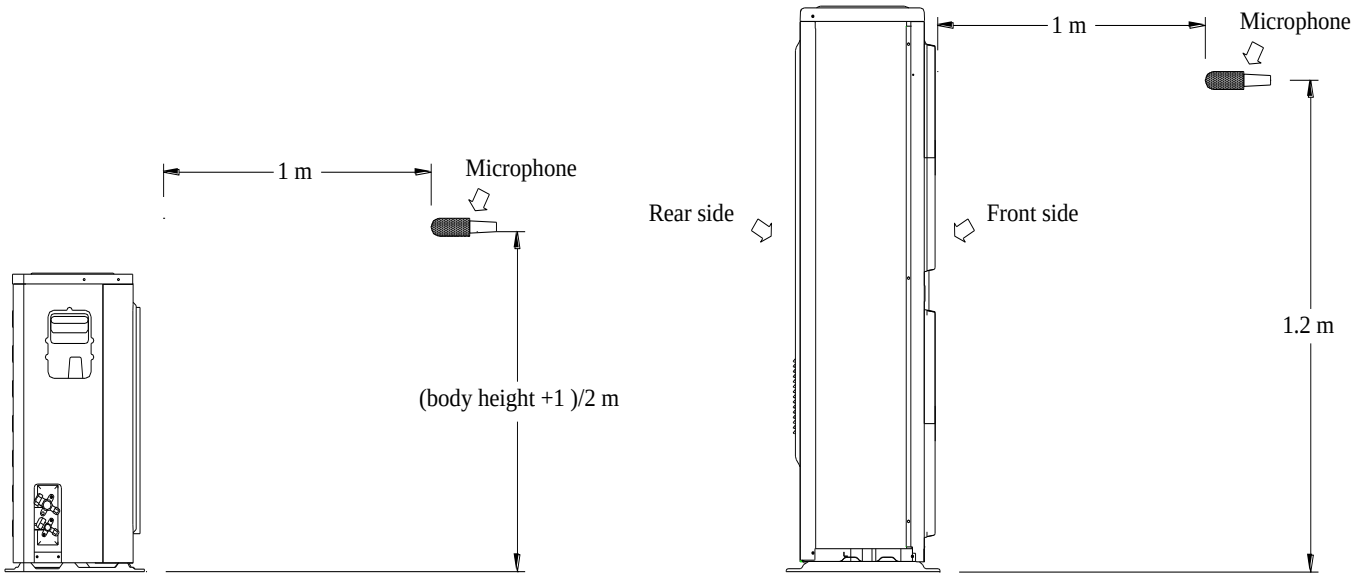
Model	Outdoor Unit				
	Hz	Voltage	Min.	Max.	Outdoor motor (kw)
COU-12HDR1	50	220~240V	198	254	0.060
COU-18HDR1	50	220~240V	198	254	0.072
COU-24HDR1	50	220~240V	198	254	0.072
COU-36HDR1-A	50	220~240V	198	254	0.18
COU-36HZDR1	50	380~415V	342	437	0.18
COU-48HZVR1	50	380~415V	342	437	0.077*2
COU-60HZVR1	50	380~415V	342	437	0.077*2

6 Operation Limits

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

8. Sound Levels

18kBtu/h-60kBtu/h

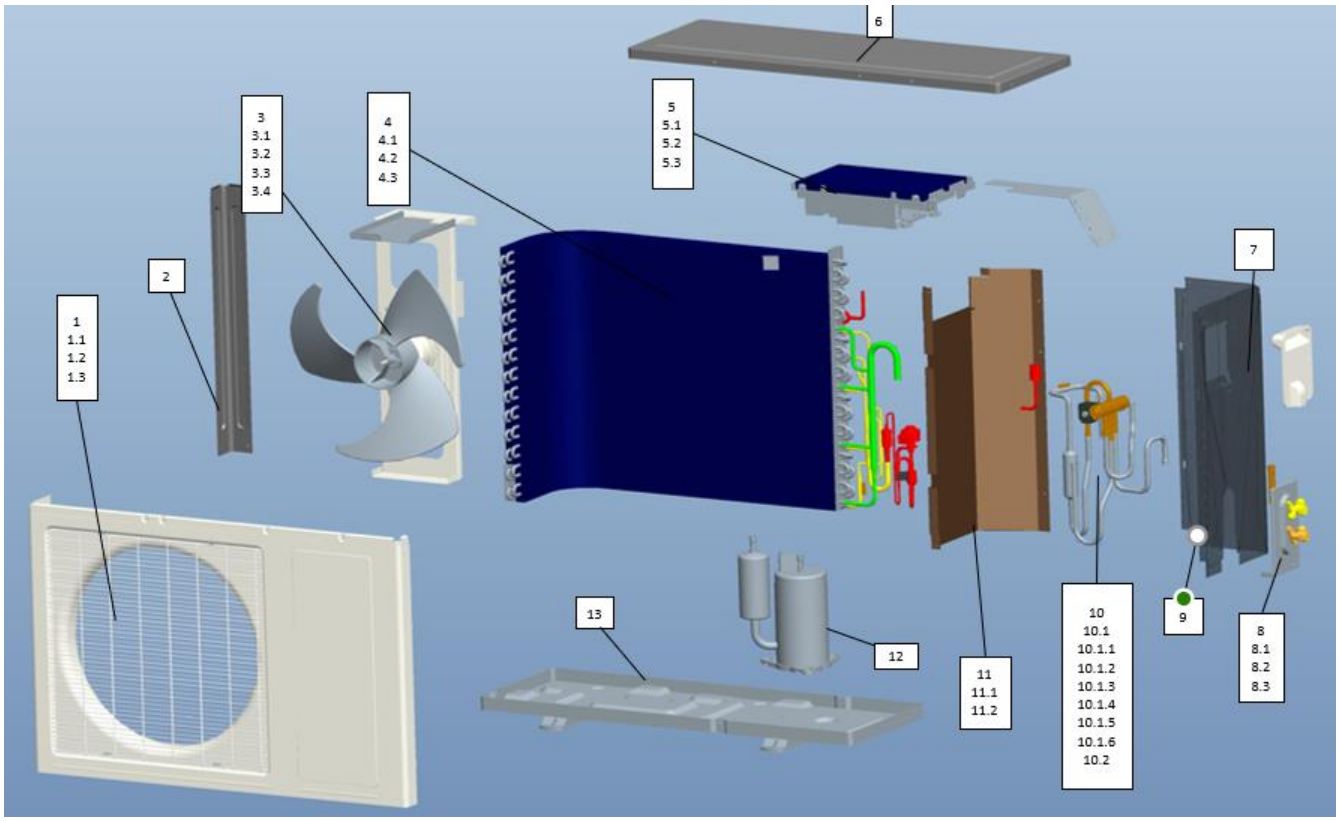


Model	Power level dB(A)	Pressure level
COU-12HDR1	62	51
COU-18HDR1	63	52
COU-24HDR1	67	54
COU-36HDR1-A	68	55
COU-36HZDR1	68	55
COU-48HZVR1	70	58
COU-60HZVR1	70	58

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.

