



DC Inverter Multi-split System Technical Manual - 50Hz/R410a

A/1/LCAC/2/TM/1.0/201111



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Part 1.

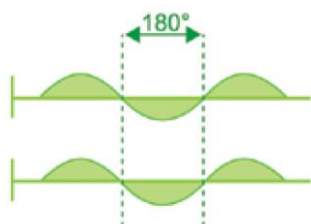
General Information

1. Features

1.1 Compressor

1.1.1 Adopting Mitsubishi DC inverter twin rotary compressor, high energy efficiency and operating reliability.

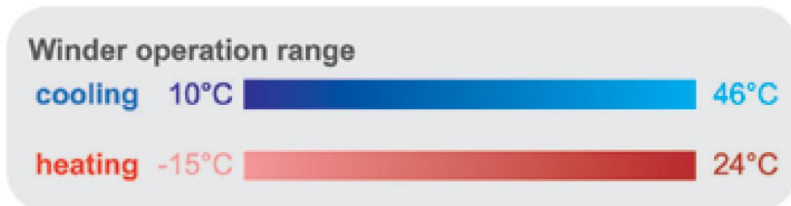
1.1.2 180° sine wave control compressor control, higher efficiency and lower power consumption.



1.1.3 Built-in high temp. protection, guarantee safety revolution.

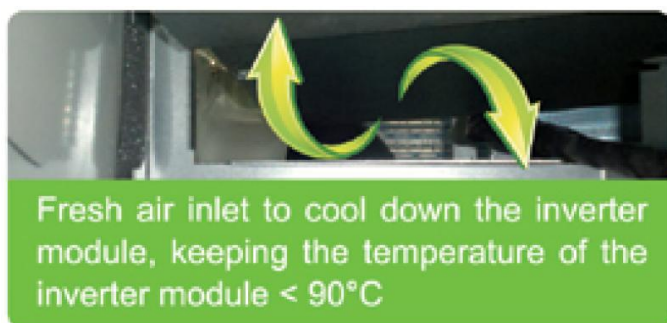
1.2 Operation range

High temperature and low temperature operation stability.



1.3 Electrical design

1.3.1 Total new design for the E-box. Optimizing design of the E-box, fresh air cooling down the temperature of the inverter module.



1.3.2 Adopting high performance main chip of NEC for the electronic control, higher reliability and operation speed.

1.4 System design

1.4.1 Anticorrosive components design, leading to longer service life.



Plastic-coating EXV loop design.

1.4.2 Profit from EXV design, the system can control the refrigerant flow much more precisely, leading to precise capacity output, make the users much more comfortable and save energy.

1.5 Free match

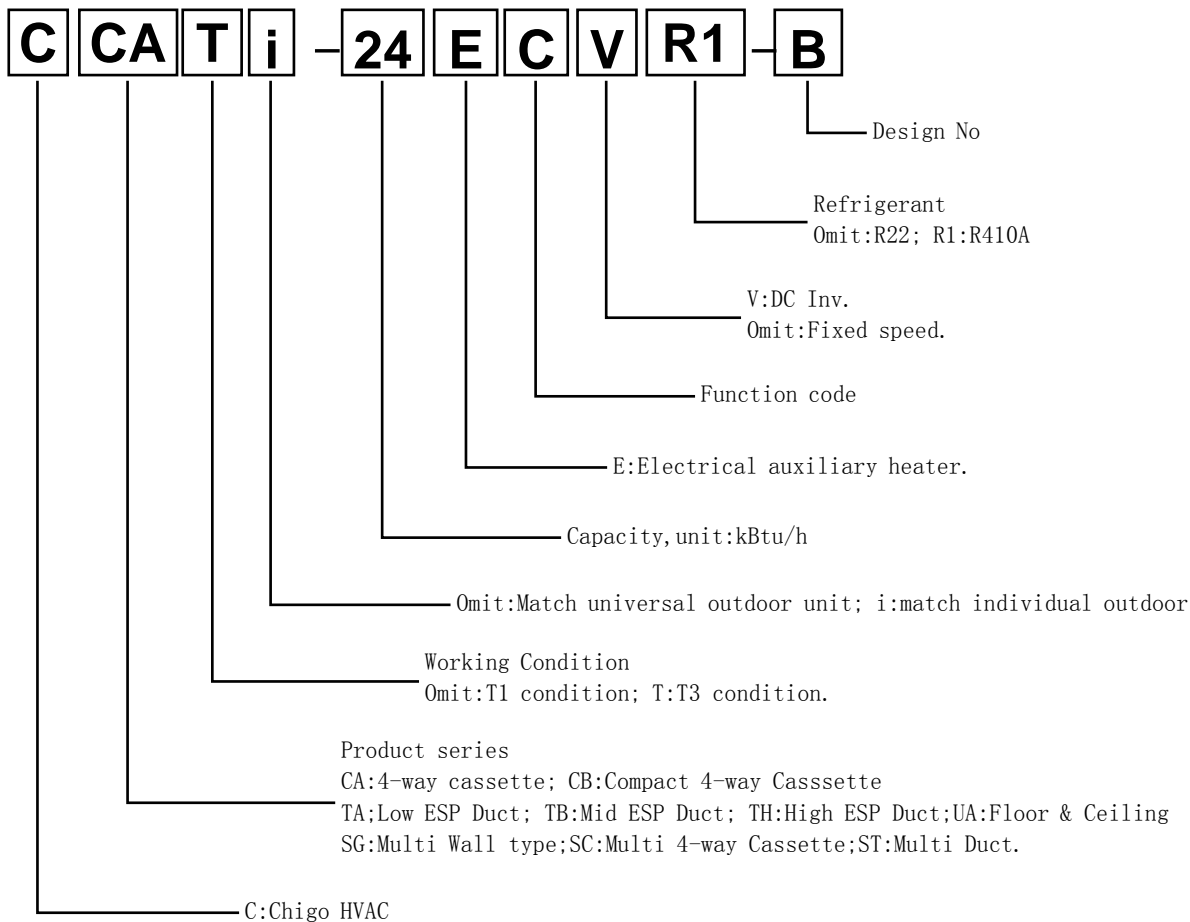
1.5.1 Different indoor units for choice. You can choose different indoor units appearance for your favorite.

1.5.2 Much more indoor units for free combination, meeting for different requirement such as office, house use, villa and etc.

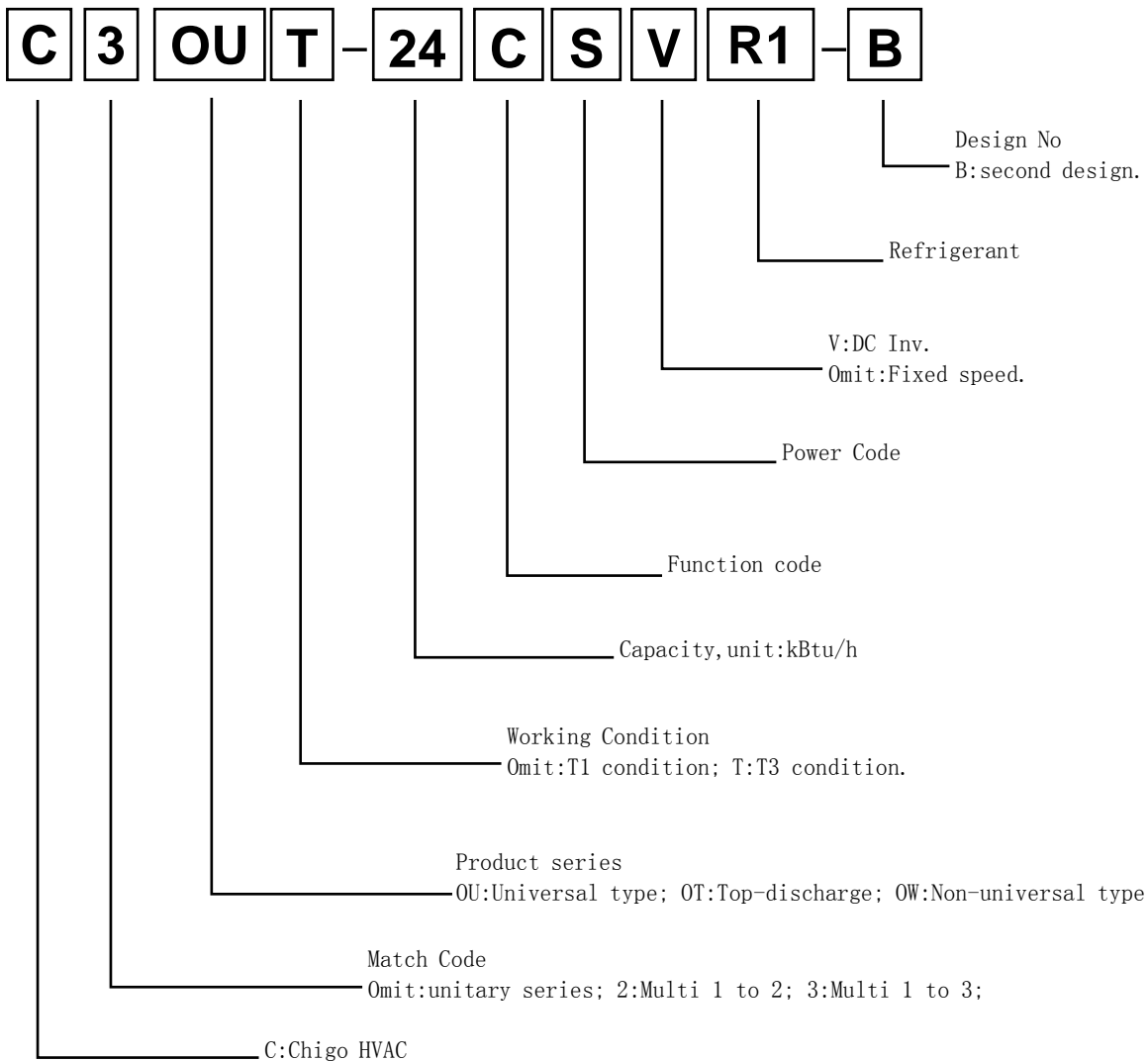
1.5.3 One or more indoor units' connection combination for your choice.

2. Nomenclature

2.1 Indoor Units



2.2 Outdoor Units



3. Products Line-up

3.1 Indoor Units

Model name	Dimension (W×H×D)(mm)	Net/Gross weight (kg)	Power supply
Wall Mounted			
CSG-07HVR1(84)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-09HVR1(84)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-12HVR1(84)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-18HVR1(84)	900×282×205	14/16	220~240V/1Ph/50Hz
CSG-07HVR1(87)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-09HVR1(87)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-12HVR1(87)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-18HVR1(87)	900×282×205	14/16	220~240V/1Ph/50Hz
CSG-07HVR1(107)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-09HVR1(107)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-12HVR1(107)	800×287×192	9/11	220~240V/1Ph/50Hz
CSG-18HVR1(107)	900×282×205	14/16	220~240V/1Ph/50Hz

3.2 Outdoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight (kg)	Power supply
DC Dual-split			
C2OU-14HVR1	940×332×608	38/41	220~240V/1Ph/50Hz
C2OU-18HVR1	940×332×608	39/42	220~240V/1Ph/50Hz
DC Tri-split			
C3OU-21HVR1	900×332×840	62/67	220~240V/1Ph/50Hz
C3OU-27HVR1	900×332×840	63/68	220~240V/1Ph/50Hz

4. External Appearance

4.1 Indoor Units

Wall Mounted



7k~18k Btu/h (84 Series)



7k~18k Btu/h (87 Series)



7k~18k Btu/h (107 Series)

4.2 Outdoor Units

DC Dual-split

14k Btu//h



18k Btu//h



DC Triple-split

21k Btu//h



27k Btu//h



5. Combination Table

Outdoor Unit	Qty. of indoor units	Combination Table (kBtu/h)
C2OU-14HVR1	1	7
	1	9
	1	12
	2	7+7
	2	7+9
	2	7+12
	2	9+9
	2	9+12
C2OU-18HVR1	1	7
	1	9
	1	12
	2	7+7
	2	7+9
	2	7+12
	2	9+9
	2	9+12
C3OU-21HVR1	1	7
	1	9
	1	12
	2	7+7
	2	7+9
	2	7+12
	2	9+9
	2	9+12
	2	12+12
	3	7+7+7
	3	7+7+9
	3	7+7+12
	3	7+9+9
	3	7+9+12
	3	9+9+9

C3OU-27HVR1	1	7
	1	9
	1	12
	1	18
	2	7+7
	2	7+9
	2	7+12
	2	7+18
	2	9+9
	2	9+12
	2	9+18
	2	12+12
	2	12+18
	3	7+7+7
	3	7+7+9
	3	7+7+12
	3	7+9+9
	3	7+9+12
	3	9+9+9
	3	7+12+12
3	9+9+12	
3	9+12+12	

Part 2.

Indoor Units

1. Features

The wall-mounted indoor unit has several different types for your choice, such as 84 style, 87 style and 107 style. The different style panels can satisfy your different requirements. All the units have various functions, such as the function of auto-restart, sleep mode are standard, golden fins and some filter for optional.

2. Specifications

2.184 style indoor unit

Model name			CSG-07HVR1(84)	CSG-09HVR1(84)	CSG-12HVR1(84)	CSG-18HVR1(84)
Power supply	V-ph-Hz		220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Electricity supplying type			Outdoor unit supply			
Cooling	Capacity	Btu/h	7000	9000	12000	18000
	Input	W	40	40	40	60
	Rated current	A	0.2	0.2	0.2	0.27
Heating	Capacity	Btu/h	8500	10400	13800	19800
	Input	W	40	40	40	60
	Rated current	A	0.2	0.2	0.2	0.27
Indoor fan motor	Model		YDK-16-4 3	YDK-16-4 3	YDK-16-4 3	YDK-27-4 A6
	Type		PG Motor	PG Motor	PG Motor	Tapping Motor
	Brand		CHIGO	CHIGO	CHIGO	CHIGO
	Input	W	40	40	40	60
	Capacitor	μF	1	1	1	1.8
	Speed (H/M/L)	r/min	900/850/800	1000/900/800	1200/1100/1000	1300/1150/1000
Indoor coil	Number of rows		2	2	2	2
	Tube pitch * row pitch	mm	21*10.9	21*10.9	21*10.9	21*12.7
	Fin spacing	mm	1.5	1.5	1.5	1.6
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside diameter	mm	Φ5	Φ5	Φ5	Φ7
	Tube type		Inner screw	Inner screw	Inner screw	Inner screw
	Coil size (W*H*D)	mm	615*121*210	615*121*210	615*121*210	745*138*216
	Number of circuits		4	4	4	4
Indoor air flow (H/M/L)	m ³ /h	400/345/290	450/390/327	500/431/364	750/600/420	
Indoor noise level(H/M/L)	dB(A)	30/28/26	33/30/27	35/32/28	43/39/35	
Indoor unit	Net Dimension (W*H *D)	mm	800*287*192	800*287*192	800*287*192	900*282*202
	Packing Dimension(W*H*D)	mm	865*358*275	865*358*275	865*358*275	983*377*300
	Net/Gross weight	kg	9/11	9/11	9/11	14/16
Refrigerant Type		R410a	R410a	R410a	R410a	
Refrigerant pipe (Liquid side/ Gas	mm	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ12.7	
Drainage water pipe diameter	mm	DN25	DN25	DN25	DN25	
Controller(standard)		TB-YKQ-D02b	TB-YKQ-D02b	TB-YKQ-D02b	TB-YKQ-D02b	
Application area	m ²	13-15	16-20	21-26	32-40	

Notes:

1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.
2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.
3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
4. The above data may be changed without notice for future improvement on quality and performance.

2.287 style indoor units

Model name			CSG-07HVR1(87)	CSG-09HVR1(87)	CSG-12HVR1(87)	CSG-18HVR1(87)
Power supply		V-ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Electricity Supplying type			Outdoor unit supply			
Cooling	Capacity	Btu/h	7000	9000	12000	18000
	Input	W	40	40	40	60
	Rated current	A	0.2	0.2	0.2	0.27
Heating	Capacity	Btu/h	8500	10400	13800	19800
	Input	W	40	40	40	60
	Rated current	A	0.2	0.2	0.2	0.27
Indoor fan motor	Model		YDK-16-4 3	YDK-16-4 3	YDK-16-4 3	YDK-27-4 A6
	Type		PG Motor	PG Motor	PG Motor	Tapping Motor
	Brand		CHIGO	CHIGO	CHIGO	CHIGO
	Input	W	40	40	40	60
	Capacitor	μF	1	1	1	1.8
	Speed (H/M/L)	r/min	900/850/800	1000/900/800	1200/1100/1000	1300/1150/1000
Indoor coil	Number of rows		2	2	2	2
	Tube pitch * row pitch	mm	21×10.9	21×10.9	21×10.9	21×12.7
	Fin spacing	mm	1.5	1.5	1.5	1.6
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside diameter	mm	Φ 5	Φ 5	Φ 5	Φ 7
	Tube type		Inner screw	Inner screw	Inner screw	Inner screw
	Coil size (W*H*D)	mm	615*121*210	615*121*210	615*121*210	745*138*216
	Number of circuits		4	4	4	4
Indoor air flow (H/M/L)		m ³ /h	400/345/290	450/390/327	500/431/364	750/600/420
Indoor noise level (H/M/L)		dB(A)	30/28/26	33/30/27	35/32/28	43/39/35
Indoor unit	Net Dimension (W*H	mm	800*287*192	800*287*192	800*287*192	900*282*202
	Packing Dimension	mm	865*358*275	865*358*275	865*358*275	983*377*300
	Net/Gross weight	kg	9/11	9/11	9/11	14/16
Refrigerant Type			R410a	R410a	R410a	R410a
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ12.7
Drainage water pipe diameter		mm	DN25	DN25	DN25	DN25
Controller(standard)			TB-YKQ-D02b	TB-YKQ-D02b	TB-YKQ-D02b	TB-YKQ-D02b
Application area		m ²	13-15	16-20	21-26	32-40

Notes:

1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB
2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB
3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
4. The above data may be changed without notice for future improvement on quality and performance.

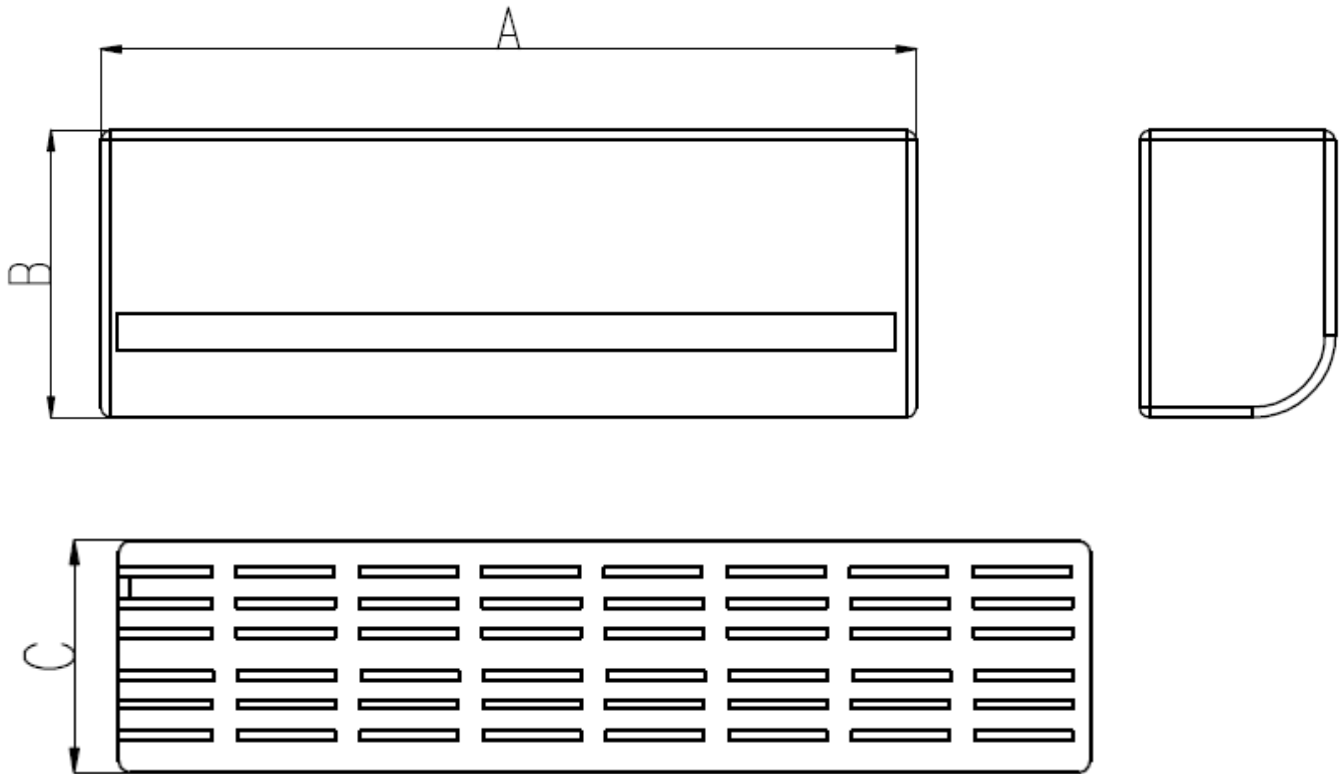
2.3 107 style indoor units

Model name			CSG-07HVR1(107)	CSG-09HVR1(107)	CSG-12HVR1(107)	CSG-18HVR1(107)
Power supply		V-ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Electricity Supplying type			Outdoor unit supply			
Cooling	Capacity	Btu/h	7000	9000	12000	18000
	Input	W	40	40	40	60
	Rated current	A	0.2	0.2	0.2	0.27
Heating	Capacity	Btu/h	8500	10400	13800	19800
	Input	W	40	40	40	60
	Rated current	A	0.2	0.2	0.2	0.27
Indoor fan motor	Model		YDK-16-4 3	YDK-16-4 3	YDK-16-4 3	YDK-27-4 A6
	Type		PG Motor	PG Motor	PG Motor	Tapping Motor
	Brand		CHIGO	CHIGO	CHIGO	CHIGO
	Input	W	40	40	40	60
	Capacitor	μF	1	1	1	1.8
	Speed (H/M/L)	r/min	900/850/800	1000/900/800	1200/1100/1000	1300/1150/1000
Indoor coil	Number of rows		2	2	2	2
	Tube pitch * row pitch	mm	21×10.9	21×10.9	21×10.9	21×12.7
	Fin spacing	mm	1.5	1.5	1.5	1.6
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside diameter	mm	Φ 5	Φ 5	Φ 5	Φ 7
	Tube type		Inner screw	Inner screw	Inner screw	Inner screw
	Coil size (W*H*D)	mm	615*121*210	615*121*210	615*121*210	745*138*216
	Number of circuits		4	4	4	4
Indoor air flow (H/M/L)		m ³ /h	400/345/290	450/390/327	500/431/364	750/600/420
Indoor noise level (H/M/L)		dB(A)	30/28/26	33/30/27	35/32/28	43/39/35
Indoor unit	Net Dimension (W*H	mm	800*287*192	800*287*192	800*287*192	900*282*202
	Packing Dimension	mm	865*358*275	865*358*275	865*358*275	983*377*300
	Net/Gross weight	kg	9/11	9/11	9/11	14/16
Refrigerant Type			R410a	R410a	R410a	R410a
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ12.7
Drainage water pipe diameter		mm	DN25	DN25	DN25	DN25
Controller(standard)			TB-YKQ-D02b	TB-YKQ-D02b	TB-YKQ-D02b	TB-YKQ-D02b
Application area		m ²	13-15	16-20	21-26	32-40

Notes:

1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.
2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.
3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
4. The above data may be changed without notice for future improvement on quality and performance.

