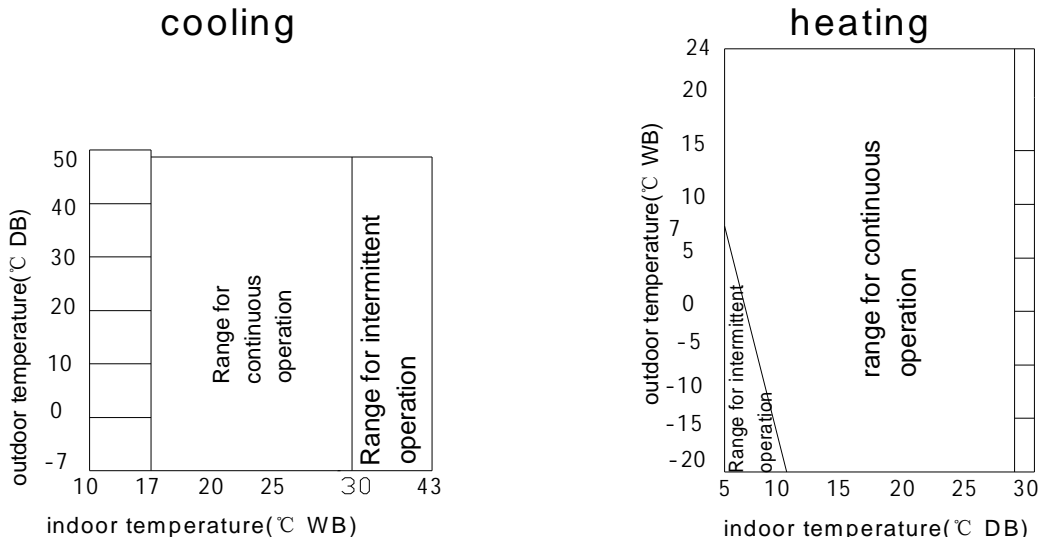


9. Operation Limits

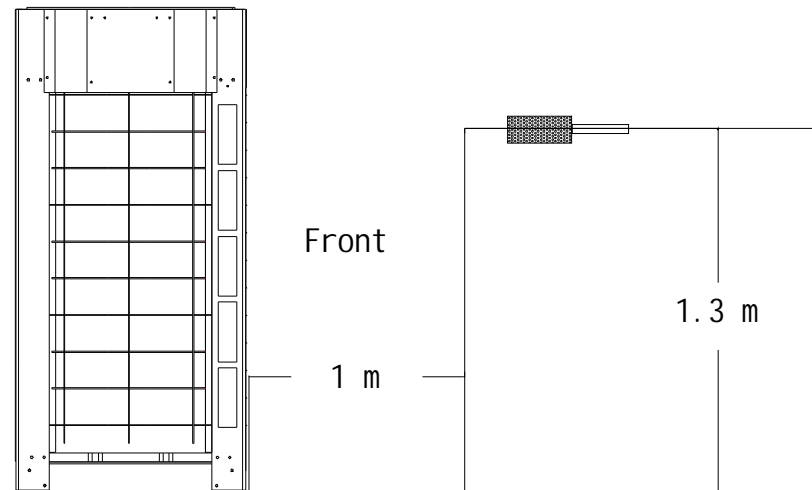


Notes: These figures assume the following operation conditions (Indoor and outdoor units):

