GREE
Change for Life

E-TAC

ENGINEERED TERMINAL AIR CONDITIONER

Service Manual

GREE ELECTRIC APPLIANCES, INC.OF ZHUHAI

Table of Contents

Summary and Features

Models

ETAC 12 __ 230V 20 A -A

Series Designation
ETAC

Capacity
07 - 7,000 BTUH
09 - 9,000 BTUH
12 - 12,000 BTUH
15 - 15,000 BTUH

Type
-Heat Pump
- Heat/Cool

Electrical Rating
230V - 208/230V 60Hz 1PH
265V - 265V 60Hz 1PH

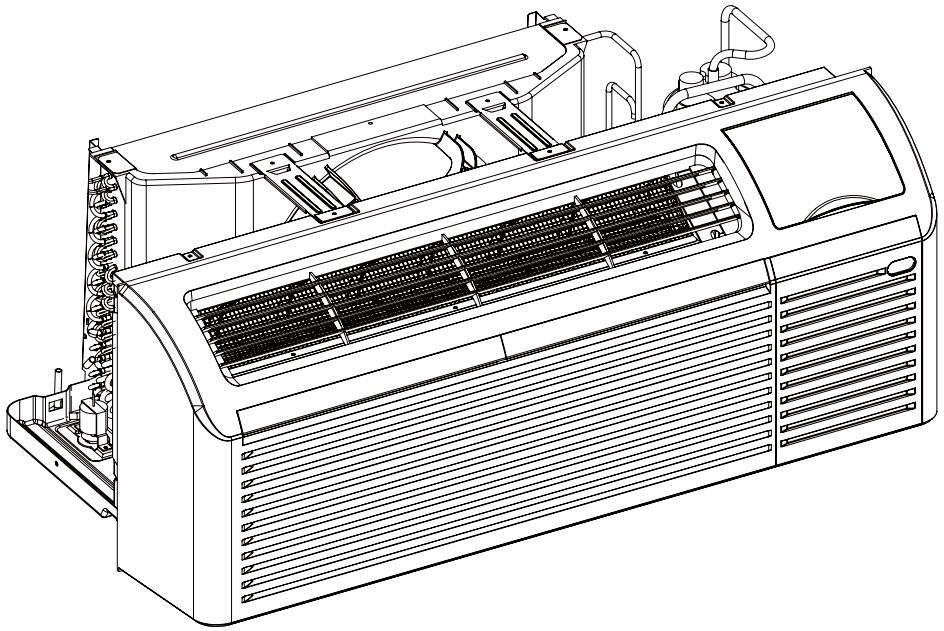
Heat Capacity
15 - 2 KW
20 - 3 KW
30 - 5 KW

Level

A - Standard Protection
C - Sea Coast Protection

Remote Controller

PN: 30510092MX



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.

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.

●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.

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

Parameter		Unit	Value	Value
Model			ETAC-07HC265V20A	ETAC-07HP265V20A
Product Code			CC060017300 CC060017301	CC060017400 CC060017401
Power Supply	Rated Voltage	V ～	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7200	7200
Heating Capacity		Btu/h	-	6100
Cooling Power Input		W	655	655
Heating Power Input		W	-	540
Cooling Power Current		A	2.6	2.6
Heating Power Current		A	-	2.2
Electric Heating Power Input		W	3000	3000
Electric Heating Power Current		A	11.32	11.32
Rated Input		W	770	770
Rated Current		A	3.22	3.22
Air Flow Volume(H/M/L)		m^3/h	500/470/440	500/470/440
Dehumidifying Volume		L/h	0.80	0.80
EER		Btu/w.h	11.00	11.00
COP		W/W	-	3.30
Application Area		m^2	7-12	7-12
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
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	46	46
Gross Weight		kg	56	56
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.56	0.60
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	840/790/740	840/790/740
	Output of Fan Motor	W	18	21
	Fan Motor RLA	A	0.1	0.1
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	3000	3000
	Evaporator Form		Alumium Tube	Alumium Tube
	Pipe Diameter	mm	Φ7.94	Φ7.94
	Row-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	699X38.1X242	699X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	51/50/49	51/50/49
	Sound Power Level (H/M/L)	dB (A)	61/60/59	61/60/59