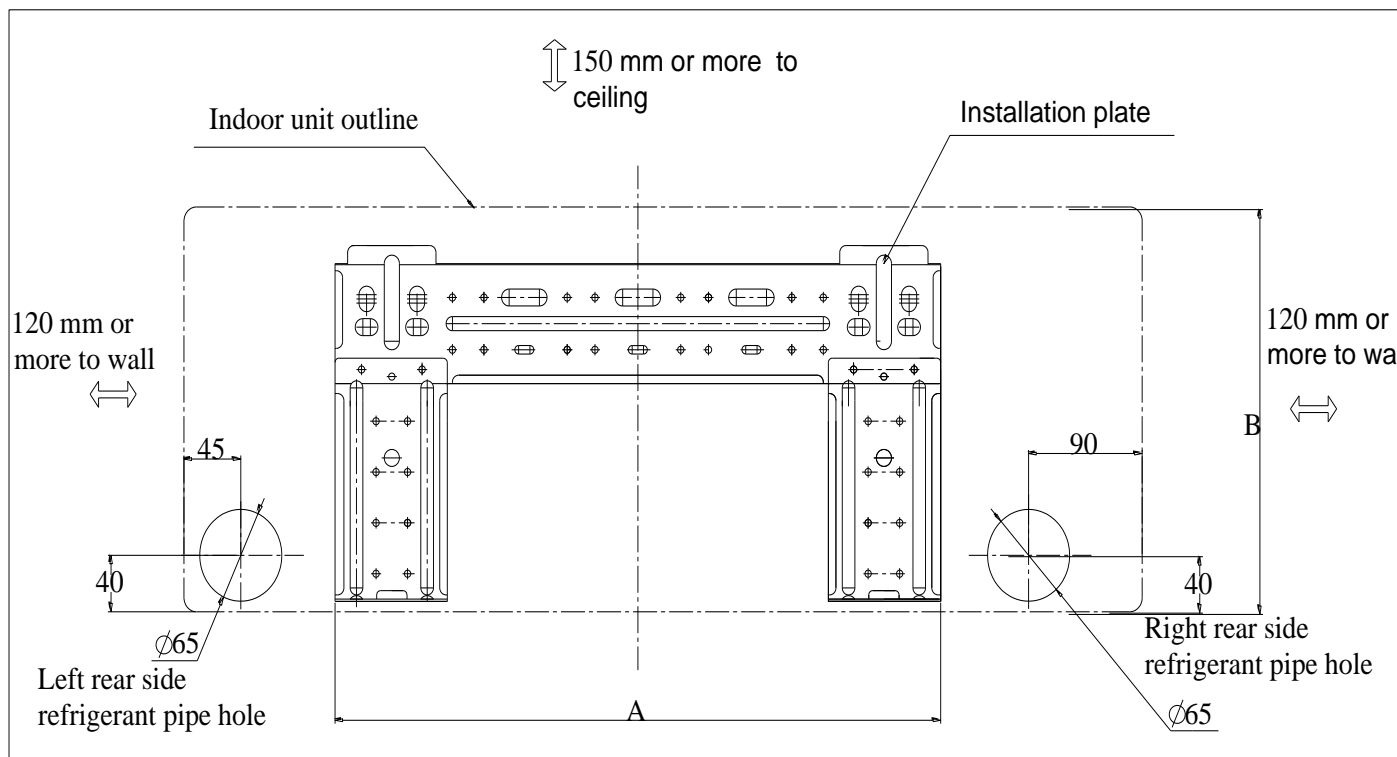
3. Dimensions



Unit: mm

Capacity	A	B	C
≤12k Btu/h	800	287	192
18k Btu/h	900	282	205

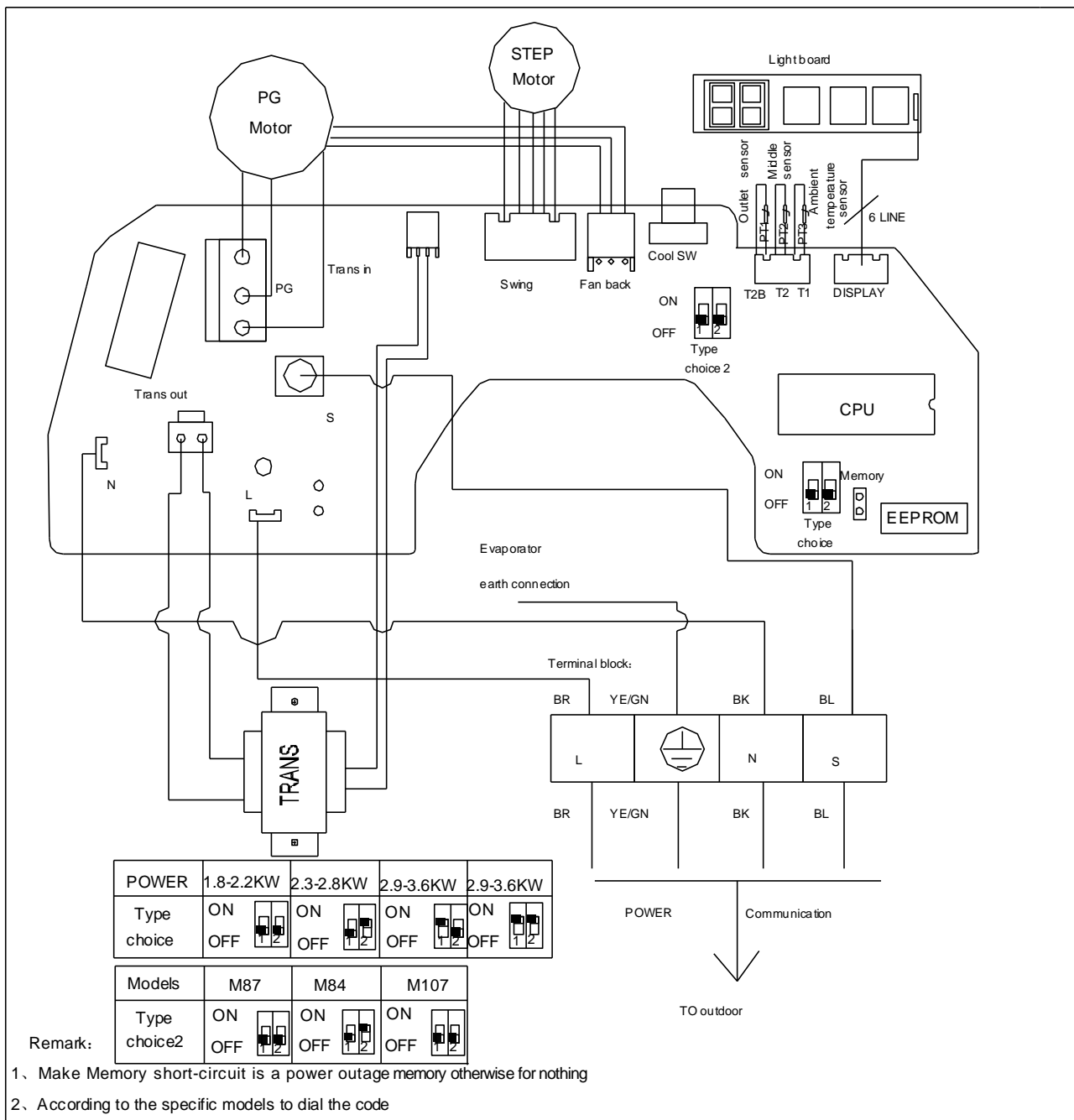
4. Service Space



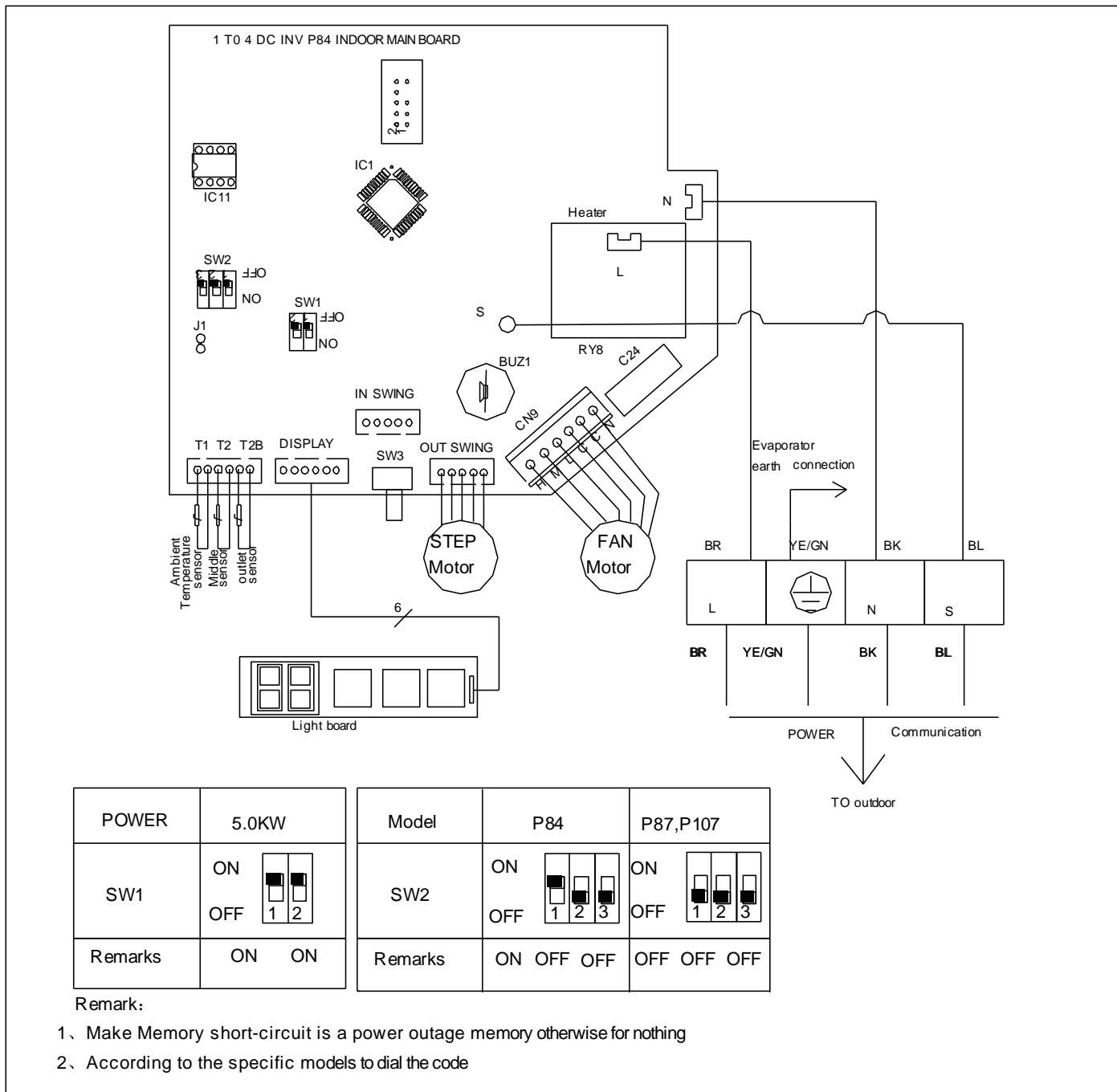
Model	A(mm)	B(mm)
≤12000Btu/h	790	280
≥18000Btu/h	900	296

5. Wiring Diagrams

CSG-07HVR1CSG-09HVR1CSG-12HVR1



CSG-18HVR1



6. Capacity Table

6.1 Cooling

TC: Total Capacity; **SC:** Sensible Capacity **WB:** Wet-bulb temp. **DB:** Dry-bulb temp.

Indoor Unit size	Outdoor temperature (°C DB)	Indoor temperature (°C WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
07kBtu/h (2.1kW)	10	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.5	1.6	2.8	1.6
	12	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.5	1.6	2.7	1.5
	14	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.5	1.6	2.7	1.5
	16	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.5	1.6	2.7	1.5
	18	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.5	1.6	2.7	1.5
	20	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.5	1.6	2.6	1.4
	21	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.5	1.6	2.6	1.4
	23	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.4	1.5	2.6	1.4
	25	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.4	1.5	2.5	1.4
	27	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.4	1.5	2.5	1.4
	29	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.3	1.4	2.4	1.4
	31	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.3	1.4	2.4	1.4
	33	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.3	1.4	2.3	1.4
	35	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.2	1.4	2.3	1.4
37	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.2	1.6	2.2	1.4	2.2	1.4	
39	1.4	1.3	1.7	1.4	2.0	1.5	2.1	1.5	2.1	1.5	2.2	1.4	2.2	1.4	
09kBtu/h (2.6kW)	10	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.1	2.0	3.4	2.0
	12	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.1	2.0	3.3	2.0
	14	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.1	2.0	3.3	2.0
	16	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.1	2.0	3.3	1.9
	18	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.1	2.0	3.3	1.9
	20	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.1	2.0	3.2	1.8
	21	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.1	2.0	3.2	1.8
	23	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.0	2.0	3.2	1.8
	25	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.0	1.9	3.1	1.8
	27	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	3.0	1.9	3.1	1.8
	29	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	2.9	1.9	3.0	1.8
	31	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	2.9	1.9	3.0	1.8
	33	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.1	2.9	1.9	2.9	1.9
	35	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.0	2.7	1.8	2.9	1.9
37	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.7	2.0	2.7	1.8	2.7	1.8	
39	1.8	1.7	2.1	1.8	2.5	1.9	2.6	1.9	2.6	1.9	2.7	1.8	2.7	1.8	

TC: Total Capacity; **SC:** Sensible Capacity **WB:** Wet-bulb temp. **DB:** Dry-bulb temp.

Indoor Unit size	Outdoor temperature (°C DB)	Indoor temperature (°C WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
12kBtu/h (3.5kW)	10	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.7	2.6
	12	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.5	2.6
	14	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.5	2.6
	16	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.4	2.6
	18	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.4	2.6
	20	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.3	2.6
	21	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.3	2.6
	23	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.1	2.6	4.3	2.6
	25	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.0	2.6	4.1	2.5
	27	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	4.0	2.6	4.1	2.5
	29	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	3.9	2.5	4.0	2.4
	31	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	3.9	2.5	4.0	2.3
	33	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.8	2.6	3.9	2.5	3.9	2.3
	35	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.6	2.5	3.8	2.5	3.9	2.3
	37	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.6	2.5	3.8	2.5	3.8	2.2
39	2.3	2.1	2.9	2.4	3.2	2.6	3.5	2.6	3.6	2.5	3.8	2.6	3.8	2.3	
18kBtu/h (5.3kW)	10	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.9	4.0
	12	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.9	4.0
	14	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.8	4.0
	16	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.5	3.9
	18	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.7	4.0
	20	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.7	4.0
	21	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.6	4.0
	23	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.4	6.5	3.9
	25	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.2	4.0	6.4	3.8
	27	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.1	3.9	6.2	3.7
	29	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	6.0	3.9	6.1	3.6
	31	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	5.9	3.8	6.0	3.6
	33	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	5.7	3.7	6.0	3.6
	35	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	5.6	3.6	5.9	3.5
	37	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.7	3.9	5.6	3.8	5.8	3.4
39	3.7	3.1	4.4	3.4	4.9	3.8	5.3	3.9	5.4	3.7	5.5	3.7	5.7	3.4	

6.2 Heating

TC: Total Capacity; **WB:** Wet-bulb temp. **DB:** Dry-bulb temp.

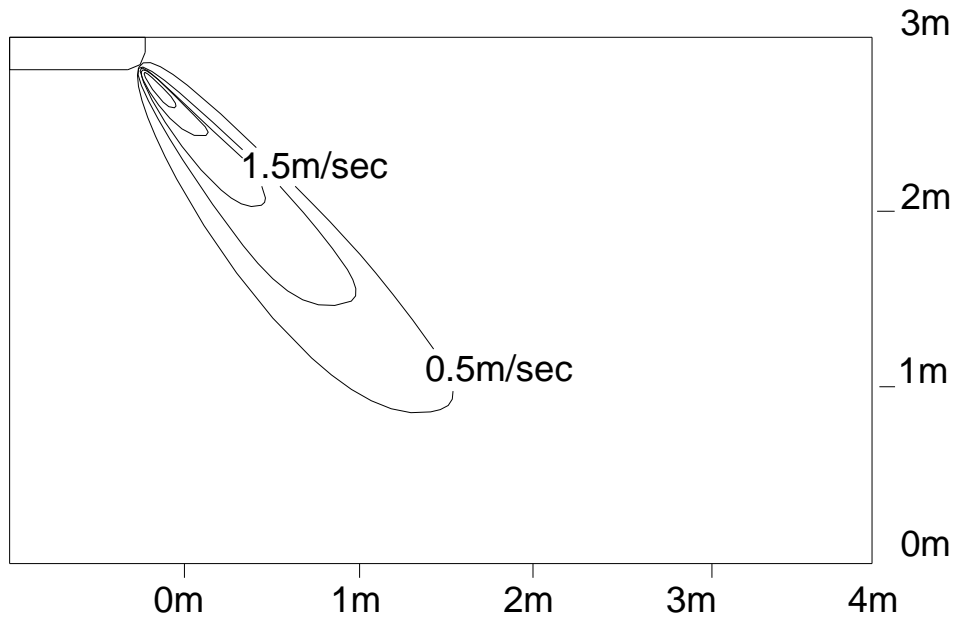
Indoor Unit size	Outdoor temperature (°C)		Indoor temperature (°C DB)					
			16	18	20	21	22	24
	WB	DB	TC	TC	TC	TC	TC	TC
07kBTu/h (2.1kW)	-15.00	-14.70	1.58	1.58	1.58	1.58	1.58	1.58
	-13.00	-12.60	1.67	1.67	1.67	1.67	1.67	1.67
	-11.00	-10.50	1.75	1.75	1.75	1.75	1.75	1.75
	-10.00	-9.50	1.83	1.83	1.83	1.83	1.83	1.83
	-9.10	-8.50	1.88	1.88	1.88	1.88	1.88	1.88
	-7.60	-7.00	1.90	1.90	1.90	1.90	1.90	1.90
	-5.60	-5.00	1.97	1.97	1.97	1.97	1.97	1.97
	-3.70	-3.00	2.08	2.08	2.08	2.08	2.08	2.08
	-0.70	0.00	2.22	2.22	2.22	2.22	2.22	2.10
	2.20	3.00	2.35	2.35	2.35	2.35	2.30	2.10
	4.10	5.00	2.42	2.42	2.42	2.42	2.30	2.10
	6.00	7.00	2.50	2.50	2.50	2.42	2.30	2.10
	7.90	9.00	2.58	2.58	2.82	2.42	2.30	2.10
	9.80	11.00	2.65	2.65	2.50	2.42	2.30	2.10
	11.80	13.00	2.75	2.70	2.50	2.42	2.30	2.10
13.70	15.00	2.83	2.70	2.50	2.42	2.30	2.10	
09kBTu/h (2.6kW)	-15.00	-14.70	1.89	1.89	1.89	1.89	1.89	1.89
	-13.00	-12.60	2.01	2.01	2.01	2.01	2.01	2.01
	-11.00	-10.50	2.10	2.10	2.10	2.10	2.10	2.10
	-10.00	-9.50	2.19	2.19	2.19	2.19	2.19	2.19
	-9.10	-8.50	2.25	2.25	2.25	2.25	2.25	2.25
	-7.60	-7.00	2.28	2.28	2.28	2.28	2.28	2.28
	-5.60	-5.00	2.37	2.37	2.37	2.37	2.37	2.37
	-3.70	-3.00	2.49	2.49	2.49	2.49	2.49	2.49
	-0.70	0.00	2.67	2.67	2.67	2.67	2.67	2.52
	2.20	3.00	2.82	2.82	2.82	2.82	2.76	2.52
	4.10	5.00	2.91	2.91	2.91	2.91	2.76	2.52
	6.00	7.00	3.00	3.00	3.00	2.91	2.76	2.52
	7.90	9.00	3.09	3.09	2.75	2.91	2.76	2.52
	9.80	11.00	3.18	3.18	3.00	2.91	2.76	2.52
	11.80	13.00	3.30	3.24	3.00	2.91	2.76	2.52
13.70	15.00	3.39	3.24	3.00	2.91	2.76	2.52	

TC: Total Capacity; **WB:** Wet-bulb temp. **DB:** Dry-bulb temp.

