



# Service Manual

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MODELS: GWH18ND-K3NNA2A  
GWH18ND-K3NNA4A  
GWH18ND-K3NNA9A  
GWH18ND-K3NNC7A  
GWH18ND-K3NND1A  
GWH18ND-K3NND2A  
GWH18ND-K3NNE2A  
GWH24ND-K3NNE2A  
(RefrigerantR410A)

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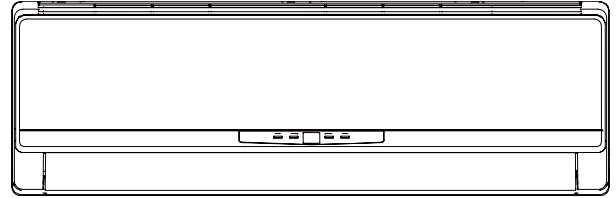
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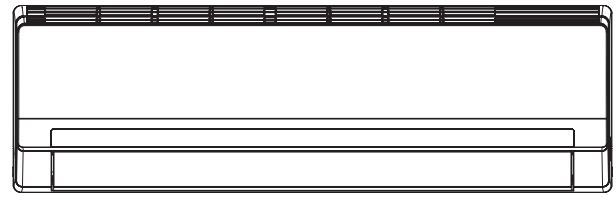
## Summary and Features

### Indoor Unit

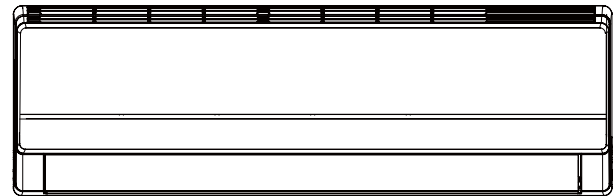
GWH18ND-K3NNA2A/I



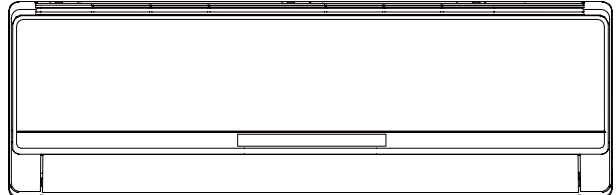
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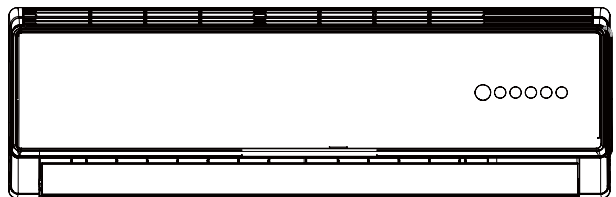
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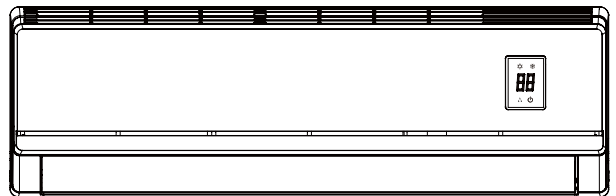
GWH18ND-K3NNC7A/I



GWH18ND-K3NND1A/I



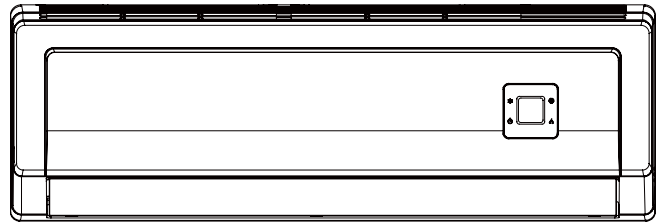
GWH18ND-K3NND2A/I (CA164N00600)



GWH18ND-K3NND2A/I (CA164N00601)

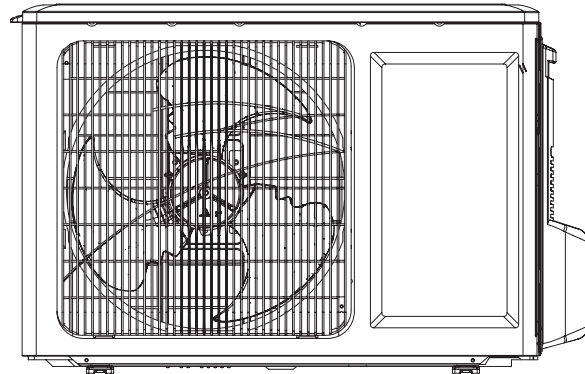


GWH18ND-K3NNE2A/I  
GWH24ND-K3NNE2A/I

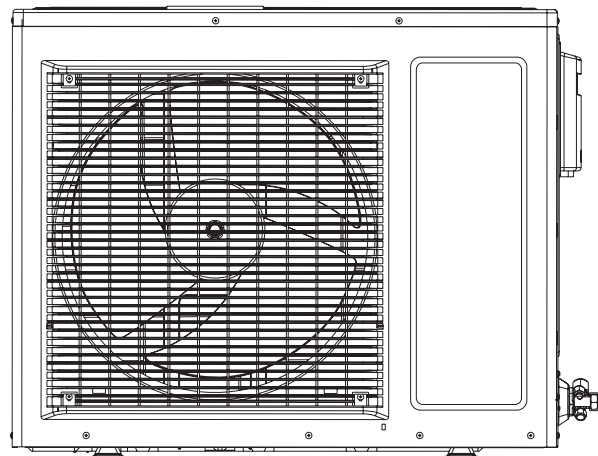


**Outdoor Unit**

GWH18ND-K3NNB1A/O

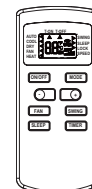


GWH24ND-K3NNB1A/O



**Remote Controller**

YX1F  
For all models except GWC18NC-K3NNA4A(CA16100281)



YT1F  
For model GWC18NC-K3NNA4A(CA16100281)



## Summary and Features

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Model	Product Code	Indoor Unit	Product Code	Outdoor Unit	Product Code	Remote Controller
GWH18ND-K3NND1A	CA147001600	GWH18ND-K3NND1A/I	CA147N01600	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NND2A	CA164000600	GWH18ND-K3NND2A/I	CA164N00600	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NNA2A	CA18100210	GWH18ND-K3NNA2A/I	CA181N0210	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NNA2A (membrane decorative strip)	CA18100211	GWH18ND-K3NNA2A/I (membrane decorative strip)	CA181N0211	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NNA9A	CA182001600	GWH18ND-K3NNA9A/I	CA182N01600	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NND2A	CA164000601	GWH18ND-K3NND2A/I (C panel)	CA164N00601	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NNC7A	CA19500370	GWH18ND-K3NNC7A/I	CA195N0370	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NNC7A (with fingers protective grille)	CA19500371	GWH18ND-K3NNC7A/I (with fingers protective grille)	CA195N0371	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NNA4A	CA16100280	GWH18ND-K3NNA4A/I	CA161N0280	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH18ND-K3NNA4A (cold plasma)	CA16100281	GWH18ND-K3NNA4A/I (cold plasma)	CA161N0281	GWH18ND-K3NNB1A/O	CA136W0010	YT1F
GWH18ND-K3NNE2A	CA401002700	GWH18ND-K3NNE2A/I	CA401N02700	GWH18ND-K3NNB1A/O	CA136W0010	YX1F
GWH24ND-K3NNE2A	CA401002800	GWH24ND-K3NNE2A/I	CA401N02800	GWH24ND-K3NNB1A/O	CA136W0040	YX1F

# 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			GWH18ND-K3NND1A GWH18ND-K3NND2A	GWH18ND-K3NNA2A	
Product Code			CA147001600 CA164000600	CA18100210 CA18100211	
Power Supply	Rated Voltage	V ~	220-240		
	Rated Frequency	Hz	50		
	Phases		1		
Power Supply Mode			Indoor		
Cooling Capacity		W	4700		
Heating Capacity		W	4900		
Cooling Power Input		W	1460		
Heating Power Input		W	1430		
Cooling Power Current		A	6.48		
Heating Power Current		A	6.34		
Rated Input		W	1980		
Rated Current		A	8.78		
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	850/800/760/730/-		
Dehumidifying Volume		L/h	1.80		
EER		W/W	3.22		
COP		W/W	3.43		
SEER		W/W	/		
HSPF		W/W	/		
Application Area		m <sup>2</sup>	23-34		
Indoor Unit	Model of indoor unit		GWH18ND-K3NND1A/I GWH18ND-K3NND2A/I	GWH18ND-K3NNA2A/I	
	Fan Type		Cross-flow		
	Diameter Length(DXL)		mm	Φ98X710	
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1200/1050/900/-	
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1420/1250/1150/1050/-	
	Output of Fan Motor		W	20	
	Fan Motor RLA		A	0.31	
	Fan Motor Capacitor		μF	1.5	
	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	715X25.4X304.8	
	Swing Motor Model			MP28VB	
	Output of Swing Motor		W	2	
	Fuse		A	3.15	
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	49/45/41/37/-	
	Sound Power Level (SH/H/M/L/SL)		dB (A)	59/55/51/47/-	
	Dimension (WXHXD)		mm	940X298X200	
	Dimension of Carton Box (LXWXH)		mm	1010X285X380	
	Dimension of Package(LXWXH)		mm	1013X288X395	
Net Weight		kg	13		
Gross Weight		kg	17		



Outdoor Unit	Model of Outdoor Unit		GWH18ND-K3NNB1A/O	
	Compressor Manufacturer/Trademark		Shanghai Hitachi Electrical Appliances Co.,Ltd/Hitachi	
	Compressor Model		ASL180SV-C7LU	
	Compressor Oil		HAF68D1	
	Compressor Type		Rotary	
	L.R.A.	A		32
	Compressor RLA	A		6.8
	Compressor Power Input	W		1500
	Overload Protector			Internal
	Throttling Method			Capillary
	Operation Temp	°C		16 ~ 30
	Ambient Temp (Cooling)	°C		18 ~ 43
	Ambient Temp (Heating)	°C		-7 ~ 24
	Condenser Form			Aluminum Fin-copper Tube
	Pipe Diameter	mm		Φ7
	Rows-fin Gap	mm		2-1.6
	Coil Length (LXDXW)	mm		735X25.4X495
	Fan Motor Speed	rpm		770±25
	Output of Fan Motor	W		35
	Fan Motor RLA	A		0.3
	Fan Motor Capacitor	μF		2.5
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /h		1800
	Fan Type			Axial-flow
	Fan Diameter	mm		Φ400
	Defrosting Method			Automatic Defrosting
	Climate Type			T1
	Isolation			I
	Moisture Protection			IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa		3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa		1.2
	Sound Pressure Level (H/M/L)	dB (A)		55/-/-
	Sound Power Level (H/M/L)	dB (A)		65/-/-
Dimension (WXHxD)	mm		848X540X320	
Dimension of Carton Box (LXWXH)	mm		878X360X580	
Dimension of Package(LXWXH)	mm		881X363X595	
Net Weight	kg		40	
Gross Weight	kg		44	
Refrigerant			R410A	
Refrigerant Charge	kg		1.15	
Connection Pipe	Length	m	5	
	Gas Additional Charge	g/m	30	
	Outer Diameter Liquid Pipe	mm	Φ6	
	Outer Diameter Gas Pipe	mm	Φ12	
	Max Distance Height	m	10	
	Max Distance Length	m	25	

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

**Specifications**

Model			GWH18ND-K3NNA9A	GWH18ND-K3NND2A	
Product Code			CA182001600	CA164000601	
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	4700	4700	
Heating Capacity		W	4900	4900	
Cooling Power Input		W	1460	1460	
Heating Power Input		W	1430	1430	
Cooling Power Current		A	6.48	6.48	
Heating Power Current		A	6.34	6.34	
Rated Input		W	1980	1980	
Rated Current		A	8.78	8.78	
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	850/800/760/730/-	850/800/760/730/-	
Dehumidifying Volume		L/h	1.80	1.80	
EER		W/W	3.22	3.22	
COP		W/W	3.43	3.43	
SEER		W/W	/	/	
HSPF		W/W	/	/	
Application Area		m <sup>2</sup>	23-34	23-34	
<b>Indoor Unit</b>	Model of indoor unit		GWH18ND-K3NNA9A/I	GWH18ND-K3NND2A/I	
	Fan Type		Cross-flow	Cross-flow	
	Diameter Length(DXL)		mm	Φ98X710	Φ98X710
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1200/1050/900/-	1350/1200/1050/900/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1420/1250/1150/1050/-	1420/1250/1150/1050/-
	Output of Fan Motor		W	20	20
	Fan Motor RLA		A	0.31	0.31
	Fan Motor Capacitor		μF	1.5	1.5
	Input of Heater		W	/	/
	Evaporator Form			Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7	Φ7
	Row-fin Gap		mm	2-1.4	2-1.4
	Coil Length (LXD <sub>X</sub> W)		mm	715X25.4X304.8	715X25.4X304.8
	Swing Motor Model			MP28VB	MP28VB
	Output of Swing Motor		W	2	2
	Fuse		A	3.15	3.15
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	49/45/41/37/-	49/45/41/37/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	59/55/51/47/-	59/55/51/47/-
	Dimension (WXHXD)		mm	940X298X200	940X298X200
	Dimension of Carton Box (LXWXH)		mm	1010X285X380	1010X285X380
	Dimension of Package(LXWXH)		mm	1013X288X395	1013X288X395
Net Weight		kg	13	13	
Gross Weight		kg	17	17	

Outdoor Unit	Model of Outdoor Unit		GWH18ND-K3NNB1A/O	GWH18ND-K3NNB1A/O
	Compressor Manufacturer/Trademark		Shanghai Hitachi Electrical Appliances Co.,Ltd /Hitachi	Shanghai Hitachi Electrical Appliances Co.,Ltd /Hitachi
	Compressor Model		ASL180SV-C7LU	ASL180SV-C7LU
	Compressor Oil		HAF68D1	HAF68D1
	Compressor Type		Rotary	Rotary
	L.R.A.	A	32	32
	Compressor RLA	A	6.8	6.8
	Compressor Power Input	W	1500	1500
	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	-7 ~ 24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Rows-fin Gap	mm	2-1.6	2-1.6
	Coil Length (LXD <sub>X</sub> W)	mm	735X25.4X495	735X25.4X495
	Fan Motor Speed	rpm	770±25	770±25
	Output of Fan Motor	W	35	35
	Fan Motor RLA	A	0.37	0.37
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /h	1800	1800
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ400	Φ400
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	3.8	3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.2	1.2
	Sound Pressure Level (H/M/L)	dB (A)	55/-/-	55/-/-
	Sound Power Level (H/M/L)	dB (A)	65/-/-	65/-/-
Dimension (WXHXD)	mm	848X540X320	848X540X320	
Dimension of Carton Box (LXWXH)	mm	878X360X580	878X360X580	
Dimension of Package(LXWXH)	mm	881X363X595	881X363X595	
Net Weight	kg	40	40	
Gross Weight	kg	44	44	
Refrigerant		R410A	R410A	
Refrigerant Charge	kg	1.15	1.15	
Connection Pipe	Length	m	5	5
	Gas Additional Charge	g/m	30	30
	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.

**Specifications**

Model			GWH18ND-K3NNC7A GWH18ND-K3NNE2A	GWH18ND-K3NNC7A (Finger-protecting grill)	
Product Code			CA19500370 CA401002700	CA19500371	
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	4700	4700	
Heating Capacity		W	4900	4900	
Cooling Power Input		W	1460	1460	
Heating Power Input		W	1430	1430	
Cooling Power Current		A	6.48	6.48	
Heating Power Current		A	6.34	6.34	
Rated Input		W	1980	1980	
Rated Current		A	8.78	8.78	
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	850/800/760/730/-	850/800/760/730/-	
Dehumidifying Volume		L/h	1.80	1.80	
EER		W/W	3.22	3.22	
COP		W/W	3.43	3.43	
SEER		W/W	/	/	
HSPF		W/W	/	/	
Application Area		m <sup>2</sup>	23-34	23-34	
Indoor Unit	Model of indoor unit		GWH18ND-K3NNC7A/I GWH18ND-K3NNE2A/I	GWH18ND-K3NNC7A/I(Finger-protecting grill)	
	Fan Type		Cross-flow	Cross-flow	
	Diameter Length(DXL)		mm	Φ98X710	Φ98X710
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1200/1050/900/-	1350/1200/1050/900/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1420/1250/1150/1050/-	1420/1250/1150/1050/-
	Output of Fan Motor		W	20	20
	Fan Motor RLA		A	0.31	0.31
	Fan Motor Capacitor		μF	1.5	1.5
	Input of Heater		W	/	/
	Evaporator Form			Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7	Φ7
	Row-fin Gap		mm	2-1.4	2-1.4
	Coil Length (LXDXW)		mm	715X304.8X25.4	715X25.4X304.8
	Swing Motor Model			MP28VB	MP28VB
	Output of Swing Motor		W	2	2
	Fuse		A	3.15	3.15
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	49/45/41/37/-	49/45/41/37/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	59/55/51/47/-	59/55/51/47/-
	Dimension (WXHXD)		mm	940X298X200	940X298X200
	Dimension of Carton Box (LXWXH)		mm	1010X380X285	1010X380X285
Dimension of Package(LXWXH)		mm	1013X383X300	1013X383X300	
Net Weight		kg	13	13	
Gross Weight		kg	17	17	

Outdoor Unit	Model of Outdoor Unit		GWH18ND-K3NNB1A/O	GWH18ND-K3NNB1A/O
	Compressor Manufacturer/Trademark		Shanghai Hitachi Electrical Appliances Co.,Ltd /Hitachi	Shanghai Hitachi Electrical Appliances Co.,Ltd /Hitachi
	Compressor Model		ASL180SV-C7LU	ASL180SV-C7LU
	Compressor Oil		HAF68D1	HAF68D1
	Compressor Type		Rotary	Rotary
	L.R.A.	A	32	32
	Compressor RLA	A	6.8	6.8
	Compressor Power Input	W	1500	1500
	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	-7 ~ 24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Rows-fin Gap	mm	2-1.6	2-1.6
	Coil Length (LXDXW)	mm	735X25.4X495	735X25.4X495
	Fan Motor Speed	rpm	770±25	770±25
	Output of Fan Motor	W	35	35
	Fan Motor RLA	A	0.37	0.37
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /h	1800	1800
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ400	Φ400
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	3.8	3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.2	1.2
	Sound Pressure Level (H/M/L)	dB (A)	55/-/-	55/-/-
	Sound Power Level (H/M/L)	dB (A)	65/-/-	65/-/-
Dimension (WXHXD)	mm	848X540X320	848X540X320	
Dimension of Carton Box (LXWXH)	mm	878X360X580	878X360X580	
Dimension of Package(LXWXH)	mm	881X363X595	881X363X595	
Net Weight	kg	40	40	
Gross Weight	kg	44	44	
Refrigerant		R410A	R410A	
Refrigerant Charge	kg	1.15	1.15	
Connection Pipe	Length	m	5	5
	Gas Additional Charge	g/m	30	30
	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.

**Specifications**

Model			GWH18ND-K3NNA4A(Cold Plasma) GWH18ND-K3NNA4A	
Product Code			CA16100281 CA16100280	
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	4700	
Heating Capacity		W	4900	
Cooling Power Input		W	1460	
Heating Power Input		W	1430	
Cooling Power Current		A	6.48	
Heating Power Current		A	6.34	
Rated Input		W	1980	
Rated Current		A	8.78	
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	850/-/-/-	
Dehumidifying Volume		L/h	1.8	
EER		W/W	3.22	
COP		W/W	3.43	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m <sup>2</sup>	23-34	
Indoor Unit	Model of indoor unit		GWH18ND-K3NNA4A/I(Cold Plasma) GWH18ND-K3NNA4A/I	
	Fan Type		Cross-flow	
	Diameter Length(DXL)		mm	Φ98X710
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1200/1050/900/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1420/1250/1150/1050/-
	Output of Fan Motor		W	20
	Fan Motor RLA		A	0.31
	Fan Motor Capacitor		μF	1.5
	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	715X25.4X304.8
	Swing Motor Model			MP28VB
	Output of Swing Motor		W	2
	Fuse		A	3.15
	Sound Pressure Level (SH/H/M/L)		dB (A)	49/45/41/37
	Sound Power Level (SH/H/M/L)		dB (A)	59/55/51/47
	Dimension (WXHXD)		mm	940X200X298
	Dimension of Carton Box (LXWXH)		mm	1010X380X285
Dimension of Package(LXWXH)		mm	1013X288X395	
Net Weight		kg	13	
Gross Weight		kg	17	

Outdoor Unit	Model of Outdoor Unit		GWH18ND-K3NNB1A/O
	Compressor Manufacturer/Trademark		Shanghai Hitachi Electrical Appliances Co.,Ltd /Hitachi
	Compressor Model		ASL180SV-C7LU
	Compressor Oil		HAF68D1
	Compressor Type		Rotary
	L.R.A.	A	32
	Compressor RLA	A	6.8
	Compressor Power Input	W	1500
	Overload Protector		Internal
	Throttling Method		Capillary
	Operation Temp	°C	16~30
	Ambient Temp (Cooling)	°C	18~43
	Ambient Temp (Heating)	°C	-7~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Rows-fin Gap	mm	2-1.6
	Coil Length (LXDXW)	mm	735X25.4X495
	Fan Motor Speed	rpm	770±25
	Output of Fan Motor	W	35
	Fan Motor RLA	A	0.37
	Fan Motor Capacitor	μF	2.5
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /h	1800
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ394.5
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.2
	Sound Pressure Level (H/M/L)	dB (A)	55/-/-
	Sound Power Level (H/M/L)	dB (A)	65/-/-
	Dimension (WXHXD)	mm	848X540X320
Dimension of Carton Box (LXWXH)	mm	878X360X580	
Dimension of Package(LXWXH)	mm	881X363X595	
Net Weight	kg	40	
Gross Weight	kg	44	
Refrigerant		R410A	
Refrigerant Charge	kg	1.15	
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	30
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ12
	Max Distance Height	m	10
	Max Distance Length	m	25

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

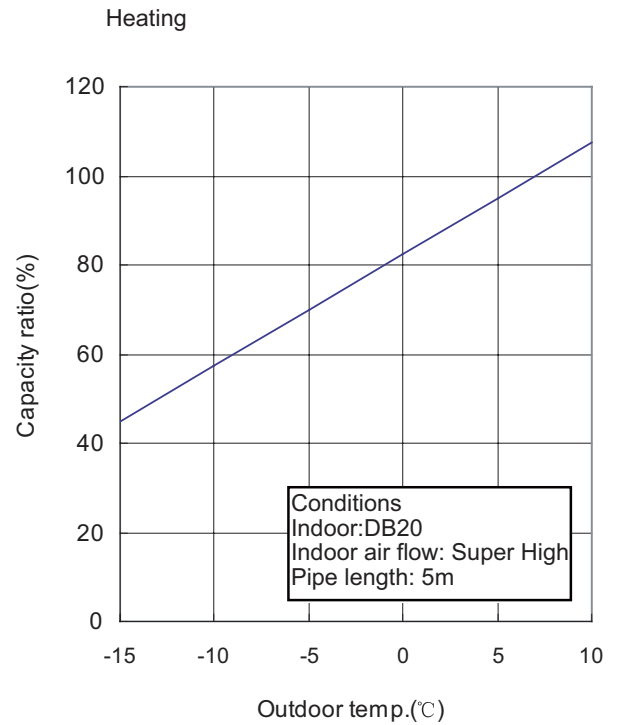
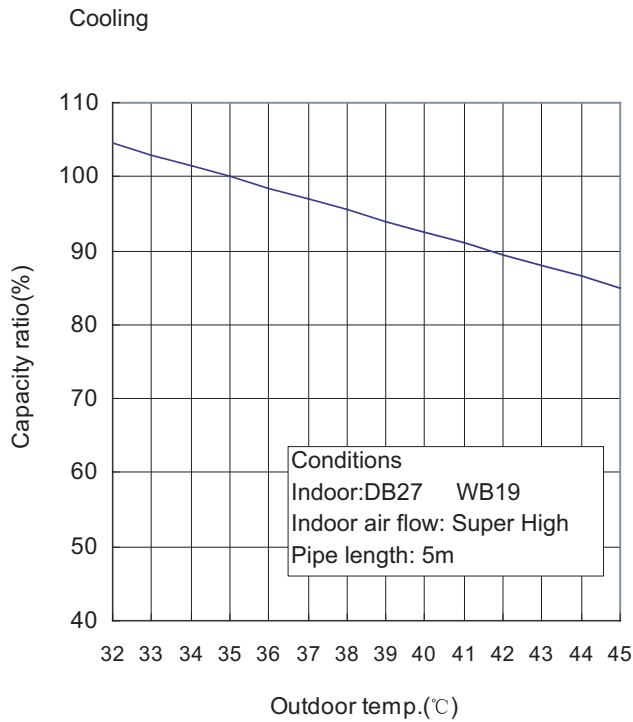
**Specifications**

Model			GWH24ND-K3NNE2A	
Product Code			CA401002800	
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	6155	
Heating Capacity		W	6500	
Cooling Power Input		W	1900	
Heating Power Input		W	1900	
Cooling Power Current		A	8.43	
Heating Power Current		A	8.43	
Rated Input		W	2700	
Rated Current		A	11.74	
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	850/780/650/550/-	
Dehumidifying Volume		L/h	2	
EER		W/W	3.24	
COP		W/W	3.42	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m <sup>2</sup>	27-42	
Indoor Unit	Model of indoor unit		GWH24ND-K3NNE2A/I	
	Fan Type		Cross-flow	
	Diameter Length(DXL)		mm	Φ98X710
	Fan Motor Cooling Speed(SH/H/ML/SL)		r/min	1350/1200/1050/900/-
	Fan Motor Heating Speed(SH/H/ML/SL)		r/min	1420/1250/1150/1050/-
	Output of Fan Motor		W	20
	Fan Motor RLA		A	0.31
	Fan Motor Capacitor		μF	1.5
	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	715X25.4X304.8
	Swing Motor Model			MP28VB
	Output of Swing Motor		W	2
	Fuse		A	3.15
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	47/44/41/38/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	57/54/51/48/-
	Dimension (WXHDX)		mm	940X298X200
	Dimension of Carton Box (LXWXH)		mm	1010X380X285
	Dimension of Package(LXWXH)		mm	1013X383X300
Net Weight		kg	13	
Gross Weight		kg	17	



Outdoor Unit	Model of Outdoor Unit		GWH24ND-K3NNB1A/O
	Compressor Manufacturer/Trademark		Shanghai Hitachi Electrical Appliances Co.,Ltd./Highly
	Compressor Model		ASH232SV-C8LU
	Compressor Oil		HAF68D1 or equivalent
	Compressor Type		Rotary
	L.R.A.	A	40
	Compressor RLA	A	8.8
	Compressor Power Input	W	1900
	Overload Protector		Inner-placed
	Throttling Method		Capillary
	Operation Temp	°C	16~30
	Ambient Temp (Cooling)	°C	18~43
	Ambient Temp (Heating)	°C	-7~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Rows-fin Gap	mm	2-1.4
	Coil Length (LXDXW)	mm	865X38.1X660
	Fan Motor Speed	rpm	780
	Output of Fan Motor	W	68
	Fan Motor RLA	A	0.75
	Fan Motor Capacitor	μF	3
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /h	2800
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ460
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.2
	Sound Pressure Level (H/M/L)	dB (A)	56/-/-
	Sound Power Level (H/M/L)	dB (A)	66/-/-
	Dimension (WXHXD)	mm	913X680X378
Dimension of Carton Box (LXWXH)	mm	994X428X725	
Dimension of Package(LXWXH)	mm	997X431X740	
Net Weight	kg	46	
Gross Weight	kg	50	
Refrigerant		R410A	
Refrigerant Charge	kg	1.45	
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ12
	Max Distance Height	m	10
	Max Distance Length	m	25

## 2.2 Capacity Variation Ratio According to Temperature



## 2.3 Operation Data

Cooling

Temperature condition (°C)		Model name	Standard pressure P (MPa)	Heat exchanger pipe temp.		Indoor fan mode(rpm)	Outdoor fan mode(rpm)
Indoor	Outdoor			T1 (°C)	T2 (°C)		
27/19	35/24	18K	0.8~0.9	in:8~11 out:11~14	in:75~83 out:37~48	1350	770±25
		24K	0.48 to 0.56	in:8 to11 out:11 to12	in:75 to 85 out:36 to 43	1350	780

