

Service Manual

MODEL: GVC18AG-K1NNA5A
GVH18AG-K1NNA5A
GVC24AG-K1NNA5A
GVH24AG-K1NNA5A
GVC36AH-M1NNA5A
GVH36AH-M1NNA5A
GVC42AH-M1NNA5A
GVH42AH-M1NNA5A
(Refrigerant R22)

Table of Contents

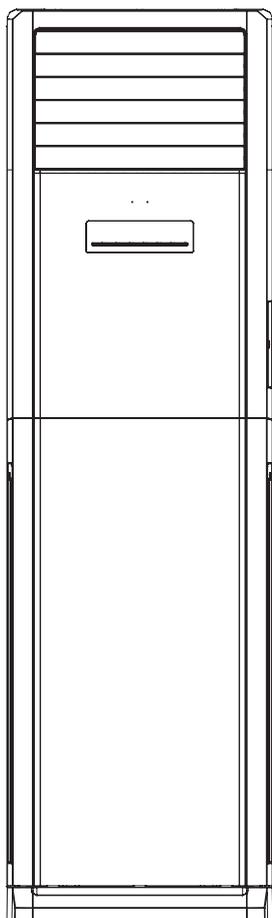
Summary and Features	1
1.Safety Precautions	3
2.Specifications	4
2.1 Unit Specifications	4
2.2 Capacity Variation Ratio According to Temperature	12
2.3 Operation Data	13
3.Construction Views	14
3.1 Indoor Unit.....	14
3.2 Outdoor Unit	15
4.Refrigerant System Diagram	17
5.Schematic Diagram	18
5.1 Electrical Wiring.....	18
5.2 Printed Circuit Board	25
6.Function and Control	27
6.1 Remote Control Operations.....	27
6.2 Function Buttons of Air Conditioner	30
6.3 Description of Each Control Operation	34
7.Installation Manual	42
7.1 Important Notices	42
7.2 Installation Dimension Diagram.....	45
7.3 Installation of Indoor Unit.....	46
7.4 Installation of Outdoor Unit.....	49
7.5 Test Operation and Check after Installation.....	51

8.Exploded Views and Parts List	52
8.1 Indoor Unit.....	52
8.2 Outdoor Unit.....	58
9.Troubleshooting	74
9.1 Precautions before Performing Inspection or Repair.....	74
9.2 Confirmation.....	74
9.3 Judgement by Flashing LED of Indoor/Outdoor Unit.....	74
9.4 How to Check Simply the Main Part.....	77
10.Removal Procedure	85
10.1 Removal Procedure of Indoor Unit.....	85
10.2 Removal Procedure of Outdoor Unit.....	92

Summary and Features

Indoor Unit:

GVC18AG-K1NNA5A/I
GVH18AG-K1NNA5A/I
GVC24AG-K1NNA5A/I
GVH24AG-K1NNA5A/I



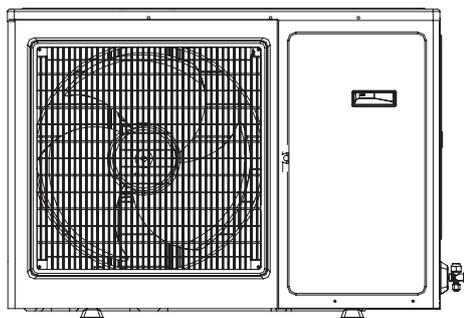
Remote Controller:

YB1F2

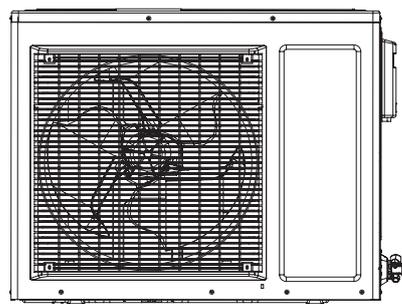


Outdoor Unit:

GVC24AG-K1NNA5A/O
GVH24AG-K1NNA5A/O



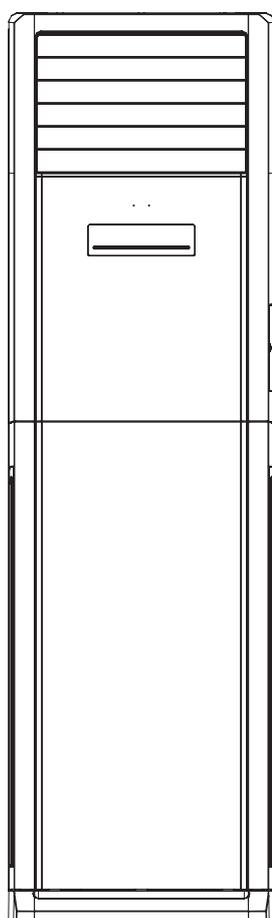
GVC18AG-K1NNA5A/O
GVH18AG-K1NNA5A/O



Summary and Features

Indoor Unit:

GVC36AH-M1NNA5A/I
GVH36AH-M1NNA5A/I
GVC42AH-M1NNA5A/I
GVH42AH-M1NNA5A/I



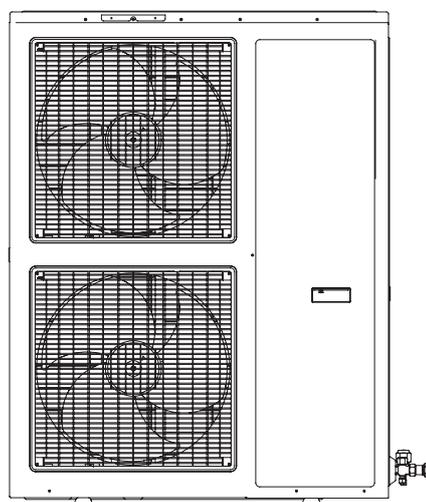
Remote Controller:

YB1F2

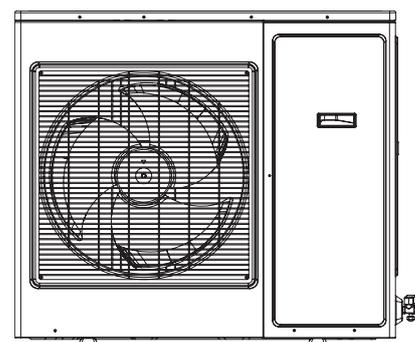


Outdoor Unit:

GVC42AH-M1NNA5A/O
GVH42AH-M1NNA5A/O



GVC36AH-M1NNA5A/O
GVH36AH-M1NNA5A/O



1. Safety Precautions

Installing, starting up, and servicing air conditioner can be hazardous due to system pressure, electrical components, and equipment location, etc.

Only trained, qualified installers and service personnel are allowed to install, start-up, and service this equipment. Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel.

When handling the equipment, observe precautions in the manual and on tags, stickers, and labels attached to the equipment. Follow all safety codes. Wear safety glasses and work gloves. Keep quenching cloth and fire extinguisher nearby when brazing.

Read the instructions thoroughly and follow all warnings or cautions in literature and attached to the unit. Consult local building codes and current editions of national as well as local electrical codes.

Recognize the following safety information:



Warning Incorrect handling could result in personal injury or death.



Caution Incorrect handling may result in minor injury, or damage to product or property.

- Make sure the outdoor unit is installed on a stable, level surface with no accumulation of snow, leaves, or trash beside.
- Make sure the ceiling/wall is strong enough to bear the weight of the unit.
- Make sure the noise of the outdoor unit does not disturb neighbors.
- Follow all the installation instructions to minimize the risk of damage from earthquakes, typhoons or strong winds.
- Avoid contact between refrigerant and fire as it generates poisonous gas.
- Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture and other hazards.
- Make sure no refrigerant gas is leaking out when installation is completed.
- Should there be refrigerant leakage, the density of refrigerant in the air shall in no way exceed its limited value, or it may lead to explosion.
- Keep your fingers and clothing away from any moving parts.
- Clear the site after installation. Make sure no foreign objects are left in the unit.
- Always ensure effective grounding for the unit.



Warning

All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.

- Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.
- Never supply power to the unit unless all wiring and tubing are completed, reconnected and checked.
- This system adopts highly dangerous electrical voltage. Incorrect connection or inadequate grounding can cause personal injury or death. Stick to the wiring diagram and all the instructions when wiring.
- Have the unit adequately grounded in accordance with local electrical codes.
- Have all wiring connected tightly. Loose connection may lead to overheating and a possible fire hazard.

All installation or repair work shall be performed by your dealer or a specialized subcontractor as there is the risk of fire, electric shock, explosion or injury.



Caution

- Never install the unit in a place where a combustible gas might leak, or it may lead to fire or explosion.
- Make a proper provision against noise when the unit is installed at a telecommunication center or hospital.
- Provide an electric leak breaker when it is installed in a watery place.
- Never wash the unit with water.
- Handle unit transportation with care. The unit should not be carried by only one person if it is more than 20kg.
- Never touch the heat exchanger fins with bare hands.
- Never touch the compressor or refrigerant piping without wearing glove.
- Do not have the unit operate without air filter.
- Should any emergency occur, stop the unit and disconnect the power immediately.
- Properly insulate any tubing running inside the room to prevent the water from damaging the wall.

2. Specifications

2.1 Unit Specifications

Model		GVC18AG-K1NNA5A	GVH18AG-K1NNA5A
Product Code		CG09000010	CG09000020
Power Supply	Rated Voltage	V ~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode		Indoor	Indoor
Cooling Capacity	W	5275	5275
Heating Capacity	W	/	5900
Cooling Power Input	W	1895	1895
Heating Power Input	W	/	1820
Cooling Power Current	A	10.2	10.2
Heating Power Current	A	/	10.2
Rated Input	W	2550	2550
Rated Current	A	10.2	10.2
Air Flow Volume(SH/H/M/L)	m ³ /h	900/-/-	900/-/-
Dehumidifying Volume	L/h	1.8	1.8
EER	W/W	2.78	2.78
COP	W/W	/	3.24
Application Area	m ²	23-34	23-34
Indoor Unit	Model of Indoor Unit		GVC18AG-K1NNA5A/I
	Indoor Unit Product Code		CG090N0010
	Fan Type-Piece		Centrifugal fan
	Diameter Length(DXL)	mm	Φ350X130
	Fan Motor Cooling Speed (SH/H/M/L)	r/min	455/415/370/330
	Fan Motor Heating Speed (SH/H/M/L)	r/min	/
	Output of Fan Motor	W	50
	Fan Motor RLA	A	0.61
	Fan Motor Capacitor	μF	4.5
	Input of Heater	W	/
	Evaporator Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Row-fin Gap	mm	2-1.3
	Coil Length (LXDXW)	mm	571X30.4X392
	Swing Motor Model		MP35AA MP35AB
	Output of Swing Motor	W	2.5
	Fuse	A	3.15
	Sound Pressure Level (SH/H/M/L)	dB (A)	50/47/44/42
	Sound Power Level (SH/H/M/L)	dB (A)	60/57/54/52
	Dimension (WXHXD)	mm	1757X500X300
	Dimension of Carton Box (LXWXH)	mm	1940X630X435
	Dimension of Package(LXWXH)	mm	1943X633X450
	Net Weight	kg	38
	Gross Weight	kg	58

Outdoor Unit	Model of Outdoor Unit		GVC18AG-K1NNA5A/O	GVH18AG-K1NNA5A/O
	Outdoor Unit Product Code		CG090W0010	CG090W0020
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO., LTD.	ZHUHAI LANDA COMPRESSOR CO., LTD.
	Compressor Model		QX-34F050gA	QX-34F050gA
	Compressor Oil		ATMOS-NM56EP	ATMOS-NM56EP
	Compressor Type		rotary	rotary
	L.R.A.	A	44	44
	Compressor RLA	A	8.4	8.4
	Compressor Power Input	W	1820	1820
	Overload Protector		Internal	Internal
	Throttling Method		Capillary	Capillary
	Operation Temp	°C	16~30	16~30
	Ambient Temp (Cooling)	°C	18~43	18~43
	Ambient Temp (Heating)	°C	/	-7~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Rows-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXD _X W)	mm	613X25.4X658	613X25.4X658
	Fan Motor Speed	rpm	780±20	780±20
	Output of Fan Motor	W	68	68
	Fan Motor RLA	A	0.75	0.75
	Fan Motor Capacitor	μF	3.5	3.5
	Air Flow Volume of Outdoor Unit	m ³ /h	2800	2800
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ460	Φ460
	Defrosting Method		/	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	2.5	2.5
	Permissible Excessive Operating Pressure for the Suction Side	MPa	0.6	0.6
	Sound Pressure Level (H/M/L)	dB (A)	58/-/-	58/-/-
Sound Power Level (H/M/L)	dB (A)	68/-/-	68/-/-	
Dimension (WXHXD)	mm	913X680X378	913X680X378	
Dimension of Carton Box (LXWXH)	mm	994X725X428	994X725X428	
Dimension of Package(LXWXH)	mm	997X728X443	997X728X443	
Net Weight	kg	48	49	
Gross Weight	kg	52.5	53.5	
Refrigerant		R22	R22	
Refrigerant Charge	kg	1.2	1.35	
Connection Pipe	Length	m	5	5
	Gas Additional Charge	g/m	15	20
	Outer Diameter Liquid Pipe	mm	Φ6	Φ6
	Outer Diameter Gas Pipe	mm	Φ12	Φ12
	Max Distance Height	m	10	10
	Max Distance Length	m	25	25

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			GVC24AG-K1NNA5A	GVH24AG-K1NNA5A
Product Code			CG09000030	CG09000040
Power Supply	Rated Voltage	V ~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Indoor	Indoor
Cooling Capacity		W	7038	7038
Heating Capacity		W	/	7742
Cooling Power Input		W	2650	2650
Heating Power Input		W	/	2470
Cooling Power Current		A	17.91	17.91
Heating Power Current		A	/	18.29
Rated Input		W	3420	3420
Rated Current		A	17.91	18.29
Air Flow Volume(SH/H/M/L)		m ³ /h	1100/-/-	1100/-/-
Dehumidifying Volume		L/h	2.5	2.5
EER		W/W	2.66	2.66
COP		W/W	/	3.13
Application Area		m ²	35-52	35-52
Indoor Unit	Model of Indoor Unit		GVC24AG-K1NNA5A/I	GVH24AG-K1NNA5A/I
	Indoor Unit Product Code		CG090N0030	CG090N0040
	Fan Type-Piece		Centrifugal fan	Centrifugal fan
	Diameter Length(DXL)		mm	Φ350X130
	Fan Motor Cooling Speed (SH/H/M/L)		r/min	510/450/425/390
	Fan Motor Heating Speed (SH/H/M/L)		r/min	/
	Output of Fan Motor		W	50
	Fan Motor RLA		A	0.85
	Fan Motor Capacitor		μF	4.5
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.3
	Coil Length (LXDXW)		mm	724X25.4X381
	Swing Motor Model			SM016
	Output of Swing Motor		W	4
	Fuse		A	5
	Sound Pressure Level (SH/H/M/L)		dB (A)	48/45/42/40
	Sound Power Level (SH/H/M/L)		dB (A)	58/55/52/50
	Dimension (WXHXD)		mm	1757X500X300
	Dimension of Carton Box (LXWXH)		mm	1940X630X435
	Dimension of Package(LXWXH)		mm	1943X633X450
	Net Weight		kg	40
Gross Weight		kg	60	

Outdoor Unit	Model of Outdoor Unit		GVC24AG-K1NNA5A/O	GVH24AG-K1NNA5A/O
	Outdoor Unit Product Code		CG090W0030	CG090W0040
	Compressor Manufacturer/Trademark		MITSUBISHI ELECTRIC(GUANGZHOU) COMPRESSOR CO.,LTD	MITSUBISHI ELECTRIC(GUANGZHOU) COMPRESSOR CO.,LTD
	Compressor Model		LH42VBDC	LH42VBDC
	Compressor Oil		ATMOS-NM56EP	ATMOS-NM56EP
	Compressor Type		rotary	rotary
	L.R.A.	A	59	59
	Compressor RLA	A	11.2	11.2
	Compressor Power Input	W	2398	2398
	Overload Protector		Internal	Internal
	Throttling Method		Capillary	Capillary
	Operation Temp	°C	16~30	16~30
	Ambient Temp (Cooling)	°C	18~43	18~43
	Ambient Temp (Heating)	°C	/	-7~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ9.52	Φ9.52
	Rows-fin Gap	mm	2-1.5	2-1.5
	Coil Length (LXDXW)	mm	732X44X660	732X44X660
	Fan Motor Speed	rpm	840±20	840±20
	Output of Fan Motor	W	68	68
	Fan Motor RLA	A	0.65	0.65
	Fan Motor Capacitor	μF	3.5	3.5
	Air Flow Volume of Outdoor Unit	m ³ /h	3600	3600
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ472	Φ472
	Defrosting Method		/	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	2.5	2.5
	Permissible Excessive Operating Pressure for the Suction Side	MPa	0.6	0.6
	Sound Pressure Level (H/M/L)	dB (A)	56/-/-	56/-/-
	Sound Power Level (H/M/L)	dB (A)	66/-/-	66/-/-
Dimension (WXHXD)	mm	1018X700X412	1018X700X412	
Dimension of Carton Box (LXWXH)	mm	1100X755X450	1100X755X450	
Dimension of Package(LXWXH)	mm	1103X456X510	1103X456X510	
Net Weight	kg	59	59	
Gross Weight	kg	64	64	
Refrigerant		R22	R22	
Refrigerant Charge	kg	1.6	2.2	
Connection Pipe	Length	m	4	4
	Gas Additional Charge	g/m	15	20
	Outer Diameter Liquid Pipe	mm	Φ9.52	Φ9.52
	Outer Diameter Gas Pipe	mm	Φ16	Φ16
	Max Distance Height	m	10	10
	Max Distance Length	m	25	25

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			GVC36AH-M1NNA5A	GVH36AH-M1NNA5A
Product Code			CG09000050	CG09000060
Power Supply	Rated Voltage	V ~	380-415	380-415
	Rated Frequency	Hz	50	50
	Phases		3	3
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	10545	10545
Heating Capacity		W	/	10984
Cooling Power Input		W	4089	4089
Heating Power Input		W	/	3953
Cooling Power Current		A	10.6	10.6
Heating Power Current		A	/	10.4
Rated Input		W	5400	5400
Rated Current		A	10.6	10.4
Air Flow Volume(SH/H/M/L)		m ³ /h	1850/-/-	1850/-/-
Dehumidifying Volume		L/h	3.5	3.5
EER		W/W	2.58	2.58
COP		W/W	/	2.78
Application Area		m ²	46-70	46-70
Indoor Unit	Model of Indoor Unit		GVC36AH-M1NNA5A/I	GVH36AH-M1NNA5A/I
	Indoor Unit Product Code		CG090N0050	CG090N0060
	Fan Type-Piece		Centrifugal fan	Centrifugal fan
	Diameter Length(DXL)		mm	Φ379X180.5
	Fan Motor Cooling Speed (SH/H/M/L)		r/min	550/490/440/390
	Fan Motor Heating Speed (SH/H/M/L)		r/min	/
	Output of Fan Motor		W	150
	Fan Motor RLA		A	1.5
	Fan Motor Capacitor		μF	6
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.4
	Coil Length (LXD _X W)		mm	876.5X 25.4X470
	Swing Motor Model			MP35AA MP35AB
	Output of Swing Motor		W	2.5
	Fuse		A	5
	Sound Pressure Level (SH/H/M/L)		dB (A)	52/50/47/44
	Sound Power Level (SH/H/M/L)		dB (A)	62/60/57/54
	Dimension (WXHXD)		mm	1870X581X395
	Dimension of Carton Box (LXWXH)		mm	2080X735X530
	Dimension of Package(LXWXH)		mm	2083X738X545
Net Weight		kg	57	
Gross Weight		kg	83	

Outdoor Unit	Model of Outdoor Unit		GVC36AH-M1NNA5A/O	GVH36AH-M1NNA5A/O
	Outdoor Unit Product Code		CG090W0050	CG090W0060
	Compressor Manufacturer/Trademark		Qingan Refrigeration Equipment co.,Ltd	Qingan Refrigeration Equipment co.,Ltd
	Compressor Model		JT125GABY1L	JT125GABY1L
	Compressor Oil		DAPHNE SE56P	DAPHNE SE56P
	Compressor Type		rotary	rotary
	L.R.A.	A	47.8	47.8
	Compressor RLA	A	6	6
	Compressor Power Input	W	3440	3440
	Overload Protector		Internal	Internal
	Throttling Method		Capillary	Capillary
	Operation Temp	°C	16~30	16~30
	Ambient Temp (Cooling)	°C	18~43	18~43
	Ambient Temp (Heating)	°C	/	-7~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ9.52	Φ9.52
	Rows-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	975X813X44	975X813X44
	Fan Motor Speed	rpm	920	920
	Output of Fan Motor	W	92	92
	Fan Motor RLA	A	0.85	0.85
	Fan Motor Capacitor	μF	3.5	3.5
	Air Flow Volume of Outdoor Unit	m ³ /h	3600	3600
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ482	Φ482
	Defrosting Method		/	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	2.5	2.5
	Permissible Excessive Operating Pressure for the Suction Side	MPa	0.6	0.6
	Sound Pressure Level (H/M/L)	dB (A)	60/-/-	60/-/-
	Sound Power Level (H/M/L)	dB (A)	70/-/-	70/-/-
Dimension (WXHXD)	mm	1018X840X412	1018X840X412	
Dimension of Carton Box (LXWXH)	mm	1100X450X880	1100X450X880	
Dimension of Package(LXWXH)	mm	1103X453X895	1103X453X895	
Net Weight	kg	88	90	
Gross Weight	kg	102	104	
Refrigerant		R22	R22	
Refrigerant Charge	kg	3.3	3.3	
Connection Pipe	Length	m	5	5
	Gas Additional Charge	g/m	30	120
	Outer Diameter Liquid Pipe	mm	Φ12	Φ12
	Outer Diameter Gas Pipe	mm	Φ19	Φ19
	Max Distance Height	m	20	20
	Max Distance Length	m	30	30

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			GVC42AH-M1NNA5A	GVH42AH-M1NNA5A
Product Code			CG09000070	CG09000080
Power Supply	Rated Voltage	V ~	380-415	380-415
	Rated Frequency	Hz	50	50
	Phases		3	3
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	12310	12310
Heating Capacity		W	/	13190
Cooling Power Input		W	4885	4885
Heating Power Input		W	/	4476
Cooling Power Current		A	8.4	11
Heating Power Current		A	/	10.07
Rated Input		W	6100	6100
Rated Current		A	11	10.07
Air Flow Volume(SH/H/M/L)		m ³ /h	1850/-/-	1850/-/-
Dehumidifying Volume		L/h	5	5
EER		W/W	2.52	2.52
COP		W/W	/	2.82
Application Area		m ²	55-85	55-85
Indoor Unit	Model of Indoor Unit		GVC42AH-M1NNA5A/I	GVH42AH-M1NNA5A/I
	Indoor Unit Product Code		CG090N0070	CG090N0080
	Fan Type-Piece		Centrifugal fan	Centrifugal fan
	Diameter Length(DXL)		mm	Φ379X180.5
	Fan Motor Cooling Speed (SH/H/M/L)		r/min	550/490/440/390
	Fan Motor Heating Speed (SH/H/M/L)		r/min	550/490/440/390
	Output of Fan Motor		W	150
	Fan Motor RLA		A	1.5
	Fan Motor Capacitor		μF	6
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.4
	Coil Length (LXDXW)		mm	876.5X 25.4X470
	Swing Motor Model			MP35AA MP35AB
	Output of Swing Motor		W	2.5
	Fuse		A	5
	Sound Pressure Level (SH/H/M/L)		dB (A)	52/50/47/44
	Sound Power Level (SH/H/M/L)		dB (A)	62/60/57/54
	Dimension (WXHXD)		mm	1870X581X395
	Dimension of Carton Box (LXWXH)		mm	2080X735X530
Dimension of Package(LXWXH)		mm	2083X738X545	
Net Weight		kg	57	
Gross Weight		kg	83	

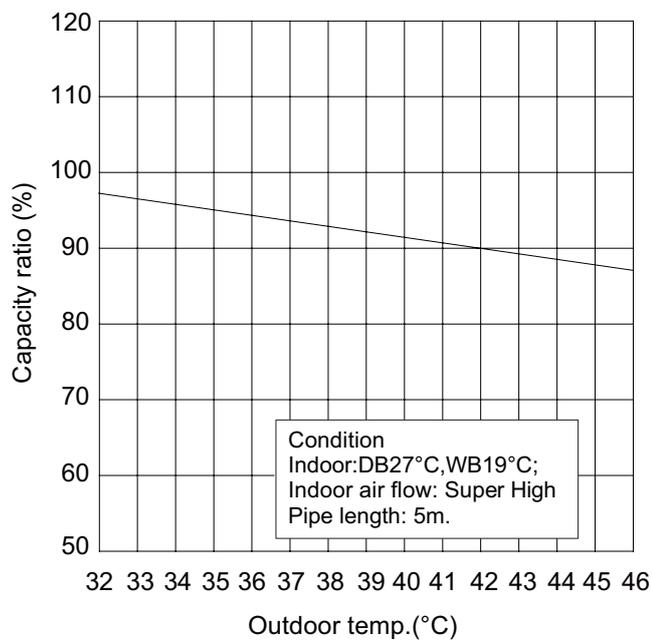
Outdoor Unit	Model of Outdoor Unit		GVC42AH-M1NNA5A/O	GVH42AH-M1NNA5A/O
	Outdoor Unit Product Code		CG090W0070	CG090W0080
	Compressor Manufacturer/Trademark		Qingan Refrigeration Equipment co.,Ltd	DALIAN SANYO COMPRESSOR CO., LTD
	Compressor Model		JT160GABY1L	C-SBX180H38A
	Compressor Oil		DAPHNE SE56P	4GSD/SAY56T
	Compressor Type		rotary	rotary
	L.R.A.	A	58	55
	Compressor RLA	A	7.5	7.6
	Compressor Power Input	W	4300	4300
	Overload Protector		Internal	Internal
	Throttling Method		Capillary	Capillary
	Operation Temp	°C	16~30	16~30
	Ambient Temp (Cooling)	°C	18~43	18~43
	Ambient Temp (Heating)	°C	/	-7~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7.94
	Rows-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXD _X W)	mm	1218X25.4X748	1218X44X726
	Fan Motor Speed	rpm	840±20	840±20
	Output of Fan Motor	W	68	68
	Fan Motor RLA	A	0.65	0.65
	Fan Motor Capacitor	μF	3.5	3.5
	Air Flow Volume of Outdoor Unit	m ³ /h	4000	4000
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ472	Φ472
	Defrosting Method		/	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	2.5	2.5
	Permissible Excessive Operating Pressure for the Suction Side	MPa	0.6	0.6
Sound Pressure Level (H/M/L)	dB (A)	60/-/-	60/-/-	
Sound Power Level (H/M/L)	dB (A)	70/-/-	70/-/-	
Dimension (WXHXD)	mm	1250X1032X412	1250X1032X412	
Dimension of Carton Box (LXWXH)	mm	1280X1110X450	1280X1110X450	
Dimension of Package(LXWXH)	mm	1283X1113X465	1283X1113X465	
Net Weight	kg	95	102	
Gross Weight	kg	105	112	
Refrigerant		R22	R22	
Refrigerant Charge	kg	3.6	3.55	
Connection Pipe	Length	m	5	5
	Gas Additional Charge	g/m	30	120
	Outer Diameter Liquid Pipe	mm	Φ12	Φ12
	Outer Diameter Gas Pipe	mm	Φ19	Φ19
	Max Distance Height	m	20	20
	Max Distance Length	m	30	30

The above data is subject to change without notice. Please refer to the nameplate of the unit.

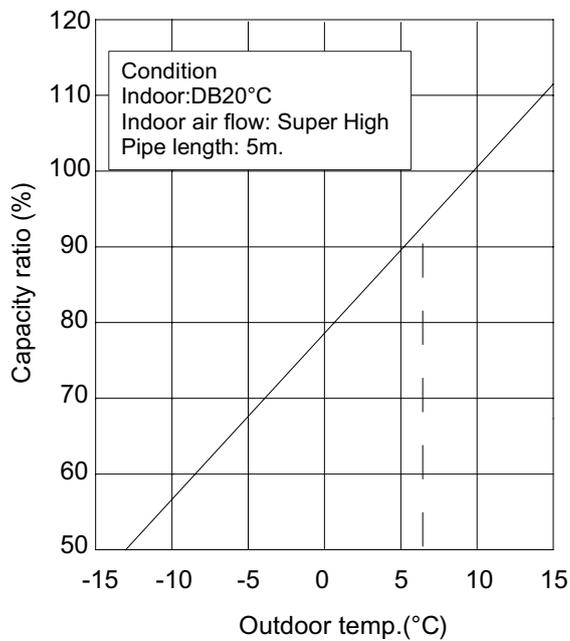
2.2 Capacity Variation Ratio According to Temperature

(1)GVC18AG-K1NNA5A GVH18AG-K1NNA5A GVC42AH-M1NNA5A GVH42AH-M1NNA5A

Cooling

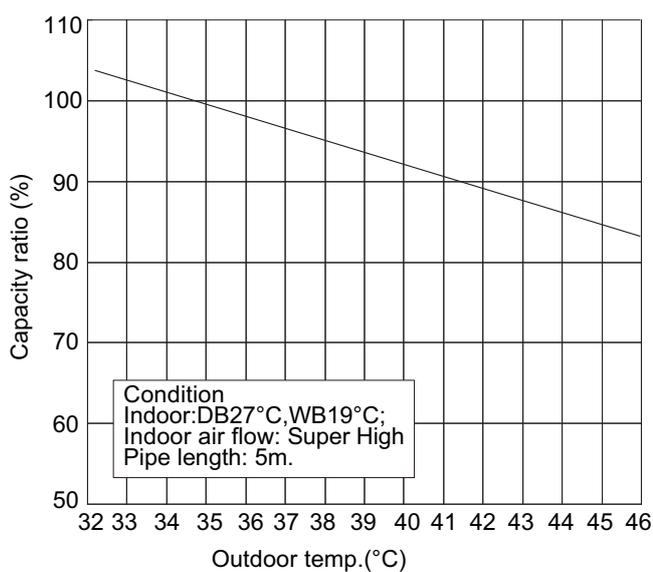


Heating

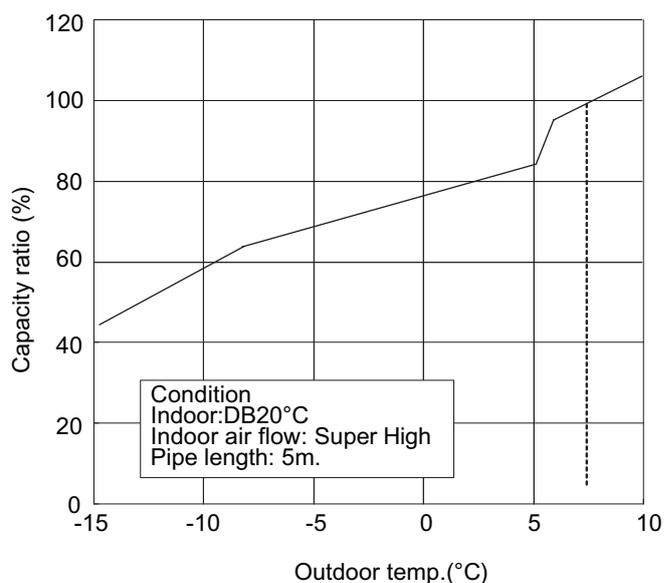


(2)GVC24AG-K1NNA5A GVH24AG-K1NNA5A

Cooling

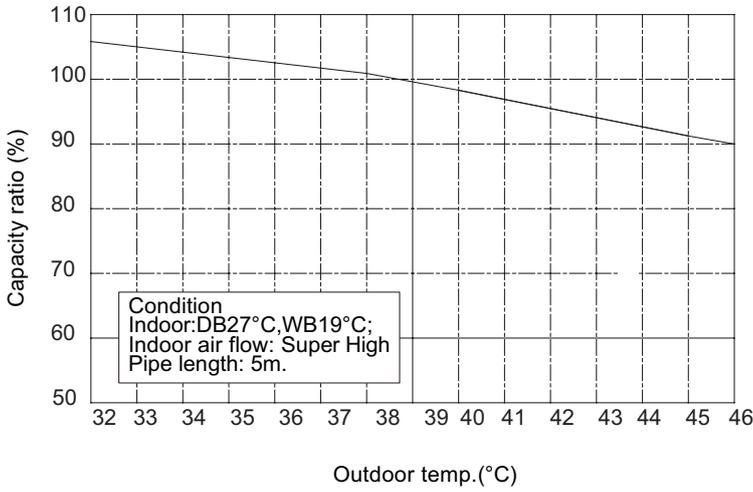


Heating

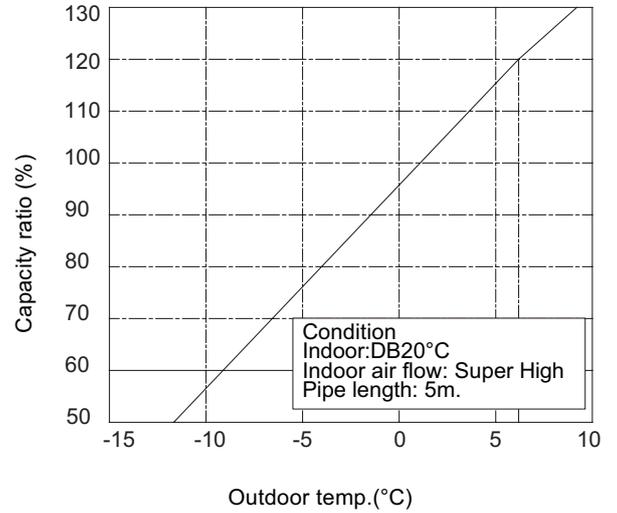


(3)GVC36AH-M1NNA5A GVH36AH-M1NNA5A

Cooling



Heating



2.3 Operation Data

Cooling

Temperature condition (°C)		Model name	Standard pressure P (MPa)	Heat exchanger pipe temp.		Indoor fan mode	Outdoor fan mode
Indoor	Outdoor			T1 (°C)	T2 (°C)		
27/19	35/24	18K	0.8~1.0	8~12	78~39	Super High	High
		24K	2	7	12		
		36K	0.8~1.0	8~12	39~43		
		42K	0.8~1.0	8~12	43~39		

Heating

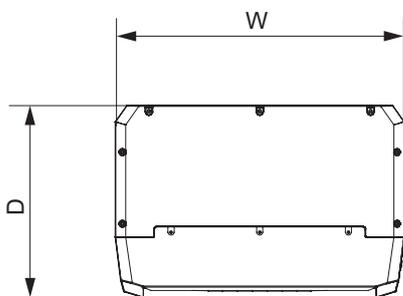
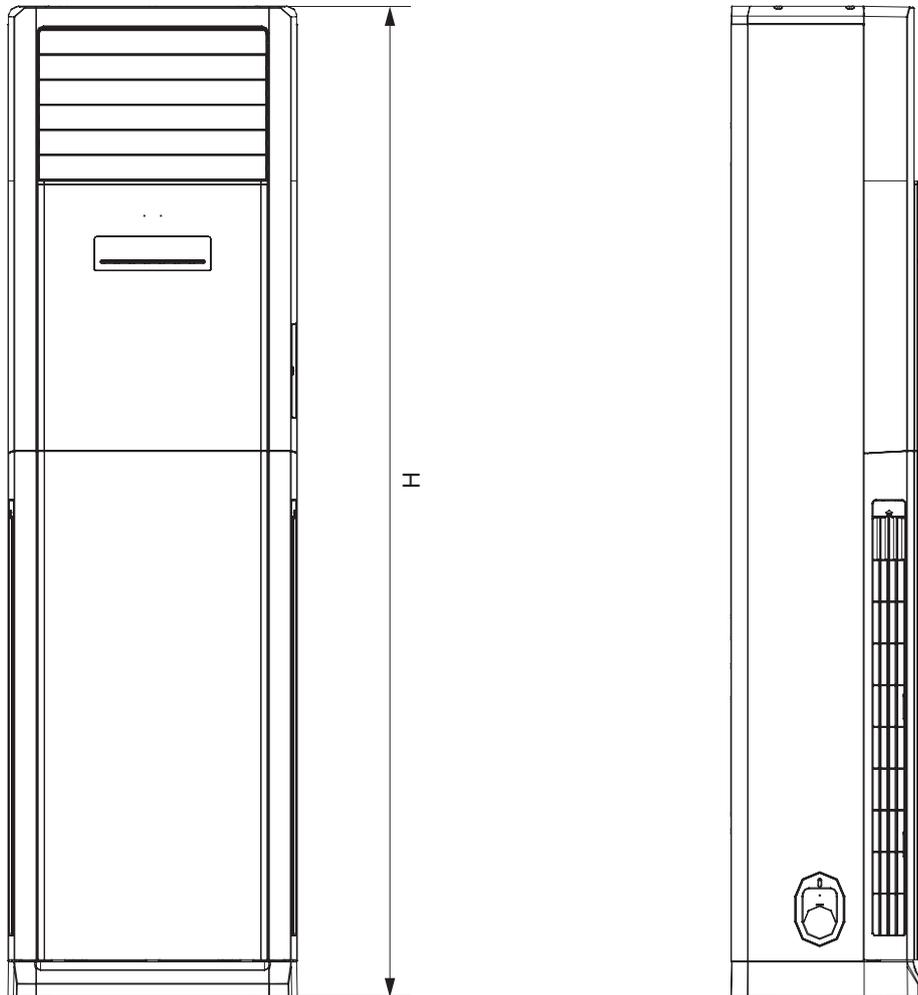
Temperature condition (°C)		Model name	Standard pressure P (MPa)	Heat exchanger pipe temp.		Indoor fan mode	Outdoor fan mode
Indoor	Outdoor			T1 (°C)	T2 (°C)		
20/-	7/6	18K	3.6~3.8	74~42	-3~3	Super High	High
		24K	2	77	4		
		36K	0.8~1.0	44~42	-4~3		
		42K	3.6~3.8	44~42	-4~3		

NOTES :

- (1) Measure surface temperature of heat exchanger pipe around center of heat exchanger path U bent. (Thermistor thermometer)
- (2) Connecting piping condition : 5 m
- (3) T1: Inlet and outlet pipe temperature of evaporator,
T2: Inlet and outlet pipe temperature of condenser,
P: Pressure of air pipe connecting indoor and outdoor units.