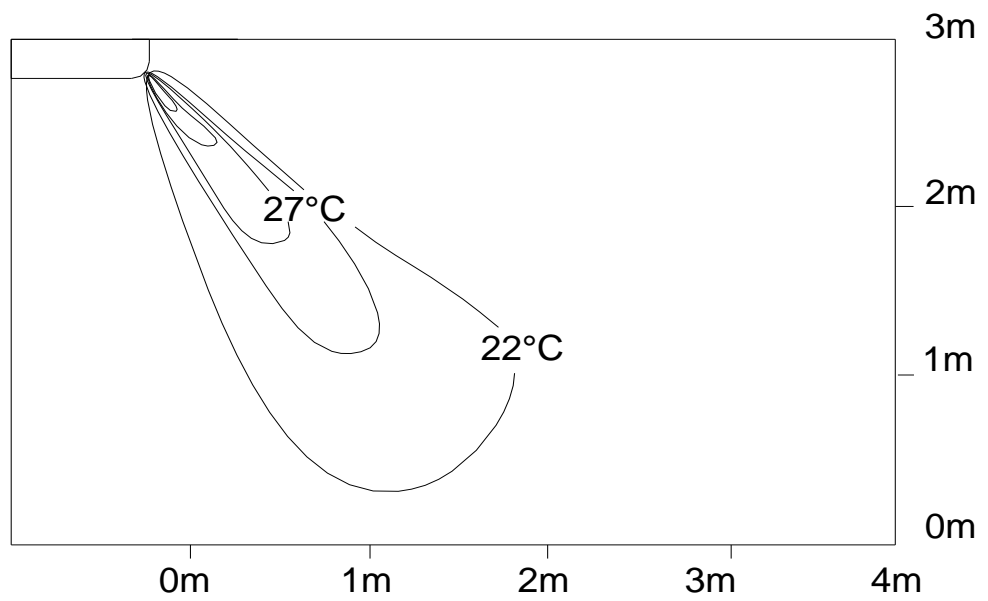
Indoor Unit size	Outdoor temperature (°C)		Indoor temperature (°C DB)					
			16	18	20	21	22	24
	WB	DB	TC	TC	TC	TC	TC	TC
12kBtu/h (3.5kW)	-15.00	-14.70	2.52	2.52	2.52	2.52	2.52	2.52
	-13.00	-12.60	2.68	2.68	2.68	2.68	2.68	2.68
	-11.00	-10.50	2.80	2.80	2.80	2.80	2.80	2.80
	-10.00	-9.50	2.92	2.92	2.92	2.92	2.92	2.92
	-9.10	-8.50	3.00	3.00	3.00	3.00	3.00	3.00
	-7.60	-7.00	3.04	3.04	3.04	3.04	3.04	3.04
	-5.60	-5.00	3.16	3.16	3.16	3.16	3.16	3.16
	-3.70	-3.00	3.32	3.32	3.32	3.32	3.32	3.32
	-0.70	0.00	3.56	3.56	3.56	3.56	3.56	3.36
	2.20	3.00	3.76	3.76	3.76	3.76	3.68	3.36
	4.10	5.00	3.88	3.88	3.88	3.88	3.68	3.36
	6.00	7.00	4.00	4.00	4.00	3.88	3.68	3.36
	7.90	9.00	4.12	4.12	2.93	3.88	3.68	3.36
	9.80	11.00	4.24	4.24	4.00	3.88	3.68	3.36
	11.80	13.00	4.40	4.32	4.00	3.88	3.68	3.36
13.70	15.00	4.52	4.32	4.00	3.88	3.68	3.36	
18kBtu/h (5.3kW)	-15.00	-14.70	3.65	3.65	3.65	3.65	3.65	3.65
	-13.00	-12.60	3.89	3.89	3.89	3.89	3.89	3.89
	-11.00	-10.50	4.06	4.06	4.06	4.06	4.06	4.06
	-10.00	-9.50	4.23	4.23	4.23	4.23	4.23	4.23
	-9.10	-8.50	4.35	4.35	4.35	4.35	4.35	4.35
	-7.60	-7.00	4.41	4.41	4.41	4.41	4.41	4.41
	-5.60	-5.00	4.58	4.58	4.58	4.58	4.58	4.58
	-3.70	-3.00	4.81	4.81	4.81	4.81	4.81	4.81
	-0.70	0.00	5.16	5.16	5.16	5.16	5.16	4.87
	2.20	3.00	5.45	5.45	5.45	5.45	5.34	4.87
	4.10	5.00	5.63	5.63	5.63	5.63	5.34	4.87
	6.00	7.00	5.80	5.80	5.80	5.63	5.34	4.87
	7.90	9.00	5.97	5.97	2.70	5.63	5.34	4.87
	9.80	11.00	6.15	6.15	5.80	5.63	5.34	4.87
	11.80	13.00	6.38	6.26	5.80	5.63	5.34	4.87
13.70	15.00	6.55	6.26	5.80	5.63	5.34	4.87	

7. Air Velocity and Temperature Distributions

Air velocity



Temperature



8. Electric Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min	Max	MCA	MFA	kW	FLA
CSG-07HVR1(84)	50	220-240V	198	254	0.1	3.15	0.016	0.17
CSG-09HVR1(84)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-12HVR1(84)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-18HVR1(84)	50	220-240 V	198	254	0.1	3.15	0.027	0.19
CSG-07HVR1(87)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-09HVR1(87)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-12HVR1(87)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-18HVR1(87)	50	220-240 V	198	254	0.1	3.15	0.027	0.19
CSG-07HVR1(107)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-09HVR1(107)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-12HVR1(107)	50	220-240 V	198	254	0.1	3.15	0.016	0.17
CSG-18HVR1(107)	50	220-240 V	198	254	0.1	3.15	0.027	0.19

Remark:

MCA: Min. Current Amps. (A)

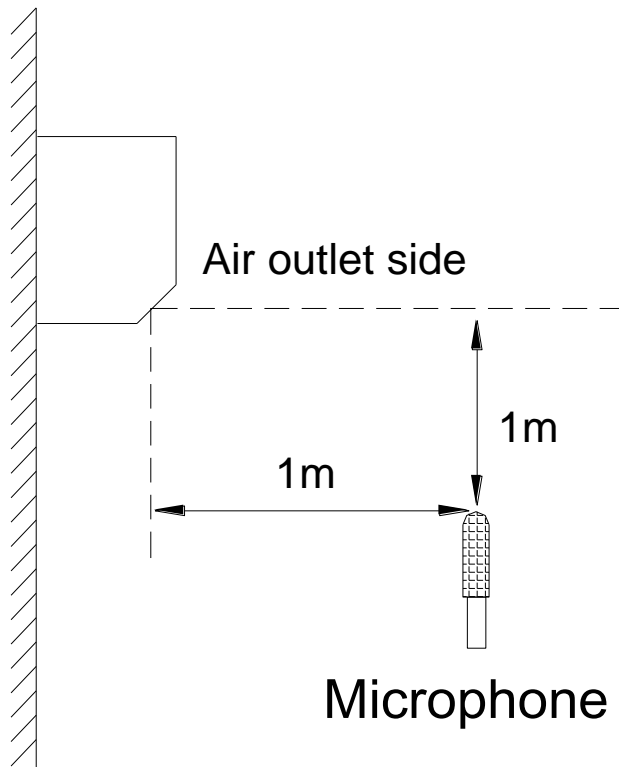
MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM: Indoor Fan Motor

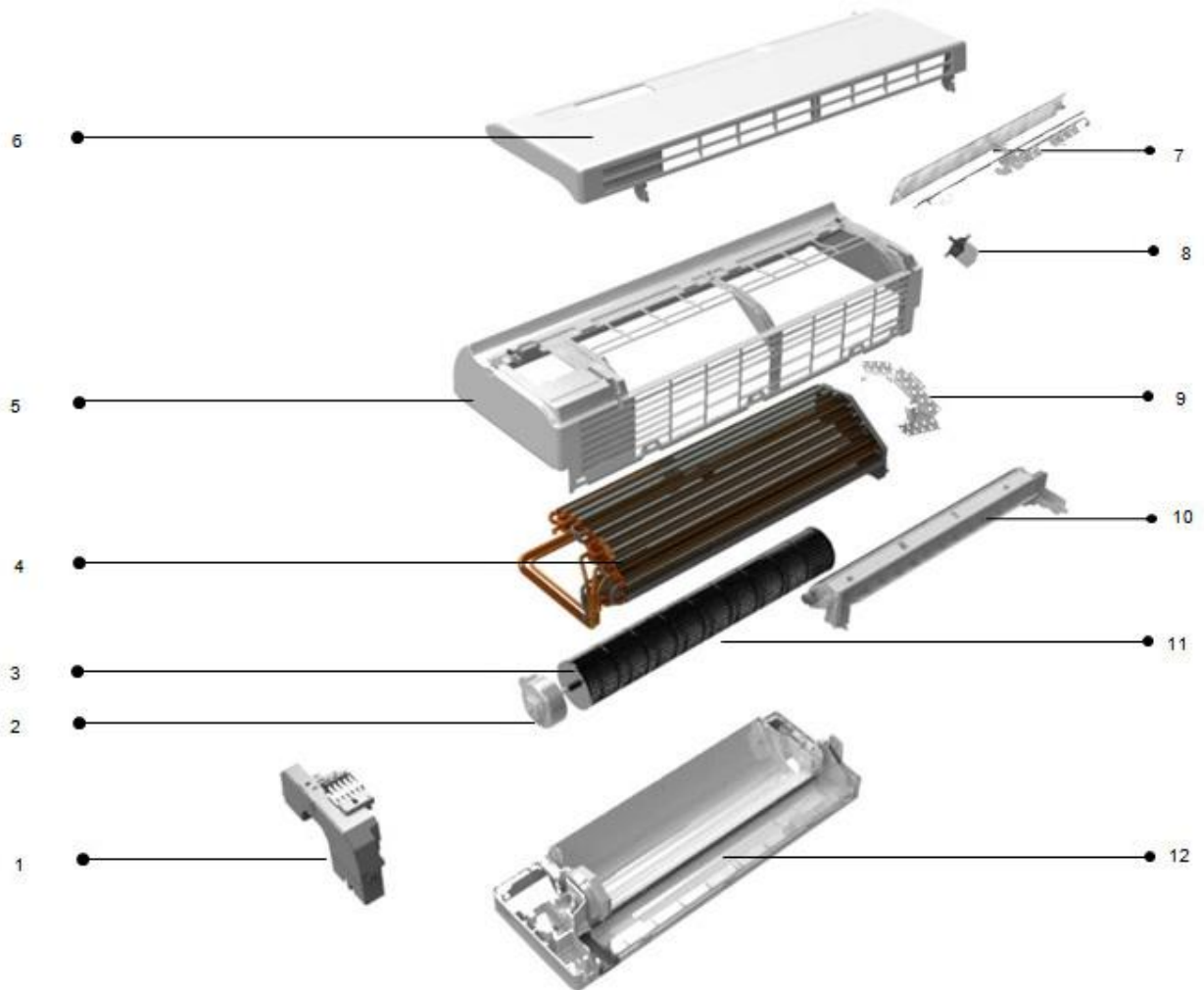
9. Sound Level



Model	Noise levelB(A)
	High speed
CSG-07HVR1(84)	30
CSG-09HVR1(84)	33
CSG-12HVR1(84)	35
CSG-18HVR1(84)	43
CSG-07HVR1(87)	30
CSG-09HVR1(87)	33
CSG-12HVR1(87)	35
CSG-18HVR1(87)	43
CSG-07HVR1(107)	30
CSG-09HVR1(107)	33
CSG-12HVR1(107)	35
CSG-18HVR1(107)	43

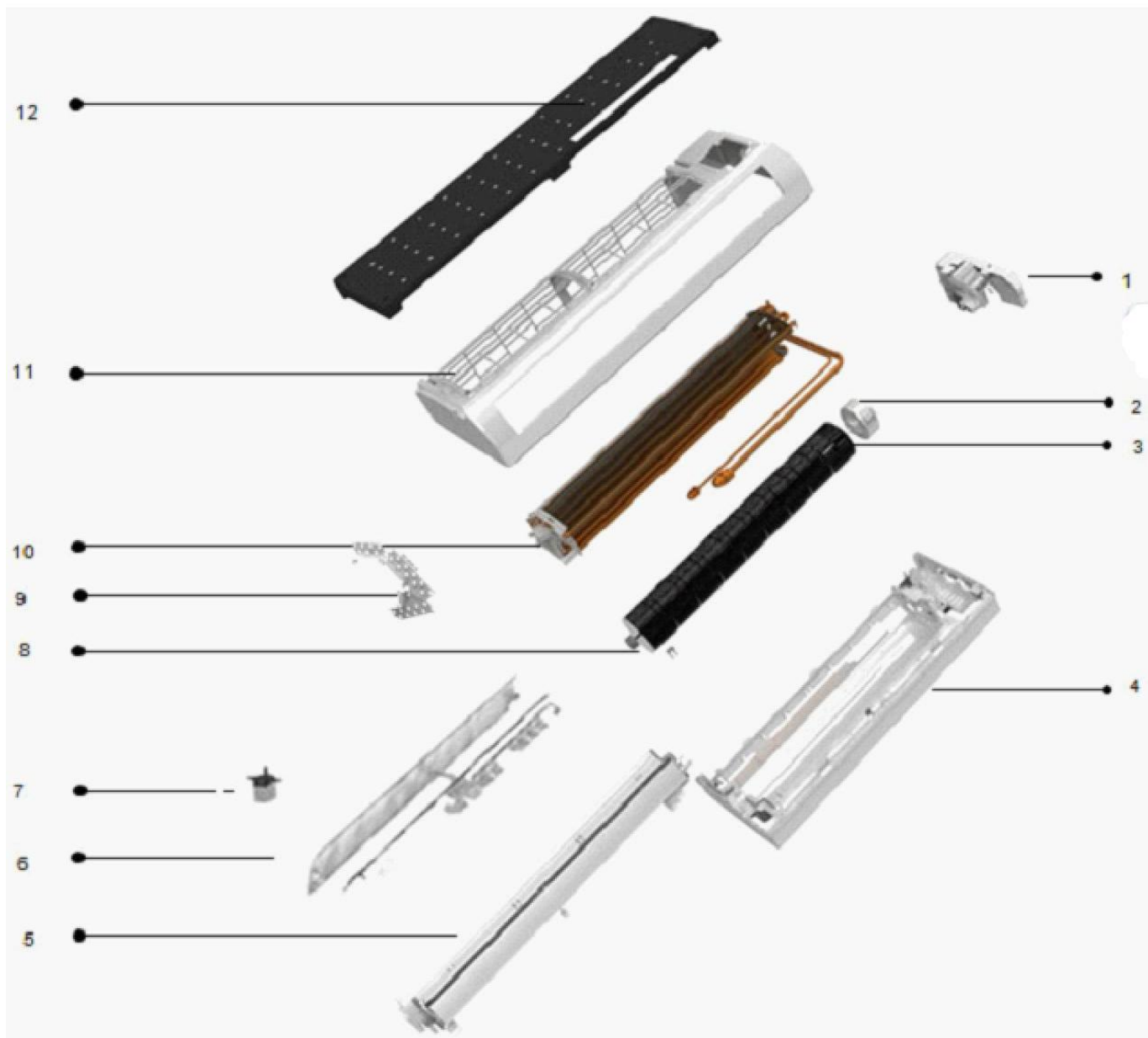
10. Exploded View

84 series



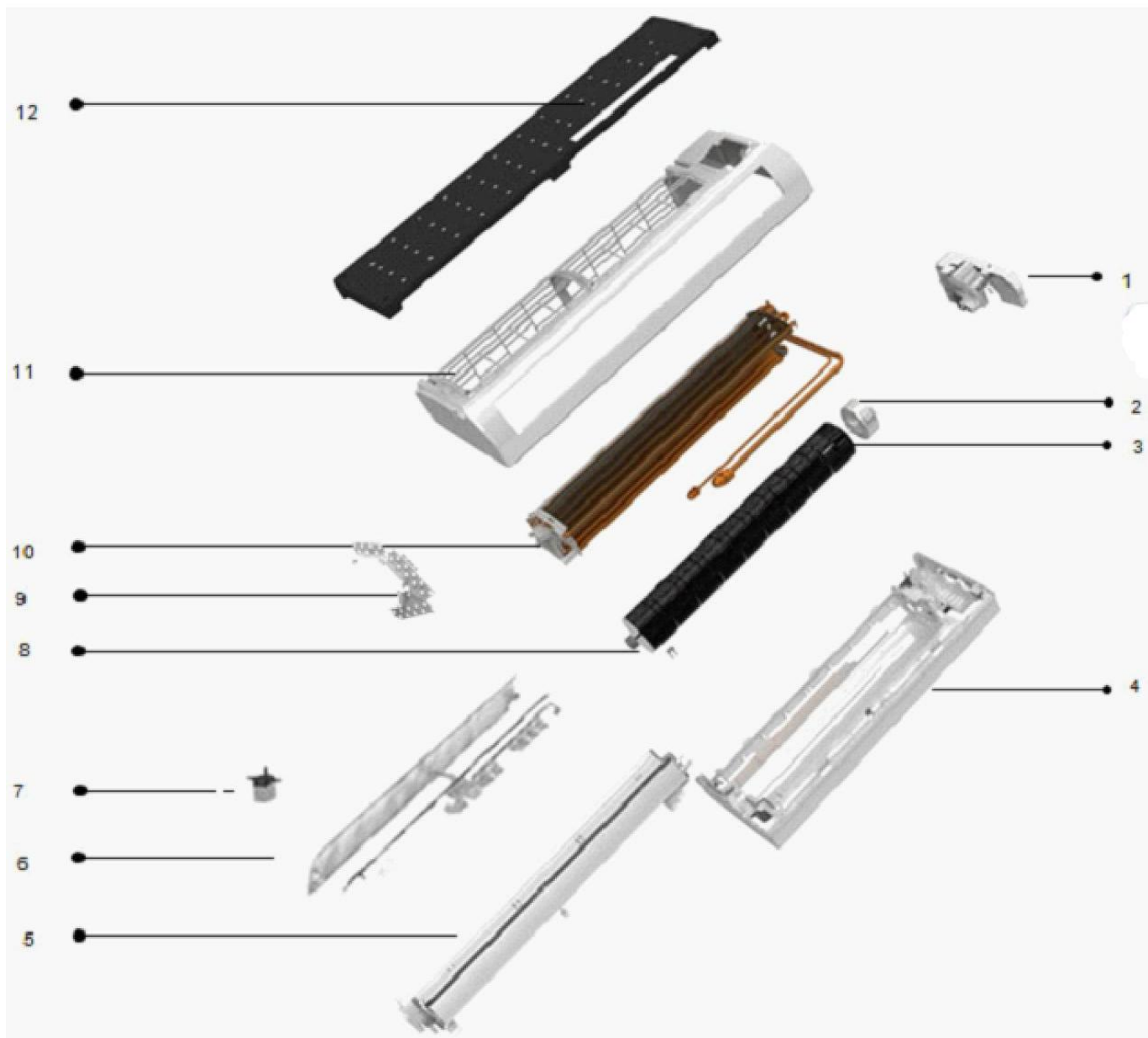
No.	Part Name	Quantity	No.	Part Name	Quantity
1	Relay components	1	6	Panel components	1
1.1	indoor unit	1	7	Louver assy	1
1.2	Main control box	1	8	Step motor	1
1.3	C1 groove clamp	1	9	Fixing tubepanel	1
1.4	(ROHS) transformer	1	10	Main air-out assy	1
1.5	Temperature sensor for indoor unit	1	11	Cross flow fan	1
1.6	Terminal earthing evaporator	1	12	Base assy	1
1.7	Main board assy for indoor unit	1	13	Remote control battery	1
2	Motor for indoor	1	14	Chigo Elf general remote	1
3	Motor cover	1	15	Export machine general specification of plastic bag	1
4	Evaporator assy	1	16	Filter net	2
4.1	Evaporator Preweldingassy	1	17	Indoor temp probe	1
4.2	Evaporator damping rubber strip	1	18	Thermal insulation pipe	1
4.3	Insulating tube	1	19	Hanging wall plate	1
4.4	Left sealing strip for evaporator	1	20	Display board	1
5	Middle frame assy	1	21	Probe spring	2

87 series



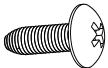
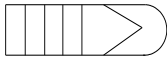



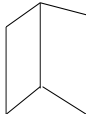
No.	Part Name	Quantity	No.	Part Name	Quantity
1	Relay components	1	9.1	Evaporator Preweldingassy	1
1.1	indoor unit	1	9.2	Evaporator damping rubber strip	1
1.2	Main control box	1	9.3	Insulating tube	1
1.3	C1 groove clamp	1	9.4	Left sealing strip for evaporator	1
1.4	(ROHS) transformer	1	10	Middle frame assy	1
1.5	Temperature sensor for indoor unit	1	11	Fixing tube panel	1
1.6	Terminal earthing evaporator	1	12	Panel components	1
1.7	Main board assy for indoor unit	1	13	Remote control battery	1
2	Motor for indoor	1	14	Chigo Elf general remote	1
3	Motor cover	1	15	Exportmachine general specification of plastic bag	1
4	Base assy	1	16	Filter net	2
5	Main air-out assy	1	17	Indoor temp probe	1
6	Louver assy	1	18	Thermal insulation pipe	1
7	Step motor	1	19	Hanging wall plate	1
8	Cross flow fan	1	20	Display board	1
9	Evaporator assy	1	21	Probe spring	2

107 series



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Relaycomponents	1	9.1	Evaporator Preweldingassy	1
1.1	indoor unit	1	9.2	Evaporator damping rubber strip	1
1.2	Main control box	1	9.3	Insulating tube	1
1.3	C1 groove clamp	1	9.4	Left sealing strip for evaporator	1
1.4	(ROHS) transformer	1	10	Middle frame assy	1
1.5	Temperature sensor for indoor unit	1	11	Fixing tube panel	1
1.6	Terminal earthing evaporator	1	12	Panel components	1
1.7	Main board assy for indoor unit	1	13	Remote control battery	1
2	Motor for indoor	1	14	Chigo Elf general remote	1
3	Motor cover	1	15	Export machine general specification of plastic bag	1
4	Base assy	1	16	Filter net	2
5	Main air-out assy	1	17	Indoor temp probe	1
6	Louver assy	1	18	Thermal insulation pipe	1
7	Step motor	1	19	Hanging wall plate	1
8	Cross flow fan	1	20	Displayboard	1
9	Evaporator assy	1	21	Probe spring	2

11. Accessories

NO.	NAME	SHAPE	QUANTITY
1	Screw for installation board		3
2	Plastic expanded tube		3
3	Drain pipe		1
4	Remote controller		1
5	Alkaline dry batteries (AM4)		2
6	User's manual of indoor unit		1

Part 3.