Heating

Temperature condition (°C)		Model name	Standard pressure P (MPa)	Heat exchanger pipe temp.		Indoor fan mode(rpm)	Outdoor fan mode(rpm)
Indoor	Outdoor			T1 (°C)	T2 (°C)		
20/-	7/6	18K	2.5~3.0	in:75~83 out:37~45	in:1~3 out:2~6	1420	770±25
		24K	2.1~2.3	in:75 to 85 out:36 to 43	in:1~3 out:2~5	1420	780

### NOTES :

(1) T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser

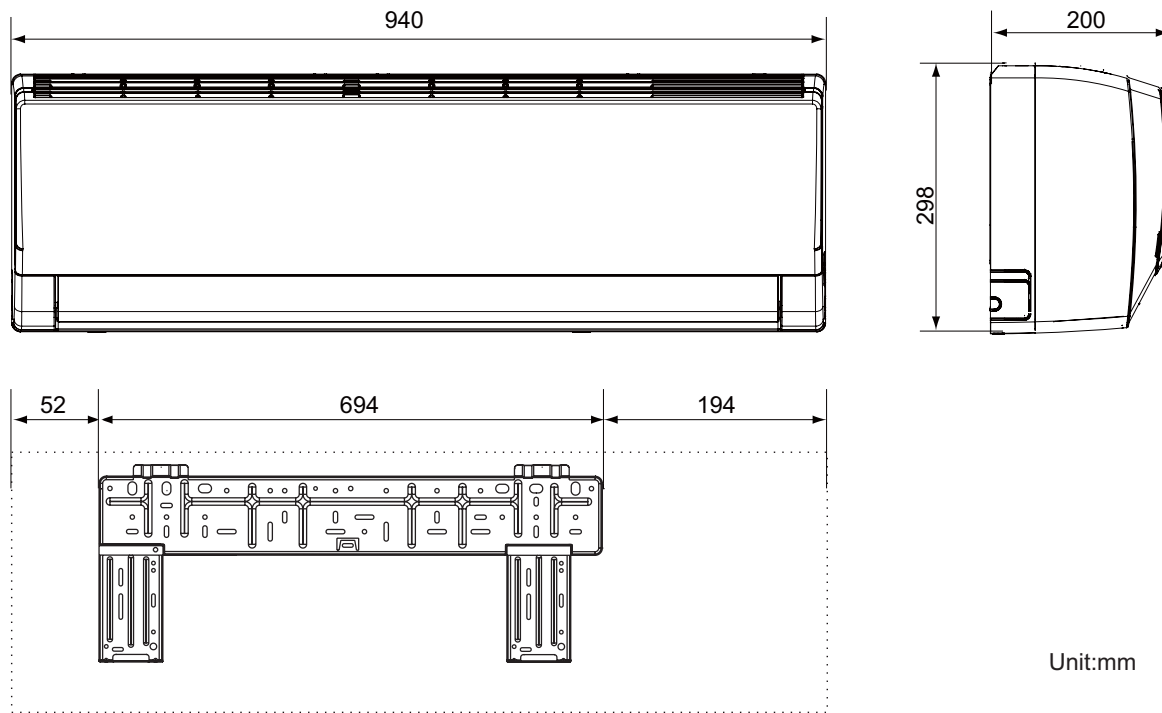
P: Pressure of air pipe connecting indoor and outdoor units(on the side of gas pipe)

(2) Measure surface temperature of heat exchanger pipe around center of heat exchanger path U bent. (Thermistor thermometer)

(3) Connecting piping condition : 5m

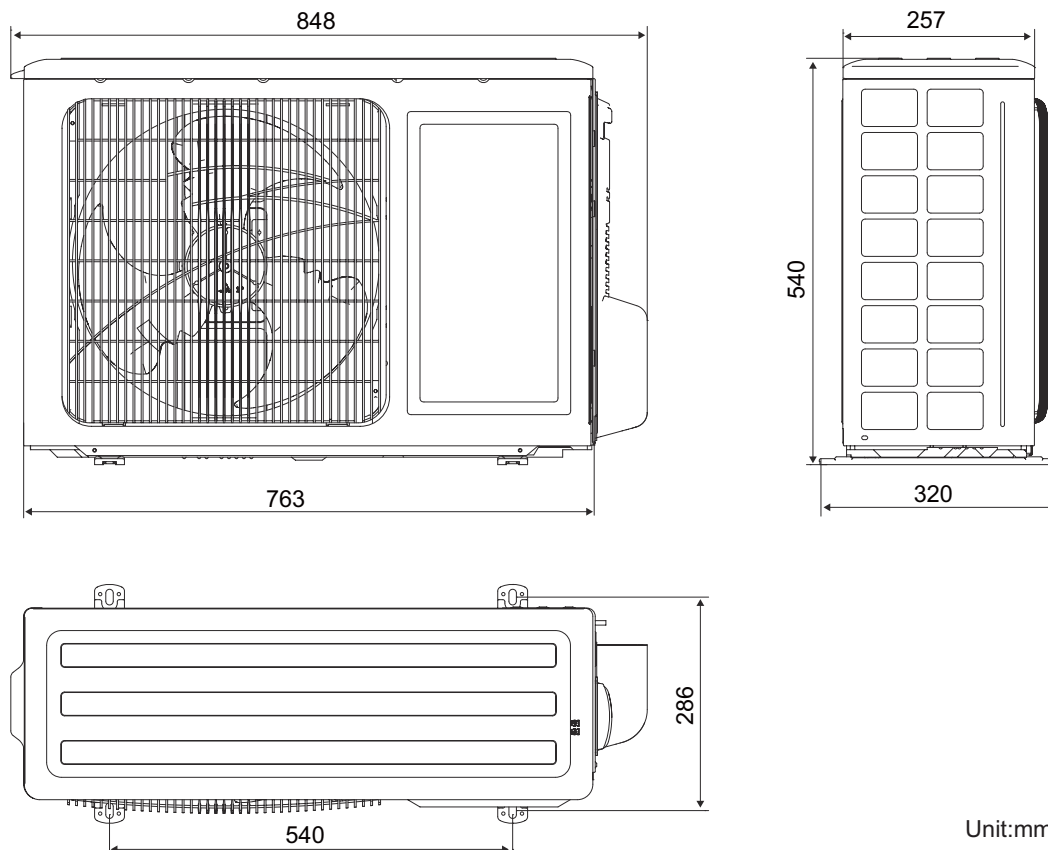
### 3. Construction Views

#### 3.1 Indoor Unit

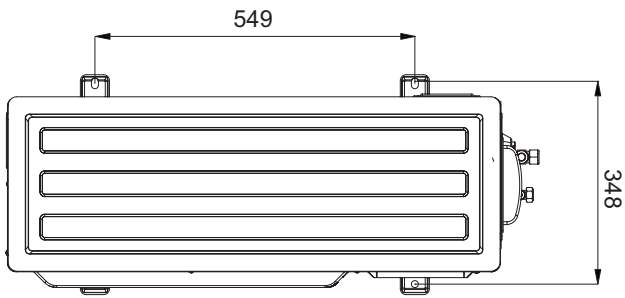
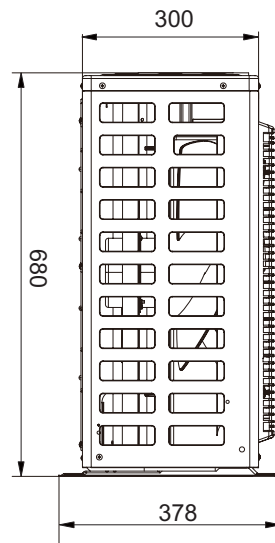
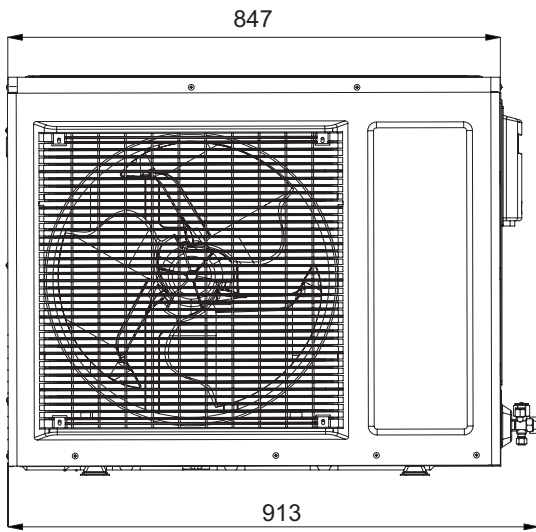


#### 3.2 Outdoor Unit

Model GWH18ND-K3NNB1A/O

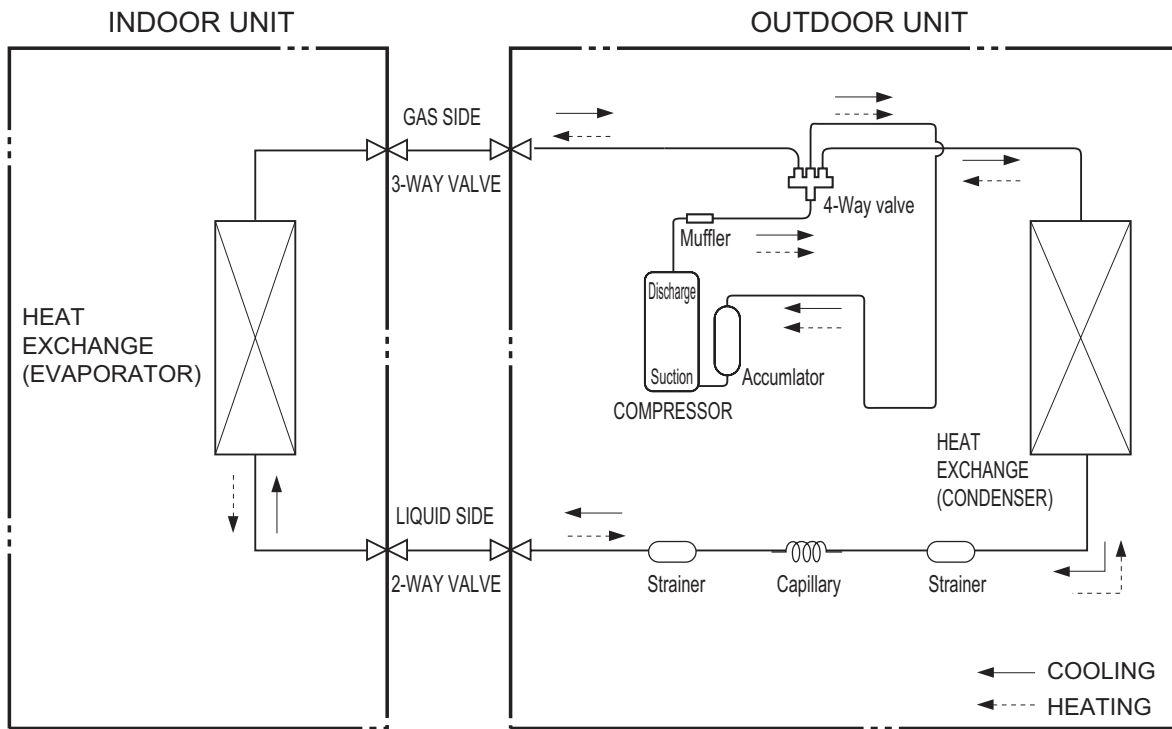


Model GWH24ND-K3NNB1A/O



Unit: mm

## 4. Refrigerant System Diagram



Refrigerant pipe diameter  
 Liquid : 1/4" (6 mm)  
 Gas : 1/2" (12mm)

## 5. Schematic Diagram

### 5.1 Electrical Data

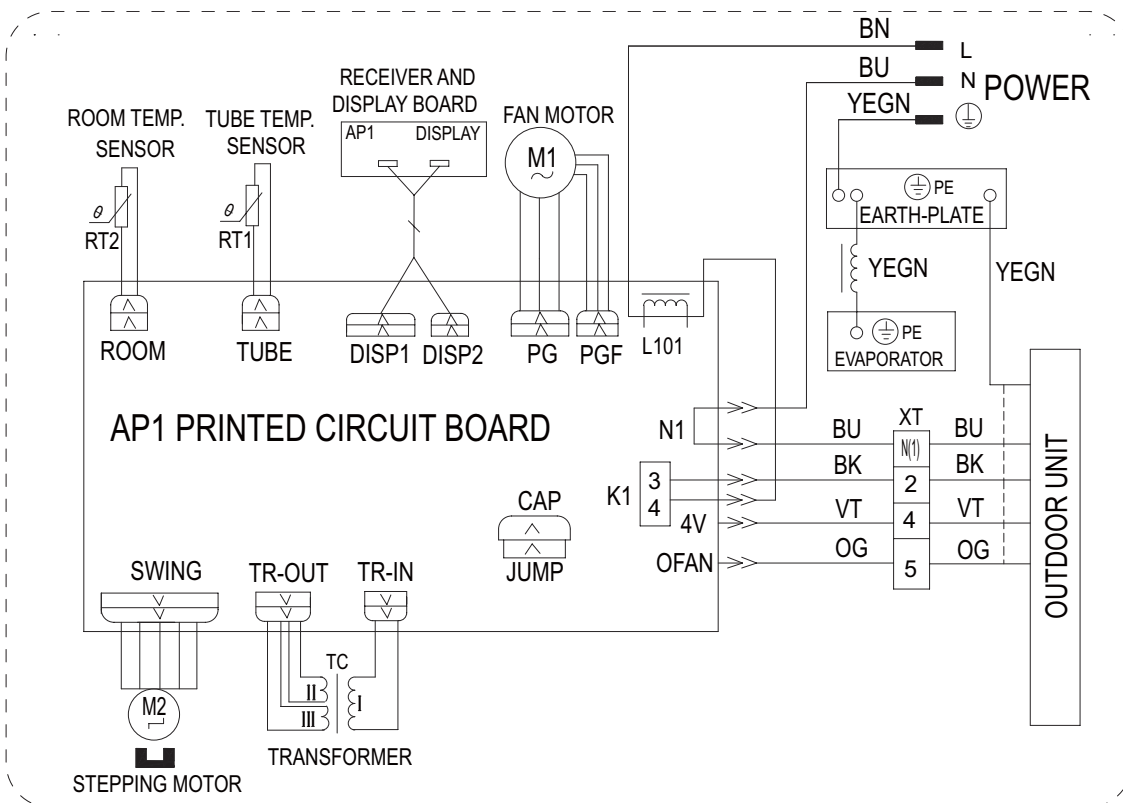
Meaning of marks

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

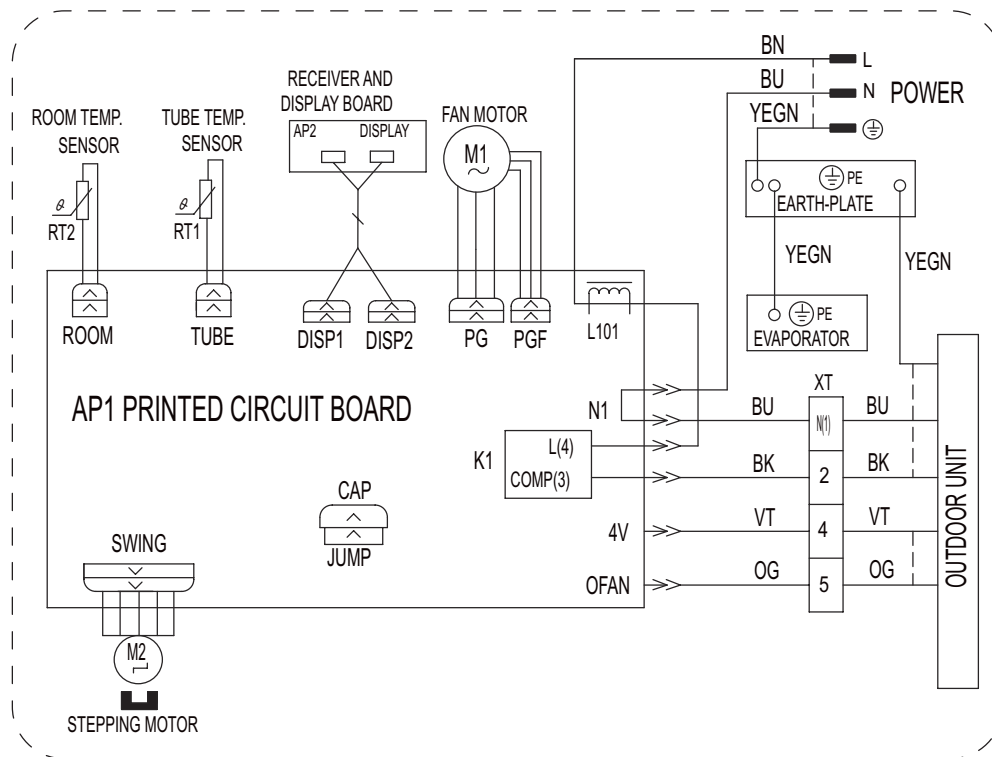
### 5.2 Electrical Wiring

• Indoor Unit

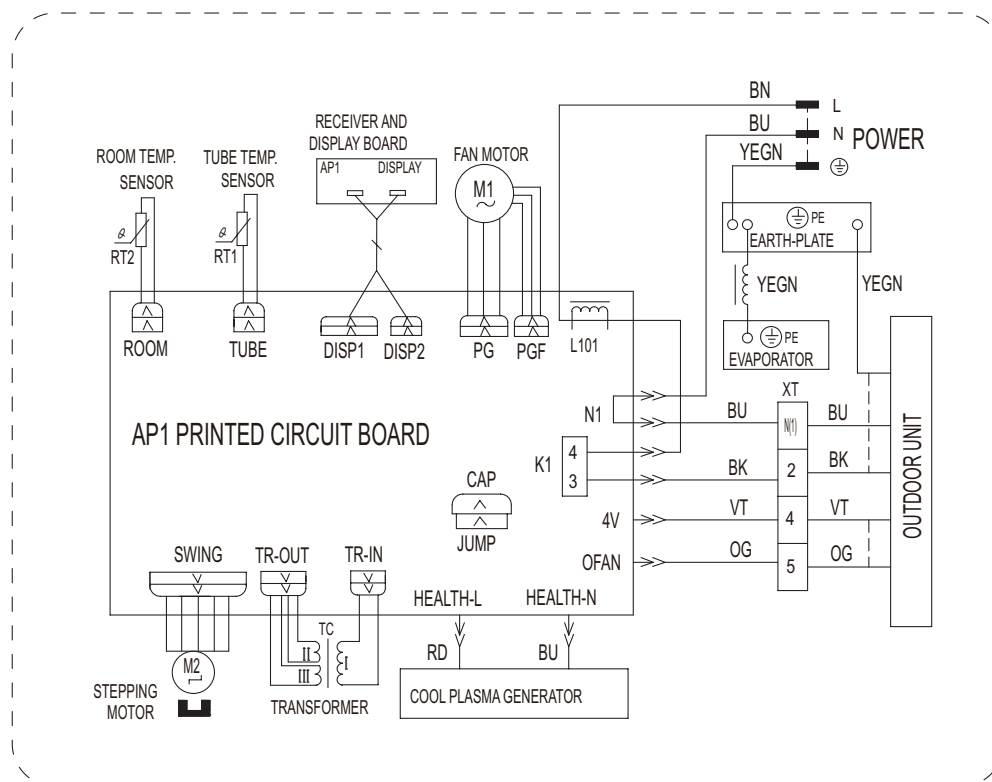
Models **GWH18ND-K3NNA2A/I** **GWH18ND-K3NNA4A/I(CA161N0280)** **GWH18ND-K3NNA9A/I**  
**GWH18ND-K3NNC7A/I** **GWH18ND-K3NND1A/I** **GWH18ND-K3NND2A/I(CA164N00601)**



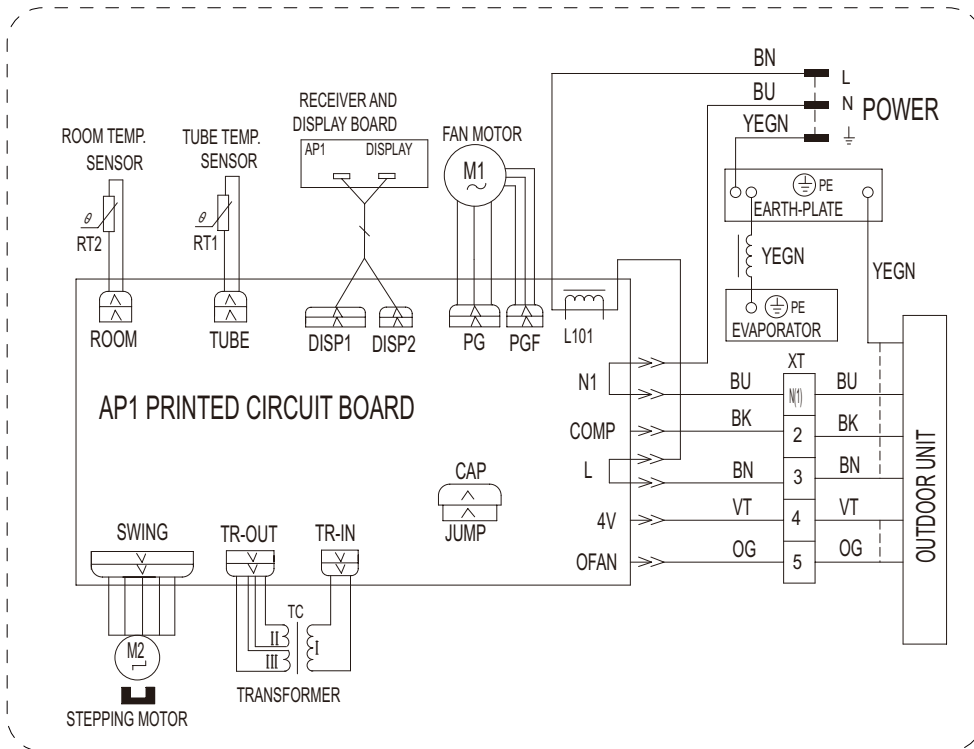
Models GWH18ND-K3NND2A/I(CA164N00600) GWH18ND-K3NNE2A/I



Model GWH18ND-K3NNA4A/I(CA161N0281)

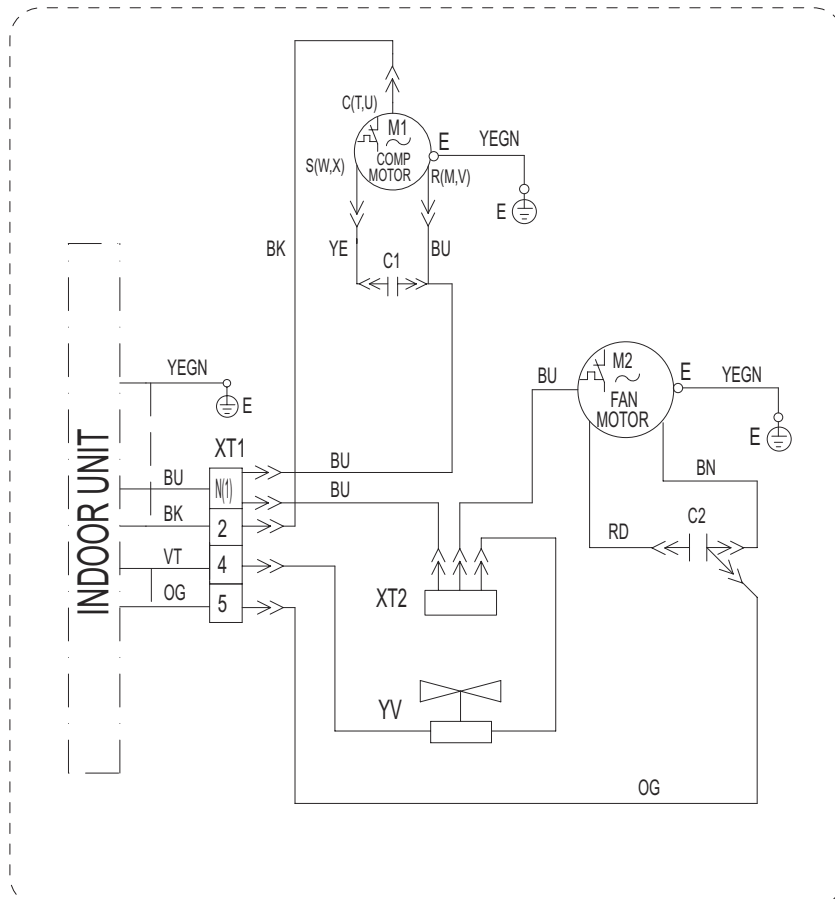


Model GWH24ND-K3NNE2A/I



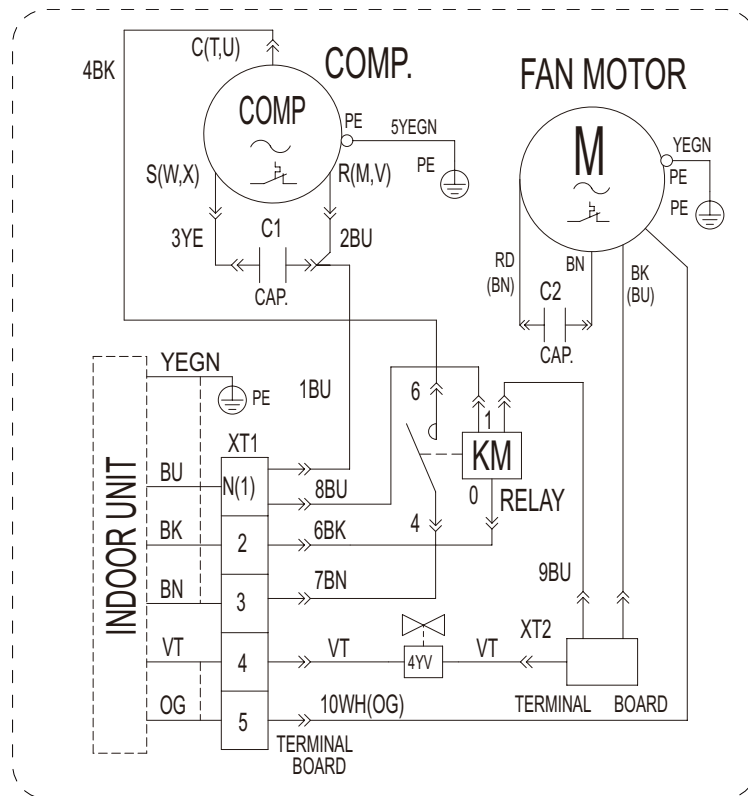
• Outdoor Unit

Model GWH18ND-K3NNB1A/O





Model GWH24ND-K3NNB1A/O

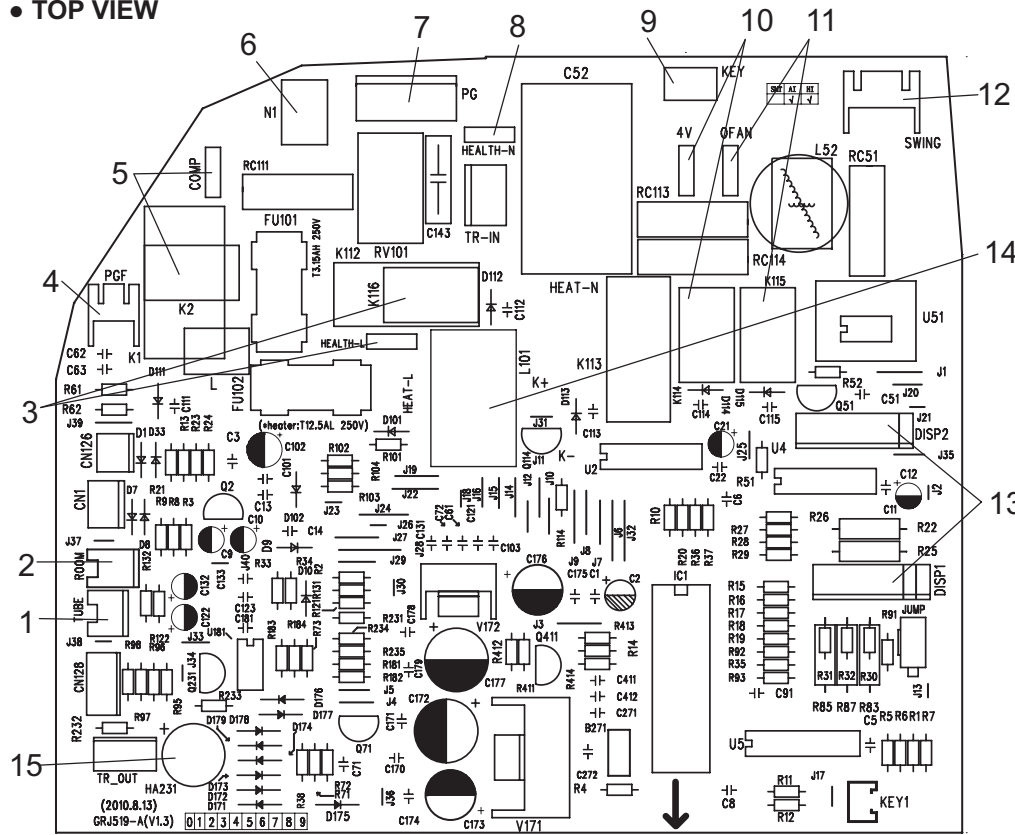


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

### 5.3 Printed Circuit Board

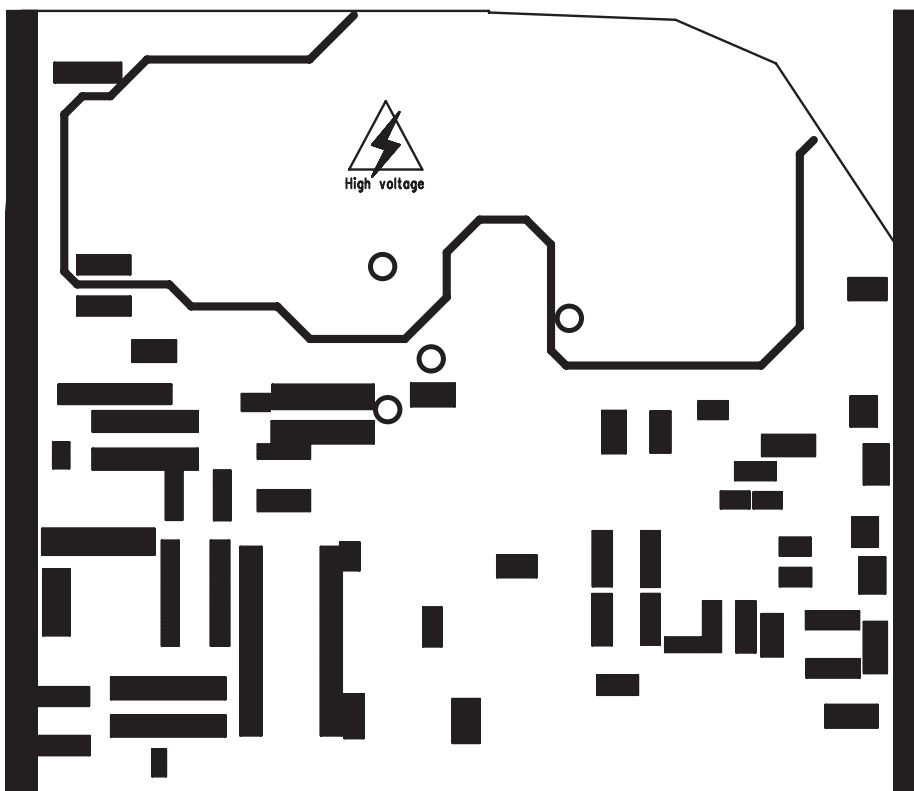
Models GWH18ND-K3NNA2A/I GWH18ND-K3NNA4A/I GWH18ND-K3NNA9A/I GWH24ND-K3NNE2A/I  
 GWH18ND-K3NNC7A/I GWH18ND-K3NND1A/I GWH18ND-K3NND2A/I(CA164N00601)