9. Exploded View

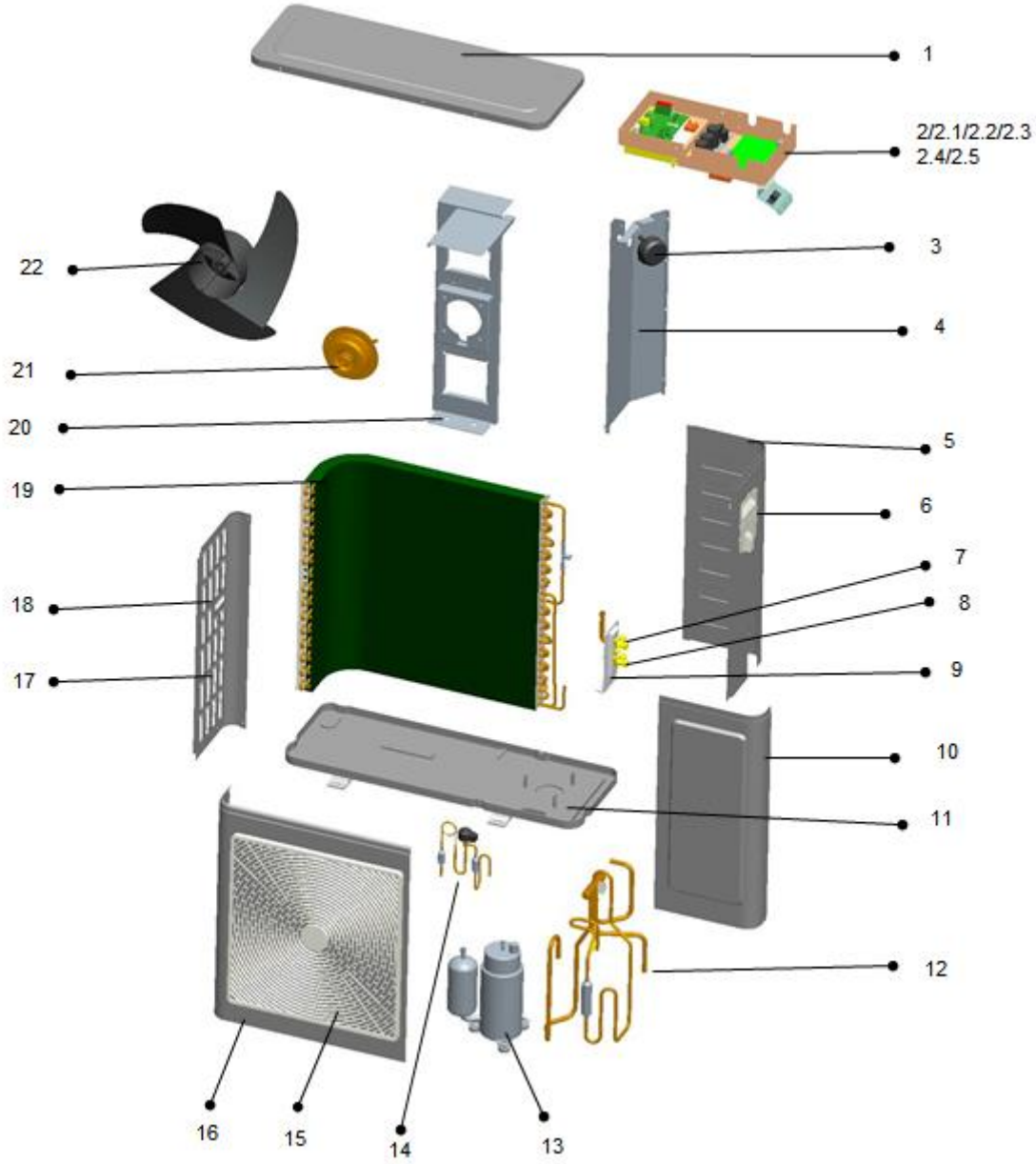
9.1 COU-12HDR1



No	Part Name	Quantity	No.	Part Name	Quantity
1	Front panel assembly	1	7	handle	1
1.1	panel	1	8	Valve seat plate assembly	1
1.2	Front grille	1	8.1	Valve seat plate	1
1.3	Front net buckle	8	8.2	Gas stop valve	1
2	Left column	1	8.3	Liquid stop valve	1
3	Motor bracket parts	1	9	Right plate	1
3.1	Motor bracket assembly	1	10	Circuit component	1
3.1.1	Motor bracket	1	10.1	4-way valve component	1
3.2	Motor bracket connection plate	1	10.1.1	4-way valve discharge pipe	1
3.3	Axial fan blade	1	10.1.2	4-way valve connecting pipe B	1
3.4	Fan motor	1	10.1.3	4-way valve connecting pipe C	1
4	Condenser component	1	10.1.4	4-way valve connecting pipe D	1
4.1	Gas collection tube assembly	1	10.1.5	4-way valve	1
4.2	Distributor component	1	10.1.6	4-way valve wire	1
4.3	condenser	1	10.2	4-way valve suction pipe	1
5	Electrnic control board	1	11	Middle insolate plate component	1

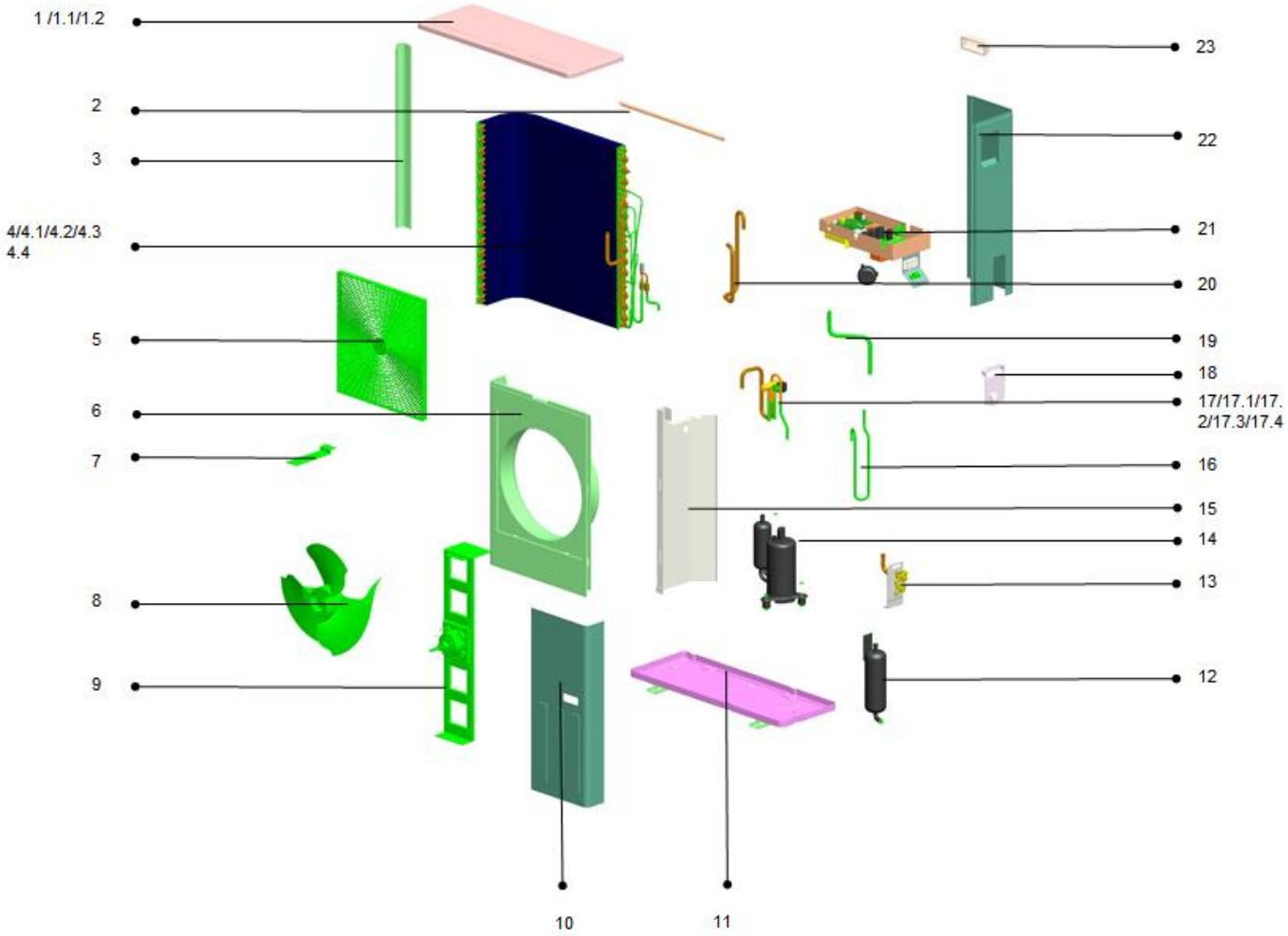
5.1	PCB	1	11.1	Middle insolate plate	1
5.2	Terminal board	1	11.2	E-BOX support plate	1
5.3	Terminal	1	12	DC inverter comprossor	1
6	Top cover	1	13	Chassis component	1

8.2 COU-18HDR1


1
2/2.1/2.2/2.3
2.4/2.5
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

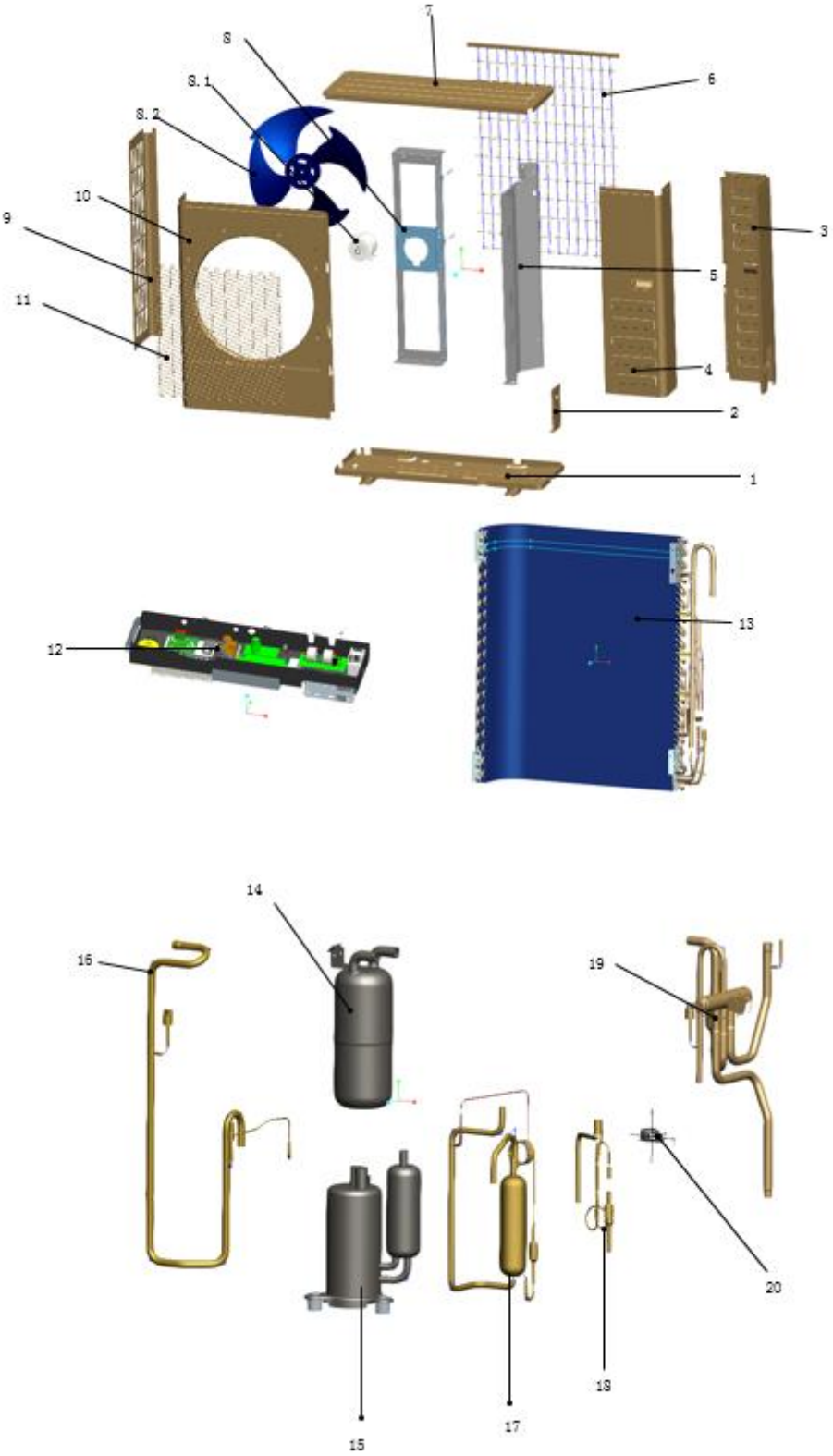
No	Part Name	Quantity	No.	Part Name	Quantity
1	Cover plate assay	1	10	Maintenance board	1
1.1	cover	1	11	Chassis assy	1
1.2	Specifications sponge	1	12	4-Ways valve assy	1
2	Electronic control components	1	13	Compressor	1
2.1	E-box welded components	1	14	Throttle part	1
2.2	Cover for E-parts	1	14.1	Electric expansive valve (EEV)	1
2.3	Capacitor plates	1	14.2	Control wire for EEV	1
2.4	Current transformer	1	15	Plastic front nets	1
2.5	Electric control	1	16	Front clapboard	1
3	Amorphous PFC inductor	1	17	Left clapboard	1
4	Middle separating board	1	18	Small handle	1
5	Right side board	1	19	Condenser assy	1
6	Large handle	1	20	Holder for fan motor assy	1
7	cut-off valve C	1	21	Uniaxial fan DC motor	1
8	cut-off valve C	1	22	Propeller fan	1
9	Valve holder	1			