Outdoor Units

1. Features

- 1.1** One outdoor unit match many indoor units, free combination, suit for small office, house, villa and etc. Sometimes the bigger building also needs one set outdoor unit only because of the small A/C space of the building; DC Inverter Multi Series which is simple and direct should be a better choice, and the location space needs is small.
- 1.2** Soft start, the start current of the compressor is small and smooth.
- 1.3** Easy piping and wiring connection, no welding and only flare nut connection which makes the installation work easy and convenient.

2. Specifications

Outdoor model name			C2OU-14HVR1		C2OU-18HVR1		
Power supply		V-ph-Hz	220~240-1-50		220~240-1-50		
Electricity supplying type			Outdoor unit supply power		Outdoor unit supply power		
Indoor units combination			Single	Double	Single	Double	
Cooling	Capacity	Btu/h	7000~12000	14000	7000~12000	18000	
	Input	W	600~1040	1214	600~1050	1603	
	Rated current	A	3.0~5.1	6.0	3.0~5.1	7.9	
	EER	Btu/(h*W)		11.5		11.2	
		W/W		3.38		3.29	
Heating	Capacity	Btu/h	8500~13800	17000	8500~13800	21000	
	Input	W	660~1084	1343	660~1090	1665	
	Rated current	A	3.3~5.4	6.6	3.3~5.4	8.2	
	COP	Btu/(h*W)		12.7		12.6	
		W/W		3.71		3.70	
Max. input consumption		W	1560	1900	1780	2400	
Max. current		A	8.1	9.8	9.2	12.4	
Compressor	Model		SNB130FGYMC-L1		SNB130FGYMC-L1		
	Type		DC inverter twin-rotary		DC inverter twin-rotary		
	Brand		MITSUBISHI		MITSUBISHI		
	Capacity	Btu/h	14000		14000		
	Input	W	1245		1245		
	Rated current (RLA)	A	8.4		8.4		
	Refrigerant oil	ml	500		500		
Fan motor	Model		YDK-60-6P3-3		YDK-60-6P3-3		
	Brand		CHIGO		CHIGO		
	Input	W	160		160		
	Capacitor	μF	3.5		3.5		
	Speed	r/min	850/530		850/530		
Outdoor coil	Number of rows		1.7		1.7		
	Tube pitch * row pitch	mm	21*13.37		21*13.37		
	Fin spacing	mm	1.4		1.4		
	Fin type		Hydrophilic aluminum		Hydrophilic aluminum		
	Tube diameter and type	mm	φ7 Inner screw		φ7 Inner screw		
	Coil size (W*H*D)	mm	214*640*550		214*640*550		
	Number of circuits		4		4		
Outdoor air flow		m ³ /h	2500		2500		
Outdoor noise level		dB(A)	57		57		
Outdoor unit	Net dimension (W*H*D)	mm	940*332*608		940*332*608		
	Packing dimension (W*H*D)	mm	995*415*680		995*415*680		
	Net / Gross weight	kg	38/41		39/42		
Refrigerant	Type		R410a		R410a		
	Charged volume	g	1150		1450		
Throttle type			Electronic expansion valve				
Max. pressure(Hi/Lo)		MPa	4.4/2.6		4.4/2.6		
Refrigerant piping (Between each IU and OU)	Liquid side/ Gas side	mm	φ6.35/φ9.52		φ6.35/φ9.52		
	Max. pipe length	m	30		30		
	Max. height difference	m	10		10		
Connection wiring	Power wiring	mm ²	1.5		1.5		
	Signal wiring	mm ²	1		1		
Ambient temperature		°C	-15~46		-15~46		
Application area		m ²	26~30		35~43		

Notes:

1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.
2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.
3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
4. The above data may be changed without notice for future improvement on quality and performance.

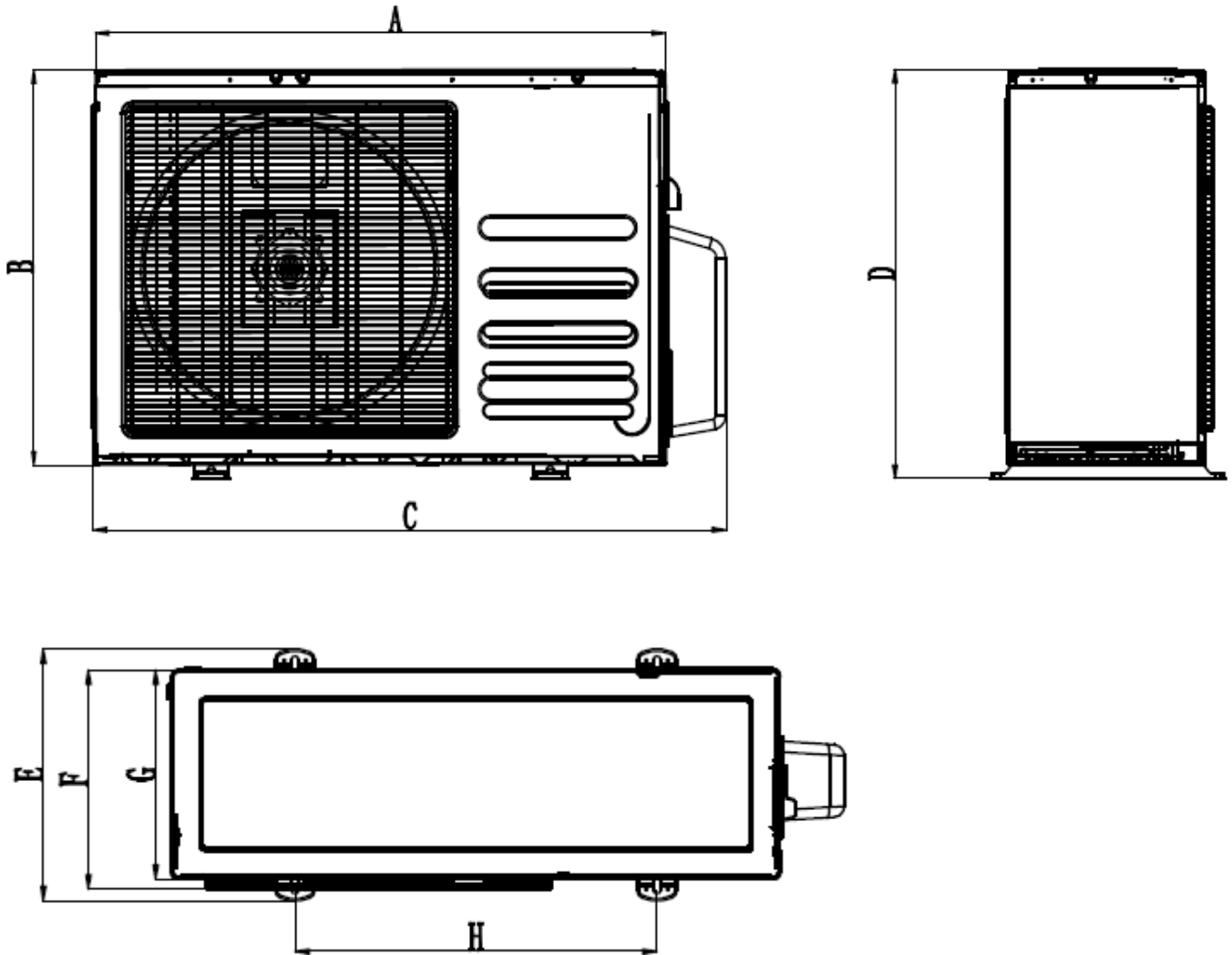
Outdoor model name			C3OU-21HVR1			C3OU-27HVR1		
Power supply		V-ph-Hz	220~240-1-50			220~240-1-50		
Electricity supplying type			Outdoor unit supply power			Outdoor unit supply power		
Indoor units combination			Single	Double	Triple	Single	Double	Triple
Cooling	Capacity	Btu/h	7000~1200	14000~1800	21000	7000~1800	14000~2400	27000
	Input	W	600~1040	1213~1584	1860	600~1040	1181~2087	2434
	Rated current	A	3.0~5.1	6.0~7.8	9.2	3.0~5.1	5.8~10.3	12.0
	EER	Btu/(h*W)	11.3			11.1		
W/W		3.31			3.25			
Heating	Capacity	Btu/h	8500~1380	17000~2080	25500	8500~1980	17000~2760	31200
	Input	W	648~1062	1318~1630	2031	657~1542	1325~2182	2511
	Rated current	A	3.2~5.2	6.5~8.1	10.0	3.2~7.6	6.5~10.8	12.4
	COP	Btu/(h*W)	12.6			12.4		
W/W		3.68			3.64			
Max. input consumption		W	1560	2170	3000	1940	2750	3700
Max. current		A	8.1	11.2	15.5	10.0	14.2	19.1
Compressor	Model		SNB172FEGMC			SNB172FEGMC		
	Type		DC inverter twin-rotary			DC inverter twin-rotary		
	Brand		MITSUBISHI			MITSUBISHI		
	Capacity	Btu/h	18000			18000		
	Input	W	1640			1640		
	Rated current (RLA)	A	8.1			8.1		
	Refrigerant oil	ml	600			600		
Fan motor	Model		YDK-60-6P3-4			YDK-60-6P3-4		
	Brand		CHIGO			CHIGO		
	Input	W	160			160		
	Capacitor	μF	5			5		
	Speed	r/min	850/530			850/530		
Outdoor coil	Number of rows		1.7			2		
	Tube pitch * row pitch	mm	21*13.37			21*13.37		
	Fin spacing	mm	1.4			1.4		
	Fin type		Hydrophilic aluminum			Hydrophilic aluminum		
	Tube diameter and type	mm	φ7 Inner screw			φ7 Inner screw		
	Coil size (W*H*D)	mm	215*624*798			215*624*798		
	Number of circuits		6			6		
Outdoor air flow		m ³ /h	2880			3100		
Outdoor noise level		dB(A)	57			57		
Outdoor unit	Net dimension (W*H*D)	mm	900*332*840			900*332*840		
	Packing dimension (W*H*D)	mm	1030*440*960			1030*440*960		
	Net / Gross weight	kg	62/67			63/68		
Refrigerant	Type		R410a			R410a		
	Charged volume	g	1550			1550		
Throttle type			Electronic expansion valve					
Max. pressure(Hi/Lo)		MPa	4.4/2.6			4.4/2.6		
Refrigerant piping (Between each IU and CU)	Liquid side/ Gas	mm	φ6.35/φ9.52			φ6.35/φ9.52		
	Max. pipe length	m	45			45		
	Max. height	m	10			10		
Connection wiring	Power wiring	mm ²	2.5			2.5		
	Signal wiring	mm ²	1			1		
Ambient temperature		°C	-15~46			-15~46		
Application area		m ²	39~45			52~65		

Notes:

1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB
2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB
3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
4. The above data may be changed without notice for future improvement on quality and performance.