• TOP VIEW



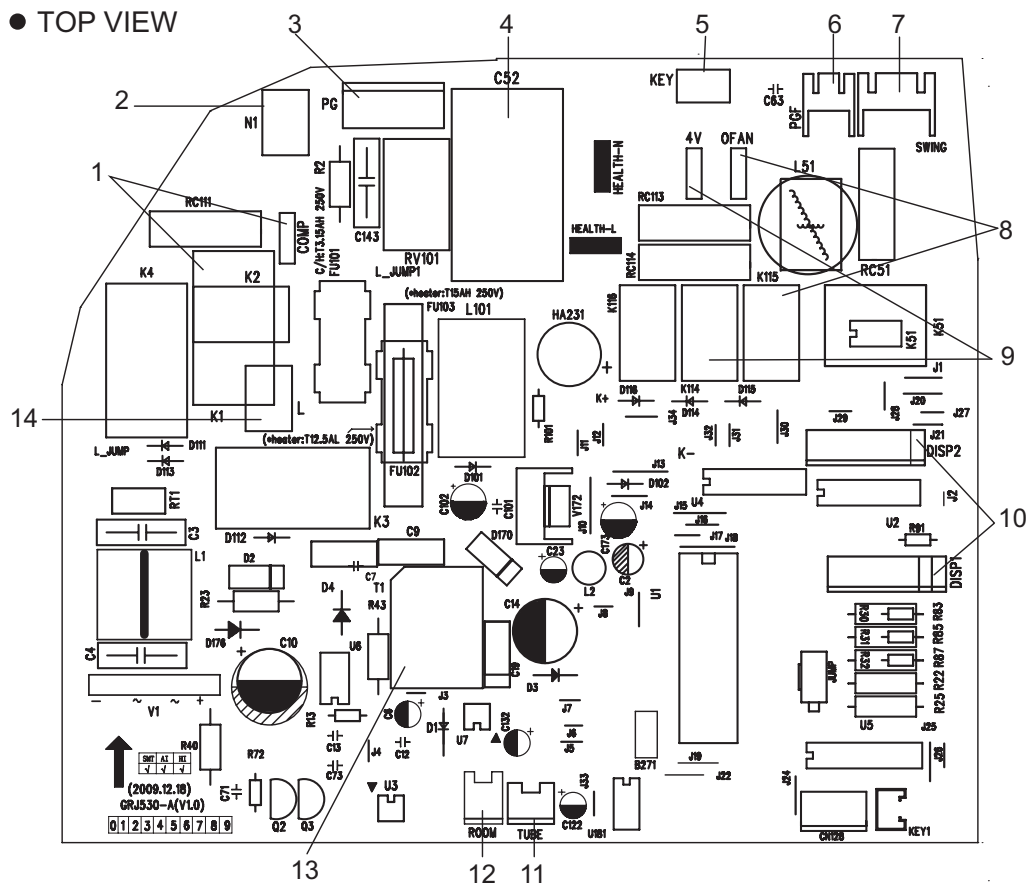
1	Connector of tube temperature sensor
2	Connector of ambient temperature sensor
3	Control connector of health function and control relay K116
4	Feedback connector of indoor fan
5	Control connector of compressor and control relay K2
6	Connector of neutral wire
7	Control connector of indoor fan
8	Neutral wire connector of health function
9	Auto button
10	Control connector of 4-way valve and control relay K114
11	Control connector of outdoorfan and control relay K115
12	Up and down swing control connector
13	Display control connector
14	Current detection circuit
15	Buzzer

• BOTTOM VIEW



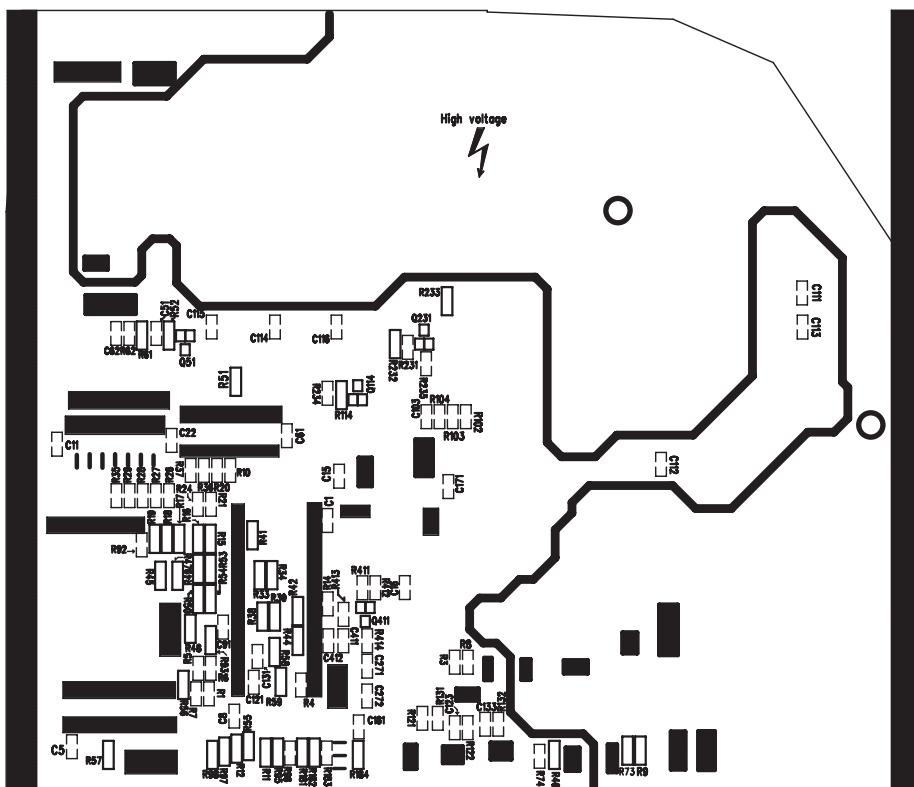
Models GWH18ND-K3NND2A/I(CA164000600) GWH18ND-K3NNE2A/I

● TOP VIEW



1	Interface COMP and control relay K2
2	Interface of neutral wire of power supply
3	Control interface of indoor fan
4	Capacitor for Drive of indoor fan
5	Auto button
6	Signal feedback interface of fan
7	Control interface of fan motor
8	Control interface of outdoor fan and control relay K115
9	Control interface of 4-way valve and control relay K114
10	Interface of display
11	Interface of pipe temp sensor
12	Interface of ambient temp sensor
13	High-frequency transformer T1
14	Interface of live wire of power supply

● BOTTOM VIEW



## 6. Function and Control

### 6.1 Remote Controller Description of YX1F



- 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 SWING**  
Press it to set swing angle.
- 7 SLEEP**
- 8 TIMER**  
Press it to set auto-on/auto-off timer.

**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 the button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, FAN, and HEAT\*, as the following:



**3 -** :  
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.

**4 +** :  
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.

**5 FAN:**  
This button is used for setting Fan Speed in the sequence that goes from AUTO, , , to , then back to Auto.





**6 SWING:**  
Press this key to activate or deactivate the swing.

**7 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.

**8 TIMER:**

Press this button to initiate auto-on/auto-off timer. To cancel auto-timer program, press this button twice.

**9 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.

**10 Combination of "MODE" and "-" buttons: About switch between fahrenheit and cennigrade**

At unit OFF, press "MODE" and "-" buttons simultaneously to switch between °C and °F .

**11 Combination of "+" and "FAN" buttons: About Lamp**

Under switch-on or switch-off state, you may hold "+" and "FAN" buttons simultaneously for 3 seconds to set the lamp on or off and send the code. After being energized, the lamp is defaulted on.

## 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 types of batteries, otherwise, it may cause malfunction.
- If the remote controller will not be used for a long time, please remove batteries to prevent batteries from leaking.
- 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 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.

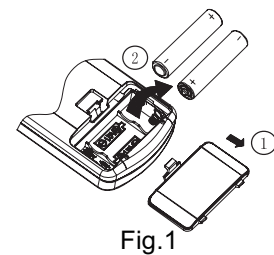


Fig.1

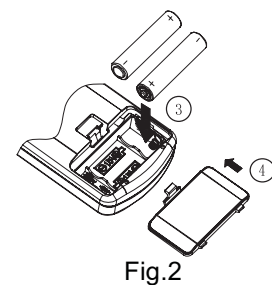



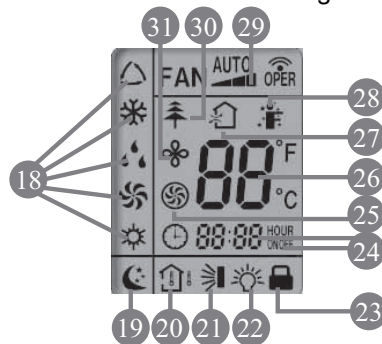


Fig.2






## 6.2 Remote Controller Description of YT1F



- 1 ON/OFF  
Press it to start or stop operation.
- 2 -:  
Press it to decrease temperature setting.
- 3 +:  
Press it to increase temperature setting.
- 4 FAN  
Press it to set fan speed.
- 5 MODE  
Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT).
- 6 I FEEL  
Press it to set HE ALTH function
- 7   
Press it to set AIR function.
- 8   
Press it set clock.
- 9 CLOCK  
Press it to set auto-on timer.
- 10 TIMER ON  
Press it set swing angle.
- 11   
Press it to set auto-off timer
- 12 X-FAN(X -FAN is the aiternative expression of BLOW for the purpose of understanding.)
- 13 TEMP
- 14 TIMER OFF  
Press it to turn on/off the light.
- 15 TURBO
- 16 SLEEP
- 17 LIGHT




**18** MODE icon:

If MODE button is pressed, current operation mode icon  (AUTO),  (COOL),  (DRY),  (FAN) or  (HEAT only for heat pump models) will show.


19 SLEEP icon :

 is displayed by pressing the SLEEP button. Press this button again to clear the display.


20 TEMP icon:

Pressing TEMP button,  (set temperature),  (ambient temperature),  (outdoor ambient temperature) and blank is displayed circularly.


21 Up & down swing icon:

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

22 LIGHT icon:

 is displayed by pressing the LIGHT button. Press LIGHT button again to clear the display.

23 LOCK icon:

 is displayed by pressing "+" and "-" buttons simultaneously. Press them again to clear the display.

24 SET TIME display:

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

25 TURBO icon:

 is displayed when pressing the TURBO button. Press this button again to clear the display.

26 DIGITAL display:

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

27 AIR icon:

 is displayed when pressing the AIR button. Press this button again to clear the display.

28 I FEEL icon:

 is displayed when pressing the I FEEL button. Press this button again to clear the display.

29 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.

30 HEALTH icon:

 is displayed when pressing the HEALTH button. Press this button again to clear the display.

31 X-FAN icon:

 is displayed when pressing the X-FAN button. Press this button again to clear the display.

1 ON/OFF:

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



2 -:

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.

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 FAN :

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



5 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.

**6 I FEEL:**

Press this button to turn on I FEEL function. The unit automatically adjust temperature according to the sensed temperature. Press this button again to cancel I FEEL function.



**7 **

Press this button to set HEALTH function ON or OFF. After the unit is turned on, it defaults to HEALTH function ON.

**8 **


Press this button to select AIR function ON or OFF.

**9 CLOCK :**

Pressing CLOCK button,  blinks. Within 5 seconds, pressing + or - button adjusts the present time. Holding down either button above 2 seconds increases or decreases the time by 1 minute every 0.5 second and then by 10 minutes every 0.5 second. During blinking after setting, press CLOCK button again to confirm the setting, and then  will be constantly displayed.

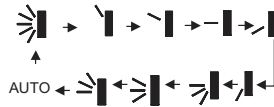
**10 TIMER ON :**













Press this button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again.

After pressing this button,  disappear sand " ON " blink s . 00:00 is displayed for ON time setting. Within 5 seconds, press + or - button to adjust the time value. Every press of either button changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute and then 10 minutes. Within 5 seconds after setting, press TIMER ON button to confirm.


**11 **

Press this button to set up & down swing angle, which circularly changes as below:




This remote controller is universal. If any command , or is sent out,  ,  ,  the unit will carry out the command as   
 indicates the guide louver swings as:       

**12 X-FAN:**

Pressing X -FAN button in COOL or DRY mode, the icon  is displayed and the indoor fan will continue operation for 10 min utes 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 or HEAT mode.

**13 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.

**14 TIMER OFF :**

Press this button to initiate the auto-off timer. To cancel the auto-timer program, simply press the button again. TIMER OFF setting is the same as TIMER ON.



**15 TURBO:**

Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in the 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.



**16 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.

**17 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.

**18 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.

**19 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)

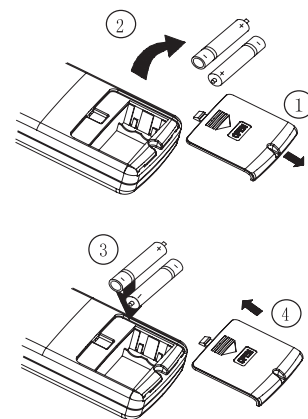
2. Take out the old batteries.

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 types of batteries, otherwise, it may cause malfunction.
- If the remote controller will not be used for a long time, please remove batteries to prevent batteries from leaking.
- 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 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

## 6.3 Description of Each Control Operation

### 1 Temperature Parameters

- ◆ Indoor preset temperature ( $T_{\text{preset}}$ )
- ◆ Indoor ambient temperature ( $T_{\text{amb}}$ )

**2 Basic functions** (The temperature in this manual is expressed by Centigrade. If Fahrenheit is used, the switchover between them is  $T_f = T_c \times 1.8 + 32$ .)

Once the compressor is energized, there should be a minimum interval of 3 minutes between two start-ups. But if the unit is de-energized and then energized, the compressor can restart within 3 minutes.

### 2.1 Cooling mode

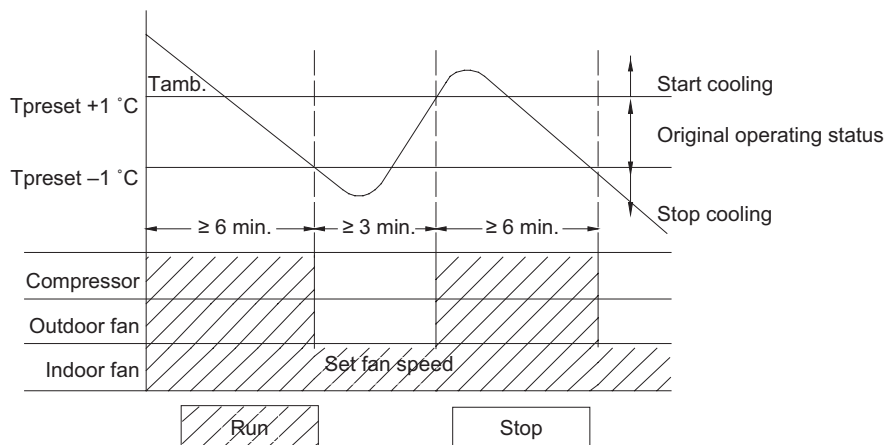
#### 2.1.1 Cooling conditions and process

When  $T_{\text{amb}} \geq T_{\text{preset}} + 1^\circ\text{C}$ , the unit starts cooling operation. In this case, the compressor and the outdoor fan operate and the indoor fan operates at set speed.

When  $T_{\text{amb}} \leq T_{\text{preset}} - 1^\circ\text{C}$ , the compressor and the outdoor fan stop while the indoor fan runs at set speed.

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

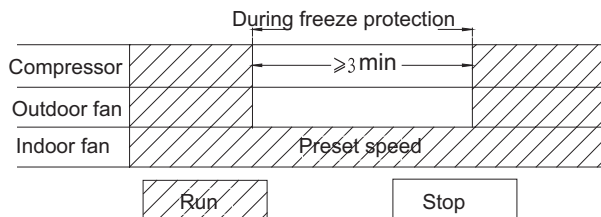
In cooling mode, the four-way valve is de-energized; temperature setting range is  $16 \sim 30^\circ\text{C}$ ; the indoor unit displays operation icon, cooling icon and set temperature.



#### 2.1.2 Protection Functions

##### ◆ Freeze protection

If the system is under freeze protection, the compressor and the outdoor fan stop operation, and the indoor fan operates at set speed. If freeze protection is eliminated and the compressor has been out of operation for 3 minutes, the unit will resume its previous running status.



#### 2.1.3 Overcurrent Protection

If the system current exceeds the specified value in 3 successive seconds, the complete unit will stop operation except for the indoor fan. After 3 minutes, if the overcurrent is eliminated, the complete unit will resume previous operation.

If overcurrent protection occurs for 6 successive times (If the compressor operates for 6 minutes continuously, the protective times will be cleared.), the complete unit will stop operation except for the indoor unit. In this case, you are expected to turn off the unit with the remote controller and then restart. During overcurrent protection, the indoor unit displays error code "E5"; the operation indicator lamp blinks (OFF for 3 seconds and blinks 5 times).

## 2.2 Dry Mode

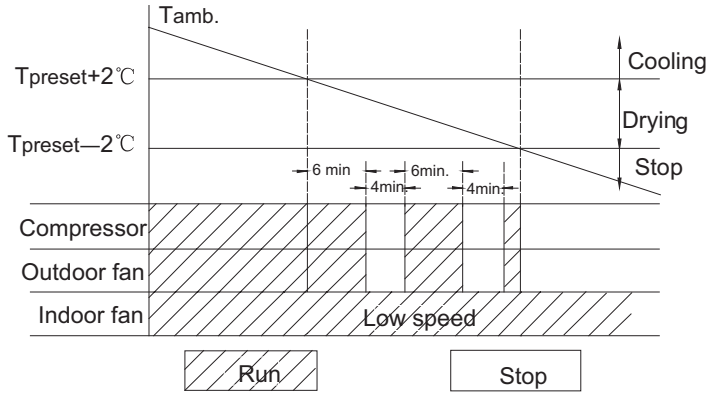
### 2.2.1 Dry Conditions and Process

When  $T_{amb.} > T_{preset} + 2^{\circ}\text{C}$ , the unit starts drying and cooling operation. In this case, the compressor and the outdoor fan operate; the indoor fan operates at low speed.

When  $T_{preset} - 2^{\circ}\text{C} \leq T_{amb.} \leq T_{preset} + 2^{\circ}\text{C}$ , the unit will start drying operation. In this case, the indoor fan operates at low speed; the compressor and the outdoor fan operate for 6 minutes and stop for 4 minutes in cycle.

When  $T_{amb.} < T_{preset} - 2^{\circ}\text{C}$ , the compressor and the outdoor fan stop operation; the indoor fan operates at low speed.

In drying mode, the four-way valve is de-energized; temperature setting range is  $16 \sim 30^{\circ}\text{C}$ ; the indoor unit displays operation icon, cooling icon and set temperature.



### 2.2.2 Protection

#### ◆ Freeze protection

During drying and cooling operation, if the system is under freeze protection, the compressor and outdoor fan stop operation while indoor fan operates at low speed. If freeze protection is eliminated and the compressor has been out of operation for 3 minutes, the complete unit will resume its previous running status.

During the cycle of on for 6 min and off for 4 min, if freeze protection is detected, the compressor and the outdoor fan will stop operation; the indoor fan will operate at low speed. When freeze protection is eliminated and the compressor has been out of operation for 4 minutes, the complete unit will resume its previous running status.

### 2.2.3 Other protection

Other protections are the same as those in cooling mode.

## 2.3 Heating mode

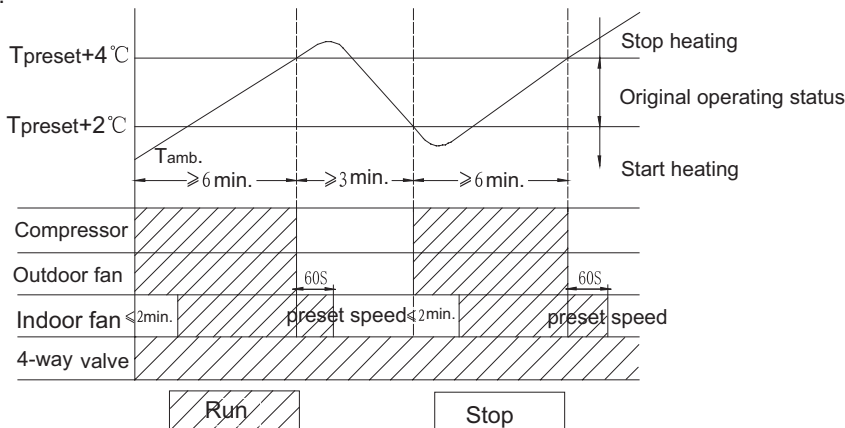
### 2.3.1 Heating conditions and process

When  $T_{amb.} \leq T_{preset} + 2^{\circ}\text{C}$ , the unit starts heating operation. In this case, the 4-way valve, compressor and outdoor fan operate simultaneously; the indoor fan operates with a maximum delay of 2 minutes.

When  $T_{amb} \geq T_{preset} + 4^{\circ}\text{C}$ , the compressor and outdoor fan stop operation. The 4-way valve remains energized; the indoor fan blow residual heat.

When  $T_{preset} + 2^{\circ}\text{C} < T_{amb.} < T_{preset} + 4^{\circ}\text{C}$ , the unit will maintain its previous running status.

Under this mode, the 4-way valve is energized; temperature setting range is  $16 \sim 30^{\circ}\text{C}$ ; the indoor unit displays operation icon, heating icon and set temperature.



### 2.3.2 Defrosting Conditions and Process

With intelligent defrosting function, the unit defrosts automatically according to the actual condition. The indoor unit displays "H1".

### **2.3.3 Protection Functions**

#### **◆Overheating Prevention Protection**

If the evaporator tube temperature overheats, the outdoor fan stops operation. When the tube temperature returns to normal, the outdoor fan resumes operation.

#### **◆Noise Silencing Protection**

If the unit is turned off by pressing ON/OFF button or during mode switchover, the 4-way valve stops with a delay of 2 minutes.

### **2.3.4 Overcurrent Protection**

This protection is the same as that in cooling mode (But indoor fan will blow residual heat).

### **2.4 Fan mode**

In fan mode, indoor fan operates at set speed while the compressor, outdoor fan, 4-way valve and electric heating tube stop operation. In this mode, temperature setting range is 16~30°C. The indoor unit displays operation icon and set temperature.

### **2.5 Auto Mode**

In AUTO mode, the unit will automatically select its operation mode (cooling, heating or fan) with the change of ambient temperature. The indoor unit displays the operation icon, operation mode icon and set temperature. There is a 30-second delay protection for mode switchover. Protection functions are the same as those in any other mode.

## **3 Other Control**

### **3.1 Timer function**

General timer and clock timer functions are compatible by equipping remote controller with different functions.

#### **3.1.1 General Timer**

Timer ON can be set at unit OFF. If selected ON time is reached, the unit will start to operate according to previous setting status. Time setting range is 0.5-24hr in 30-minute increments.

Timer OFF can be set at unit ON. If selected OFF time is reached, the unit will stop operation. Time setting range is 0.5-24hr in 30-minute increments.

#### **3.1.2 Clock Timer**

##### **Timer ON**

If timer ON is set during operation of the unit, the unit will continue to operate. If timer ON is set at unit OFF, upon ON time reaches the unit will start to operate according to previous setting status.

##### **Timer OFF**

If timer OFF is set at unit OFF, the system will keep standby status. If timer OFF is set at unit ON, upon OFF time reaches the unit will stop operation.

##### **Timer Change**

Although timer has been set, the unit still can be turned on/off by pressing ON/OFF button of the remote controller. You can also set the timer once again, and then the unit will operate according to the last setting.

If timer ON and timer OFF are set at the same time during operation of the unit, the unit will keep operating at current status till OFF time reaches.

If timer ON and timer OFF are set at the same time at unit OFF, the unit will keep off status till ON time reaches.

Each day in future, the system will operate according to preset mode till OFF time reaches and stop operation till ON time reaches. If ON time and OFF time are the same, OFF command will prevail.

### **3.2 Auto Button**

If this button is pressed, the unit will operate in AUTO mode and indoor fan will operate at auto speed; meanwhile, the swing motor operates. Press this button again to turn off the unit.

### **3.3 Buzzer**

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

### **3.4 Sleep Function**

In SLEEP mode, the unit will automatically select appropriate sleep curve to operate according to different temperature setting.

### **3.5 Turbo Function**

This function can be set in cooling or heating mode to quickly cool or heat the room.

### **3.6 X-FAN Function**

This function can be set in COOL or DRY mode.

### **3.7 Automatic Control of Fan Speed**

In this mode, the indoor fan will automatically select high, medium or low speed with the change of ambient temperature.

### **3.8 Up & Down Swing**

After energization, up & down swing motor will firstly have the horizontal louver rotate anticlockwise to position 0 to close air outlet.

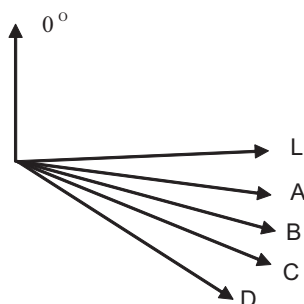
If swing function has not been set after startup of the unit, horizontal louver will turn clockwise to position D in HEAT mode, or turn clockwise to level position L in other modes.

If swing function is set when starting up the unit, the horizontal louver will swing between L and D.