8.3 COU-24HDR1



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Cover attached cotton assay	1	14	Inverter compressor	1
1.1	Cover	1	15	Separating board	1
1.2	Specifications sponge	1	16	Discharge pipe assy	1
2	Back frame	1	16.1	Discharge pipe	1
3	Left clapboard	1	16.2	Probe of copper pipe	1
4	Condenser welding assy	1	17	4-Ways valve assy	1
4.1	Condenser	1	17.1	4-Ways valve	1
4.2	Collector welding components	1	17.2	4-Ways valve connecting pipe	1
4.3	Distributing capillary assy	1	17.3	4-Ways valve connecting pipe	1
4.4	EEV welding assy	1	17.4	Length of straight pipe	1
5	Front top net	1	18	Big handle	1
6	Front panel	1	19	connecting pipe of 4-Ways valve	1
7	Holder for fan motor	1	20	Suction pipe	1
8	Propeller fan	1	21	E-parts assy	1
9	Holder for fan motor welding assy	1	21.1	Heatsink	1
10	Maintenance panel	1	21.2	fixing board for heatsink	1
11	Chassis	1	21.3	E-parts welding assy	1
12	Vapour-liquid separator	1	21.4	E-parts module board	1
13	Valve holder assy	1	21.5	Main control board	1
13.1	Valve holder	1	22	Right clapboard	1
13.2	Cut-off valve	1	23	Handle	2
13.3	Cut-off valve	1			

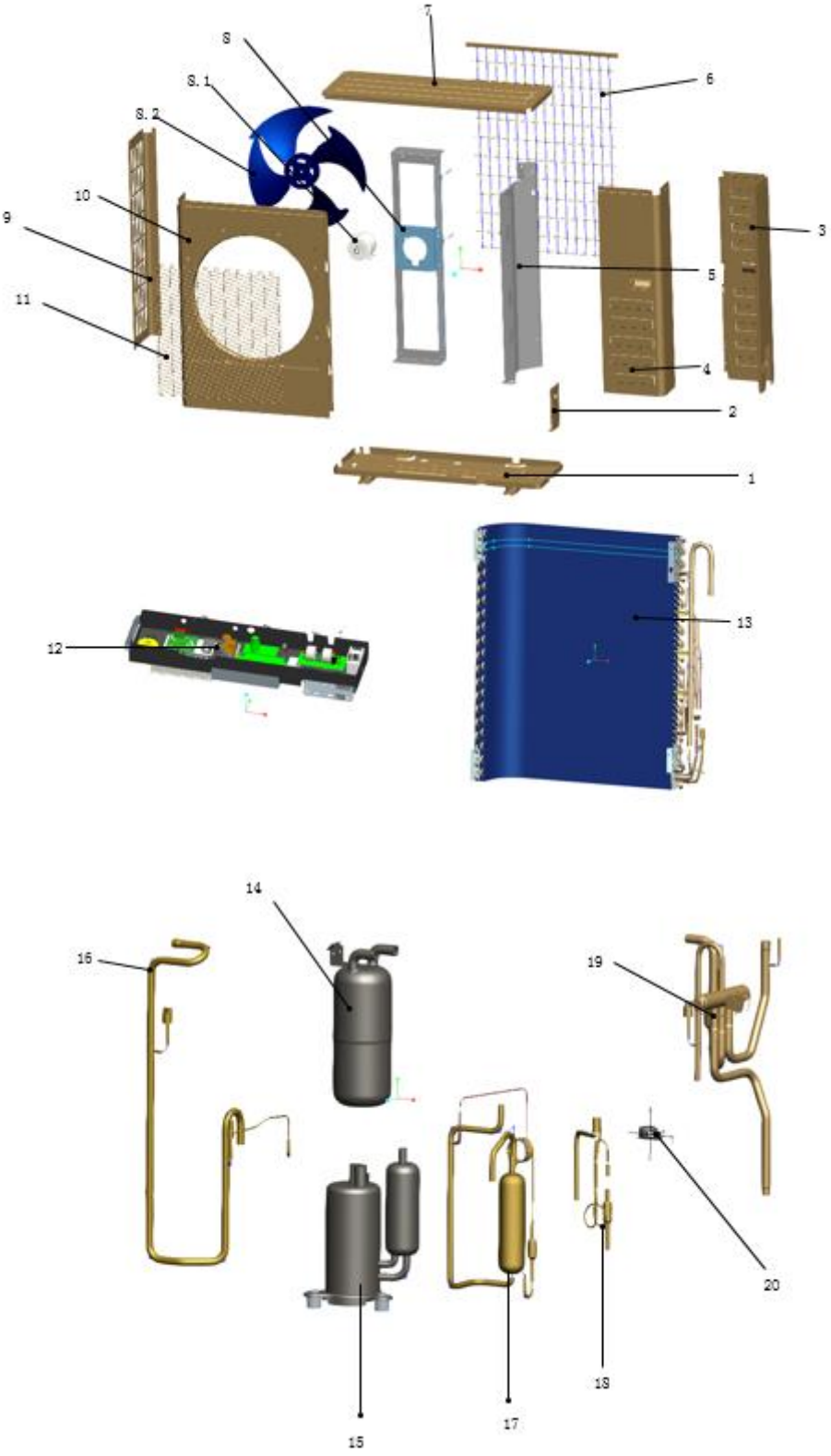
8.4 COU-36HDR1-A



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Chassis assembly	1	10	front panel	1

2	Valve seat plate	1	11	mesh enclosure	1
3	The right side plate assembly	1	12	Electronic control unit	1
3.1	The right side plate	1	12.1	Inverter module board component	1
3.2	Pumping hands	1	12.2	PFC module board	1
4	Maintenance panel assembly	1	12.3	Capacitor board	1
4.1	Maintenance panel	1	12.4	Single-phase filter plate	1
4.2	Pumping hands	1	12.5	Reactor	2
5	Middle wall	1	12.6	Terminal	1
6	Back net	1	12.7	Current transformer	1
7	Lamina tecti	1	12.8	AC contactor	1
8	Fan motor assembly	1	13	Condenser	1
8.1	DC motor	1	14	Vapour separator	1
8.2	Axial flow fan	1	15	compressor	1
8.3	Holder for fan motor	1	16	Return pipe assembly	1
8.4	The up retaining plate	1	17	Exhaust pipe assembly	1
8.5	The down retaining plate	1	18	Electronic expansion valve assembly	1
8.6	Right motor bracket assembly	1	19	The four valve assembly	1
8.7	The motor installation board assembly	1	20	Solenoid valve coil	1
9	The left side plate	1			