3. Dimensions

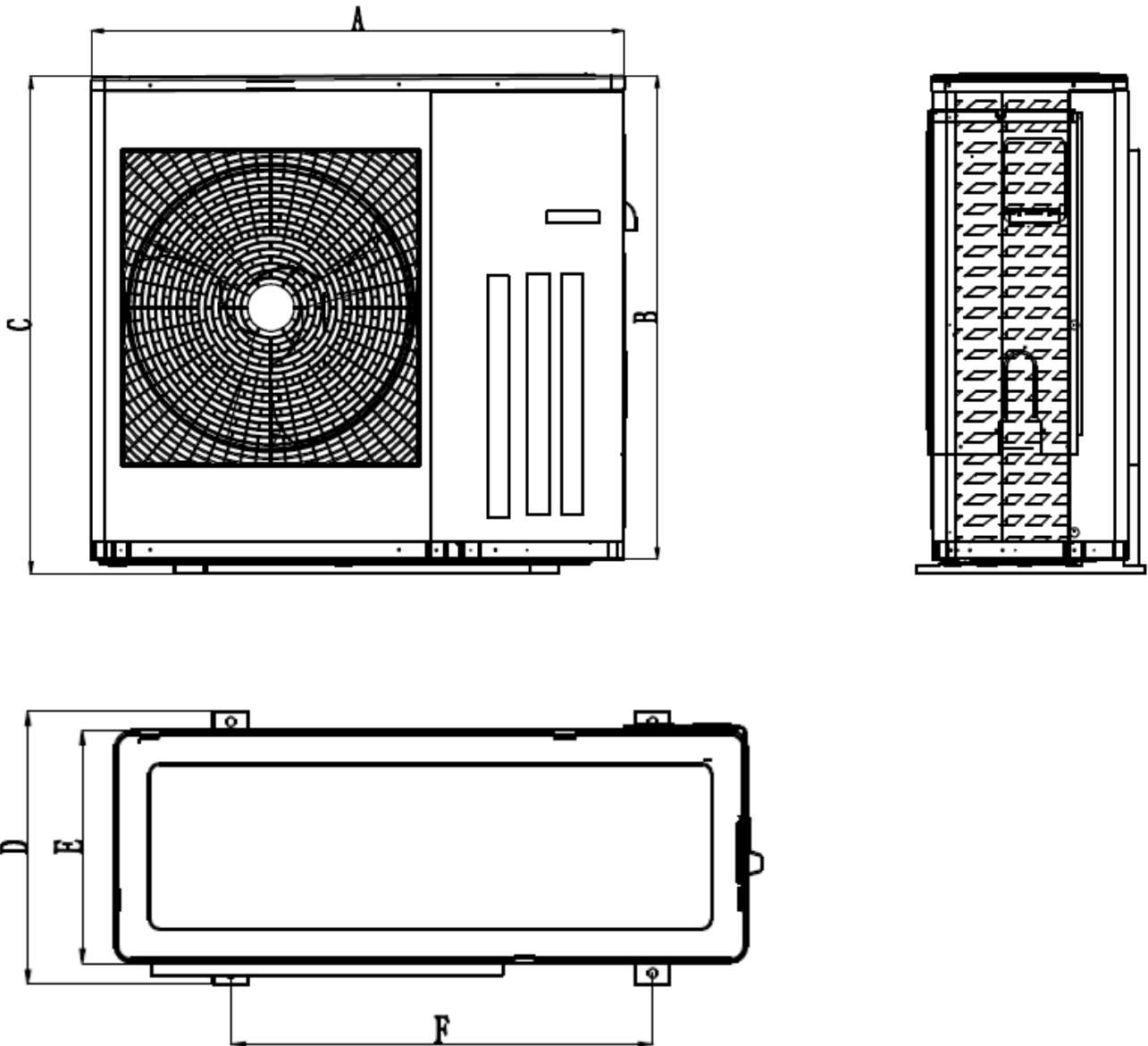
C2OU-14HVR1 C2OU-18HVR1



Unit: mm

A	B	C	D	E	F	G	H
850	588	940	608	332	306	292	505

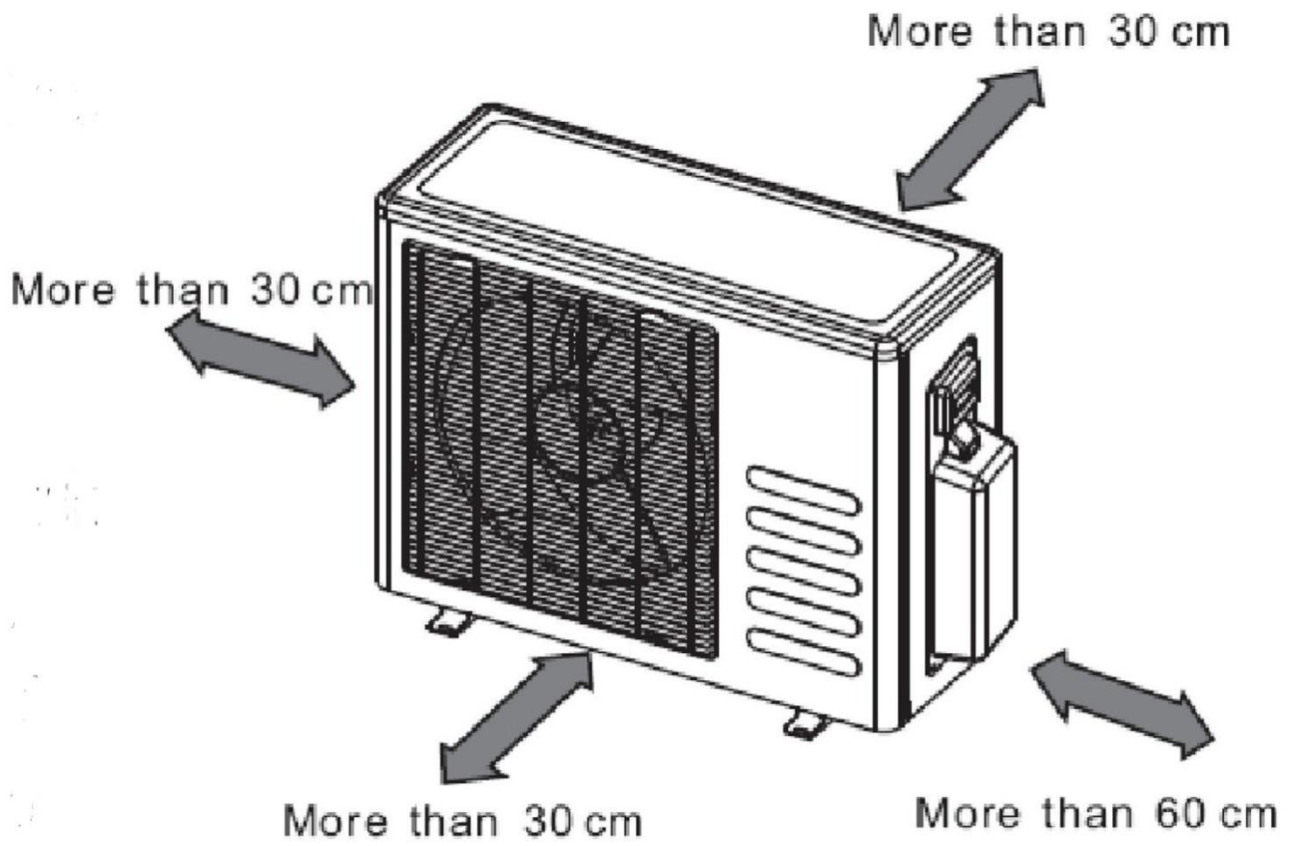
C3OU-21HVR1C3OU-27HVR1



Unit: mm

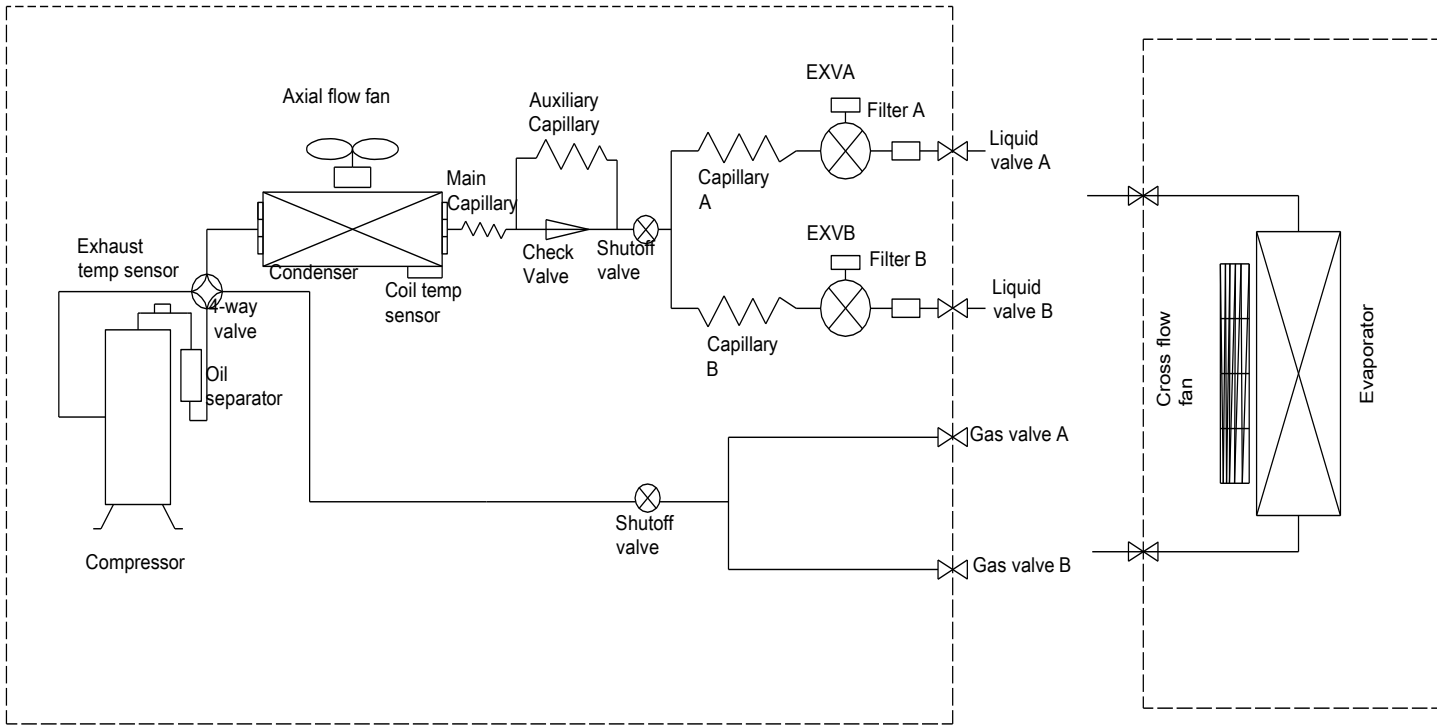
A	B	C	D	E	F
900	816	840	388	332	600

4. Service Space

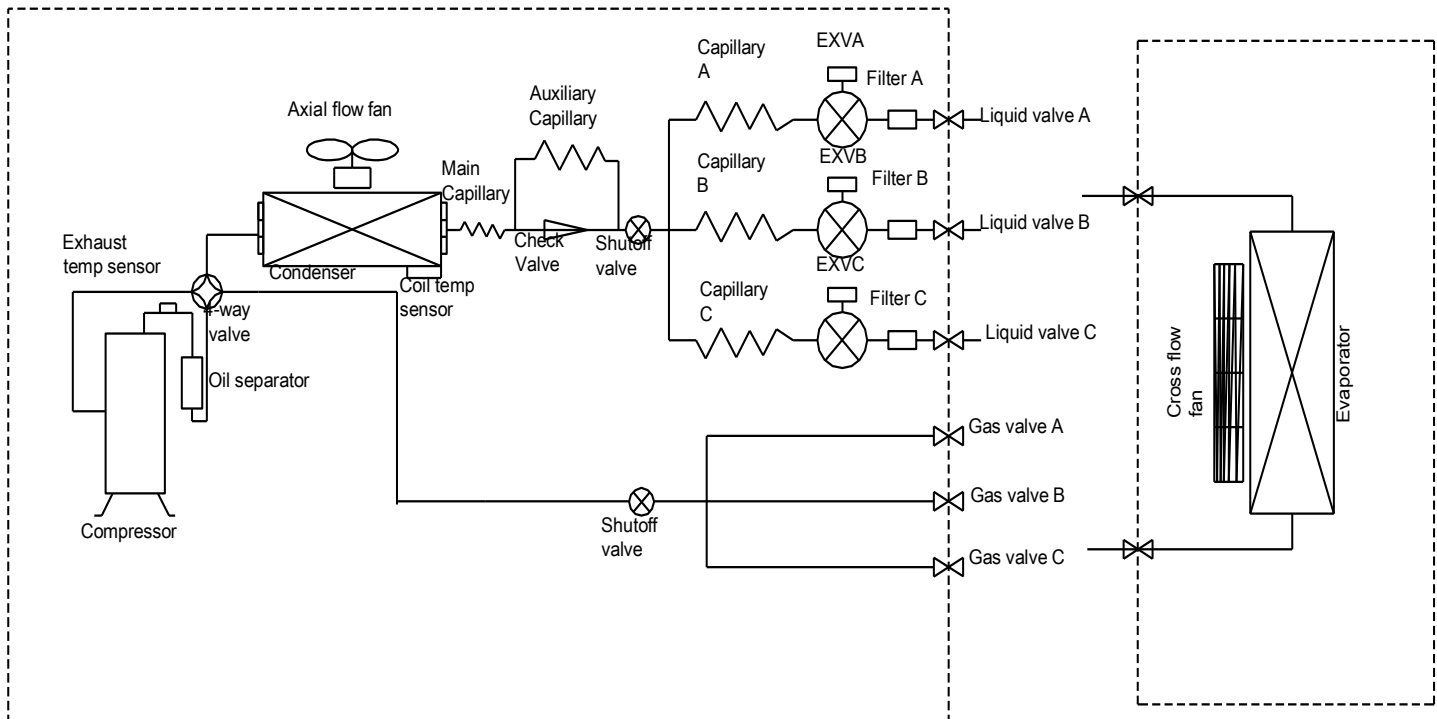


5. Piping Diagrams

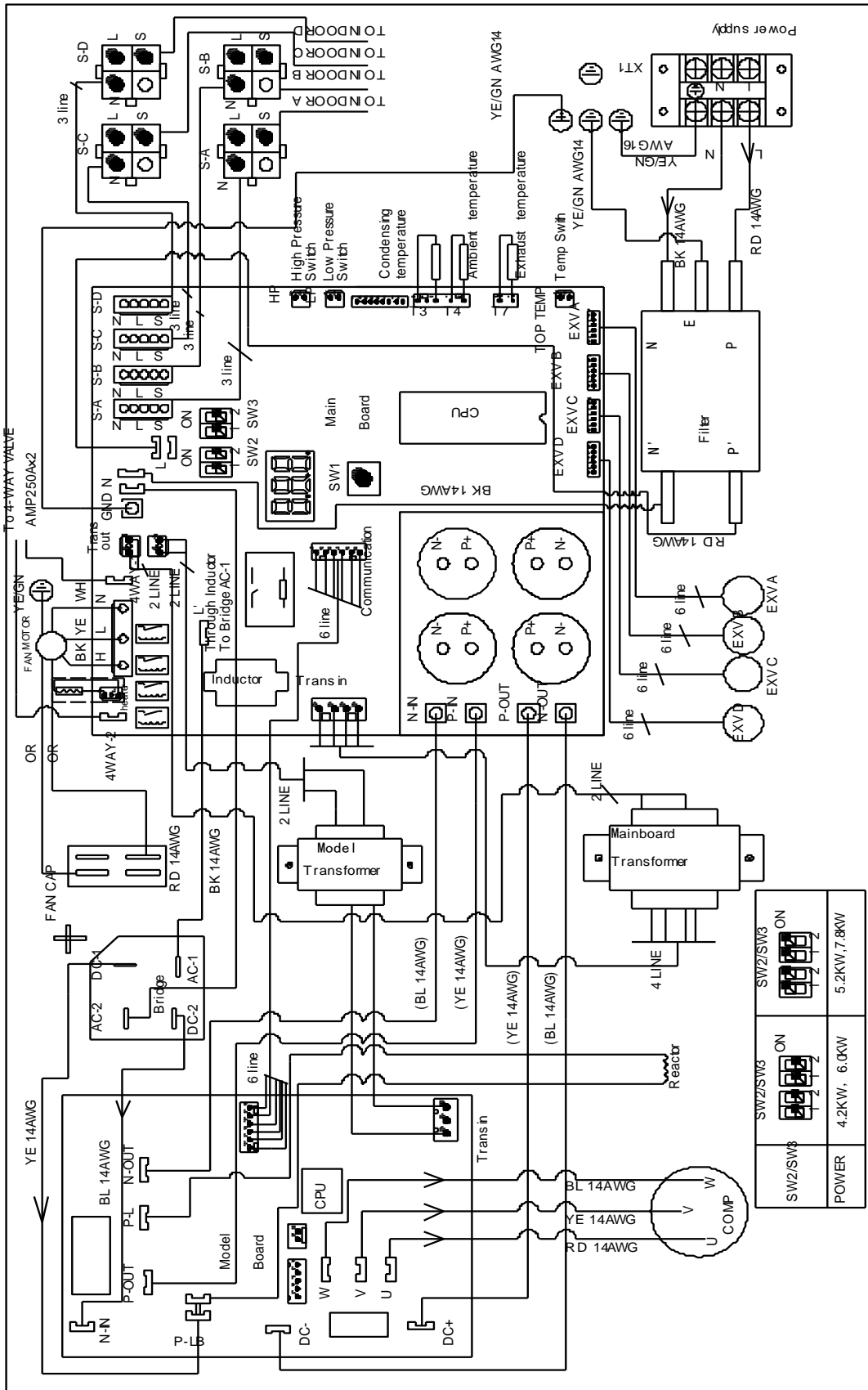
C2OU-14HVR1C2OU-18HVR1



C3OU-21HVR1C3OU-27HVR1



6. Wiring Diagrams



7. Combination Capacity Table

Cooling (kBtu/h)

Model name	Indoor quantities	Combinations			Rated capacity			Actual capacity			Power input			EER	Energy label
					kBtu/h			kBtu/h			kW			Btu/(h*W)	
		Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rate	Max.	Min.	Rate	Max.	Rated	
C2OU-14HVR1	1	7K	/	/	7	/	/	3.6	7.0	8.4	0.29	0.60	0.74	11.7	A
		9K	/	/	9	/	/	4.7	9.0	10.9	0.38	0.77	0.96	11.6	A
		12K	/	/	12	/	/	6.2	12.0	14.5	0.50	1.04	1.28	11.6	A
	2	7k	7k	/	7	7	/	7.2	14.0	16.9	0.60	1.21	1.50	11.5	A
		7k	9k	/	6	8	/	7.3	14.1	17.1	0.60	1.23	1.52	11.5	A
		7k	12k	/	5	9	/	7.4	14.2	17.2	0.63	1.27	1.57	11.2	A
		9k	9k	/	7	7	/	7.4	14.2	17.2	0.62	1.25	1.55	11.3	A
		9k	12k	/	6	8	/	7.4	14.2	17.2	0.63	1.26	1.56	11.3	A
		12K	12k	/	7	7	/	7.4	14.2	17.2	0.62	1.26	1.56	11.3	A
C2OU-18HVR1	1	7K	/	/	7	/	/	3.0	7.0	7.8	0.25	0.60	0.67	11.6	A
		9K	/	/	9	/	/	3.9	9.0	10.0	0.32	0.78	0.86	11.5	A
		12K	/	/	12	/	/	5.1	12.0	13.4	0.43	1.05	1.16	11.5	A
	2	7k	7k	/	7	7	/	6.0	14.0	15.6	0.50	1.23	1.37	11.4	A
		7k	9k	/	7	9	/	6.9	16.0	17.8	0.58	1.41	1.57	11.3	A
		7k	12k	/	7	12	/	7.8	18.2	20.3	0.67	1.62	1.81	11.2	A
		9k	9k	/	9	9	/	7.7	18.0	20.1	0.67	1.60	1.79	11.2	A
		9k	12k	/	8	10	/	7.8	18.3	20.4	0.71	1.69	1.89	10.8	B
		12K	12k	/	9	9	/	7.8	18.3	20.4	0.70	1.67	1.87	10.9	B
C3OU-21HVR1	1	7K	/	/	7	/	/	3.2	7.0	8.6	0.24	0.59	0.72	11.8	A
		9K	/	/	9	/	/	4.2	9.0	11.1	0.32	0.77	0.95	11.6	A
		12K	/	/	12	/	/	5.5	12.0	14.8	0.44	1.03	1.27	11.6	A
	2	7k	7k	/	7	7	/	6.5	14.0	17.2	0.51	1.21	1.50	11.5	A
		7k	9k	/	7	9	/	7.4	16.0	19.7	0.60	1.40	1.73	11.5	A
		7k	12k	/	7	12	/	8.8	19.0	23.4	0.72	1.66	2.06	11.4	A
		9k	9k	/	9	9	/	8.3	18.0	22.2	0.68	1.58	1.97	11.4	A
		9k	12k	/	9	12	/	9.7	21.0	25.8	0.81	1.87	2.32	11.3	A
		12K	12k	/	11	11	/	9.8	21.1	26.0	0.83	1.90	2.37	11.1	A
		3	7k	7k	7k	7	7	7	9.7	21.0	25.8	0.82	1.86	2.33	11.3
	7k		7k	9k	6	6	8	9.7	21.1	25.9	0.82	1.88	2.35	11.2	A
	7k		7k	12k	6	6	10	9.8	21.3	26.2	0.85	1.93	2.42	11.0	A
	7k		9k	9k	6	8	8	9.8	21.2	26.1	0.86	1.92	2.42	11.0	A
	7k		9k	12k	5	7	9	9.9	21.4	26.3	0.89	1.98	2.49	10.8	B
	7k		12k	12k	5	8	8	9.9	21.4	26.3	0.89	1.97	2.48	10.9	B
	9k		9k	9k	7	7	7	9.8	21.3	26.2	0.88	1.95	2.46	10.9	B
	9k		9k	12k	6	6	9	9.9	21.4	26.3	0.88	1.96	2.48	10.9	B
	9k		12k	12k	6	8	8	9.9	21.4	26.3	0.87	1.95	2.45	11.0	A
12k	12k	12k	7	7	7	9.9	21.4	26.3	0.87	1.94	2.44	11.0	A		

Cooling (k Btu/h)

Model name	Indoor quantities	Combinations			Rated capacity			Actual capacity			Power input			EER	Energy label
					kBtu/h			kBtu/h			kW			Btu/(h*W)	
		Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rate	Max.	Min.	Rate	Max.	Rated	
C30U-27HVR1	1	7K	/	/	7	/	/	2.7	7.0	7.6	0.21	0.58	0.61	12.0	A
		9K	/	/	9	/	/	3.5	9.0	9.8	0.27	0.76	0.79	11.9	A
		12K	/	/	12	/	/	4.6	12.0	13.1	0.36	1.01	1.06	11.9	A
		18K	/	/	18	/	/	6.9	18.0	19.6	0.54	1.52	1.61	11.8	A
	2	7k	7k	/	7	7	/	5.4	14.0	15.3	0.42	1.18	1.24	11.8	A
		7k	9k	/	7	9	/	6.2	16.0	17.4	0.48	1.35	1.43	11.8	A
		7k	12k	/	7	12	/	7.3	19.0	20.7	0.59	1.64	1.75	11.6	A
		7K	18K	/	7	18	/	9.6	25.0	27.2	0.79	2.19	2.36	11.4	A
		9k	9k	/	9	9	/	6.9	18.0	19.6	0.55	1.53	1.62	11.8	A
		9k	12k	/	9	12	/	8.1	21.0	22.9	0.65	1.81	1.94	11.6	A
		9K	18K	/	9	18	/	10.4	27.0	29.4	0.88	2.39	2.61	11.3	A
		12K	12k	/	12	12	/	9.2	24.0	26.2	0.76	2.09	2.24	11.5	A
		12K	18K	/	11	17	/	10.6	27.6	30.1	0.94	2.55	2.81	10.9	B
		18K	18K	/	14	14	/	10.8	28.1	30.6	0.96	2.57	2.88	11.0	A
	3	7k	7k	7k	7	7	7	8.1	21.0	22.9	0.66	1.82	1.94	11.6	A
		7k	7k	9k	7	7	9	8.8	23.0	25.1	0.72	1.99	2.13	11.6	A
		7k	7k	12k	7	7	12	10.0	26.0	28.3	0.84	2.29	2.49	11.3	A
		7k	7k	18k	6	6	16	10.7	27.7	30.2	0.93	2.52	2.79	11.0	A
		7k	9k	9k	7	9	9	9.6	25.0	27.2	0.80	2.20	2.39	11.4	A
		7k	9k	12k	7	9	12	10.5	27.3	29.8	0.91	2.46	2.71	11.1	A
		7k	9k	18k	6	7	15	10.7	27.9	30.4	0.92	2.48	2.77	11.2	A
		7k	12k	12k	6	11	11	10.6	27.6	30.1	0.93	2.51	2.78	11.0	A
		7k	12k	18k	5	9	14	10.8	28.1	30.6	0.93	2.49	2.81	11.3	A
		9k	9k	9k	9	9	9	10.4	27.0	29.4	0.90	2.43	2.68	11.1	A
		9k	9k	12k	8	8	11	10.6	27.6	30.1	0.92	2.48	2.74	11.1	A
		9k	9k	18k	7	7	14	10.8	28.1	30.6	0.93	2.50	2.80	11.2	A
		9k	12k	12k	8	10	10	10.7	27.8	30.3	0.92	2.48	2.76	11.2	A
9k	12k	18k	7	9	13	10.8	28.2	30.7	0.94	2.50	2.83	11.3	A		
12k	12k	12k	9	9	9	10.8	28.1	30.6	0.93	2.49	2.80	11.3	A		

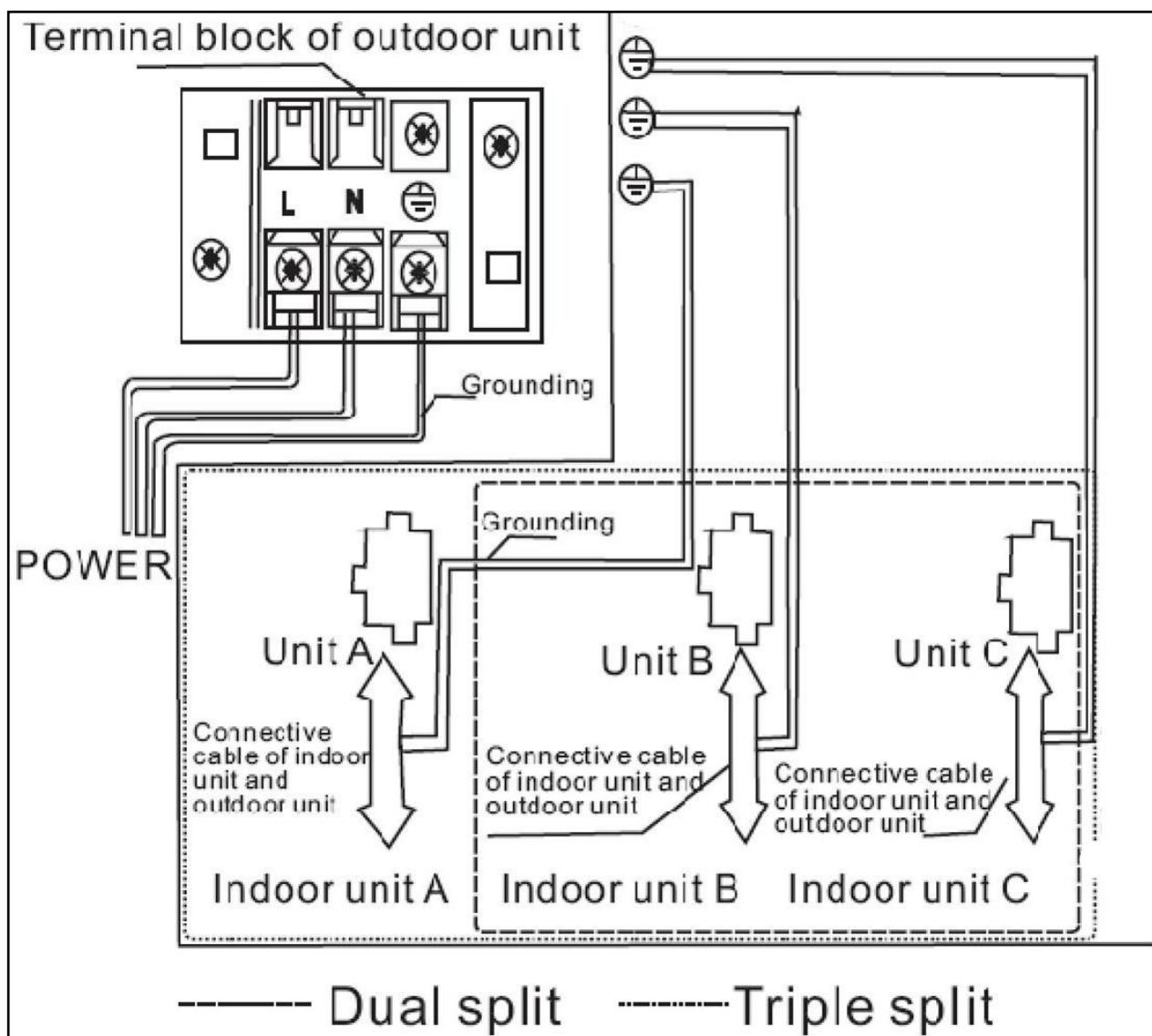
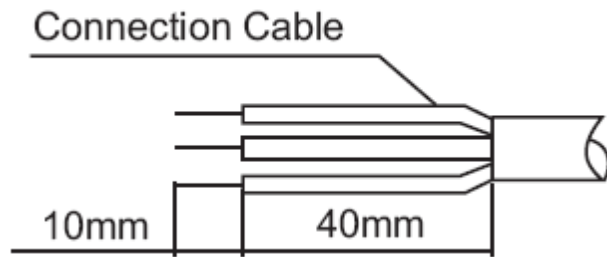
Heating (kBtu/h)