There are 7 swing status of horizontal louver: Positions L, A, B, C and D, swing between L and D and stop at any position between L and D (angles between L and D are equiangular).

Upon turning off the unit, the horizontal louver will close at position 0. Swing function is available only when swing function is set and indoor fan is operating.

Note: If the position is set between L and B, A and C or B and D by remote controller, the horizontal louver will swing between L and D.



### 3.9 Display

#### 3.9.1 Operation and Mode Icons

Upon energization, the unit will display all icons. Under standby state, running indicating mark is displayed in red. If the unit is started by remote controller, running indicating mark gives off light; meanwhile, the mark of current running mode will be displayed (mode LED: cooling, heating and dry mode). If the light button is turned off, no mark will be displayed.

#### 3.9.2 Display of Nixie Tube on Indoor Unit

When energized & started for the first time, the indoor unit defaults to displaying current set temperature (16~30°C). When set temperature display is set by remote controller, it will display set temperature; when room temperature display is set, it will display room temperature. After that, when operating the remote controller for other settings, the temperature display method will keep original.

When operating the remote controller during room temperature display, the set temperature will be displayed for 5 seconds firstly and then room temperature display returns.

"F1" will be displayed upon malfunction of room temperature sensor, "F2" upon malfunction of indoor unit tube temperature sensor and "C5" upon malfunction of jumper cap.

For some models, if set temperature display is set by the remote controller, current set temperature will be displayed. After that, when switching to room temperature display from set temperature or outdoor temperature by the remote controller, room temperature will be displayed for 5 seconds firstly and then set temperature display returns.

#### 3.10 Locked protection to PG motor

If the indoor fan motor keeps low rotation speed for a continuous period of time after startup, the unit will stop operation and display "H6".

#### 3.11 Memory Function

Memorized items: mode, up & down swing, light, set temperature and set fan speed.

When power is recovered after power failure, the unit will automatically start operation according to memorized status. After power recovery, the unit without timer setting before power failure will operate according to the last setting; the unit with general timer setting which has not been fulfilled before power failure will memorize the timer setting and re-calculate the time after.

### 4 Special Functions(Optional)

#### 4.1 HEALTH Function

During operation of the indoor unit fan, press HEALTH button on the remote controller to start HEALTH function (If there is no tHEALTH button on the remote controller, the unit defaults HEALTH function ON).

#### 4.2 I FEEL Function

When I FEEL command is received, the controller will operate according to the ambient temperature sent by the remote controller (For defrosting and cold blow prevention, the unit operates according to the ambient temperature sensed by the air conditioner). The remote controller will regularly send ambient temperature data to the controller. When the data has not been received for a long time, the unit will operate according to the temperature sensed by the air conditioner. If I FEEL function is not selected, the ambient temperature will be that sensed by the air conditioner. I FEEL function is not to be memorized.

## 7. Installation Manual

### 7.1 Notices for Installation

#### Caution

- 1.The unit should be installed only by authorized service center according to local or government regulations and in compliance with this manual.
- 2.Before installing, please contact with local authorized maintenance center. If the unit is not installed by the authorized service center, the malfunction may not be solved due to inconvenient contact between the user and the service personnel.
- 3.When removing the unit to the other place, please firstly contact with the local authorized service center.
- 4.Warning: Before obtaining access to terminals, all supply circuits must be disconnected.
- 5.For appliances with type Y attachment, the instructions shall contain the substance of the following. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- 6.The appliance must be positioned so that the plug is accessible.
- 7.The temperature of refrigerant line will be high; please keep the interconnection cable away from the copper tube.
- 8.The instructions shall state the substance of the following:

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

#### 7.1.1 Installation Site Instructions

Proper installation site is vital for correct and efficient operation of the unit. Avoid the following sites where:

- strong heat sources, vapours, flammable gas or volatile liquids are emitted.
- high-frequency electro-magnetic waves are generated by radio equipment, welders and medical equipment.
- salt-laden air prevails (such as close to coastal areas).
- the air is contaminated with industrial vapours and oils.
- the air contains sulphur gas such as in hot spring zones.
- corrosion or poor air quality exists.

#### 7.1.2 Installation Site of Indoor Unit

- 1.The air inlet and outlet should be away from the obstructions. Ensure the air can be blown through the whole room.
- 2.Select a site where the condensate can be easily drained out, and where it is easily connected to outdoor unit.
- 3.Select a place where it is out of reach of children.
- 4.Select a place where the wall is strong enough to withstand the full weight and vibration of the unit.
- 5.Be sure to leave enough space to allow access for routine maintenance. The installation site should be 250cm or more above the floor.
- 6.Select a place about 1m or more away from TV set or any other electric appliance.
- 7.Select a place where the filter can be easily taken out.
- 8.Make sure that the indoor unit is installed in accordance with installation dimension instructions.
- 9.Do not use the unit in the laundry or by swimming pool etc.

#### 7.1.3 Installation Site of Outdoor Unit

- 1.Select a site where noise and outflow air emitted by the unit will not annoy neighbors.
- 2.Select a site where there is sufficient ventilation.
- 3.Select a site where there is no obstruction blocking the inlet and outlet.
- 4.The site should be able to withstand the full weight and vibration.
- 5.Select a dry place, but do not expose the unit to direct sunlight or strong wind.
- 6.Make sure that the outdoor unit is installed in accordance with the installation instructions, and is convenient for maintenance and repair.
- 7.The height difference between indoor and outdoor units is within 10m, and the length of the connecting tubing does not exceed 25m.
- 8.Select a place where it is out of reach of children.
- 9.Select a place where the unit does not have negative impact on pedestrians or on the city.

### 7.1.4 Safety Precautions for Electric Appliances

- 1.A dedicated power supply circuit should be used in accordance with local electrical safety regulations.
- 2.Don't drag the power cord with excessive force.
- 3.The unit should be reliably earthed and connected to an exclusive earth device by the professionals.
- 4.The air switch must have the functions of magnetic tripping and heat tripping to prevent short circuit and overload.
- 5.The minimum distance between the unit and combustive surface is 1.5m.
- 6.The appliance shall be installed in accordance with national wiring regulations.
- 7.An all-pole disconnection switch with a contact separation of at least 3mm in all poles should be connected in fixed wiring.

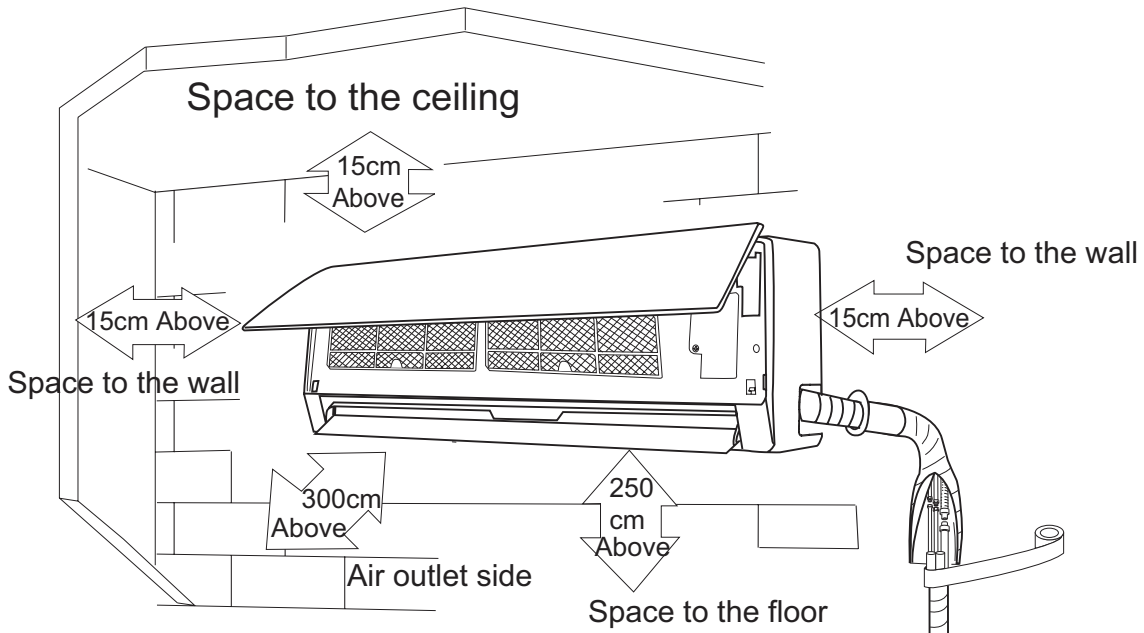
**Note:**

- Make sure the live wire, neutral wire and earth wire in the family power socket are properly connected.
- There should be reliable circuit in the diagram.Inadequate or incorrect electrical connections may cause electric shock or fire.

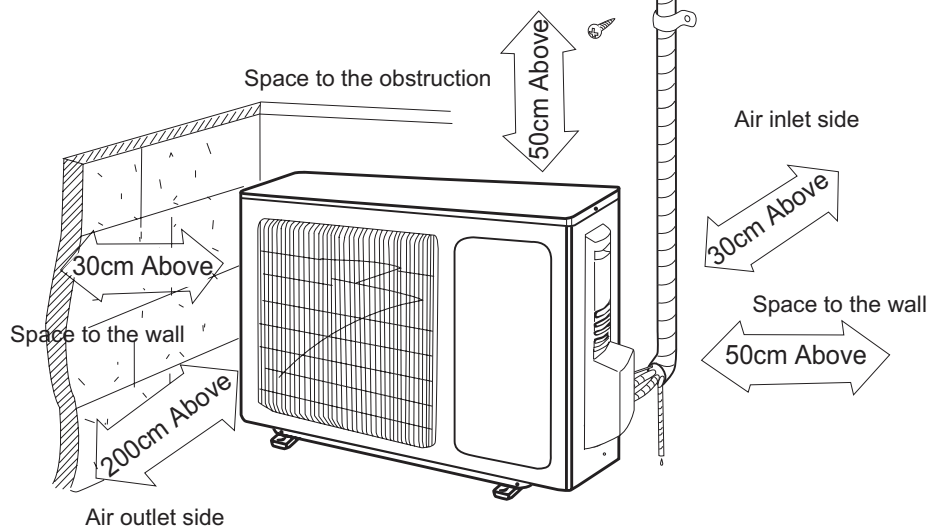
### 7.1.5 Earthing Requirements

- 1.Air conditioner is type I electric appliance. Please ensure that the unit is reliably earthed.
- 2.The yellow-green wire in air conditioner is the earthing wire which can not be used for other purposes. Improper earthing may cause electric shock.
- 3.The earth resistance should accord to the national criterion.
- 4.The power must have reliable earthing terminal. Please do not connect the earthing wire with the following:
  - ① Water pipe
  - ② Gas pipe
  - ③ Contamination pipe
  - ④ Other place that professional personnel consider is unreliable
5. The model and rated values of fuses should accord with the silk print on fuse cover or related PCB.

## 7.2 Installation Drawing



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

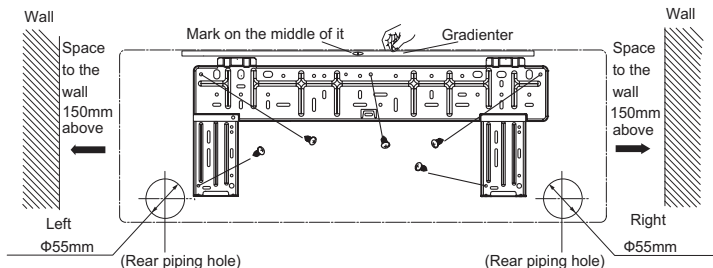




## 7.3 Install Indoor Unit

### 7.3.1 Installation of Mounting Plate

1. Mounting plate should be installed horizontally. As the water tray's outlet for the indoor unit is two-way type, during installation, the indoor unit should slightly slant to water tray's outlet for smooth drainage of condensate.
2. Fix the mounting plate on the wall with screws.
3. Be sure that the mounting plate has been fixed firmly enough to withstand about 60 kg. Meanwhile, the weight should be evenly shared by each screw.



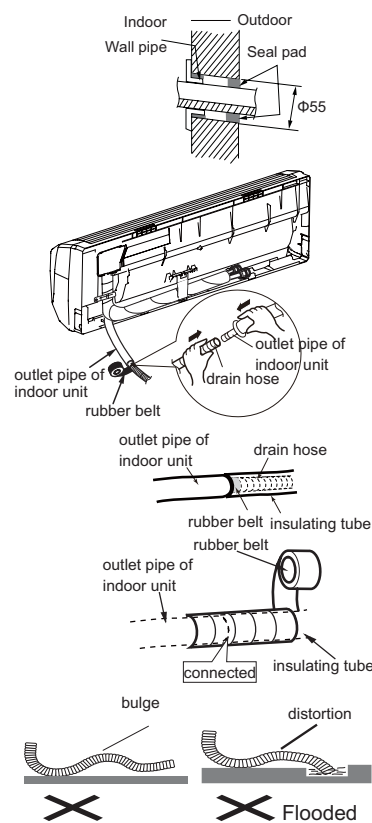
### 7.3.2 Drill Piping Hole

1. Slant the piping hole (Φ55) on the wall slightly downward to the outdoor side.
2. Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.

### 7.3.3 Installation of Drain Hose

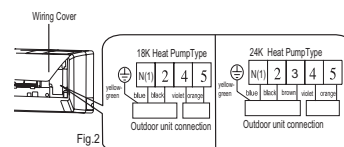
1. Connect the drain hose to the outlet pipe of the indoor unit. Bind the joint with rubber belt.
2. Put the drain hose into insulating tube.
3. Wrap the insulating tube with wide rubber belt from the joint of outlet pipe and insulating pipe so as to prevent shift of insulating tube. The drain hose should be placed at a downward slant for easy discharge of condensate.

Note: the insulating tube should be connected reliably with the sleeve outside the outlet pipe. The drain hose should be downward slant, without distortion, bulge or fluctuation. Do not put the water outlet in the water.



### 7.3.4 Connecting Indoor and Outdoor Electric Wires

1. Open the front panel.
2. Remove the wiring cover connect and fix power connection cord and signal control wire to the terminal board (As shown in Fig.2)
3. Make the power connection cord and signal control wire through the hole in the back of indoor unit.
4. Reinstall the cord anchorage and wiring cover.
5. Reinstall the front panel.



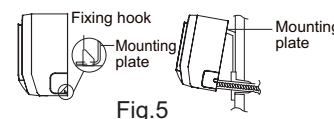
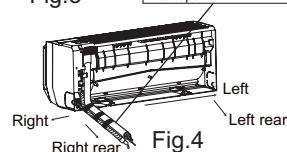
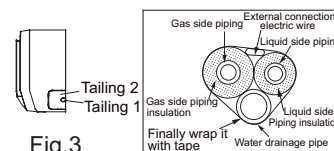
**NOTE:**

All wires between indoor and outdoor units must be connected by the qualified electric contractor.

- Electric wires must be connected correctly. Improper connection may cause malfunction.
- Tighten the terminal screws securely.
- After tightening the screws, pull the wire slightly to confirm whether it's firm or not.
- Make sure that the electric connections are earthed properly to prevent electric shock.
- Make sure that all wiring connections are secure and the cover plates are reinstalled properly. Poor installation may cause fire or electric shock.

**7.3.5 Installation of Indoor Unit**

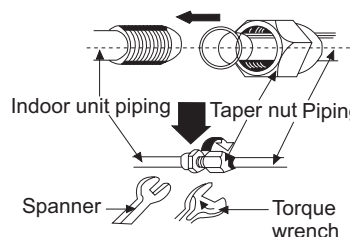
- The piping can be output from right, right rear, left or left rear.
1. When routing the piping and wiring from the left or right side of indoor unit, cut off the tailings from the chassis when necessary (As shown in Fig.3)
    - (1) Cut off the tailing 1 when routing the wiring only;
    - (2) Cut off the tailing 1 and tailing 2 when routing both the wiring and piping.
  2. Take out the piping from body case, wrap the piping, power cords, drain hose with the tape and make them through the piping hole. (As shown in Fig.4)
  3. Hang the mounting slots of the indoor unit on the upper hooks of the mounting plate and check if it is firm enough. (As shown in Fig.5)
  4. The installation site should be 250cm or more above the floor.



**7.3.6 Installation of Connection Pipe**

1. Align the center of the pipe flare with the relevant valve.
2. Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench referring to the following:

Hex nut diameter	Tightening torque (N·m)
Φ6	15~20
Φ 9.52	31~35
Φ 12	50~55
Φ 16	60~65
Φ 19	70~75



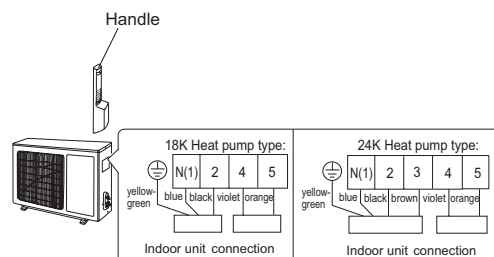
**NOTE:**

Connect the connection pipe to indoor unit at first and then to outdoor unit. Handle piping bending with care. Do not damage the connection pipe. Ensure that the joint nut is tightened firmly, otherwise, it may cause leakage.

**7.4 Installation of Outdoor Unit**

**7.4.1 Electric Wiring**

1. Remove the handle on the right side plate of outdoor unit.
2. Take off wire cord anchorage. Connect and fix power connection cord and signal control wire to the terminal board. Wiring should fit that of indoor unit.
3. Fix the power cord and signal control wire with wire clamps and then connect the corresponding connector.
4. Confirm if the wire has been fixed properly.
5. Reinstall the handle.



**NOTE:**

- Incorrect wiring may cause malfunction of spare part.
- After the wire has been fixed, ensure there is free space between the connection and fixing places on the lead wire.

### 7.4.2 Air Purging and Leakage Test

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
2. Connect joint of charging hose to vacuum pump.
3. Fully open the handle of Lo manifold valve.
4. Open the vacuum pump for vacuumization. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside. (If noise of vacuum pump has been changed, the reading of multimeter is 0) Then tighten the nut.
5. Keep evacuating for more than 15mins and make sure the reading of multi-meter is  $1.0 \times 10^5$  pa(-76cmHg).
6. Fully open high/low pressure valves.
7. Remove charging hose from charging end of low pressure valve.
8. Tighten bonnet of low pressure valve. (As shown in Fig.6)

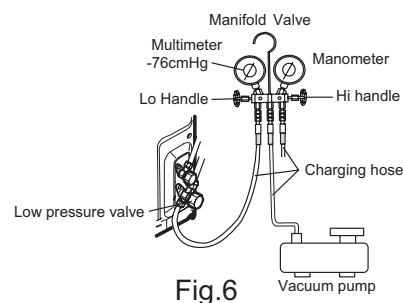
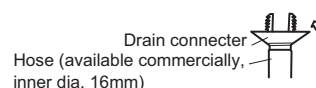
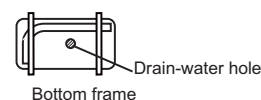


Fig.6

### 7.4.3 Outdoor condensate Drainage (only for heat pump type)

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.



## 7.5 Check after Installation and Test Operation

### 7.5.1 Check after Installation

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

## 7.5.2 Operation Test

### 1. Before Operation Test

- (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. Operation Test Method

- (1) Switch on power and press "ON/OFF" button on the wireless remote controller to start the operation.
- (2) Press MODE button to select the COOL, HEAT (Not available for cooling only unit), FAN to check whether the operation is normal or not.

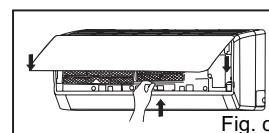
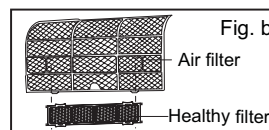
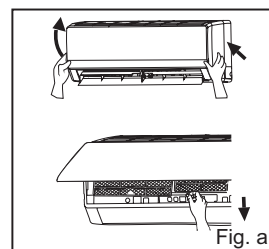
## 7.6 Installation and Maintenance of Healthy Filter

### 7.6.1 Installation of Healthy Filter

1. Lift up the front panel from its two ends, as shown by the arrow direction, and then remove the air filter. (as shown Fig.a)

2. Attach the healthy filter onto the air filter, (as shown Fig.b).

3. Install the air filter properly along the arrow direction in Fig.c, and then close the panel .



### 7.6.2 Cleaning and Maintenance

Remove the healthy filter and reinstall it after cleaning according to the installation instruction. Do not use brush or hard objects to clean the filter. After cleaning, be sure to dry it in the shade.

### 7.6.3 Service Life

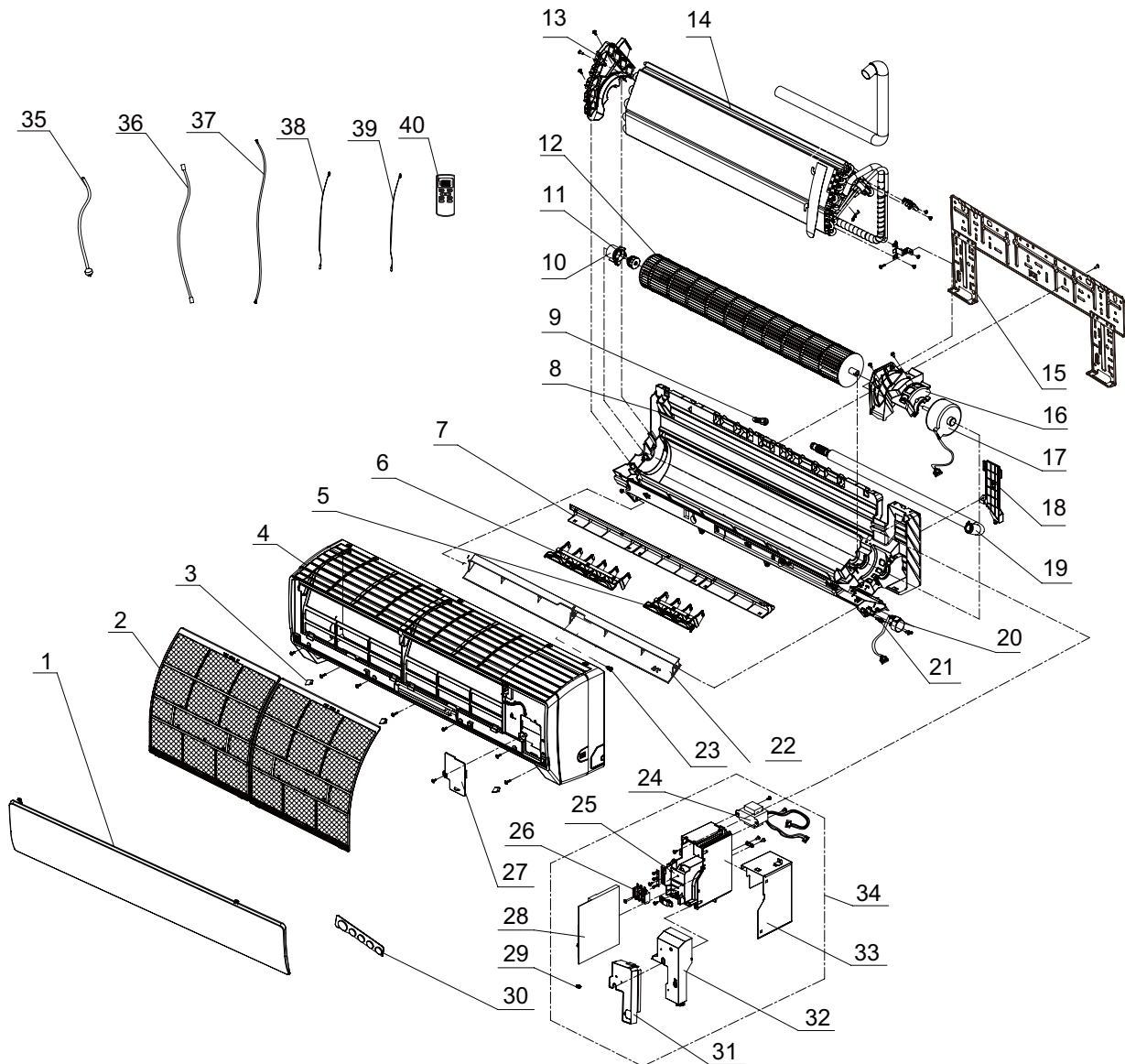
The general service life for the healthy filter is about one year under normal condition. As for silver ion filter, it is ineffective when its surface becomes black (green).

● This supplementary instruction is provided for reference to the unit with healthy filter. If the graphics provided herein are different from the actual product, please refer to the actual product. The quantity of healthy filters is based on the actual delivery.