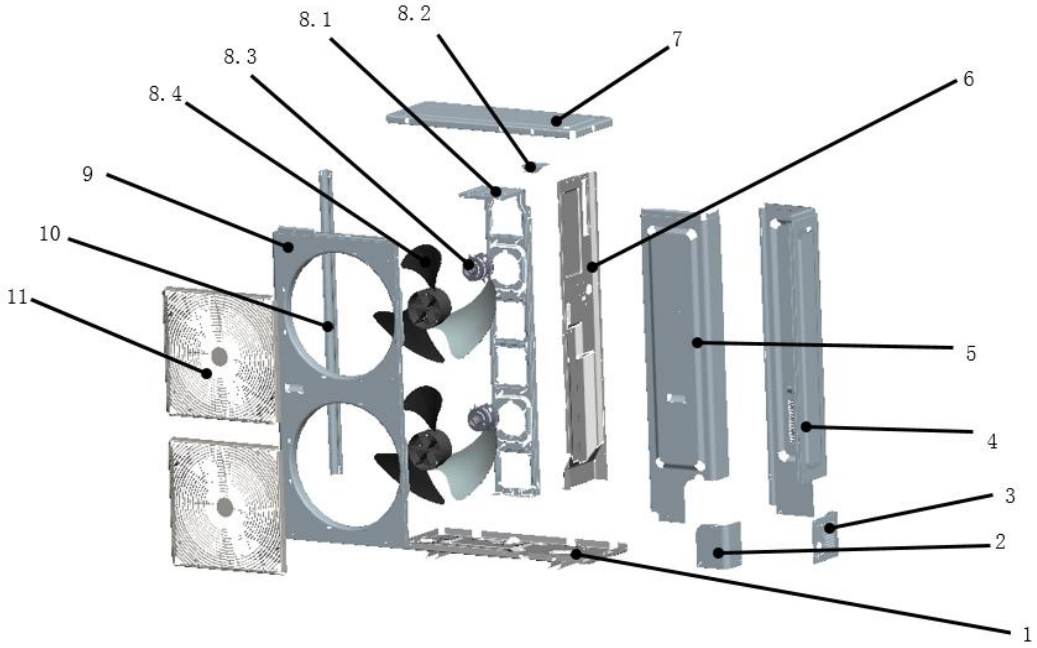
8.5 COU-36HZDR1

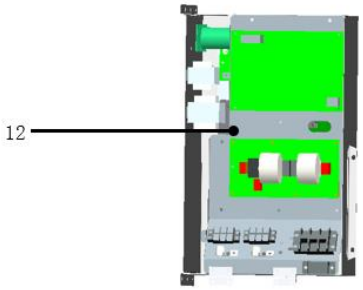


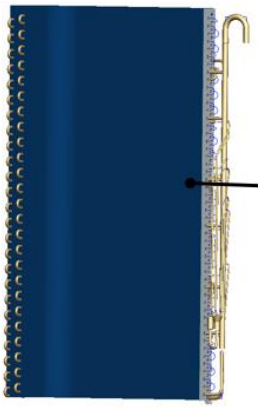
No.	Part Name	Quantity	No.	Part Name	Quantity
1	Chassis assembly	1	10	front panel	1

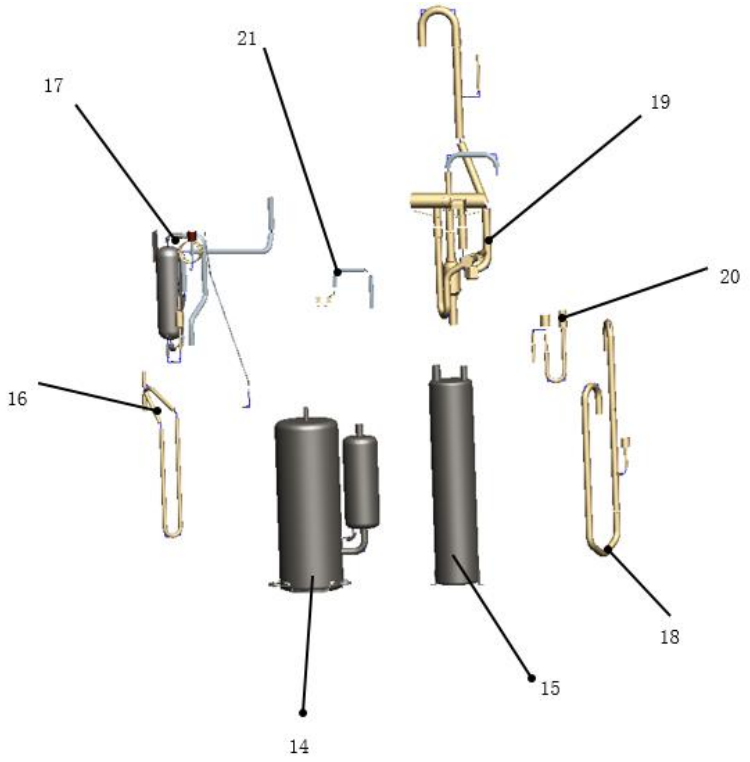
2	Valve seat plate	1	11	mesh enclosure	1
3	The right side plate assembly	1	12	Electronic control unit	1
3.1	The right side plate	1	12.1	Inverter module board components	1
3.2	Pumping hands	1	12.2	Fan power board	1
4	Maintenance panel assembly	1	12.3	Capacitor board	1
4.1	Maintenance panel	1	12.4	Electric main control board	1
4.2	Pumping hands	1	12.5	Reactor	1
5	Middle wall	1	12.6	Terminal	1
6	Back net	1	12.7	Current transformer	1
7	Lamina tecti	1	12.8	AC contactor	2
8	Fan motor assembly	1	12.9	3 phase filter board	1
8.1	DC motor	1	13	Condenser	1
8.2	Axial flow fan	1	14	Vapour separator	1
8.3	Holder for fan motor	1	15	compressor	1
8.4	The up retaining plate	1	16	Return pipe assembly	1
8.5	The down retaining plate	1	17	Exhaust pipe assembly	1
8.6	Right motor bracket assembly	1	18	Electronic expansion valve assembly	1
8.7	The motor installation board assembly	1	19	The four valve assembly	1
9	The left side plate	1	20	Solenoid valve coil	1

8.6 COU-48HZVR1, COU-60HZVR1









No.	Part Name	Quantity	No.	Part Name	Quantity
1	Chassis assy	1	12.3	Three phase filter board	1
2	The right side of the valve panel	1	12.4	Contactor	1
3	Rear side of the valve panel	1	12.5	Current Transformer	1
4	After backplane	1	13	Condenser	2
5	Right clapboard	1	13.1	Condenser assy	1
6	Separating board welding assy	1	13.2	Flute shunt components	1
7	Cover board	1	13.3	Confluence components	1
8	Holder for fan motor assy	1	14	Inverter compressor	1
8.1	Holder for fan motor	1	15	Gas-liquid separator	1
8.2	Holder for fan motor connect board	1	16	Discharge pipe assy A	1
8.3	Fan motor	2	17	Discharge pipe assy B	1
8.4	Propeller fan	2	18	Suction pipe assy	1

9	Front panel	1	19	4-Ways valve assy	1
10	Column	1	20	EXV assy	1
11	Top net	2	21	High pressure cut-off valve assy	1
12	E-parts assy	1			
12.1	IPM module board	1			
12.2	Outdoor main control board	1			

9 Troubleshooting

9.1 Fault display(12-18Kbtu/h)

Display	Definition of fault or protection	Remark
P3	Primary/secondary overcurrent protection	
P4	Exhaust overheating protection	3 time of P4 protection appears within 100 minutes and then H6 occurs
P5	Condenser high temperature protection	
P6	Module protection	3 times of P6 protection appears within 30 minutes and then H4 occurs
P9	Outdoor DC fan motor fault	Display H9 after 2 times of P9 protection within 10 10 minutes
H0	Communication fault between main board and drive board	
F3	Current problem and can’t recover	3 times p3 in 60 minutes
F4	Ambient temperature sensor fault	
F6	Condenser temperature sensor fault	
F9	Outdoor unit fan motor problem	

9.2 Fault display(24-60Kbtu/h)

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	Modular PCB and main PCB 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 voltage protection	
P2	Low-voltage 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 voltage 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	Speed difference 〉15hz in a moment	
L9	Speed difference 〉15hz between programmer setting speed and running	

9.3 Parameter table for spot inspection of outdoor unit(24-60Kbtu/h)

No.		Display content	Remark
0	Normal display	Current frequency or indoor unit quantity	Display indoor unit quantity when standby
1	1-	Outdoor unit capacity	120, 140, 160
2	2-	Total capacity needs of indoor unit	
3	3-	Total capacity demands after outdoor unit correction	
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 degree of the electronic expansion valve	Actual value = spot inspection display value x 8
12	12-	Primary current	
13	13-	Secondary current	
14	14-	Primary voltage	
15	15-	Secondary voltage	Actual value = spot inspection display value x 4

16	16-	Quantity 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

Part 4 Installation

1. Precaution on Installation

1.1. Measure the necessary length of the connecting pipe, and make it by the following way.

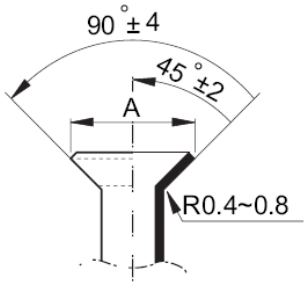
a. Connect the indoor unit at first, then the outdoor unit.

Bend the tubing in proper way. Do not harm them.

CAUTIONS:

- Daub the surfaces of the flare pipe and the joint nuts with frozen oil, and wrench it for 3~4 rounds
- With hands before fasten the flare nuts.

Be sure to use two wrenches simultaneously when you connect or disconnect the pipes.