Model name	Indoor quantities	Combinations			Rated capacity			Actual capacity			Power input			COP	Energy label
					kBtu/h			kBtu/h			kW			Btu/(h*W)	
		Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rate	Max.	Min.	Rate	Max.	Rated	
C2OU-14HVR 1	1	7K	/	/	8.5	/	/	4.4	8.5	10.3	0.32	0.66	0.80	12.9	A
		9K	/	/	10.4	/	/	5.4	10.4	12.6	0.40	0.81	0.99	12.8	A
		12K	/	/	13.8	/	/	7.1	13.8	16.7	0.54	1.08	1.33	12.7	A
	2	7k	7k	/	8.5	8.5	/	8.8	17.0	20.5	0.67	1.34	1.65	12.7	A
		7k	9k	/	8.5	10.4	/	9.0	17.3	20.9	0.68	1.38	1.70	12.6	A
		7k	12k	/	8.5	13.8	/	9.0	17.4	21.0	0.70	1.41	1.75	12.4	A
		9k	9k	/	10.4	10.4	/	9.0	17.4	21.0	0.69	1.40	1.72	12.5	A
9k		12k	/	10.4	13.8	/	9.0	17.4	21.0	0.71	1.42	1.76	12.3	B	
12k	12k	/	8.7	8.7	/	9.0	17.4	21.0	0.71	1.41	1.75	12.4	A		
C2OU-18HVR 1	1	7K	/	/	8.5	/	/	3.6	8.5	9.5	0.26	0.66	0.73	12.8	A
		9K	/	/	10.4	/	/	4.5	10.4	11.6	0.33	0.82	0.91	12.7	A
		12K	/	/	13.8	/	/	5.9	13.8	15.4	0.44	1.09	1.21	12.7	A
	2	7k	7k	/	8.5	8.5	/	7.3	17.0	18.9	0.55	1.35	1.51	12.6	A
		7k	9k	/	8.5	10.4	/	8.1	18.9	21.1	0.62	1.51	1.68	12.5	A
		7k	12k	/	8.0	13.0	/	9.0	21.1	23.5	0.70	1.69	1.88	12.5	A
		9k	9k	/	10.4	10.4	/	8.9	20.8	23.2	0.70	1.67	1.86	12.5	A
9k	12k	/	9.1	12.0	/	9.0	21.1	23.5	0.72	1.72	1.92	12.2	B		
12k	12k	/	10.6	10.6	/	9.0	21.1	23.5	0.72	1.71	1.91	12.3	A		
C3OU-21HVR 1	1	7K	/	/	8.5	/	/	3.9	8.5	10.5	0.28	0.65	0.80	13.1	A
		9K	/	/	10.4	/	/	4.8	10.4	12.8	0.34	0.80	0.99	13.1	A
		12K	/	/	13.8	/	/	6.4	13.8	17.0	0.46	1.06	1.32	13.0	A
	2	7k	7k	/	8.5	8.5	/	7.8	17.0	20.9	0.58	1.32	1.64	12.9	A
		7k	9k	/	8.5	10.4	/	8.7	18.9	23.3	0.65	1.47	1.84	12.9	A
		7k	12k	/	8.5	13.8	/	10.3	22.3	27.4	0.78	1.76	2.21	12.7	A
		9k	9k	/	10.4	10.4	/	9.6	20.8	25.6	0.72	1.63	2.04	12.8	A
		9k	12k	/	10.4	13.8	/	11.2	24.2	29.8	0.86	1.94	2.44	12.5	A
		12k	12k	/	12.8	12.8	/	11.8	25.7	31.6	0.92	2.05	2.58	12.5	A
		12k	12k	/	12.8	12.8	/	11.8	25.7	31.6	0.92	2.05	2.58	12.5	A
	3	7k	7k	7k	8.5	8.5	8.5	11.8	25.5	31.4	0.91	2.03	2.53	12.6	A
		7k	7k	9k	7.9	7.9	9.7	11.8	25.6	31.5	0.92	2.05	2.58	12.5	A
		7k	7k	12k	7.1	7.1	11.6	11.9	25.8	31.8	0.94	2.10	2.64	12.3	A
		7k	9k	9k	7.5	9.1	9.1	11.9	25.7	31.7	0.93	2.07	2.61	12.4	A
		7k	9k	12k	6.7	8.3	11.0	12.0	26.0	31.9	0.97	2.14	2.71	12.1	B
		7k	12k	12k	6.1	9.9	9.9	12.0	26.0	31.9	0.96	2.13	2.69	12.2	B
9k		9k	9k	8.6	8.6	8.6	11.9	25.9	31.9	0.96	2.11	2.67	12.2	B	
9k		9k	12k	7.8	7.8	10.4	12.0	26.0	31.9	0.96	2.12	2.68	12.2	B	
9k		12k	12k	7.1	9.4	9.4	12.0	26.0	31.9	0.96	2.11	2.66	12.3	A	
12k	12k	12k	8.7	8.7	8.7	12.0	26.0	31.9	0.95	2.10	2.65	12.4	A		

Heating (k Btu/h)

Model name	Indoor quantities	Combinations			Rated capacity			Actual capacity			Power input			COP	Energy label
					kBtu/h			kBtu/h			kW			Btu/(h*W)	
		Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rate	Max.	Min.	Rate	Max.	Rated	
C30U-27HVR1	1	7K	/	/	8.5	/	/	3.3	8.5	9.3	0.23	0.66	0.69	12.9	A
		9K	/	/	10.4	/	/	4.0	10.4	11.3	0.29	0.81	0.84	12.9	A
		12K	/	/	13.8	/	/	5.3	13.8	15.0	0.38	1.07	1.12	12.9	A
		18K	/	/	19.8	/	/	7.6	19.8	21.6	0.55	1.54	1.63	12.8	A
	2	7k	7k	/	8.5	8.5	/	6.5	17.0	18.5	0.47	1.33	1.40	12.8	A
		7k	9k	/	8.5	10.4	/	7.3	18.9	20.6	0.53	1.47	1.55	12.8	A
		7k	12k	/	8.5	13.8	/	8.6	22.3	24.3	0.63	1.74	1.86	12.8	A
		7K	18K	/	8.5	19.8	/	10.9	28.3	30.8	0.81	2.23	2.41	12.7	A
		9k	9k	/	10.4	10.4	/	8.0	20.8	22.7	0.59	1.64	1.73	12.7	A
		9k	12k	/	10.4	13.8	/	9.3	24.2	26.4	0.69	1.91	2.04	12.7	A
		9K	18K	/	10.4	19.8	/	11.6	30.2	32.9	0.87	2.38	2.59	12.7	A
		12K	12k	/	13.8	13.8	/	10.6	27.6	30.1	0.79	2.18	2.35	12.6	A
		12K	18K	/	13.1	18.8	/	12.3	31.9	34.8	0.97	2.64	2.91	12.1	B
		18K	18K	/	16.2	16.2	/	12.5	32.4	35.3	1.00	2.68	3.00	12.1	B
	3	7k	7k	7k	8.5	8.5	8.5	9.8	25.5	27.8	0.73	2.03	2.18	12.6	A
		7k	7k	9k	8.5	8.5	10.4	10.5	27.4	29.9	0.79	2.19	2.34	12.5	A
		7k	7k	12k	8.5	8.5	13.8	11.8	30.8	33.6	0.90	2.47	2.69	12.5	A
		7k	7k	18k	7.4	7.4	17.2	12.3	32.0	34.9	0.97	2.63	2.91	12.2	B
		7k	9k	9k	8.5	10.4	10.4	11.3	29.3	31.9	0.86	2.36	2.56	12.4	A
		7k	9k	12k	8.2	10.0	13.3	12.2	31.6	34.4	0.94	2.56	2.82	12.4	A
		7k	9k	18k	7.1	8.7	16.5	12.4	32.2	35.1	0.97	2.60	2.90	12.4	A
		7k	12k	12k	7.5	12.2	12.2	12.3	31.9	34.8	0.96	2.61	2.89	12.2	B
		7k	12k	18k	6.5	10.6	15.3	12.5	32.4	35.3	0.98	2.60	2.93	12.5	A
		9k	9k	9k	10.4	10.4	10.4	12.0	31.2	34.0	0.93	2.51	2.77	12.4	A
		9k	9k	12k	9.6	9.6	12.7	12.3	31.9	34.8	0.96	2.60	2.87	12.3	B
		9k	9k	18k	8.3	8.3	15.8	12.5	32.4	35.3	0.98	2.62	2.94	12.4	A
		9k	12k	12k	8.8	11.7	11.7	12.3	32.1	35.0	0.97	2.62	2.91	12.2	B
		9k	12k	18k	7.7	10.2	14.7	12.5	32.6	35.5	0.98	2.60	2.94	12.6	A
		12k	12k	12k	10.8	10.8	10.8	12.5	32.4	35.3	0.98	2.62	2.94	12.4	A

8. Field Wiring



9. Electric Characteristics

Model	Outdoor Unit				Power Supply			OFM	
	Hz	Voltage	Min.	Max.	MCA	TOCA	MFA	kW	FLA
C2OU-14HVR1	50	220-240	198	254	5.7	7.4	30	0.06	0.62
C2OU-18HVR1	50	220-240	198	254	7.2	10.2	30	0.06	0.62
C3OU-21HVR1	50	220-240	198	264	8.9	11.8	30	0.06	0.72
C3OU-27HVR1	50	220-240	198	264	10.6	13.3	30	0.06	0.72

Remark:

MCA: Min. Current Amps. (A)

TOCA: Total Over-current Amps. (A)

MFA: Max. Fuse Amps. (A)

MSC: Max. starting Amps. (A)

RLA: Rated Locked Amps. (A)

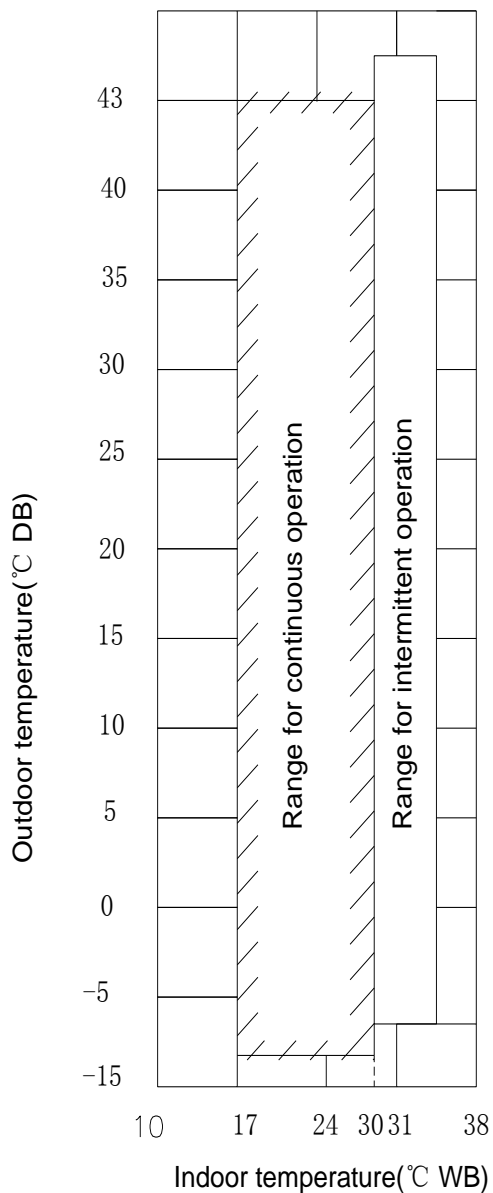
OFM: Fan Motor.

FLA: Full Load Amps. (A)

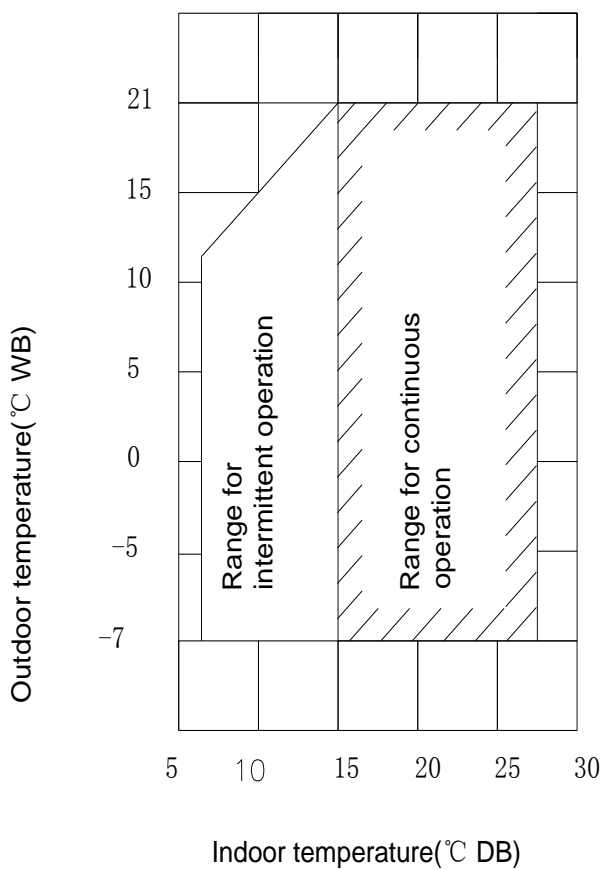
KW: Rated Motor Output (kW)

10.Operation Limits

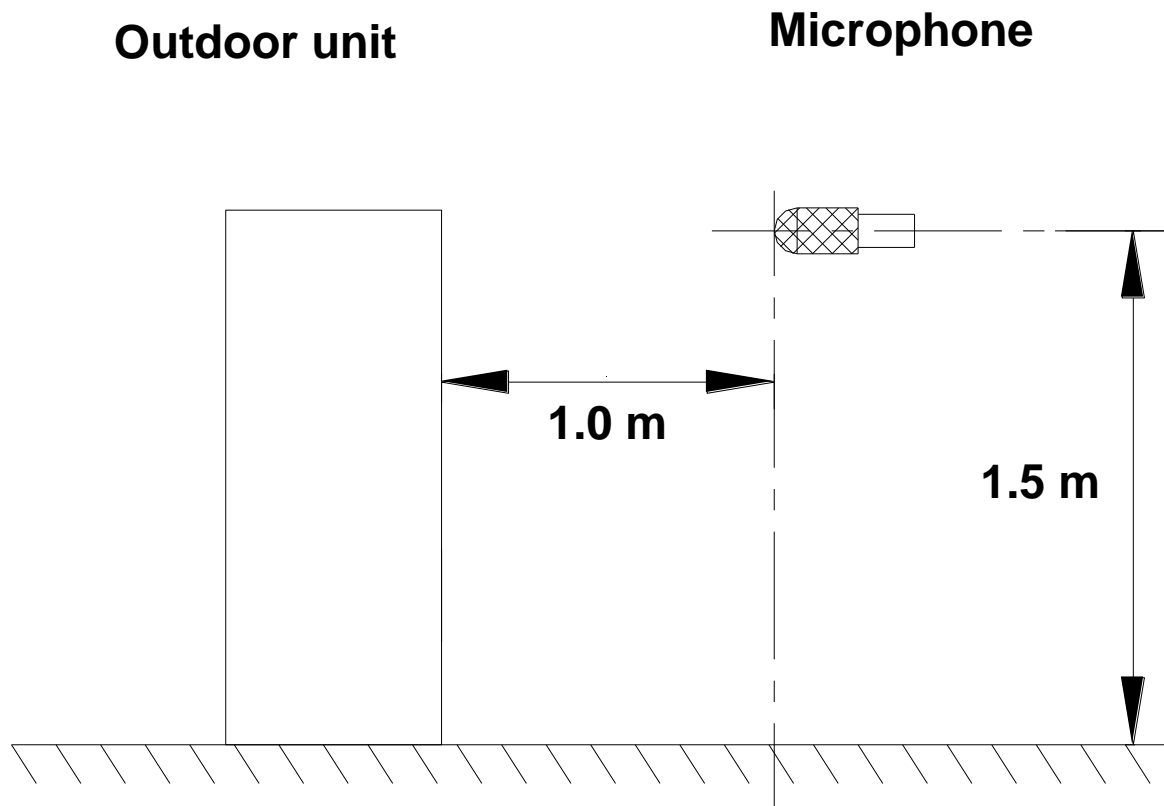
Cooling



Heating



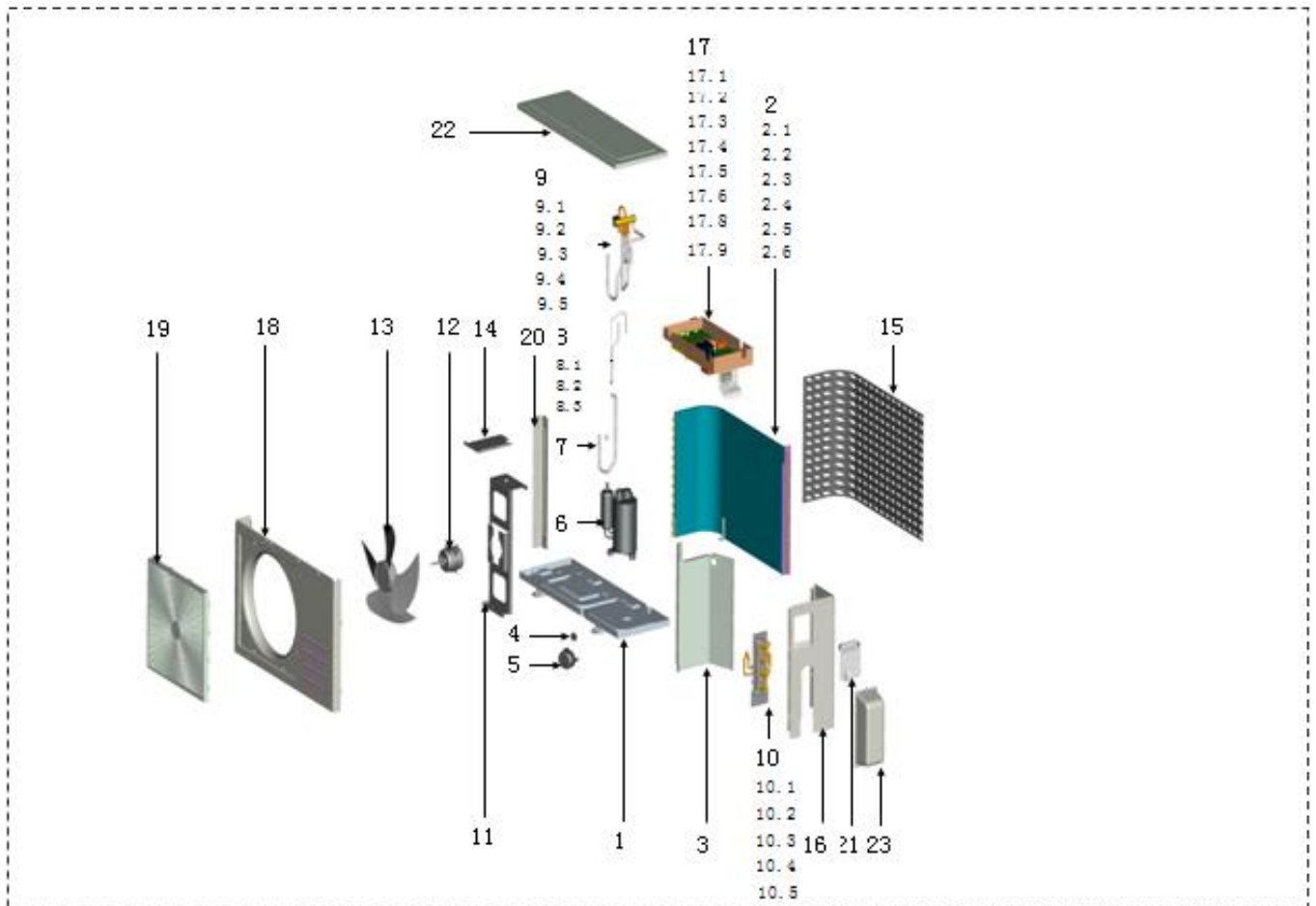
11.Sound Levels



Model	Noise level dB(A)
	H
C2OU-14HVR1	57
C2OU-18HVR1	57
C3OU-21HVR1	57
C3OU-27HVR1	57