## 8. Exploded Views and Parts List

### 8.1 Indoor Unit

(1) Models: GWH18ND-K3NNA2A/I GWH18ND-K3NND1A/I

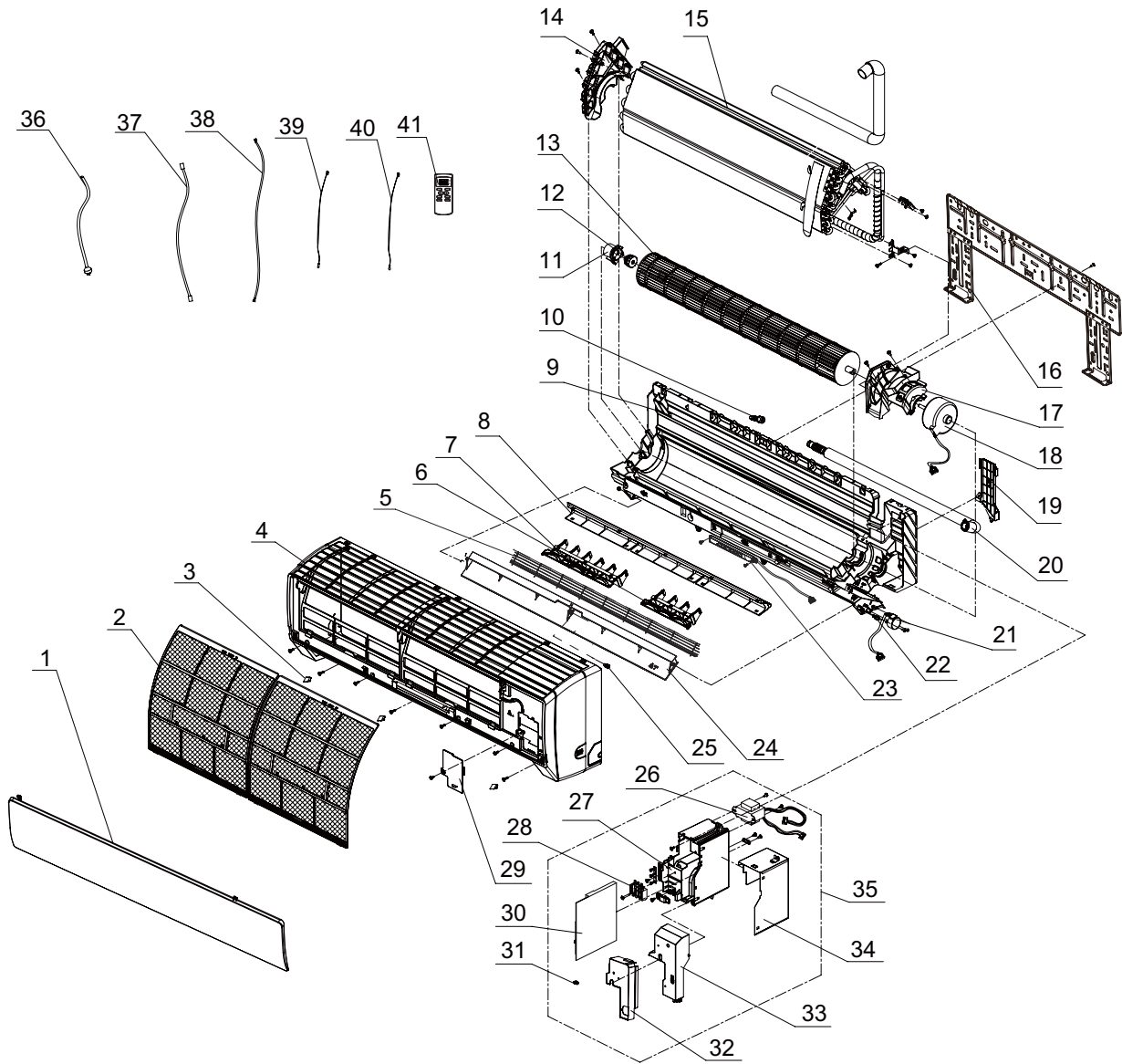


**Exploded Views and Parts List**

NO.	Description	Part Code			Qty
		GWH18ND-K3NND1A/I	GWH18ND-K3NNA2A/I		
		Product Code	CA147N01600	CA181N0210	
1	Front Panel Assy	20012713	20012283	20012861	1
2	Filter Sub-Assy	1112208901	1112208901	1112208901	2
3	Screw Cover	24252016	24252016	24252016	3
4	Front Case	20012767	20012250	20012250	1
5	Air Louver 1	10512116	10512116	10512116	1
6	Air Louver 2	10512117	10512117	10512117	1
7	Helicoid tongue	26112238	26112238	26112238	1
8	Rear Case assy	12312214	12312214	12312214	1
9	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	76512203	76512051	76512051	1
12	Cross Flow Fan	10352019	10352019	10352019	1
13	Evaporator Support	24212100	24212100	24212100	1
14	Evaporator Assy	01002590	01002590	01002590	1
15	Wall Mounting Frame	01252218	01252218	01252218	1
16	Motor Press Plate	26112178	26112494	26112494	1
17	Fan Motor	15012116	15012116	15012116	1
18	Pipe Clamp	26112164	26112164	26112164	1
19	Drainage hose	5230014	05230014	05230014	1
20	Step Motor	15012086	15012086	15012086	1
21	Crank	10582070	10582070	10582070	1
22	Guide Louver	10512115	10512115	10512115	1
23	Axile Bush	10542008	10542008	10542008	1
24	Transformer	43110237	43110237	43110237	1
25	Electric Box	20112108	20112108	20112108	1
26	Terminal Board	42010268	42010268	42010268	1
27	Electric Box Cover2	20112081	20112081	20112081	1
28	Main Board	30135228	30135228	30135228	1
29	Jumper	4202300109	4202300109	4202300109	1
30	Display Board	30565122	30565039	30565061	1
31	Shield cover of Electric Box	01592092	01592092	01592092	1
32	Electric Box Cover1	20122128	20122154	20122154	1
33	Lower Shield of Electric Box	01592091	01592091	01592091	1
34	Electric Box Assy	2020217708	20202109	2020208010	1
35	Power Cord	4002048716	400203253	400203253	1
36	Connecting Cable	4002053603	4002053603	4002053603	1
37	Connecting Cable	400205402	400205402	400205402	1
38	Tube Sensor	390000591	390000591	390000591	1
39	Ambient Temperature Sensor	390000451	390000451	390000451	1
40	Remote Controller	30510065	30510065	30510065	1

**The data above are subject to change without notice.**

(2) Model: GWH18ND-K3NNC7A/I



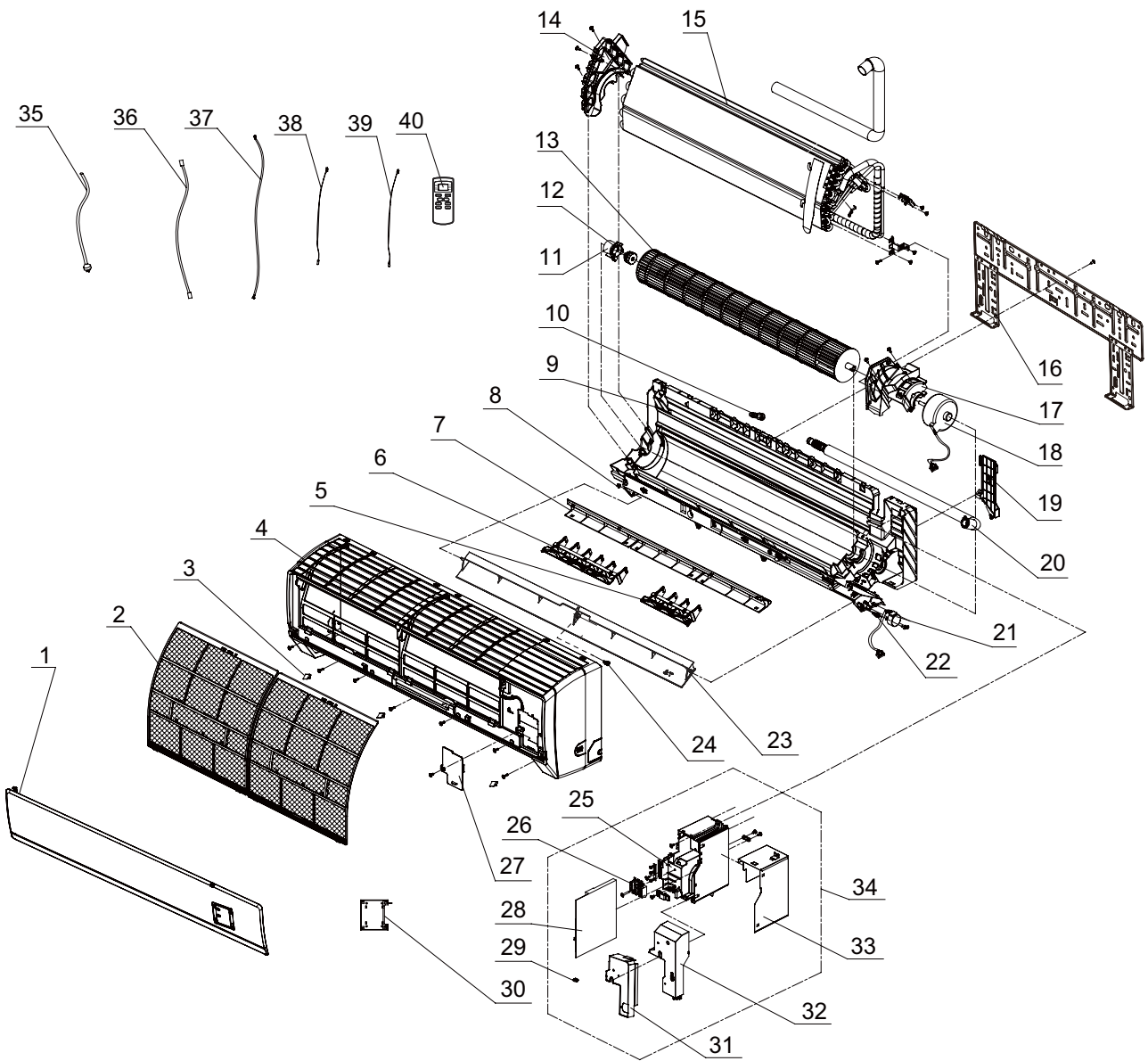
**Exploded Views and Parts List**

NO.	Description	Part Code		Qty
		GWH18ND-K3NNC7A/I	GWH18ND-K3NNC7A/I(Finger-protecting grill)	
		Product code	CA195N0370	
1	Front Panel Assy	20012612	20012612	1
2	Filter Sub-Assy	1112208901	1112208901	2
3	Screw Cover	24252016	24252016	3
4	Front Case	20012250	20012250	1
5	Mesh Enclosure(Air Outlet)	/	01472015	1
6	Air Louver 1	10512116	10512708	1
7	Air Louver 2	10512117	10512709	1
8	Helicoid Tongue	26112238	26112238	1
9	Rear Case assy	12312214	22202128	1
10	Rubber Plug (Water Tray)	76712012	76712012	1
11	Ring of Bearing	26152022	26152022	1
12	O-Gasket of Cross Fan Bearing	76512203	76512203	1
13	Cross Flow Fan	10352019	10352019	1
14	Evaporator Support	24212100	24212100	1
15	Evaporator Assy	01002590	01002575	1
16	Wall Mounting Frame	01252218	01252218	1
17	Motor Press Plate	26112178	26112178	1
18	Fan Motor	15012116	15012116	1
19	Pipe Clamp	26112164	26112164	1
20	Drainage Hose	05230014	05230014	1
21	Step Motor	15012086	15012086	1
22	Crank	10582070	10582070	1
23	Display Board	30565106	30565106	1
24	Guide Louver	10512115	10512115	1
25	Axile Bush	10542008	10542008	1
26	Transformer	43110237	43110237	1
27	Electric Box	20112108	20112108	1
28	Terminal Board	42010268	42010268	1
29	Electric Box Cover2	20112081	20112081	1
30	Main Board	30135228	30135228	1
31	Jumper	4202300109	4202300109	1
32	Shield Cover of Electric Box	1592092	01592092	1
33	Electric Box Cover1	20122128	20122128	1
34	Lower Shield of Electric Box	01592091	01592091	1
35	Electric Box Assy	20202600	20202600	1
36	Power Cord	400203253	400203253	1
37	Connecting Cable	4002053603	4002053603	0
38	Connecting Cable	400205402	400205402	0
39	Tube Sensor	390000591	390000591	1
40	Ambient Temperature Sensor	390000451	390000451	1
41	Remote Controller	30510065	30510065	1

**The data above are subject to change without notice.**



(3) Model: GWH18ND-K3NND2A/I

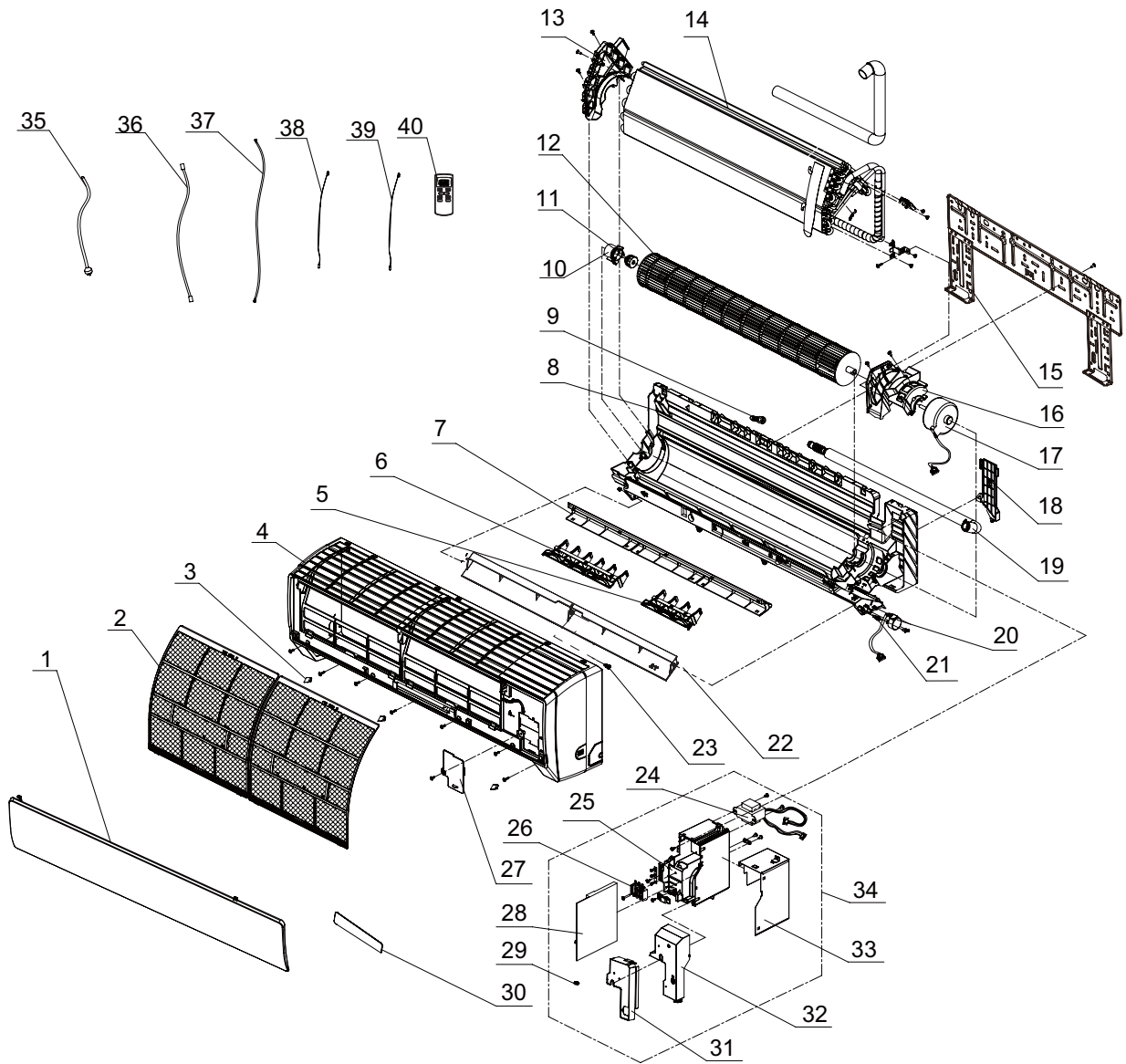


**Exploded Views and Parts List**

NO.	Description	Part Code	Qty
		GWH18ND-K3NND2A/I	
		Product Code CA164N00600	
1	Front Panel Assy	20012477	1
2	Filter Sub-Assy	1112208901	2
3	Screw Cover	24252016	3
4	Front Case	20012767	1
5	Air Louver 1	10512116	1
6	Air Louver 2	10512117	1
7	Helicoid tongue	26112238	1
8	Left Axile Bush	10512037	1
9	Rear Case assy	12312214	1
10	Rubber Plug (Water Tray)	76712012	1
11	Ring of Bearing	26152022	1
12	O-Gasket of Cross Fan Bearing	76512203	1
13	Cross Flow Fan	10352019	1
14	Evaporator Support	24212100	1
15	Evaporator Assy	01002590	1
16	Wall Mounting Frame	01252218	1
17	Motor Press Plate	26112178	1
18	Fan Motor	15012116	1
19	Pipe Clamp	26112164	1
20	Drainage hose	05230014	1
21	Step Motor	15012086	1
22	Crank	10582070	1
23	Guide Louver	10512115	1
24	Axile Bush	10542008	1
25	Electric Box	20112108	1
26	Terminal Board	42010268	1
27	Electric Box Cover2	20112081	1
28	Main Board	30135454	1
29	Jumper	4202300109	1
30	Display Board	30540016	1
31	Shield cover of Electric Box	01592092	1
32	Electric Box Cover1	20122128	1
33	Lower Shield of Electric Box	01592091	1
34	Electric Box Assy	20202440	1
35	Power Cord	4002048716	1
36	Connecting Cable	4002053603	1
37	Connecting Cable	400205402	1
38	Tube Sensor	390000591	1
39	Ambient Temperature Sensor	390000453	1
40	Remote Controller	30510065	1

**The data above are subject to change without notice.**

(4) Models: GWH18ND-K3NNA9A/I , GWH18ND-K3NND2A/I(C panel )



**Exploded Views and Parts List**

NO.	Description	Part Code		Qty
		GWH18ND-K3NNA9A/I	GWH18ND-K3NND2A/I(C panel )	
	Product Code	CA182N01600	CA164N00601	
1	Front Panel Assy	20012886	20012771	1
2	Filter Sub-Assy	1112208901	1112208901	2
3	Screw Cover	24252016	24252016	3
4	Front Case	20012767	20012945	1
5	Air Louver 1	10512116	10512116	1
6	Air Louver 2	10512117	10512117	1
7	Helicoid tongue	26112238	26112238	1
8	Rear Case assy	12312214	12312214	1
9	Rubber Plug (Water Tray)	76712012	76712012	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	76512051	76512051	1
12	Cross Flow Fan	10352019	10352019	1
13	Evaporator Support	24212100	24212100	1
14	Evaporator Assy	01002590	01002590	1
15	Wall Mounting Frame	01252218	01252218	1
16	Motor Press Plate	26112178	26112178	1
17	Fan Motor	15012116	15012116	1
18	Pipe Clamp	26112164	26112164	1
19	Drainage hose	5230014	5230014	1
20	Step Motor	15012086	15012086	1
21	Crank	10582070	10582070	1
22	Guide Louver	10512115	10512115	1
23	Axile Bush	10542008	10542008	1
24	Transformer	43110237	43110237	1
25	Electric Box	20112108	20112108	1
26	Terminal Board	42010268	42010268	1
27	Electric Box Cover2	20112081	20112081	1
28	Main Board	30135228	30135228	1
29	Jumper	4202300109	4202300109	1
30	Display Board	30565018	3056506401	1
31	Shield cover of Electric Box	01592092	01592092	1
32	Electric Box Cover1	20122128	20122128	1
33	Lower Shield of Electric Box	01592091	01592091	1
34	Electric Box Assy	20202829	20202903	1
35	Power Cord	4002048716	400203253	1
36	Connecting Cable	4002053603	4002053603	1
37	Connecting Cable	400205402	400205402	1
38	Tube Sensor	390000591	390000591	1
39	Ambient Temperature Sensor	390000451	390000451	1
40	Remote Controller	30510065	30510065	1

**The data above are subject to change without notice.**

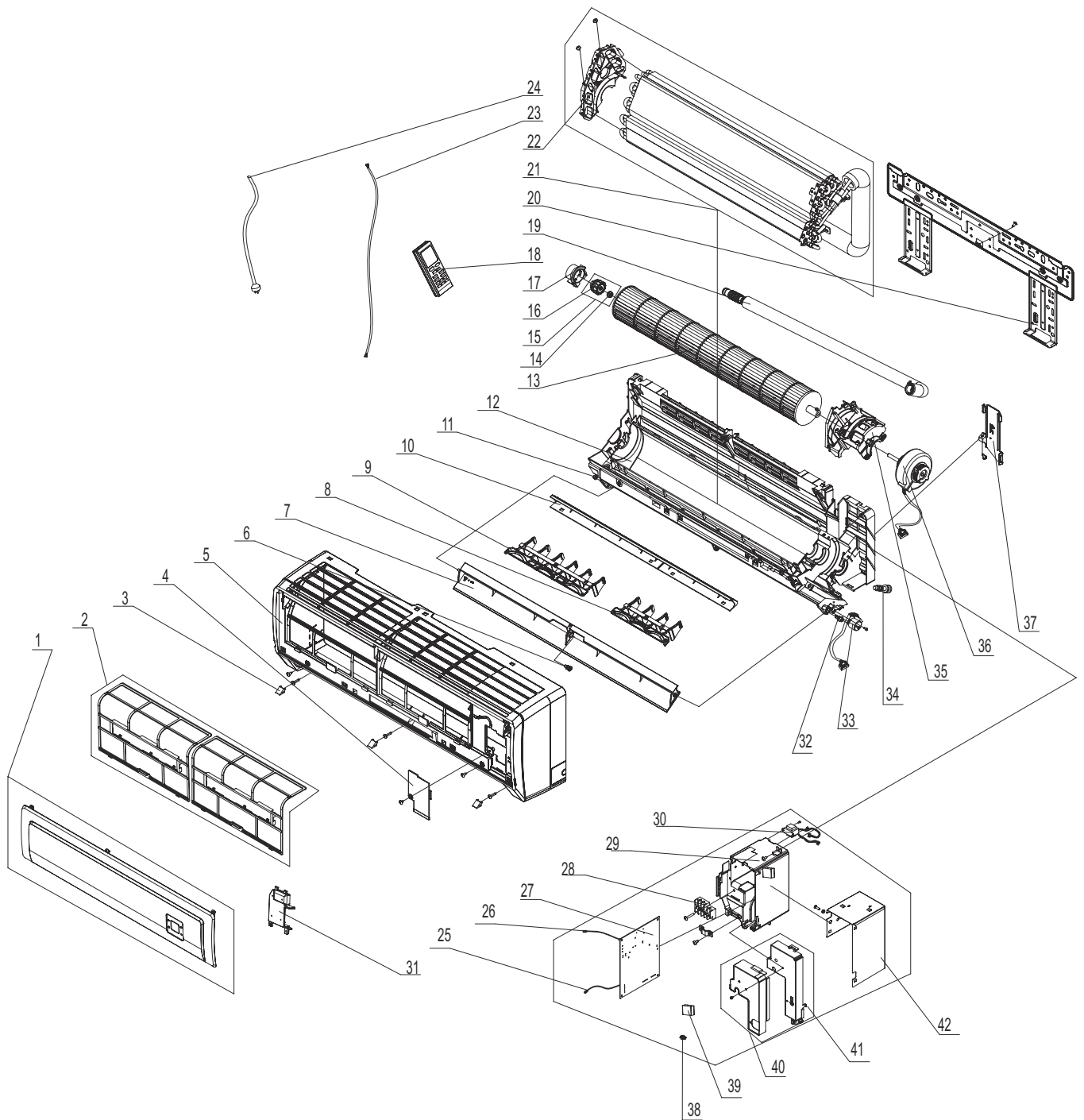


**Exploded Views and Parts List**

NO.	Description	Part Code		Qty
		GWH18ND-K3NNA4A/I	GWH18ND-K3NNA4A/I(Cold Plasma)	
	Product Code	CA161N0280	CA161N0281	
1	Front Panel Assy	20012280	20012280	1
2	Filter Sub-Assy	1112208901	1112208901	2
3	Screw Cover	24252016	24252016	3
4	Front Case Sub-assy	20012288	20022172	1
5	Guide Louver	10512115	10512115	1
6	Air Louver 1	10512116	10512116	1
7	Helicoid Tongue	26112238	26112238	1
8	Left Axile Bush	10512037	10512037	1
9	Rear Case assy	12312214	2220222701	1
10	Rubber Plug (Water Tray)	76712012	76712012	1
11	O-Gasket sub-assy of Bearing	76512051	76512051	1
12	Ring of Bearing	26152022	26152022	1
13	Evaporator Support	24212133	24212100	1
14	Cold Plasma Generator Sub-assy	/	11140009	1
15	Evaporator Assy	01002937	01002575	1
16	Wall Mounting Frame	01252218	01252218	1
17	Cross Flow Fan	10352019	10352019	1
18	Motor Press Plate	26112178	26112494	1
19	Fan Motor	15012116	15012116	1
20	Pipe Clamp	26112164	26112164	1
21	Drainage Hose	05230014	05230014	1
22	Step Motor	15012086	15012086	1
23	Crank	10582070	10582070	1
24	Display Board	30565039	30565039	1
25	Air Louver 2	10512117	10512117	1
26	Electric Box Assy	20202109	20302342	1
27	Electric Box	20112108	20112108	1
28	Axile Bush	10542008	10542036	1
29	Terminal Board	42010268	42010268	1
30	Jumper	4202300109	4202300109	1
31	Electric Box Cover2	20112081	20112081	1
32	Main Board	30135228	30135289	1
33	Shield Cover of Electric Box	01592092	01592102	1
34	Electric Box Cover1	20122128	20122154	1
35	Power Cord	400203253	400203253	1
36	Connecting Cable	4002053603	4002053603	0
37	Remote Controller	30510065	305100492	1

**The data above are subject to change without notice.**

(6) Model:GWH18ND-K3NNE2A/I



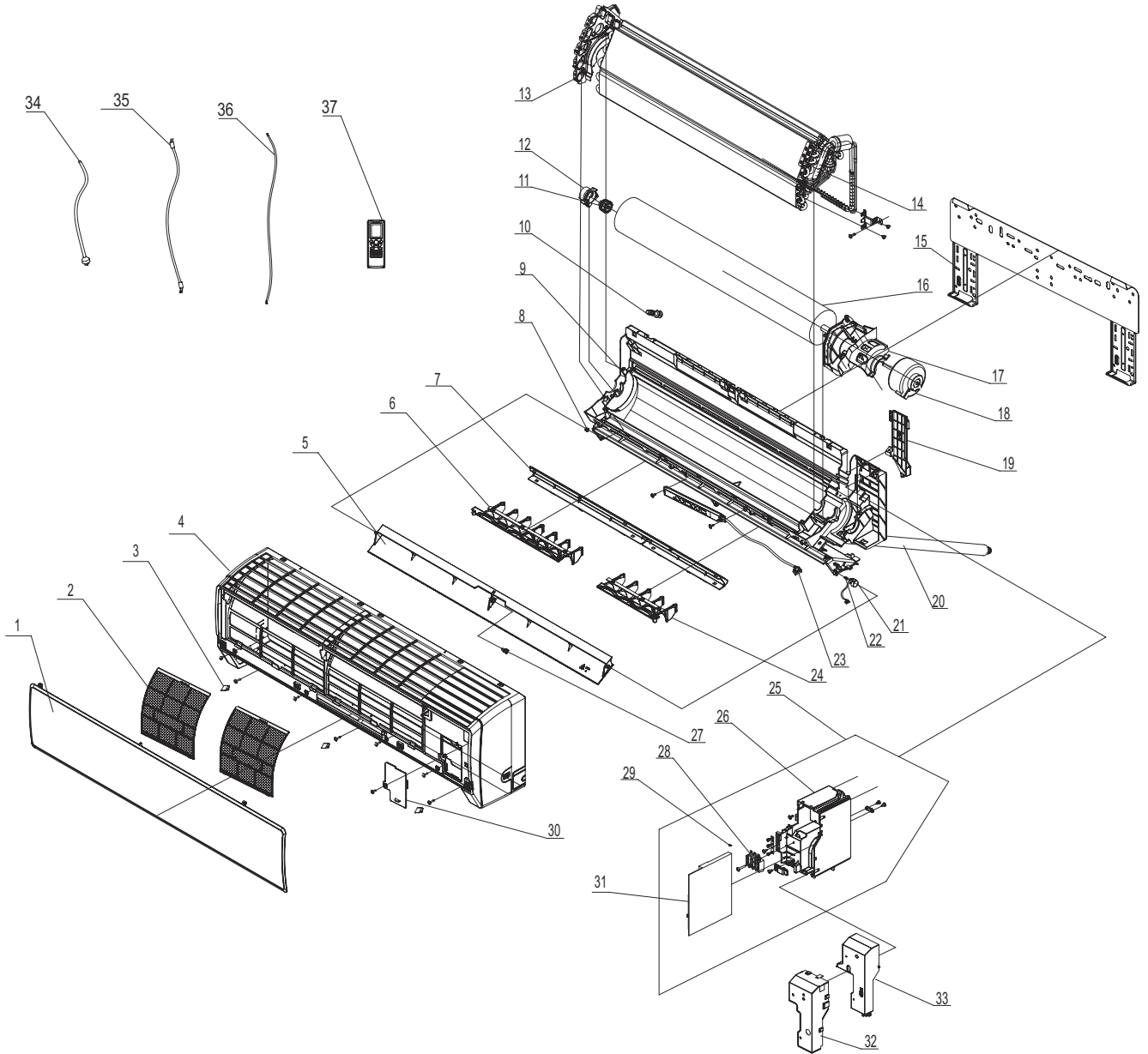
**Exploded Views and Parts List**

NO.	Description	Part Code		Qty
		GWH18ND-K3NNE2A/I		
		CA401N02700		
1	Front Panel Assy	20012869		1
2	Filter Sub-Assy	1112208901		2
3	Screw Cover	24252016		3
4	Electric Box Cover2	20112081		1
5	Front Case	20022111		1
6	Axile Bush	10542036		1
7	Guide Louver	10512115		1
8	Air Louver 1	10512116		1
9	Air Louver 2	10512117		1
10	Helicoid Tongue	26112238		1
11	Left Axile Bush	10512037		1
12	Rear Case assy	12312214		1
13	Cross Flow Fan	10352019		1
14	Fan Bearing	76512210		1
15	O-Gasket sub-assy of Bearing	76512051		1
16	O-Gasket of Cross Fan Bearing	76512203		1
17	Ring of Bearing	26152022		1
18	Remote Controller	30510065		1
19	Drainage Hose	05230014		1
20	Wall Mounting Frame	01252218		1
21	Evaporator Assy	01002937		1
22	Evaporator Support	24212133		1
23	Connecting Cable	400205402		0
24	Connecting Cable	4002053603		0
25	Power Cord	4002048716		1
26	Temperature Sensor	390000591		1
27	Ambient Temperature Sensor	390000453		1
28	Main Board	30135454		1
29	Terminal Board	42010268		1
30	Electric Box	20112108		1
31	Electric Box Assy	20202750		1
32	Display Module	35030418		1
33	Crank	10582070		1
34	Step Motor	15012086		1
35	Rubber Plug (Water Tray)	76712012		1
36	Motor Press Plate	26112178		1
37	Fan Motor	15012116		1
38	Pipe Clamp	26112164		1
39	Jumper	4202300109		1
40	Capacitor CBB61	33010043		1
41	Shield Cover of Electric Box	01592092		1
42	Electric Box Cover1	20122128		1