1. Equivalent pipe length: 10m
2. Height difference: 0m

10. Sound Levels

10.1 Standard of testing



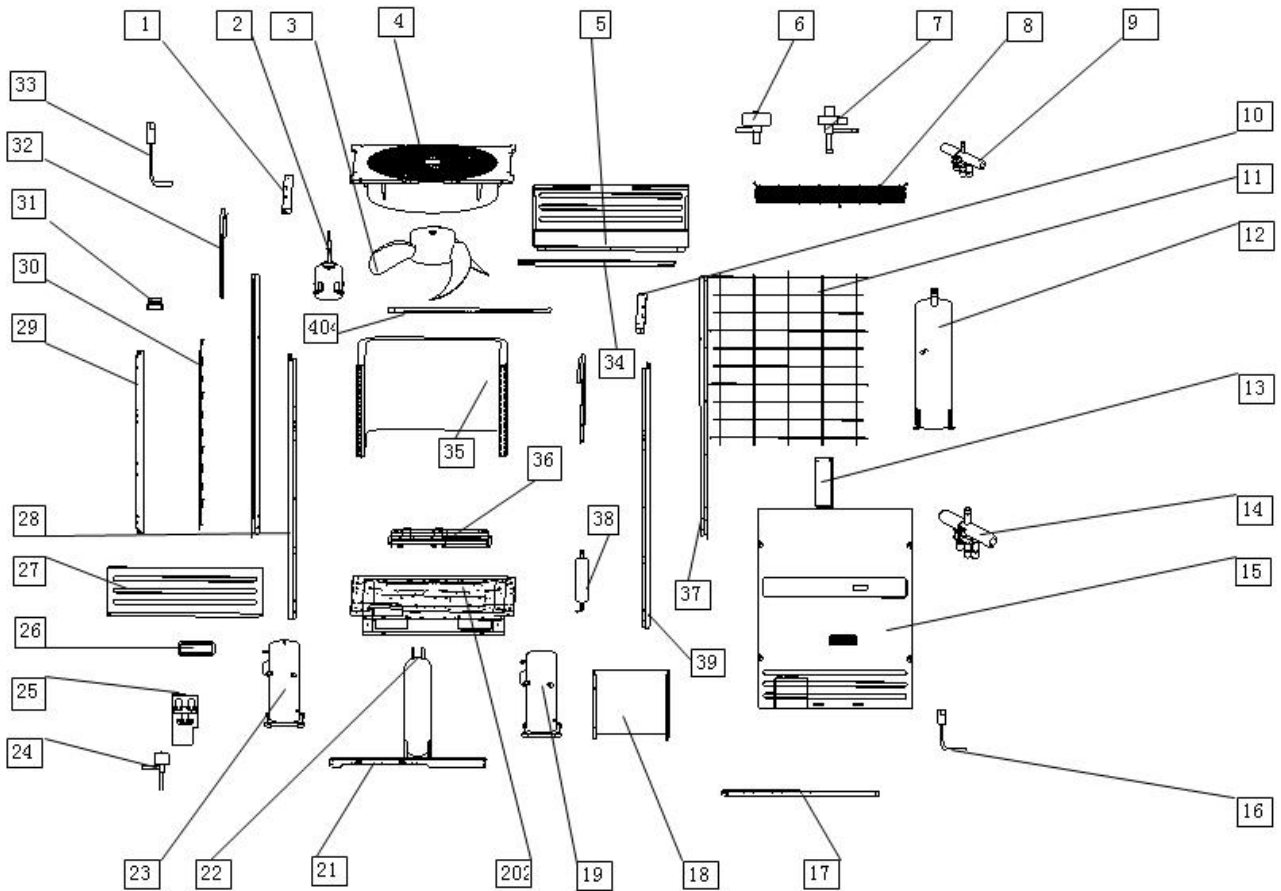
10.2 Sound levels

Outdoor unit (HP)	Noise level (dB)	Outdoor unit (HP)	Noise level (dB)	Outdoor unit (HP)	Noise level (dB)
8	58	28	63	48	64
10	58	30	63	50	65
12	58	32	63	52	65

14	60	34	64	54	65
16	60	36	64	56	65
18	62	38	64	58	65
20	62	40	64	60	65
22	62	42	64	62	65
24	62	44	64	64	65
26	62	46	64		