3. Construction Views

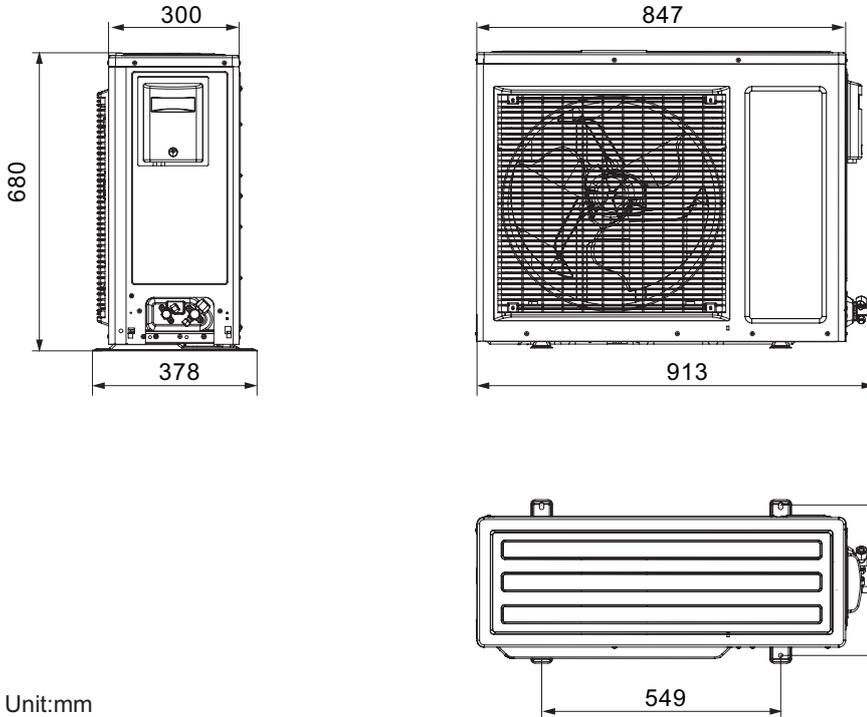
3.1 Indoor Unit



Unit:mm			
MODEL	H	W	D
GVC18AG-K1NNA5A/I GVH18AG-K1NNA5A/I GVC24AG-K1NNA5A/I GVH24AG-K1NNA5A/I	1575	500	300
GVC36AH-M1NNA5A/I GVH36AH-M1NNA5A/I GVC42AH-M1NNA5A/I GVH42AH-M1NNA5A/I	1870	581	395

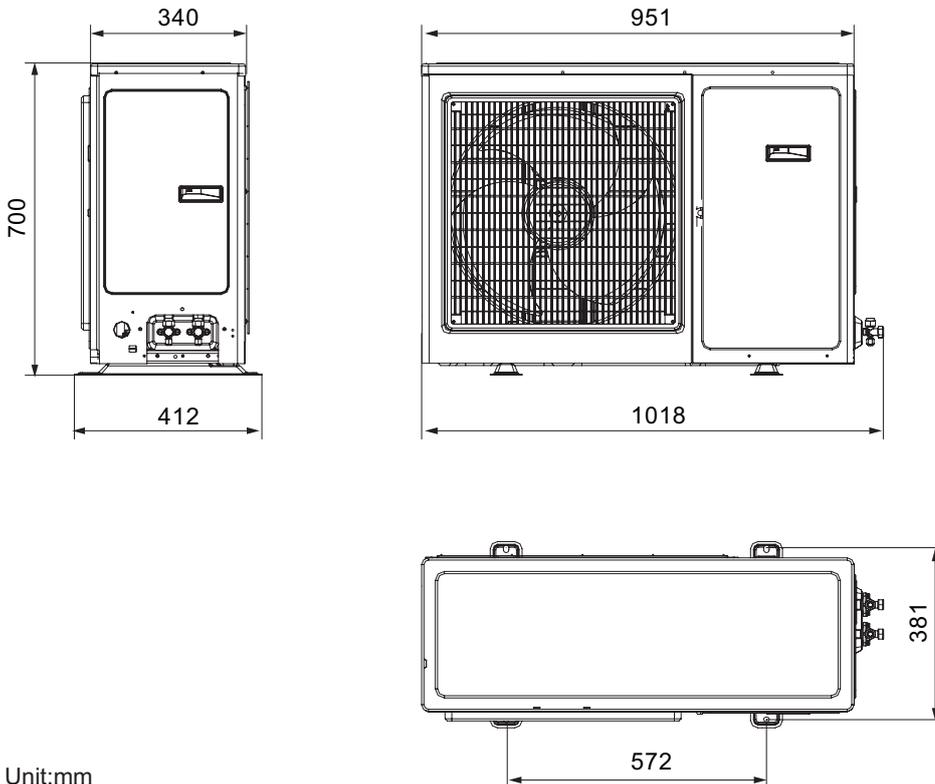
3.2 Outdoor Unit

(1)GVC18AG-K1NNA5A/O GVH18AG-K1NNA5A/O



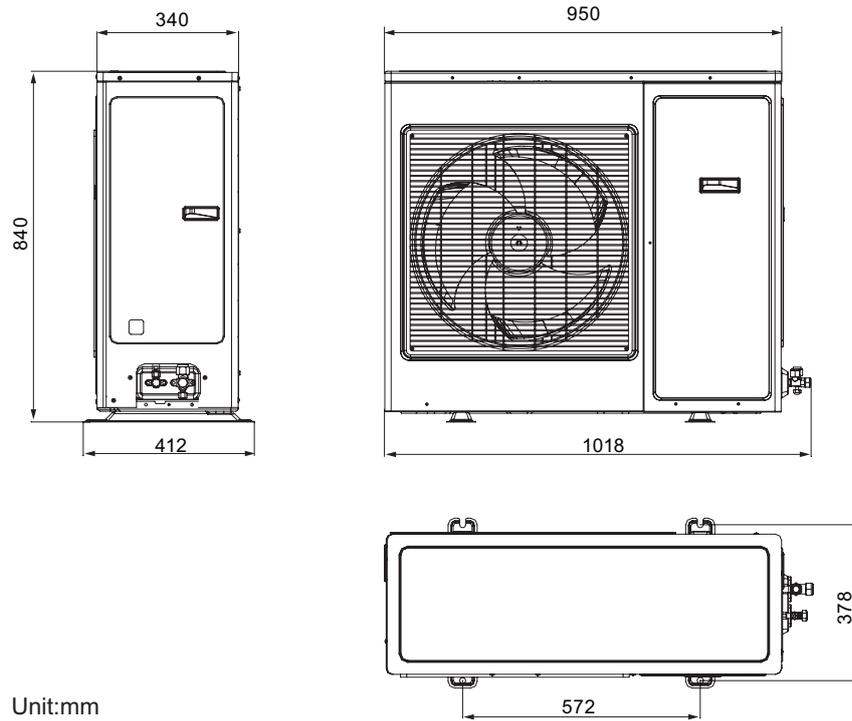
Unit:mm

(2)GVC24AG-K1NNA5A/O GVH24AG-K1NNA5A/O



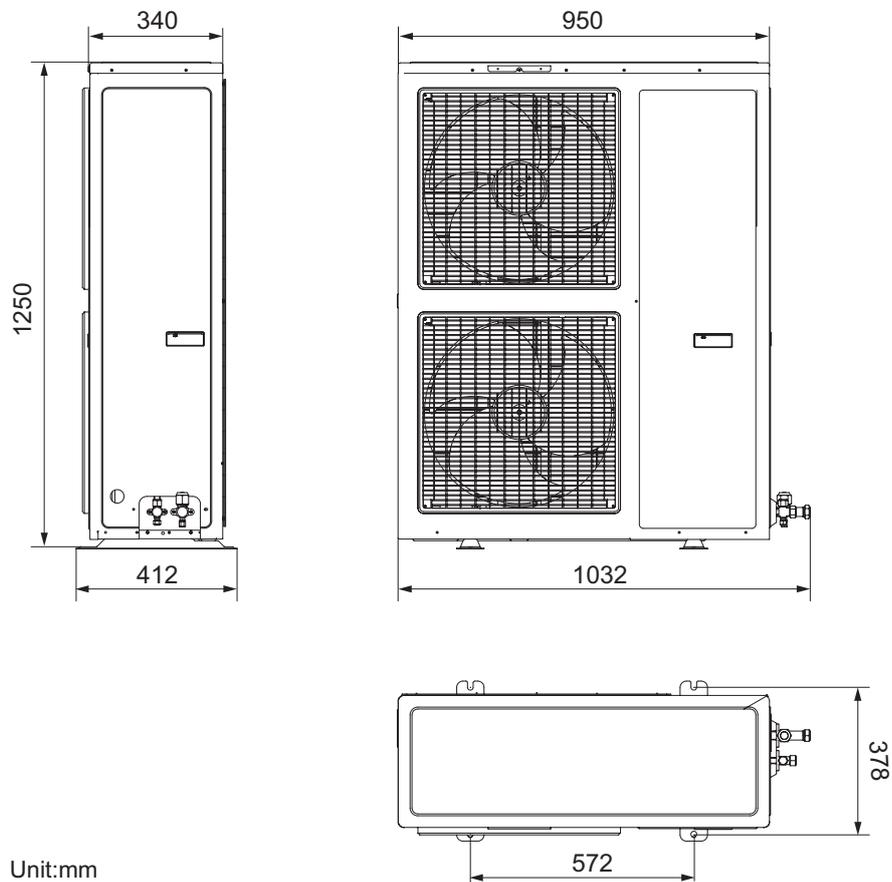
Unit:mm

(3)GVC36AH-M1NNA5A/O GVH36AH-M1NNA5A/O



Unit:mm

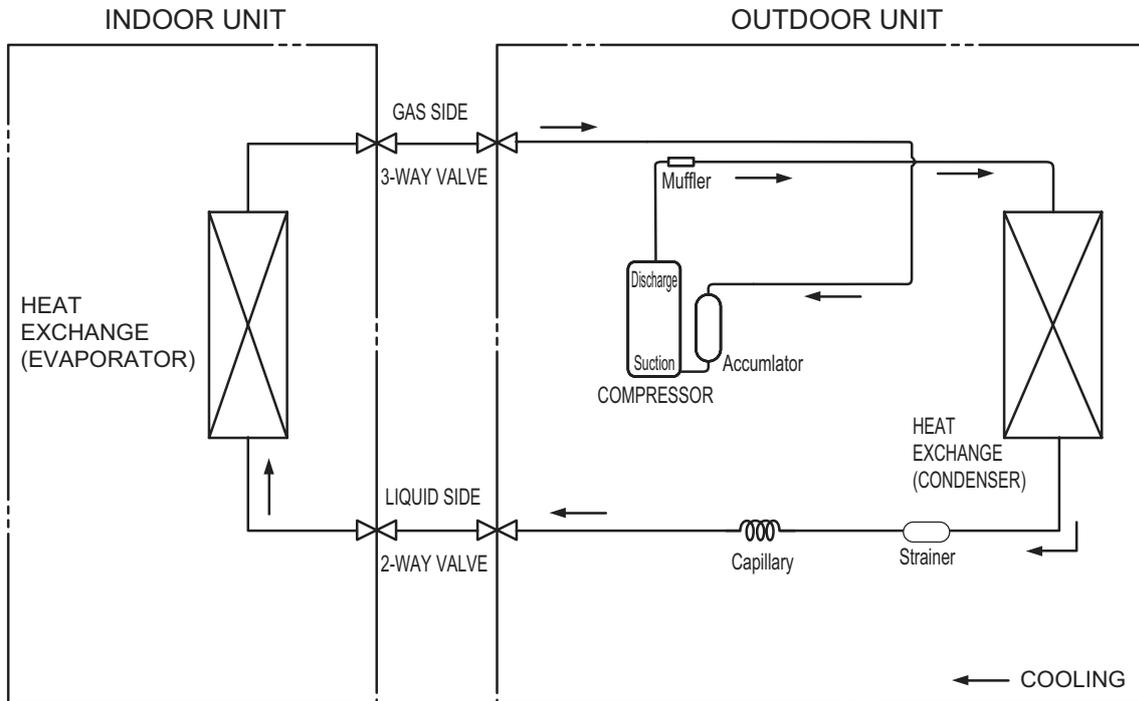
(4)GVC42AH-M1NNA5A/O GVH42AH-M1NNA5A/O



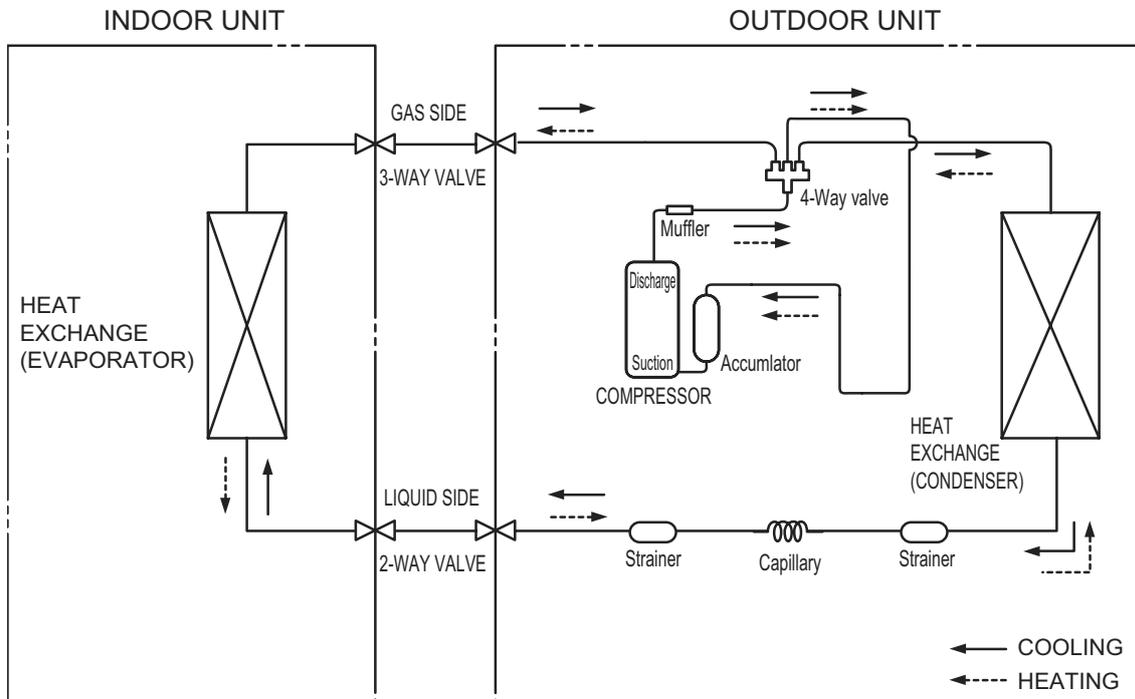
Unit:mm

4.Refrigerant System Diagram

(1)Cooling Only Models



(2)Cooling & Heating Models



Refrigerant pipe diameter

Liquid : 1/4"(6mm) Gas : 1/2"(12mm)(For GVC18AG-K1NNA5A/O GVH18AG-K1NNA5A/O)

Liquid : 3/8"(9.52mm) Gas : 5/8"(16mm)(For GVC24AG-K1NNA5A/O GVH24AG-K1NNA5A/O)

Liquid : 1/2"(12mm) Gas : 3/4"(19mm)

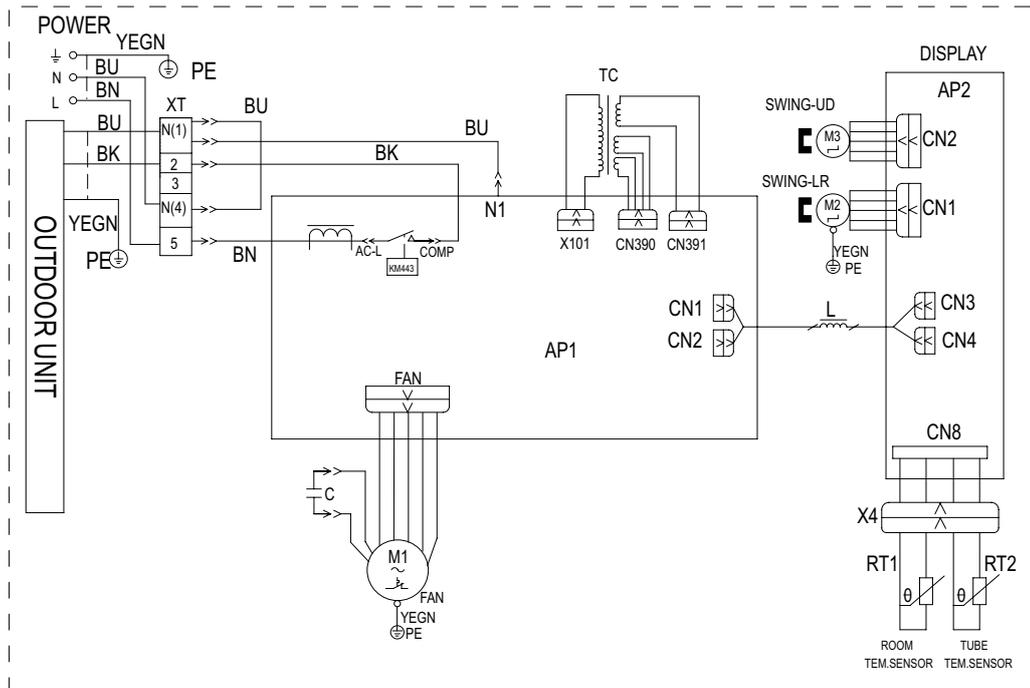
(For GVC36AH-M1NNA5A/O GVH36AH-M1NNA5A/O GVC42AH-M1NNA5A/O GVH42AH-M1NNA5A/O)

5.Schematic Diagram

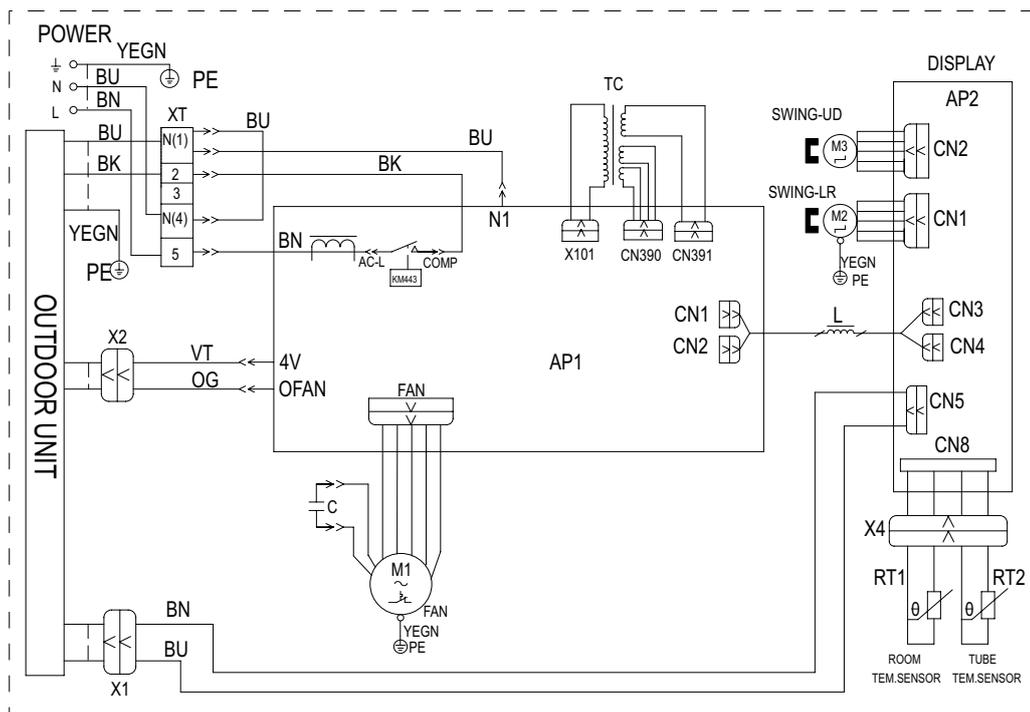
5.1 Electrical Wiring

Indoor Unit:

(1)GVC18AG-K1NNA5A/I



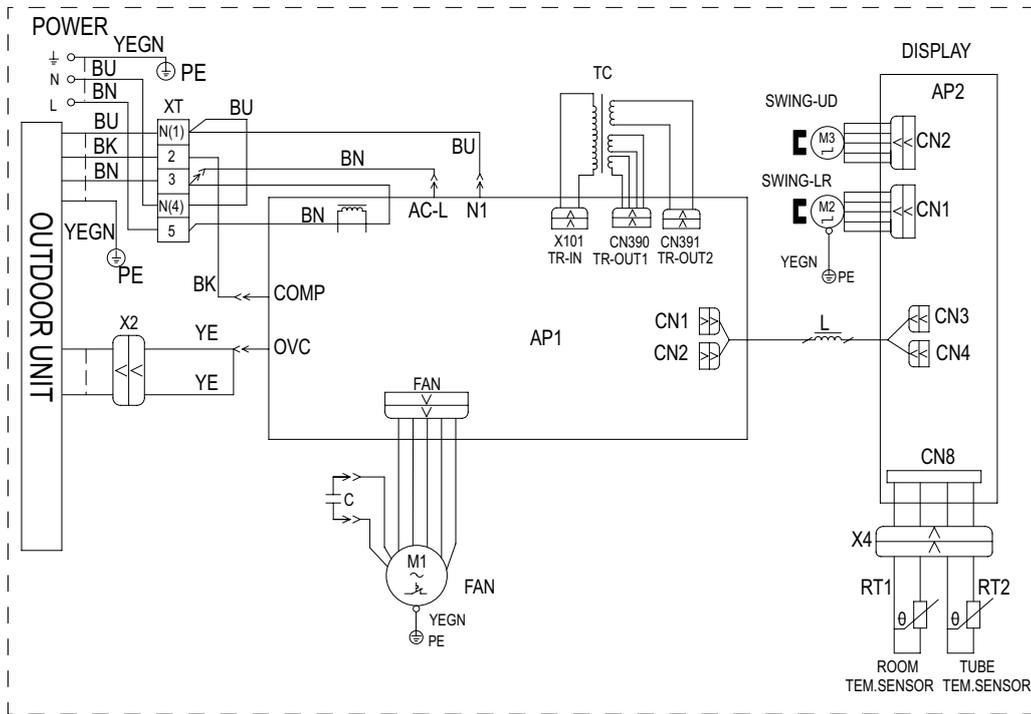
(2)GVH18AG-K1NNA5A/I



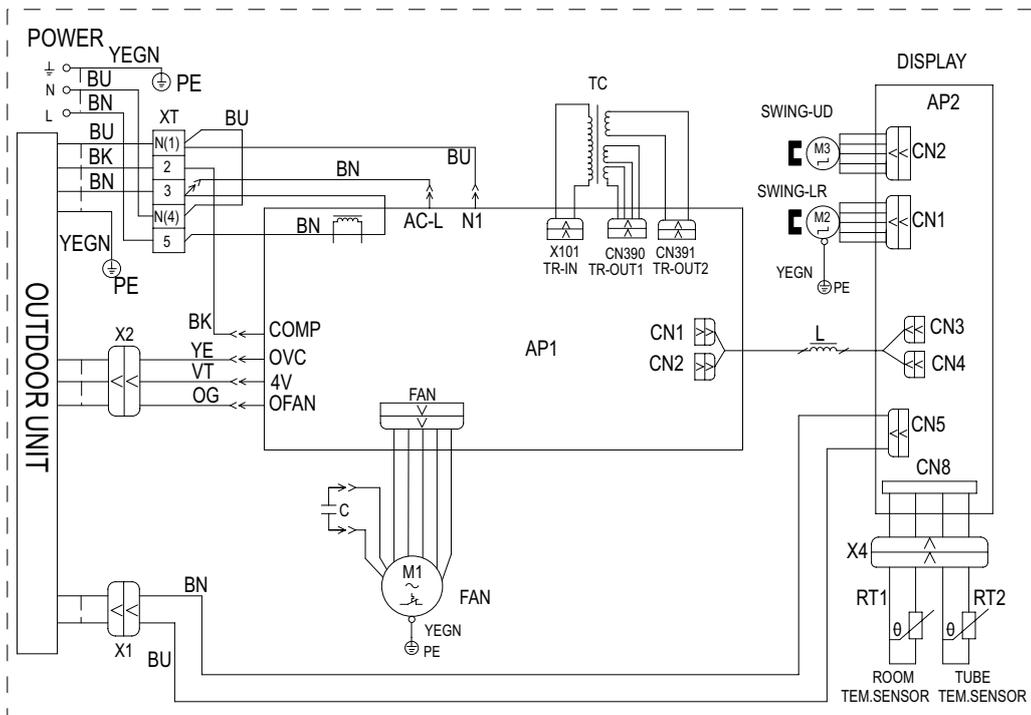
Meaning of marks

Symbol	Color Symbol
WH	WHITE
YE	YELLOW
RD	RED
VT	VIOLET
GN	GREEN
BN	BROWN
BU	BLUE
BK	BLACK
OG	ORANGE
YEGN	YELLOW GREEN
Symbol	Parts Name
SAT	OVERLOAD
COMP	COMPRESSOR
	PROTECTIVE EARTH

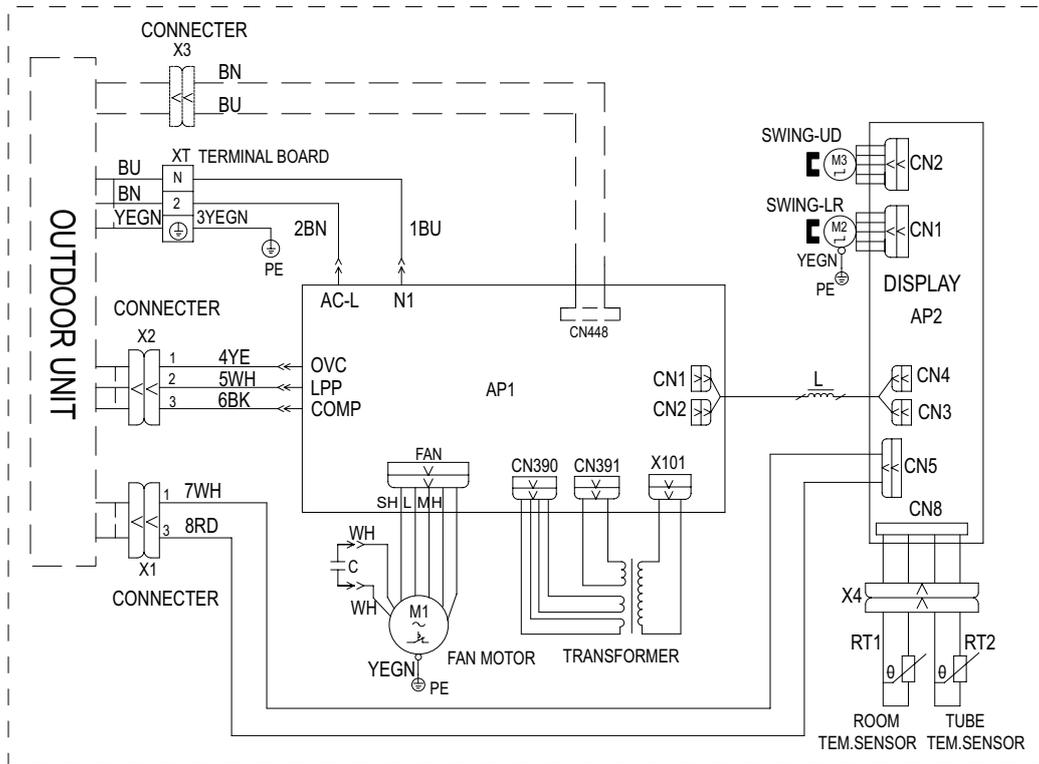
(3)GVC24AG-K1NNA5A/I



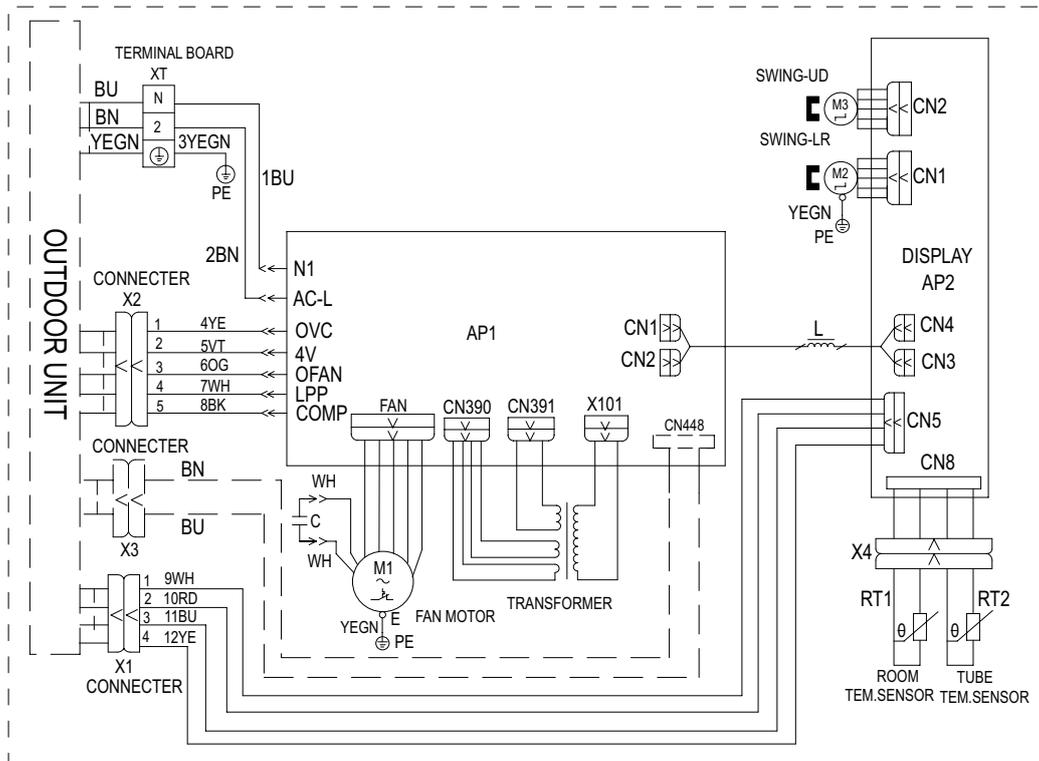
(4)GVH24AG-K1NNA5A/I



(5)GVC36AH-M1NNA5A/I、GVC42AH-M1NNA5A/I

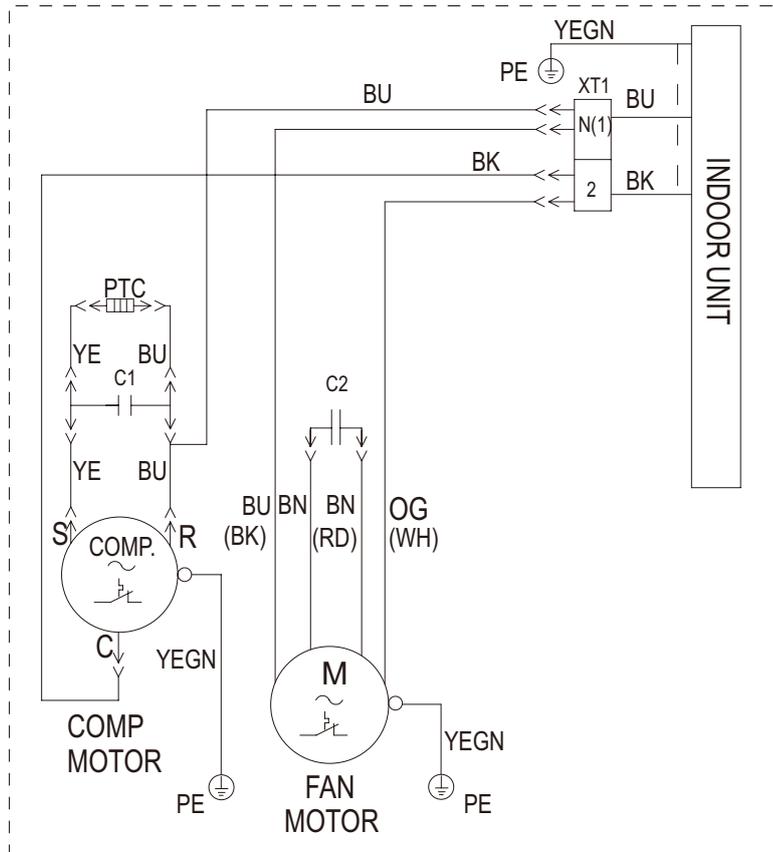


(6)GVH36AH-M1NNA5A/I、GVH42AH-M1NNA5A/I

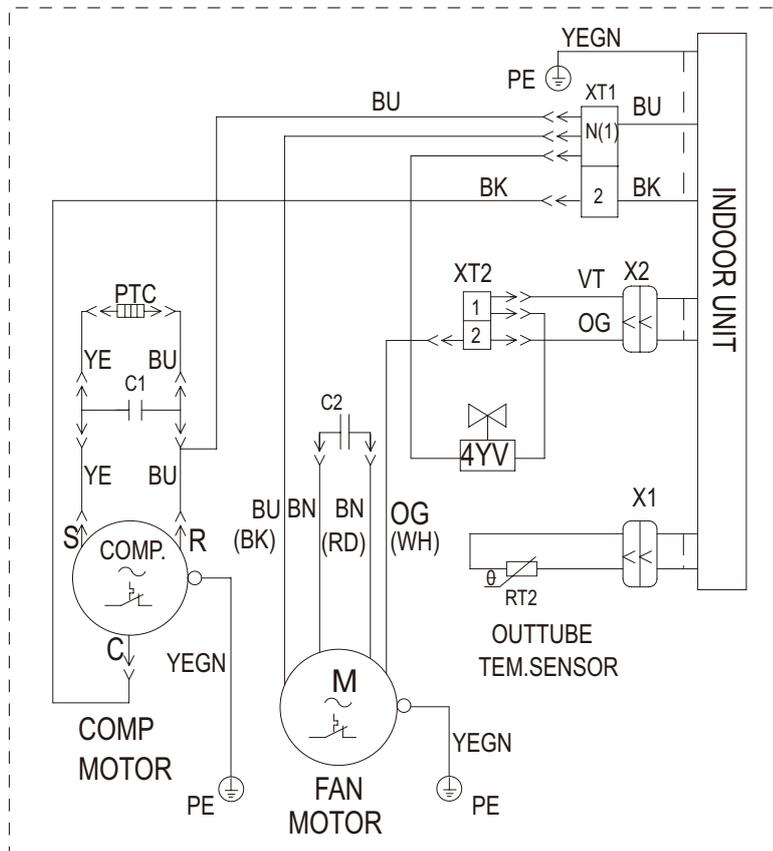


Outdoor Unit:

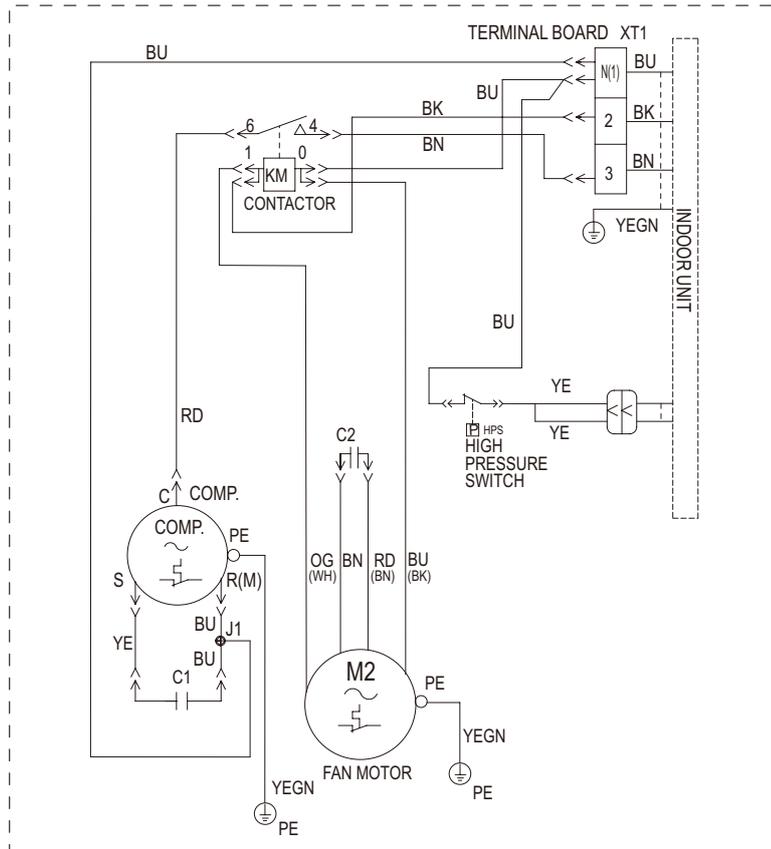
(1)GVC18AG-K1NNA5A/O



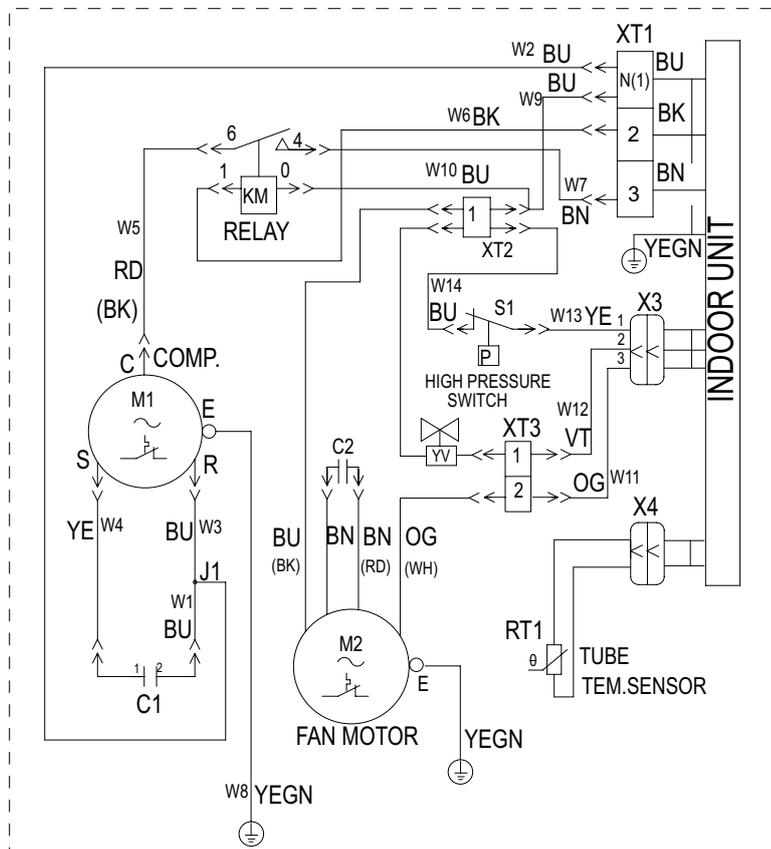
(2)GVH18AG-K1NNA5A/O



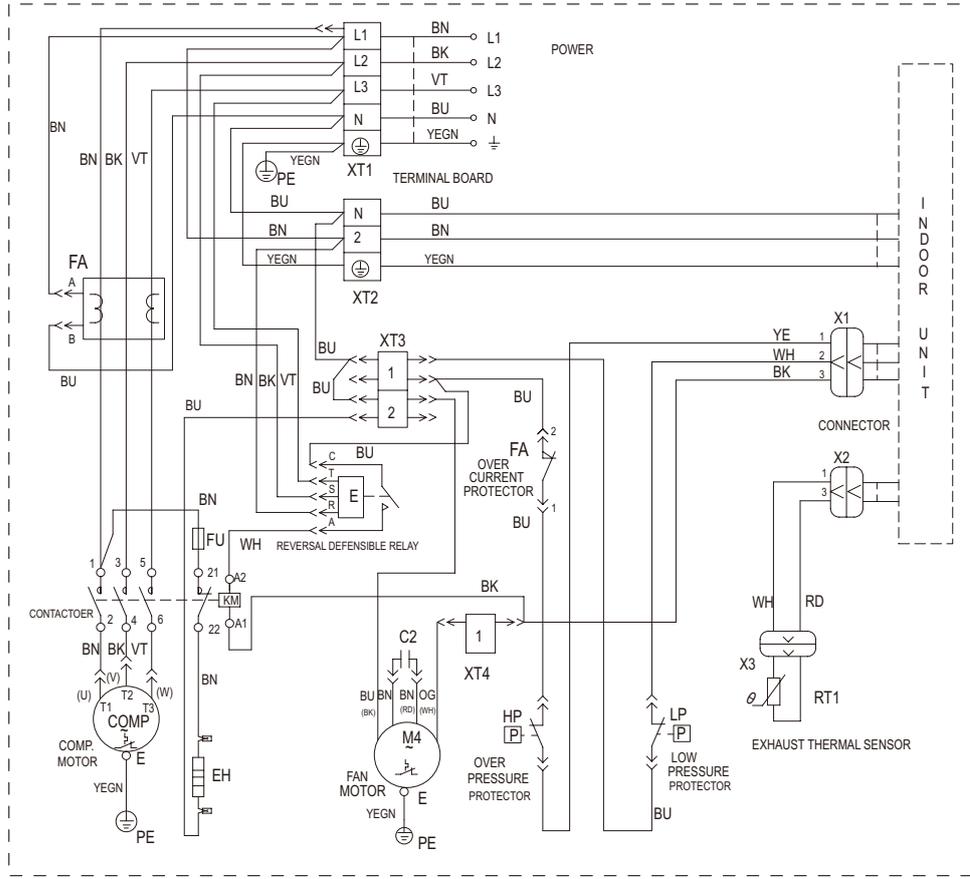
(3)GVC24AG-K1NNA5A/O



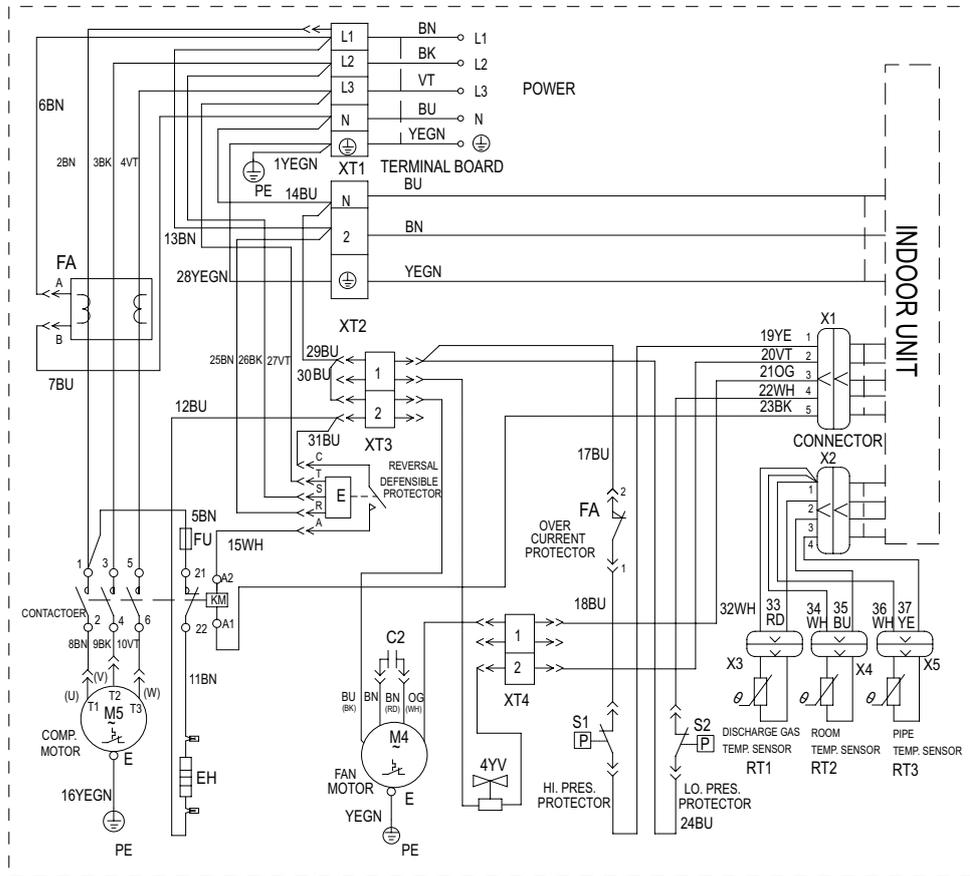
(4)GVH24AG-K1NNA5A/O



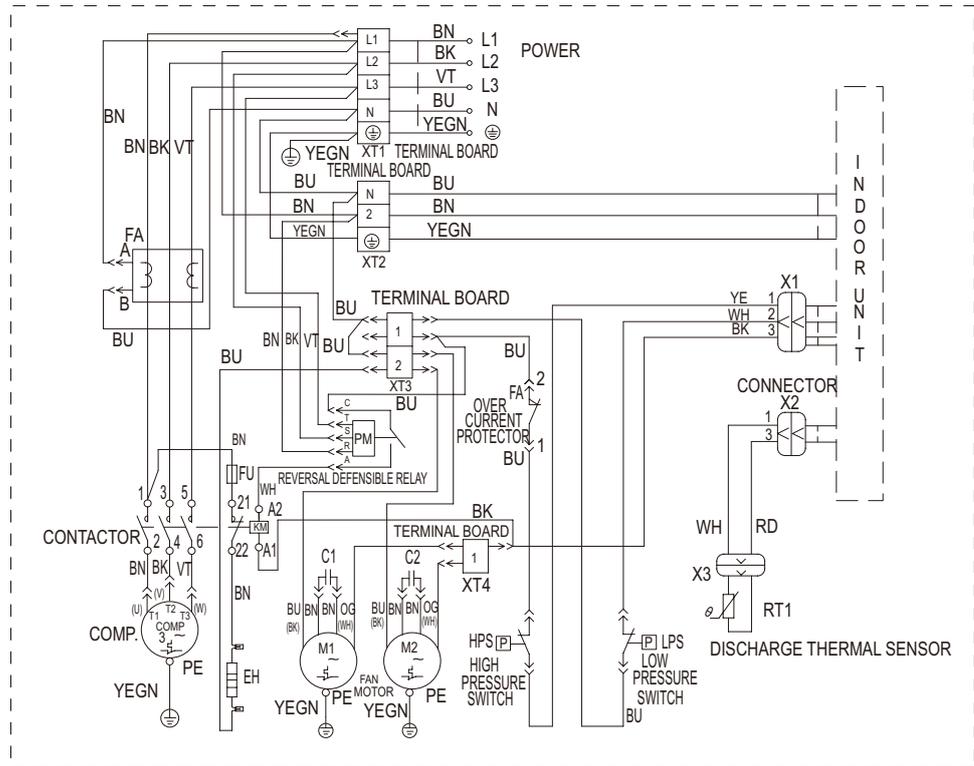
(5)GVC36AH-M1NNA5A/O



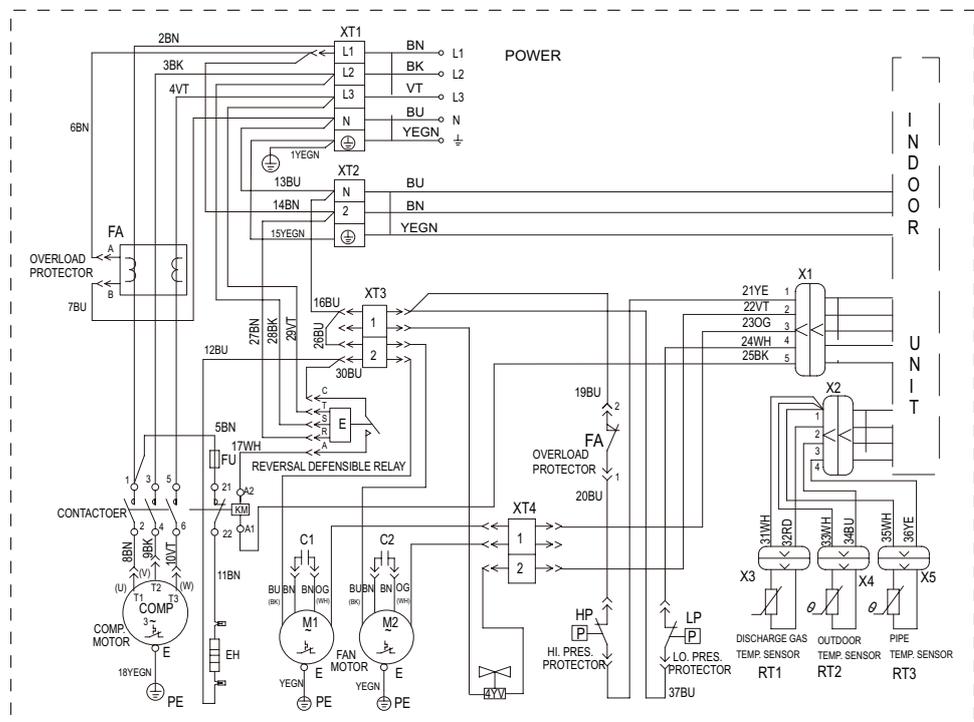
(6)GVH36AH-M1NNA5A/O



(7)GVC42AH-M1NNA5A/O



(8)GVH42AH-M1NNA5A/O

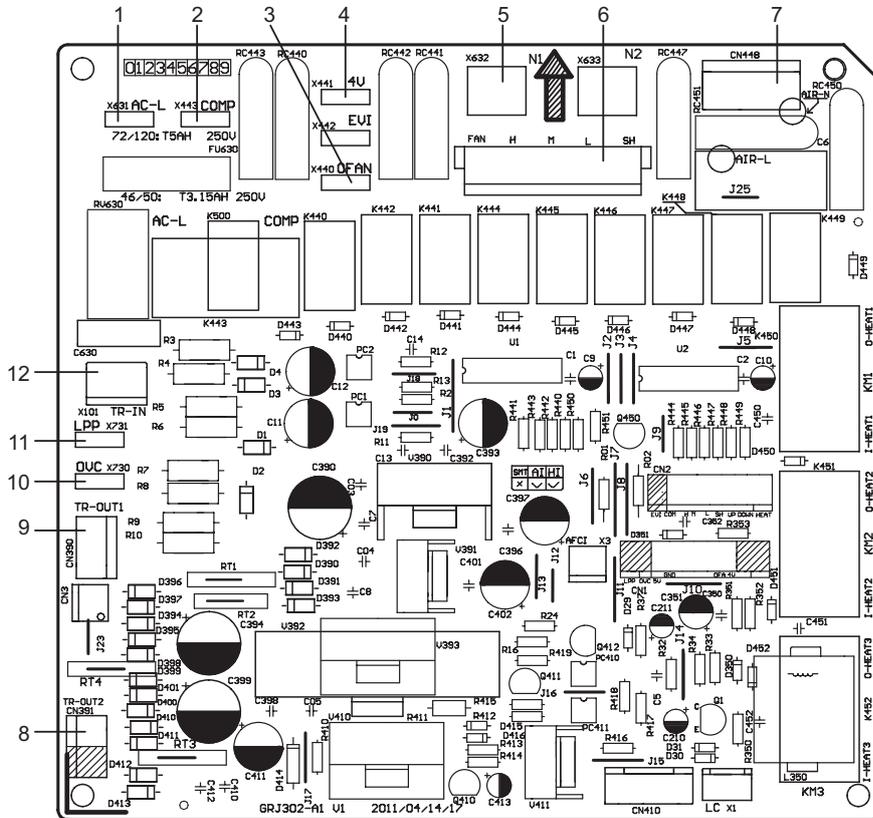


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

5.2 Printed Circuit Board

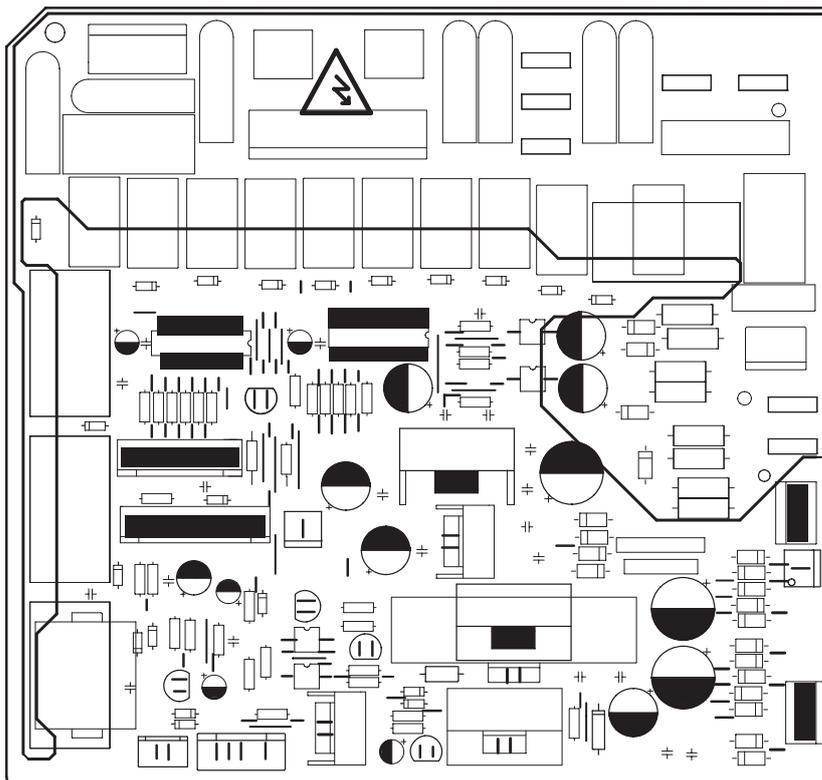
(1) Main Board

• TOP VIEW



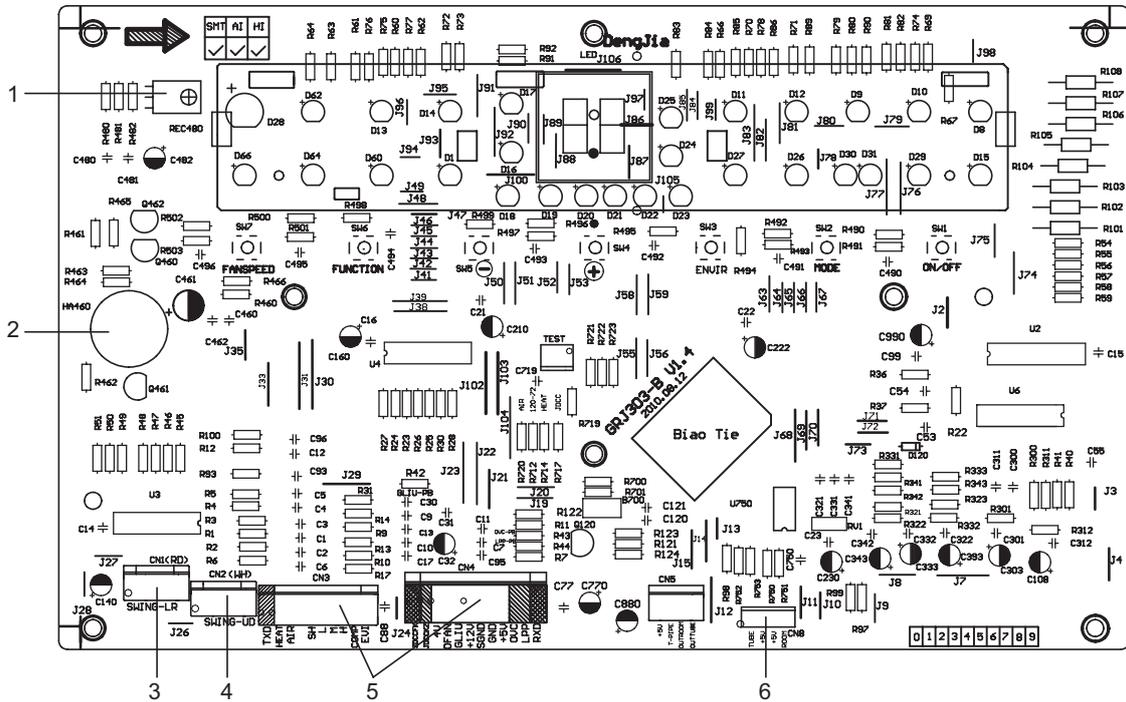
1	Terminal of live wire
2	Terminal of compressor
3	Terminal of outdoor fan
4	Terminal of 4-way valve
5	Terminal of neutral wire
6	Terminal of indoor fan
7	Terminal for air function
8	Transformer secondary 2
9	Transformer secondary 1
10	High pressure detection
11	Low pressure detection
12	Transformer primary

• BOTTOM VIEW



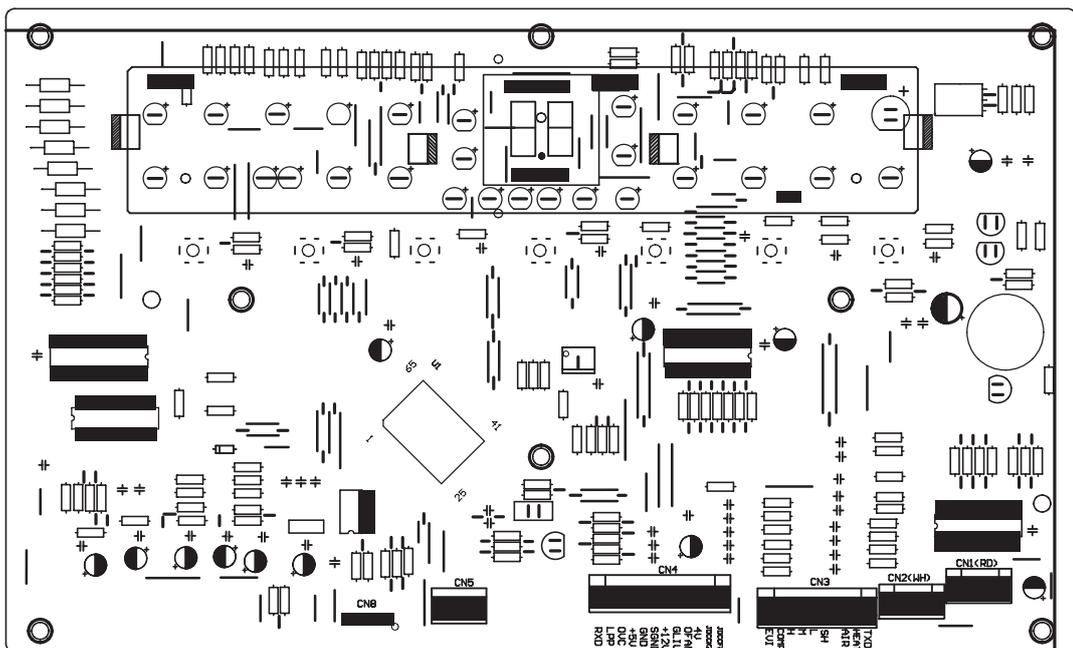
(2) Display Board

• TOP VIEW



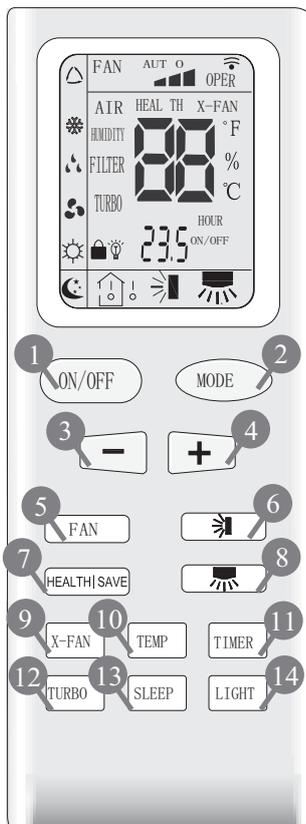
1	receiver	3	Left&right swing	5	Connect main board
2	buzzer	4	Up&down swing	6	Indoor ambient temperature sensor; indoor tube temperature sensor

• BOTTOM VIEW

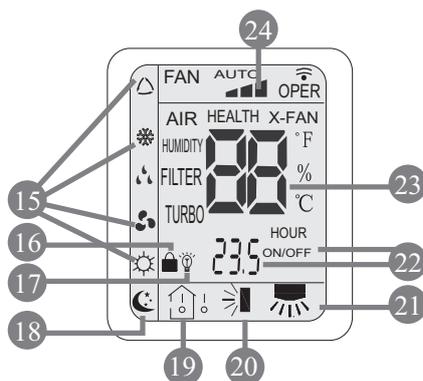


6.Function and Control

6.1 Remote Control Operations



- 1 ON/OFF**
Press it to start or stop operation.
- 2 MODE**
Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT).
- 3 -**
Press it to decrease temperature setting.
- 4 +**
Press it to increase temperature setting.
- 5 FAN**
Press it to set fan speed.
- 6** 
Press it to set swing angle.
- 7 HEALTH SAVE**
Press it to turn on or off health function.
- 8** 
Press it to set left & right swing angle.
- 9 X-FAN**(X-FAN is the alternative expression of BLOW for the purpose of understanding.)
- 10 TEMP**
- 11 TIMER**
Press it to set timer ON/ timer OFF.
- 12 TURBO**
- 13 SLEEP**
- 14 LIGHT**
Press it to turn on/off the light.



- 15 MODE icon:**
If MODE button is pressed, current operation mode icon  (AUTO),  (COOL),  (DRY),  (FAN) or  (HEAT is only for heat pump models) will show.
- 16 LOCK icon:**
 is displayed by pressing "+" and "-" buttons simultaneously. Press them again to clear the display.
- 17 LIGHT icon:**
 is displayed by pressing the LIGHT button. Press LIGHT button again to clear the display.
- 18 SLEEP icon :**
 is displayed by pressing the SLEEP button. Press this button again to clear the display.
- 19 TEMP icon:**
Pressing TEMP button, , ,  and blank is displayed circularly.

20 Up & down swing icon:

 is displayed when pressing the up & down swing button. Press this button again to clear the display.

21 Left & right swing icon:

 is displayed when pressing the left & right swing button. Press this button again to clear the display.

22 SET TIME display:

After pressing TIMER button, ON or OFF will blink. This area will show the set time.

23 DIGITAL display:

This area will show the set temperature. In SAVE mode, "SE" will be displayed. During defrosting operation, "H1" will be displayed.

24 FAN SPEED display:

Press FAN button to select the desired fan speed setting (AUTO, Low, Med, High). Your selection will be displayed in the LCD windows, except the AUTO fan speed.

Remote controller description

1 ON/OFF:

Press this button to turn on the unit. Press this button again to turn off the unit.

2 MODE:

Each time you press this button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, FAN, and HEAT *, as the following:



*Note: Only for models with heating function.

After energization, AUTO mode is defaulted. In AUTO mode, the set temperature will not be displayed on the LCD, and the unit will automatically select the suitable operation mode in accordance with the room temperature to make indoor room comfortable.

3 + :

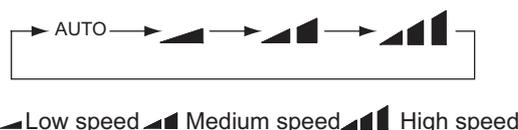
Press this button to increase set temperature. Hold it down for above 2 seconds to rapidly increase set temperature. In AUTO mode, set temperature is not adjustable.

4 -:

Press this button to decrease set temperature. Hold it down for above . 2 seconds to rapidly decrease set temperature. In AUTO mode, set temperature is not adjustable.

5 FAN :

This button is used for setting fan speed in the sequence that goes from AUTO, , ,  to then back to Auto.



6 

- Press  button to start or stop up & down swing function. The remote controller defaults to simple swing condition.
- Press + button and  button at the same time at unit OFF to switch between simple swing and static swing;  blinks for 2 seconds.
- In static swing condition, pressing  button, the swing angle of up & down louver changes as below:



• If the unit is turned off during swing operation, the louver will stop at present position.

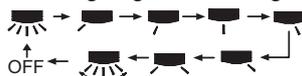
7 HEALTH|SAVE:

Press HEALTH part of this button to turn on or off HEALTH function. Pressing SAVE part of this button, "SE" is displayed and the unit goes into SAVE operation mode. Press SAVE part of the button again to cancel SAVE function. During SAVE operation, the temperature and fan speed is not adjustable.

8 

- Press  button to start or stop left & right swing function. The remote controller defaults to simple swing condition.
- Press + button and  button at the same time at unit OFF to switch between simple swing and static swing;  blinks for 2 seconds.

- In static swing condition, pressing  button, the swing angle of left & right louver changes as below:



- If the unit is turned off during swing operation, the louver will stop at present position.

9 X-FAN:

Pressing X -FAN button in COOL or DRY mode, the icon "X-FAN" is displayed and the indoor fan will continue operation for 10 minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN and HEAT mode.

10 TEMP:

Press this button, could select displaying the indoor setting temperature or indoor ambient temperature. When the indoor unit firstly power on it will display the setting temperature, if the temperature's displaying status is changed from other status to "  ", displays the ambient temperature, 5s later or within 5s, it receives other remote control signal that will return to display the setting temperature. if the users haven't set up the temperature displaying status, that will display the setting temperature.

11 TIMER:

Press TIMER button at unit ON to set TIMER OFF; HOUR OFF blinks. Press TIMER button at unit OFF to set TIMER ON; HOUR ON blinks. In this case, pressing + or - button changes time setting. Holding down either button rapidly changes time setting (time setting range 0.5-24hours). Press TIMER button again to confirm setting; HOUR ON/OFF stops blinking. If there is not any operation of button within 5 seconds during HOUR ON/OFF blinking, TIMER setting will be cancelled.

12 TURBO:

Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in shortest time. In COOL mode, the unit will blow strong cooling air at super high fan speed. In HEAT mode, the unit will blow strong heating air at super high fan speed.

13 SLEEP :

Press this button to go into the SLEEP operation mode. Press it again to cancel this function. This function is available in COOL , HEAT (Only for models with heating function) or DRY mode to maintain the most comfortable temperature for you.

14 LIGHT:

Press LIGHT button to turn on the display's light and press this button again to turn off the display's light. If the light is turned on ,  is displayed. If the light is turned off,  disappears.

15 Combination of "+" and "-" buttons: About lock

Press "+" and "-" buttons simultaneously to lock or unlock the keypad. If the remote controller is locked,  is displayed. In this case, pressing any button,  blinks three times.

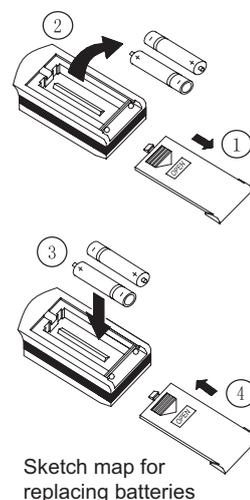
16 Combination of "MODE" and "-" buttons: About switch between Fahrenheit and Centigrade. At unit OFF, press "MODE" and "-" buttons simultaneously to switch between  and .

Replacement of Batteries

1. Remove the battery cover plate from the rear of the remote controller. (As shown in the figure)
2. Take out the old batteries.
3. Insert two new AAA1.5V dry batteries, and pay attention to the polarity.
4. Reinstall the battery cover plate.

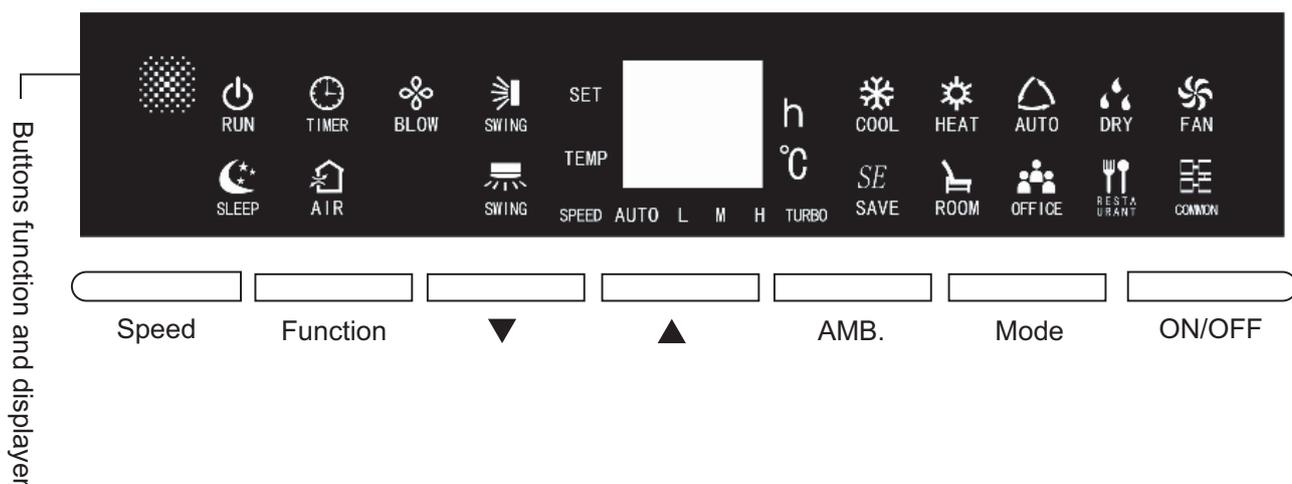
Notes:

- When replacing the batteries, do not use old or different batteries, otherwise, it may cause malfunction.
- If the wireless remote controller will not be used for a long time, please remove batteries to prevent damage from leaking batteries.
- The operation should be performed in its receiving range.
- It should be kept 1m away from the TV set or stereo sound sets.
- If the wireless remote controller does not operate normally, please take the batteries out and reinsert them after 30 seconds. If it still can't operate properly, replace the batteries.



Sketch map for replacing batteries

6.2 Function Buttons of Air Conditioner



ON/OFF

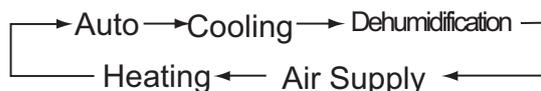
ON/OFF Button

- Press this button, to turn on the unit. When unit is turned on, the original setting like Timer, Sleep function will be canceled. Note: When the unit is running in Dry mode, press ON/OFF button that can turn on the unit directly.
-  When the unit start up running, the status light will display in red indicated as power turn-on and free-duty.

Mode

Mode Button

- Press the button, the circulating changes of mode are shown as below:



Auto: the controller will determine its operation mode according to changes of room temperatures under this mode.
Cooling: display cooling state.

Dehumidification: reduce temperature and keep the setting room temperature without any change.

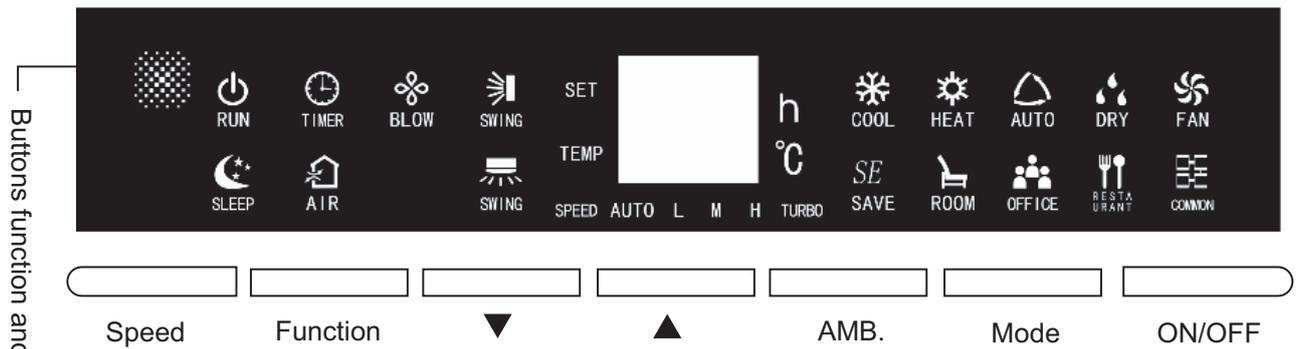
Air supply: The compressor doesn't on work and only the indoor blower is on running under this mode.

Heating: Display the state of heating. (Note: Single-cooling machine is not equipped with heating mode)

▲ and ▼

▲ and ▼ Button

- Under the situation without setting the function, press ▲ and ▼ buttons, the setting temperature goes up and down 1°C, the regulating range is from 16°C to 30°C.
- Under the conditions of setting the functions, can proceed with the round-trip option of this function (set ▲ and ▼ opposite direction of circulation).
- Keep pressing ▲ and ▼ buttons for 3 seconds continuously, functions of all buttons on the display panel will be conductively-closed, and then press any button, the buzzer will ring once while "LC" is flashing for three times on the location of double 8 and resume to normal display so as to prompt users that the buttons have been locked up. When keep pressing again the two buttons for another 3 seconds continuously, the function of lockup will be removed and resume to display in normal state.



▲ and ▼

▲ and ▼ Buttons (Continued)

- After switch-on at first time, if without any button input: 1. consecutively press twice of ▲ buttons in 20 seconds and soon access to the running of forced heating. After the blades of blowing up and down opens to the minimum position, start up running of all loads, indoor and outdoor high-speed blowers. All characters will be displayed when the non-inductive thermometer bulb is broken down. The fault codes of breakdown will be displayed when the inductive thermometer bulb is broken down and then the buzzer rings. After shutdown for five minutes or receiving shutdown signal within 5 minutes, it enter the status of normal standby. 2. consecutively press twice of ▼ buttons in 20 seconds and soon access to the running of forced cooling. After the blades of blowing up and down opens to the minimum position, start up running of all loads, indoor and outdoor high-speed blowers besides the four-way valve and then the buzzer rings. After shutdown for five minutes or receiving shutdown signal within 5 minutes, it enter the status of normal standby. The 1 and 2 Functions are for trial use only.

Speed

Speed Button

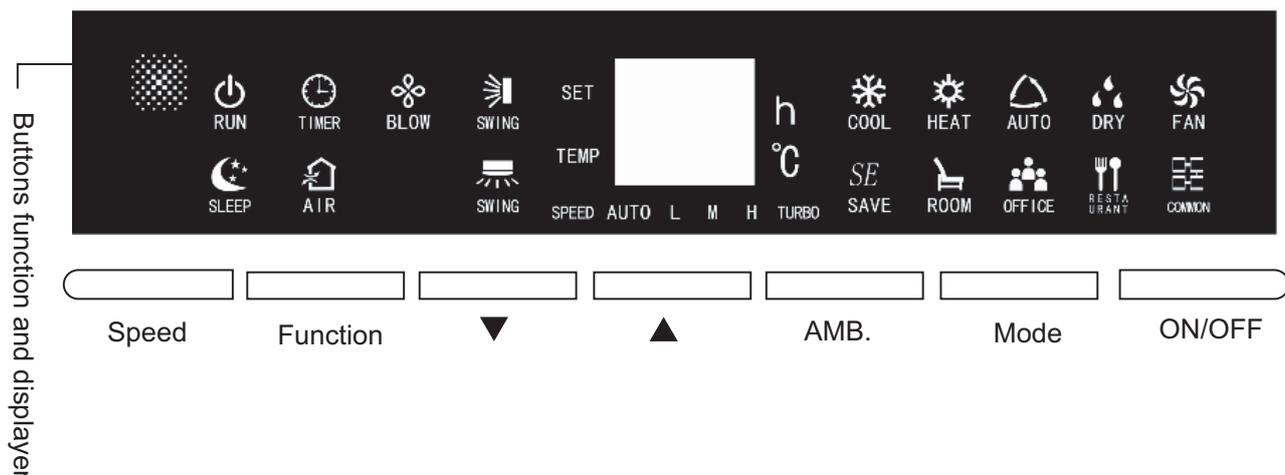
- Press this button, the speed can shift in the circulation among of “Auto → Low → Medium → High → Super → Auto”
Note: the function of forced low speed under operation of dehumidification is not available.

AMB.

AMB. Button

- Press this button, AMB. circulating changes set forth below:

→ Energy saving → Living Room →
 ← Normal ← Restaurant ← Conference/Office ←
- Adjustable method of AMB.
Button: The switch-on of AMB. mode at first time is the default of normal mode, when shutting down and starting up again, the AMB. mod will keep the setting status before last shutting down. Under the modes of energy-saving, conference/office and restaurant, the sleep function will be automatically cancelled. And the sleep function is not adjustable: sleep function is only available on service for cooling, dehumidification and heating under normal mode.



AMB.

AMB. Buttons (Continued)

- Under the modes of living room, restaurant, conference/office, The setting temperature, speed, blowing up and down as well as left and right can be adjustable. If users change the setting temperature, speed, blowing up and down as well as left and right, the operation will run in accordance with the status of setting adjustment. The services setting of blowing up and down as well as left and right of next time start-up will be remained before last shutdown while the setting temperature and speed will run with the default.
- Under the energy-saving mode, while the heating service is on running, the setting temperature, speed, blowing up and down as well as left and right can be adjustable. If users change the setting speed, blowing up and down as well as left and right,
- it will run according the status of users' setting adjustment. But the setting temperature under the energy-saving cooling function can not be adjusted.

AMB.

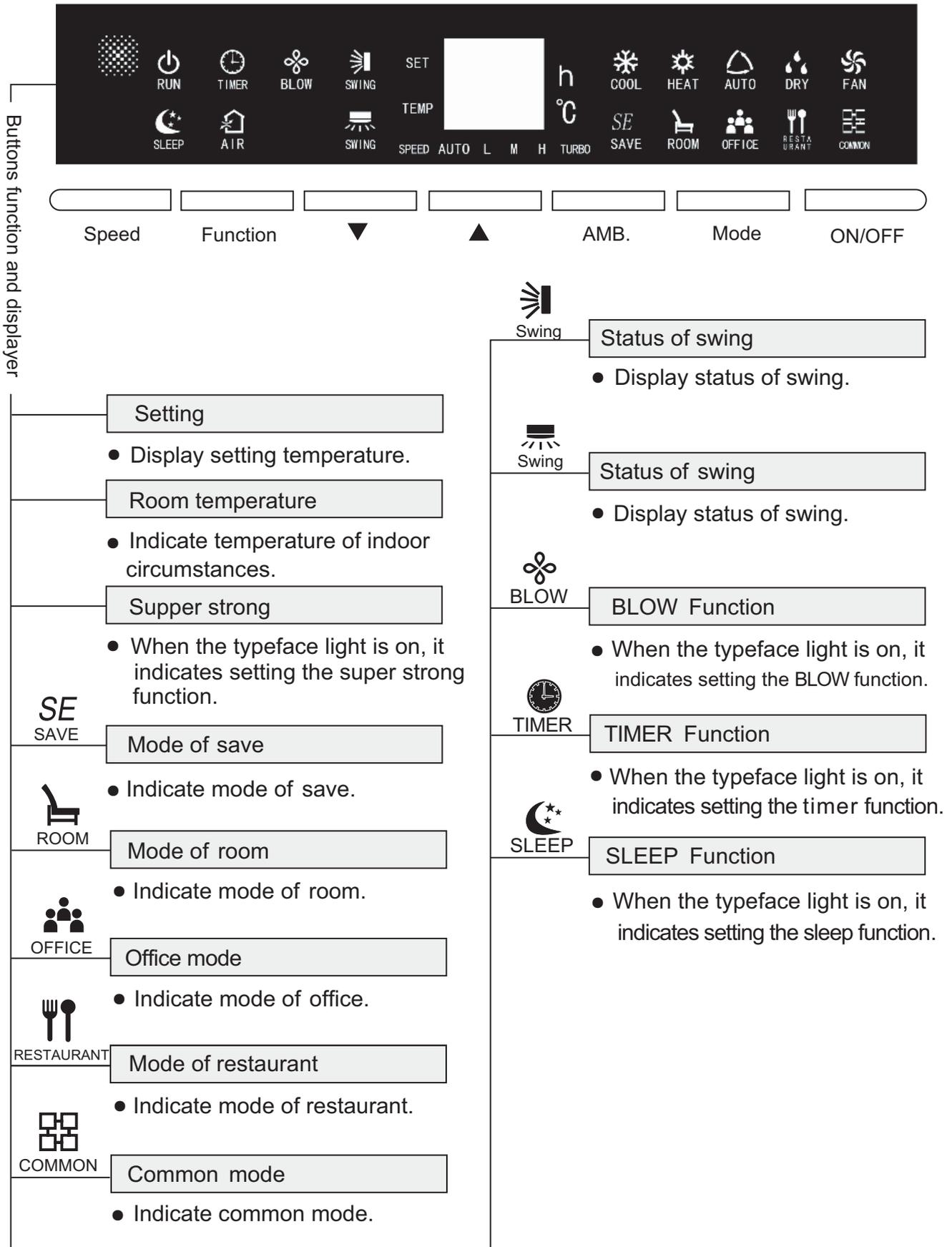
AMB. Buttons (Continued)

- The modes of living room, restaurant, conference/office can only be called out by pressing buttons of air conditioner panel. If receiving the signal from remote control when the air conditioner is running the modes of living room, restaurant, conference/office, it will exit from the above-mentioned modes and run according to the modes of remote control.

Function

Function Button

- Under the status of switch-on, Every time press the function button, the settings of up and down, left and right, drying, concurrent heating, timing, air renewal, setting and room temperature can be shifted in sequence. When a certain character is flashing, it indicates can proceed its setting and go on setting by press buttons. The action will be confirmed if without receiving other operating order in 5 seconds. Or press the function button to leave for the confirm.
- Press the function button under the status of running drying service can directly proceed shutdown. Press the function button under the status of shutdown and non-drying can proceed timing setting.



6.3 Description of Each Control Operation

1. Running Mode

1. cooling; 2. dry; 3. fan; 4. heating; 5. AUTO; 6. others (Freon recovery mode).

2. Temperature Parameter

1. Indoor ambient temperature T_{amb} . (adopt 15K temperature sensor, external connect 15K partial resistance);
2. Outdoor ambient temperature $T_{outdoor\ amb}$. (adopt 15K temperature sensor, external connect 15K partial resistance);
3. Discharge temperature ($T_{discharge}$)
4. Indoor evaporator tube temperature $T_{evaporator}$ (adopt 20K temperature sensor, external connect 20K partial resistance);
5. Outdoor condenser tube temperature $T_{condenser}$ (adopt 20K temperature sensor, external connect 20K partial resistance).

3. Basic Functions of System

In all modes, once the compressor is started up, it will run within 6mins all the time; once the compressor is stopped, it can only be started up after 3mins delayed.

(1) Cooling Mode

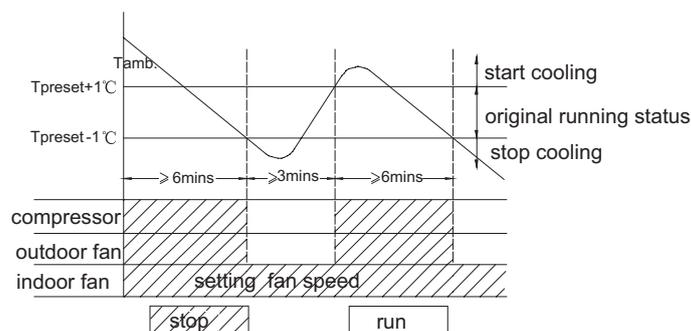
1. Working conditions and process of cooling

When $T_{amb} \geq T_{preset} + 1^\circ\text{C}$, the unit will run in cooling mode. Meanwhile, compressor, outdoor fan will start running, and indoor fan will run at setting fan speed;

When $T_{amb} \leq T_{preset} - 1^\circ\text{C}$, the unit is at OFF status in cooling mode. Meanwhile, compressor, outdoor fan will all stop running, while indoor fan will run at setting fan speed;

When $T_{preset} - 1^\circ\text{C} < T_{amb} < T_{preset} + 1^\circ\text{C}$, the unit will keep previous running status.

➤ In this mode, the temperature setting range is $16^\circ\text{C} \sim 30^\circ\text{C}$ and the initial value is 25°C .



(2) Dry Mode

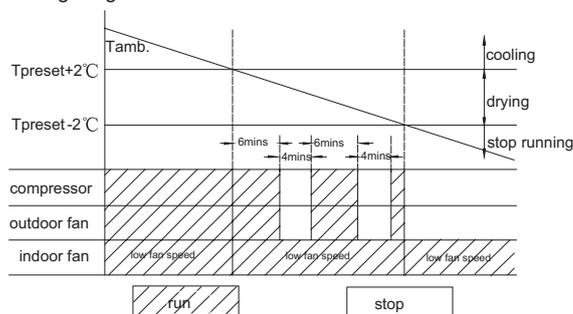
1. Working conditions and process of dry

When $T_{amb} > T_{preset} + 2^\circ\text{C}$, the unit will run in cooling mode. Meanwhile, compressor and outdoor fan will start running, and indoor fan will run at low fan speed;

When $T_{preset} - 2^\circ\text{C} \leq T_{amb} \leq T_{preset} + 2^\circ\text{C}$, compressor and outdoor fan will run for 6mins and then stop for 4 mins, and they will run like that circularly. Indoor fan will run at low fan speed;

When $T_{amb} < T_{preset} - 2^\circ\text{C}$, compressor and outdoor fan will stop running, while indoor fan will run at low fan speed.

➤ In this mode, the temperature setting range is $16^\circ\text{C} \sim 30^\circ\text{C}$ and the initial value is 25°C .



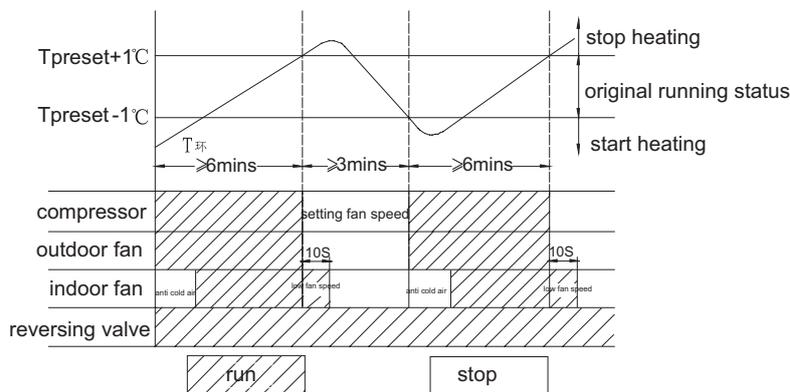
(3) Heating Mode (this mode is not available for cooling only unit)

1. Working condition and process for heating

When $T_{amb} \leq T_{preset}-1^{\circ}C$, the unit will run in heating mode. Meanwhile, compressor and outdoor fan will start running. Indoor fan may be start running after delayed for a period of time to prevent blowing out cold air. If the unit turns to heating mode for the first time or switches to heating mode from other modes, the four-way valve will be energized after compressor was started up for the first time for 20s. When $T_{amb} \geq T_{preset}+1^{\circ}C$, compressor and outdoor fan will stop running. The four-way valve is energized all the same and indoor fan will stop running after running at low fan speed for 10s;

When $T_{preset}-1^{\circ}C < T_{amb} < T_{preset}+1^{\circ}C$, the unit will keep original running status;

- In this mode, the temperature setting range is $16^{\circ}C \sim 30^{\circ}C$ and the initial value is $25^{\circ}C$. When tuning off the unit in heating mode or switching to other modes from heating mode, the four-way valve will be de-energized after 2mins delayed.
- When turning off the unit, if the complete unit is at running status in heating mode, the unit will stop running when reaching the setting temperature and the unit will be turned off after blowing residual heat for 10s. If the unit is at the status of blowing residual heat when the unit is stopped after reaching the temperature point, the unit will continue to blow residual heat and then it will be turned off; if the unit is stopped after reaching the temperature and indoor fan is stopped, the unit will be turned off directly without blowing residual heat.



2. Defrosting condition and process

System will defrost intelligently and automatically. When it's detected that the system is reached the defrosting condition, the system will turn to defrosting status;

After defrosting is started up, H1 will be displayed. If there's auxiliary heating, auxiliary heating will be stopped and then compressor, indoor fan and outdoor fan will stop running after 1min delayed. 3mins later, the four-way valve will be closed. After four-way valve has closed for 30s, compressor will be started up.

After defrosting is finished, compressor will stop running, while the four-way valve will be start up. 30s later, compressor and outdoor fan will be restarted up and turn to the next periods. Indoor fan is running at anti cold air status.

Defrosting time can't exceeds 12mins at the most.

3. Working condition for auxiliary heating

Auxiliary heating can be turned on/off by buttons.

If auxiliary heating is at ON status, when indoor fan is running, and indoor ambient temperature and air discharge temperature are low, auxiliary heater will start running;

When indoor fan isn't running, or indoor ambient temperature is high, or air discharge temperature is high, auxiliary heater will stop running. Once the auxiliary heater is stopped, it can only be restarted up after 2mins delayed.

If auxiliary heating is set OFF, the auxiliary heating will be turned off directly.

(4) Fan Mode

Indoor fan is running at setting fan speed: auto fan speed → low fan speed → medium fan speed → high fan speed

- The temperature setting range is $16^{\circ}C \sim 30^{\circ}C$ and the initial value is $25^{\circ}C$.

(5) Auto Mode

In this mode, the system will select the running mode (cooling, dry, heating, fan) automatically according to the change of ambient temperature.

- Once the mode is started up, the unit will only switch to the running status under auto mode according to T_{amb} after it has run for 30s at least.

(6) Freon Recovery Mode

That's the recovery operation method for refrigerant:

1. After the A/C is energized for the first time, set the A/C at FAN mode, low fan speed by remote controller and the indoor temperature is set as 20°C; Meanwhile, indoor fan will start running.
2. Press the light button on remote controller for twice successively within 5s; meanwhile, indoor fan and compressor will start running automatically.
3. After compressor has run for 3mins, close the cut-off valve completely.
4. When the protector for low-voltage switch has an action, compressor and outdoor unit will stop running automatically. Please close the cut-off valve immediately.
5. After stopping blowing wind by remote controller, the refrigerant recovery operation is finished completely.

Notice: 1. After refrigerant is recovered, if the recovery operation should be operated again, please cut off the power at first and then put through the power again.

2. Above methods are applicable for the movement or reinstallation of indoor unit or outdoor unit; during this process, the low voltage switch can't be short circuited.

4. Other Controls

1. Sleep Function

Sleep in cooling mode:

When initial temperature is set as 16~23°C, after sleep function is started up, the temperature will increase by 1°C every 1hr. After the temperature has increased by 3°C, the unit will keep this temperature. After the unit has run for 7hrs, the temperature will decrease 1°C and then the unit will run at this temperature all the time.

When initial temperature is set as 24~27°C, after sleep function is started up, the temperature will increase by 1°C every 1hr. After the temperature has increased by 2°C, the unit will keep this temperature. After the unit has run for 7hrs, the temperature will decrease 1°C and then the unit will run at this temperature all the time.

When initial temperature is set as 28~29°C, after sleep function is started up, the temperature will increase by 1°C every 1hr. After the temperature has increased by 1°C, the unit will keep this temperature. After the unit has run for 7hrs, the temperature will decrease 1°C and then the unit will run at this temperature all the time.

When initial temperature is set as 30 °C, the unit will run at this temperature. After the unit has run for 7hrs, the temperature will decrease by 1°C and then the unit will run at this temperature all the time.

Sleep in heating mode:

When initial temperature is set as 16°C, the unit will run at this temperature all the time;

When initial temperature is set as 17~20°C, after sleep function is started up, the temperature will decrease by 1°C every 1hr. After the temperature has decreased for 1°C, the unit will keep this temperature.

When initial temperature is set as 21~27°C, after sleep function is started up, the temperature will decrease by 1°C every 1hr. After the temperature has decreased for 2°C, the unit will keep this temperature.

When initial temperature is set as 28~30°C, after sleep function is started up, the temperature will decrease by 1°C every 1hr. After the temperature has decreased for 3°C, the unit will keep this temperature.

Sleep in dry mode:

When setting sleep function in dry mode, after the sleep function has run for 1hr, Tpreset will increase by 1°C and it will increase by another 1°C after 2hrs. Tpreset will increase by 2°C at all within 2hrs and then the unit will run at this temperature.

Sleep in fan mode and auto mode:

Sleep function is nor available in fan mode and auto mode.

2. Timer Function

Timer ON: Timer ON can be set at the OFF status of the unit. After timer ON is reached, controller will run according to the setting mode. The time setting range is 0.5~25hrs and the interval is 0.5hr. If the time on display screen is less than 10hrs, the display interval is 0.5hr; if the time is more than 10hrs, the display interval is 1hr.