**The data above are subject to change without notice.**



(7) Model:GWH24ND-K3NNE2A/I



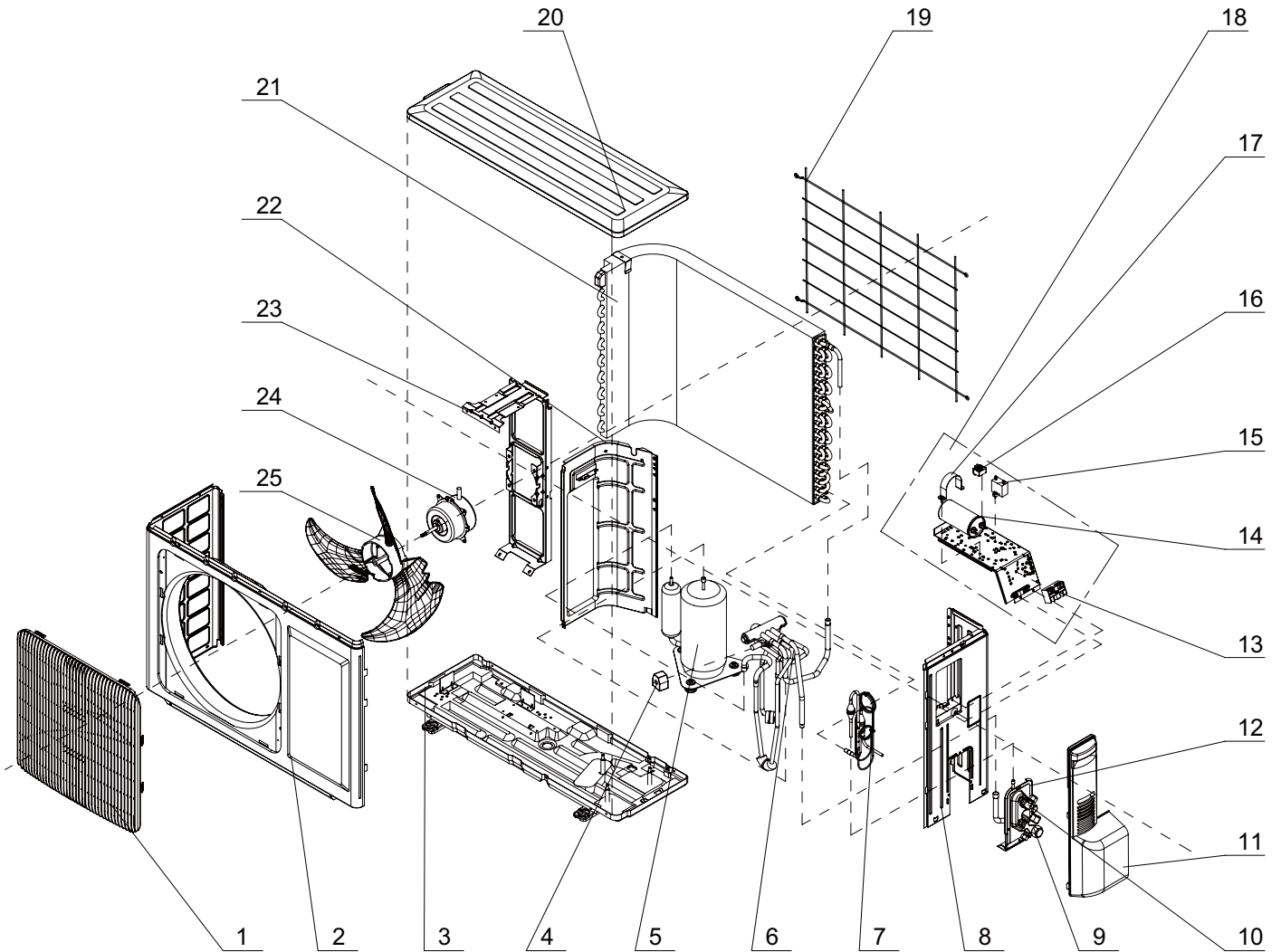
**Exploded Views and Parts List**

NO.	Description	Part Code		Qty
		GWH24ND-K3NNE2A/I		
		CA401N02800		
1	Front Panel Assy	20012869	1	
2	Filter Sub-Assy	1112208901	2	
3	Screw Cover	24252016	3	
4	Front Case Sub-assy	20022132	1	
5	Guide Louver	10512115	1	
6	Air Louver 1	10512116	1	
7	Helicoid Tongue	26112238	1	
8	Left Axile Bush	10512037	1	
9	Rear Case assy	12312214	1	
10	Rubber Plug (Water Tray)	76712012	1	
11	O-Gasket sub-assy of Bearing	76512051	1	
12	Ring of Bearing	26152022	1	
13	Evaporator Support	24212133	1	
14	Evaporator Assy	01002575	1	
15	Wall Mounting Frame	01252218	1	
16	Cross Flow Fan	10352019	1	
17	Motor Press Plate	26112178	1	
18	Fan Motor	15012116	1	
19	Pipe Clamp	26112164	1	
20	Drainage Hose	05230014	1	
21	Step Motor	15012086	1	
22	Crank	10582070	1	
23	Display Board	30565126	1	
24	Air Louver 2	10512117	1	
25	Electric Box Assy	20302730	1	
26	Electric Box	20112108	1	
27	Axile Bush	10542036	1	
28	Terminal Board	4201026201	1	
29	Jumper	4202300109	1	
30	Electric Box Cover2	20112081	1	
31	Main Board	30135295	1	
32	Shield Cover of Electric Box	01592092	1	
33	Electric Box Cover1	20122128	1	
34	Power Cord	400203253	1	
35	Connecting Cable	4002053603	0	
36	Connecting Cable	400205382	0	
37	Remote Controller	30510065	1	

**The data above are subject to change without notice.**

## 8.2 Outdoor Unit

(1) Model:GWH18ND-K3NNB1A/O

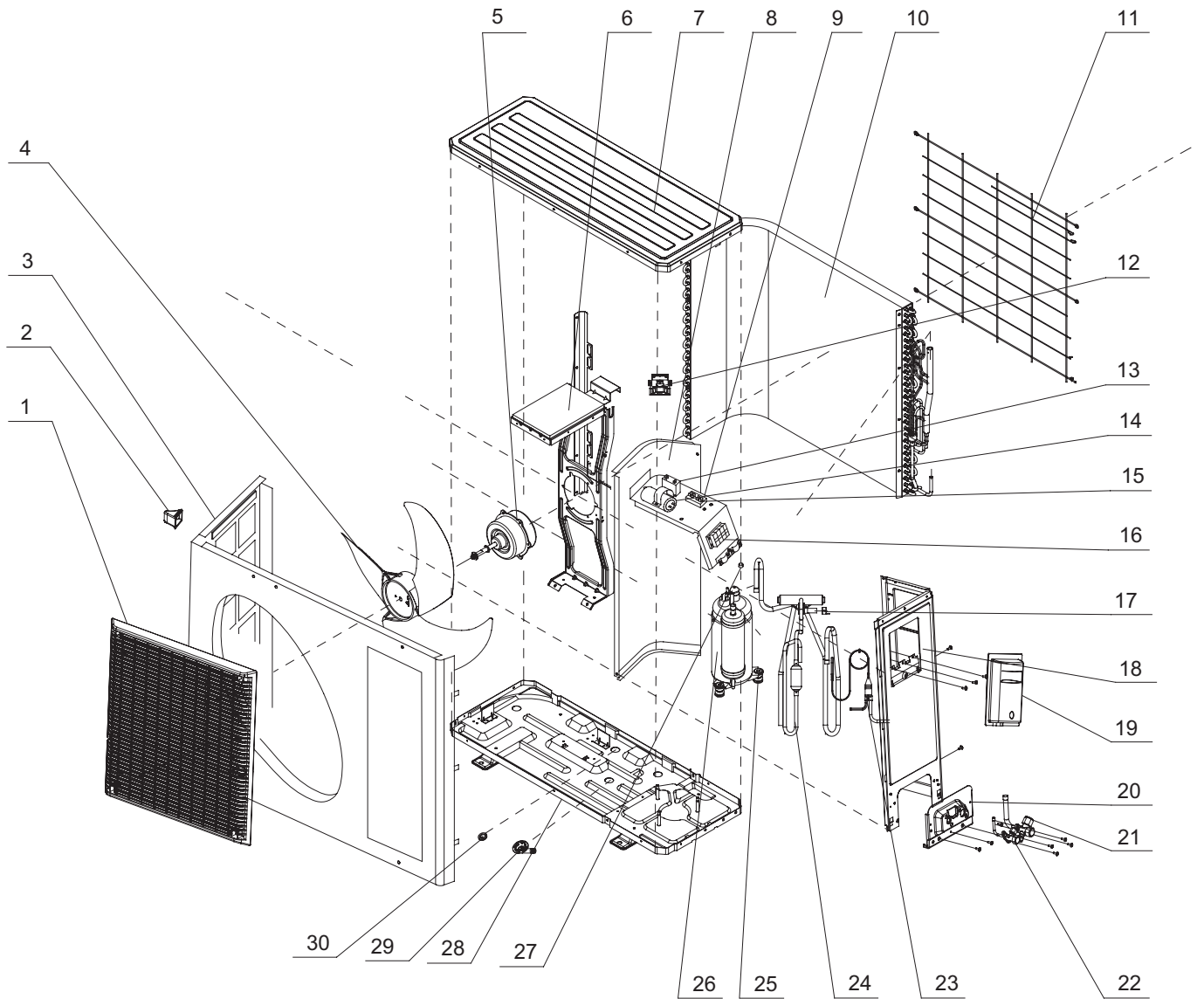


**Exploded Views and Parts List**

NO.	Description	Part Code	Qty
		GWH18ND-K3NNB1A/O	
		Product Code	
		CA136W0010	
1	Front grill	22413433	1
2	Front panel B3	20012456S	1
3	Chassis Sub-assy	012032134	1
4	Magnet Coil	43000400	1
5	Compressor and fittings	00120023	1
6	4-way Valve Assy	03123303	1
7	Capillary Sub-Assy	03103911	1
8	Right Side Plate Assy	0130200404	1
9	Valve	07100004	1
10	Valve	07100006	1
11	Big Handle	26233433	1
12	Valve Support	01713041	1
13	Terminal Board	42010265	1
14	Capacitor CBB65	33010743	1
15	Capacitor CBB61	33010026	1
16	Terminal Board	42011147	1
17	capacitor clamp sub	02143401	1
18	Electric Box Assy	0140383001	1
19	Rear grill	11123205	1
20	Top Cover Plate	01253443	1
21	Condenser Assy	01113359	1
22	Clapboard Sub-Assy	012334172	1
23	Motor Support Sub-Assy	017030511	1
24	Fan Motor	150130676	1
25	Axial Flow Fan	10333004	1

**The data above are subject to change without notice.**

(2) Model:GWH24ND-K3NNB1A/O



**Exploded Views and Parts List**

NO.	Description	Part Code		Qty
		GWH24ND-K3NNB1A/O		
		CA136W0040		
1	Front grill	22415001	1	
2	left handle	26235401	1	
3	Front Panel	01305015	1	
4	Axial Flow Fan	10335257	1	
5	Fan Motor	15015057	1	
6	Motor Support Sub-Assy	0170305901	1	
7	Top Cover	01255001	1	
8	Clapboard Sub-Assy	01233035	1	
9	Electric Box Assy	02603219	1	
10	Condenser Assy	01113396	1	
11	Rear Grill	0147500401	1	
12	AC Contactor	44010245	1	
13	Capacitor CBB61	33010027	1	
14	Capacitor CBB65	33000039	1	
15	Terminal Board	42011147	1	
16	Terminal Board	420101941	1	
17	Magnet Coil	430004002	1	
18	Right Side Plate	01305013	1	
19	Handle	26235254	1	
20	Valve Support Sub-Assy	01713075	1	
21	Cut-off Valve	07130213	1	
22	Valve	07100003	1	
23	Capillary Sub-Assy	03103946	1	
24	4-way Valve Assy	03123248	1	
25	Compressor Gasket	76710202	3	
26	Compressor and fittings	00103702	1	
27	Overload Protector	00180157	1	
28	Chassis Sub-assy	0120362602P	1	
29	Drainage Connector	06123401	1	
30	Drainage Plug	06813401	3	

**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 electricity 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.)

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 DC 220V to 240V) 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.

Open the outdoor unit in a minimum of 20 minutes after disconnecting power supply.

No.	Troubleshooting Procedure
1	Confirmation
2	Judgement by Flashing LED of Indoor/Outdoor Unit
3	How to Check Simply the Main Part

### 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 220-230-240  $\pm 10\%$ .

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

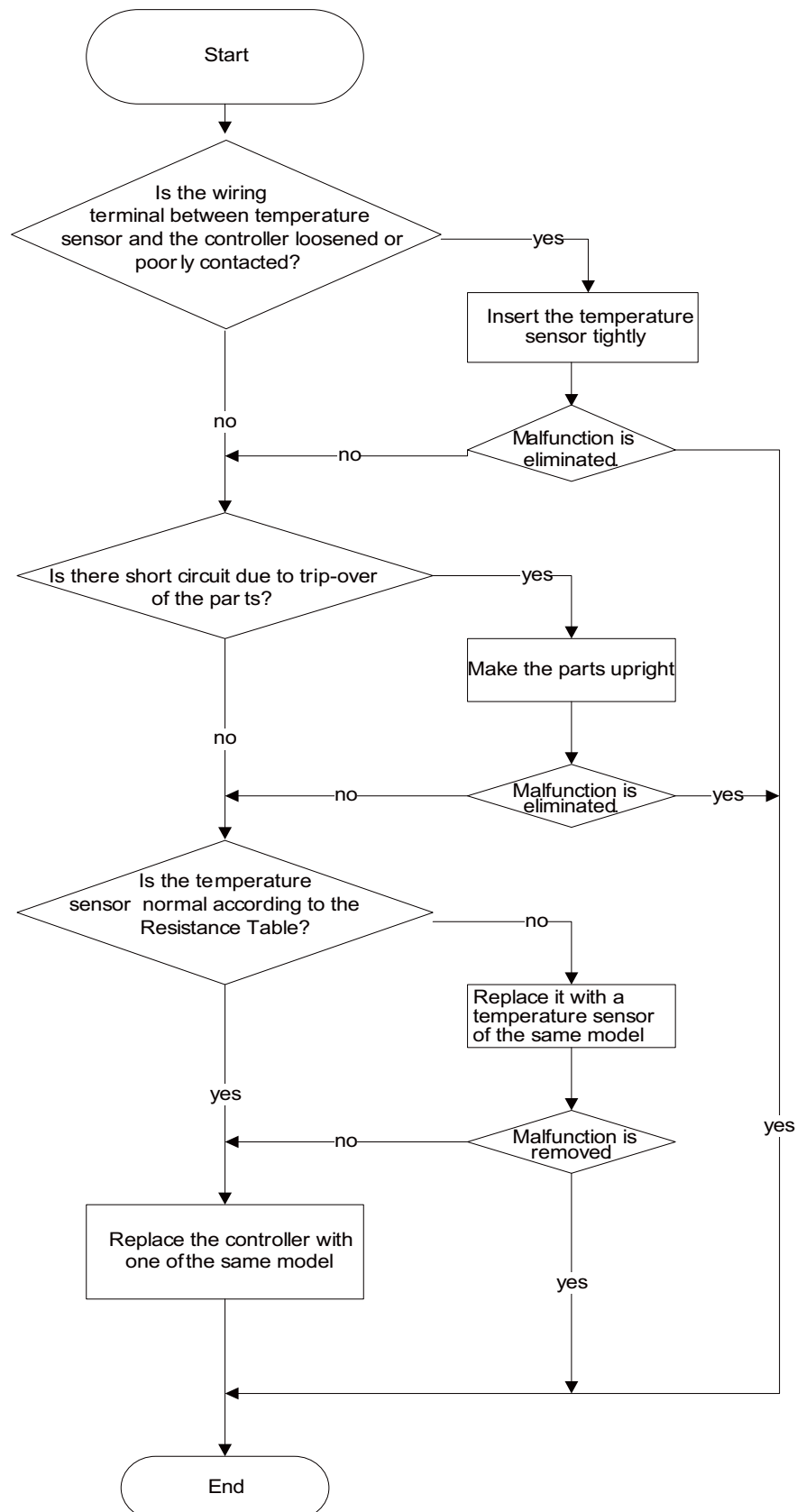
### 9.3 Judgement by Flashing LED of Indoor/Outdoor Unit

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	Indoor ambient temperature sensor is open/short circuited	F1		OFF 3S and blinks once		<p>The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads (such as compressor, outdoor fan, 4-way valve) stop operation; During heating operation, the complete unit stops operation.</p> <ol style="list-style-type: none"> <li>1. The wiring terminal between indoor ambient temperature sensor and controller is loosened or poorly contacted;</li> <li>2. There's short circuit due to trip-over of the parts on controller;</li> <li>3. Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor)</li> <li>4. Main board is broken.</li> </ol>	
2	Indoor evaporator temperature sensor is open/short-circuited	F2		OFF 3S and blinks twice		<p>The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads stop operation; During heating operation, the complete unit stops operation.</p> <ol style="list-style-type: none"> <li>1. The wiring terminal between indoor evaporator temperature sensor and controller is loosened or poorly contacted;</li> <li>2. There's short circuit due to the trip-over of the parts on controller;</li> <li>3. Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor)</li> <li>4. Main board is broken.</li> </ol>	
3	PG motor (indoor fan motor) does not operate	H6	OFF 3S and blinks 11 times			<p>Indoor fan, outdoor fan, compressor and electric heat tube stop operation. 2 minutes later, 4-way valve stops; horizontal louver stops at the current position.</p> <ol style="list-style-type: none"> <li>1. The feedback terminal of PG motor is not connected tightly.</li> <li>2. The control terminal of PG motor is not connected tightly.</li> <li>3. Fan blade rotates unsmoothly due to improper installation.</li> <li>4. Motor is not installed properly and tightly.</li> <li>5. Motor is damaged.</li> <li>6. Controller is damaged.</li> </ol>	
4	Malfunction protection of jumper cap	C5	OFF 3S and blinks 15 times			<p>Operation of remote controller or control panel is available, but the unit won't act.</p> <ol style="list-style-type: none"> <li>1. There's not jumper cap on the controller.</li> <li>2. Jumper cap is not inserted properly and tightly.</li> <li>3. Jumper cap is damaged.</li> <li>4. Controller is damaged.</li> </ol>	
5	PG motor (indoor fan) circuit malfunction by zero cross detection	U8	OFF 3S and blinks 17 times			<p>Operation of remote controller or control panel is available, but the unit won't act.</p> <ol style="list-style-type: none"> <li>1. Controller is damaged.</li> </ol>	
6	Overcurrent protection	E5	OFF 3S and blinks 5 times			<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"> <li>1. Unstable supply voltage. Normal fluctuation shall be within 10% of the rated voltage on the nameplate.</li> <li>2. Supply voltage is too low and load is too high.</li> <li>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.</li> <li>4. The indoor and outdoor heat exchangers are too dirty, or the air inlet and air outlet are blocked.</li> <li>5. The fan motor is not running. Abnormal fan speed: fan speed is too low or the fan doesn't run</li> <li>6. The compressor is not running normally. There is abnormal sound, oil leakage or the temperature of the shell is too high, etc.</li> <li>7. There's blockage in the system (filth blockage, ice plug, greasy blockage, Y-valve hasn't been opened completely)</li> </ol>	

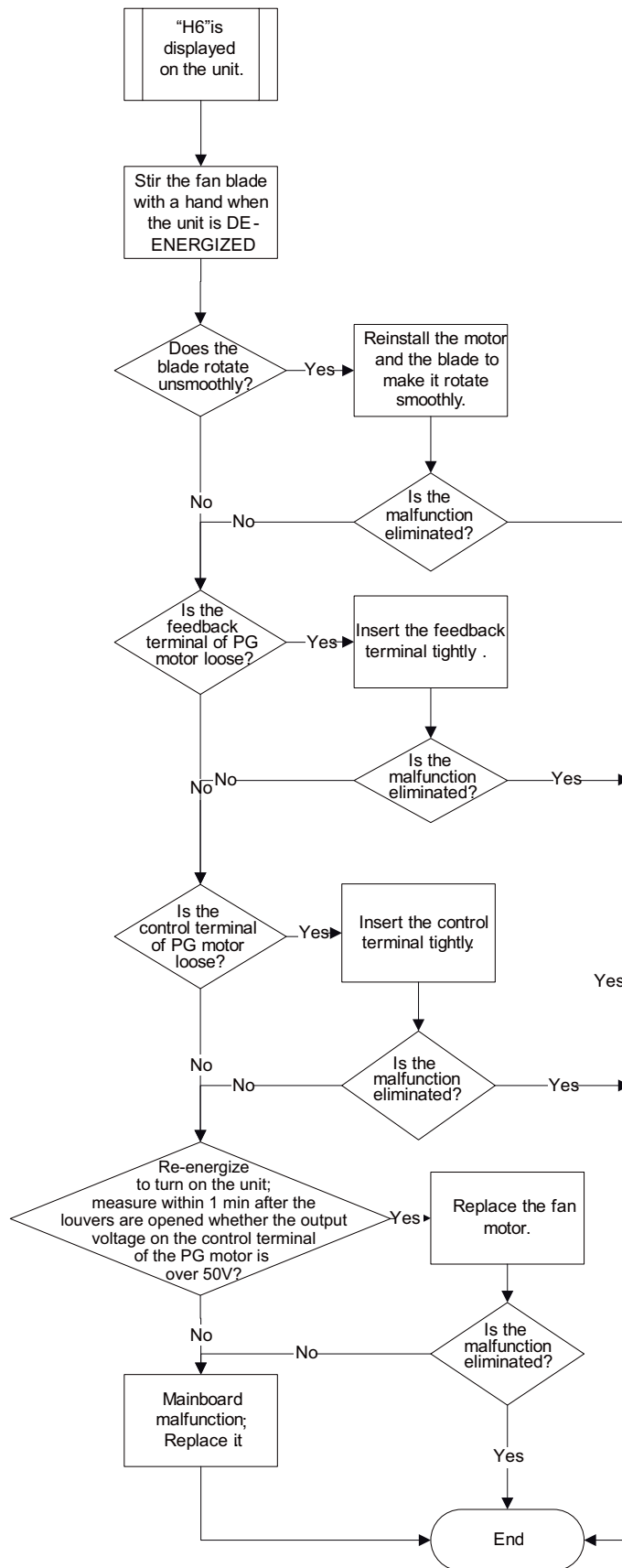


## 9.4 How to Check Simply the Main Part

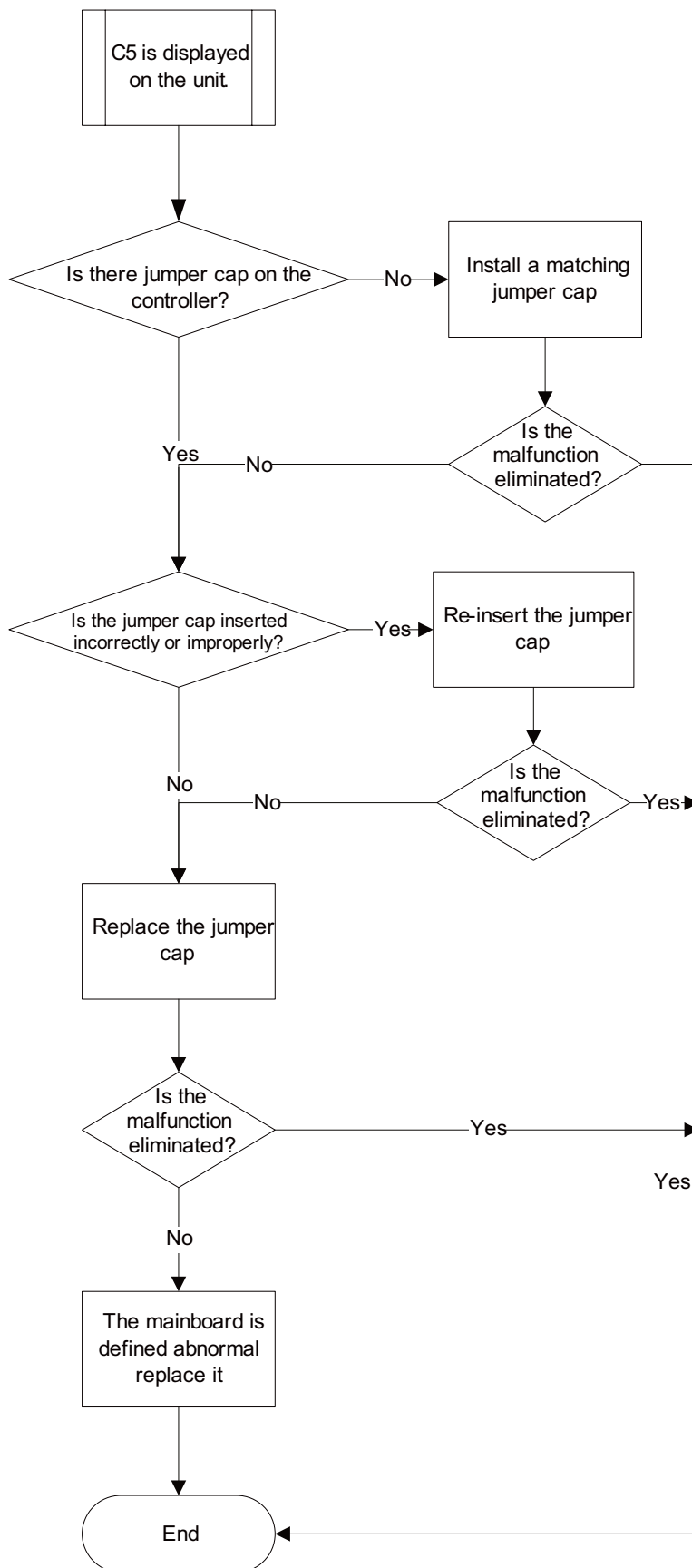
### (1) Malfunction of temperature sensor



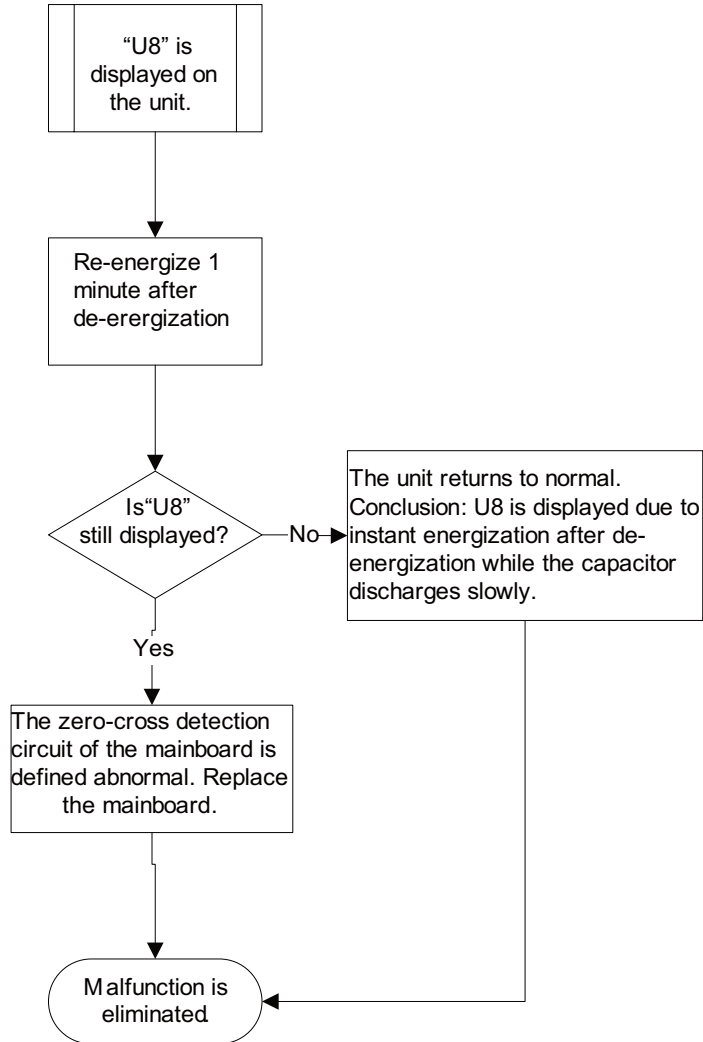
(2) PG motor (indoor fan) does not operate (H6)