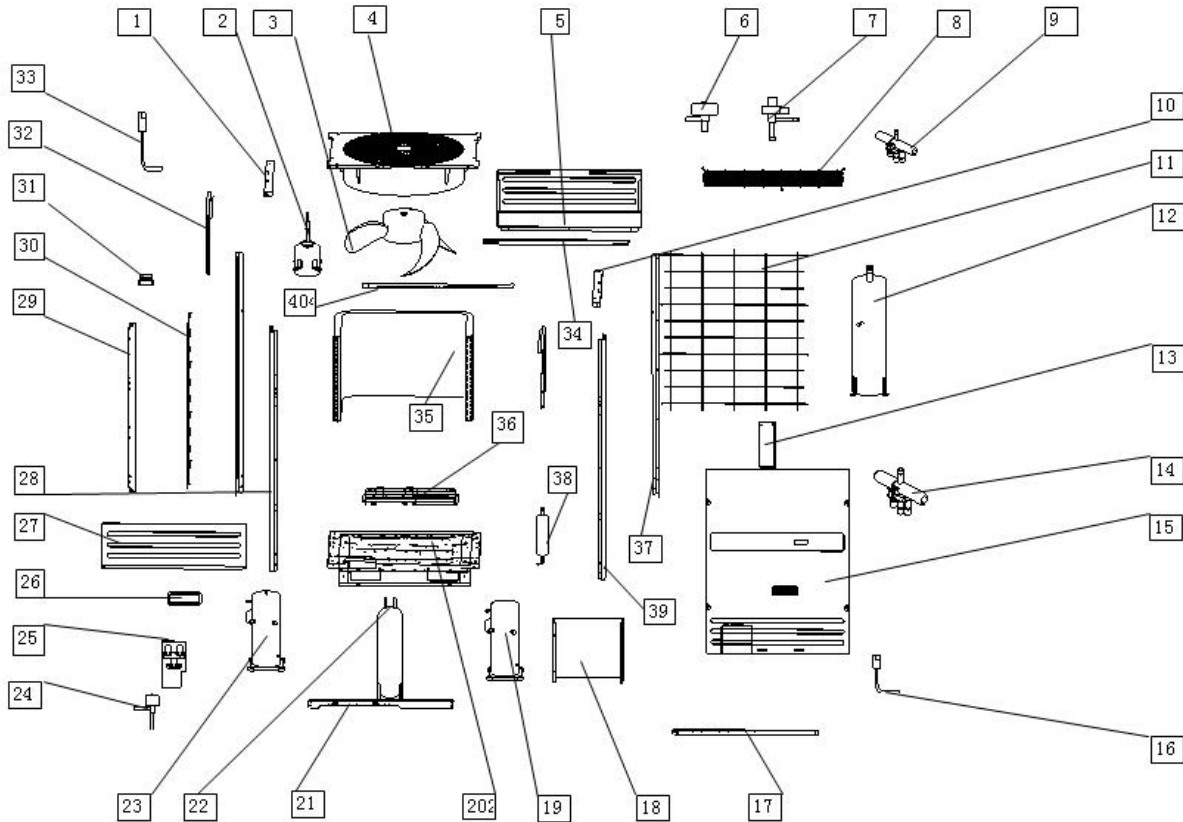
11. Exploded View

8HP 10HP 12HP Exploded View



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Left installation board for fan holder	1	24	Pressure-relief-valve	1
2	fan motor	1	25	Installation board for valve	1
3	Propeller fan	1	26	Protection board for bottom feets	1
4	Plastic holder	1	27	Top clapboard, Front	1
5	Back cove	1	28	Front-left holder	1
6	Electric expansive valve	2	29	Sealing board for condenser	2
7	Single way electromagnetic valve	5	30	Right-Left wire netting	2
8	Fan protection net	1	31	Little handle	1
9	4-Way valve	1	32	Cabinet, right-left	2
10	Right installation board for fan holder	1	33	Pressure transmitter	1
11	Back wire netting	1	34	Holder for motor	2
12	Vapor -liquid separator	1	35	Condenser	
13	Ball Valve holder	1	35.1	Condenser, up	1
14	4-Way valve	1	35.2	Condenser, down	1
15	Front cover board	1	36		
16	pressure controller	1	36.1	Compressor holder	2
17	installation board for Electric parts(down)	1	36.2	Compressor holder II	1
18	E-control box, assmy	1	36.3	Compressor holder I	2
19	Compressor (Copland)	1	37	Back-right holder	1
20	Chassis	1	38	Oil separator	2
21	installation board for Electric parts (up)	1	39	Front-right holder	1
22	Refrigerant container	1	40	Hermetic board, Condenser	1
23	Compressor(Copeland)	1			