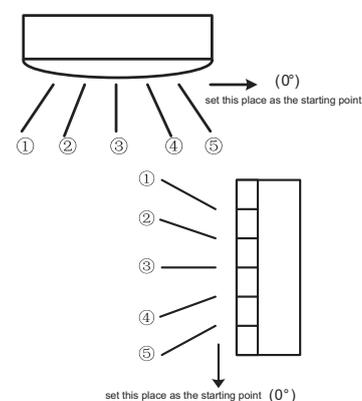
Timer OFF: Timer OFF can be set at the ON status of the unit. After timer OFF is reached, the unit will be turned off. The time setting range is 0.5~25hrs and the setting interval is 0.5hr. If the time on display screen is less than 10hrs, the display interval is 0.5hr; if the time is more than 10hrs, the display interval is 1hr.

3. Swing Control

Swing motor can be turned on/off by pressing the swing button on remote controller. Swing is valid only when the indoor fan is running.

Right & left swing: swing blade has 7 kinds of status: ① angle 1, ② angle 2, ③ angle 3, ④ angle 4, ⑤ angle 5, ⑥ swing, ⑦ stop. After the unit is turned on by the ON/OFF button on control panel every time, the default status of swing is OFF and the position is ③ angle 3. After the unit is turned on by remote controller, the status of swing motor is basing on the display status on remote controller. After the unit is energized every time, right & left swing motor will be reset.

UP & down swing: when turning off the unit, the swing blade will stop at the starting point (zero position). When turning on the unit, there are 7 kinds of status: ① angle 1 (max position), ② angle 2, ③ angle 3, ④ angle 4, ⑤ angle 5 (min position), ⑥ swing, ⑦ stop. If turn on the unit by the ON/OFF button on control panel, the setting swing status is basing on the status before turning off the unit; while if turn on the unit by remote controller, the setting swing status is basing on the status on remote controller (if the receiving remote controller is 35, 25, 24, 14 or 13, it's ⑥ swing). When turning on the unit each time (including turn on the unit by remote controller or control panel), if the setting swing status is not ⑦ stop, then it will at the actual swing status; if the setting swing status is ⑦ stop, after turning the unit, it will be defaulted at angle 3 in cooling, angle 4 in heating and angle 3 in dry. As for mode switchover, it will also switch like that until the setting swing status is not ⑦ stop, then the above compulsory default status will be cancelled.



When turning on the unit each time, the swing blade must be open to angle 5 (mini position), and then compressor, fan etc. can run. When switching on controller or turning off the unit each time, the swing blade must be at OFF status.

4. Buzzer

Upon energization or operation, the buzzer will give out pleasant sound (digital chord).

5. Auto Fan Speed Control of Indoor fan

In auto fan speed, indoor fan will select high, medium or low fan speed automatically according to the change of ambient temperature. For the switchover between any two kinds of fan speed, the unit must be make sure that it has run at each fan speed for 3mins and 30s at least.

6. AIR Function (it's reserved for some models)

AIR function is invalid when the unit is turned off. Upon receiving the order for starting up AIR function from remote controller or control panel, indoor fan will be turned on and the AIR function will be started up; once receiving the order for turning off AIR function, AIR function will be turned off. After the unit is turned off, AIR function will be cleared automatically.

7. BLOW function

Blow function can be turned on/off by the FUNCTION button on control panel or BLOW· E-HEATER button on remote controller.

If start up BLOW function in cooling or dry mode, after the unit is turned off, indoor unit will still run for a few minutes to dry the water inside the unit, and then the indoor unit will be turned off automatically.

8. Turbo Function

In cooling and heating mode, turbo function can be turned on/off (there's no turbo function in auto, dry and fan mode) by the turbo button. After pressing turbo button for once, remote controller will display the characters of "turbo" and fan speed won't change. Meanwhile, indoor fan will run at super-high fan speed and display panel will display the super-high fan speed; After repressing turbo button, the turbo function will be quitted and the characters of "turbo" on remote controller will be disappeared. Meanwhile, indoor fan will turn back to setting fan speed. Super-high fan speed will also be quitted after operating the fan speed button and the fan speed will also be changed correspondingly. Display panel will display the setting fan speed.

Turbo function is default to be turned off when remote controller is energized.

When restarting up the unit or switching the mode, turbo function will be memorized.

When restarting up the unit by remote controller and controller or switch to cooling or heating mode, turbo function will be memorized.

While when switching to auto, dry or fan mode, the turbo function is unavailable.

9. Power-off Memory Function

When re-energizing the unit after power failure, the unit will run at the memory content. Memory content : mode, up&down swin (7kinds of status), right and left swing (7 kinds of status), setting temperature, setting fan speed, light, timer, turbo, AIR, health and environment mode.

If the unit is at ON status after power failure, compressor will be started up 3mins delayed after energization; if the unit is at OFF status, compressor will be started up without 3mins delayed.

If the timer hasn't been reached before power failure, the unit will time again according to the setting timer before power failure.

5 Protective Measures

1. Indoor antifreezing protection

When cooling in cooling mode or dry mode (that's $T_{amb} > T_{preset} + 2^{\circ}\text{C}$), if it's detected that the evaporator tube temperature is too low the system will turn to antifreezing protection status. Meanwhile, compressor and outdoor fan will stop running, while indoor fan and swing motor will keep original status. When evaporator tube temperature resumes to normal range and compressor has stopped for 6mins, controller will run at the setting mode.

Buttons won't be shielded during the antifreezing protection.

2. High-pressure protection of system

When the high-pressure protection is detected for 3s successively, all loads will be turned off. Meanwhile, all buttons and signal will be shielded and E1 will be displayed. When it's detected that the high-pressure protection of compressor has been released for 6s successively, the shield for button and signal will be released and E1 will still be displayed. E1 can be cleared after pressing ON/OFF button to turn off the unit. The unit will resume running after repressing ON/OFF button.

3. Low-voltage protection of system

This function is unavailable for some modes. But if the controller is the general controller and the shielded wire of low-pressur protection is loosened or not connected well, it will take it as low-pressure protection by mistake. The details are as below:

1. After compressor is started up for 2mins, it will begin to detect the signal of low pressure switch. If it's detected that the low pressure switch is broken for 1mins successively, the complete unit will stop running. 3mins later, if the low pressure switch is resumed, the unit will resume running automatically. If low pressure switch protection occurs for 2 times successively, E3 will be displayed and the can't resume running automatically to warn users that it's leaking. After restarting up the unit and low pressure switch is resumed, the unit will resume running.

2. When compressor is stopped, if it's detected that the low pressure switch is broken for 30s successively, the complete unit will stop running. Meanwhile, E3 will be displayed and the unit can't resume running automatically. Only after restarting up the unit and the low pressure switch is resumed, the unit can resume sunning.

3. When compressor hasn't been start up after energization each time, if it's detected that the low pressure switch is broken for 1s successively, all loads won't be turned on after turning on the unit, and E3 will be displayed on the display screen. E3 will still be displayed after restarting up the unit. Only when the low pressure switch is resumed, E3 will be cleared and then all loads will run normally.

4. In compulsory cooling or heating mode, it will begin to detect the signal of low pressure switch after compressor has started up for 2mins. When it's detected that the low pressure switch is broken for 1s successively, the complete unit will stop running and E3 will be displayed. During compulsory heating, if outdoor ambient temperature $\leq 0^{\circ}\text{C}$, the detection for low pressure switch will be shielded.

Correct disposal method: after cutting off the power, insert the shielded wire again to make sure that the shielded wire is connected firmly and then restart up the unit.

4. High temperature protection for discharge pipe

After the compressor is started up, if it's detected that the discharge temperature is too high for 30s successively, the unit will stop running when indoor ambient temperature is reached to setting temperature. When compressor has stopped for 3mins and discharge temperature resumes to normal range $T_{\text{discharge}} < 90^{\circ}\text{C}$, the complete unit will resume running.

If above protection is occurred for twice successively, the complete unit can't resume running and E4 will be displayed. When restarting up the unit and $T_{\text{discharge}} < 90^{\circ}\text{C}$, the unit will run at setting mode.

If turning on the unit to turn to heating mode or switching to heating mode from other modes, discharge protection will be shielded for 1min when compressor is started up for the first time.

5. Indoor high temperature resistance protection

In heating mode, when it's detected that the evaporator tube temperature is too high, outdoor fan will stop running; when evaporator tube temperature resumes to normal range, outdoor fan will be started up.

6. Overcurrent protection

After compressor is started up, if it's detected that the current exceeds $I_0 (I_0=25\text{A})$ for 3s successively, the unit will stop running when Indoor ambient temperature is reached to setting temperature. After compressor has stopped for 3mins, the unit will resume original running status. If protection times exceeds 6 times, indicator will blink and display E5 and the unit can't resume original running status. The unit can only resume running after restarting up the unit.

7. Malfunction of temperature sensor

Under ON status, it will detect the malfunction of indoor tube temperature (exclude defrosting period and the period when defrosting is finished for 5mins) and outdoor discharge temperature sensor (in heating mode, it starts detecting the malfunction after compressor has started up for 1min; the malfunction won't be detected when compressor is stopped). It's the malfunction when they are short circuit or broken circuit for 30s successively. When there's malfunction of temperature sensor, the complete unit will stop running. Meanwhile the indicator will blink and display the corresponding error code. Malfunction of temperature sensor won't shield the button and remote controller.

8. Malfunction and protection code

E1: high-pressure protection of system;

E3: low-pressure protection of system;

E4: high temperature protection for discharge pipe;

E5: overcurrent protection;

F1: malfunction of indoor ambient temperature sensor;

F2: malfunction of indoor tube temperature sensor;

F3: malfunction of outdoor ambient temperature sensor

F4: malfunction of outdoor tube temperature sensor

F5: malfunction of discharge temperature sensor

When multiple malfunctions are occurred simultaneously, each malfunction error will be displayed for 3s and they be will displayed in cycle.

6 Button

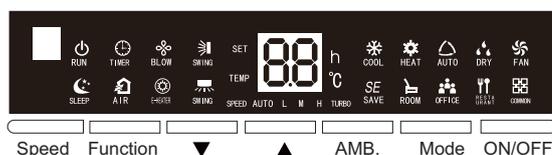
When remote controlling by remote controller:

1.If the display mode for remote controller is the heating mode and A/C is the cooling only type, A/c won't receive other signal except the signal for turning off the unit.

2.If pressing the invalid button on remote controller, the buzzer will still give out a sound but the function won't be carried out.

There are those buttons on the panel: ON/FF button, mode button, ambient setting button, ▲ button, ▼ button, function button, fan speed button.

Display screen:

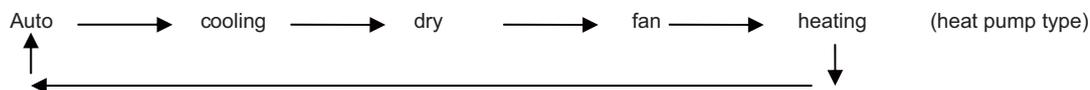


1. ON/OFF button

Controller is turned on/off by pressing this button. After each pressing of this button, the on/off status will be switched for once.

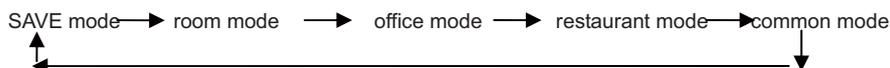
2. Mode button

After pressing this button, it will be selected and displayed as below:



3. Ambient setting button

After pressing AMB. button, it will be selected as below:



- ① In each mode, after pressing AMB. mode on control panel, the ambient mode can be selected and cycled as : SAVE mode---room mode---office mode---restaurant mode---common mode; when the unit is turned on for the first time, ambient mode is default as common mode; when restarting up the unit, ambient mode will keep the setting status before turning off the unit.
- ② When using the remote controller, the unit can only turn to SAVE mode or common mode after receiving the order from remote controller, and the unit will run according to the order transmitted by remote controller all the time.
- ③ In SAVE mode, room mode, office mode or restaurant mode, sleep will be cancelled automatically and sleep can't be adjusted; Sleep is only valid in cooling, dry and heating mode under the common mode.
- ④ Room, restaurant and office modes
Cooling and heating mode: setting temperature, fan speed and swing will run at the default status. If users have adjusted the parameters, they will run according to adjusting status. 30mins later, it will turn back to auto adjusting status; when restating the unit, swing will keep the status before turning off the unit.
Fan, dry and auto mode: running status is the same as that in common mode.
- ⑤ SAVE mode
In cooling mode: setting temperature and fan speed can be adjusted automatically; if users have adjusted the setting temperature and setting fan speed, it will run according to the adjusting status. 30mins later, it will turn back to auto adjusting status.
Heating, fan, dry and auto mode: the running status is the same as that in common mode.

Notice : roo m, restaurant and office mode can only be adjusted by buttons on control panel. If contr oller is recei ving t he order fro m remote co ntr oller when it's run ning in roo m, restaurant or o ffice mode, thos e modes will be quite d and i t will run acc ordi ng to the mode on remote co ntr oller.

4. Selection button for setting temperature (▲ and ▼)

(1) During the status when don't set the function, after pressing ▲ button or ▼ button for once, the setting temperature will increase or decrease for 1℃ and the temperature setting range is 16℃~30℃.

(2) During the status when setting the function, the function can be selected circularly. (the circulatory direction for ▲ and ▼ is opposite)

- ① up & down (swing): swing, stop swinging.
- ② right & left (swing): swing, stop swinging.
- ③ blow: start up blow, turn off blow.
- ④ E-HEATER: start up E-HEATER, turn off E-HEATER.
- ⑤ TIMER: set timer and it can be adjusted among 0~24hrs. If the time is less than 10hrs, the interval is 0.5hr; if the time is more than 10hrs, the interval is 1hr.
- ⑥ AIR: start up AIR, turn off AIR.
- ⑦ Sleep: start up sleep, turn off sleep.
- ⑧ Health: start up the electrostatic dedusting, turn off the electrostatic dedusting.
- ⑨ Turbo: start up turbo, turn off turbo.

- ⑩ Setting: default to display the setting temperature at ON status, default to display the setting temperature at off status
- ⑪ Room temperature: default to display room temperature at on status, default to display to room temperature at off status.
- (3) After pressing ▲ button and ▼ button simultaneously, all buttons on the display panel will be shielded. When pressing any buttons, the buzzer will give out a sound and dual 8 will display "LC". The display will resume normal after the dual 8 blinks 3 times to warn users that the buttons are locked. When repressing those two buttons simultaneously, shield will be released and the display will resume normal status.

(4) After the unit is energized for the first time, if there isn't any input:

① If pressing ▲ buttons within 20s successively, the unit will turn to compulsory heating immediately and up & down swing blade will open to angle I (minimum position). Meanwhile, all loads will be started up and indoor fan and outdoor fan will run at high fan speed. When there's no malfunction of temperature sensor, all characters will be displayed. When there's malfunction of temperature sensor, dual 8 will display error codes circularly and the buzzer will give out sound. When the unit is stopped 5 mins later or the unit is stopped after receiving the signal for turning off the unit within 5mins, the unit will turn to normal standby status.

② If pressing ▼ button within 20s successively, the unit will turn to compulsory cooling immediately and up & down swing blade will open to angle I (minimum position). Meanwhile, all loads will be turned on except the four-way valve and the indoor fan and outdoor fan will run at high fan speed. When there's no malfunction of temperature sensor, all characters will be displayed. When there's malfunction of temperature sensor, dual 8 will display error codes circularly and the buzzer will give out sound. When the unit is stopped 5 mins later or the unit is stopped after receiving the signal for turning off the unit within 5mins, the unit will turn to normal standby status.

After above tests are all displayed for 2s, it will begin to detect the malfunction of indoor ambient, indoor tube temperature, outdoor ambient, outdoor ambient, outdoor tube temperature and discharge temperature sensor. When it's detected that there are multiple malfunctions, each error code will be displayed for 3s and they will be displayed circularly.

Item ① and ② are only used for testing. During this period, high pressure, overcurrent and discharge protection won't be detected.

5. Function button

In the ON state of the unit, after each pressing of the function button, you can switch among up&down swing, right&left swing, blow, E-HEATER, timer, AIR, sleep, health (this is unavailable for L-shape floor standing A/C), turbo, setting and room temperature setting in sequence. When a certain character is blinking, it means that you can set this function and you can press "▲" button or "▼" button to set it. The setting will be confirmed after the setting has been set for 5 mins and there's no change for the operation.

In blow running status, the unit will be turned off after pressing the function button. If repressing the function button, you can set the timer or health function.

After a function is selected by function button, if the unit hasn't been turned off and it hasn't received the signal from remote controller within 2 mins, the unit will circulate starting from the original setting function after repressing the function button. 2mins later or the unit is turned off or the unit has received the signal from remote controller, the unit will circulate from the first icon after repressing function button.

6. Fan Speed Button

After pressing speed button, it will be selected and displayed as:

auto → low → medium → high



7. Display Method

1. Middle Number Part

(1) When there's malfunction protection (E1, E3, E4, E5, F2, F5), the unit only displays the error code and others won't be displayed. When there's multiple malfunctions, those malfunctions will be displayed circularly.

(2) In the normal running status, when setting temperature or timer is set, the unit will display the corresponding setting for 5s. After that, the unit will display the setting temperature and it will default to display H1 during the time of defrosting. When setting the setting temperature, timer and temperature display, they will be displayed in sequence as below: setting temperature, timer, temperature display and defrosting H1 and each status will be displayed for 5s. If one status (setting temperature, timer, temperature display, defrosting H1) isn't exist, that status will be omitted and the display will stop at the defaulted or setting temperature display. After the unit is energized, it defaults to display the ambient temperature.

The corresponding character and icon will be displayed simultaneously.

2. Fan Speed

When setting auto, low, medium and low fan speed, the corresponding character for the selected fan speed will be bright, and others won't be bright.

When setting auto, cooling, dry, fan and heating mode, the corresponding character for the selected mode will be bright and others won't be bright. The character and icon for the selected mode will be bright simultaneously. In auto mode, the auto and actual running mode will be displayed at the same time.

3. Ambient Mode

Ambient mode is including 5 kinds of mode: SAVE mode, room mode, office mode, restaurant mode and common mode. The selected ambient mode will be bright, others won't be bright.

- ① Up&down swing: when setting up&down swing, the icon and character will blink; when selecting the up&down swing, the icon and the character of (up&down) will be displayed. When there's no up&down swing or the swing the stopped, the icon and the character of "up&down" won't be displayed.
- ② Right&left swing: when setting right&left swing, the icon and character will blink; when selecting the right&left swing, the icon and the character of (right&left swing) will be displayed. When there's no right&left swing swing or the swing the stopped, the icon and the character of "right&left swing" won't be displayed.

- ③ Blow: when setting blow function, the icon and character will blink; when this function is selected, the icon and character will be displayed. If the blow function hasn't been selected, the icon and character won't be displayed. During the time of blow, only the icon and character are displayed, others won't be displayed.
- ④ Timer: when setting timer function, the icon and character will blink; when this function is selected, the icon and character will be displayed. If the timer function hasn't been selected, the icon and character won't be displayed.
- ⑤ AIR: when setting AIR function, the icon and character will blink; when this function is selected, the icon and character will be displayed. If the AIR function hasn't been selected, the icon and character won't be displayed.
- ⑥ Sleep: when setting AIR function, the icon and character will blink; when this function is selected, the icon and character will be displayed. If the sleep function hasn't been selected, the icon and character won't be displayed.
- ⑦ Health: when setting AIR function, the icon and character will blink; when this function is selected, the icon and character will be displayed. If the health function hasn't been selected, the icon and character won't be displayed.
- ⑧ Turbo: when setting turbo function, the character will blink; when this function is selected, the character will be displayed. If the turbo function hasn't been selected, the character won't be displayed.
- ⑨ Setting: when setting function, the character of setting will blink; when this function is selected, the character will be displayed and the dual 8 will display the setting temperature. If the setting function hasn't been selected, the character and setting temperature won't be displayed.
- ⑩ Room temperature: when setting function, the character of room temperature will blink; when this function is selected, the character will be displayed and the dual 8 will display the indoor room temperature. If the room temperature function hasn't been selected, the character and indoor room temperature won't be displayed.

5. Indicator Control

When the unit is at standby status after energizing, the power LED will be bright. After the unit is turned on, the running LED will be bright. When any one of the circumstances as below are occurred, the running LED will blink: defrosting, overcurrent protection, high pressure protection of compressor, low pressure protection of compressor, high temperature protection of discharge pipe, malfunction of indoor tube temperature sensor, malfunction of discharge temperature sensor.

6. Light Control

LED display can be turned off by the light button on remote controller. When using remote controller to cancel "light", the complete LED displayer screen will go out, except the running LED. When turning off the light, if there's signal from button or remote controller, LED will go out after displaying for 5s.

7. Installation Manual

7.1 Important Notices

1. The unit installation work must be done by qualified personnel according to the local rules and this manual.
2. When removing the unit to the other place, please firstly contact with the local maintenance center.

Basic requirements for installation location

Installation at the following places may cause failure of the air conditioner. Please contact installation and service agency if the installation at such places cannot be avoided.

- Choose a place far away from heat source, steam and inflammable gases.
- A place with high frequency facilities, such as radio equipment, electric welder or medical equipment;
- A region with saline-sodic soil near the sea;
- A place full of machine oil;
- A place with sulphide gases (such as sulphur spring);
- An environment with special conditions.

Installation location of indoor unit

1. Select a place, avoid the inflammable gas produce or leakage.
2. Select a place avoid the water vapor or oil sprayed on the unit.
3. Ensure that airflow can reach every corner of the room.
4. Choose a place so that the connection pipe could be easily pulled out.
5. Select the place where the airflow of the unit can not be blocked.
6. Select the position where the few outer air influenced.
7. Select the firm and flat ground.
8. Ensure sufficient clearance and space for service and maintenance.
9. Ensure the installation of indoor unit is in conformity with the requirements of installation dimension drawing;
10. Do not use the unit in the immediate surroundings of a laundry a bath a shower or a swimming pool.
11. A location from which the condensation water can be drained out conveniently.

Installation location of outdoor unit

1. A place where noise and airflow generated by air exhaust do not affect the neighbors, animals and plants.
2. Ensure good ventilation of outdoor unit.
3. No obstacles near the outdoor unit obstructing the air intake and air exhaust of the unit.
4. The installation position shall be able to withstand the weight and vibration of the outdoor unit.
5. Choose a place far away the direct sunshine or strong wind.
6. The indoor unit shall be in conformity with the requirements of installation diagram, and ensure sufficient clearance and space for service and maintenance.
7. The height of connection pipe should be within 5 meters, and the length of it should be within 10 meters.
8. Please select the place keep out of the children's reach.
9. Select the place which do not influence the communal path way and the appearance of the city.

Electric wiring

- 1.It should be connected with the special earth device on the building, it should be installed by the professional personnel. There should be enough capacity of creepage protector and air switch. (please refer to the following table)
- 2.The power supply must use the rated voltage and special circuit.
- 3.The diameter of the power wiring should be large enough. (Please refer to the following table)
- 4.The wiring work should conform to relative standard.
- 5.The ground must be connected.
- 6.Don't pull the power wire strongly.

Requirements for electric safety

- 1.First install wire of outdoor unit and then wire of indoor unit. After finishing wiring and piping, connect the unit to the power supply.
- 2.Please strictly follow the instruction of this manual when installing indoor unit and its piping.
- 3.The unit is subject to change without prior notice.
- 4.Please read this manual carefully before installation.

The unit power is large, the power supply circuit supplied for the unit should accord with the following:

- 1.Installed the air switch with suitable capacity, please refer to the following, the air switch must have the functions of magnetic tripping and heat tripping. (Note: never use the fuse to protect the branch circuit.)
- 2.The capacity of wire diameter should be 1.5 times larger than the unit max. current
- 3.Installed the creepage protector with enough capacity.
- 4.Make sure to divide the branch circuit for the special circuit.
- 5.The min. clearance between combustible surface and the air conditioner is 1.5 meters.

Models	Air switch capacity
GVC18AG-K1NNA5A GVC36AH-M1NNA5A GVH36AH-M1NNA5A GVC42AH-M1NNA5A	16A
GVH18AG-K1NNA5A GVC24AG-K1NNA5A GVH42AH-M1NNA5A	25A
GVH24AG-K1NNA5A	32A

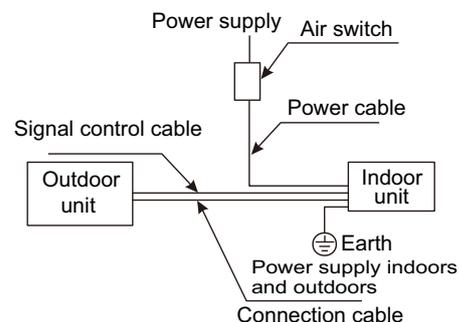
Note:

- Please pay attention to surrounding conditions (eg. Ambient temp., direct sun shine, rain drops etc.)
- The data of lead wire cross section listed above is the min. area. The cross section area of power cable, power connection wire should not be less than the data listed above.
- The power cable, power connection wire must adopt the standard copper-core cable accord with the national criterion.
- Earth wire must be connected to both of indoor and outdoor units.
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- the appliance shall be installed in accordance with national wiring regulations.

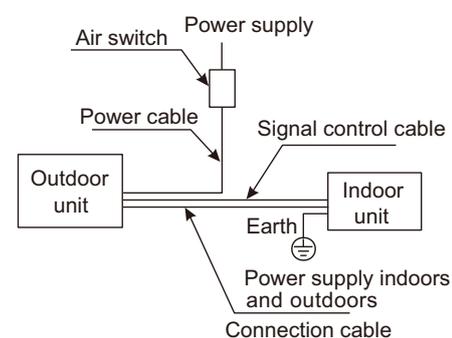
Notes for electric wiring:

1. Special circuit must be used for power supply.
2. The circuit must be installed by special serviceman.
3. Please do the wiring according to the following wiring diagram. The screws must be tightly fastened, the slippery screws must be changed, the tapping screw cannot be used for electric wiring.
4. Please wiring according to the circuit diagram on the unit.
5. Adopts the cables which are attached with the unit, please do not to change the cables optionally, and do not change the length and ends of the cable, if need to adjust, please contact with the local after-sales service center.
6. For the power cord which is without the plug, that cannot be connected the plug for using.
7. The electric wiring connection of indoor and outdoor should not be affected by the stretch and bending.
8.  is the symbol of earthing, it denotes that the yellow-green dual wire only can be connected with the place with the symbol.
9. After the electric installation completed, make sure to use wire clamp to fix the power cord, power supply connection cable and signal cable tightly, and ensure that there is enough space in the fix position and each connection terminals of the lead wires.
10. Please use about a half kilogram of force, to check whether each lead wire is installed well. When checking the air connector please enclasp it, and check each lead wire of which is connecting with the connector.

Installation diagram, please refer to the following.
For the single phase:



For the three phase:



Note: the unit should be correctly earthed to avoid interference to the complete unit and ensure personal safety.

Requirements for earthing

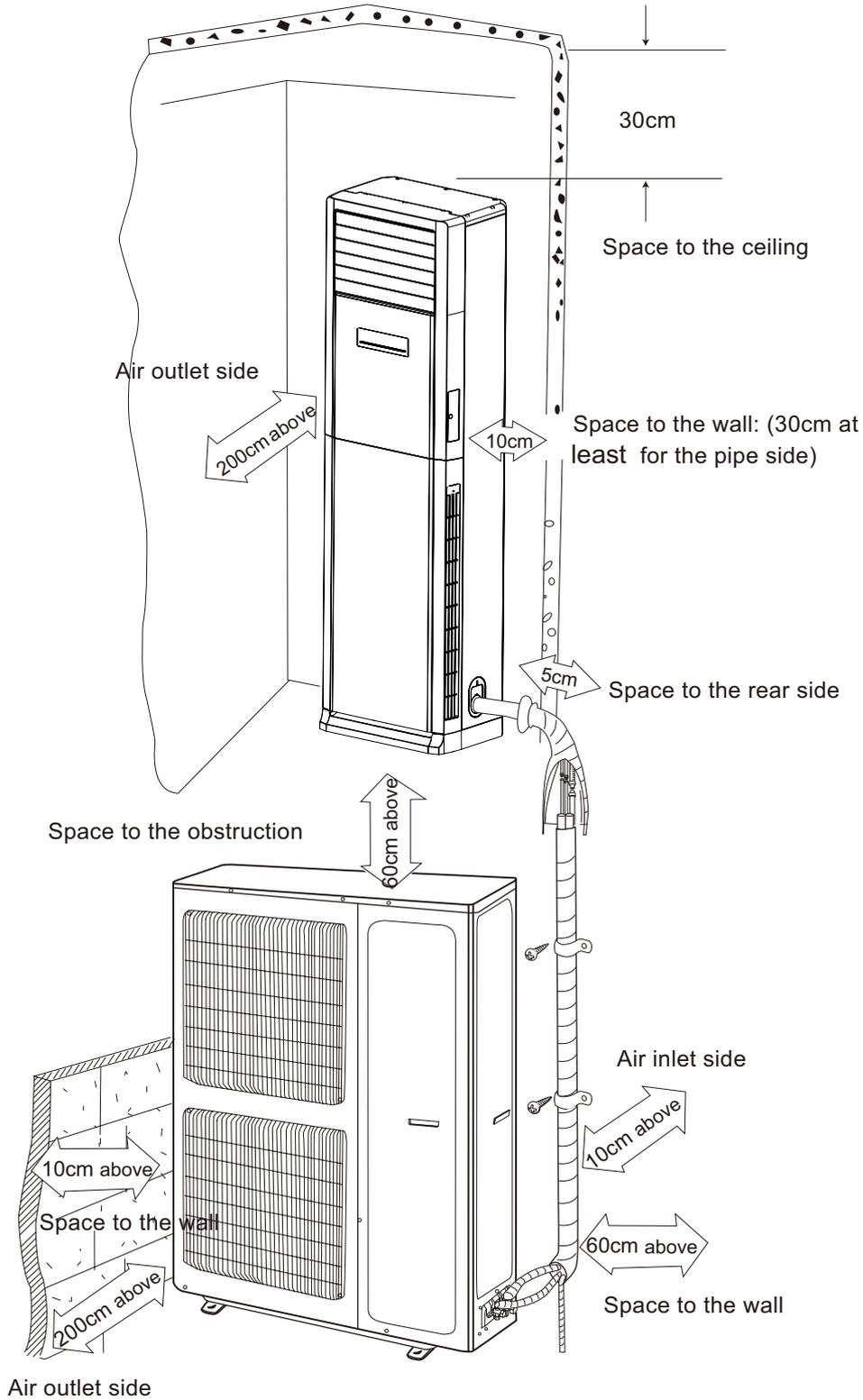
1. The air conditioner is the first class electric appliance:
2. The yellow and green dual color wire in the air conditioner is earth wire, it cannot be used for other purposes, do not cut off it. Do not fix it by the tapping screw: otherwise, it can cause the electric shock.
3. Please do not connect the earth wire to the place: The power supply must be reliably earthed.

(1) Water pipe (2) Gas pipe (3) Drainage pipe (4) The place where is unreliable by the professional

Other

1. All electric installation must be done by professional personnel according to local law, regulation and this manual.
2. The connection method between air conditioner and power cable as well as the interconnection of each separate components, please refer to the circuit diagram on the unit.
3. The model and rated value of blown fuse please refer to the corresponding silk-screen on the controller or fuse sleeve.
4. The outer static pressure is 0MPa when the unit is testing.

7.2 Installation Dimension Diagram



This is just the schematic plan, please refer to the actual product.

7.3 Installation of Indoor Unit

Installation of connection pipe

Before wiring and piping, please remove the filter after opening the glass panel.

1.As shown in Fig.2,take out the decorative strip at position 1 and then unscrew the screws.Remove the screws fixing the filter after opening the glass panel.At last take out the filter along the arrow direction at position 3.

2.During piping and wiring in the left and at the rear side,the attached accessories should be used,as shown in Fig.4 .

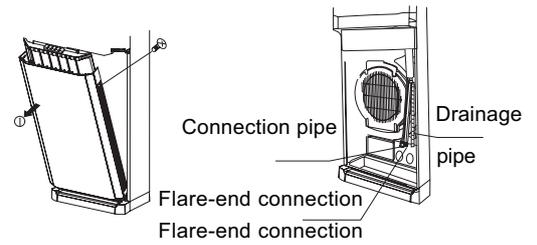


Fig.2

Fig.3

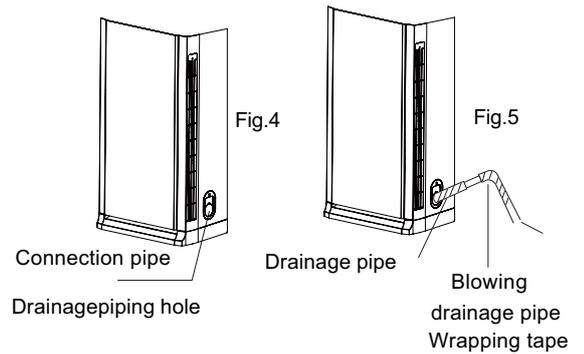


Fig.4

Fig.5

Installation of drainage pipe

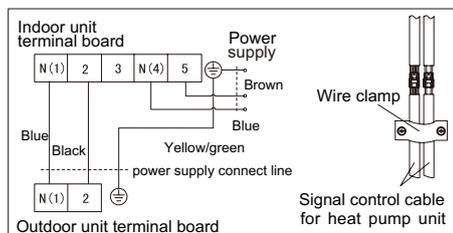
1. Make sure drainage pipe is led outdoors (discharge side).
2. Butt-joint drainage pipe in the unit with blowing drainage pipe and fix them with insulated tape.
3. If the drainage pipe should be wrapped with heat-preservation material (at least 9mm thickness), and then wrap it with tape to prevent air from entering into the pipe,which will cause condensation.
4. After connecting, check if water can discharge properly or if there is any leakage. (As shown in Fig.5)

Electric connection

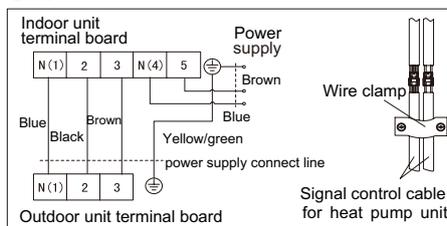
- 1.Disassemble the air intake grill.
- 2.Remove screws from the cover of electric box to expose the box.
- 3.Put the power connection wire through the single wire hole of the indoor unit rear side, the pull it out from the front.
4. According to the diagram for wiring,according to the marks on wire board for connection correspondingly,as shown in Fig.6.

Wire connection according to this diagram:

18K:



24K:



36K 42K:

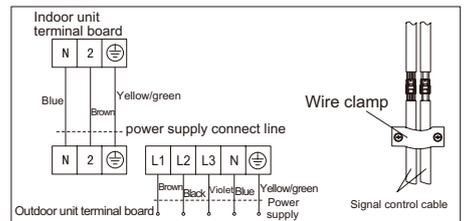


Fig.6.

5. Place the section with sleeve of the power connection wire into the wire groove, then cover the electric box cover, tighten the fixing screw, and tighten the connection wire.
6. Recover the electric box cover.
7. For the cooling and heating unit, the signal control wire is connected via connector and indoor unit, and clasp the signal control wire with the wire clamp, which is under the bottom of body case.

Note:

When the connection wire length isn't enough, please contact with the appointed service shop for buying a dedicated electric wire with enough length, the connection isn't allowed between the wire.

- The wrong wiring connection isn't allowed, it may cause the malfunction of the components.
- Tighten the terminal screw.
- After tightened the screw, and slightly pull the electric wire to confirm whether it is firmed or not.
- Wrong earth wire connection may cause electric shock.
- The electric wire covering plate must be fixed well, and tighten the connection wire, if the wire cover-ing plate isn't installed well, that may lead the dust, moisture enter in or due to the outside force impact, it may cause fire or electric shock.

Installation of baffle

Please install it after installation of connection pipe and drainage pipe according to Fig.7.

1. Loosen the screws and adjust the baffle position up and down to clamp connection pipe/drainage pipe as much as possible.
2. Tighten the screws.

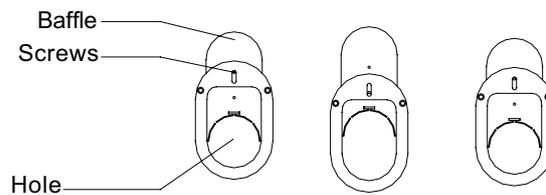


Fig.7

Notes for piping

Pipes for refrigerant and drainage pipe should be insulated to avoid frosting and dripping.

1. Both of the indoor and outdoor units adopt flare-end connection. Refrigerant pipe as shown below is used to connect indoor and outdoor units. (As shown in Fig.8)

Note: Don't bend the bendable pipe back and forth more than 3 times. Insulate all exposed parts of the flare-end connection joint and refrigerant pipe. (As shown in Fig.9)

2. Check valve of the outdoor unit should be closed (in factory). Every time of connection, screw cap at check valve should be unscrewed and then connect it with flare-end pipe immediately (within 5 min). Otherwise, dust, moisture and other impurities may go into the pipe and cause malfunction.

Notes for bendable pipe:

1. The part with bendable pipe should be used in indoor side.
2. The bending angle should not be more than 90°.
3. It's better for the bend to be in the middle of the pipe and the radius of the bend is the bigger the better.
4. Don't bend the bendable pipe more than three times.

When bending the pipe

1. Cut some part of the insulation pipe at the place of the bend (and wrap with polythene tape after bending).
2. Make radius of the bend as big as possible so that the pipe will not get flat or broken.
3. Tighten the pipe bending by the rubber bender.

When using copper pipe bought locally

Check valve of the outdoor unit should be closed completely (in the factory). After connection of indoor and outdoor units via connection pipe, discharge the air from service vent of low-pressure check valve of the outdoor unit. After that, screw down the nuts to service vent.

Install the big handle.

After step 1 or 2 above, check valve of the outdoor unit should be fully opened to ensure smooth flow of connection pipe between indoor and outdoor units.

Note: Before fastening nut of the flare-end pipe, please apply some refrigerant oil to the end of the pipe and the joint.

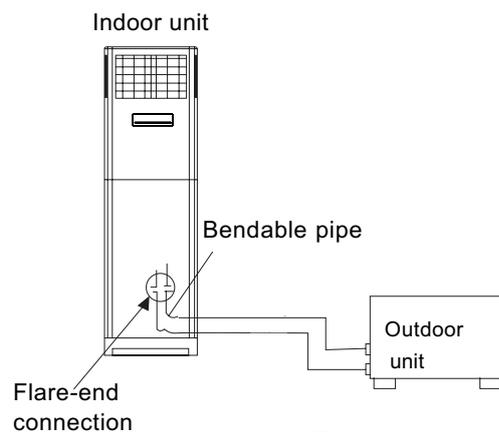


Fig.8

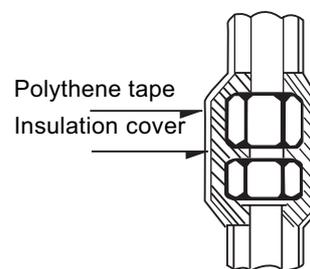


Fig.9

Bend the pipe with thumbs

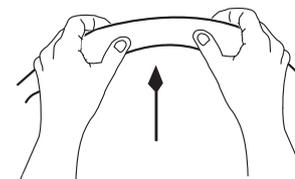


Fig.10

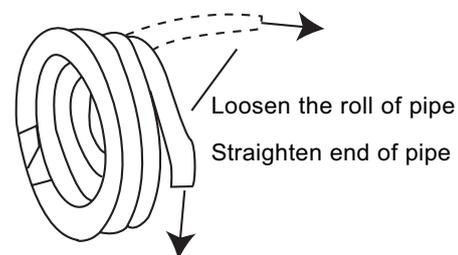


Fig.11

Installation of connection pipe

- 1.Align the center of the piping flare with the pyramidal face of relevant valve.
- 2.Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench refer to the following.

Hex nut	Tightening torque (N.m)
Φ6	15~20
Φ9.52	35~40
Φ12	50~55
Φ16	60~65
Φ19	70~75

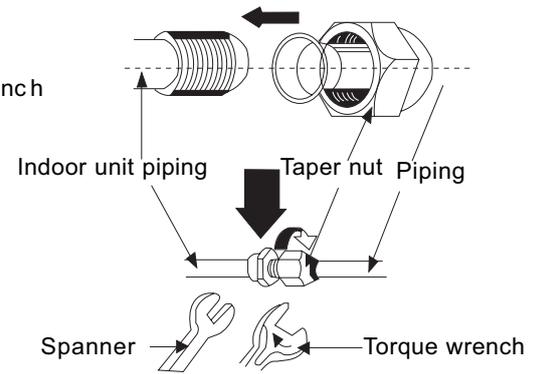


Fig.12

NOTE: Firstly connect the connection pipe to indoor unit, then to outdoor unit; pay attention to the piping bending, do not damage the connection pipe; the joint nut couldn't tighten too much, otherwise it may cause leakage.

7.4 Installation of Outdoor Unit

Exhausting(with A5mm hexagon wrench)

When using refrigerant of outdoor unit:

1. Tighten nuts A, B, C, D substantially.
2. Remove cover from check valve A (As show in Fig.14)
3. Twist open core of liquid valve B with hexagon wrench, and at the same time hold screw driver against core of gas valve A to let gas out. After 15 seconds of exhausting and refrigerant appears,close one-way valve and tighten bonnet.
4. Fully open cores of both liquid valve and gas valve,tighten bonnet, then check with soap wate or leakage detector to see if there is any leaking in the joints of piping between indoor and outdoor units.

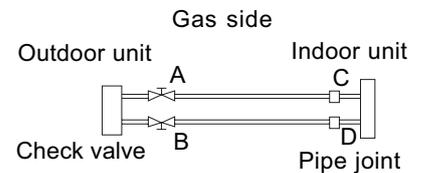


Fig.13

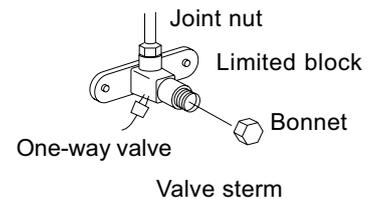


Fig.14

Air discharge method	Length of connection pipe	Charge volume of additional refrigerant
Use refrigerant of outdoor unit	Below 4m(42k Below 5m)	Volume on nameplate
Use vacuum pump	4-15m(42k 5-15m)	model Volume on nameplate+50g/m 42k model Volume on nameplate+100g/m

When using vacuum pump

1. Connect charging hose of to charge nozzle. (both cores of gas and liquid valves should be shut down tightly.)
2. Connect joint of charging hose to vacuum pump.
3. Fully open low-pressure valve(Lo) of manometer.
4. Make vacuum pump operate for 15 min above. Close lowpressure valve(Lo) to stop vacuum pump after confirmation of $-1.0 \times 10^5 \text{pa} (-76 \text{cmHg})$ at manometer. Then check if there is air in the pipe(keep for 2 min to see if indicated needle of manometer returns). If there is ,re-operate the vacuum pump after restoration.
5. Remove charging hose from gas valve.
6. Fully open the cores of gas valve and liquid valve.
7. Tighten bonnet of gas valve and liquid valve and nut of charge nozzle.(As shown in Fig.15)

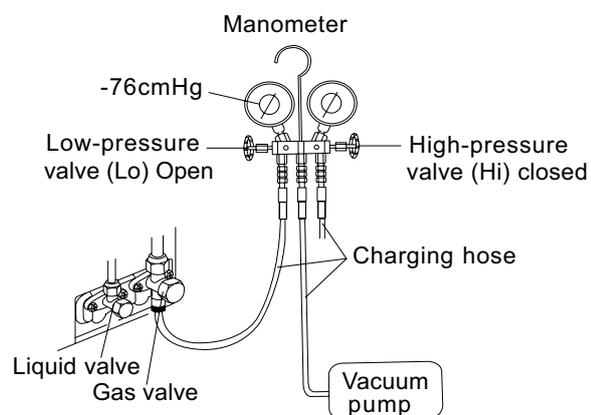
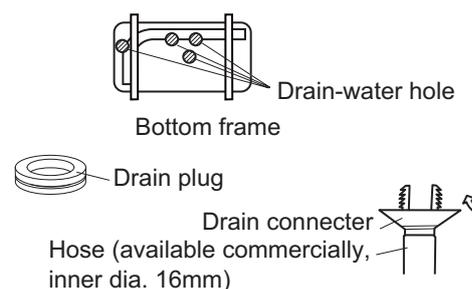


Fig.15

Outdoor condensation drainage (Heat pump type only)

During heating operation, the condensate and defrosting water should be drained out reliably through the drain hose. Install the outdoor drain connector in a $\Phi 25$ hole on the base plate and attach the drain hose to the connector so that the waste water formed in the outdoor unit can be drained out. The hole diameter 25 must be plugged. Whether to plug other holes will be determined by the dealers according to actual conditions.