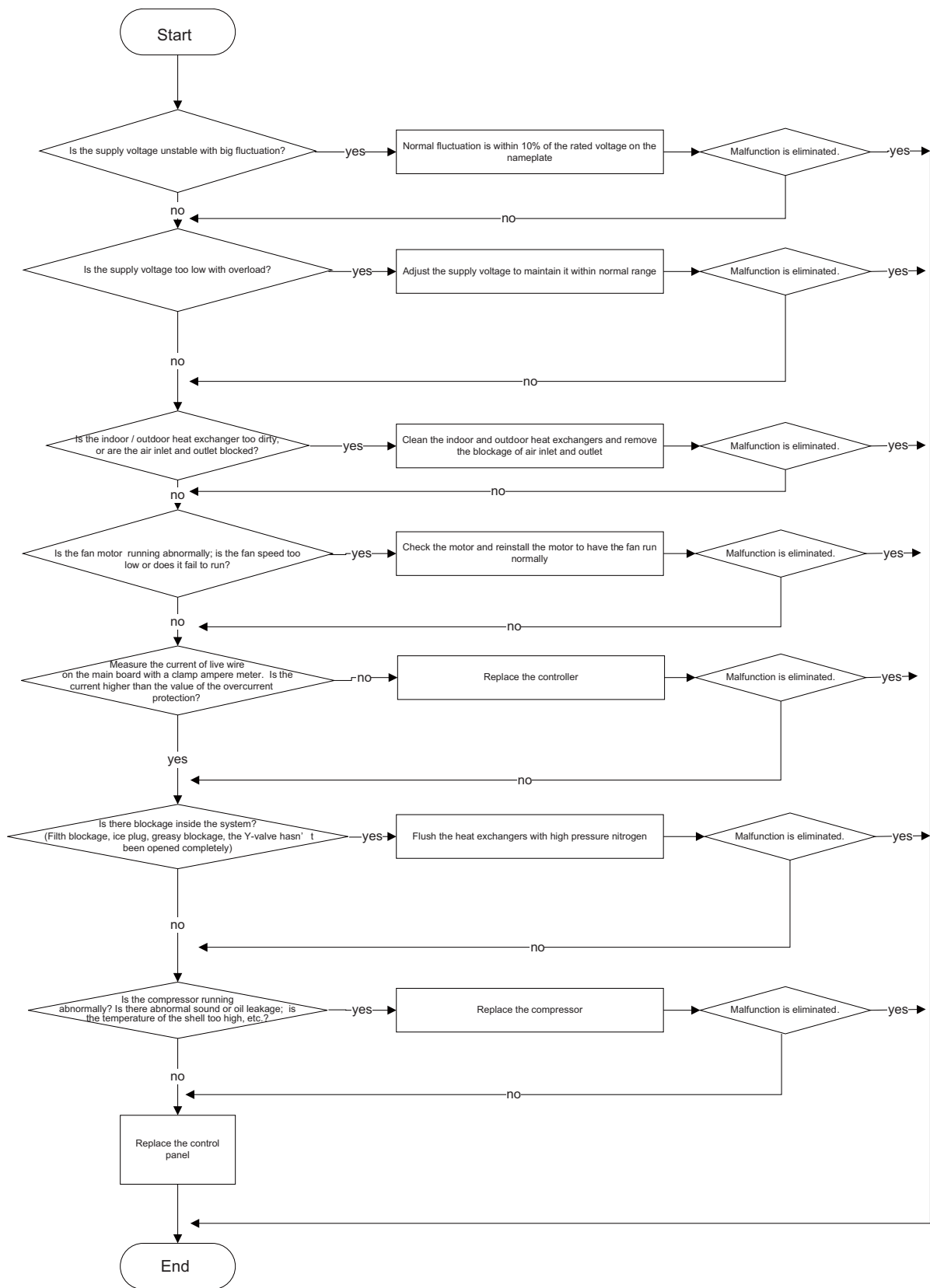
(3) Jumper cap malfunction (C5)



(4) U8 Malfunction



(5) E5 Malfunction



**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

**Appendix3: Resistance Table for 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	4.75
-28	799.8	11	93.42	50	17.65	89	4.61
-27	750	12	89.07	51	16.99	90	4.47
-26	703.8	13	84.95	52	16.36	91	4.33
-25	660.8	14	81.05	53	15.75	92	4.20
-24	620.8	15	77.35	54	15.17	93	4.08
-23	580.6	16	73.83	55	14.62	94	3.96
-22	548.9	17	70.5	56	14.09	95	3.84
-21	516.6	18	67.34	57	13.58	96	3.73
-20	486.5	19	64.33	58	13.09	97	3.62
-19	458.3	20	61.48	59	12.62	98	3.51
-18	432	21	58.77	60	12.17	99	3.41
-17	407.4	22	56.19	61	11.74	100	3.32
-16	384.5	23	53.74	62	11.32	101	3.22
-15	362.9	24	51.41	63	10.93	102	3.13
-14	342.8	25	49.19	64	10.54	103	3.04
-13	323.9	26	47.08	65	10.18	104	2.96
-12	306.2	27	45.07	66	9.83	105	2.87
-11	289.6	28	43.16	67	9.49	106	2.79
-10	274	29	41.34	68	9.17	107	2.72
-9	259.3	30	39.61	69	8.85	108	2.64
-8	245.6	31	37.96	70	8.56	109	2.57
-7	232.6	32	36.38	71	8.27	110	2.50
-6	220.5	33	34.88	72	7.99	111	2.43
-5	209	34	33.45	73	7.73	112	2.37
-4	198.3	35	32.09	74	7.47	113	2.30
-3	199.1	36	30.79	75	7.22	114	2.24
-2	178.5	37	29.54	76	7.00	115	2.18
-1	169.5	38	28.36	77	6.76	116	2.12
0	161	39	27.23	78	6.54	117	2.07
1	153	40	26.15	79	6.33	118	2.02
2	145.4	41	25.11	80	6.13	119	1.96
3	138.3	42	24.13	81	5.93	120	1.91
4	131.5	43	23.19	82	5.75	121	1.86
5	125.1	44	22.29	83	5.57	122	1.82
6	119.1	45	21.43	84	5.39	123	1.77
7	113.4	46	20.6	85	5.22	124	1.73
8	108	47	19.81	86	5.06	125	1.68
9	102.8	48	19.06	87	4.90	126	1.64

**Note: The information above is for reference only.**



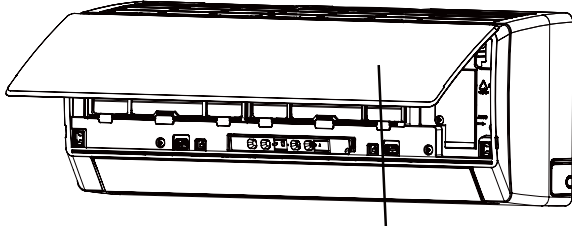
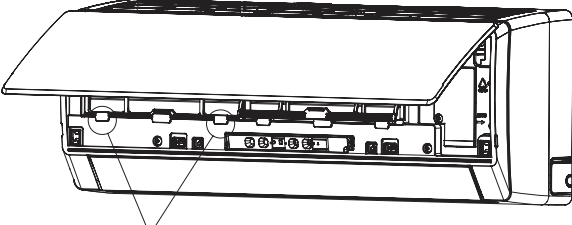
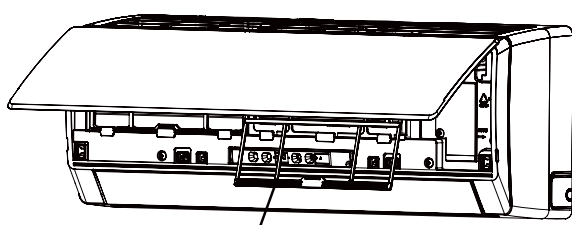
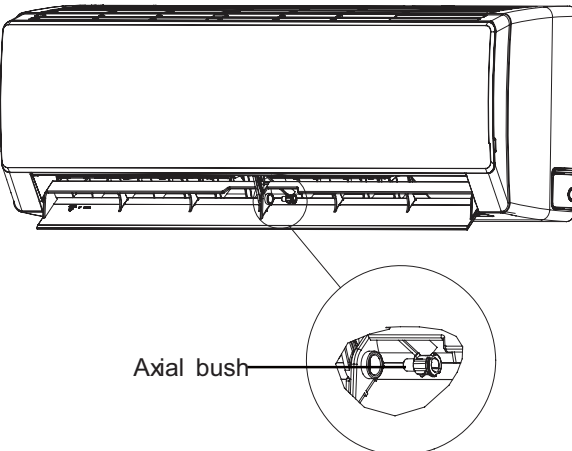
## 10. Removal Procedure

### 10.1 Removal Procedure of Indoor Unit

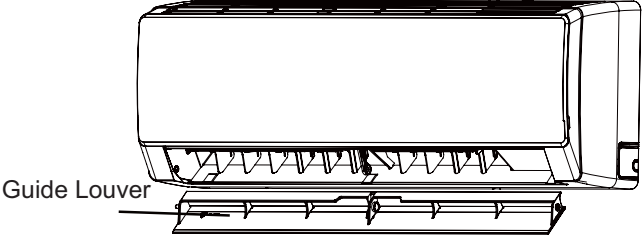
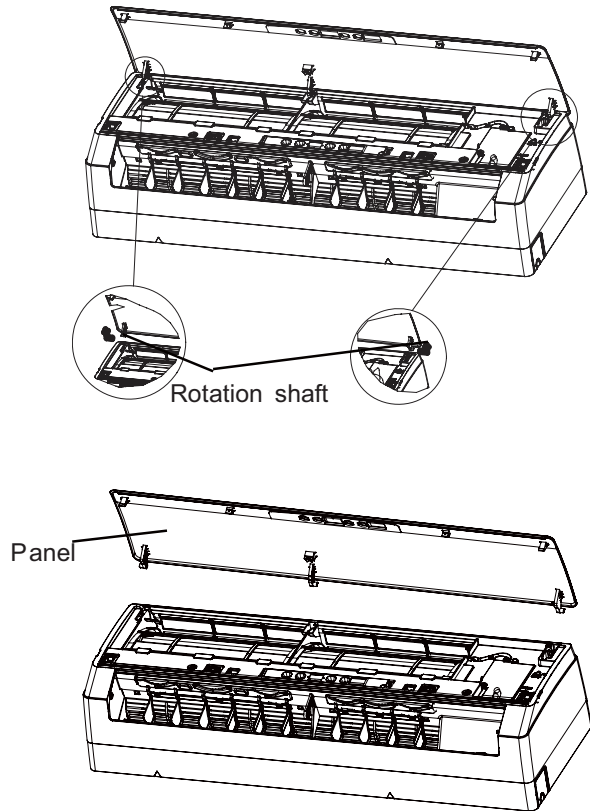
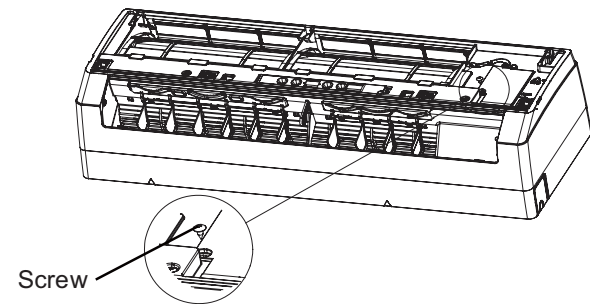


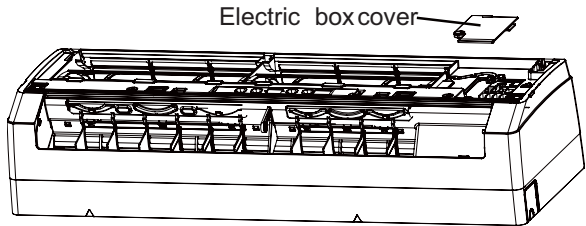
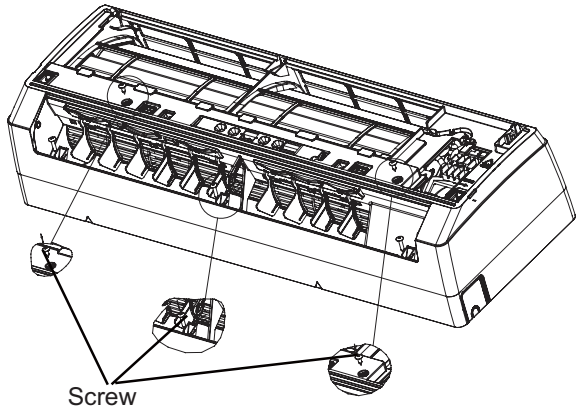
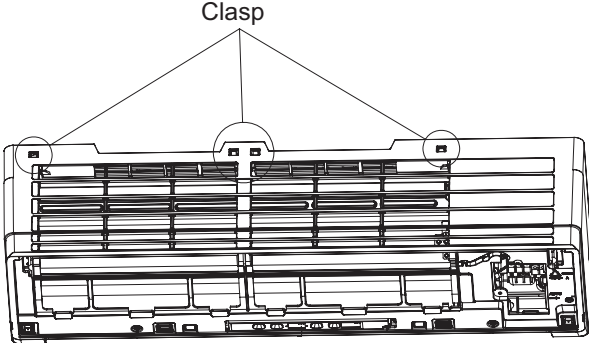
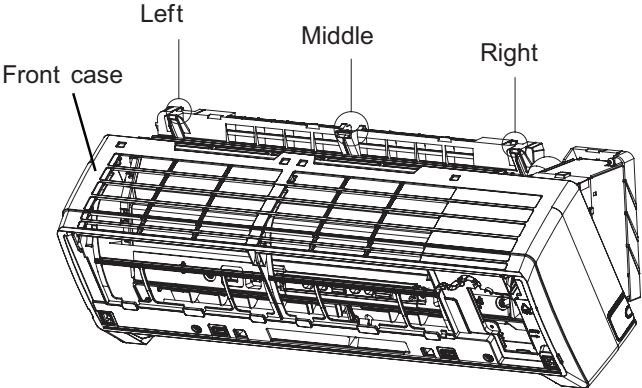
**Warning** Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

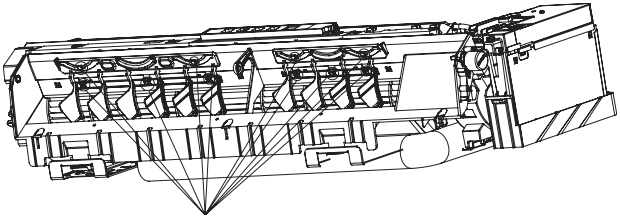
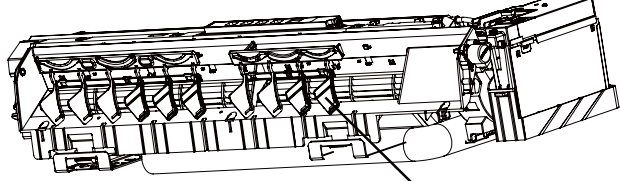
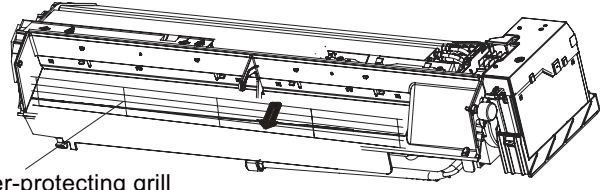
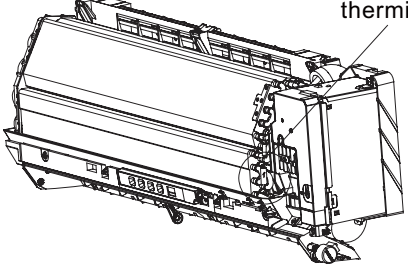
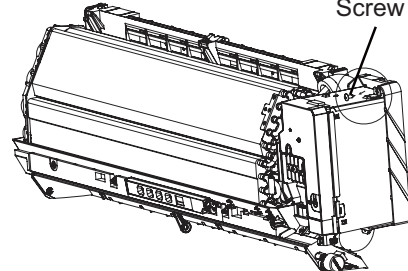
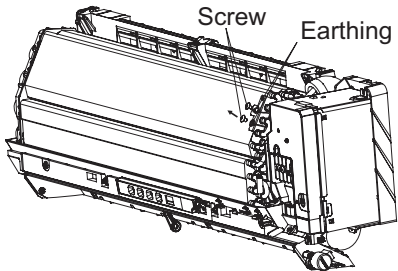
NOTE: This part takes A2 front panel as example.

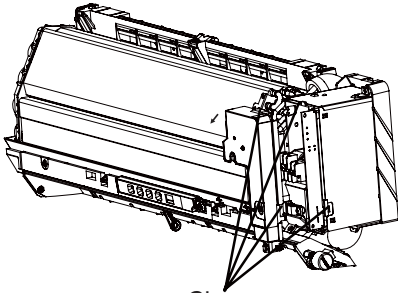
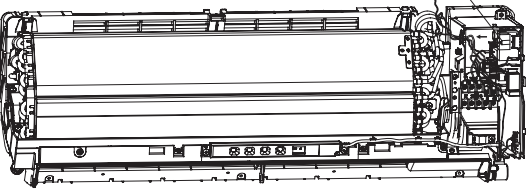
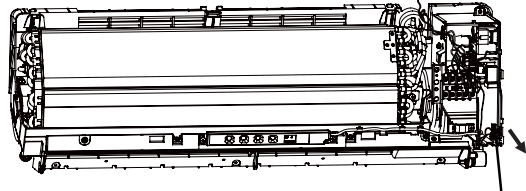
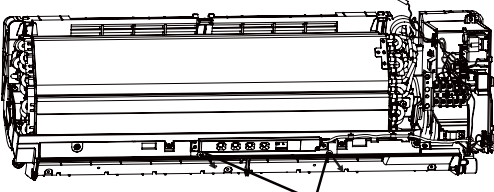
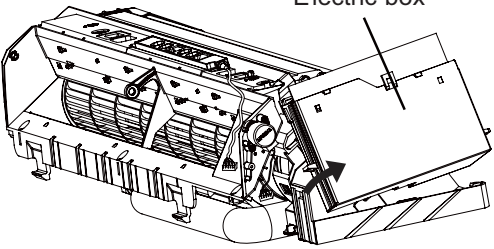
Steps	Procedure	
1. Remove filter		 <p style="text-align: center;">Panel</p>  <p style="text-align: center;">Clasps</p>  <p style="text-align: center;">Filter</p>
2. Remove guide louver		 <p style="text-align: center;">Axial bush</p>
1	Remove the axial bush on guide louver.	

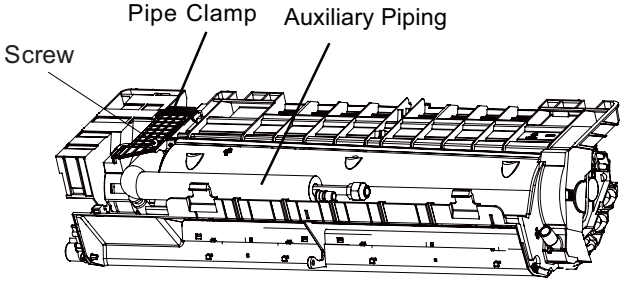
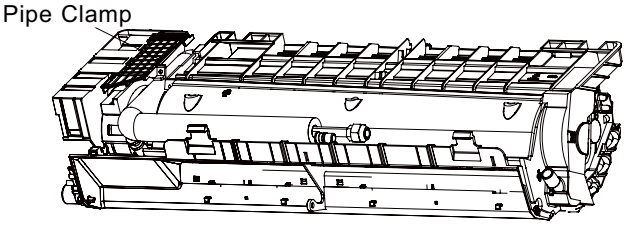
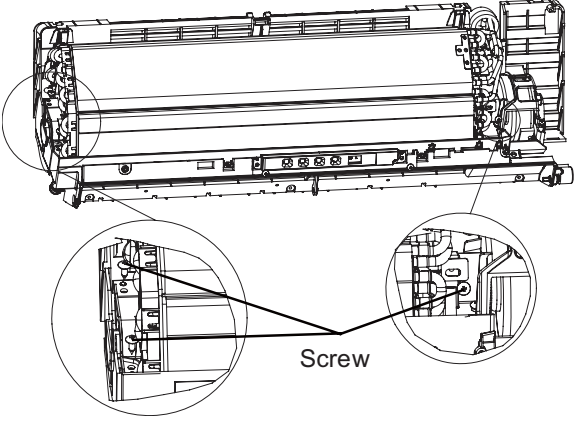
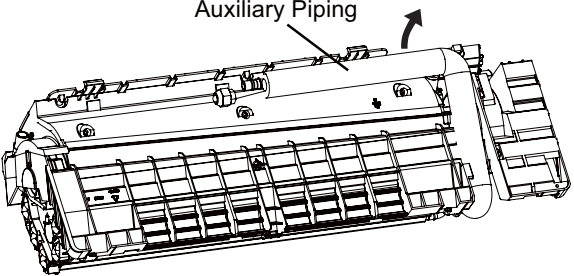
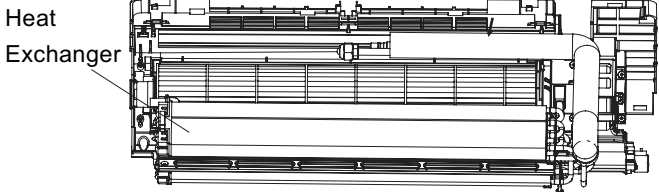
Removal Procedure

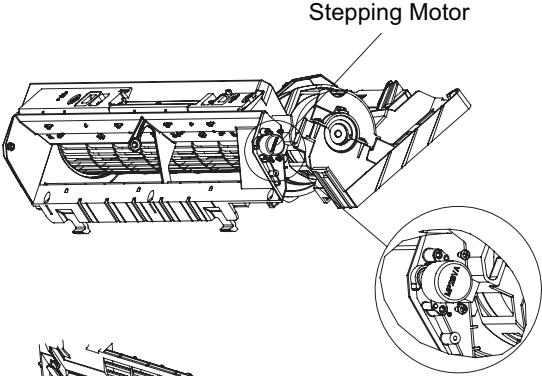
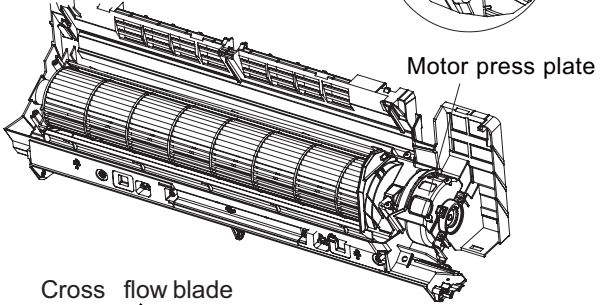
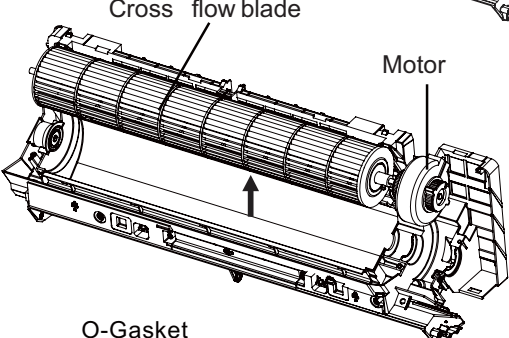
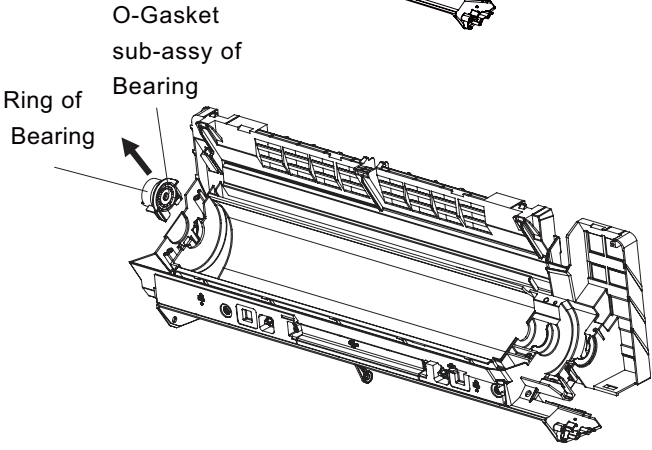
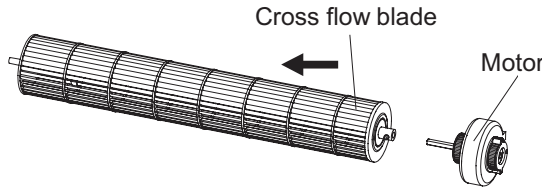
Steps	Procedure	
2	Bend the horizontal louver slightly and then remove the Guide Louver	 <p>The diagram shows a perspective view of the unit's front panel. A horizontal louver is bent downwards. A separate component, the Guide Louver, is shown below it, with a line pointing to its position on the unit's frame.</p>
3. Remove panel		 <p>The diagram illustrates the removal of the front panel. The top part shows the panel being pushed open, with circular callouts showing the rotation shafts. The middle part shows the panel being lifted away from the unit. The bottom part shows the unit with the panel removed.</p>
4. Remove electric box cover 2		 <p>The diagram shows the unit with the electric box cover removed. A circular callout shows a screwdriver being used to twist off a screw from the cover.</p>

Steps	Procedure	
2	Remove the electric box cover 2 to separate the electric box cover and front case.	
5. Remove front case		
1	Open the screw cap on front case and then twist off the screws on the front case with screwdriver.	
2	Loosen the clasps at the left, middle and right side of front case.	
3	Remove the front case to separate it from the bottom case.	

Steps	Procedure
<p>6. Remove swing blade</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>1 Loosen clasps connected the swing blade and bottom case.</p> <p>2 Remove the swing blade to separate it from the bottom case.</p> <p>3 Remove the Finger-protecting grill. (NOTE:Only applicable for units with finger-protecting grill)</p> </div> <div style="width: 50%; text-align: center;">  <p>Clasp</p>  <p>Swing blade</p>  <p>Finger-protecting grill</p> </div> </div>
<p>7. Remove electric box</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>1 Pull out the indoor tube temperature sensor.</p> <p>2 Twist off the screws on electric box with screwdriver.</p> <p>3 Twist off the screws connecting the earthing wire and evaporator with screwdriver.</p> </div> <div style="width: 50%; text-align: center;">  <p>Heat exchanger thermistor</p>  <p>Screw</p>  <p>Screw Earthing wire</p> </div> </div>

Steps	Procedure	
4	Loosen the clasps between electric box cover and electric box.	 <p>Clasp</p>
5	Pull out the plug on motor connection wire.	 <p>Fan motor signal wire</p>
6	Pull out the plug on connection wire of stepping motor.	 <p>Plug of stepping motor</p>
7	Twist off the 2 screws on displayer with screwdriver.	 <p>Screw</p>
8	Remove the electric box to separate it from the bottom case.	 <p>Electric box</p>

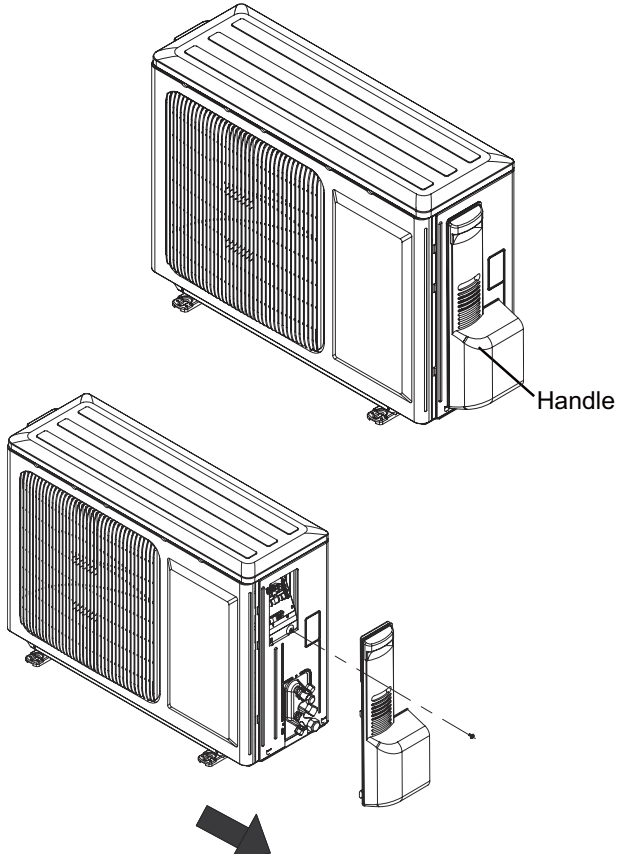
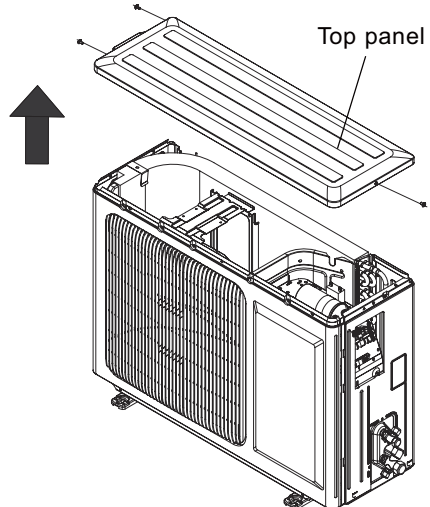
Steps	Procedure	
8. Remove press board of connection pipe		
1	Twist off the screws on press board of connection pipe with screwdriver.	
2	Remove the press board of connection pipe to separate it from the bottom case.	
9. Remove evaporator		
1	Twist off the 3 screws connecting the evaporator and bottom case with screwdriver.	
2	Adjust the pipes on evaporator slightly to separate the connection pipe from the evaporator.	
3	Remove the evaporator to separate it from the bottom case.	