14HP 16HP Exploded View



Number	Part Name	Quantity
1	Cover	2
2	Side cover board	2
3	Back-left holder	1
4	Front-left holder	1
5	Fan motor	2
6	Holder for fan motor	2
7	Condenser, Up	1
	Condenser, Down	1
8	Main four-way valve	1
9	Auxiliary four-way valve	1
10	Pressure controller	1
11	Pressure controller	1
12	Vapour-liquid separator	1
13	Single path electromagnetic valve	5
14	Top clapboard	2
15	Front-left clap board	1
16	Front-right clap board	1
17	Low Pressure Valve	2
	Low Pressure Valve	1
18	Left base pan	1
19	Right base pan	1
20	Mid-front holder	1

Number	Part Name	Quantity
21	Digital scroll compressor	1
22	Constant compressor	2
23	Left wire netting	1
24	Rear net	2
25	Right wire netting	1
26	Refrigerant container	1
27	Back-right holder	1
28	Electric expansive valve	2
29	Oil separator	3
30	Front-right holder	1
31	Mid-back holder	1
32	Ball Valve	1
33	E-control box, assmy	1
33.1	Transformer	1
33.2	Terminal Block, 4p	1
33.3	Relay Power	4
33.4	Contactora	2
33.5	Wire joint	1
33.6	Wire joint	1
33.7	Compressor capacitor	2
33.8	Main control board	1

12. Troubleshooting

12.1 The air-conditioner does not run after pressing ON/OFF button.

12.1.1 Communication malfunction between outdoor units

Display: The outdoor unit digital diode is displaying "E0"

Solutions: ① Check if communication cable is broken off

② Exchange P, Q line if there is no broken circuit

12.1.2 Phase sequence error

Display: The outdoor unit digital diode is displaying "E1"

Solutions: ① Check if the voltage between the power line terminals A,B,C of outdoor units and N is normally 220v. If not please check whether the power lines are well connected.

② After checking the voltage without finding any error, please transpose any two of the outdoor units power lines (A,B.C.)

12.1.3 Communication trouble between indoor unit and outdoor unit

Display: Outdoor unit digital diode is displaying "E2" and the timer lamp on the display board of the indoor unit, which has the communication trouble blinks.

Solutions: ① Check if communication cable is broken off

② Exchange P, Q line if there is no broken circuit

12.1.4 Outdoor unit ambient temperature sensor abnormal

Display: Outdoor unit digital diode is displaying E4

Solutions: ① Measure T4 electric resistance respectively and replace the broken one if the electric resistance is not correct.

② If the electric resistance is normal, please test the outdoor PCB and change a new one if it does not work well.

12.1.5 The address of outdoor unit malfunction

Display: Outdoor unit digital diode display "E8"

Method: Check the address code of outdoor unit PCB and make sure the address code in the right position.

12.1.6 voltage malfunction

Display: Outdoor unit digital diode is displaying "E9"

Method: Check the voltage of outdoor if it is between 352V and 418V, if not , please use a manostat.

12.2 After running a while the system stops to perform protection.

12.2.1 Water level alarming trouble

Display: Indoor unit alarm lamp blinks

Solutions: ① Check if water pump runs well

② Check if the drainpipe is broken

③ Check if the water level switch is blocked

④ If the above situations do not occur please change a new indoor PCB

12.2.2 High-pressure protection

Display: The outdoor unit digital diode is displaying:"P1"

Solutions: ① Check if the high-pressure protection switch is broken or loosen

② Test if the discharge temperature of the compressor is too high. If the discharge temperature is too high and the current is lower than the rated current, the system is probably lack of refrigerant and replenishes it.

③ Test if the pressure(high pressure) is too high or the current is overloaded. If so the possible causes are: the overcharge of refrigerant, the system air leakage, or bad ventilation conditions.

a. Let the surplus refrigerant out if refrigerant is too much

b. Let the entire refrigerant out, re-vacuumize the system and then replenish the refrigerant if air is penetrating into the system.

c. Improve the ventilation and heat-emission environment for the outdoor unit

12.2.3 Low-pressure protection

Display: The outdoor unit digital diode is displaying: "P2"

Solutions: ① Check if the low pressure protection switch is broken or loosen

② Test if the pressure (low pressure) is too low. The probable reasons are: the overcharge of refrigerant or system blockade.