Leakage detection

Coat soap water at the gap between connection pipes to see if there is any leakage. If there is air bubble at this position, it should leak. (As shown in Fig.16) Leakage detector, if possible, can be used.

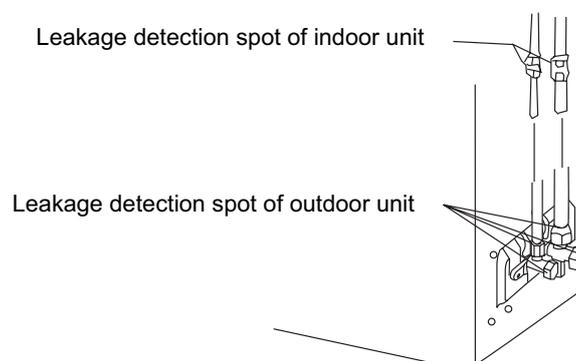


Fig.16

Wiring method

1. Remove the front side plate.
2. Put it through to the outdoor wire hole.
3. Please refer to the electric wiring connection of the indoor unit, then fix them with wire clamp.(As shown in Fig.17)

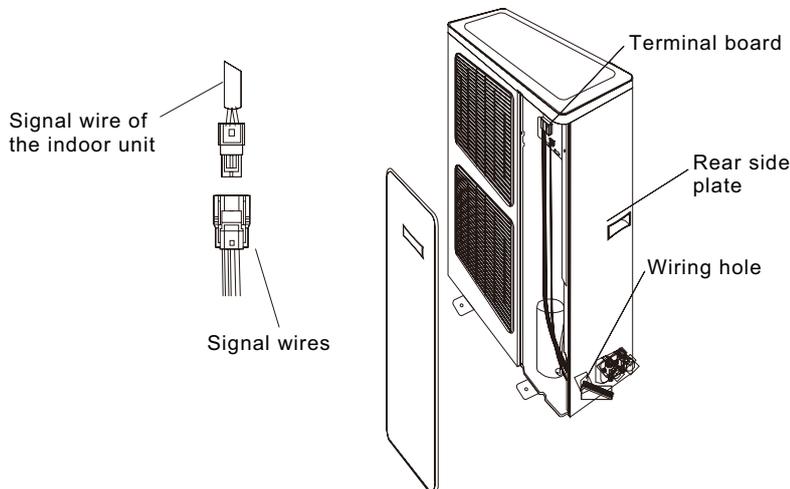


Fig.17

7.5 Test Operation and Check after Installation

Check after installation

Items to be checked	Possible malfunction
Has it been fixed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling(heating)capacity.
Is heat insulation sufficient?	It may cause condensation and dripping.
Is water drainage well?	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the part.
Is the electric wiring and piping connection installed correctly and securely?	It may cause electric malfunction or damaged the part.
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.
Is the power cord specified?	It may cause electric malfunction or damage the part.
Is the inlet and outlet been covered?	It may cause insufficient cooling(heating)capacity.
Has the length of connection pipes and refrigerant capacity been recorded?	The refrigerant capacity is not accurate.

Test operation

1. Before test operation

- (1) Do not switch on power before installation is finished completely.
- (2) Electric wiring must be connected correctly and securely.
- (3) Cut-off valves of the connection pipes should be opened.
- (4) All the impurities such as scraps and thums must be cleared from the unit.

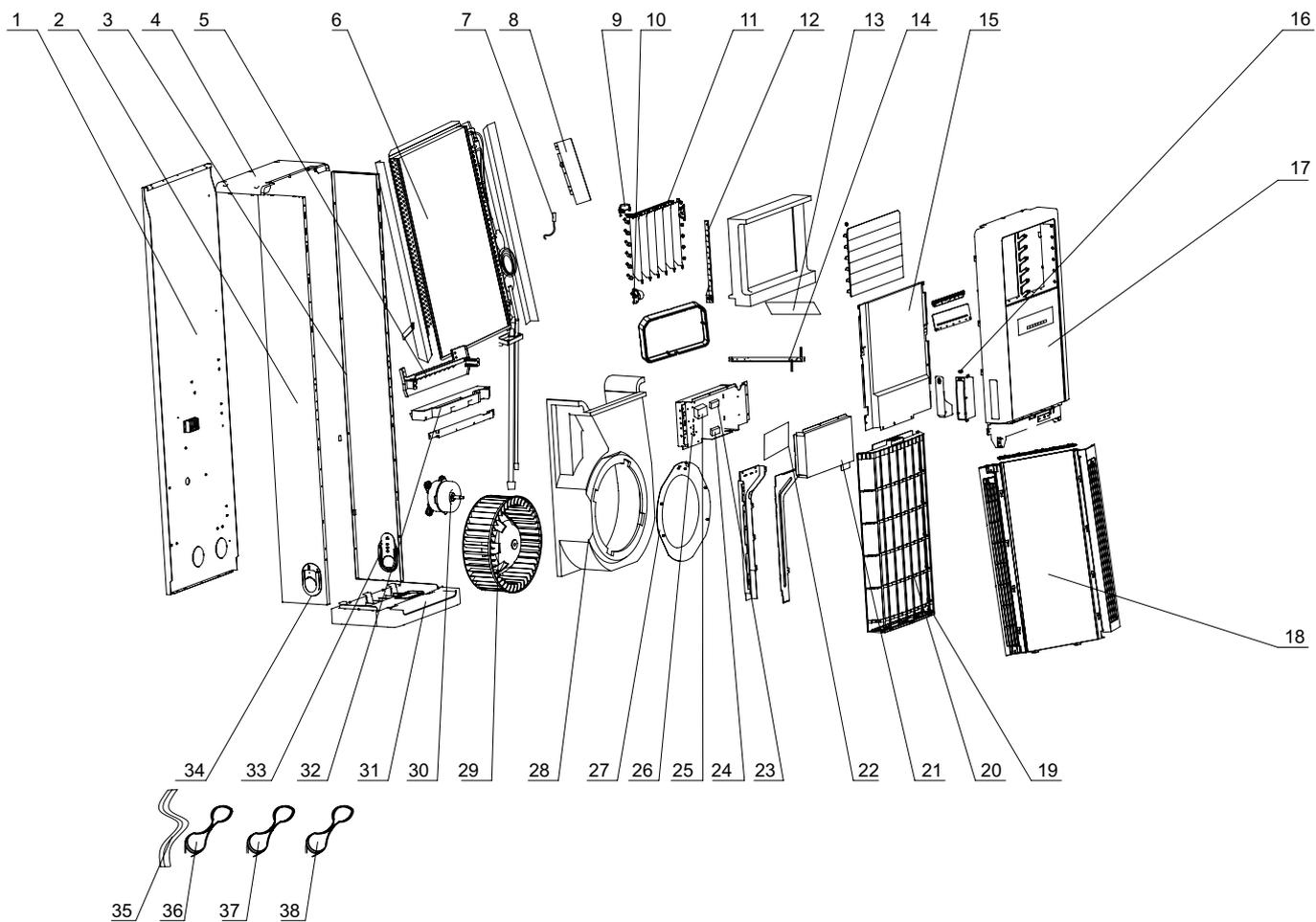
2. Test operation method

- (1) Switch on power, press ON/OFF button on the remote controller to start the operation.
- (2) Press MODE button to select the COOL, HEAT, FAN to check whether the operation is normal or not.

8.Exploded Views and Parts List

8.1 Indoor Unit

Models: GVC18AG-K1NNA5A/I GVH18AG-K1NNA5A/I GVC24AG-K1NNA5A/I GVH24AG-K1NNA5A/I



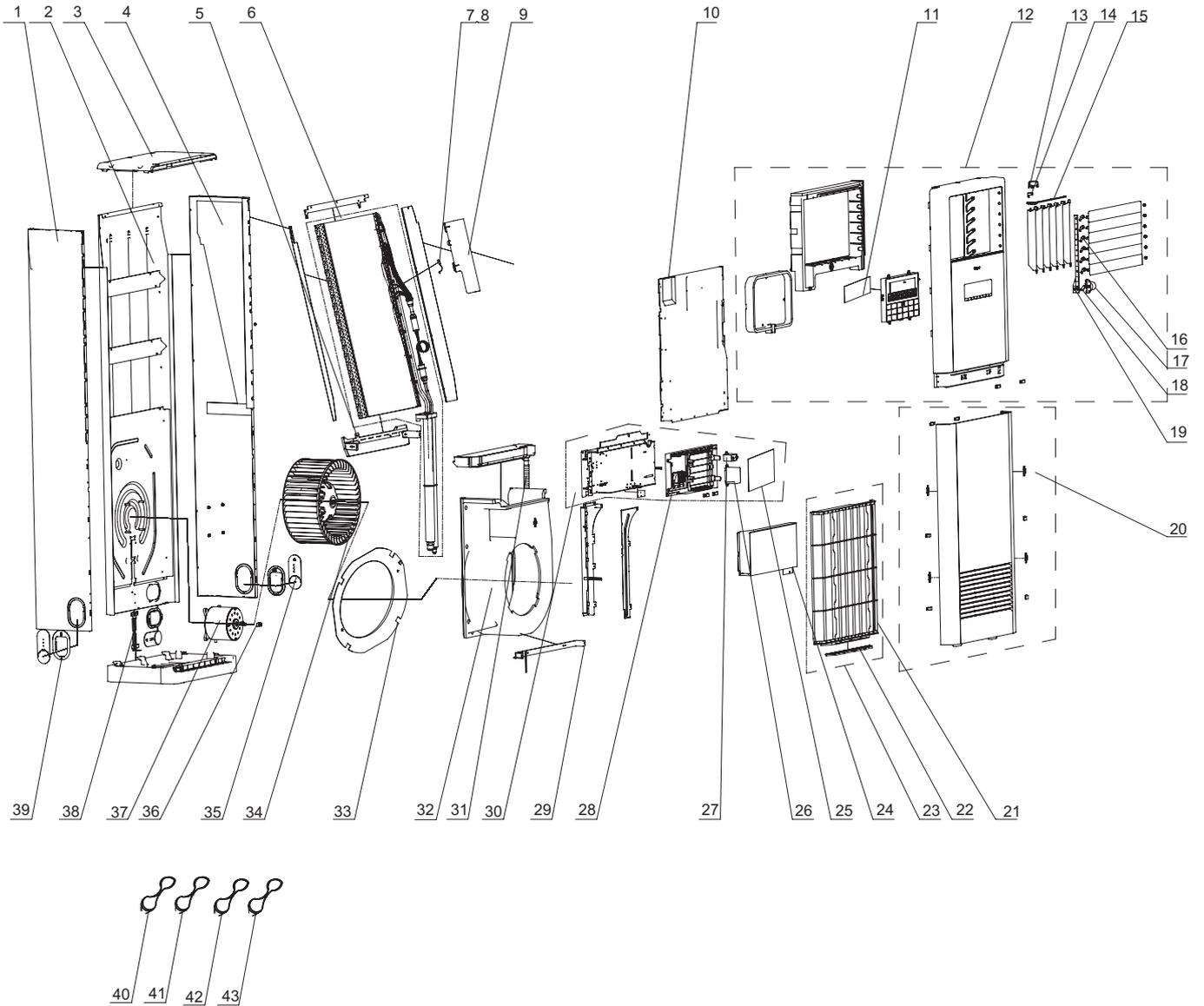
NO.	Description	Part Code		Qty
		GVC18AG-K1NNA5A/I	GVH18AG-K1NNA5A/I	
	Product Code	CG090N0010	CG090N0020	
1	Rear Plate Sub-Assy	01304344	01304344	1
2	Left Side Plate Sub-Assy	0130438203	0130438203	1
3	Right Side Plate Sub-Assy	0130438303	0130438303	1
4	Top Cover Sub-Assy	22244106	22244106	1
5	Breakwater	26114193	26114193	1
6	Evaporator Assy	01004089	01004089	1
7	Temperature Sensor	3900019003	3900019003	1
8	Protection Cover	20124112	20124112	1
9	Stepping Motor	1521400801	1521421102	1
10	Stepping Motor	1521400801	1521400801	1
11	Swing Lever	10584218	10584218	1
12	Guide Blade Lever	10584088	10584088	1
13	Display Board	30563190	30563193	1
14	Propeller Housing Press Plate	01364215	01364215	1
15	Air Guard Sub-Assy	01364183	01364183	1
16	Latch	70811002	70811002	1
17	Air Outlet Panel Assy	2000452013	2000452014	1
18	Air Intake Panel Assy	20004524	20004524	1
19	Filter Sub-assy(Lower)	11124105	11124105	1
20	Filter Sub-assy(Upper)	11124104	11124104	1
21	Cover Plate assy of Electric Box	01404389	01404389	1
22	Main Board	30134128	30134132	1
23	Capacitor CBB61	33010012	33010012	1
24	Terminal Board	42010258	42010258	1
25	Transformer	43110287	43110287	1
26	Electric Box Assy	01404600	01404599	1
27	Diversion Circle	10374006	10374006	1
28	Propeller Housing Sub-assy	1210420101	1210420101	1
29	Centrifugal Fan	10314001	10314001	1
30	Fan Motor	1501421404	1501421404	1
31	Chassis	22224021	22224021	1
32	Water Tray Sub-Assy	20184022	20184022	1
33	Baffle Plate	2611408801	2611408801	3
34	Rear Cover	2224422101	2224422101	3
35	Power Cord	4002028801	4002028801	1
36	Connecting Cable	400205406	400205406	1
37	Connecting Cable	/	4003213447	1
38	Connecting Cable	/	4003213450	1

The data above are subject to change without notice.

NO.	Description	Part Code		Qty
		GVC24AG-K1NNA5A/I	GVH24AG-K1NNA5A/I	
		Product Code		
		CG090N0030	CG090N0040	
1	Rear Plate Sub-Assy	01304344	01304344	1
2	Left Side Plate Sub-Assy	0130438203	0130438203	1
3	Right Side Plate Sub-Assy	0130438303	0130438303	1
4	Top Cover Sub-Assy	22244106	22244106	1
5	Breakwater	26114118	26114118	1
6	Evaporator Assy	0100404401	0100404401	1
7	Temperature Sensor	3900019003	3900019003	1
8	Protection Cover	20124112	20124112	1
9	Stepping Motor	1521400801	1521400801	1
10	Stepping Motor	1521400801	1521400801	1
11	Swing Lever	10584218	10584218	1
12	Guide Blade Lever	10584088	10584088	1
13	Display Board	30563191	30563194	1
14	Propeller Housing Press Plate	01364215	01364215	1
15	Air Guard Sub-Assy	01364183	01364183	1
16	Latch	70811002	70811002	1
17	Air Outlet Panel Assy	2000452015	2000452016	1
18	Air Intake Panel Assy	20004524	20004524	1
19	Filter Sub-assy(Lower)	11124105	11124105	1
20	Filter Sub-assy(Upper)	11124104	11124104	1
21	Cover Plate assy of Electric Box	01404389	01404389	1
22	Main Board	30134129	30134133	1
23	Capacitor CBB61	33010012	33010012	1
24	Terminal Board	42010258	42010258	1
25	Transformer	43110287	43110287	1
26	Electric Box Assy	0140451007	0140451008	1
27	Diversion Circle	10374006	10374006	1
28	Propeller Housing Sub-assy	1210420101	1210420101	1
29	Centrifugal Fan	10314001	10314001	1
30	Fan Motor	15014217	15014217	1
31	Chassis	22224021	22224021	1
32	Water Tray Sub-Assy	20184022	20184022	1
33	Baffle Plate	2611408801	2611408801	3
34	Rear Cover	2224422101	2224422101	3
35	Power Cord	4002028801	4002028801	1
36	Connecting Cable	400205382	400205382	1
37	Connecting Cable	/	4003213447	1
38	Connecting Cable	4003213450	4003213431	1

The data above are subject to change without notice.

Models:GVC36AH-M1NNA5A/I GVH36AH-M1NNA5A/I GVC42AH-M1NNA5A/I GVH42AH-M1NNA5A/I



NO.	Description	Part Code		Qty
		GVC36AH-M1NNA5A/I	GVH36AH-M1NNA5A/I	
		Product Code	CG090N0050	
1	Left Side Plate Sub-Assy	0130430401	0130430401	1
2	Rear Plate Assy	01304290	01304290	1
3	Top Cover Sub-Assy	22244152	22244152	1
4	Right Side Plate Sub-Assy	0130430301	0130430301	1
5	Breakwater Sub-Assy	01364154P	01364154P	1
6	Evaporator Assy	01004271	01004271	1
7	Temp Sensor Sleeving	42020063	42020063	1
8	Ambient Temperature Sensor	39000190	39000190	1
9	Protection Cover	20124062	20124062	1
10	Air Guard Assy	01364509	01364509	1
11	Display Board	30563192	30563195	1
12	Air Outlet Panel Assy	2000438102	2000453402	1
13	Stepping Motor	1521400801	1521400801	1
14	Crank 1	10564204	10564204	1
15	Swing Lever	10584218	10584218	1
16	Crankshaft of Guide Louver	1056420502	1056420502	6
17	Stepping Motor	1521421102	1521400801	1
18	Crank	10564201	10564201	1
19	Guide Blade Lever	10584089	10584089	1
20	Air Intake Panel Assy	20004536	20004536	1
21	Filter Sub-assy(Upper)	11124103	11124103	1
22	Filter Sub-Assy	07210029	07210029	1
23	Filter Sub-Assy	11124100	11124100	1
24	Electric Box Cover Sub-Assy	01404388	01404388	1
25	Main Board	30134131	30134135	1
26	Transformer	43110287	43110287	1
27	Capacitor CBB61	33010037	33010037	1
28	Terminal Board	42010258	42010258	1
29	Propeller Housing Press Plate	01384061	01384061	1
30	Electric Box Assy	01404840	01404838	1
31	Drainage Pipe Sub-assy	05235434	05235434	1
32	Propeller Housing Sub-assy	12104058	12104058	1
33	Diversion Circle	10374435	10374435	1
34	Centrifugal Fan	10314401	10314401	1
35	Baffle Plate	2611408801	2611408801	3
36	Gasket	70414201	70414201	1
37	Fan Motor	1501443307	1501443307	1
38	Wire Clamp	01384201	01384201	1
39	Rear Cover	2224422101	2224422101	3
40	Connecting Cable	40020539	40020539	1
41	Connecting Cable	400205403	400205403	1
42	Connecting Cable	4003213431	40030328	1
43	Connecting Cable	4003213447	40032117	1

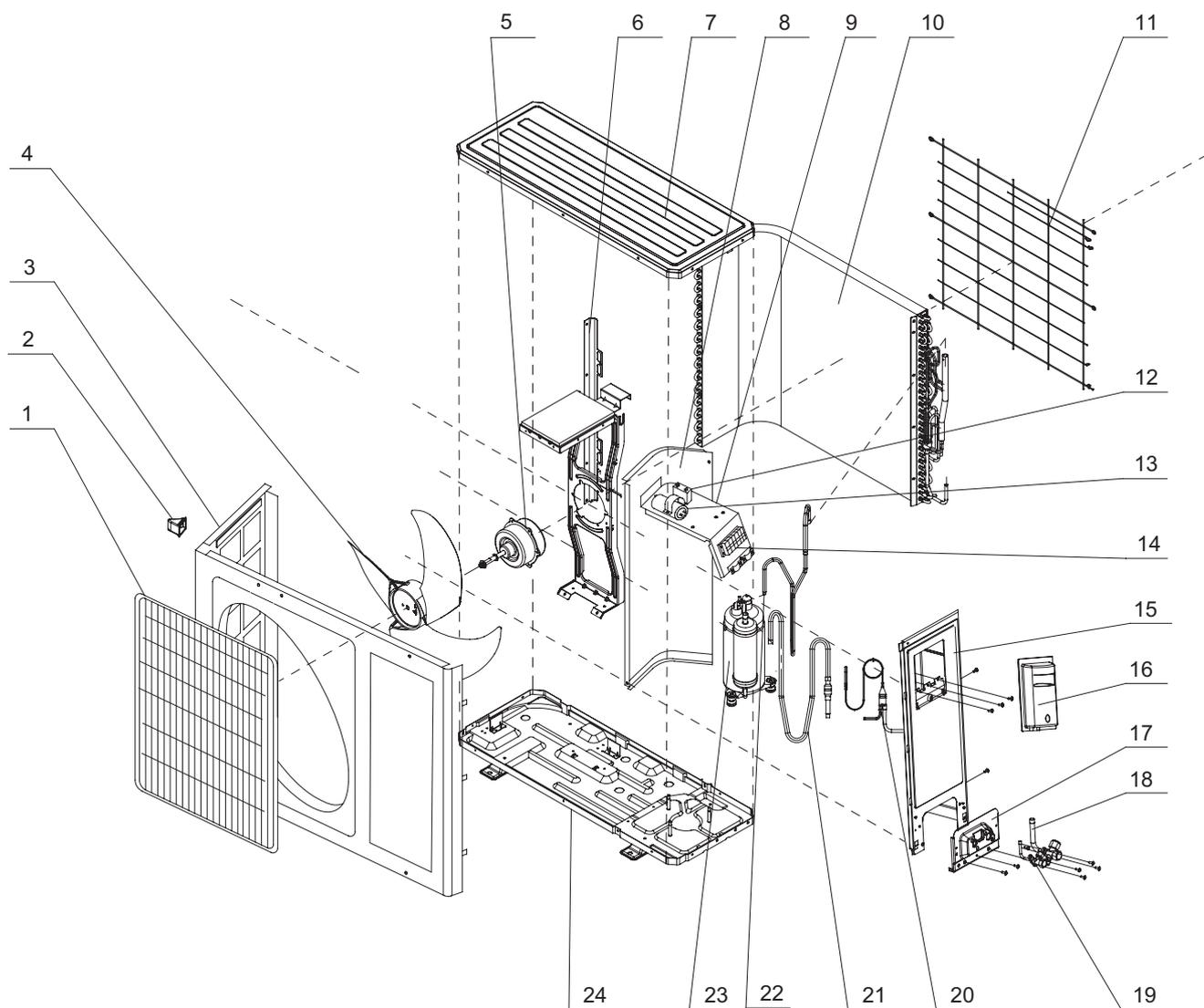
The data above are subject to change without notice.

NO.	Description	Part Code		Qty
		GVC42AH-M1NNA5A/I	GVH42AH-M1NNA5A/I	
		Product Code		
		CG090N0070	CG090N0080	
1	Left Side Plate Sub-Assy	0130430401	0130430401	1
2	Rear Plate Assy	01304290	01304290	1
3	Top Cover Sub-Assy	22244152	22244152	1
4	Right Side Plate Sub-Assy	0130430301	0130430301	1
5	Breakwater Sub-Assy	01364154P	01364154P	1
6	Evaporator Assy	01004271	01004271	1
7	Temp Sensor Sleeving	42020063	42020063	1
8	Ambient Temperature Sensor	39000190	39000190	1
9	Protection Cover	20124062	20124062	1
10	Air Guard Assy	01364509	01364509	1
11	Display Board	30563192	30563195	1
12	Air Outlet Panel Assy	2000438102	2000453402	1
13	Stepping Motor	1521400801	1521400801	1
14	Crank 1	10564204	10564204	1
15	Swing Lever	10584218	10584218	1
16	Crankshaft of Guide Louver	1056420502	1056420502	6
17	Stepping Motor	1521400801	1521400801	1
18	Crank	10564201	10564201	1
19	Guide Blade Lever	10584089	10584089	1
20	Air Intake Panel Assy	20004536	20004536	1
21	Filter Sub-assy(Upper)	11124103	11124103	1
22	Filter Sub-Assy	07210029	11124100	1
23	Filter Sub-Assy	11124100	07210029	1
24	Electric Box Cover Sub-Assy	01404388	01404388	1
25	Main Board	30134131	30134135	1
26	Transformer	43110287	43110287	1
27	Capacitor CBB61	33010037	33010037	1
28	Terminal Board	42010258	42010258	1
29	Propeller Housing Press Plate	01384061	01384061	1
30	Electric Box Assy	01404843	01404842	1
31	Drainage Pipe Sub-assy	05235434	05235434	1
32	Propeller Housing Sub-assy	12104058	12104058	1
33	Diversion Circle	10374435	10374435	1
34	Centrifugal Fan	10314401	10314401	1
35	Baffle Plate	2611408801	2611408801	3
36	Gasket	70414201	70414201	1
37	Fan Motor	1501443307	1501443307	1
38	Wire Clamp	01384201	01384201	1
39	Rear Cover	2224422101	2224422101	3
40	Connecting Cable	40020539	40020539	1
41	Connecting Cable	400205403	400205403	1
42	Connecting Cable	4003213431	40030328	1
43	Connecting Cable	4003213447	40032117	1

The data above are subject to change without notice.

8.2 Outdoor Unit

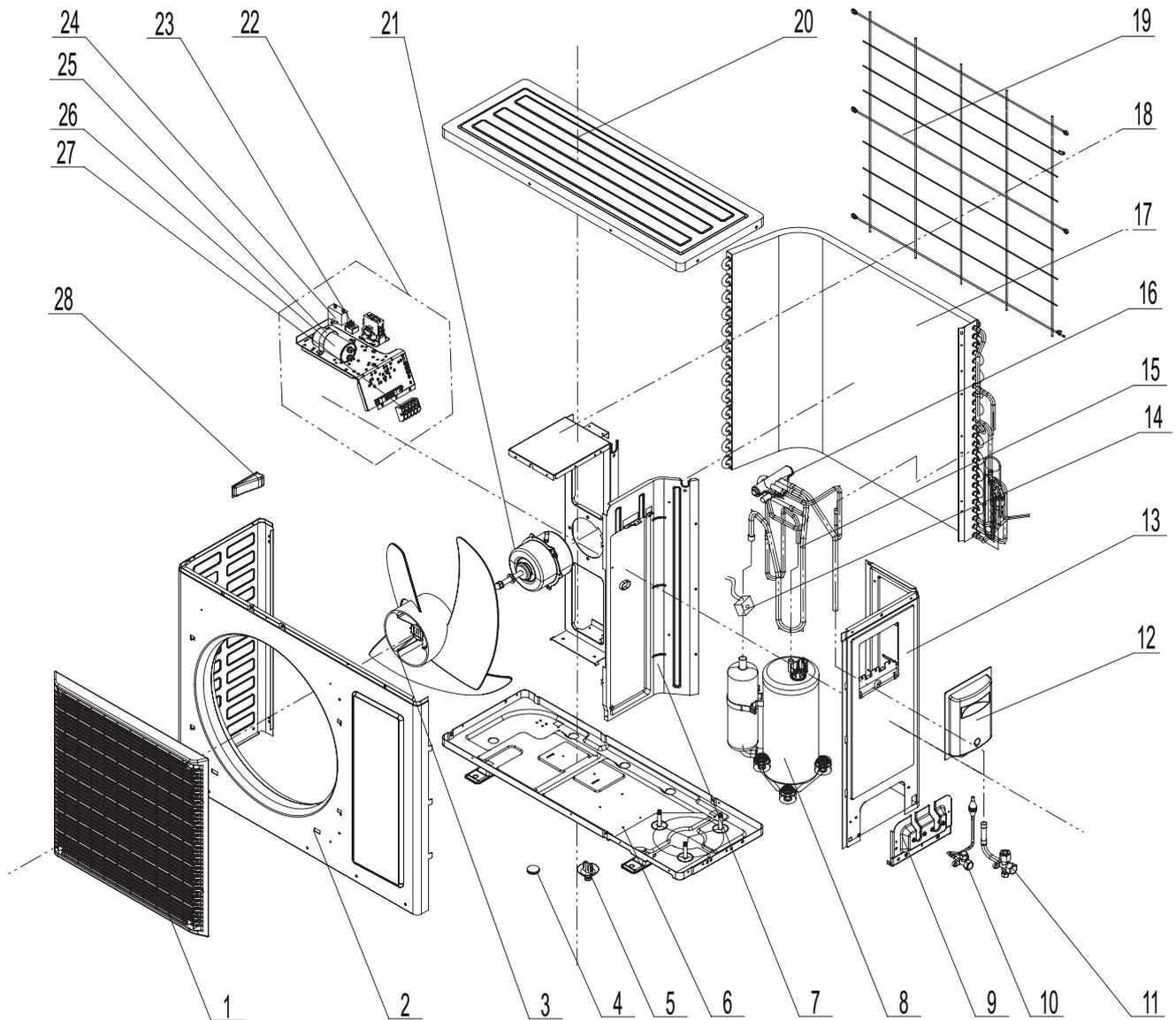
Model:GVC18AG-K1NNA5A/O



NO.	Description	Part Code		Qty
		GVC18AG-K1NNA5A/O		
		Product Code	CG090W0010	
1	Front grill	22415001	1	
2	Handle	26235253	1	
3	Cabinet	01435001P	1	
4	Axial Flow Fan	10335257	1	
5	Fan Motor	15015057	1	
6	Motor Support Sub-Assy	0170510701	1	
7	Coping	01255002	1	
8	Clapboard Sub-Assy	01233035	1	
9	Electric Box Assy	01405667	1	
10	Condenser Assy	01105515	1	
11	Rear grill	01475004	1	
12	Capacitor CBB61	33010027	1	
13	Capacitor CBB65	33000038	1	
14	Terminal Board	42010267	1	
15	Right Side Plate	01305095P	1	
16	Handle	26235254	1	
17	Valve Support Sub-Assy	01715006	1	
18	Cut off Valve	07130835	1	
19	Cut off Valve	07130211	1	
20	Capillary Sub-Assy	03005458	1	
21	Inhalation Tube	03625532	1	
22	Discharge Tube	03615545	1	
23	Compressor and fittings	00105017	1	
24	Chassis Sub-assy	01205076P	1	

The data above are subject to change without notice.

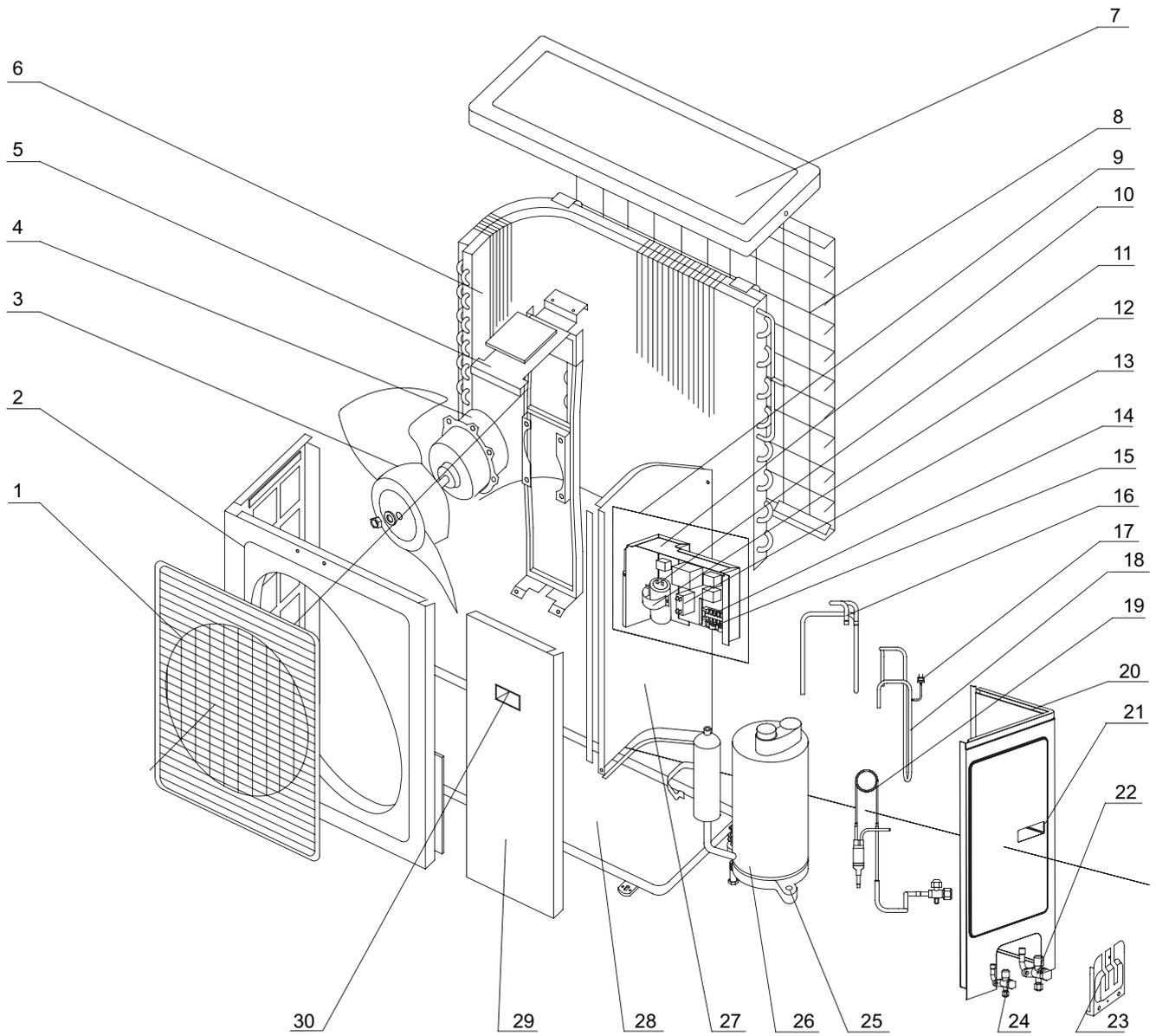
Model:GVH18AG-K1NNA5A/O



NO.	Description	Part Code	Qty
		GVH18AG-K1NNA5A/O	
	Product Code	CG090W0020	
1	Front Grill	22415001	1
2	Cabinet	01435001P	1
3	Axial Flow Fan	10335257	1
4	Drainage hole Cap	06813401	3
5	Drainage Connector	06123401	1
6	Chassis Sub-assy	01205076P	1
7	Clapboard Sub-Assy	01233035	1
8	Compressor and Fittings	00105017	1
9	Valve Support Sub-Assy	01715006	1
10	Cut off Valve	07130211	1
11	Cut off Valve	07130835	1
12	Handle	26235253	1
13	Right Side Plate	01305095P	1
14	Magnet Coil	430004002	1
15	4-Way Valve Assy	03025080	1
16	4-Way Valve	43000403	1
17	Condenser Assy	01105509	1
18	Motor Support Sub-Assy	0170510701	1
19	Rear Grill	01475004	1
20	Coping	01255001	1
21	Fan Motor	15015057	1
22	Electric Box Assy	01405666	1
23	Terminal Board	42010267	1
24	Capacitor CBB61	33010027	1
25	Capacitor Clamp	02141375	1
26	Capacitor CBB65	33000038	1
27	Terminal Board	42011103	1
28	Handle	26235253	1

The data above are subject to change without notice.

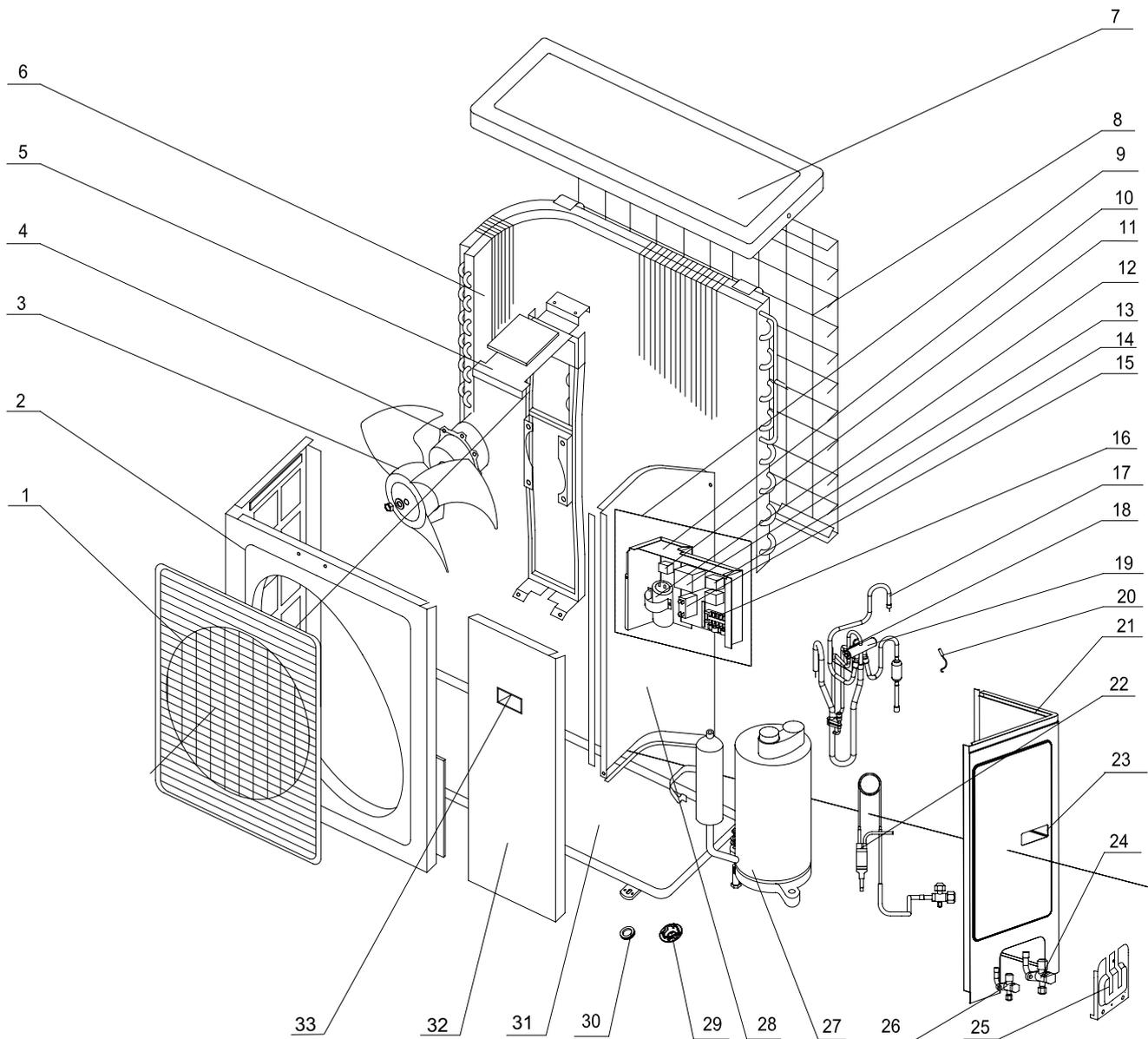
Model:GVC24AG-K1NNA5A/O



NO.	Description	Part Code		Qty
		GVC24AG-K1NNA5A/O		
		Product Code	CG090W0030	
1	Front Grill	22414102	1	
2	Cabinet	01433017P	1	
3	Axial Flow Fan	10338731	1	
4	Fan Motor	1501542103	1	
5	Motor Support	01703027	1	
6	Condenser Assy	01105179	1	
7	Coping	01255013P	1	
8	Rear Grill	01473028	1	
9	Electric Box Assy	01405270	1	
10	Electric Box Cover Plate	01413047	1	
11	Capacitor CBB65	33000039	1	
12	Capacitor Clamp	02141375	1	
13	Capacitor CBB61	33010010	1	
14	Terminal Board	42011113	1	
15	Wire Clamp	71010102	1	
16	Inhalation Tube Sub-assy	03635367	1	
17	Pressure Protect Switch	46020003	1	
18	Discharge Tube Sub-assy	03635366	1	
19	Capillary Assy	03005074	1	
20	Rear Side Plate Sub-Assy	01303271P	1	
21	Left Handle	26235401	1	
22	Gas Valve Sub-Assy	07105252	1	
23	Valve Support Sub-Assy	01715001	1	
24	Cut off Valve	071302113	1	
25	Compressor Gasket	76713058	3	
26	Compressor and Fittings	00105018	1	
27	Mid Clapboard Sub-assy	01233024	1	
28	Chassis Sub-assy	01205203	1	
29	Front Side Plate	01303309P	1	
30	Handle	26235253	2	

The data above are subject to change without notice.