Pipe gauge	Tightening torque	Flare dimension A Min (mm) Max		Flare shape
Φ6.4	15～16N.m (153～163 kgf.cm)	8.3	8.7	
Φ9.5	25～26N.m (255～265kgf.cm)	12.0	12.4	
Φ12.7	35～36N.m (357～367kgf.cm)	15.4	15.8	
Φ15.9	45～47N.m (459～480 kgf.cm)	18.6	19.1	
Φ19.1	65～67N.m (663～684kgf.cm)	22.9	23.3	

b. The stop value of the outdoor unit should be closed absolutely (as original state). Every time you connect it, first loosen the nuts at the part of stop value, then connect the flare pipe immediately (in 5 minutes). If the nuts have been loosened for a long time, dusts and other impurities may enter the pipe system and may cause malfunction later. So please expel the air out of the pipe with refrigerant before connection.

c. Expel the air after connecting the refrigerant pipe with the indoor unit and the outdoor unit. Then fasten the nuts at the repair-points.

1.2. Locate The Pipe

a. Drill a hole in the wall (suitable just for the size of the wall conduit), then set on the fittings such as the wall conduit and its cover.

b. Bind the connecting pipe and the cables together tightly with binding tapes. Do not let air in, which will

cause water leakage by condensation.

c. Pass the bound connecting pipe through the wall conduit from outside. Be careful of the pipe allocation to do no damage to the tubing.

1.3. Connect the pipes.

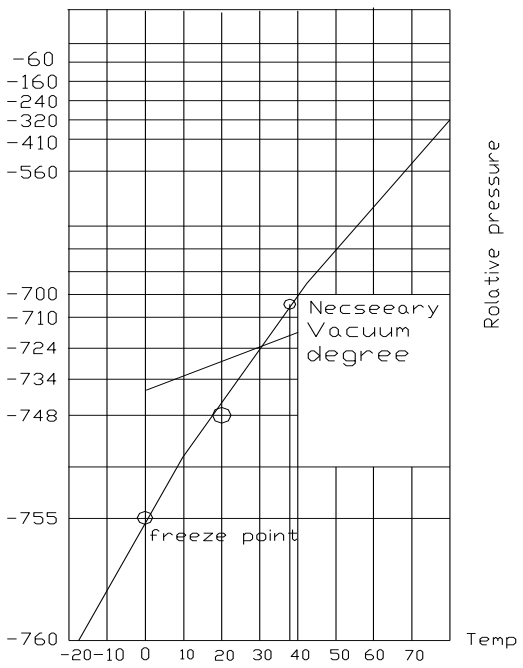
1.4. Then, open the stem of stop values of the outdoor unit to make the refrigerant pipe connecting the indoor unit with the outdoor unit in fluent flow.

1.5. Be sure of no leakage by checking it with leak detector or soap water.

1.6. Cover the joint of the connecting pipe to the indoor unit with the soundproof / insulating sheath (fittings), and bind it well with the tapes to prevent leakage.

2 Vacuum Dry and Leakage Checking

2.1 Vacuum Dry: use vacuum pump to change the moisture (liquid) into steam (gas) in the pipe and discharge it out of the pipe to make the pipe dry. Under one atmospheric pressure, the boiling point of water(steam temperature) is 100℃. Use vacuum pump to make the pressure in the pipe near vacuum state, the boiling point of water falls relatively. When it falls under outdoor temperature, the moisture in the pipe will be vaporized.

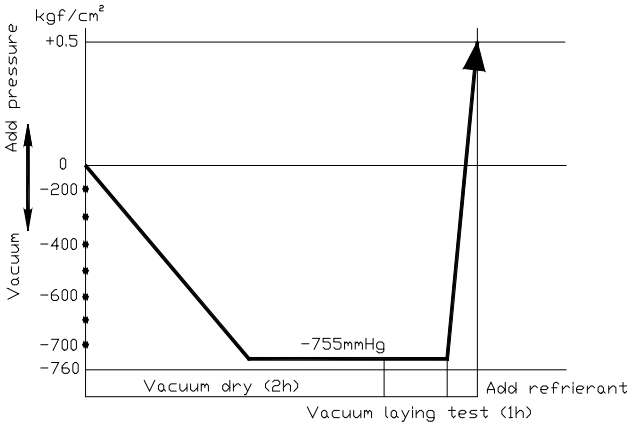


2.2 Vacuum dry procedure

There are two methods of vacuum dry due to different construction environment: common vacuum dry, special vacuum dry.

①. Common vacuum dry procedure

- Vacuum dry (for the first time)---connect the all-purpose detector to the inlet of liquid pipe and gas pipe, and run the vacuum pump more than two hours (the vacuum pump should be below -755mmHg)
- If the pump can't achieve below -755mmHg after pumping 2 hours, moisture or leakage point will still exist in the pipe. At this time, it should be pumped 1 hour more.
- If the pump can't achieve -755mmHg after pumping 3 hours, please check if there are some leakage points.
- Vacuum placement test: place 1 hour when it achieves -755mmHg, pass if the vacuum watch shows no rising. If it rises, it shows there's moisture or leakage point.
- Vacuuming from liquid pipe and gas pipe at the same time.
- Sketch map of common vacuum dry procedure.



②. Special vacuum dry procedure

- This vacuum dry method is used in the following conditions:
- There's moisture when flushing the refrigerant pipe.
- Rainwater may enter into the pipe.
- Vacuum dry for the first time …… 2h pumping

③. Vacuum destroy for the second time …… Fill nitrogen to 0.5Kgf/cm^2

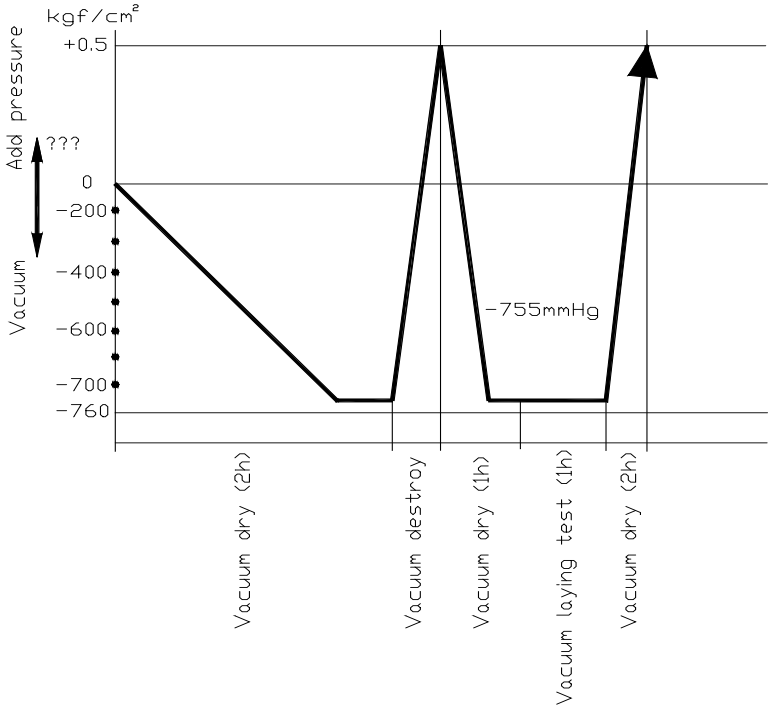
Because nitrogen is for drying gas, it has vacuum drying effect during vacuum destroy. But if the moisture is too much, this method can't dry thoroughly. So, please pay more attention to prevent water entering and forming condensation water.

④. Vacuum dry for the second time……1h pumping

Determinant: Pass if achieving below -755mmHg. If -755mmHg can't be achieved in 2h, repeat procedure ③ and ④.

⑤. Vacuum placing test …… 1h

⑥. Sketch map of special vacuum dry procedure



3 Additional Refrigerant Charge

Caution

● Refrigerant cannot be charged until field wiring has been completed.

● Refrigerant may only be charged after performing the leak test and the vacuum pumping.

● When charging a system, care shall be taken that its maximum permissible charge is never exceeded, in view of the danger of liquid hammer.

● Charging with an unsuitable substance may cause explosions and accidents, so always ensure that the appropriate refrigerant is charged.

● Refrigerant containers shall be opened slowly.

● Always use protective gloves and protect your eyes when charging refrigerant.

The outdoor unit is factory charged with refrigerant. Calculate the added refrigerant according to the diameter and the length of the liquid side pipe of the outdoor unit/indoor unit

R(g) D(mm) / L(m)	φ6.4	Φ9.5	Φ12.7
Less than 5m (One-way)	—	—	—

Added Refrigerant When Over 5m(One-way)	30g/m×(L-5)	65g/m×(L-5)	120g/m×(L-5)

Remark:

R (g): Additional refrigerant to be charged

L (m): The length of the refrigerant pipe (one-way)

D (mm): Liquid side piping

4 Water Drainage

4.1 Gradient and Supporting

4.1.1 Keep the drainpipe sloping downwards at a gradient of at least 1/100. Keep the drainpipe as short as possible and eliminate the air bubble.

4.1.2 The horizontal drainpipe should be short. When the pipe is too long, a prop stand must be installed to keep the gradient of 1/100 and prevent bending. Refer to the following table for the specification of the prop stand.

	Diameter	Distance between the prop stands
Hard PVC pipe	25~40mm	1~1.5m

4.1.3. Precautions

① The diameter of drainpipe should meet the drainage requirement at least.

② The drainpipe should be heat-insulated to prevent atomization.

③ Drainpipe should be installed before installing indoor unit. After powering on, there is some water in water-receiver plate. Please check if the drain pump can operate correctly.

④ All connection should be firm.

⑤ Wipe color on PVC pipe to note connection.

⑥ Climbing, horizontal and bending conditions are prohibited.