Steps	Procedure	
10. Remove motor and axial flow blade		
1	Twist off the screws on stepping motor with screwdriver and then remove the stepping motor.	
2	Twist off the screws on motor press plate with screwdriver, and then remove the motor press plate.	
3	Remove the cross flow blade and motor.	
4	Pull out the shaft rubber cushion block.	
5	Twist off the screws connecting the cross flow blade and motor with screwdriver, and then remove the motor	

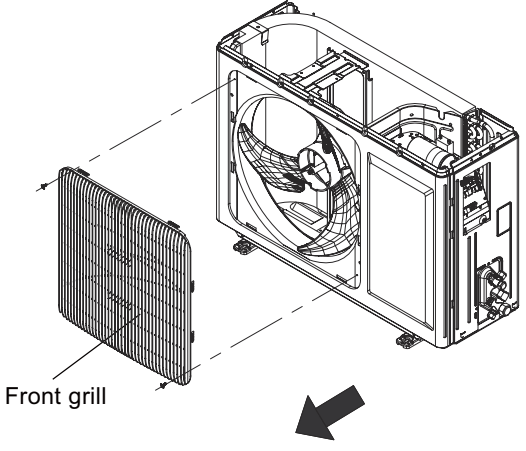
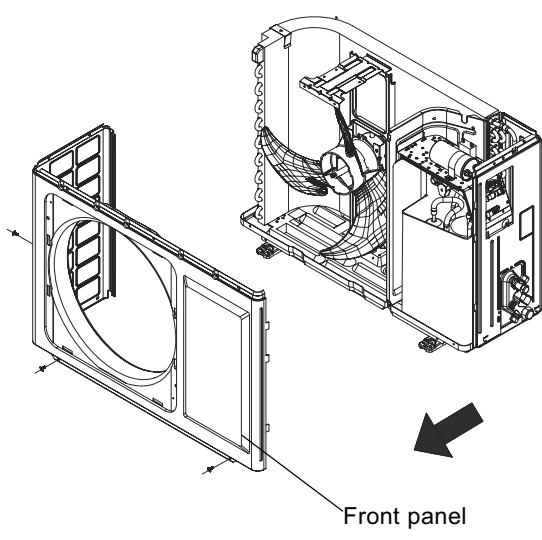
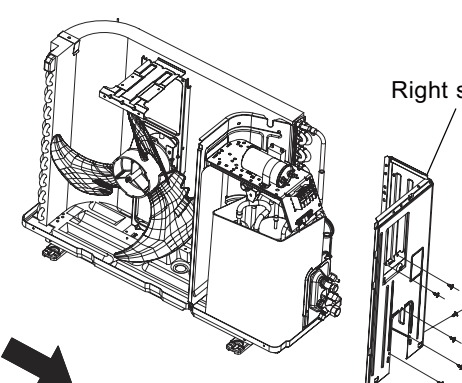
## 10.2 Removal Procedure of Outdoor Unit

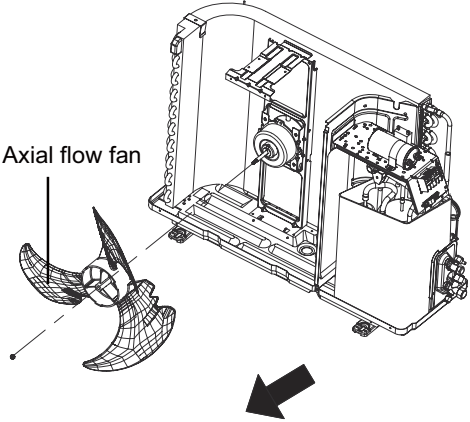
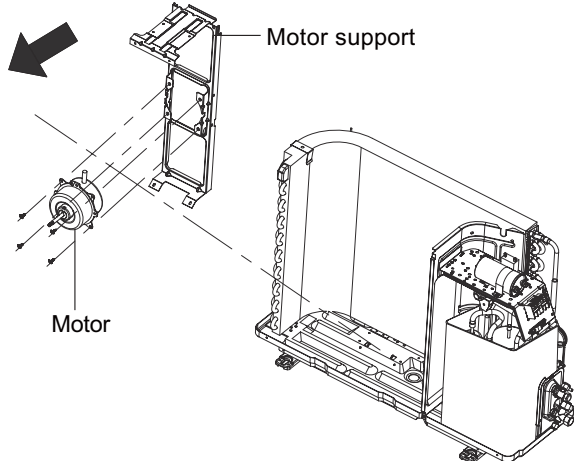
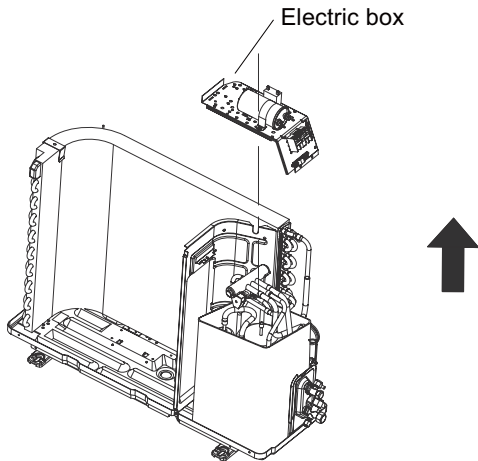
**Warning** Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

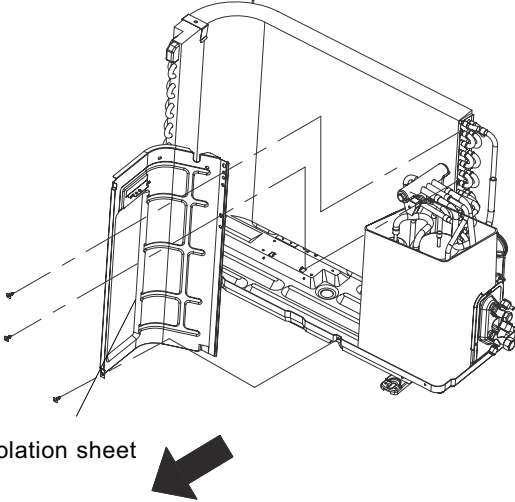
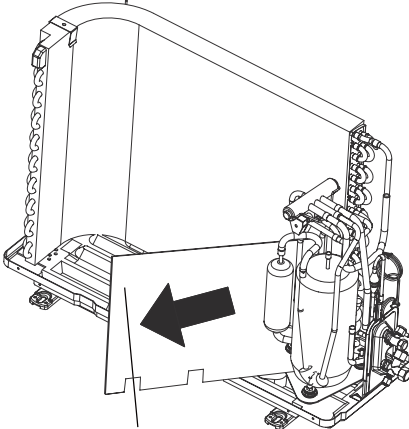
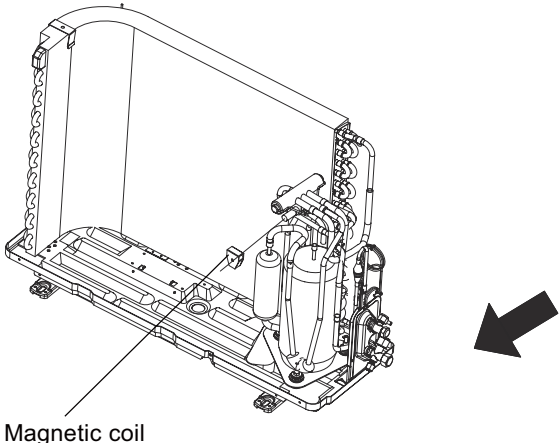
Model:GWH18ND-K3NNB1A/O

Steps	Procedure
1.Remove big handle	
1	Before disassembly.
2	Remove 1 connection screw fixing handle and then remove the handle.
	2. Remove top panel
	Remove connection screws among top cover, front panel and right side plate.
	

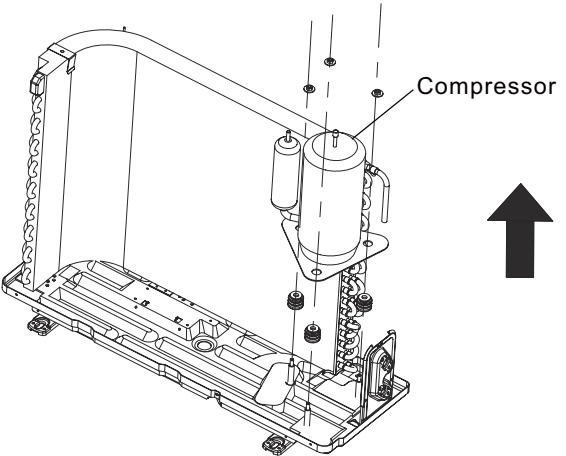
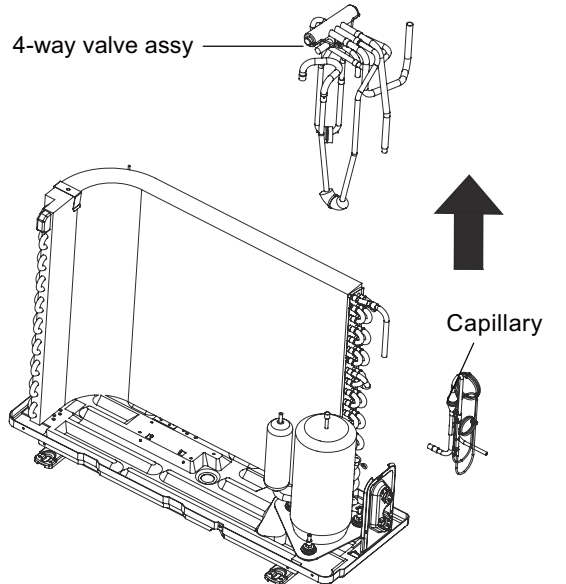
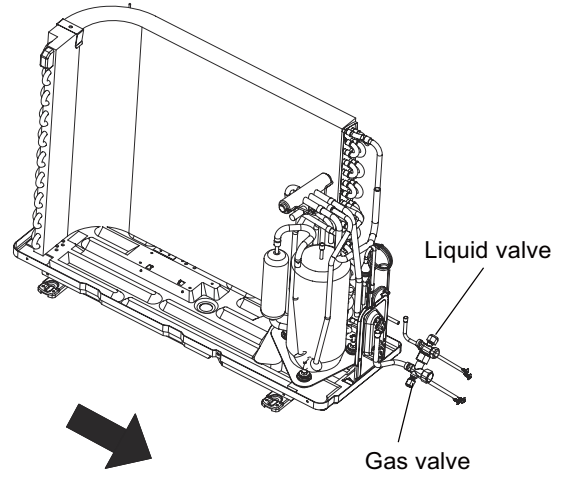


Steps	Procedure	
3.Remove front grill and front panel		
1	Remove 2 connection screws of front grill and front panel. Then remove front grill.	 <p>Front grill</p>
2	Remove 5 connection screws among front panel, chassis and motor support. Then remove the front panel.	 <p>Front panel</p>
4.Remove right side plate		
	Removal 6 connection screws among right side plate, chassis, valve support and electric box. Then remove the right side plate.	 <p>Right side plate</p>

Steps	Procedure	
5.Remove axial flow fan and motor		
1	Remove nuts of axial flow fan and then remove it.	 <p>Axial flow fan</p>
2	Remove self-threading screws of motor and then remove leading wire of motor. Remove the motor and self-threading screws fixing motor support. Finally,remove the motor support.	 <p>Motor support</p> <p>Motor</p>
6.Remove electric box		
	Remove screws fixing electric box sub-assy and loose the wire bundle and unplug wiring terminal. Then lift it to remove the electric box.	 <p>Electric box</p>

Steps	Procedure	
7. Removal of isolation sheet	<p>Remove 3 screws of isolation sheet and then remove the sheet.</p>	 <p>Isolation sheet</p>
8. Remove sound-proof sponge	<p>Remove sound-proof sponge wrapping compressor.</p>	 <p>Sound-proof sponge</p>
9. Remove magnetic coil	<p>Remove screws of magnetic coil and then remove it</p>	 <p>Magnetic coil</p>

Steps	Procedure
10.Remove c compressor	
1	<p>Unsolder weld point between capillary and outlet pipes of valve and condenser. Then remove capillary. Don't block capillary with welding slag when replacing the capillary.</p> <p><b>(Note: make sure there is no refrigerant inside the compressor before unsoldering compressor or any pipe.)</b></p> <p>Remove 2 screws of gas valve and unsolder weld point connecting gas valve to air return pipe. Then remove the gas valve. (Note: Wrap the gas valve completely with wet cloth before unsoldering to prevent the valve from damage by high temperature). Remove screws fixing liquid valve and unsolder weld point connecting liquid valve to Y-type pipe. Then, remove the liquid valve.</p>
2	<p>Unsolder pipe connecting with compressor, and the weld point connecting with 4-way valve. Then remove 4-way valve assy.</p>
3	<p>Remove 3 nuts on feet of compressor and then remove compressor.</p>



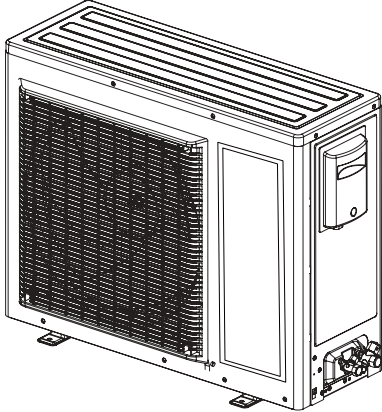
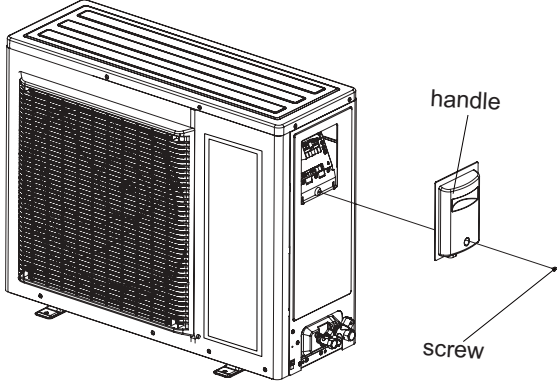
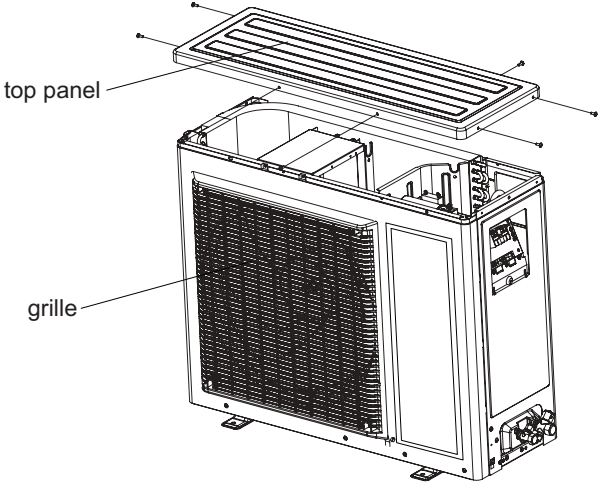
## 10.3 Removal Procedure of Outdoor Unit

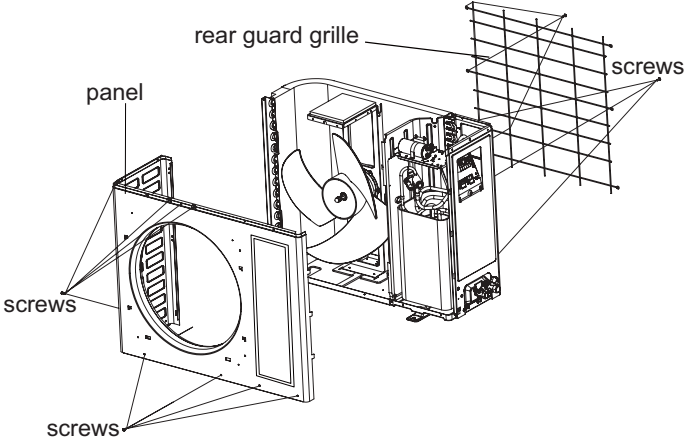
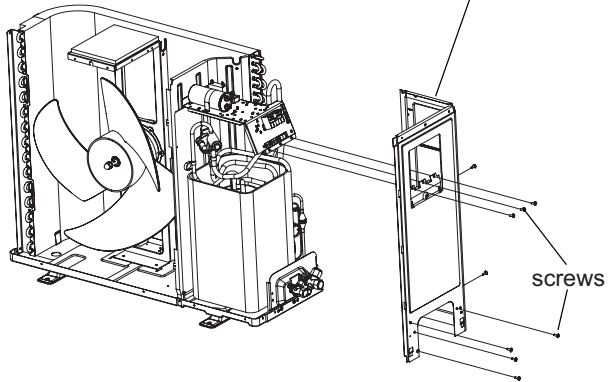
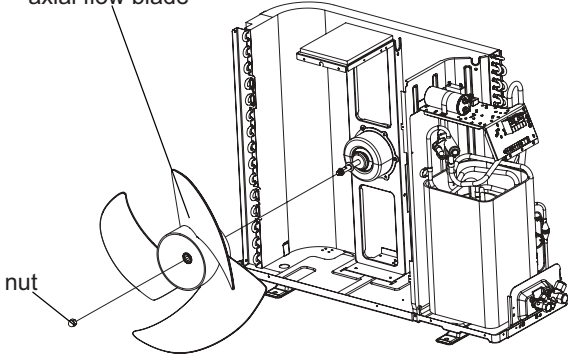


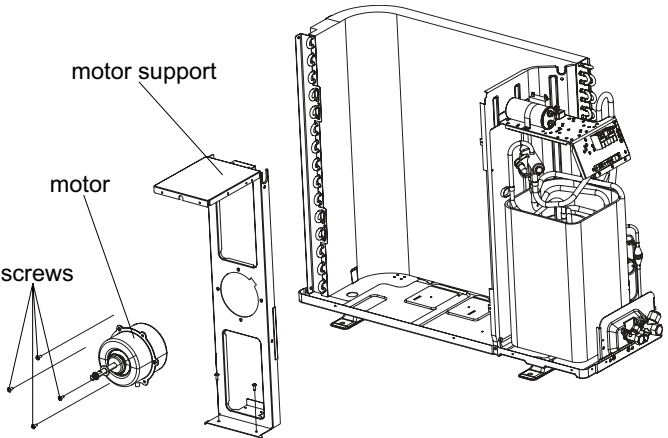
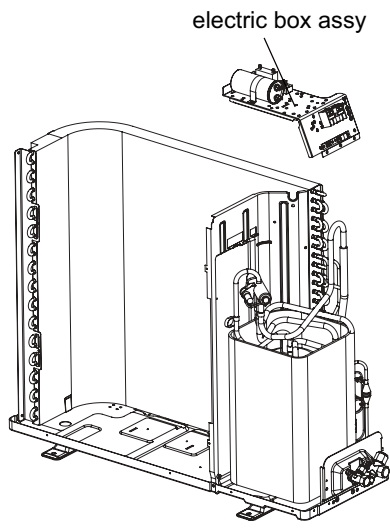
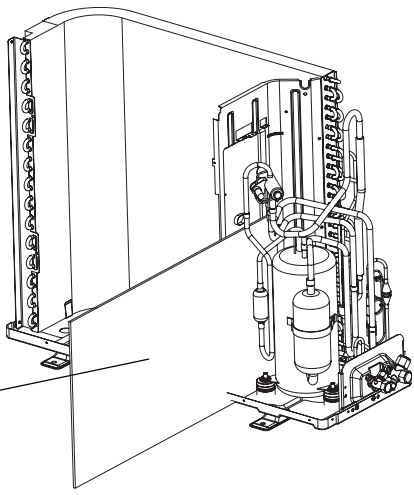
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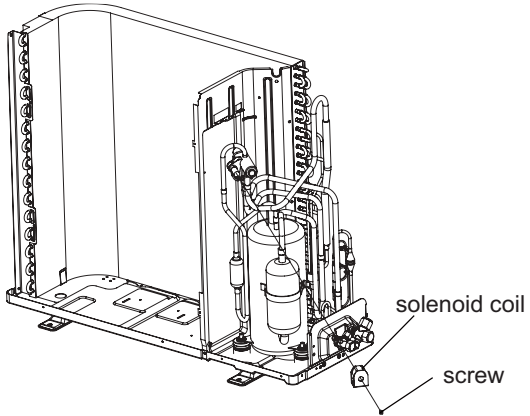
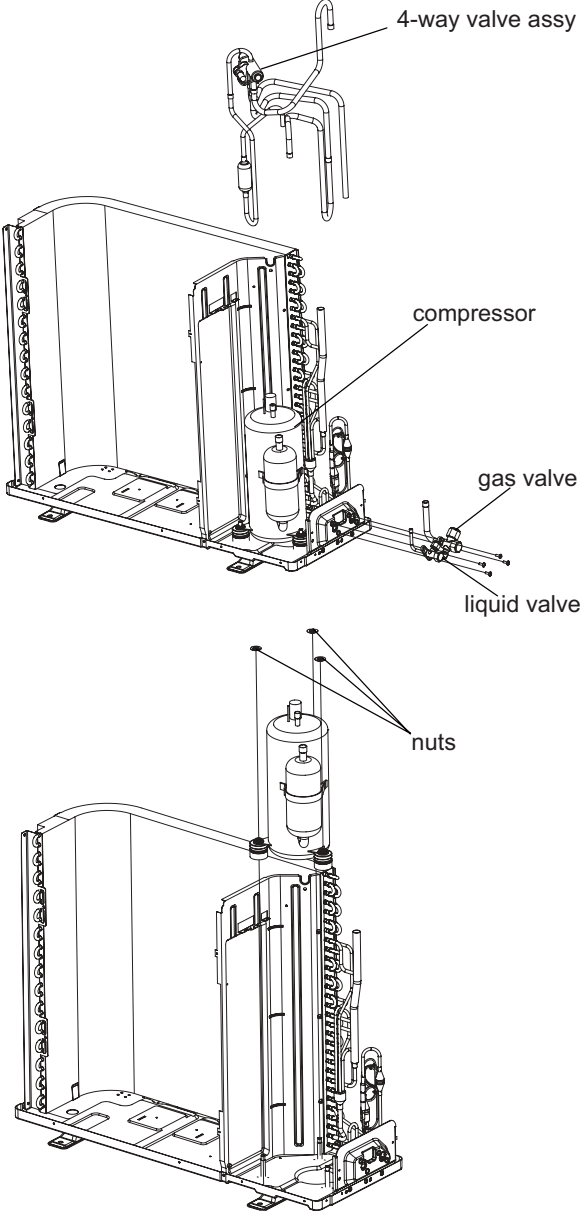
Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

Model:GWH24ND-K3NNB1A/O

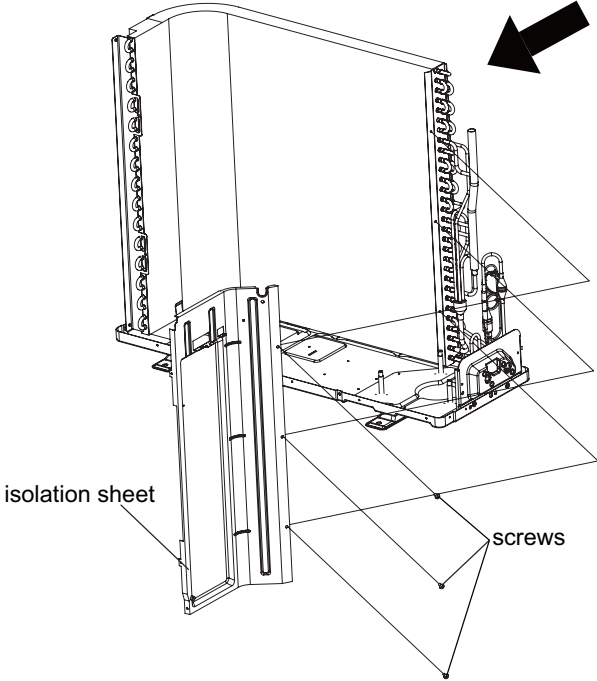
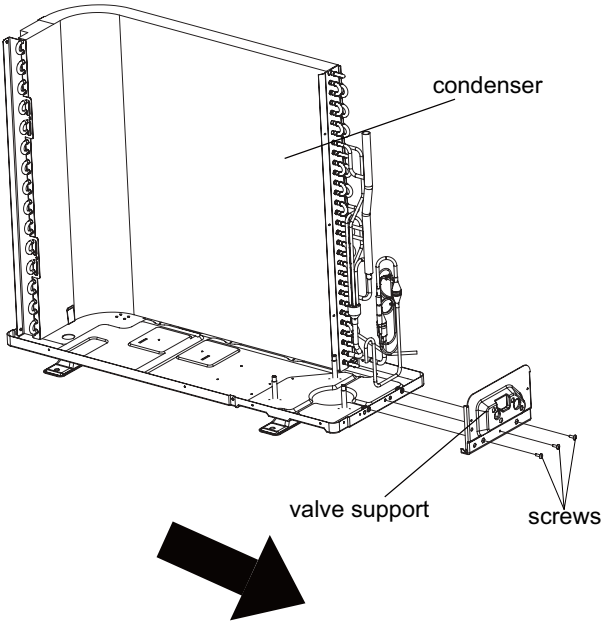
Steps	Procedure
1. Before disassembly	
2. Remove handle	<p data-bbox="209 1173 660 1240">Remove the screw fixing the handle and then remove the handle.</p> 
3. Remove top panel and grille	<p data-bbox="209 1688 667 1800">Remove screws fixing the top panel and the grille respectively, and then remove the top panel and the grille.</p> 

Steps	Procedure
<p data-bbox="97 327 549 356">4. Remove front panel and rear guard grille</p> <p data-bbox="215 495 670 645">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 data-bbox="1013 365 1189 394">rear guard grille</p> <p data-bbox="901 421 965 450">panel</p> <p data-bbox="1436 398 1500 427">screws</p> <p data-bbox="821 633 901 663">screws</p> <p data-bbox="869 757 949 786">screws</p>
<p data-bbox="97 869 376 898">5. Remove right side plate</p> <p data-bbox="215 1025 670 1137">Remove screws connecting the front panel with the chassis and the motor support, and then remove the right side plate.</p>	 <p data-bbox="1276 896 1436 925">right side plate</p> <p data-bbox="1412 1216 1492 1245">screws</p>
<p data-bbox="97 1451 387 1480">6. Remove axial flow blade</p> <p data-bbox="215 1608 663 1675">Remove nut fixing the blade and then remove the blade.</p>	 <p data-bbox="861 1563 1021 1592">axial flow blade</p> <p data-bbox="837 1854 885 1883">nut</p>

Steps	Procedure	
7. Remove motor and motor support	<p>Remove screws on the motor and the motor support, and then remove the motor and the motor support.</p>	
8. Remove electric box	<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>	
9. Remove soundproof sponge	<p>Remove the soundproof sponge wrapping the compressor.</p>	

Steps	Procedure	
10. Remove solenoid coil	Remove the screw on the solenoid coil, and then remove the solenoid coil.	 <p>solenoid coil screw</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>	 <p>4-way valve assy compressor gas valve liquid valve nuts</p>



Steps	Procedure
12. Remove isolation sheet	<p data-bbox="212 488 663 555">Remove the 3 screws fixing the isolation sheet and then remove the isolation sheet.</p>  <p data-bbox="786 846 943 875">isolation sheet</p> <p data-bbox="1278 891 1353 920">screws</p>
13. Remove valve support and condenser	<p data-bbox="212 1285 663 1473">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>  <p data-bbox="1283 1308 1398 1337">condenser</p> <p data-bbox="1139 1727 1283 1756">valve support</p> <p data-bbox="1378 1733 1453 1762">screws</p>

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