12.2.4 Over current protection

Display: The outdoor unit diode. Is displaying: "P3"

Solutions: ① Check if the current is overloaded.

② The possible reasons for the over current are: the overcharge of refrigerant, air leakage, bad ventilation and heat-emission conditions.

12.2.5 Compressor discharge temperature protection, Condenser high temperature protection

Display: P4/ P5 is displayed on the outdoor unit diode

Solutions: ① Test digital discharge temperature, outdoor condenser T3 temperature

② Test system pressure

③ High digital discharge temperature is likely owing to the lack of refrigerant, air leakage or system blockade. Check the above items respectively to solve the problem.

④ Condenser high temperature protection owes to the overcharge of refrigerant, air leakage or bad ventilation and heat-emission conditions.

12.2.6 Module protection

Display: P6 is displayed on the outdoor unit diode

Solutions: guarantee the compressor and system is normal, otherwise the module must be changed.

12.2.7 Current protection of Fix1 compressor

Display: P7 is displayed on the outdoor unit diode

Solutions: Check if constant compressor 1 is damaged or blocked

12.2.8 Current protection of Fix2 compressor

Display: P8 is displayed on the outdoor unit diode

Solutions: Check if constant compressor2 is damaged or blocked

12.3 Cooling or heating capacity is not enough.

12.3.1 Address setting for the indoor units is wrong

Solutions: Do spot check of the indoor unit address and reset for those repeated ones.

12.3.2 Capacity code setting for the indoor units is wrong

Solutions: Do spot check of the indoor unit capacity code and reset for those repeated ones.

12.3.3 Overcharge or lack of refrigerant

12.3.4 The system air leakage or alcidine leakage

12.3.5 4-way valve leakage / blockade

Solutions: Replace with a new 4-way valve

12.3.6 Compressor leakage/ wear and tear

Solutions: Replace with a new compressor

12.3.7 Outdoor units are overload because there are many indoor units in the combination. If all the indoor units are in operation, cooling/heating effect will be lowered.

Solutions: ① Avoid all the indoor units running simultaneously.

② Reduce the indoor units that connected in the system

12.4 The whole system may run well while a specific indoor unit does not operate quite well

12.4.1 Mode conflict: Indoor Defrost lamp link

If within one system some indoor units are in cooling mode, while some others are in heating mode, mode conflict will be displayed on those cooling units LED and as a result those units will be power off.

12.4.2 Indoor sensor electric resistance changing

When the indoor sensor electric resistance changes to a certain extent, under the control of the PCB, the indoor unit will stop running at the set temperature. Consequently the cooling effect is weakened

12.4.3 Electric throttle kit blockade

Solutions: Use new electric throttle kits

12.4.4 EXV trouble of the power off units

If the refrigerant is leaked owing to EXV trouble of the power off units, the refrigerant will run through that power-- off units. As a result the cooling/heating capacity of the operating units is lowered.

Solutions: Replace all the bad electric throttle kits

12.5 Communication malfunction

12.5.1 Communication malfunction of 9177 and 780034

Display: H1 is displayed on the outdoor unit diode

Solutions: change outdoor main control board

12.5.2 Malfunction that the quantity of outdoor unit is less than actual quantity

Display: H2 is displayed on the outdoor unit diode

Check the power supply of outdoor unit and communication wire between outdoor units

12.5.3 Malfunction that the quantity of outdoor unit is more than actual quantity

Display: H3 is displayed on the outdoor unit diode

Check the power supply of outdoor unit and communication wire between outdoor units

13. Accessories

Name	Quantity	Outline	Function
Outdoor unit installation manual	1	This manual	---
Outdoor unit owner's manual	1	---	Given to user
Indoor unit owner's manual	2	---	Give owner
Service manual (guarantee and bar code inside)	1	---	Given to user
Screws bag	1	---	For maintenance
Screws driver	1	---	For the toggle switch
Gauge joint	1	---	For airtight test
90 elbow	2	---	Pipe connecting