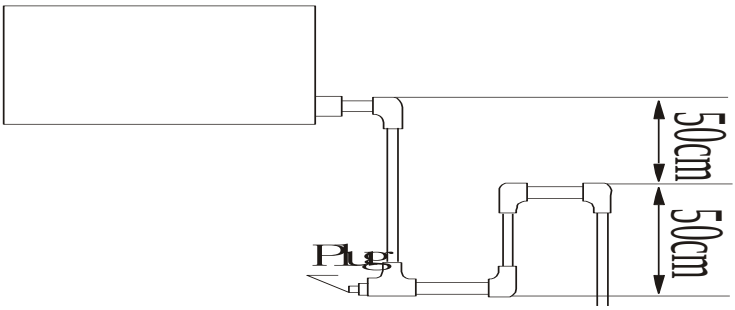
⑦ The dimension of drainpipe can't less than the connecting dimension of indoor drainpipe.

⑧ Heat-insulation should be done well to prevent condensation.

⑨ Indoor units with different drainage type can't share one convergent drainpipe.

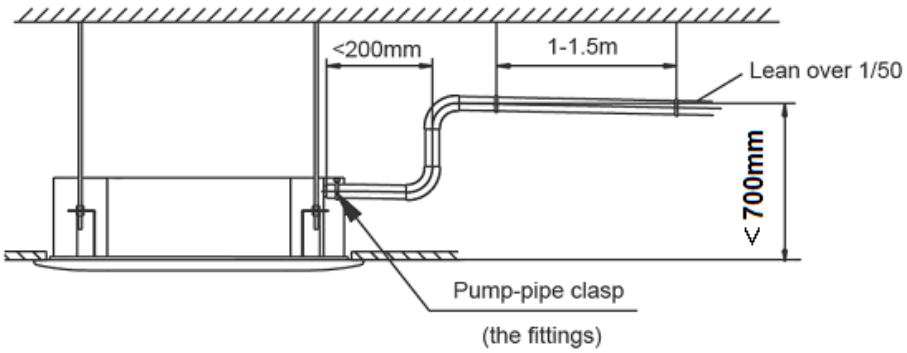
4.2 Drainpipe Trap

4.2.1. If the pressure at the connection of the drainpipe is negative, it needs to design drainpipe trap.
4.2.2. Every indoor unit needs one drainpipe trap.
4.2.3. A plug should be designed to do cleaning.

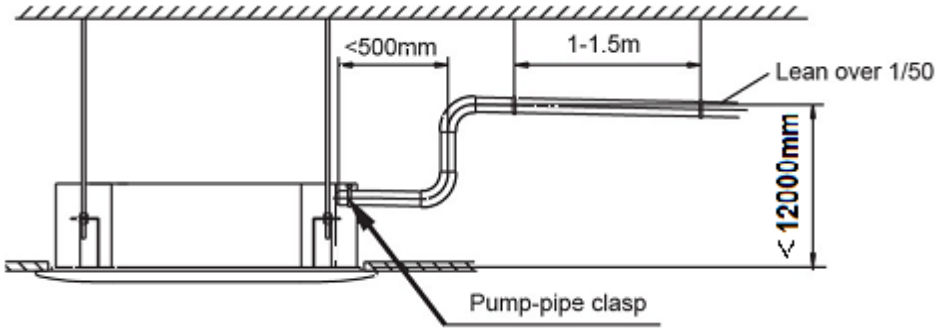


4.3 Upwards drainage (drain pump)

For Four-way cassette (compact)

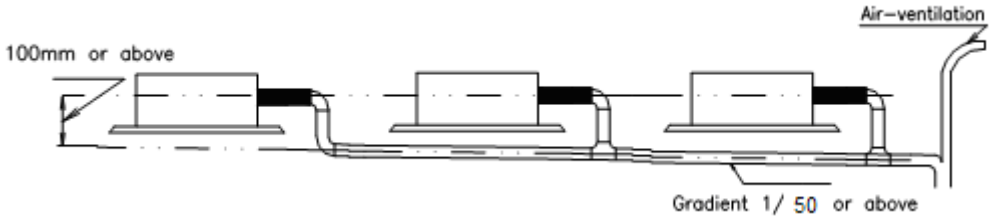


For Four-way cassette



4.4 Convergent drainage

4.4.1. The number of indoor units should be as small as possible to prevent the traverse main pipe overlong.
4.4.2. Indoor unit with drain pump and indoor unit without drain pump should be in different drainage system.



4.4.3. Selecting the diameter

Number of connecting indoor units → Calculate drainage volume → Select the diameter
Calculate allowed volume =Total cooling capacity of indoor units(HP)×2 (l/ hr)

	Allowed volume(lean 1/50) (l/ hr)	I.D. (mm)	Thick
Hard PVC	∽≤14	¢25	3.0
Hard PVC	14＜∽≤88	¢30	3.5
Hard PVC	88＜∽≤334	¢40	4.0
Hard PVC	175＜∽≤334	¢50	4.5
Hard PVC	334＜∽	¢80	6.0

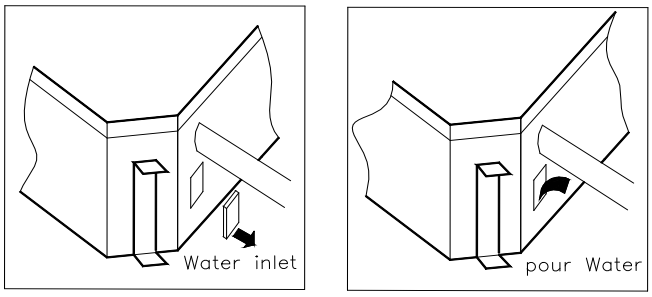
4.5 Drainage test

4.5.1Drainage without drain pump

After finishing drainpipe installation, pour some water into the water receiver plate to check if the water flows smoothly.

4.5.2 Drainage with drain pump

① Poke the Water Level Switch, remove the cover, use water pipe to pour 2000ml water into the water receipt plate through the water inlet.



② Turn on the power to Cooling operation. Check the pump's operation and switch on the Water Level Switch. Check the pump's sound and look into the transparent hard pipe in the outlet at the same time to check if the water can discharge normally.

③ Stop the air conditioner running, turn off the power, and put back the cover.

- Stop the air conditioner. After 3 minutes, check if it has abnormity. If the collocation of drainpipes is illogical, the water will flow back overfull, which will cause the alarm lamp flashes, even overflow from the water receipt plate.
- Keep on pouring water until it gives an alarm signal for high water level, check if the pump drains water at once. If the water level can't fall below the alarmed water level after 3 minutes, the air conditioner will stop. Turn off the power and drain the remained water, and then turn on the air conditioner.

Note: the drain stuff in the main water receipt plate is for maintenance. Stuff up the drain stuff to prevent water leakage.

5 Insulation Work

5.1 Insulation material and thickness

5.1.1. Insulation material

Insulation material should adopt the material which is able to endure the pipe's temperature: no less than 70℃ in the high-pressure side, no less than 120℃ in the low-pressure side(For the cooling type machine, no requirements at the low-pressure side.)

◆ Example: Heat pump type----Heat-resistant Polyethylene foam (withstand above 120℃)
Cooling only type----Polyethylene foam (withstand above 100℃)

5.1.2. Thickness choice for insulation material

Insulation material thickness is as follows:

	Pipe diameter (mm)	Adiabatic material thickness
Refrigerant pipe	Φ6.4—Φ25.4	10mm
	Φ28.6—Φ38.1	15mm
Drainage pipe	Inner diameterΦ20—Φ32	6mm

5.2 Refrigerant pipe insulation

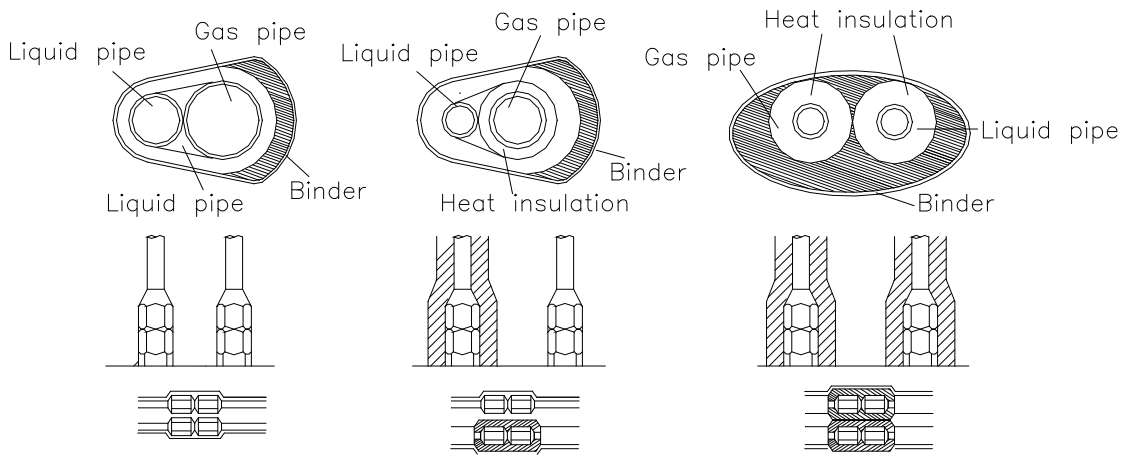
5.2.1. Work Procedure

① Before laying the pipes, the non-jointing parts and non-connection parts should be heat insulated.