Outdoor Side	Compressor Manufacturer/ Trademark		PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD	PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD
	Compressor Model		5RS062LAA21	5RS062LAA21
	Compressor Oil		FV50S	FV50S
	Compressor Type		Rotary	Rotary
	L.R.A.	A	19	19
	Compressor RLA	A	2.45	2.45
	Compressor Power Input	W	645	645
	Overload Protector		B90-150-241E	B90-150-241E
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	2-1.3	2-1.3
	Coil Length (LXDXW)	mm	635X22.8X343	635X22.8X343
	Fan Motor Speed	rpm	1380	1380
	Output of Fan Motor	W	40	40
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1.5	1.5
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	63/62/61	63/62/61
	Sound Power Level (H/M/L)	dB (A)	73/72/71	73/72/71
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-09HC265V20A	ETAC-09HP265V20A
Product Code			CC060017500 CC060017501	CC060017600 CC060017601
Power Supply	Rated Voltage	V ~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	9000	9300
Heating Capacity		Btu/h	-	8100
Cooling Power Input		W	800	825
Heating Power Input		W	-	720
Cooling Power Current		A	3.2	3.4
Heating Power Current		A	-	2.9
Electric Heating Power Input		W	3000	3000
Electric Heating Power Current		A	11.32	11.32
Rated Input		W	960	975
Rated Current		A	4.00	4.10
Air Flow Volume(H/M/L)		m^3/h	500/470/440	530/500/470
Dehumidifying Volume		L/h	1.00	1.00
EER		Btu/w.h	11.30	11.30
COP		W/W	-	3.30
Application Area		m^2	10-17	10-17
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
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	47	48
Gross Weight		kg	57	58
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.55	0.67
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	840/790/740	1000/950/900
	Output of Fan Motor	W	18	21
	Fan Motor RLA	A	0.1	0.1
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	3000	3000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7.94
	Row-fin Gap	mm	2-1.3	2-1.4
	Coil Length (LXDXW)	mm	699X25.4X248	699X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	51/50/49	53/52/51
	Sound Power Level (H/M/L)	dB (A)	61/60/59	63/62/61

Outdoor Side	Compressor Manufacturer/ Trademark		SUZHOU SAMSUNG ELECTRONICS CO.,LTD	SUZHOU SAMSUNG ELECTRONICS CO.,LTD
	Compressor Model		G4C085YUAJP	G4C085YUAJP
	Compressor Oil		FREOLa68ES-T(POE)	FREOLa68ES-T(POE)
	Compressor Type		Rotary	Rotary
	L.R.A.	A	19	19
	Compressor RLA	A	3.2	3.2
	Compressor Power Input	W	795	795
	Overload Protector		MRA12190-12008	MRA12190-12008
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X34.2X343	635X34.2X343
	Fan Motor Speed	rpm	1380	1540
	Output of Fan Motor	W	40	45
	Fan Motor RLA	A	0.2	0.17
	Fan Motor Capacitor	μF	1.5	2
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	63/62/61	66/65/64
	Sound Power Level (H/M/L)	dB (A)	73/72/71	76/75/74
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-12HC265V20A	ETAC-12HP265V20A
Product Code			CC060017700 CC060017701	CC060017800 CC060017801
Power Supply	Rated Voltage	V ～	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	12000	12000
Heating Capacity		Btu/h	-	10700
Cooling Power Input		W	1120	1120
Heating Power Input		W	-	1010
Cooling Power Current		A	4.6	4.6
Heating Power Current		A	-	3.9
Electric Heating Power Input		W	3000	3000
Electric Heating Power Current		A	11.32	11.32
Rated Input		W	1340	1400
Rated Current		A	5.60	5.90
Air Flow Volume(H/M/L)		m^3/h	530/500/470	530/500/470
Dehumidifying Volume		L/h	1.30	1.30
EER		Btu/w.h	10.70	10.70
COP		W/W	-	3.10
Application Area		m^2	16-24	16-24
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
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	49	49
Gross Weight		kg	59	59
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.71	0.79
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	1070/940/860	1070/940/860
	Output of Fan Motor	W	23	23
	Fan Motor RLA	A	0.11	0.11
	Fan Motor Capacitor	μF	1.5	1.5
	Input of Heater	W	3000	3000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	699X25.4X248	699X25.4X248
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	54/53/52	55/54/53
	Sound Power Level (H/M/L)	dB (A)	64/63/62	65/64/63