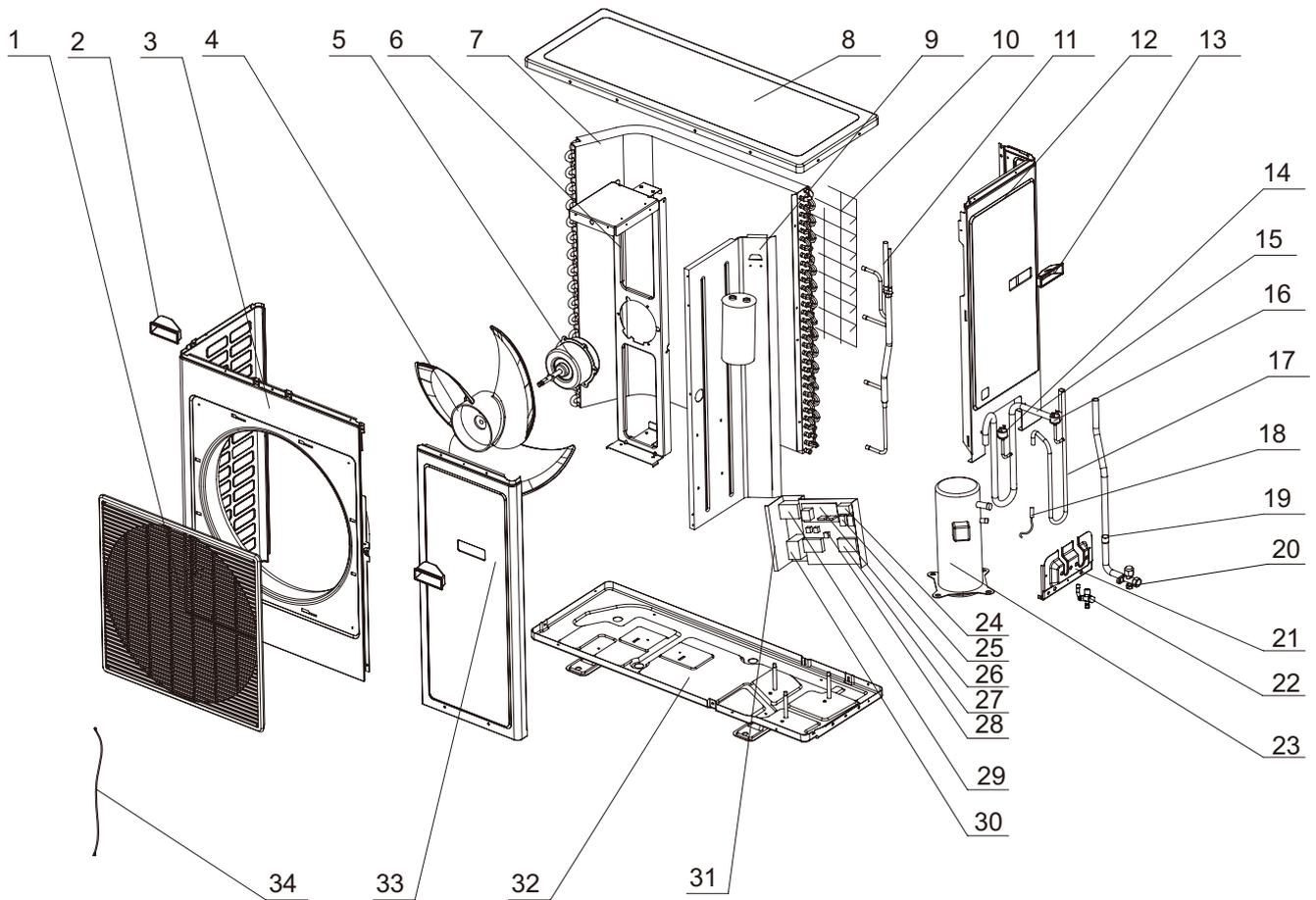
Model:GVH24AG-K1NNA5A/O



NO.	Description	Part Code	Qty
		GVH24AG-K1NNA5A/O	
	Product Code	CG090W0040	
1	Front Grill	22414102	1
2	Cabinet	01433017P	1
3	Axial Flow Fan	10338731	1
4	Fan Motor	1501542103	1
5	Motor Support	01703027	1
6	Condenser Assy	01105163	1
7	Coping	01255013P	1
8	Rear Grill	01473028	1
9	Electric Box Assy	014052294	1
10	Electric Box Cover Plate	01413047	1
11	Capacitor CBB65	33000039	1
12	Capacitor CBB61	33010010	1
13	AC Contactor	44010256	1
14	Terminal Board	42011103	1
15	Terminal Board	42011113	1
16	Terminal Board	42011147	1
17	Discharge Tube 1	03615544	1
18	Magnet Coil	430004002	1
19	4-Way Valve Assy	03025255	1
20	Tube sensor	390001214	1
21	Rear Side Plate Sub-Assy	01303271P	1
22	Capillary Sub-assy	03005075	1
23	Left Handle	26235401	1
24	Gas Valve Sub-Assy	07105252	1
25	Valve Support Sub-Assy	01715001	1
26	Cut off Valve	071302113	1
27	Compressor and Fittings	00105018	1
28	Mid Clapboard Sub-assy	012330241	1
29	Drainage Connector	06123401	1
30	Drainage hole Cap	06813401	3
31	Chassis Sub-assy	012052073	1
32	Front Side Plate	01303309P	1
33	Handle	26235253	2

The data above are subject to change without notice.

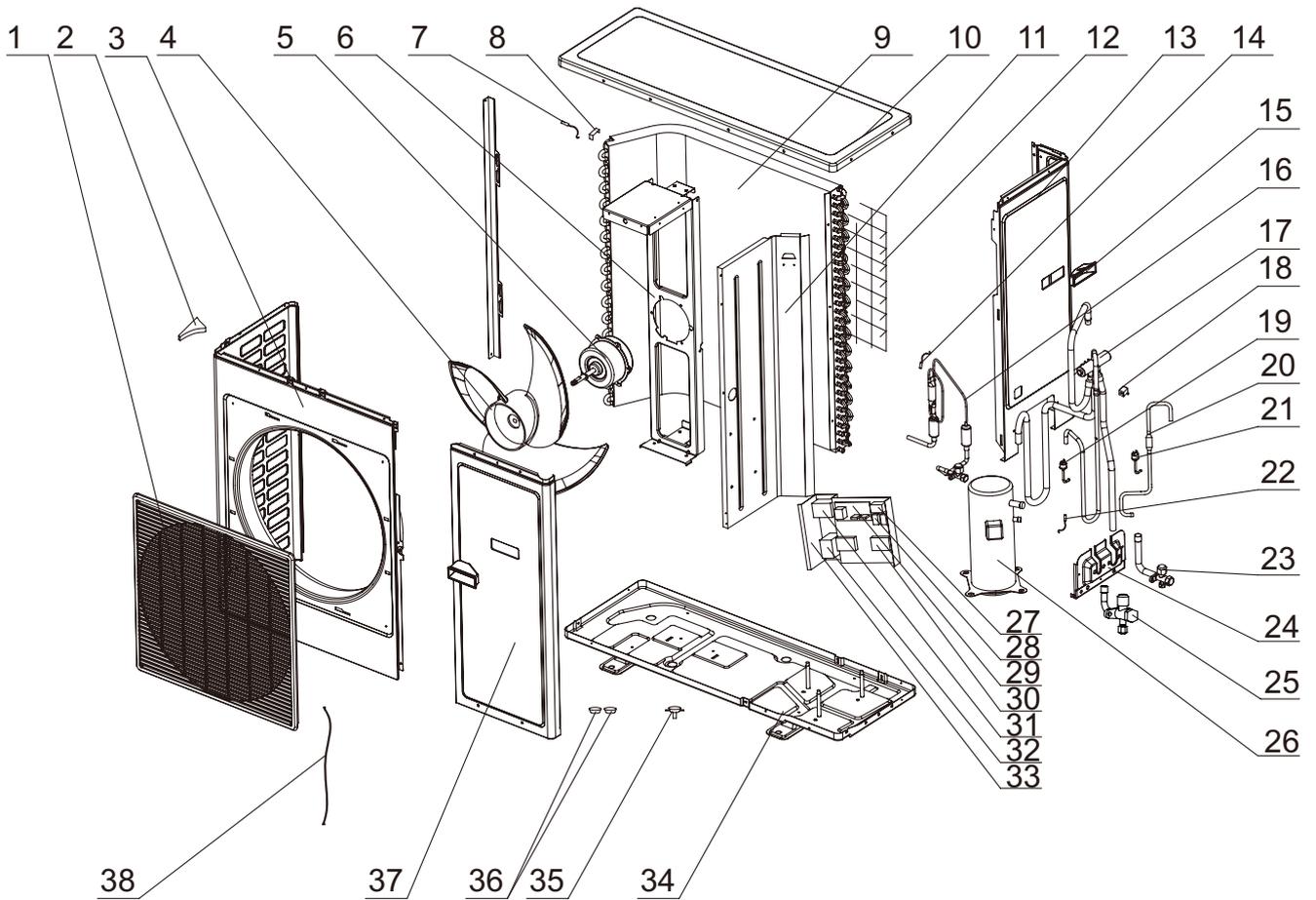
Model:GVC36AH-M1NNA5A/O



NO.	Description	Part Code	Qty
		GVC36AH-M1NNA5A/O	
	Product Code	CG090W0050	
1	Front Grill	22265401	1
2	Left Handle	26235401	1
3	Cabinet	01435103P	1
4	Axial Flow Fan	10335401	1
5	Fan Motor	15015401	1
6	Motor Support	01705401	1
7	Condenser Assy	01105171	1
8	Coping	01255012P	1
9	Clapboard Sub-Assy	01235403	1
10	Rear Grill	01475401	1
11	Condenser Outlet Pipe Sub-assy	03225487	1
12	Rear Side Plate Sub-Assy	01305402	1
13	Handle	26235253	2
14	Pressure Protect Switch	46020007	1
15	Inhalation tube Assy	03635375	1
16	Pressure Protect Switch	46020003	1
17	Discharge Tube Sub-assy	03635354	1
18	Air-out Temp Sensor	39000163	1
19	Gas Returnning Pipe Sub-assy	03635376	1
20	Gas Valve Sub-Assy	07103401	1
21	Valve Support Sub-Assy	01715001	1
22	Cut off Valve	071302115	1
23	Compressor and Fittings	00120215	1
24	Capacitor CBB61	33010010	1
25	Terminal Board	42011103	2
26	Over Current Protector	46020112	1
27	Terminal Board	42011222	1
28	Terminal Board	42010258	1
29	Anti-phase Protector	46020052	1
30	AC Contactor	44010226	1
31	Electric Box Assy	01405673	1
32	Chassis Sub-assy	01205404	1
33	Front Side Plate Sub-Assy	01305507	1
34	Electrical Heater	76515407	1

The data above are subject to change without notice.

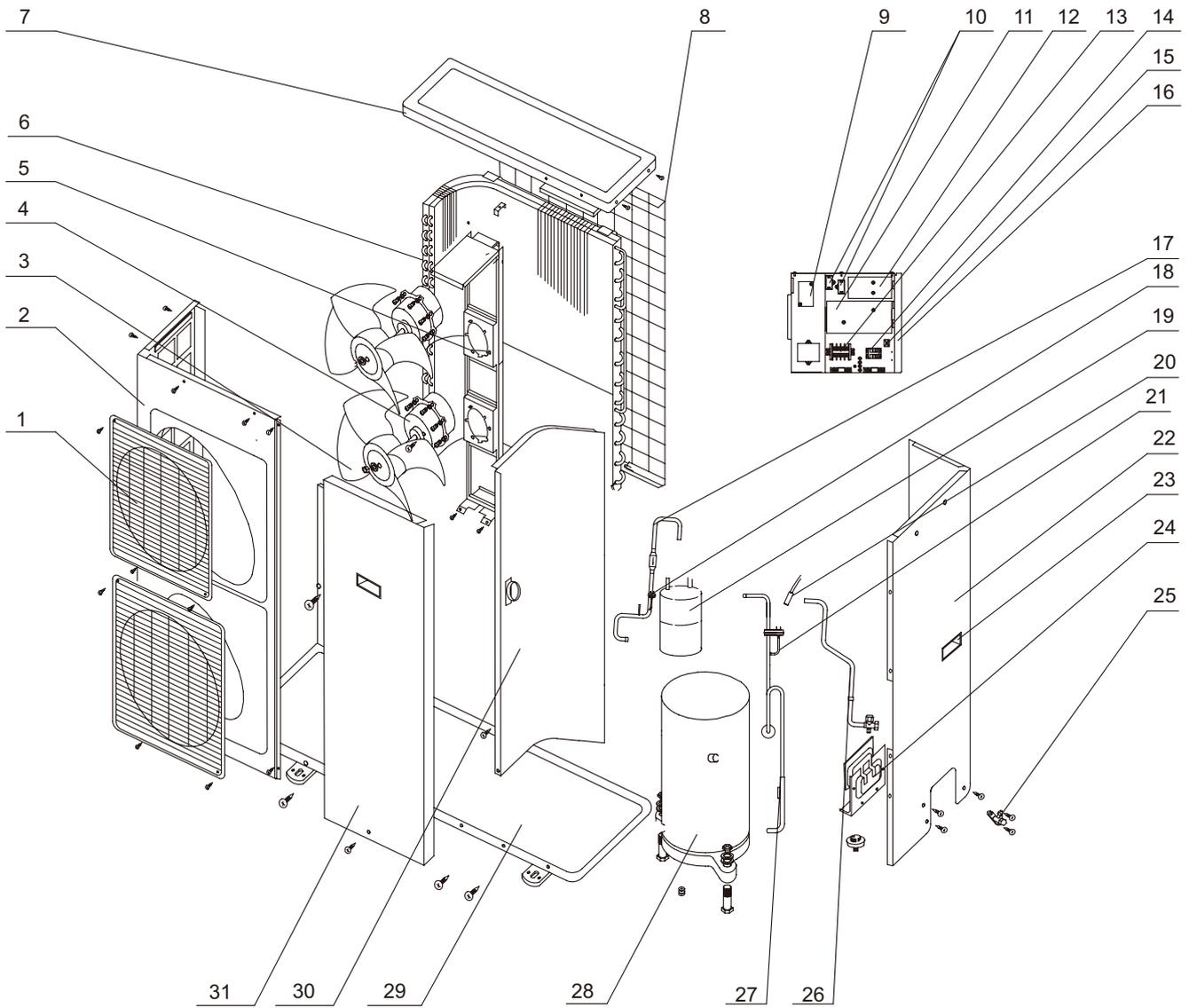
Model:GVH36AH-M1NNA5A/O



NO.	Description	Part Code		Qty
		GVH36AH-M1NNA5A/O		
		Product Code	CG090W0060	
1	Front Grill	22265401	1	
2	Left Handle	26235401	1	
3	Cabinet	01435103P	1	
4	Axial Flow Fan	10335401	1	
5	Fan Motor	15015401	1	
6	Motor Support	01705401	1	
7	Ambient Temperature Sensor	39000199	1	
8	Sensor Support	24215101	1	
9	Condenser Assy	01105250	1	
10	Coping	01255012P	1	
11	Clapboard Sub-Assy	01235403	1	
12	Rear Grill	01475401	1	
13	Rear Side Plate Sub-Assy	01305402	1	
14	Outdoor Tube Sensor	39000194	1	
15	Handle	26235253	2	
16	Assistant Capillary Sub-Assy	03005231	1	
17	4-Way Valve Assy	03025224	1	
18	Magnet Coil	430004002	1	
19	Pressure Protect Switch	46020003	1	
20	Inhalation tube Assy	03635375	1	
21	Pressure Protect Switch	46020007	1	
22	Air-out Temp Sensor	39000163	1	
23	Cut off Valve Sub-Assy	071302338	1	
24	Valve Support Sub-Assy	01715402	1	
25	Gas Valve Sub-Assy	07105405	1	
26	Compressor and Fittings	00120215	1	
27	Capacitor CBB61	33010010	1	
28	Terminal Board	42011103	2	
29	Over Current Protector	46020112	1	
30	Terminal Board	42010258	2	
31	Anti-phase Protector	46020052	1	
32	AC Contactor	44010226	1	
33	Electric Box Assy	01405670	1	
34	Chassis Sub-assy	01205404	1	
35	Drainage Connector	06123401	1	
36	Drainage hole Cap	06813401	2	
37	Front Side Plate Sub-Assy	01305507	1	
38	Electrical Heater	76515407	1	

The data above are subject to change without notice.

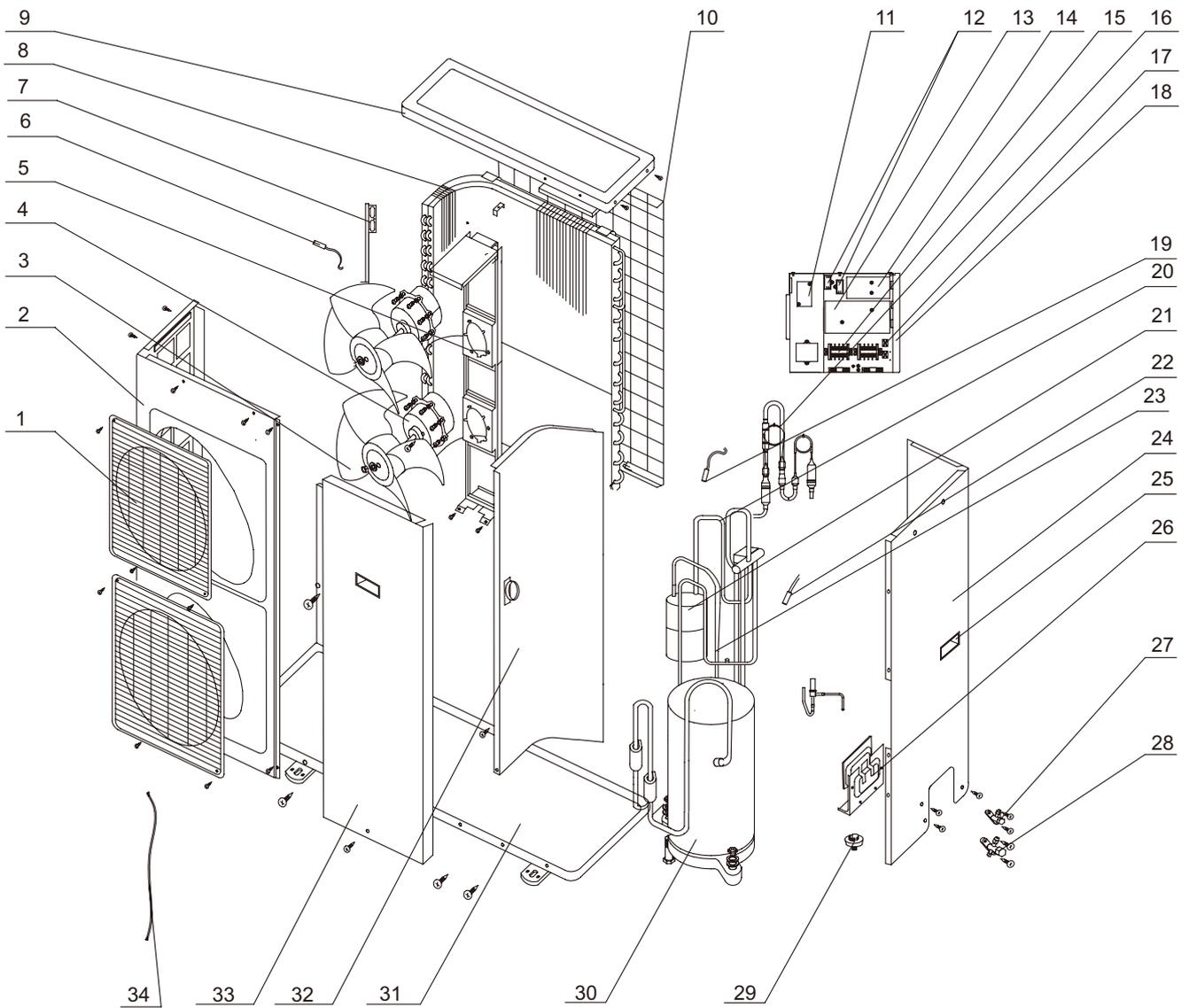
Model:GVC42AH-M1NNA5A/O



NO.	Description	Part Code		Qty
		GVC42AH-M1NNA5A/O		
		Product Code	CG090W0070	
1	Front Grill	22414102	2	
2	Cabinet	01435436	1	
3	Axial Flow Fan	10338731	2	
4	Fan Motor	15015421	2	
5	Motor Support Sub-Assy	01705433	1	
6	Condenser Assy	0110506501	1	
7	Coping	01255013P	1	
8	Rear Grill	01475432	1	
9	AC Contactor	44010226	1	
10	Capacitor CBB61	33010010	2	
11	Over Current Protector	46020112	1	
12	Anti-phase Protector	46020052	1	
13	Terminal Board	42011103	2	
14	Terminal Board	42011222	1	
15	Terminal Board	42010258	1	
16	Electric Box Assy	01405672	1	
17	Inhalation Tube Sub-assy	03533006	1	
18	Pressure Protect Switch	46020003	1	
19	Gas-liquid Separator Sub-Assy	07225018	1	
20	Air-out Temp Sensor	39000163	1	
21	Pressure Protect Switch	46020007	1	
22	Rear Side Plate Sub-Assy	01303712	1	
23	Handle	26235253	3	
24	Valve Support Sub-Assy	01715001	1	
25	Gas Valve Sub-Assy	071034011	1	
26	Gas Returnning Pipe assy	03635434	1	
27	Discharge Tube Sub-assy	0353300502	1	
28	Compressor and Fittings	00120137	1	
29	Chassis Sub-assy	01205438	1	
30	Clapboard Sub-Assy	01235440	1	
31	Front Side Plate Sub-Assy	01305034	1	

The data above are subject to change without notice.

Model:GVH42AH-M1NNA5A/O



NO.	Description	Part Code	Qty
		GVH42AH-M1NNA5A/O	
Product Code		CG090W0080	
1	Front Grill	22414102	2
2	Cabinet	01435436	1
3	Axial Flow Fan	10338731	2
4	Fan Motor	15015421	2
5	Motor Support Sub-Assy	01705433	1
6	Ambient Temperature Sensor	39000199	1
7	Condenser support plate	01175090	1
8	Condenser Assy	01105299	1
9	Coping	01255013P	1
10	Rear Grill	01475432	1
11	AC Contactor	44010226	1
12	Capacitor CBB61	33010010	2
13	Over Current Protector	46020112	1
14	Anti-phase Protector	46020052	1
15	Terminal Board	42011103	2
16	Assistant Capillary Sub-Assy	0300515701	1
17	Terminal Board	42010258	2
18	Electric Box Assy	01405671	1
19	Outdoor Tube Sensor	39000194	1
20	4-Way Valve Assy	03025145	1
21	Gas-liquid Separator Sub-Assy	07225018	1
22	Air-out Temp Sensor	39000163	1
23	Inhalation Tube Sub-assy	03635440	1
24	Rear Side Plate Sub-Assy	01303712	1
25	Handle	26235253	3
26	Valve Support Sub-Assy	01715001	1
27	Cut off Valve	071302114	1
28	Gas Valve Sub-Assy	071034011	1
29	Drainage Connector	06123401	1
30	Compressor and Fittings	00105001	1
31	Chassis Sub-assy	0120543804	1
32	Clapboard Sub-Assy	01235440	1
33	Front Side Plate Sub-Assy	01305034	1
34	Electrical Heater(Compressor)	76515404	1

The data above are subject to change without notice.

9. Troubleshooting

9.1 Precautions before Performing Inspection or Repair

Be cautious during installation and maintenance. Do operation following the regulations to avoid electric shock and casualty or even death due to drop from high attitude.

* Static maintenance is the maintenance during de-energization of the air conditioner.

For static maintenance, make sure that the unit is de-energized and the plug is disconnected.

*dynamic maintenance is the maintenance during energization of the unit.

Before dynamic maintenance, check the electricity and ensure that there is ground wire on the site. Check if there is electric ity on the housing and connection copper pipe of the air conditioner with voltage tester . After ensure insulation place and the safety, the maintenance can be performed.

Take sufficient care to avoid directly touching any of the circuit parts without first turning off the power.

At times such as when the circuit board is to be replaced, place the circuit board assembly in a vertical position.

Normally,diagnose troubles according to the trouble diagnosis procedure as described below.(Refer to the check points in servicing written on the wiring diagrams attached to the indoor/outdoor units.)

NO.	Troubleshooting procedure
1	Confirmation
2	Judgement by Flashing LED of Indoor/Outdoor Unit
3	How to Check simply the main part

Precautions when inspecting the control section of the outdoor unit :

A large-capacity electrolytic capacitor is used in the outdoor unit controller (inverter).Therefore,if the power supply is turned off,charge(charging voltage DC280V to 380V)remains and discharging takes a lot of time.. After turning off the power source,if touching the charging section before discharging, an electrical shock may be caused.

Please open the outdoor unit after the unit is power off for 20min.

9.2 Confirmation

(1)Confirmation of Power Supply

Confirm that the power breaker operates(ON) normally;

(2)Confirmation of Power Voltage

Confirm that power voltage is AC 380–415 ± 10%.

If power voltage is not in this range, the unit may not operate normally .

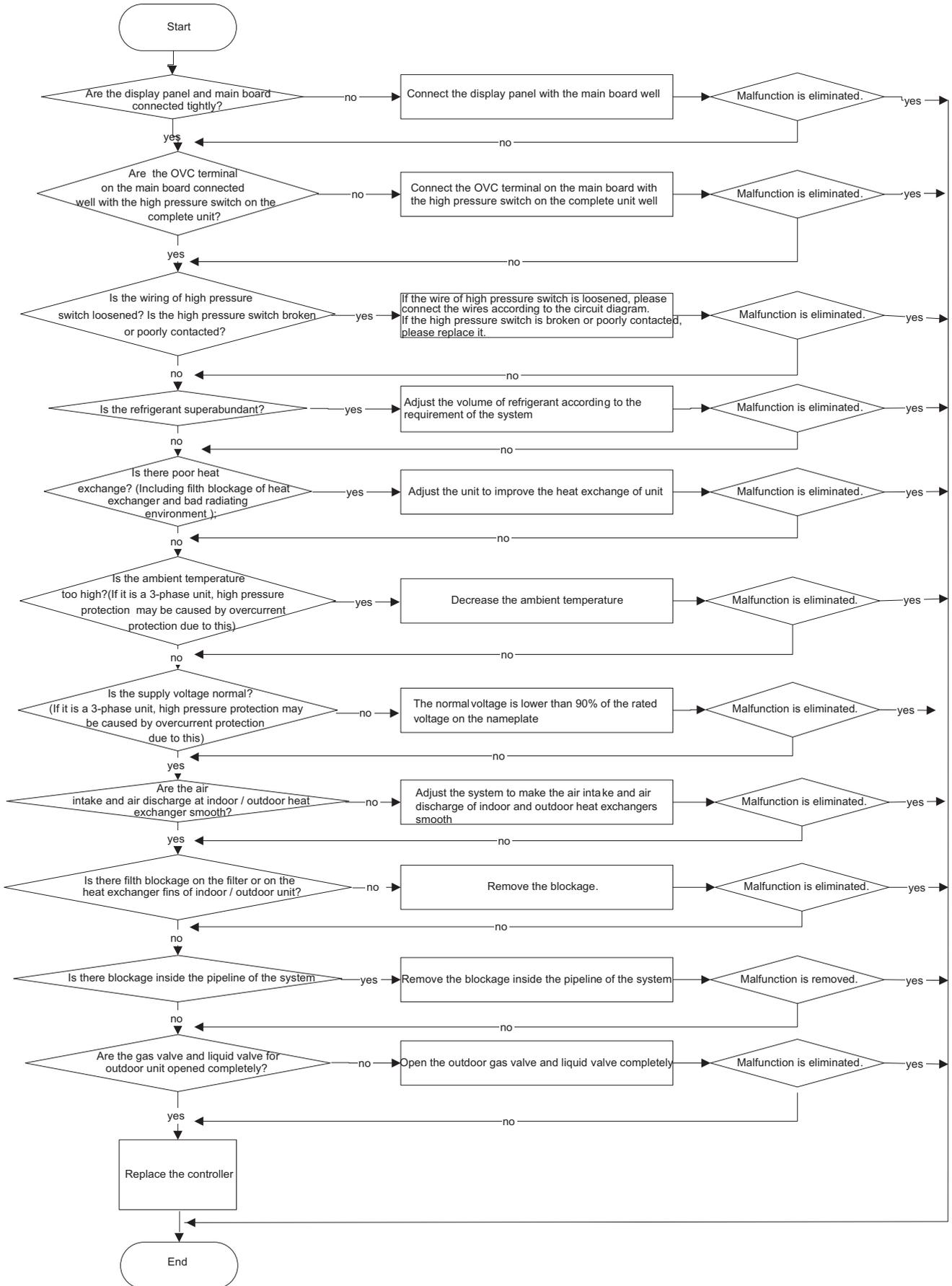
9.3 Judgement by Flashing LED of Indoor/Outdoor Unit

No.	Malfunction Name	Display Method of Indoor Unit				A/C Status	Possible Causes
		Error Code	Indicator lamp				
			(During blinking, ON for 0.5S and OFF for 0.5 S)				
Operation Lamp	COOL Lamp	HEAT Lamp					
1	High pressure protection	E1	OFF 1S and blinks once			<p>During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, if it is inverter unit, the complete unit stops; if it is floor standing unit, the complete unit stops and operation of remote controller or controller is unavailable.</p>	<ol style="list-style-type: none"> 1. The main board and the display panel are not connected well. 2. The OVC terminal on main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of high pressure switch is loosened. 4. Refrigerant is superabundant; 5. Poor heat exchange (including blocked heat exchanger and bad radiating environment); 6. Ambient temperature is too high; (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 7. The supply voltage is abnormal (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 8. The air intake and air discharge at indoor / outdoor heat exchanger are not smooth. The air cycle is short circuited. 9. Filter and heat exchange fins of indoor/ outdoor units are blocked. 10. The system pipeline is blocked. 11. The gas valve and liquid valve for outdoor unit are not completely opened. 12. The OVC input is at high level.
2	Low pressure protection of compressor	E3	OFF 1S and blinks once			<p>The complete unit stops</p>	<ol style="list-style-type: none"> 1. The main board and display panel are not connected well. 2. The LPP terminal on the main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of the high pressure switch is loosened. High pressure switch is damaged or poorly contacted. 4. Insufficient or leaking out refrigerant. 5. The LPP input is at high level.
3	High discharge temperature protection of compressor	E4	OFF 1S and blinks once			<p>During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.</p>	<ol style="list-style-type: none"> 1. Abnormal system (e.g.: blockage, etc) 2. Abnormal rotation speed of outdoor motor (cooling) 3. Abnormal air intake (cooling) 4. System is normal, but the compressor discharge temperature sensor is abnormal or poorly contacted.

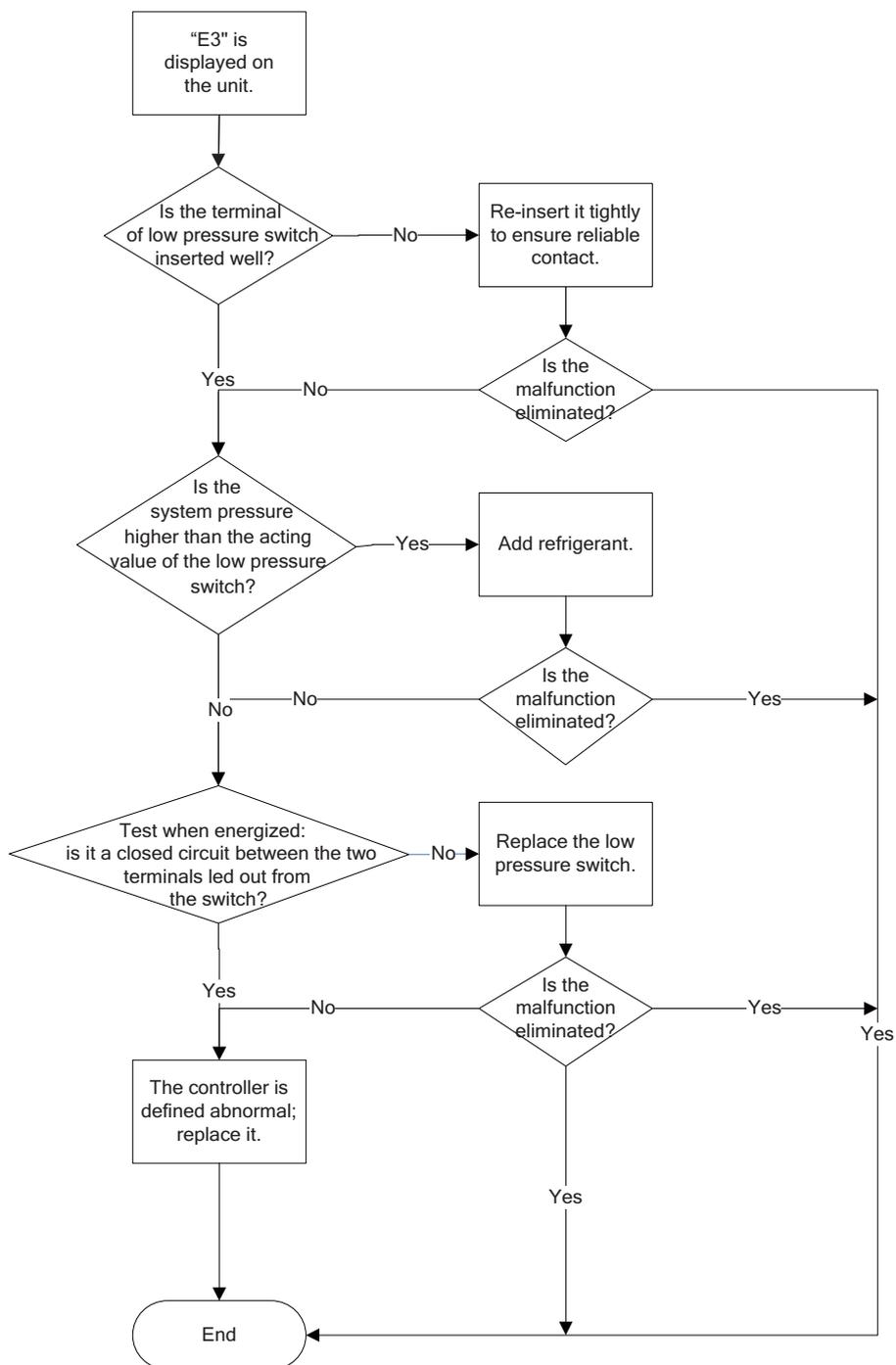
4	Overcurrent protection	E5	OFF 1S and blinks once		<p>During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.</p>	<ol style="list-style-type: none"> 1. Unstable supply voltage. Normal fluctuation shall be within 10% of the rated voltage on the nameplate. 2. Supply voltage is too low and load is too high. 3. Measure the current of live wire on main board. If the current isn't higher than the overcurrent protection value, please check the controller. 4. The indoor and outdoor heat exchangers are too dirty, or the air inlet and air outlet are blocked. 5. The fan motor is not running. Abnormal fan speed: fan speed is too low or the fan doesn't run 6. The compressor is not running normally. There is abnormal sound, oil leakage or the temperature of the shell is too high, etc. 7. There's blockage in the system(filth blockage, ice plug, greasy blockage, Y-valve hasn't been opened completely)
---	------------------------	----	------------------------	--	--	--

9.4 How to Check Simply the Main Part

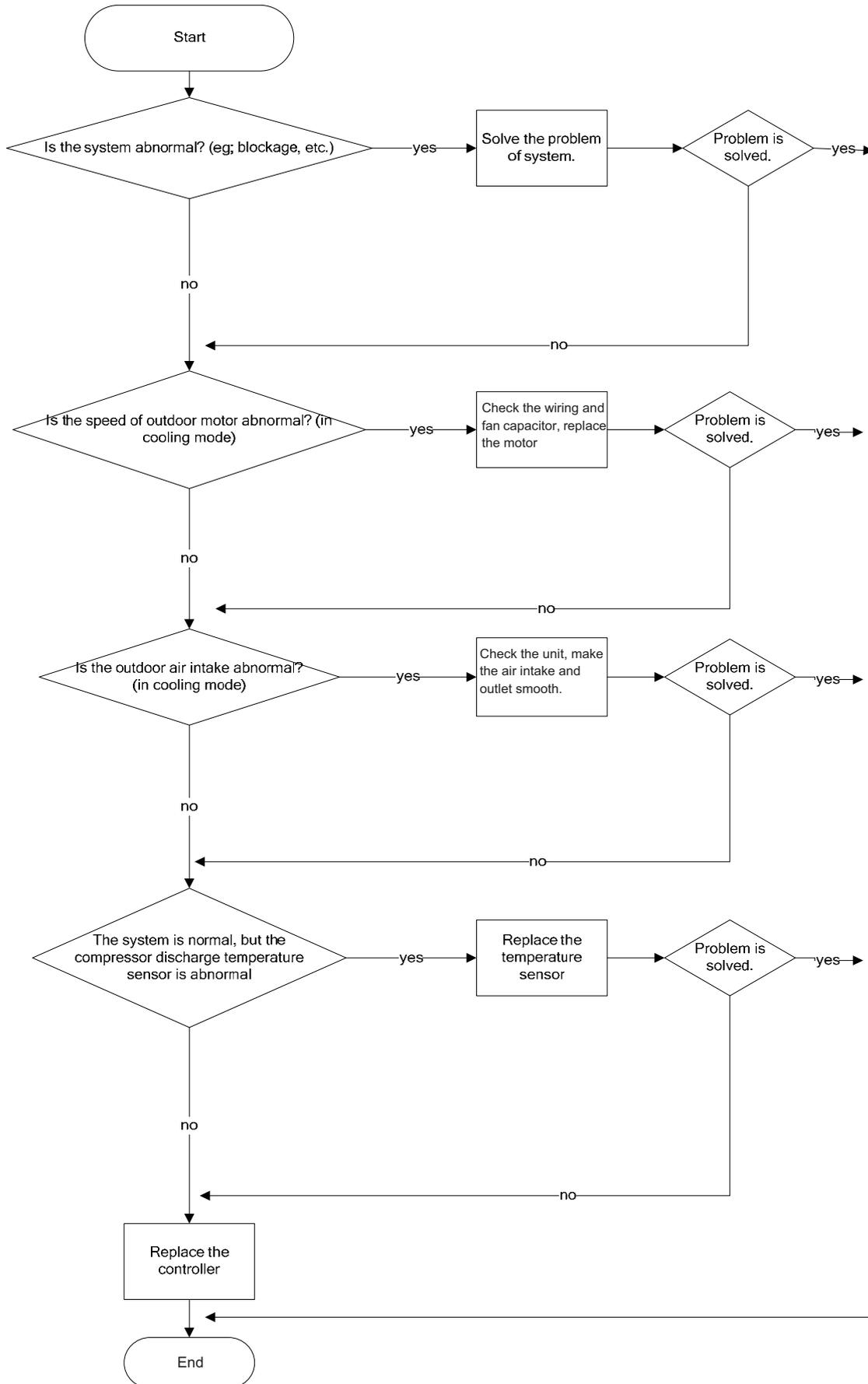
(1) High pressure protection (E1)



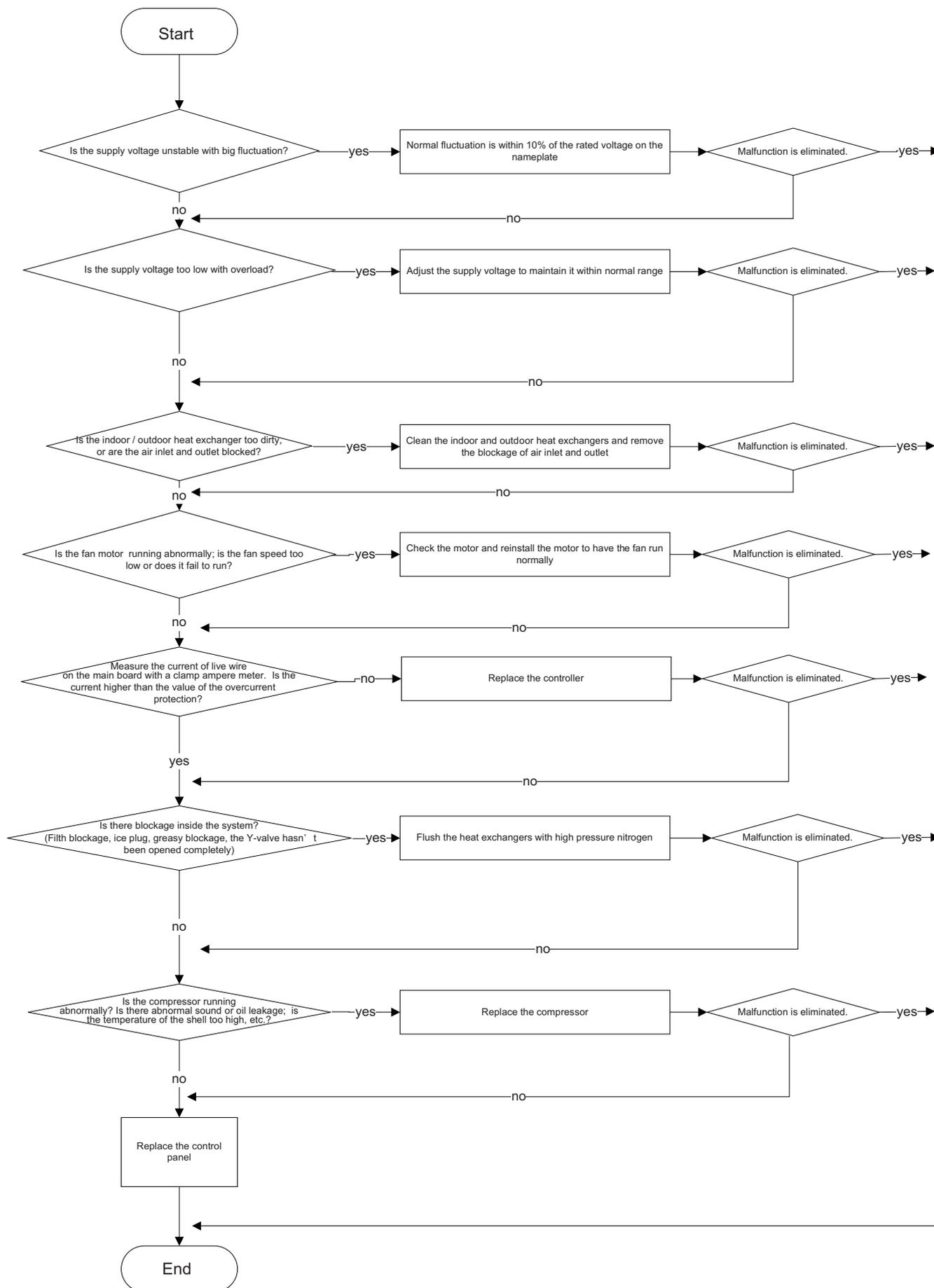
(2) Low pressure protection of compressor (E3)



(3) High discharge temperature protection of compressor (E4)



(4) Overcurrent protection (E5)



Appendix 1: Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(15K)

Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance(kΩ)
-19	138.1	20	18.75	59	3.848	98	1.071
-18	128.6	21	17.93	60	3.711	99	1.039
-17	121.6	22	17.14	61	3.579	100	1.009
-16	115	23	16.39	62	3.454	101	0.98
-15	108.7	24	15.68	63	3.333	102	0.952
-14	102.9	25	15	64	3.217	103	0.925
-13	97.4	26	14.36	65	3.105	104	0.898
-12	92.22	27	13.74	66	2.998	105	0.873
-11	87.35	28	13.16	67	2.896	106	0.848
-10	82.75	29	12.6	68	2.797	107	0.825
-9	78.43	30	12.07	69	2.702	108	0.802
-8	74.35	31	11.57	70	2.611	109	0.779
-7	70.5	32	11.09	71	2.523	110	0.758
-6	66.88	33	10.63	72	2.439	111	0.737
-5	63.46	34	10.2	73	2.358	112	0.717
-4	60.23	35	9.779	74	2.28	113	0.697
-3	57.18	36	9.382	75	2.206	114	0.678
-2	54.31	37	9.003	76	2.133	115	0.66
-1	51.59	38	8.642	77	2.064	116	0.642
0	49.02	39	8.297	78	1.997	117	0.625
1	46.6	40	7.967	79	1.933	118	0.608
2	44.31	41	7.653	80	1.871	119	0.592
3	42.14	42	7.352	81	1.811	120	0.577
4	40.09	43	7.065	82	1.754	121	0.561
5	38.15	44	6.791	83	1.699	122	0.547
6	36.32	45	6.529	84	1.645	123	0.532
7	34.58	46	6.278	85	1.594	124	0.519
8	32.94	47	6.038	86	1.544	125	0.505
9	31.38	48	5.809	87	1.497	126	0.492
10	29.9	49	5.589	88	1.451	127	0.48
11	28.51	50	5.379	89	1.408	128	0.467
12	27.18	51	5.197	90	1.363	129	0.456
13	25.92	52	4.986	91	1.322	130	0.444
14	24.73	53	4.802	92	1.282	131	0.433
15	23.6	54	4.625	93	1.244	132	0.422
16	22.53	55	4.456	94	1.207	133	0.412
17	21.51	56	4.294	95	1.171	134	0.401
18	20.54	57	4.139	96	1.136	135	0.391
19	19.63	58	3.99	97	1.103	136	0.382

Appendix 2: Resistance Table of Outdoor and Indoor Tube Temperature Sensors(20K)

Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance(kΩ)
-19	181.4	20	25.01	59	5.13	98	1.427
-18	171.4	21	23.9	60	4.948	99	1.386
-17	162.1	22	22.85	61	4.773	100	1.346
-16	153.3	23	21.85	62	4.605	101	1.307
-15	145	24	20.9	63	4.443	102	1.269
-14	137.2	25	20	64	4.289	103	1.233
-13	129.9	26	19.14	65	4.14	104	1.198
-12	123	27	18.13	66	3.998	105	1.164
-11	116.5	28	17.55	67	3.861	106	1.131
-10	110.3	29	16.8	68	3.729	107	1.099
-9	104.6	30	16.1	69	3.603	108	1.069
-8	99.13	31	15.43	70	3.481	109	1.039
-7	94	32	14.79	71	3.364	110	1.01
-6	89.17	33	14.18	72	3.252	111	0.983
-5	84.61	34	13.59	73	3.144	112	0.956
-4	80.31	35	13.04	74	3.04	113	0.93
-3	76.24	36	12.51	75	2.94	114	0.904
-2	72.41	37	12	76	2.844	115	0.88
-1	68.79	38	11.52	77	2.752	116	0.856
0	65.37	39	11.06	78	2.663	117	0.833
1	62.13	40	10.62	79	2.577	118	0.811
2	59.08	41	10.2	80	2.495	119	0.77
3	56.19	42	9.803	81	2.415	120	0.769
4	53.46	43	9.42	82	2.339	121	0.746
5	50.87	44	9.054	83	2.265	122	0.729
6	48.42	45	8.705	84	2.194	123	0.71
7	46.11	46	8.37	85	2.125	124	0.692
8	43.92	47	8.051	86	2.059	125	0.674
9	41.84	48	7.745	87	1.996	126	0.658
10	39.87	49	7.453	88	1.934	127	0.64
11	38.01	50	7.173	89	1.875	128	0.623
12	36.24	51	6.905	90	1.818	129	0.607
13	34.57	52	6.648	91	1.736	130	0.592
14	32.98	53	6.403	92	1.71	131	0.577
15	31.47	54	6.167	93	1.658	132	0.563
16	30.04	55	5.942	94	1.609	133	0.549
17	28.68	56	5.726	95	1.561	134	0.535
18	27.39	57	5.519	96	1.515	135	0.521
19	26.17	58	5.32	97	1.47	136	0.509

Appendix 3: Resistance Table of Outdoor Discharge Temperature Sensor(50K)

Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance (kΩ)	Temp. (°C)	Resistance(kΩ)
-29	853.5	10	98	49	18.34	88	4.754
-28	799.8	11	93.42	50	17.65	89	4.609
-27	750	12	89.07	51	16.99	90	4.469
-26	703.8	13	84.95	52	16.36	91	4.334
-25	660.8	14	81.05	53	15.75	92	4.204
-24	620.8	15	77.35	54	15.17	93	4.079
-23	580.6	16	73.83	55	14.62	94	3.958
-22	548.9	17	70.5	56	14.09	95	3.841
-21	516.6	18	67.34	57	13.58	96	3.728
-20	486.5	19	64.33	58	13.09	97	3.619
-19	458.3	20	61.48	59	12.62	98	3.514
-18	432	21	58.77	60	12.17	99	3.413
-17	407.4	22	56.19	61	11.74	100	3.315
-16	384.5	23	53.74	62	11.32	101	3.22
-15	362.9	24	51.41	63	10.93	102	3.129
-14	342.8	25	49.19	64	10.54	103	3.04
-13	323.9	26	47.08	65	10.18	104	2.955
-12	306.2	27	45.07	66	9.827	105	2.872
-11	289.6	28	43.16	67	9.489	106	2.792
-10	274	29	41.34	68	9.165	107	2.715
-9	259.3	30	39.61	69	8.854	108	2.64
-8	245.6	31	37.96	70	8.555	109	2.568
-7	232.6	32	36.38	71	8.268	110	2.498
-6	220.5	33	34.88	72	7.991	111	2.431
-5	209	34	33.45	73	7.726	112	2.365
-4	198.3	35	32.09	74	7.47	113	2.302
-3	199.1	36	30.79	75	7.224	114	2.241
-2	178.5	37	29.54	76	6.998	115	2.182
-1	169.5	38	28.36	77	6.761	116	2.124
0	161	39	27.23	78	6.542	117	2.069
1	153	40	26.15	79	6.331	118	2.015
2	145.4	41	25.11	80	6.129	119	1.963
3	138.3	42	24.13	81	5.933	120	1.912
4	131.5	43	23.19	82	5.746	121	1.863
5	125.1	44	22.29	83	5.565	122	1.816
6	119.1	45	21.43	84	5.39	123	1.77
7	113.4	46	20.6	85	5.222	124	1.725
8	108	47	19.81	86	5.06	125	1.682
9	102.8	48	19.06	87	4.904	126	1.64

Note: The information above is for reference only.