② When the gas proof test is eligible, the jointing area, expanding area and the flange area should be heat insulated

5.2.2. Insulation for non-jointing parts and non-connection parts

wrong	right	
Gas pipe and liquid pipe should not be put together to insulate	Insulate the gas pipe (cooling only)	Insulate the gas pipe and liquid pipe

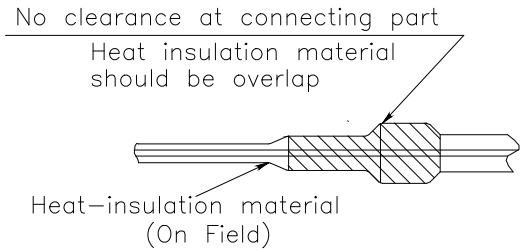

Liquid pipe
Gas pipe
Liquid pipe
Binder
Liquid pipe
Gas pipe
Binder
Heat insulation
Heat insulation
Gas pipe
Liquid pipe
Binder

For construction convenience, before laying pipes, use insulation material to insulate the pipes to be deal with, at the same time, at two ends of the pipe, remain some length not to be insulated, in order to be welded and check the leakage after laying the pipes.

5.2.3. Insulate for the jointing area, expanding area and the flange area

① Insulate for the jointing area, expanding area and the flange area should be done after checking leakage of the pipes

② Make sure there's no clearance in the joining part of the accessorial insulation material and local preparative insulation material.



5.3 Drainage pipe insulation

The connection part should be insulated, or else water will be condensing at the non-insulation part.

5.4 Note

5.4.1 The jointing area, expanding area and the flange area should be heat insulated after passing the pressure test

5.4.2 The gas and liquid pipe should be heat insulated individually, the connecting part should be heat insulated individually.

5.4.3 Use the attached heat-insulation material to insulate the pipe connections (pipes' tie-in ,expand nut) of the indoor unit

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.

Indoor unit

- 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.

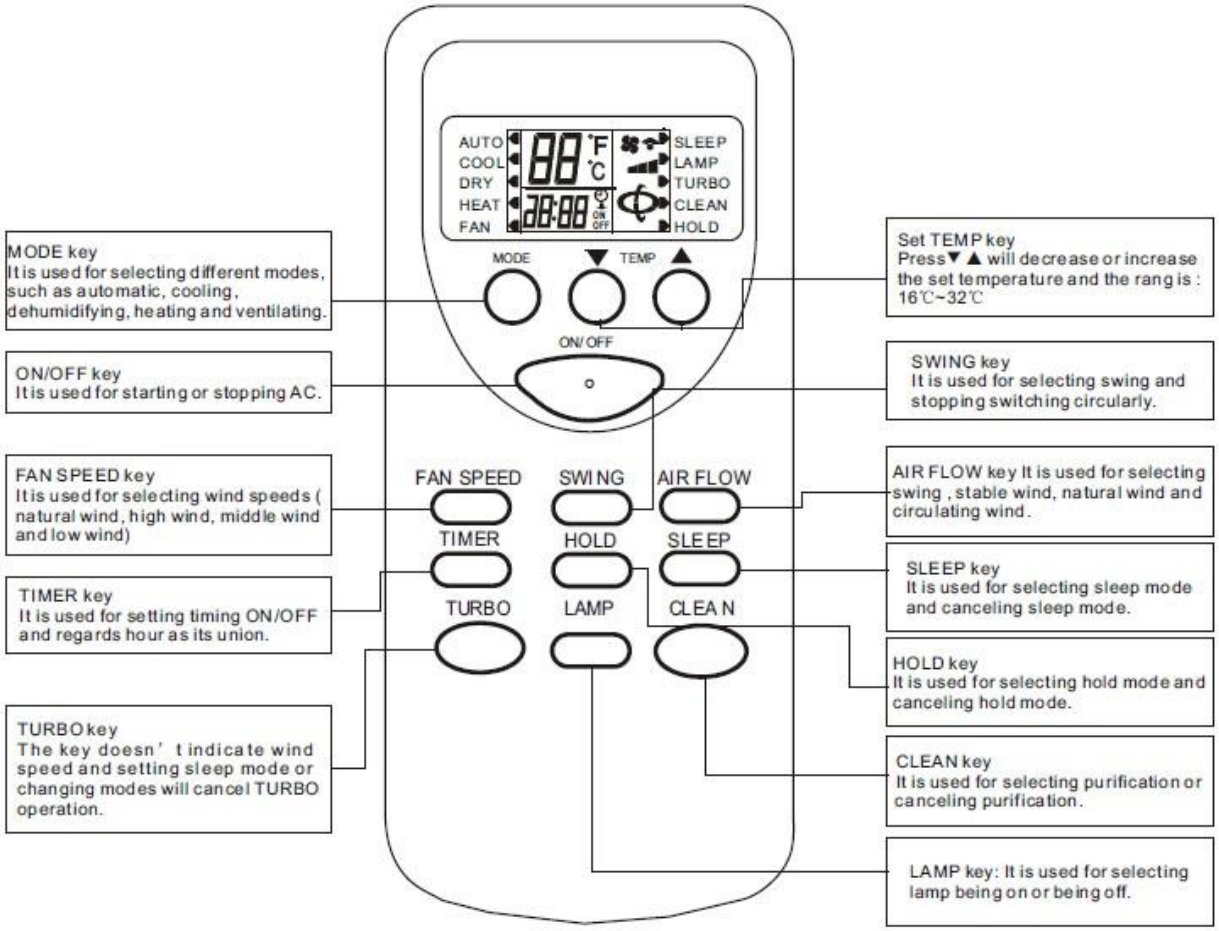
Outdoor unit

- Whether there is vibration or abnormal noise during operation.
- Whether the generated wind, noise, or condensed of by the air conditioner have influenced your neighborhood.
- Whether any of the refrigerant is leaked.

Part 5 Controller

1 Wireless Remote Controller

1.1 Jingling TB-YKQ-D02b



USE OF REMOTE CONTROLLER

The controller below is the Jingling Common Remote Controller, SWING key, TURBO key, LAMP key and CLEAN key is applicable for special latest developed new models instead of normal ones.

FUNCTION KEY

A. ON/OFF key:

Press the key and the remote control will switch circularly in the order: ON→OFF→ON. When it is powered on at first from off state to on state, the default setting of work condition is (The set temperature is 25℃ and the mode , wind speed, swing and air door are all automatic and there is no lamp, no turbo, no purification, no sleep, no timing and no hold function). When it is not powered on firstly from off state to on state, the work condition is as the same as the state before stopping. It will cancel damp, purification, sleep, turbo and timing running mode.

B. MODE key:

Press the key to switch modes in the order: automatic cooling →dehumidify →heating →ventilating →automatic.

C. " ▼ " key:

In dehumidifying mode and automatic mode, pressing the key cannot change the temperature. In other mode, press the key once and the temperature will decrease 1℃ in the order: 32℃→31℃→…→17℃→16℃ .

D. " ▲ " key:

In dehumidifying mode and automatic mode, pressing the key cannot change the temperature. In other mode, press the key once and the temperature will increase 1℃ in the order: 16℃→17℃→…→31℃→32℃.

E. SWING key:

In dehumidifying mode, the swing mode is in the stable wind mode without change. In other mode, press the key to switch modes in the order: swing → stable wind→ natural wind →swing

F. AIR FLOW key:

The default air flow is in the swing mode when starting firstly and press the key to switch modes in the order: swing →stop →swing.

G. WIND SPEED key:

The default wind speed is in the automatic wind mode when starting firstly. The remote control won't react by pressing the key because the wind speed can't be adjusted and in low speed in dehumidifying mode. In other mode, press the key to switch modes in the order: Automatic wind→ high speed →middle speed→ low speed →automatic wind

H. TIMER key:

The default mode is in no timing state, press the key to set timing time with hour as its union. The switch order is: 1H→2H→…→24H→cancel→1H…. Press the key to set timing starting in the off state and set timing stopping in the on state. After setting timing function, the time keeps decreasing per hour until the time decreasing to the timing on or timing off and the timing display will be cancelled at the same time. Pressing MODE key can't cancel timing in timing mode which will send out the order of timing time by pressing other key.

I. TURBO key:

The default state for the control is no turbo and the key don't work in the automatic mode, dehumidifying mode and ventilating mode (It will not display any contents and not send out any codes). The control, however, will

switch between on and off by pressing the key in other mode. The wind speed isn't indicated in turbo mode and it will be cancelled for changing modes and setting sleep mode.

J. SLEEP key:

Press the key to switch modes in the order: sleep→ cancel sleep→ sleep. The sleep function won't be cancelled for changing modes. Press the key to set sleep mode and the wind speed will automatically be switched to low speed and it can adjust the wind speed by pressing the WIND SPEED key (except dehumidifying mode).

K. LOCK key:

The default state is in no LOCK key state, press the key to select modes in order: LOCK key →cancel LOCK key→ LOCK key; In LOCK key mode, all keys except LOCK key of the remote control can't work . (NOTE: In LOCK key mode, the remote and operation panel of the unit both will be locked automatically by pressing the key and press the key again, they will be unlocked. As for the split unit, it only holds the control rather than urgent keys and the panel will make a reaction.)

L. LAMP key:

The default state is in no LAMP key state, press the key to select modes in order: LAMP key →cancel LAMP key→ LAMP key; In LAMP key mode, pressing MODE key can't cancel the show of LAMP key.

M. CLEAN key:

The default state is in no purification state, press the key to select modes in order: CLEAN →cancel CLEAN→ CLEAN; In purification mode, pressing CLEAN key can't cancel purification function. Press the key when the remote control is closed, the control will switch modes in the order: CLEAN →cancel CLEAN→ CLEAN; when you stop the unit and turn on the purification switch, except the wind, the stable swing and air door swing speed aren't adjusted.