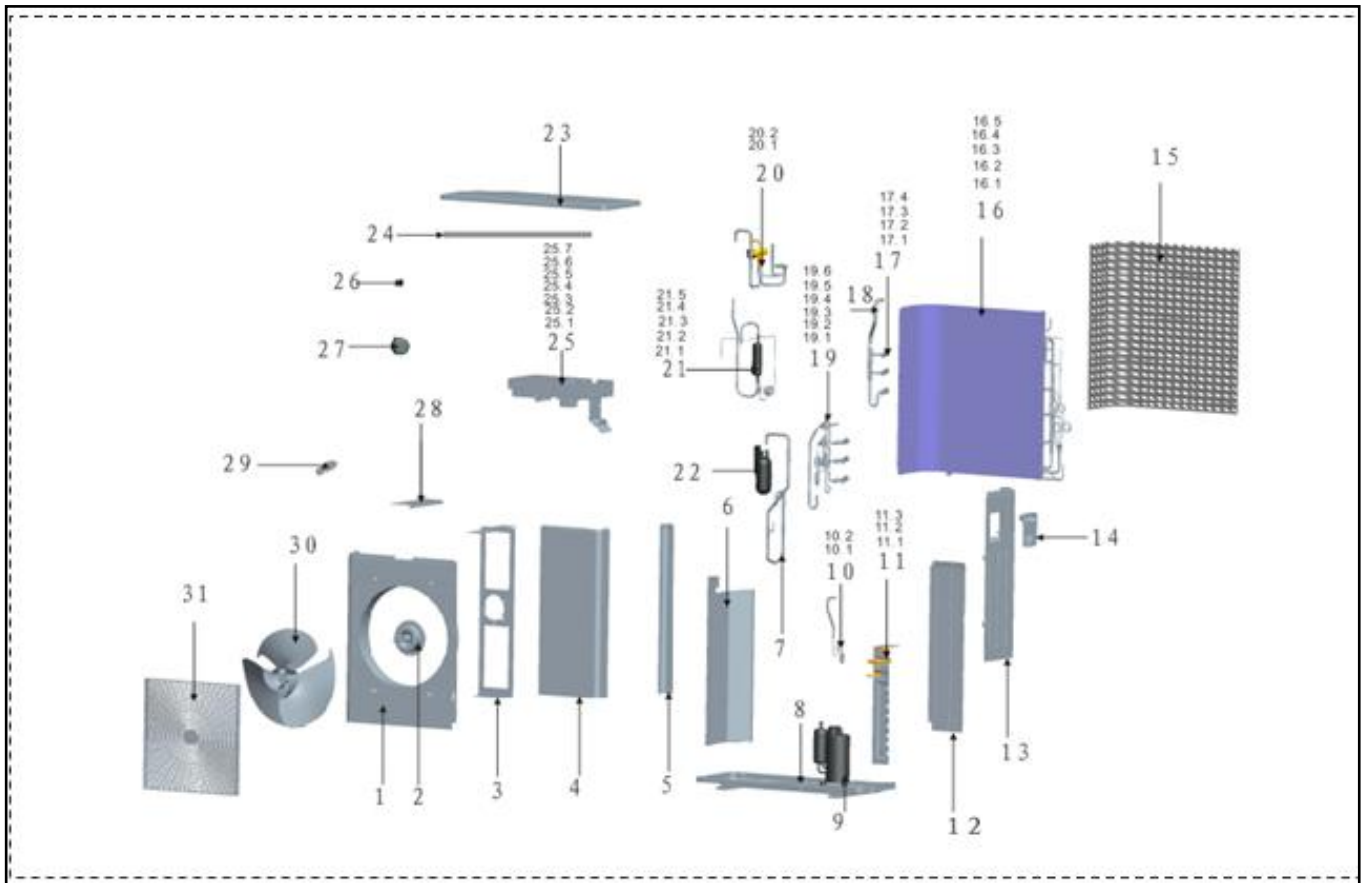
12.Exploded View

C2OU-14HVR1C2OU-18HVR1



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Chassis assembly(S214)	1	10.2	DN4 Stop valve A	1
2	Condenser prewelding assembly	1	10.3	DN8 Stop valve A	1
2.1	Two-row condenser	1	10.4	DN8 Stop valve B	1
2.2	Fixed tube of condenser main outlet pipe	1	11	Motor support	1
2.3	Probe copper pipe	1	12	Ironcladasynchronous outdoor motor	1
2.4	Condenser main outlet pipe	1	13	Axial-flow fan	1
2.5	Merged prewelding assembly of Condenser	1	14	Connection plate of Motor supports	1
2.6	Distributary prewelding assembly of condenser	1	15	Plastic grid guard of 2P outdoor unit	1
3	Septum plate	1	16	Right side plate	1
4	Gum ring	1	17	Outdoorelectroniccomponents	1
5	Amorphous inductor	1	17.1	Baseboard of Electric control box	1
6	Compressor	1	17.2	Left connection plate of Electric control box	1
7	Suction pipe	1	17.3	Right connection plate of Electric control box	1
8	Prewelding assembly of Exhaust pipe	1	17.4	Filter fixed plate	1
8.1	Exhaust pipe A	1	17.5	Radiating fin fixed plate	1
8.2	Exhaust pipe B	1	17.6	Radiating fin	1
8.3	Antihum device	1	17.7	Outdoor main board assembly	1
8.4	Probe copper pipe	1	17.8	Outdoor module board assembly	1
9	Prewelding assembly of Four-way valve	1	17.9	Monophase filter	1
9.1	Four-way valve	1	18	Panel	1
9.2	Coil kit of Four-way valve	1	19	Front grille	1
9.3	Connecting pipe A of Four-way valve	1	20	Left vertical shaft	1
9.4	Connecting pipe B of Four-way valve	1	21	Large hand-drawn	1
9.5	Connecting pipe C of Four-way valve	1	22	Top cover plate	1
10	Valve seat assembly	1	23	Valve seat guard cover	1
10.1	DN4 Stop valve B	1			

C3OU-21HVR1C3OU-27HVR1



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Front panel	1	18	Low pressure connecting tube	1
2	Ironclad asynchronous outdoor motor	1	19	Electric expansion valve assy	1
3	Holder for fan motor	1	19.1	Electric expansion valve	1
4	Front maintenance board	1	19.2	Plastic sealing coil	1
5	Left clapboard	1	19.3	(ROHS)Expansion capillary	3
6	Septum plate	1	19.4	E-shape filter	1
7	(ROHS)Welding assy for suction pipe	1	19.5	DN4 Copper adapter with holder	3
7.1	(ROHS) Suction pipe	1	19.6	Filter for oil return pipe	3
7.2	(ROHS)Oil return capillary transition tube A	1	20	(ROHS)Four-way valve assy	1
8	(ROHS)Chassis assembly(S218)	1	20.1	Four-way valve	1
8.1	(ROHS)Chassis	1	20.2	Four-way valve coil assy	1
8.2	Chassis feet	2	21	Exhaust pipe assy	1
8.3	Chassis strengthening board	1	21.1	Exhaust pipe A	1
9	(ROHS)Compressor	2	21.2	Exhaust pipe B	1
10	(ROHS)One-way valve	2	21.3	(ROHS)Oil return capillary transition tube	1
10.1	(ROHS) Connecting tube for high pressure one-way valve	1	21.4	Installation tube for probe	1
10.2	Filter	1	21.5	Oil return pipeline filter	1
11	(ROHS) Valve holder assy	1	21.6	Oil separator	1
11.1	Valve holder	1	22	Separator	1
11.2	Cut-off valve with two connecting tubes DN13	1	23	Top panel foam assy	1
11.3	Cut-off valve with two connecting tubes DN8	1	24	Rear frame	1
12	Rear panel	1	25	Electronic control components	1
13	Right clapboard	1	25.1	Welding assy for E-parts box	1
14	Large handle	1	25.2	Cooling fin fixing board	1
15	(ROHS)Protection net	1	25.3	Cooling fin	1
16	Condenser prewelding assy	1	25.4	(ROHS)Main board assy for outdoor unit	1
16.1	One and half-row condenser	1	25.5	Module board assy for outdoor unit	1
16.2	(ROHS)Condenser exhaust receiver welding assy	1	25.6	Module board transformer assy for outdoor unit	1
16.3	Condenser current dividing capillary welding assy	1	25.7	Monophase filter	1
16.4	Condenser main outlet pipe	1	26	Rubber ring	1
16.5	Fixing tube of condenser main outlet pipe	1	27	Amorphous inductor	1
17	(ROHS)Adfluxion pipe assy	1	28	(ROHS)Eliminator	1
17.1	(ROHS)Adfluxion pipe A	1	29	Small handle	1
17.2	(ROHS)Adfluxion pipe B	1	30	Propeller fan	1
17.3	(ROHS)Adfluxion pipe C	2	31	Plastic front net	1
17.4	DN8 Copper adapter with holder	3			

13. Troubleshooting

Problem	Cause	Remedy
● Unit does not operate,stand-by indicator lights	①Remote control malfunctions ②The remote control is locked	①Check remote control batteries ②Try to operate from a close distance ③Start from on-unit controls ④Unlock the remote control
● Unit does not respond properly to remote control command	①IR signal does not reach unit ②Distance between remote control and unit too large or aimed at from improper angle ③IR receiver on-unit exposed to strong light source	①Check for obstruction between unit and remote control, clear if needed. ②Get closer to unit ③Dim lights, fluorescents especially
● Air does not blow out from indoor unit	①De-icing protection mode is activated ② Unit AUTO FAN mode ③Over cooling in DRY	①Normal operation in HEATING mode ②Normal operation in DRY mode
● COOLING , DRY or HEATING does not start immediately	3-min, Compressor delayed start	Normal operation for these modes
● Unit functions but does not perform sufficiently	①Improper temperature setting ②Unit capacity insufficient for load or room size	①Reset temperature ②Consult your dealer

Part 4.

Installation

1. Installation and Operation Instructions

CAUTIONS

For correct installation read this manual before starting installation and save this manual in a safe place for future reference.

Only trained and qualified service personnel should install repair or service air conditioning equipment. Users should not install the air conditioner by themselves.

Nominal cooling capacity of outdoor unit is tested under the condition that outdoor ambient dry/wet bulb temperature is 35°C/24°C. Actual max. Output capacity depends on outdoor ambient temperature and connection method, which may differ from nominal value. According to refrigeration system design and operation requirement, this outdoor unit should work with indoor units with corresponding total capacity, which ensures optimal performance and safe operation. To meet users' demand, this unit is specially designed that unit can work even though required total capacity of indoor units exceeds nominal value. Under this condition, actual output capacity of single indoor unit may be attenuated and less than nominal value. We disclaim all responsibility for malfunction caused by users' noncompliance of this installation and operation instructions.

Please read the instructions carefully and follow the requirements below:

1.1 Type of Indoor Unit

Type	Nominal Capacity K Btu/h
CSG-07HVR1(84) (87) (107)	7
CSG-09HVR1(84) (87) (107)	9
CSG-12HVR1(84) (87) (107)	12
CSG-18HVR1(84) (87) (107)	18

1.2 Connection Rules of DC Inverter One-two Split Type

Nominal Capacity K Btu/h	One indoor unit	two indoor units		
	7	7	7+7	9+9
9	9	7+9	9+12	
12	12	7+12		

DC inverter multi system connect different style indoor units, includes 84series、 87series、 107series. All type indoor units can be freely combined.

1.3 Connection Rules of DC Inverter One -three Split Type

	one indoor unit	two indoor units			three indoor units		
Nominal	7	7+7	9+9	12+12	7+7+7	7+9+12	9+12+12
Capacity	9	7+9	9+12	12+18	7+7+9	7+12+12	
K Btu/h	12	7+12	9+18		7+7+12	9+9+9	
	18	7+18			7+9+9	9+9+12	

DC inverter multi system connect different style indoor units, includes 84series、 87series、 107series. All type indoor units can be freely combined.

2. Precaution on Installation

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.

Specially Notice the pipe length/height/dimension of each capacity.

Maximum pipe length

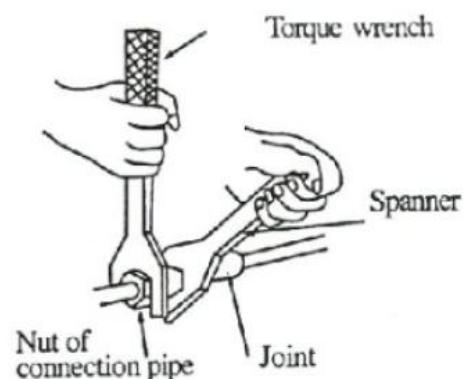
Model	Max. Length	Max. Elevation
C2OU-14HVR1	30	10
C2OU-18HVR1	30	10
C3OU-21HVR1	45	10
C3OU-27HVR1	45	10

Piping sizes

Model	Liquid(mm/inch)	Gas(mm/inch)
C2OU-14HVR1	6.35(1/4")	9.52(3/8")
C2OU-18HVR1	6.35(1/4")	9.52(3/8")
C3OU-21HVR1	6.35(1/4")	9.52(3/8")
C3OU-27HVR1	6.35(1/4")	9.52(3/8")

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 connector disconnect the pipes.



Tubing size	Tightening torque	Additional tightening torque
6.35	1500N.cm(153kgf.cm)	1600N.cm(163kgf.cm)
9.52	2500N.cm(255kgf.cm)	2600N.cm(265kgf.cm)
12.7	3500N.cm(357kgf.cm)	3600N.cm(367kgf.cm)

b. The stop valve 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 valve, 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.

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.

3) Connect the pipes.

- 4) Then, open the stem of stop valves of the outdoor unit to make the refrigerant pipe connecting the indoor unit with the outdoor unit in fluent flow.
- 5) Be sure of no leakage by checking it with leak detector or soap water.
- 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.

3. Vacuum Dry and Leakage Checking

3.1 Air purging

Air and moisture in the refrigerant system have undesirable effects as indicated below:

- Pressure in the system rises.
- Operating current rises.
- Cooling or heating efficiency drops.
- Moisture in the refrigerant circuit may freeze and block capillary tubing.
- Water may lead to corrosion of parts in the refrigeration system.

Therefore, the indoor unit and tubing between the indoor and outdoor unit must be leak tested and evacuated to remove any non-condensables and moisture from the system.

3.1.1 Air purging with vacuum pump

• Preparation

Check that each tube (both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Remove the service valve caps from both the gas and the liquid side on the outdoor unit. Note that both the liquid and the gas side service valves on the outdoor unit are kept closed at this stage.

- When relocate the unit to another place, perform evacuation using vacuum pump.
- Make sure the refrigerant added into the air conditioner is liquid form in any case.

Caution in handling the packed valve

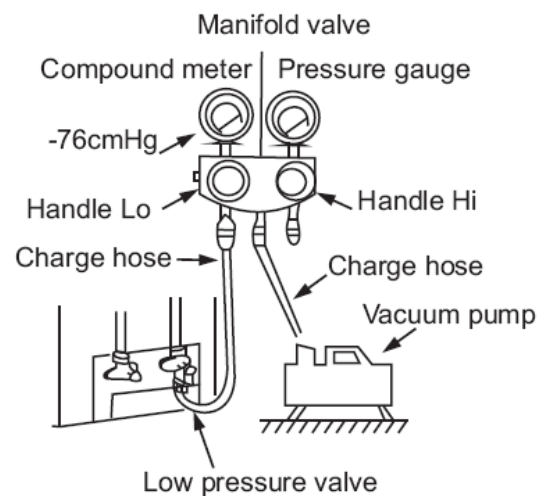
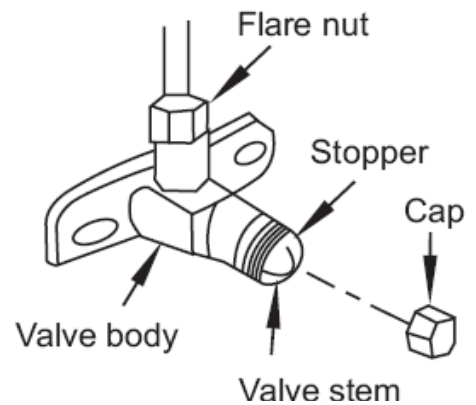
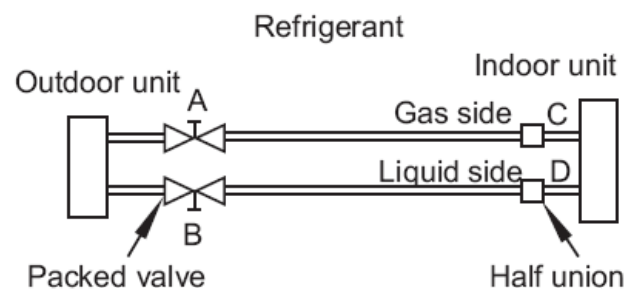
- Open the valve stem until it hits against the stopper. Do not try to open it further.
- Securely tighten the valve stem cap with a spanner or the like.
- Valve stem cap tightening torque (See Tightening torque table in previous page).

3.1.2 When Using the Vacuum Pump

• Preparation

(For method of using a manifold valve, refer to its operation manual.)

1. Completely tighten the flare nuts, A, B, C, D, connect the manifold Valve charge hose to a charge port of the low-pressure valve on the gas pipe side.
2. Connect the charge hose connection to the vacuum pump.
3. Fully open the handle Lo of the manifold valve.
4. Operate the vacuum pump to evacuate. After starting evacuation, Slightly loose the flare nut of the Lo valve on the gas pipe side and check that the air is entering (Operation noise of the vacuum pump changes and a compound meter indicates 0 instead of minus)
- 5 after the evacuation is complete, fully close the handle Lo of the manifold valve and stop the operation of the vacuum pump. Make evacuation for 15 minutes or more and check that the compound meter indicates -76cmHg (-1x10⁵Pa).



6. Turn the stem of the packed valve B about 45° counterclockwise for 6~7 seconds after the gas coming out, then tighten the flare nut again. Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.
7. Remove the charge hose from the Low pressure charge hose.
8. Fully open the packed valve stems B and A.
9. Securely tighten the cap of the packed valve.

3.2 Safety and leakage check

3.2.1 Electrical safety check

Perform the electric safe check after completing installation:

1. Insulated resistance

The insulated resistance must be more than 2MΩ.

2. Grounding work

After finishing grounding work, measure the grounding resistance by visual detection and grounding resistance tester. Make sure the grounding resistance is less than 4Ω.

3. Electrical leakage check (performing during test running)

During test operation after finishing installation, the serviceman can use the electroprobe and multimeter to perform the electrical leakage check. Turn off the unit immediately if leakage happens. Check and find out the solution ways till the unit operate properly.

3.2.2 Gas leak check

- **Soap water method:**

Apply a soap water or a liquid neutral detergent on the indoor unit connection or outdoor unit connections by a soft brush to check for leakage of the connecting points of the piping. If bubbles come out, the pipes have leakage.

- **Leak detector**

Use the leak detector to check for leakage.

4. Refrigerant charge

- 1) When the length of the one-way pipe is less than 5m, additional refrigerant charge after vacuuming is unnecessary.
- 2) When the length of one-way pipe is over 5m, the additional charge quantity is as follows (unit in gram):

Calculation method:

Refrigerant	Liquid diameter (mm)	Unit amount (g/m)	Formula
R410A	Φ6.35	15	$(L-5) \times 15$

- Remark: 1. The additional refrigerant charge is simply related with the liquid pipe diameter.
2. In the up formula, "L" means the length of liquid pipe between each indoor unit and outdoor unit (unit: m).

5. Water Drainage

Gradient and Supporting

- 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.
- 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	1.5~2m

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.