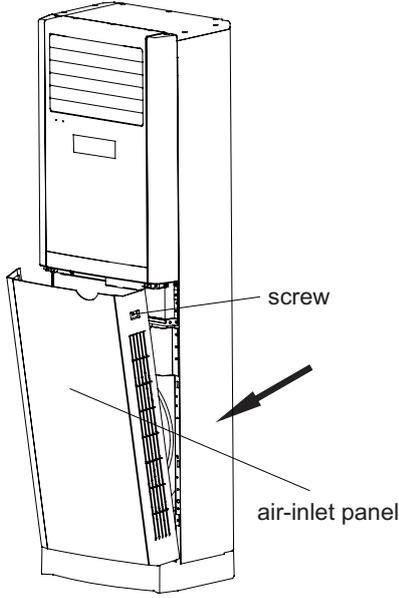
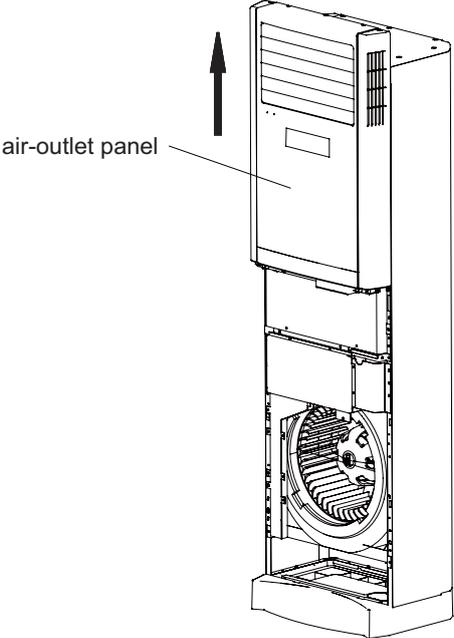
10. Removal Procedure

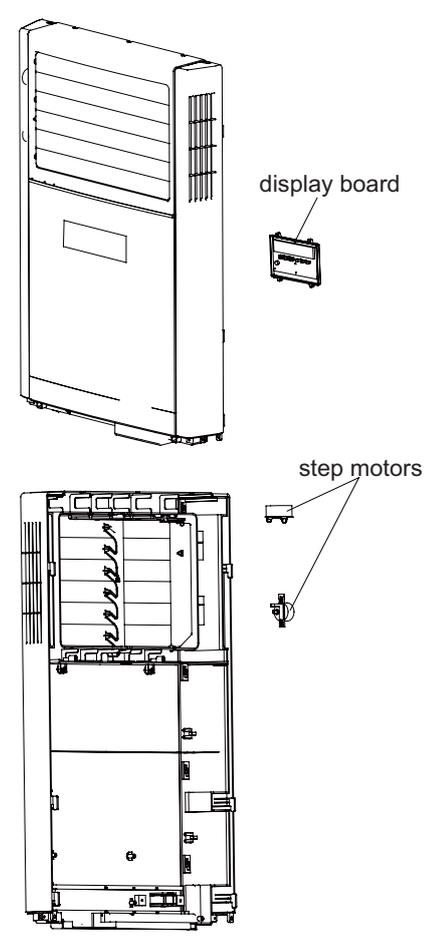
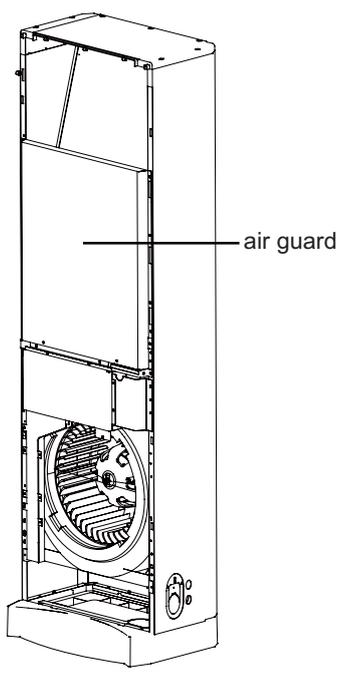
10.1 Removal Procedure of Indoor Unit

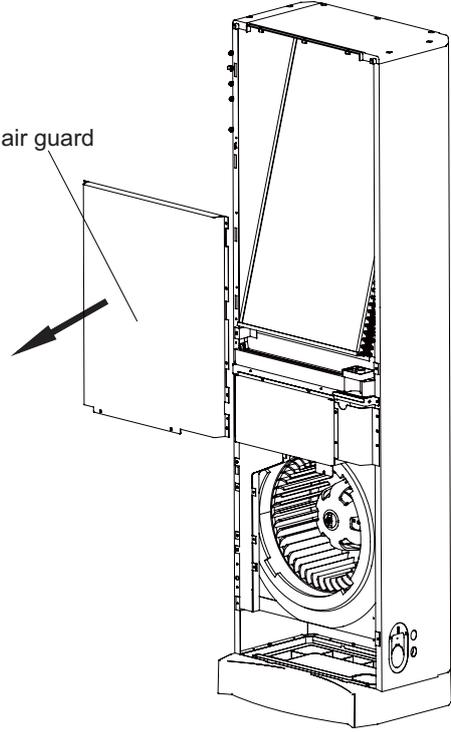
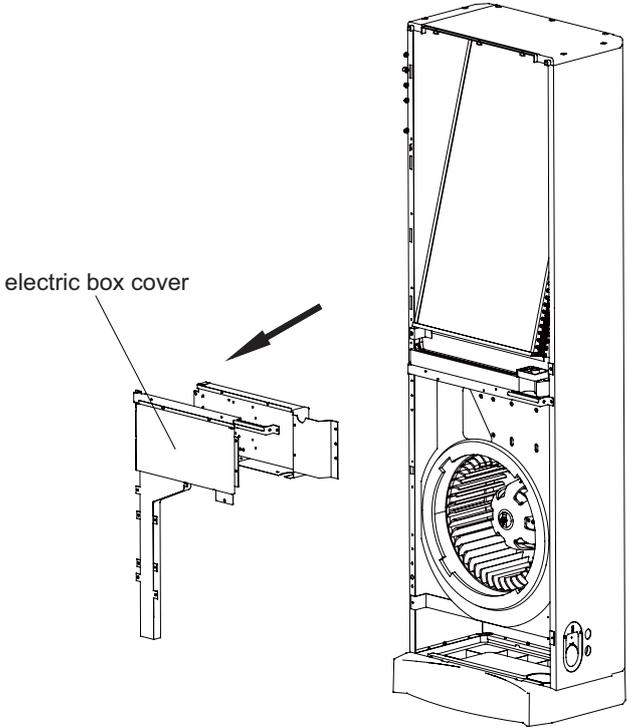


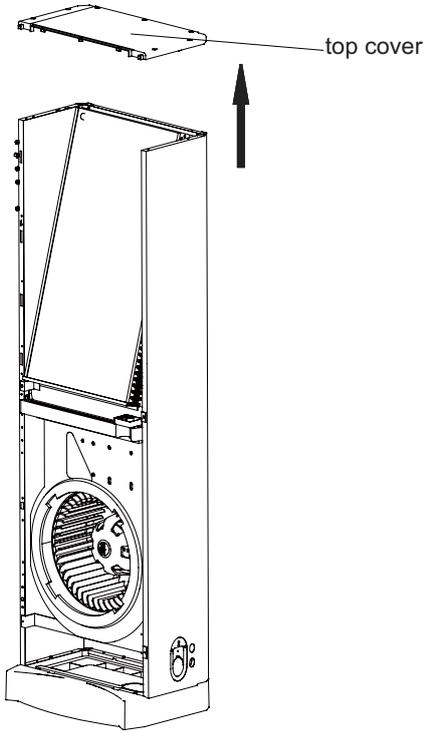
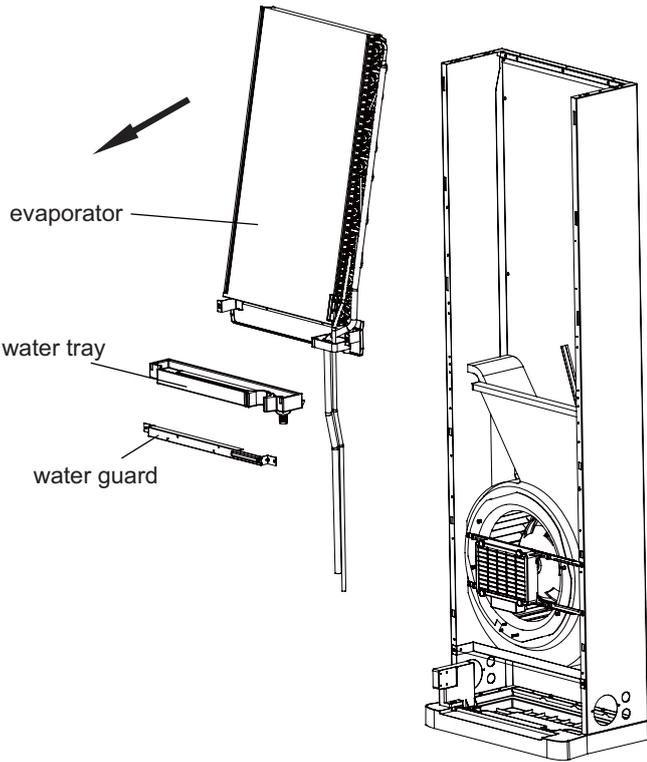
Warning

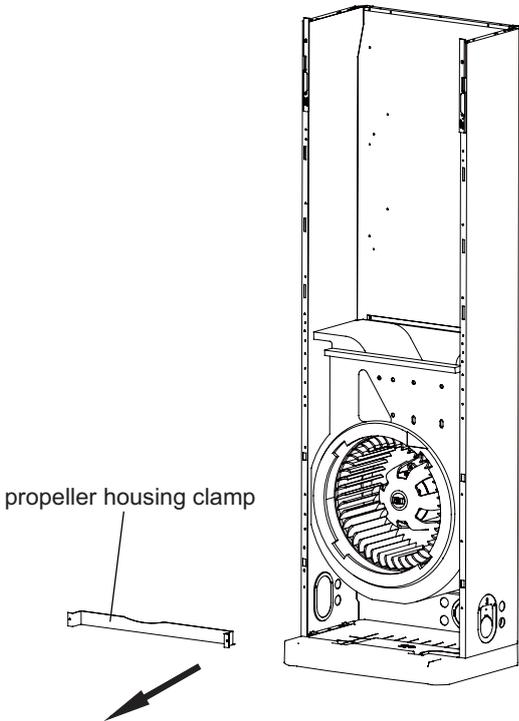
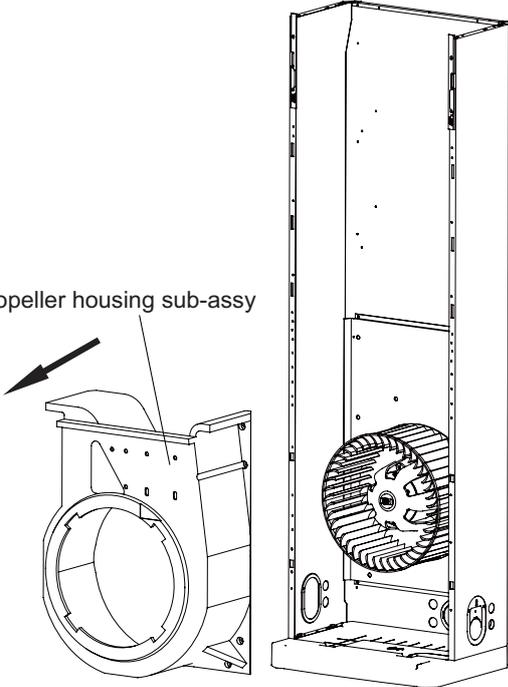
Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

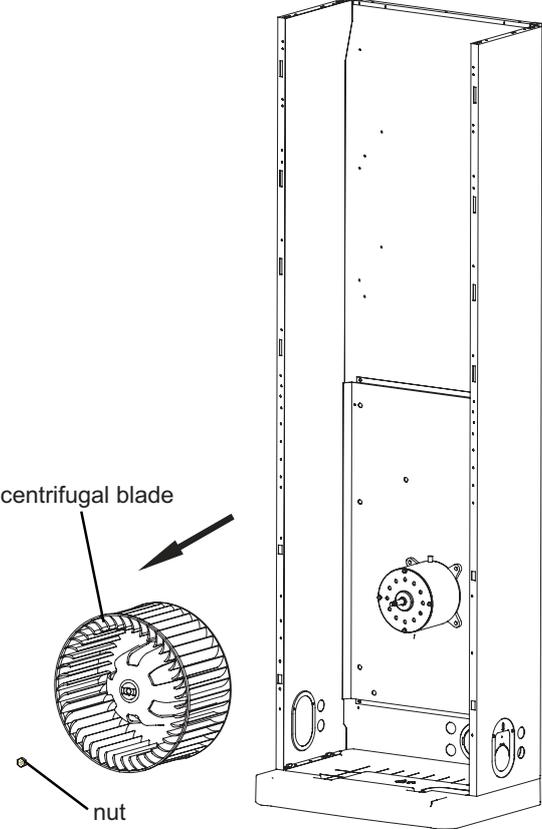
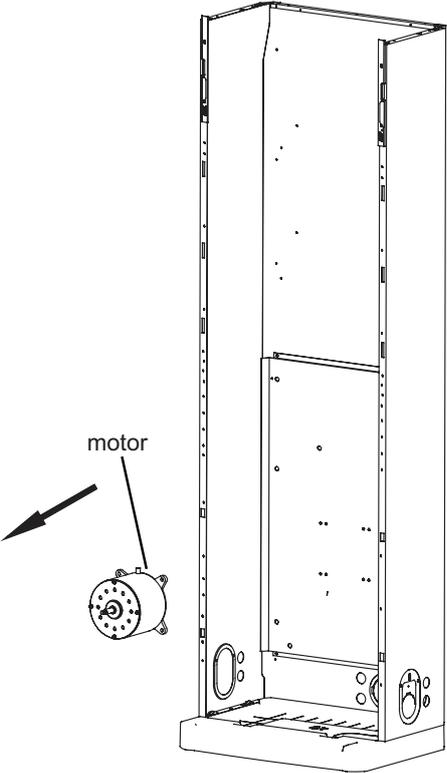
Steps	Procedure
<p>1. Remove air-inlet panel</p>	<p>Remove the screw stopper; remove the screws fixing air-inlet panel and pull the upper part of air-inlet panel outwards.</p> 
<p>2. Remove air-outlet panel</p>	<p>Remove the screws fixing the top and lower part of air-outlet panel; push the air-outlet panel upwards slightly and then remove the air-outlet panel.</p> 

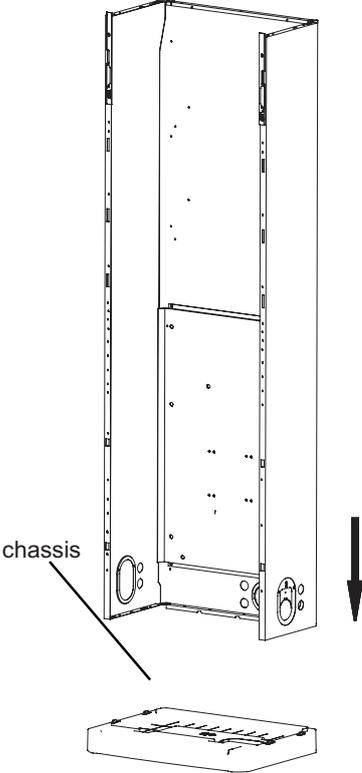
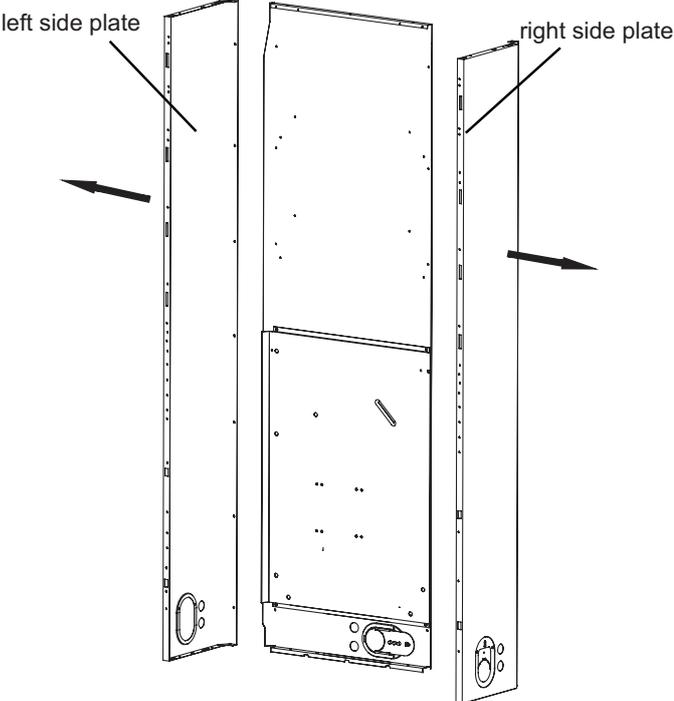
Steps	Procedure
<p>3. Remove display board, horizontal swing motor and vertical swing motor</p>	<p>Remove the screws fixing controller box; remove the controller box cover to remove the display board; remove the screw fixing motor in the air-outlet panel sub-assy; remove the horizontal swing motor and vertical swing motor.</p> 
<p>4. Remove air guard</p>	<p>Remove the screw fixing air guard and then remove the air guard.</p> 

Steps	Procedure	
		 <p>air guard</p>
5. Remove electric box assy		
	<p>Remove the screw fixing electric box cover to remove the electric box cover; disconnect each wiring terminal; remove the relevant electrical elements according to the requirement; remove the screw fixing electric box to remove the electric box assy.</p>	 <p>electric box cover</p>

Steps	Procedure
<p>6. Remove top cover</p>	<p>Remove the screw fixing top cover to remove the top cover.</p> 
<p>7. Remove evaporator assy</p>	<p>Remove the screws fixing the top connection plate and lower connection plate of evaporator; pull the left side plate and right side plate outwards slightly to remove the evaporator, water guard and water tray; after removing the evaporator, remove the left and right air guard and water guard at the top side of evaporator.</p> 

Steps	Procedure
<p data-bbox="108 293 481 322">8. Remove propeller housing clamp</p> <p data-bbox="213 434 676 577">Remove the screws fixing propeller housing clamp and then pull the propeller housing clamp outwards to remove the propeller housing clamp.</p>	 <p data-bbox="767 842 1023 871">propeller housing clamp</p>
<p data-bbox="108 1198 507 1227">9. Remove propeller housing sub-assy</p> <p data-bbox="213 1355 676 1422">Remove the screws fixing propeller housing to remove the propeller housing sub-assy.</p>	 <p data-bbox="783 1563 1066 1592">propeller housing sub-assy</p>

Steps	Procedure
<p data-bbox="92 286 400 315">10. Remove centrifugal blade</p> <p data-bbox="204 483 643 551">Remove the nut fixing centrifugal blade to remove the centrifugal blade.</p>	 <p data-bbox="715 801 890 831">centrifugal blade</p> <p data-bbox="802 1115 842 1144">nut</p>
<p data-bbox="100 1193 296 1223">11. Remove motor</p> <p data-bbox="204 1361 655 1507">Remove the remove the wire clamp on the rear plate; disconnect the motor wire and remove the screws fixing motor to remove the motor.</p>	 <p data-bbox="874 1686 938 1715">motor</p>

Steps	Procedure
12. Remove chassis	<p data-bbox="209 409 679 472">Remove the screws fixing chassis to remove the chassis.</p> 
13. Remove left side plate and right side plate	<p data-bbox="209 1328 679 1435">Remove the screws fixing left side plate and right side plate to remove the left side plate and right side plate sub-assy.</p> 

10.2 Removal Procedure of Outdoor Unit

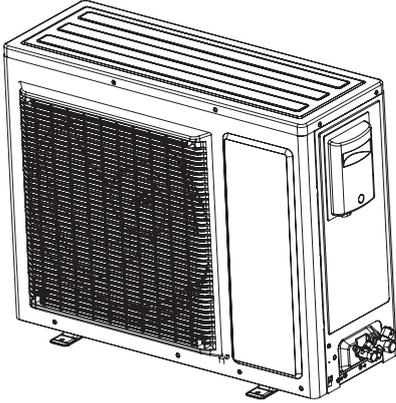
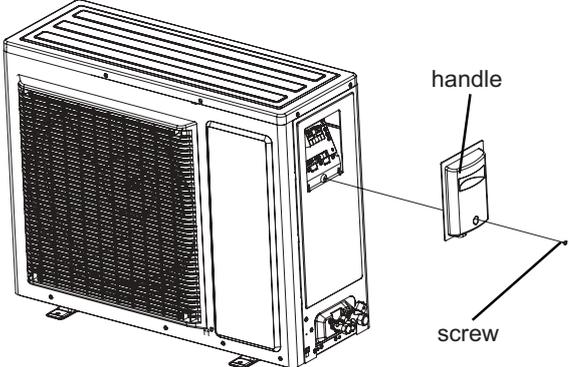
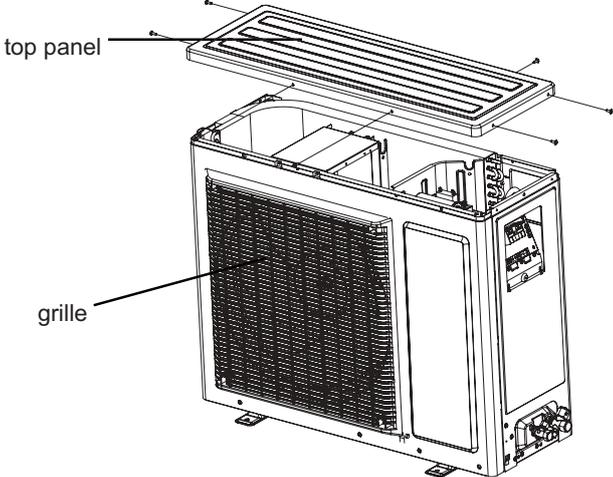


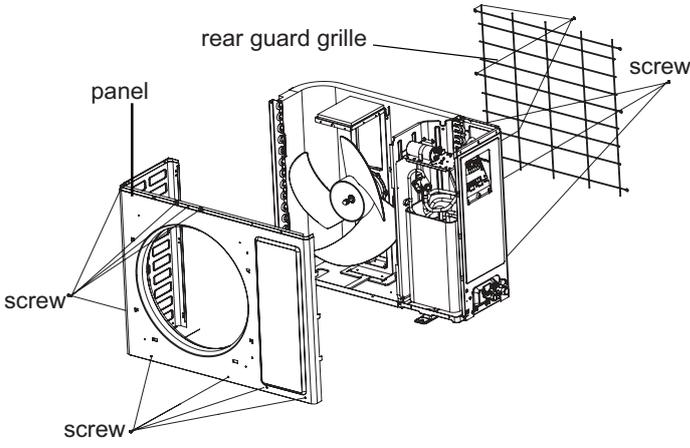
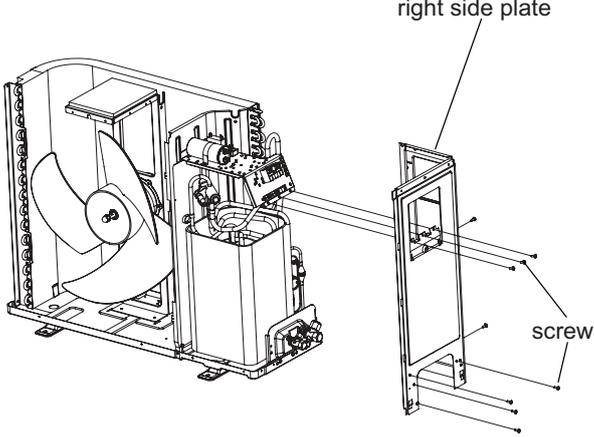
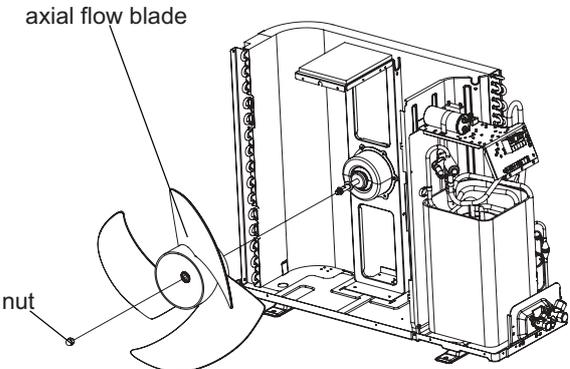
Warning

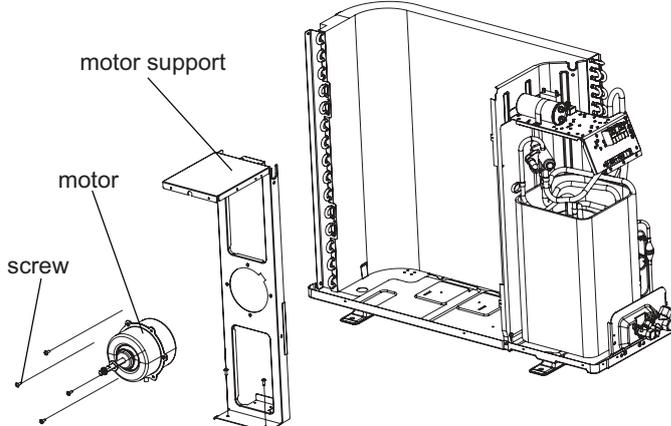
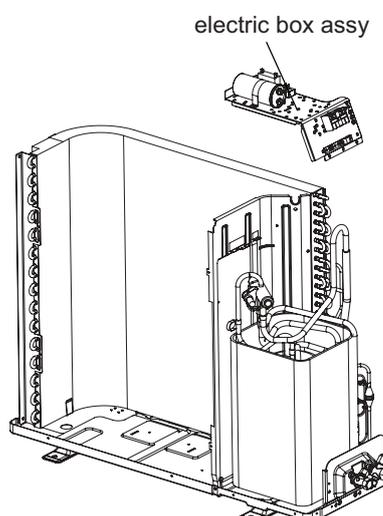
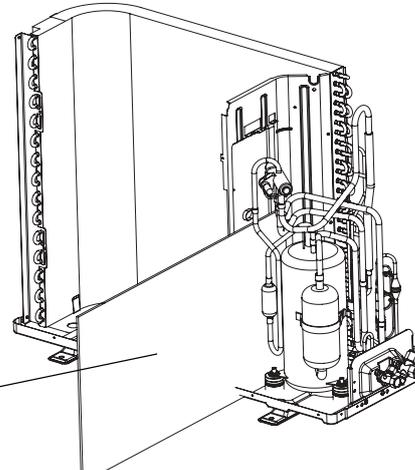
Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

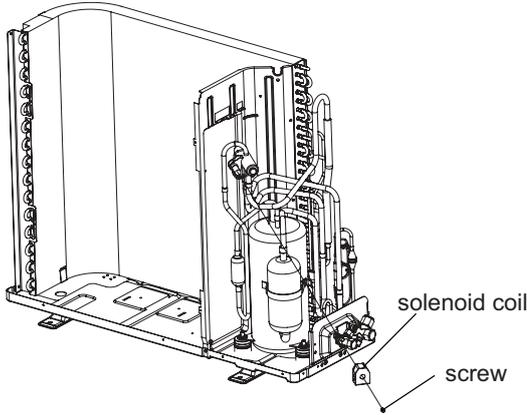
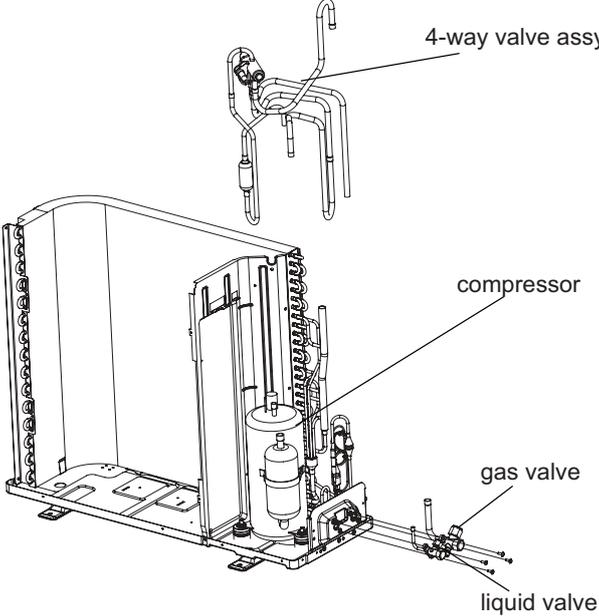
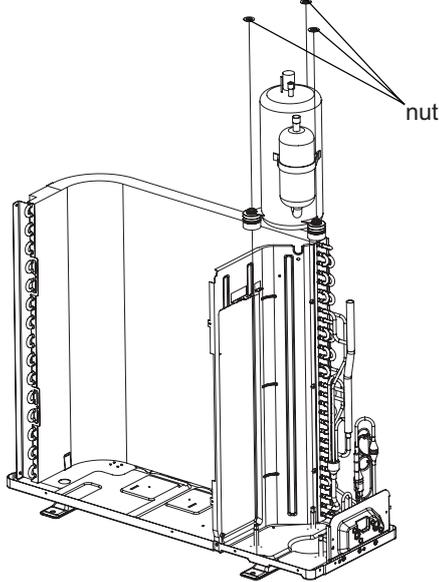
(1)GVC18AG-K1NNA5A/O GVH18AG-K1NNA5A/O

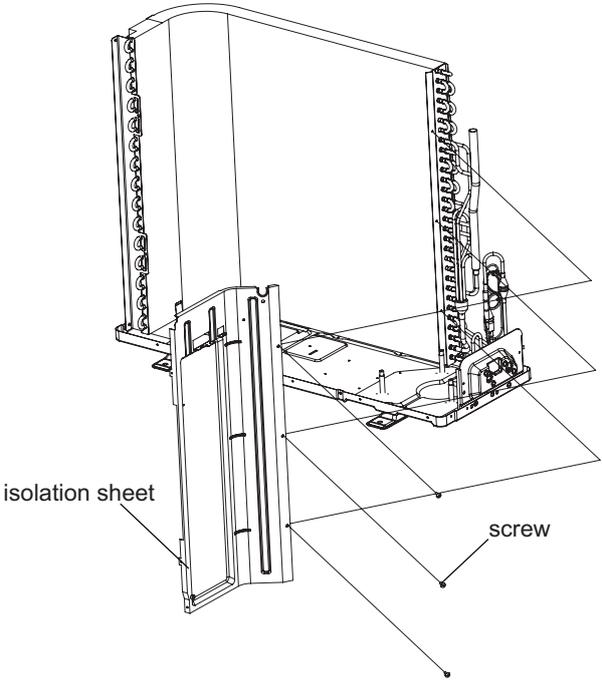
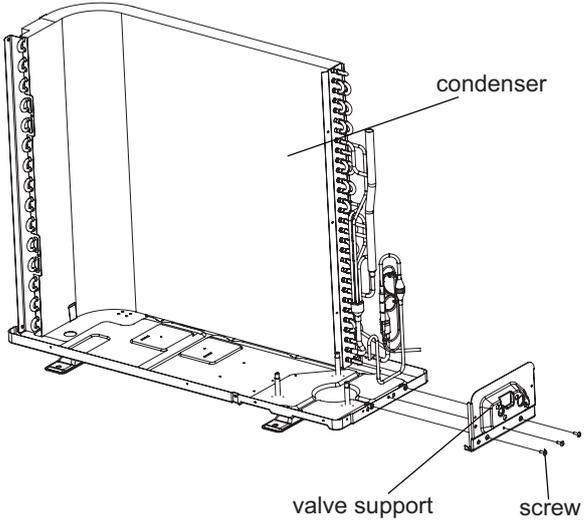
NOTE:Take heat pump for an example.

Steps	Procedure
1. Before disassembly	
2. Remove handle	<p data-bbox="209 1211 663 1279">Remove the screw fixing the handle and then remove the handle.</p> 
3. Remove top panel and grille	<p data-bbox="213 1599 668 1711">Remove screws fixing the top panel and the grille respectively, and then remove the top panel and the grille.</p> 

Steps	Procedure
<p>4. Remove front panel and rear guard grille</p>	<p>Remove screws fixing the front panel and the rear guard grille respectively, and then remove the front panel and the rear guard grille.</p> 
<p>5. Remove right side plate</p>	<p>Remove screws connecting the front panel with the chassis and the motor support, and then remove the right side plate.</p> 
<p>6. Remove axial flow blade</p>	<p>Remove nut fixing the blade and then remove the blade.</p> 

Steps	Procedure
<p>7. Remove motor and motor support</p>	<p>Remove screws on the motor and the motor support, and then remove the motor and the motor support.</p>  <p>motor support</p> <p>motor</p> <p>screw</p>
<p>8. Remove electric box</p>	<p>Remove the 2 screws fixing the electric box; loosen the wire bundle; pull out the wiring terminals and then pull electric box upwards to remove it.</p>  <p>electric box assy</p>
<p>9. Remove soundproof sponge</p>	<p>Remove the soundproof sponge wrapping the compressor.</p>  <p>soundproof sponge</p>

Steps	Procedure
10. Remove solenoid coil	 <p>Remove the screw on the solenoid coil, and then remove the solenoid coil.</p>
11. Remove compressor	<p>1 Unsolder the pipes (including the soldering joint among the 4-way valve, the compressor, the condenser, the gas valve and the liquid valve) connected to the compressor at first. (NOTE: Before unsoldering the joints, discharge the refrigerant completely)</p>  <p>2 Remove the 3 foot nuts fixing the compressor with wrench, and then remove the compressor.</p> 

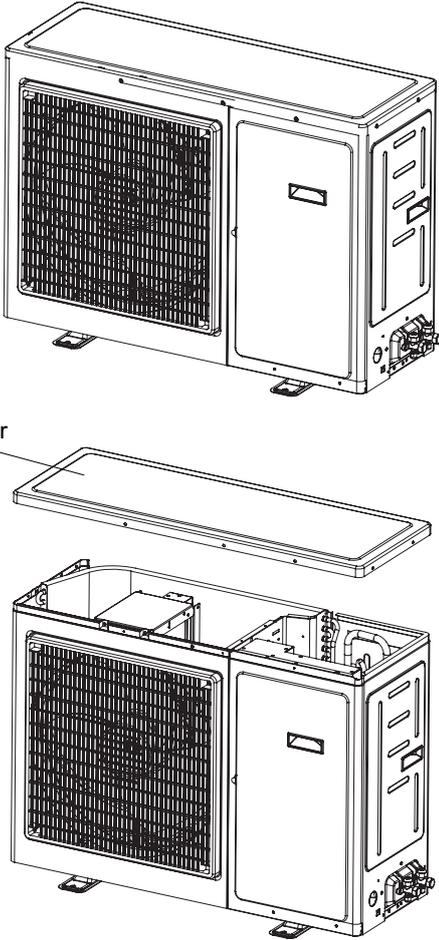
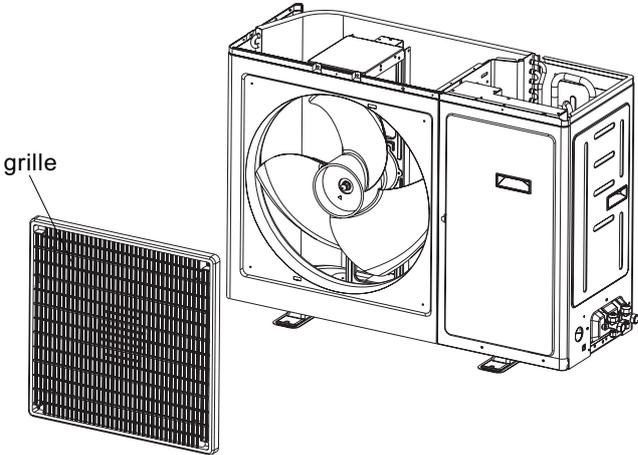
Steps	Procedure
<p>12. Remove isolation sheet</p>	<p>Remove the 3 screws fixing the isolation sheet and then remove the isolation sheet.</p> 
<p>13. Remove valve support and condenser</p>	<p>Remove screws fixing the valve support and then remove the valve support; Remove the screw fixing the condenser and then pull the condenser upwards to remove it.</p> 

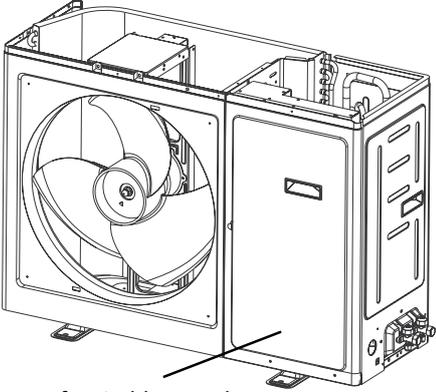
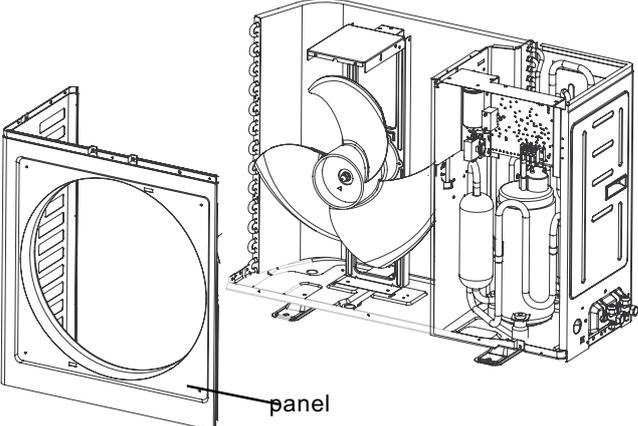
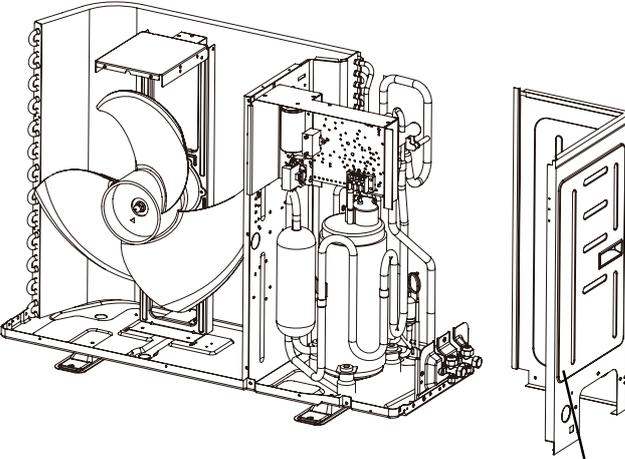
**Warning**