2 Wire Controller

ZKX-CMVE-05

I. Use-method

The control panel of wire controller is responsible for controlling the operation status of the system by the button and displaying the working status of the entire system by its LCD screen, and is responsible for communicating with the control board of the system.

Fig1 Appearance of Wire Controller

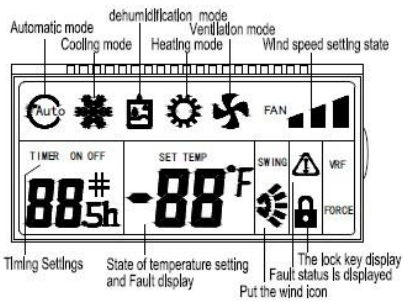


Fig2 LCD display content of Wire Controller

Operation and Instruction:

"ON/OFF" Button:

1) Control the On/Off status of the system.

2) Press and hold the On/Off button when the wire controller is powered on, to go into the self-test mode. And then you can release the button.

"MODE" Button:

When the air conditioning is powered on, every time you press mode button or the mode button of remote controller, the mode will change in the following sequence.

Auto Mode→Refrigeration→Dehumidification→Heating→Ventilation→Auto Mode

"TEMP+" and "TEMP-" Button ("▲", "▼"):

1) Boot state, press "▲" and "▼"Button, increase/decrease the setting temperature . Refrigeration, Dehumidification, Ventilation and Heating mode Scope of temperature setting: 16 ℃ ~ 32 ℃ ; The setting temperature do not adjust in Auto Mode .

2) Press the "▲" and "▼" button for 3s simultaneously to lock this button. At this time, It will display the locking icon in LCD. Deactivate this button, and press the "▲" and "▼" button again simultaneously.

"TIMER" Button

Set Timing On or Timing Off. The wire controller to set the time range as 1-24h.

1) Press the Timer button in the Off status to go into the Timing On for 1 hour, and then press the Timer button plus 1 until it is timing on for 24h. At this time, if you press the Timer button, it will deactivate Timing On.

2) Press the Timer button in the On status to go into the Timing Off for 1 hour, and then press the Timer button plus 1 until it is timing off for 24h. At this time, if you press the Timer button, it will deactivate Timing Off.

"FAN SPEED" Button:

1) The Fan Speed button is valid in the "Cooling mode", "Heating mode" and "Ventilation mode".

2) Press the Fan Speed button of the wire controller or the Volume button of the remote controller in the Cooling mode、Heating mode or Ventilation mode, and the volume changes as follows:

High speed ⟶ Middle speed ⟶ Low speed ⟶ Auto wind

3) There is no Auto wind in the Ventilation mode.

"SWING" Button:

1) Press it to display the Swing icon. The Swing icon will swing back and forth.

2) Press the Swing button, and the upper and lower wind deflectors will swing within the specified range automatically, and the left and right wind deflectors will swing within the specified range automatically, and press it again to stop the swing.

26℃/CHECK Button Function:

1) Short press this button , Enter a state of energy saving of 26 ℃, namely the setting temperature is 26 ℃. this function under the boot of Refrigeration and Heating mode is effective.

2) Long press this button , will enter the query condition; It will exit the query condition , when you press this button again and five seconds is not operating in the condition of the query.

By pressing "▲" and "▼"Button to check the temperature in the query condition. 1 is Indoor environment temperature , 2 is Indoor pipe temperature , 3 is outdoor pipe temperature

Description of DIP Switch:

	2 ON	2 OFF
3 ON	-4℃	-2℃
3 OFF	2℃	0℃
	ON	OFF
1	The old protocol	The new protocol
4	with power failure memory	without power failure memory

1) The second and third bits of the DIP switch will select the compensation value of the indoor temperature. The compensation value is -4℃ when the second and third bits are ON, and the compensation value is 0℃ when the second and third bits are OFF. The compensation value is 2℃ when the second bit is ON and the third bit is OFF, and the compensation value is -2℃ when the second bit is OFF and the third bit is On (for the wire controller sensor only).

2) The first bit of the DIP switch indicates to select the new or old protocol. Light commercial units select the new protocol.

3) The fourth bit ON of the DIP switch indicates it is With Power Failure Memory function, and the fourth bit OFF indicates it is Without Power Failure Memory.

NOTE: Just need to dial the code when matching the old type . Detailed please see after-sales guidance !

II. Installation of Wire Controller

Safety Precautions

! Read the safety precautions carefully before installation.

! The following is the important content to be paid for the safety, be sure to follow it.

! The meaning of each part:

⚠Warning:	Indicate it may cause the death or serious injury for theimproper operation.
⚠Note:	Indicate it may cause the death or serious injury for theimproper operation.

⚠Notes:

- Please do not install the wire controller in damp or direct sunlight places.
- Please do not hit, throw and frequent disassembling the wire controller.
- Please do not operating the wire controller with Wet hand ; Don't make any fluid into the wire controller .
- Please do not do dismantling the wire controller without authorization. Please consult after-sales maintenance personnel If you have a problem .
- To prevent water and dust into the wire controller, Affect the wire controller normal use. Please dismantle the wire controller When the indoor decoration and maintenancee .

Installation and disassembly of the wire controller

1、The installation position and requirements of the wire controller

1) Please do not install the wire controller in damp or direct sunlight places.

2) Please do not install the wire controller in the places, where is near the high temperature or easy to splash water.

3) To avoid the interference of the neighbors' remote controller which has the same model , then cause abnormal work. Please do not install the wire controller where the face up to the window.

4) Before installation , please cut off the power which is Buried in the wall mounting holes. The whole installation process does not allow operation with power.

5) In order to avoid the unit by reason of electromagnetic interference caused by abnormal work . When wiring , please pay attention to the following matters.

A) Ensure that communication line access right, otherwise will lead to communication failures.

B) If the air conditioning unit is installed on the places , which is influence by electromagnetic interference . the wire controller signal lines must use shielded twisted-pair cable .

6) The standard accessories which is installation need to prepare : installed inside a wall socket bottom box, controller base plate, screw the M4 x 25, control panel.

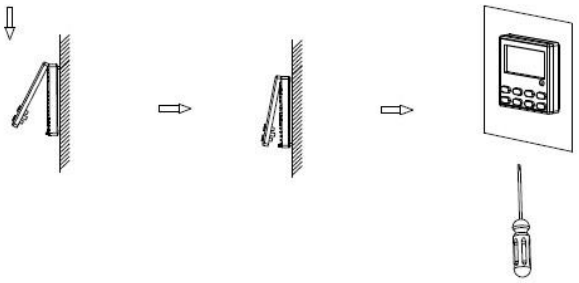
2、The installation of the wire controller

First of all, the wire controller signal line connection mode is as follows:

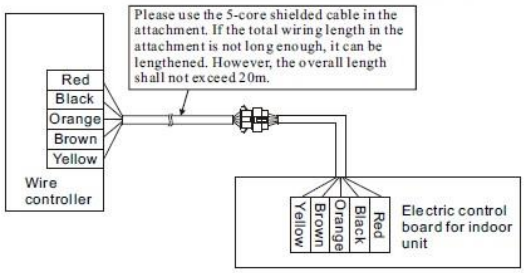
1) Open interior electrical lifted the lid, and the signal wires through the rubber ring;

2) Plug the wire controller signal lines within the five core needle base on the indoor machine circuit boards, and using cable tie line tied tightly fixed.

Next, the wire controller installation steps as shown in the figure below:



Connect the wire controller in the way as shown in the figure below



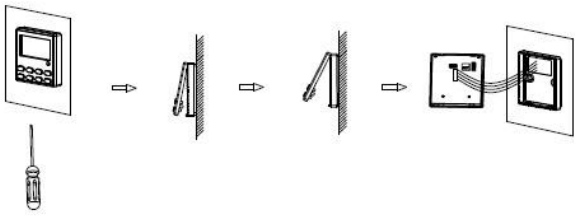
Brief description of the installation process is as follows

1) The signal lines of short through rectangle hole of the wire controller bottom plate, and then pull out five core twisted pair from the wall installation hole. Finally connect the line and the other end.

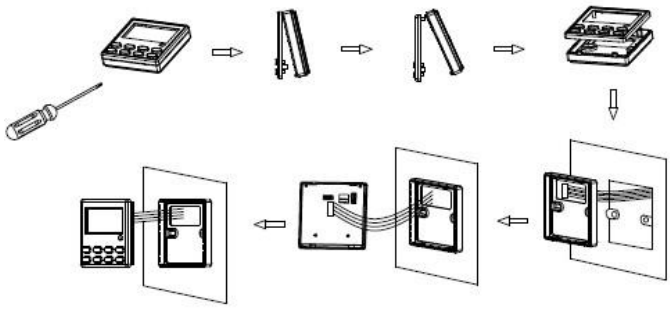
2) Use screws M4 x 25 to fix the controller base plate on the mounting holes of the wall.

3) Put the wire controller panel and floor buttons together, and this installation is complete. When installation, please reserve a certain length of the line at the bottom of box, to facilitate maintenance later removed.

3、Disassembly of the wire controller



!After the completion of the installation, confirm there is no abnormity for the commissioning, and deliver the instruction to customers for storage.



Note:

- It may cause the rear cover deformed if the screw is tightened too much.
- It is necessary to reserve a certain length for the connecting cable of the wire controller during the installation, so as to take down the wire controller for the maintenance.