6. Insulation Work

6.1 Insulation material and thickness

1) Insulation material

Insulation material should adopt the material which is able to endure the pipe's temperature: no less than 70°C in the high-pressure side, no less than 120°C 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°C)

Cooling only type---- Polyethylene foam (withstand above 100°C)

2) Thickness choice for insulation material

Insulation material thickness is as follows:

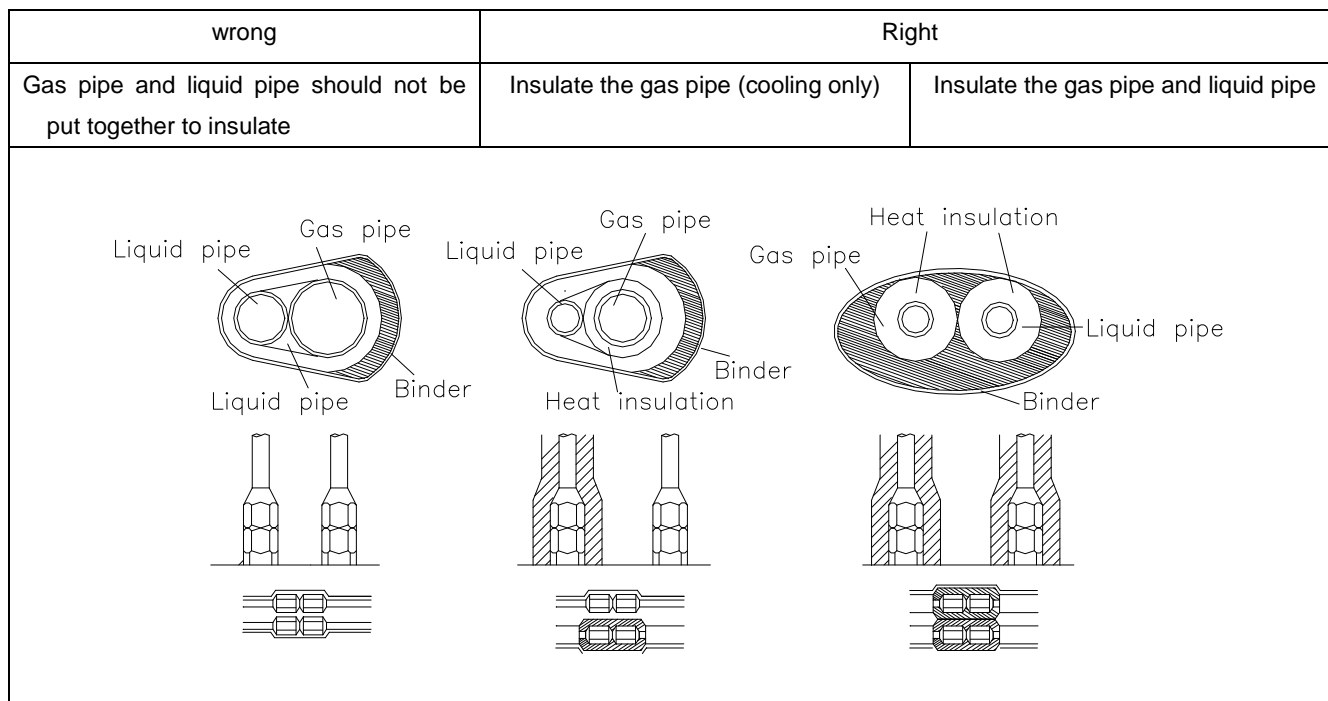
	Pipe diameter (mm)	Adiabatic material thickness
Refrigerant pipe	Φ6.4—Φ25.4	10mm
	Φ28.6—Φ38.1	15mm
Drainage pipe	Inner diameterΦ20—Φ32	6mm

6.2 Refrigerant pipe insulation

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.

2) Insulation for non-jointing parts and non-connection parts.



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.

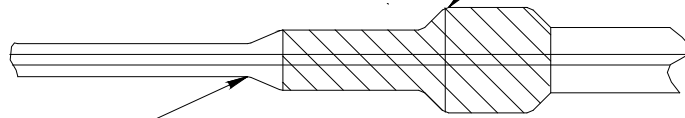
3) Insulate for the jointing area, expanding area and the flange area

- 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.

No clearance at connecting part

Heat insulation material
should be overlap



Heat-insulation material
(On Field)

6.3 Drainage pipe insulation

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

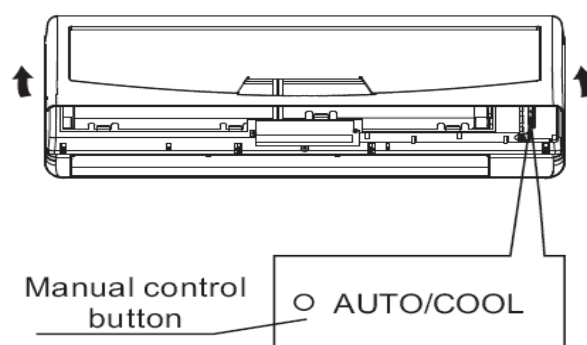
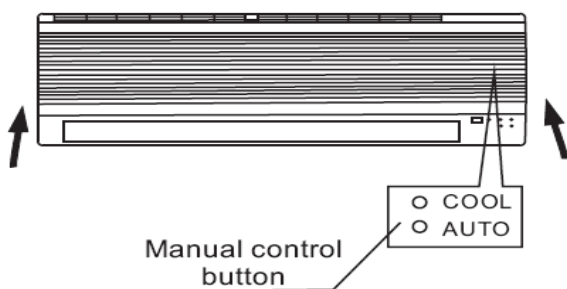
6.4 Note

- 1) The jointing area, expanding area and the flange area should be heat insulated after passing the pressure test
- 2) The gas and liquid pipe should be heat insulated individually, the connecting part should be heat insulated individually.
- 3) Use the attached heat-insulation material to insulate the pipe connections (pipes' tie-in ,expand nut) of the indoor unit.

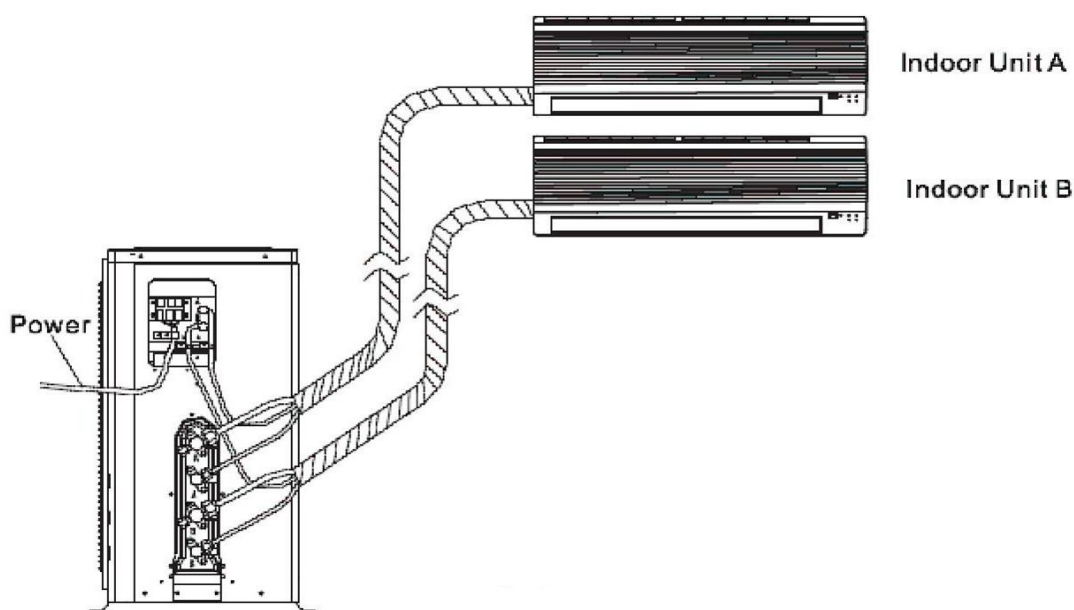
7. Test Operation

Perform test operation after completing gas leak check at the flare nutconnections and electrical safety check.

- Check that all tubing and wiring have been properly connected.
 - Check that the gas and liquid side service valves are fully open.
1. Connect the power, press the ON/OFF button on the remote controller to turn the unit on.
 2. Use the MODE button to select COOL, HEAT, AUTO and FAN to check if all the functions works well.
 3. When the ambient temperature is too low(lower than 16 C), the unit cannot be controlled by the remote controller to run at cooling mode, manual operation can be taken. Manual operation is used only when the remote controller is disable or maintenance necessary.
- Hold the panel sides and lift the panel up to an angle until it remains fixed with a clicking sound.
 - Press the Manual control button to select the AUTO or COOL, the unit will operate under Forced AUTO or COOL mode(see User Manual for details).
4. The test operation should last about 30 minutes.



Installation sketch diagram of connecting pipes and connecting lines for Dual split type unit:



Part 5.

Control System

1. Control function

1.1 Indoor fault indication function

Operation information	LED lights	Instruction
Defrosting	Display setting temperature	Operation light ON
Anti-cold air blowing	Display setting temperature	Operation light ON
Manual operation	Flash at 0.25Hz	Operation light ON and flash at 0.25Hz
Error information	LED display	Instruction
Communication failure between indoor unit and outdoor unit	E0	Indoor unit off and display
Room temperature sensor malfunction	E2	Indoor unit off and display
Middle of evaporator temperature (T2) sensor malfunction	E3	Indoor unit off and display
Outlet of evaporator temperature (T2B) sensor malfunction	E5	Indoor unit off and display
Indoor fan motor malfunction (Available when using PG motor)	E6	Indoor unit off and display
Outdoor unit malfunction	E9	Indoor unit off and display
SCR Over-zero protection (Available when using PG motor)	EA	Indoor unit off and display
EEPROM malfunction	EE	Indoor unit off and display
(Mode confliction)	EF	Indoor unit off and display

1.2 The outdoor unit display function

Code	Malfunction or protection
E01	Inverter module failure
E03	Outdoor condenser temperature (T3) sensor malfunction
E04	Outdoor ambient temperature (T4) sensor malfunction
E05	EEPROM malfunction
E06	Communication failure between DSP and 780034
E07	Compressor discharge temperature (T7) sensor malfunction (Only available when short connection)
E08	Communication failure between outdoor unit and indoor units
P01	Inverter compressor current protection (Current too big)
P02	Inverter compressor discharge temperature protection (Temperature too high)
P05	High / low pressure switch protection
P13	Outdoor coil temperature too high protection (Only available in cooling mode)
P16	AC power voltage abnormal protection(Voltage too high or too low)
E8	Low temperature of the outdoor environment protection (cancel)

1.3 Self diagnosisfunctions

Faults	LED codes	Illustrations
Communication fault between the unit and outdoor units	E0	Indoor units shut down, only the corresponding code is displayed
Room temperature sensor fault	E2	Indoor units shut down, only the corresponding code is displayed
Temperature sensor fault at the middle of the pipe	E3	Indoor units shut down, only the corresponding code is displayed
Temperature sensor fault at the outlet of the pipe	E5	Indoor units shut down, only the corresponding code is displayed
Indoor fan fault(For PG motor)	E6	Indoor units shut down, only the corresponding code is displayed
Protection from room temperature or ambient temperature being too low	E8	Indoor units shut down, only the corresponding code is displayed
Outdoor unit failure	E9	Indoor units shut down, only the corresponding code is displayed
Zero-cross protection (For PG motor)	EA	Indoor units shut down, only the corresponding code is displayed
EPROOM fault	EE	Indoor units shut down, only the corresponding code is displayed
Modes conflict hint	EF	Indoor units shut down, only the corresponding code is displayed

1.4 Point check function

NO.	Display	Instruction
Normal Display	The current running frequency	Note 1
1	The total demand for indoor units	The total demand that the indoor send over
2	operating mode	0, 1, 2, 3, 4,5 (note 2)
3	The real-time output capacity of the outdoor unit	The actual ability output (after various protection)
4	Fan state	(note 3)
5	T2 average/T2B average	The actual value(note 4)
6	T3 (the tube temperature of outdoor condenser)	The actual value
7	T4(the outdoor environment temperature)	The actual value
8	T7(the inverter exhaust temperature)	The actual value
9	The one side for inverter	The actual value
10	The another side for inverter	The actual value
11	EXV A opening degree	The actual value
12	EXV B opening degree	(Note 5) The actual value
13	EXV C opening degree	(Note 5) The actual value
14	EXV D opening degree	(Note 5) The actual value
15	The indoor unitstemperature for A system	Cooling T2B, heating T2
16	The indoor unitstemperature for B system	Cooling T2B, heating T2
17	The indoor units temperature for C system	Cooling T2B, heating T2
18	The indoor units temperature for D system	Cooling T2B, heating T2
19	The sets of the indoor units that can communicate normally	The actual value
20	---	Point check over

Note 1: normal shows. When standby, it indicates the sets of indoor units. When the compressor begins to operate, it indicates operating frequency of the compressor. When protection or failure appears, it shows protecting code or failure code. When there is some protection or failure code, it will repeatedly display protection or failure code.

Note 2: operating mode (shutdown:0 supply air:1 cooling/dehumidification:2 heating:3 rated cooling:4 rated heating: 5)

Note 3: operating wind speed (shutdown:0 low speed:1 high speed:2)

Note 4: when cooling, it shows the average temperature T2B, when heating, it shows the average temperature T2.

Note 5: electronic expansion valves opening degree divided by 8 shows. Such as 480 P is revealed to 60.

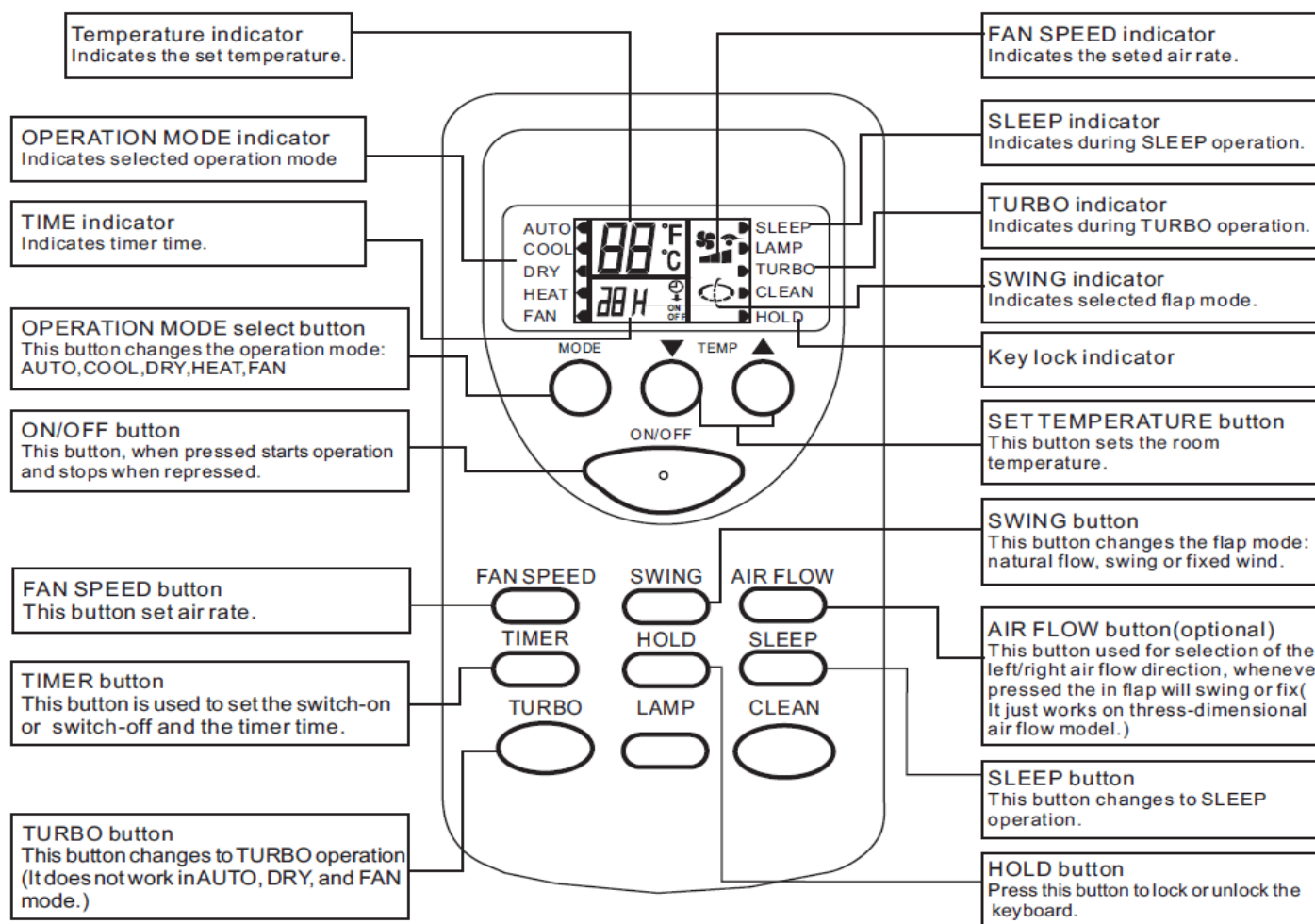
2. Controller

Attention:

1. The appearances of the following two remote controllers will vary , but the functions of the same .Please check to refer the instruction for the identical remote controller of your air-conditioner.
2. The remote controller 1 is the general one used for many types of air-conditioner in our company , we beg your forgiveness that we would not introduce the button or indicator which is not applicable for units you purchased.

The "LAMP" and "CLEAN" button are applicable for special latest developed new models only instead of normal models.

The "AIR FLOW" button is an optional function button, it just works on those models with three-dimensional air flow function.



NOTE:

1. Above figure shows all indications for the purpose of explanation , but practically only the pertinent parts are indicated .when air-conditioner's cooling-only model,the HEAT is for FAN,
2. When TURBO operation is selected ,room temperature is not controlled with operation being continually. If you feel the room temperature is too cool or too heat,please cancel the TURBO operation.

● OPERATING MACHINE IN SELECTED MODES

1. Point the remote controller at the unit ,press the ON/OFF button,then press the MODE button,select the needed mode:ATUO,COOL,DRY,HEAT,or FAN.
2. Press the SET TEMPERATURE button to increase the decrease the reading until the needed temperature is displayed .The room set temperature range is from 16°C-32°C (61°F -90°F).
(It would be automatically set at 25°C(76°F) and unadjustable in AUTO and DRY mode.)
3. Press the FAN SPEED button to choose the air rate you want :LOW (display indicates "■").Med(display indicates:" ■■"),Hi(display indicates" ■■■"),Auto(display" ■■■" indicator flashing).
(It would be automatically set at low speed and unadjustable in DRY mode.)
4. Press the SWING button to choose the up/down air flow direction you want :natural flow(display indicates" (" ,swing(display" (" indicator flashing ,fixed wind(display indicates" (")
(It would be automatically set at fixed wind air flow direction in DRY mode.)

● TURBO OPERATION

Press TURBO button during COOL or HEAT operation ,the air rate can be setted in HIGH.Press the TURBO button again can release the TURBO operation.

Note:during TURBO operation, the air rate cann'tbe changed.

● ADJUSTING LEFT/RIGHT AIR FLOW

Methods 1:Manually adjust

Adjust the direction by moving directly the left/right air flow direction adjusting fin by hand.

Caution:when adjust the direction,stop air conditioner.

Methods 2: Horizontal & vertical auto swing (three-dimensional air flow model)

Adjust the direction by remote controller.Press the AIR FLOW button,the air swing fins will constantly make the left/right swing or fixed direction in air delivery.

● TIMER OPERATION

Set turning off time

Set the time for the unit to turn off and when it is time,the air conditioner will automatically stop operating.

1. During the operation of the air conditioner ,press the TIMER button and the air conditioner will enter the timed switch-off mode.
2. Continuely press the TIMER button to set the needed time for switching off the machine.The timer can make the setting in the range from 1-24hours.Every the button is pressed,indication change is the following sequence:1→2→.....→24→cancel (no indication) →1.
3. After the setting of the timed switch-off,the digits shown on the display screen will go down by 1 for every elapsed hour.The display digits indicate the remaining time prior to the timed switch-off.

Set turning on time

Set the time for the unit to turn on and when it is time, the air conditioner will automatically start operating.

1. When the air conditioner is in the standby mode ,press the TIMER button and the air conditioner will enter the timed switch-on mode.
2. Continuely press the TIMER button to set the needed time for switching on the machine.The timer can make the setting in the range from 1-24hours.Every the button is pressed,indication change is the following sequence:1→2→.....→24→cancel (no indication) →1.
3. After the setting of the timed switch-on,the digits shown on the display screen will go down by 1 for every elapsed hour.The display digits indicate the remaining time prior to the timed switch-on.

Releasing procedure

When the indication on display screen is 24 hour ,press the TIMER button again to delete the timed mode .

● SLEEP OPERATION

Use this mode to reduce operation sound when sleeping,etc.

Press the SLEEP button,the air flow sound from the indoor unit is decreased.

Press the SLEEP button again can release the mode.

NOTE:

Use the sleep mode when you are going to bed.If this mode is used in the day,the capacity is reduced ambient temperature is too high.(COOL MODE).

During the operation of cooling ,the room temperature will be raised gradually by 2°C(4°F)higher than the setting after the machine begins to operate in the sleeping mode.

During the operation of heating mode ,the room temperature will be dropped gradually 5°C(9°F) lower setting after the machine begins to operate in the sleeping mode.

● REPLACEMENT OF BATTERIES

When the signal from the remote controller becomes weak and the indoor unit can not receive it properly; or the indications on the display screen becomes blurred ,please slide the back cover and replace with two new batteries.

The positive and negative poles must match the installation positions.

New batteries of the same type have to be used for replacement.

If the remote controller is not to be used for long time,take out the batteries so as to prevent the leakage of the electrolyte from damaging the controller.

If when the remote controller is at abnormal state ,you can out the batteries on the back cover to clear off the display.

● Basic principles and performances

The machines absorb heat from the outdoor air and transfer it indoors so as to heat the room air. The heating capabilities through this principle of heat pump go up/down with the increase/decrease of the temperatures of the outdoor air.

It only needs a fairly short time for such hot air circulation system to raise the room temperature.

When the outdoor air temperature is very low, the system can be used together with other heating devices. But good ventilation should be maintained to ensure safety and prevent accidents.

● Defrosting

When the outdoor air temperature is very low and humidity is very high,frosting will occur to the heat exchanger of the outdoor unit,which has negative impacts upon the efficiency of the heating performance .In such case .the automatic defrosting function will come into play .The heating operation will be stopped for 5-10 minutes to do the defrosting.

1、 The fans of both the outdoor and indoor units are stopped.

2、 During the defrosting,the outdoor unit might generate some steam.It is caused by fast defrosting , which is not a performance failure.

3、 Upon the completion of the defrosting process,the heating operation is resumed.