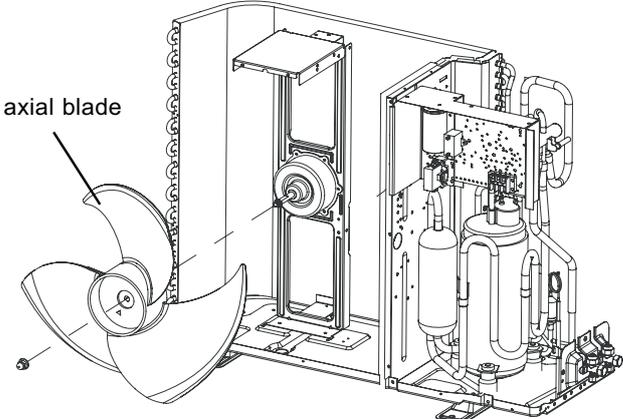
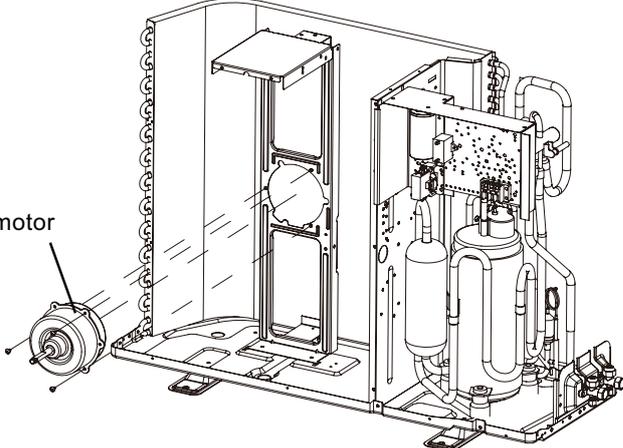
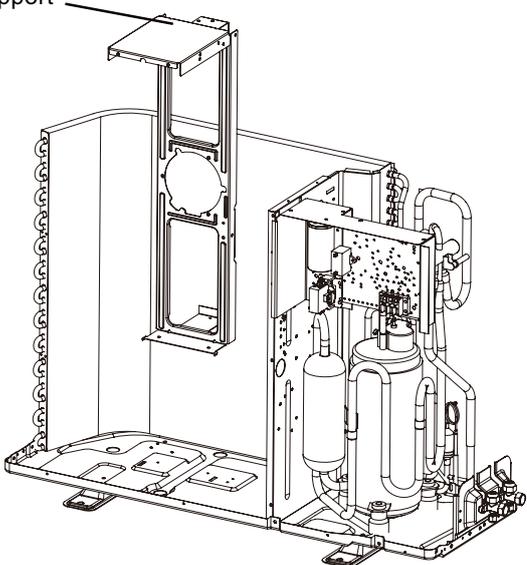
Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

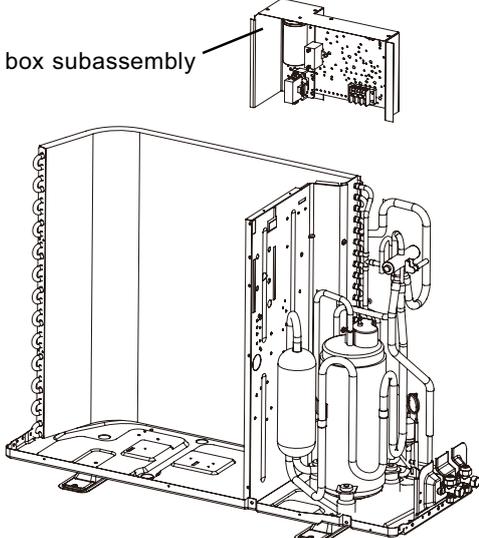
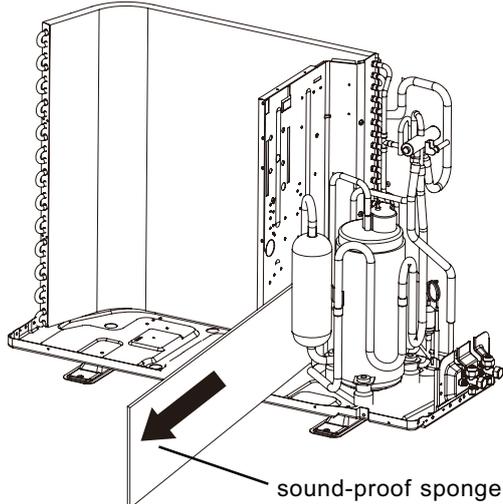
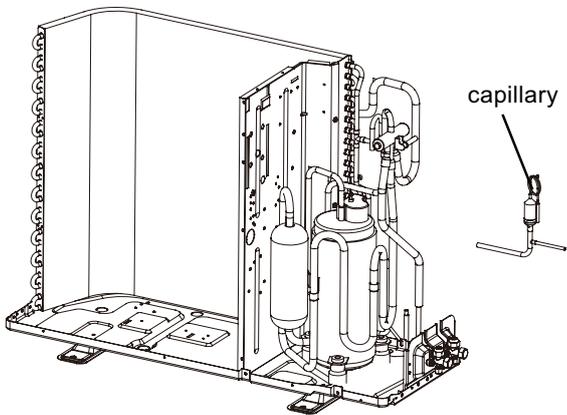
(2)GVC24AG-K1NNA5A/O GVH24AG-K1NNA5A/O

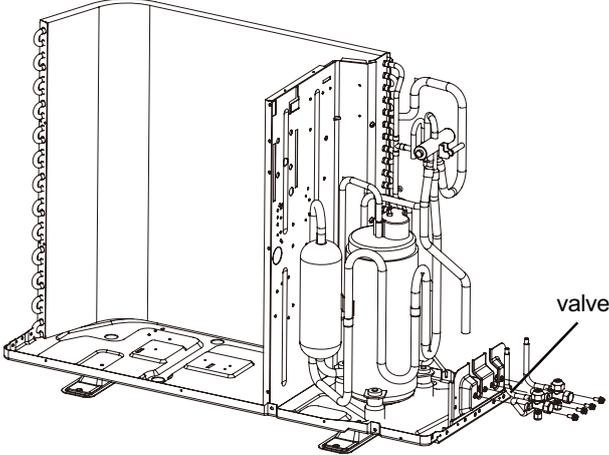
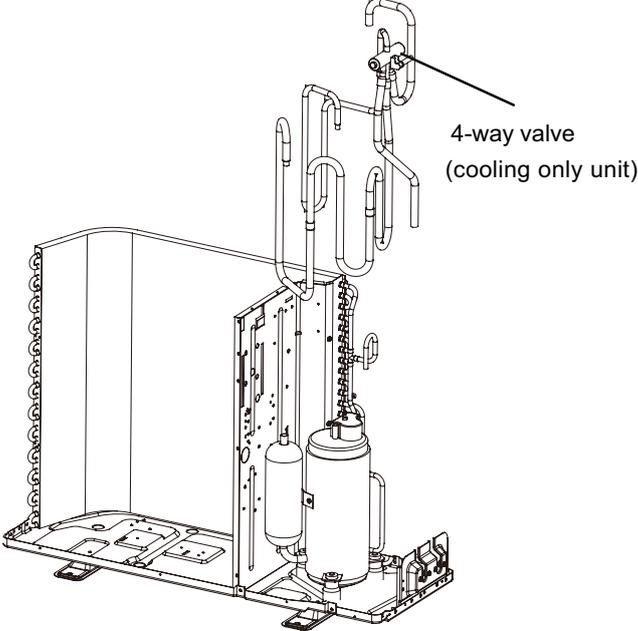
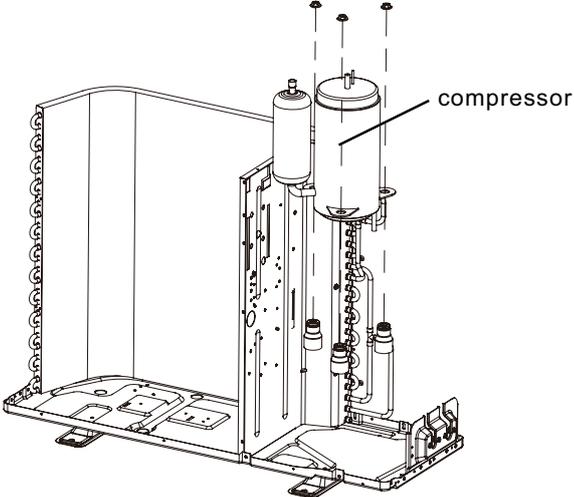
NOTE:Take heat pump for an example.

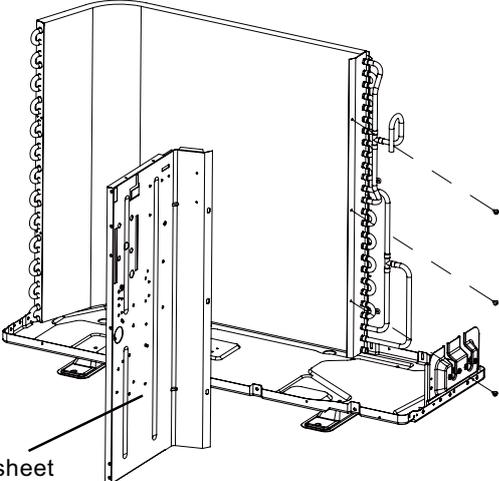
Steps	Procedure
<p>1. Remove the top cover</p>	<p>Loosen the screws fixing the top cover, front panel and side plate. Remove the top cover.</p>  <p>top cover</p>
<p>2. Remove the grille</p>	<p>Loosen the screws and clasp fixing the grille. Take down the grille.</p>  <p>grille</p>

Steps	Procedure
3. Remove the front-side panel	<p data-bbox="213 555 743 613">Loosen the screws fixing the front-side panel. Pull the front-side panel outward to remove it.</p>  <p data-bbox="979 757 1150 786">front-side panel</p>
4. Remove the grille	<p data-bbox="213 1160 743 1218">Loosen the screws fixing the panel chassis sub-assembly and motor support. Remove the panel.</p>  <p data-bbox="1086 1317 1150 1346">panel</p>
5. Remove the back-side plate	<p data-bbox="213 1733 743 1792">Loosen the screws fixing the back-side plate and chassis, valve support and electric box.</p>  <p data-bbox="1286 1995 1453 2024">back-side plate</p>

Steps	Procedure	
6. Remove the axial blade		
	<p>Loosen the screws fixing the blade. Pull the axial blade outward to remove it.</p>	 <p>axial blade</p>
7. Remove motor and motor support		
a	<p>Loosen the screws fixing the motor. Disconnect the motor wire.</p>	 <p>motor</p>
b	<p>Loosen the screws fixing the motor support. Raise the motor support to remove it.</p>	 <p>motor support</p>

Steps	Procedure
<p>8. Remove electric box subassembly</p>	<p>Cut the binding line. Disconnect the connecting wire. Loosen the screws fixing the electric box. Raise the electric box to remove it.</p>  <p>electric box subassembly</p>
<p>9. Remove the sound-proof sponge</p>	<p>Remove the sound-proof sponge covering the compressor.</p>  <p>sound-proof sponge</p>
<p>10. Remove the capillary</p>	<p>Discharge the refrigerant completely. Separate the capillary, valve and condenser by soldering. Remove the capillary. Do not block the capillary during soldering.</p>  <p>capillary</p>

Steps	Procedure
11. Remove the gas valve and liquid valve	<p data-bbox="217 495 775 663">Loosen the screws fixing the stop valve. Separate the stop valve and tube by soldering. Take down the stop valve. (Note: wrap the stop valve with wet cloth during soldering, in case that it is damaged by high temperature.)</p> 
12. Remove pipeline	<p data-bbox="217 1173 783 1234">Unsolder all the pipelines connected with the compressor.</p> 
13. Remove the compressor	<p data-bbox="217 1738 791 1798">Loosen the 3 ground bolts fixing the compressor. Raise the compressor to remove it.</p> 

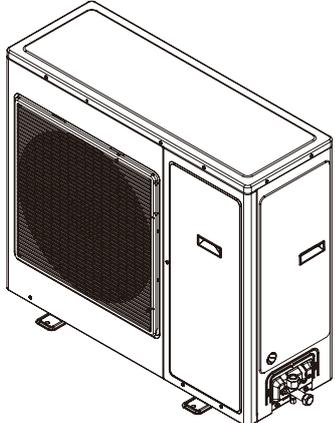
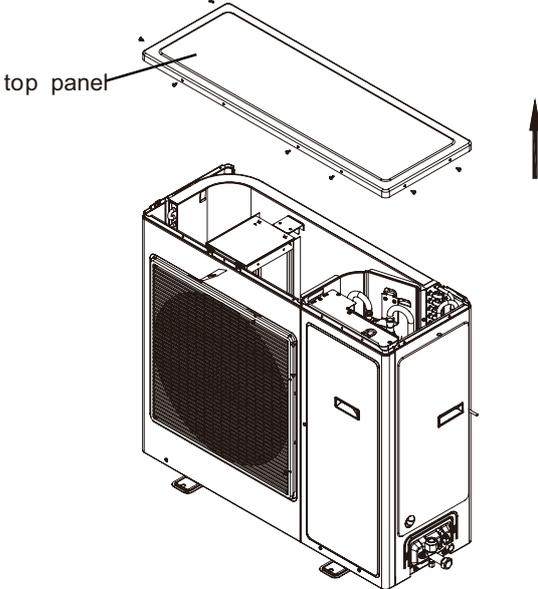
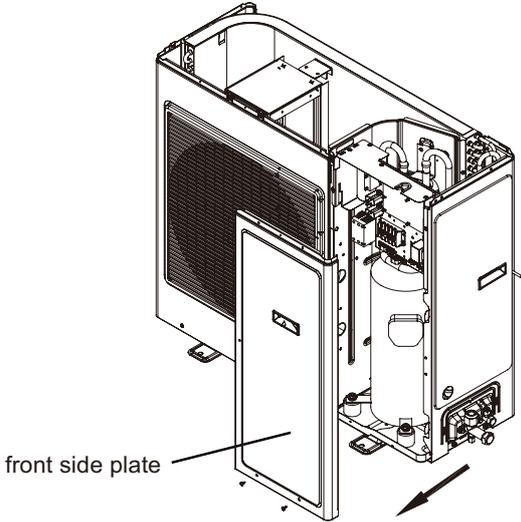
Steps	Procedure
14. Remove middle isolation sheet	<p data-bbox="220 524 759 591">Loosen the screws fixing the middle isolation sheet. Remove the middle isolation sheet.</p>  <p data-bbox="799 779 1043 808">middle isolation sheet</p>

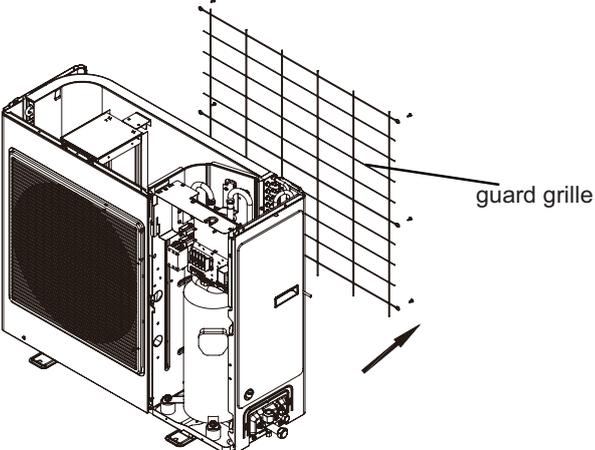
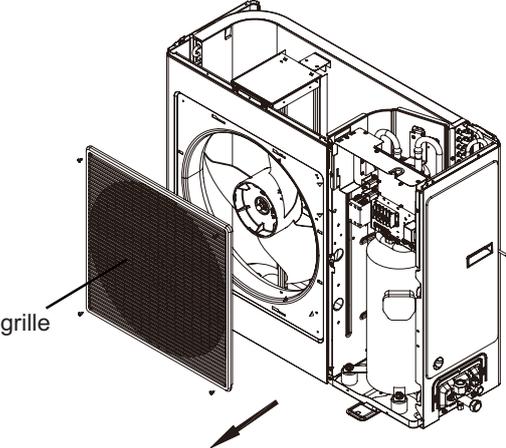
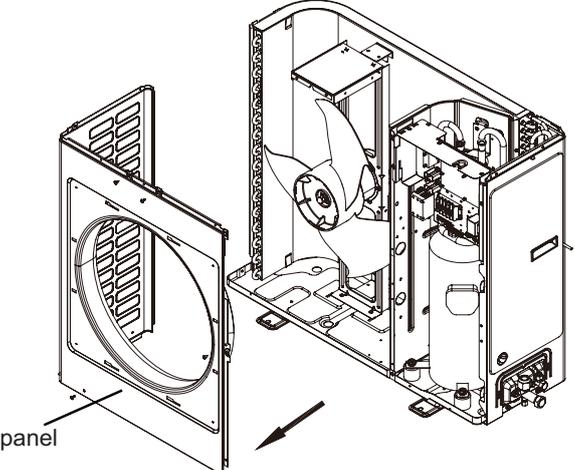
**Warning**

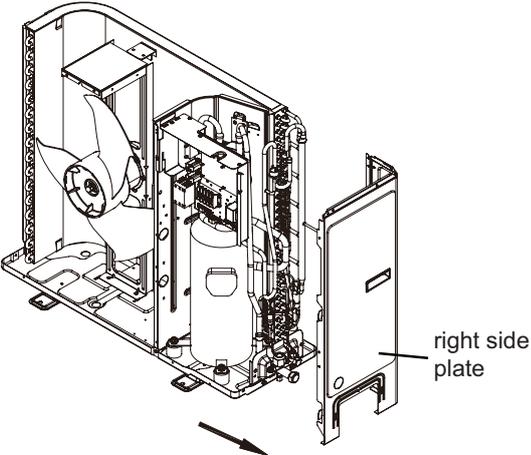
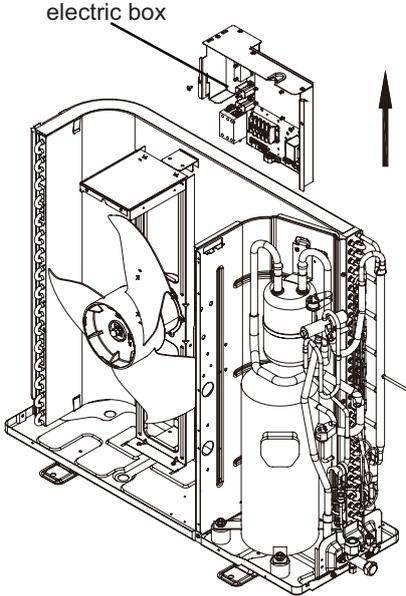
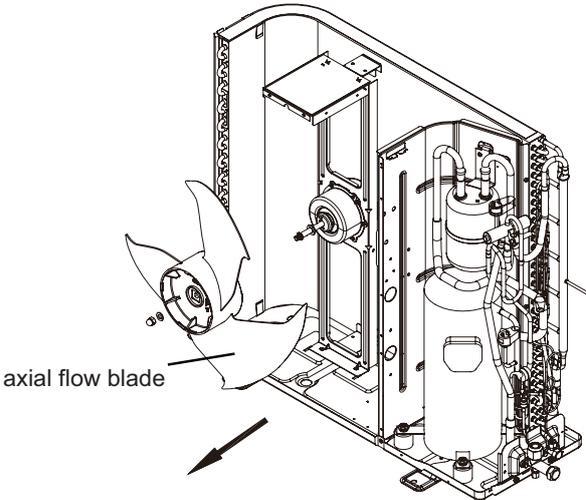
Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

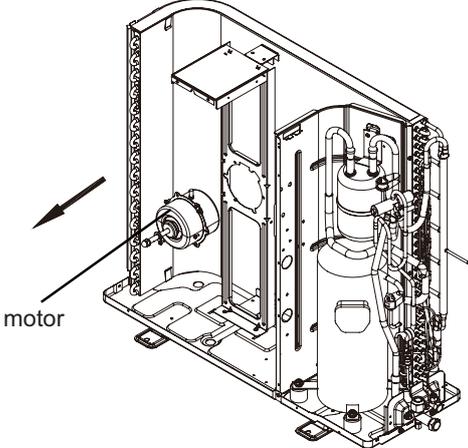
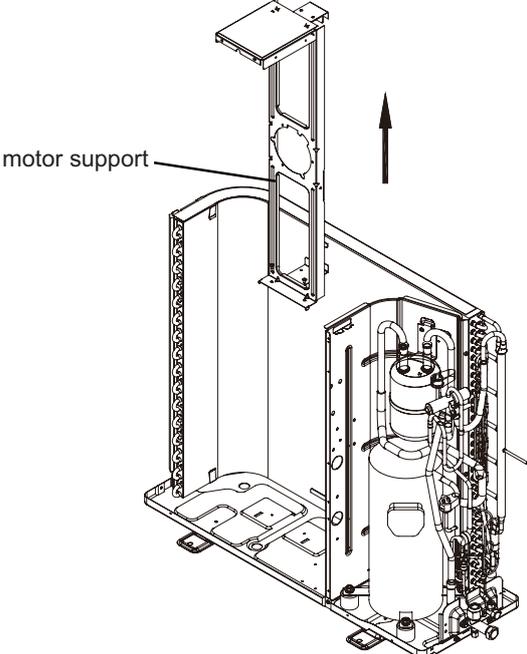
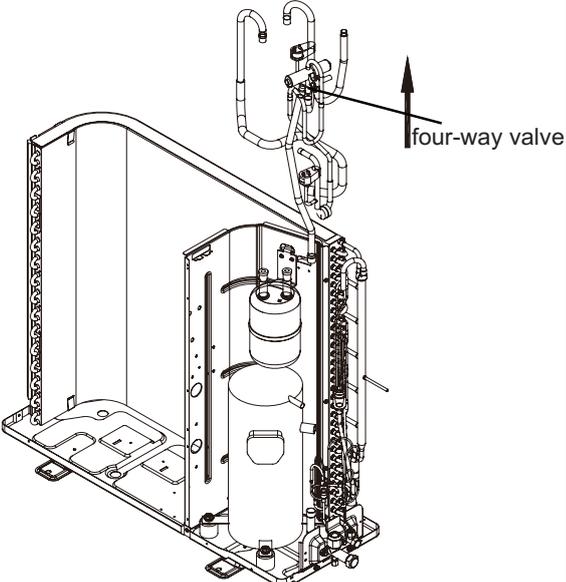
(3)GVC36AH-M1NNA5A/O GVH36AH-M1NNA5A/O

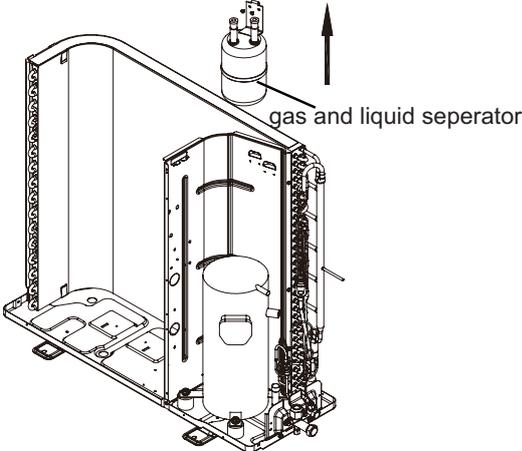
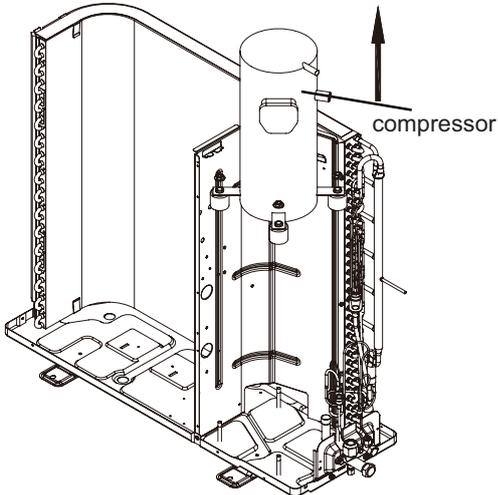
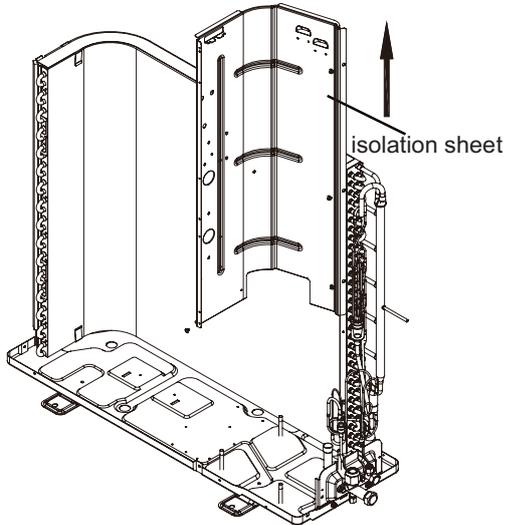
NOTE:Take heat pump for an example.

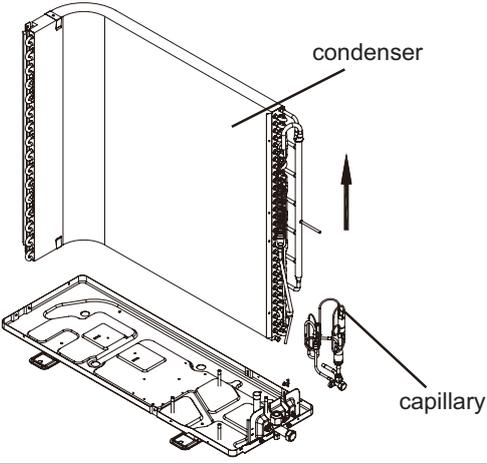
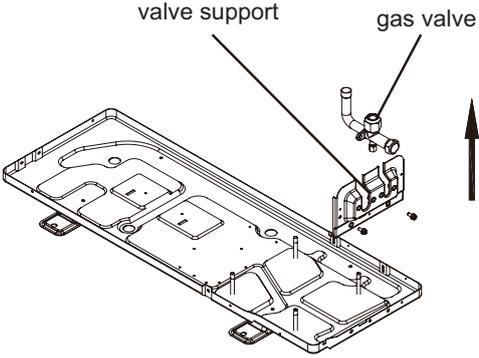
Steps	Procedure
1.Before disassembly of unit	
2.Remove top panel	<p data-bbox="245 1093 751 1182">Twist off the screws used for fixing the top cover with screwdriver, lift up the top cover and then remove the top cover .</p> 
3.Remove front side plate	<p data-bbox="245 1711 751 1800">Twist off the screws used for fixing the front side plate, pull the front side plate forward and outward and then remove the front side plate .</p> 

Steps	Procedure
<p>4.Remove guard grille</p>	<p>Twist off the screws used for fixing the guard grille, pull the guard grille outward and then remove the guard grille .</p> 
<p>5.Remove grille</p>	<p>Twist off the screw used for fixing the grille, loosen the clasp, pull out the grille outward and then remove the grille .</p> 
<p>6.Remove panel</p>	<p>Twist off the screw used for fixing the outer case, pull the panel outward and then remove the panel .</p> 

Steps	Procedure	
7.Remove right side plate	Twist off the screw used for fixing the right side plate and then pull the right side plate outward.	
8.Remove electric box	Cut off the tieline, pull out the wiring terminal, remove all the connecting wires, twist off the screws used for fixing the electric box, pull it upward and then remove the electric box.	
9.Remove axial flowblade	Twist off the nuts used for fixing the axial flow blade, pull the axial flowblade outward and then remove the blade.	

Steps	Procedure
10.Remove motor	<p data-bbox="236 465 727 555">Twist off the screws used for fixing the motor, pull out the motor wire and pull it outward,then remove the motor.</p> 
11.Remove motor support	<p data-bbox="236 999 711 1088">Twist off the screws used for fixing the motor support, pull it upward and then remove the motor support.</p> 
12.Remove four-way valve and air intake pipe	<p data-bbox="236 1682 746 1839">Release the refrigerant completely, unsolder the air intake pipe of compressor, outlet pipe of condenser, connecting pipe of gas valve and gas and liquid separator, then pull the four-way valve and air intake pipe.</p> 

Steps	Procedure
13.Remove gas and liquid separator	<p data-bbox="245 461 730 551">Loosen the two screws used for fixing the gas and liquid separator, pull it upward and then remove the gas and liquid separator.</p> 
14.Remove compressor	<p data-bbox="245 1021 753 1111">Twist off the nuts used for fixing the compressor with wrench, pull the compressor upward to remove it.</p> 
15.Remove middle isolation sheet	<p data-bbox="245 1648 740 1738">Twist off the screws used for fixing the middle isolation sheet, pull it upward and then remove the isolation sheet.</p> 

Steps	Procedure
16.Remove condenser and capillary	<p data-bbox="228 479 766 629">Twist off the screws used for fixing the condenser, unsolder the spot weld between capillary and condenser (notice: before soldering, the refrigerant should be released completely), pull it outward and then remove the condenser and capillary.</p> 
17.Remove gas valve and valve support	<p data-bbox="252 965 738 1144">Twist off the bolts used for fixing the gas valve and valve support, and then remove the gas valve; Twist off the screws used for connecting the valve support and chassis, pull it upward and then remove the valve support.</p> 



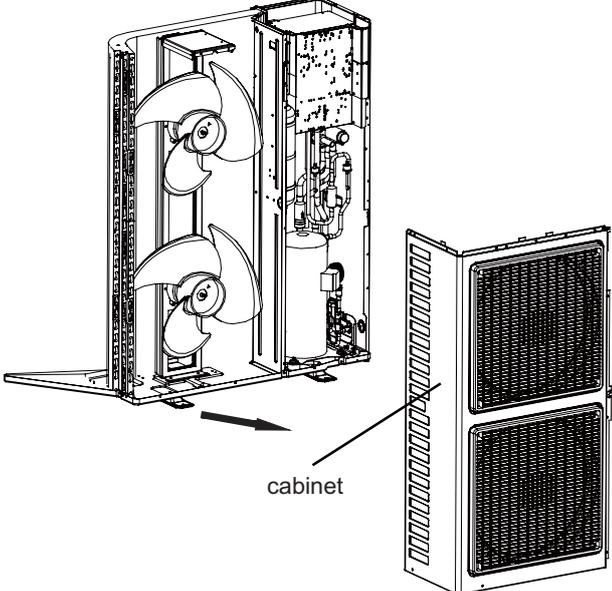
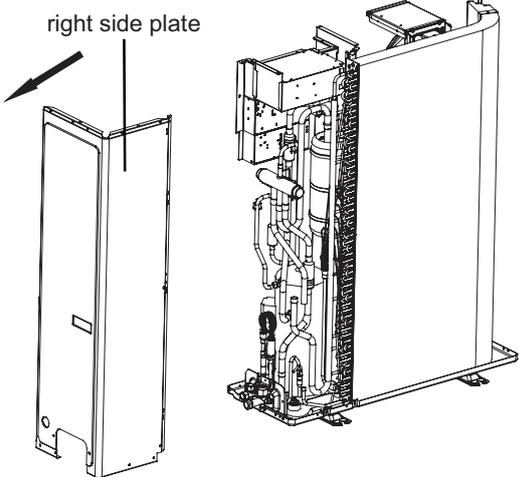
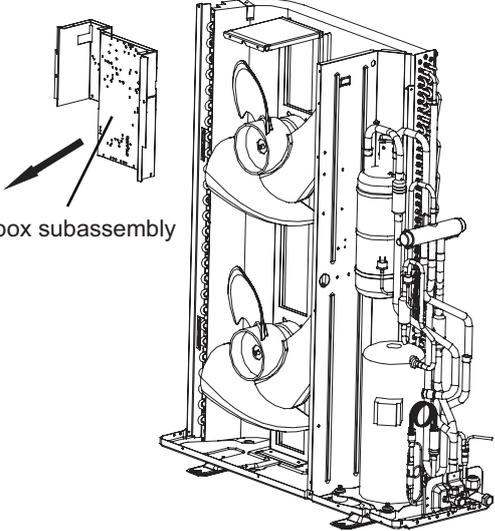
Warning

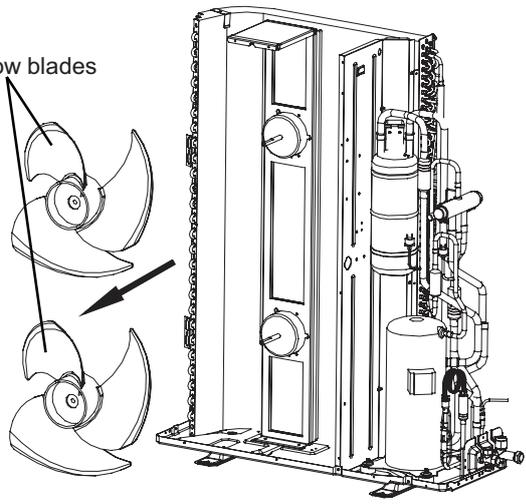
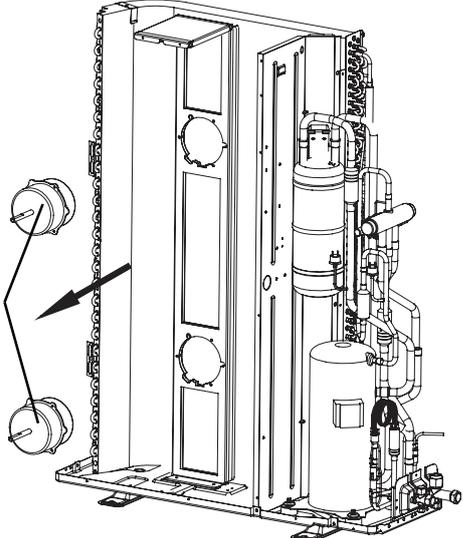
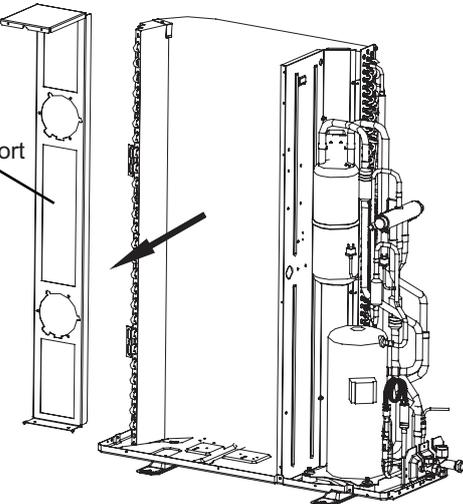
Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

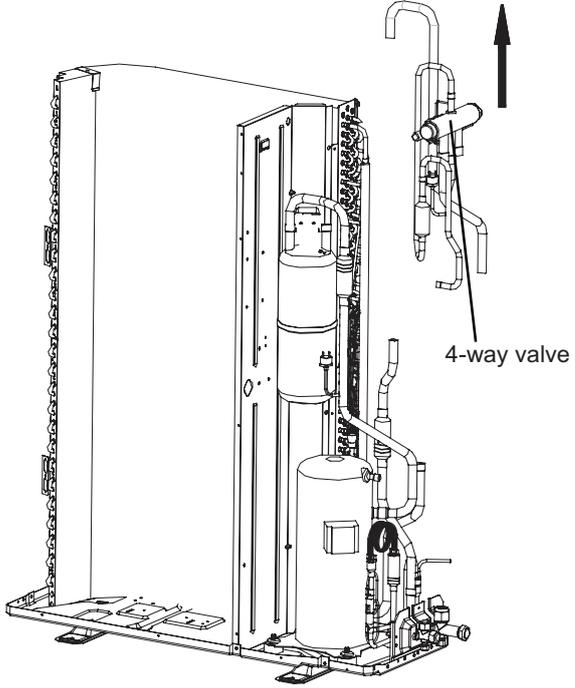
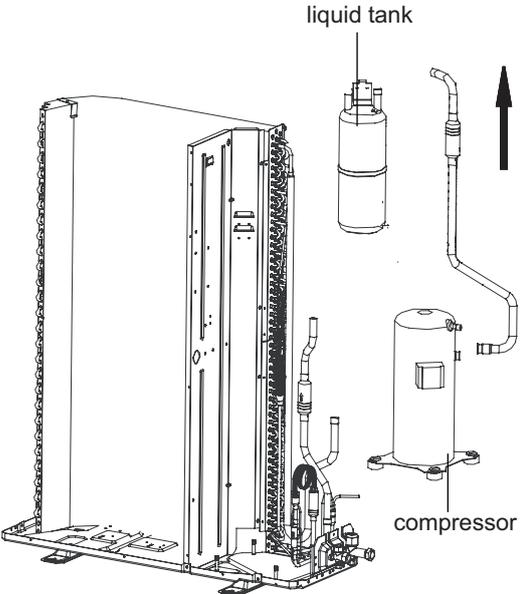
(4)GVC42AH-M1NNA5A/O GVH42AH-M1NNA5A/O

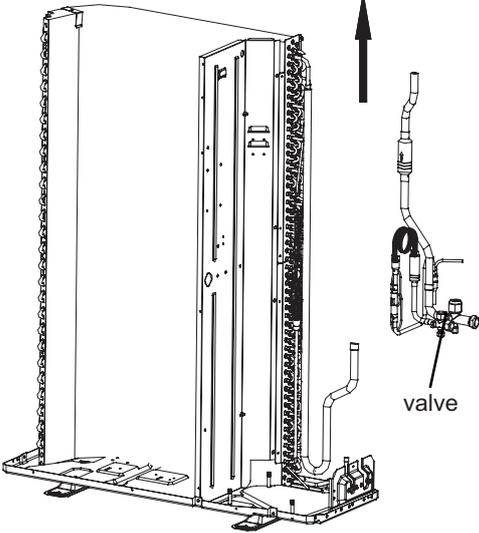
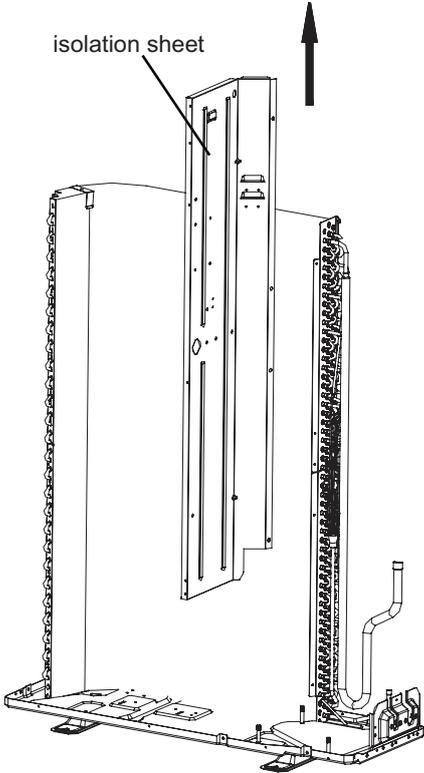
NOTE:Take heat pump for an example.

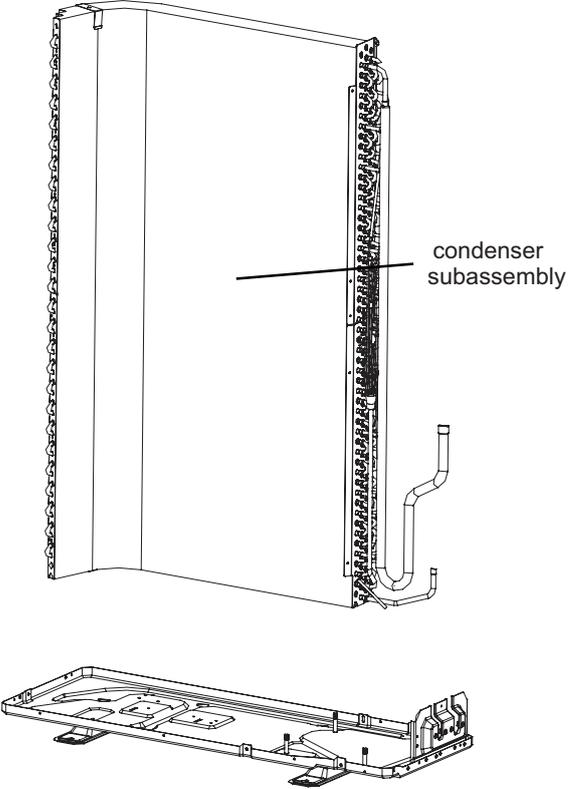
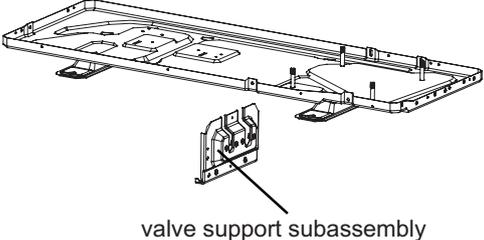
Steps	Procedure	Procedure
<p>1. Remove the rear grille</p>	<p>Remove the tapping screws connecting the back grille with the back-side plate, the front case and the chassis. Remove the back grille.</p>	
<p>2. Remove the top cover</p>	<p>Remove the screws fixing the top cover. Raise the top cover to remove it.</p>	
<p>3. Remove the front side plate</p>	<p>Remove the 3 tapping screws fixing the front side plate. Take the front side plate outward to remove it.</p>	

Steps	Procedure
<p>4. Remove the cabinet</p> <p>Remove the connecting screws fixing the cabinet. Remove the cabinet.</p>	
<p>5. Remove right side plate subassembly</p> <p>Remove the screws fixing the right side plate. Remove the right side plate.</p>	
<p>6. Remove electric box subassembly</p> <p>Remove the screws fixing the electric box cover. Disconnect the wire terminals and remove the electric box.</p>	

Steps	Procedure
7. Remove axial flow blades	<p data-bbox="204 369 683 436">Remove the nut on the axial flow blades. Remove the blades.</p> <p data-bbox="718 369 893 392">axial flow blades</p> 
8. Remove the motors	<p data-bbox="204 952 683 1064">Remove the 4 screws fixing the motors. Disconnect the leading wire inserts of the motors. Remove the motors.</p> <p data-bbox="734 1176 813 1198">motors</p> 
9. Remove the motor support	<p data-bbox="204 1512 683 1624">Remove the screws connecting the motor support and the chassis. Raise the motor support to remove it.</p> <p data-bbox="718 1624 861 1646">motor support</p> 

Steps	Procedure
<p>10. Remove the 4-way valve</p>	<p>(Only available for heat pump unit) Remove the nut on the 4-way valve coil and then remove the coil. Wrap the 4-way valve with a wet cloth. Unsolder the 4-way valve quickly and remove it. Ensure that the cloth keeps wet and do not burn the compressor lead. (Recover the refrigerant before unsoldering)</p> 
<p>11. Remove the compressor</p>	<p>Unsolder the pipes connected to the compressor and liquid tank. Remove the 4 foot bolts of the compressor. Raise the liquid tank and compressor to remove them.</p> 

Steps	Procedure
12. Remove the valve	<p data-bbox="228 398 703 790">Remove the 2 bolts fixing the gas valve. Unsolder the welding joint between the gas valve and the return air pipe. Remove the gas valve. Remove the 2 bolts fixing the liquid valve. Unsolder the welding joint between the liquid valve and the Y-type connecting pipe. Remove the liquid valve. (Note: During unsoldering, wrap the gas valve with a wet cloth to avoid damage to the valve caused by high temperature.)</p> 
13. Remove the isolation sheet	<p data-bbox="228 1137 703 1249">Remove the screws connecting the isolation sheet with the right side plate of condenser and the chassis. Remove the isolation sheet.</p> 

Steps	Procedure
<p data-bbox="121 309 512 338">14. Remove condenser subassembly</p> <p data-bbox="240 398 638 506">Remove the screws connecting the condenser and the chassis. Raise the condenser subassembly to remove it.</p>	 <p data-bbox="1286 611 1426 663">condenser subassembly</p>
<p data-bbox="121 1261 544 1290">15. Remove valve support subassembly</p> <p data-bbox="228 1350 683 1458">Remove the screw connecting the valve support and the chassis. Remove the valve support subassembly.</p>	 <p data-bbox="999 1630 1286 1659">valve support subassembly</p>

JF00301730

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

Add: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070

Tel: (+86-756) 8522218 Fax: (+86-756) 8669426

E-mail: gree@gree.com.cn www.gree.com

For continuous improvement in the products, Gree reserves the right to modify the product specification and appearance in this manual without notice and without incurring any obligations.