Outdoor Side	Compressor Manufacturer/ Trademark		SUZHOU SAMSUNG ELECTRONICS CO.,LTD	SUZHOU SAMSUNG ELECTRONICS CO.,LTD
	Compressor Model		G4A110YUAJP	G4A110YUAJP
	Compressor Oil		FREOLa68ES-T(POE)	FREOLa68ES-T(POE)
	Compressor Type		Rotary	Rotary
	L.R.A.	A	23	23
	Compressor RLA	A	4.3	4.3
	Compressor Power Input	W	1090	1090
	Overload Protector		MRA12153-12008 or B177-150-241A	MRA12153-12008 or B177-150-241A
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ~ 30	16 ~ 30
	Ambient Temp (Cooling)	ºC	13 ~ 46	13 ~ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X34.2X343	635X34.2X343
	Fan Motor Speed	rpm	1540	1540
	Output of Fan Motor	W	45	45
	Fan Motor RLA	A	0.17	0.17
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	66/65/64	67/66/65
	Sound Power Level (H/M/L)	dB (A)	76/75/74	77/76/75
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-12HC265V30A	ETAC-12HP265V30A
Product Code			CC060017900 CC060017901	CC060018000 CC060018001
Power Supply	Rated Voltage	V ～	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	12000	12000
Heating Capacity		Btu/h	-	10700
Cooling Power Input		W	1120	1120
Heating Power Input		W	-	1010
Cooling Power Current		A	4.6	4.6
Heating Power Current		A	-	3.9
Electric Heating Power Input		W	5000	5000
Electric Heating Power Current		A	18.87	18.87
Rated Input		W	1340	1400
Rated Current		A	5.60	5.90
Air Flow Volume(H/M/L)		m^3/h	530/500/470	530/500/470
Dehumidifying Volume		L/h	1.30	1.30
EER		Btu/w.h	10.70	10.70
COP		W/W	-	3.10
Application Area		m^2	16-24	16-24
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
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	49	49
Gross Weight		kg	59	59
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.71	0.79
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	1070/940/860	1070/940/860
	Output of Fan Motor	W	23	23
	Fan Motor RLA	A	0.11	0.11
	Fan Motor Capacitor	μF	1.5	1.5
	Input of Heater	W	3000	3000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	699X38.1X242	699X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	54/53/52	55/54/53
	Sound Power Level (H/M/L)	dB (A)	64/63/62	65/64/63

Outdoor Side	Compressor Manufacturer/ Trademark		SUZHOU SAMSUNG ELECTRONICS CO.,LTD	SUZHOU SAMSUNG ELECTRONICS CO.,LTD
	Compressor Model		G4A110YUAJP	G4A110YUAJP
	Compressor Oil		FREOLa68ES-T(POE)	FREOLa68ES-T(POE)
	Compressor Type		Rotary	Rotary
	L.R.A.	A	23	23
	Compressor RLA	A	4.3	4.3
	Compressor Power Input	W	1090	1090
	Overload Protector		MRA12153-12008 or B177-150-241A	MRA12153-12008 or B177-150-241A
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ~ 30	16 ~ 30
	Ambient Temp (Cooling)	ºC	13 ~ 46	13 ~ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X34.2X343	635X34.2X343
	Fan Motor Speed	rpm	1540	1540
	Output of Fan Motor	W	45	45
	Fan Motor RLA	A	0.17	0.17
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	66/65/64	67/66/65
	Sound Power Level (H/M/L)	dB (A)	76/75/74	77/76/75
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-15HC265V30A	ETAC-15HP265V30A
Product Code			CC060018100 CC060018101	CC060018200 CC060018201
Power Supply	Rated Voltage	V ～	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	15000	15000
Heating Capacity		Btu/h	-	13800
Cooling Power Input		W	1530	1530
Heating Power Input		W	-	1390
Cooling Power Current		A	5.9	5.9
Heating Power Current		A	-	5.1
Electric Heating Power Input		W	5000	5000
Electric Heating Power Current		A	18.87	18.87
Rated Input		W	1803	1803
Rated Current		A	7.31	7.31
Air Flow Volume(H/M/L)		m^3/h	580/550/520	580/550/520
Dehumidifying Volume		L/h	1.5	1.5
EER		Btu/w.h	9.80	9.80
COP		W/W	-	2.90
Application Area		m^2	21-31	21-31
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
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	53	53.5
Gross Weight		kg	63	63.5
Refrigerant			R410A	R410A
Refrigerant Charge		kg	1.14	1.14
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121X706	121X706
	Fan Motor Speed(H/M/L)	r/min	1070/940/860	1070/940/860
	Output of Fan Motor	W	23	23
	Fan Motor RLA	A	0.11	0.11
	Fan Motor Capacitor	μF	1.5	1.5
	Input of Heater	W	5000	5000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	699X38.1X242	699X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	54/53/52	54/53/52
	Sound Power Level (H/M/L)	dB (A)	64/63/62	64/63/62

Outdoor Side	Compressor Manufacturer/ Trademark		PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD	PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD
	Compressor Model		5PS146LAA21	5PS146LAA21
	Compressor Oil		FV50S	FV50S
	Compressor Type		Rotary	Rotary
	L.R.A.	A	32.6	32.6
	Compressor RLA	A	6.6	6.6
	Compressor Power Input	W	1475	1475
	Overload Protector		B180-150-141E	B180-150-141E
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7.94	Φ7.94
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X57.2X352	635X57.2X352
	Fan Motor Speed	rpm	1540	1540
	Output of Fan Motor	W	45	45
	Fan Motor RLA	A	0.17	0.17
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	66/65/64	67/66/65
	Sound Power Level (H/M/L)	dB (A)	76/75/74	77/76/75
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-07HC230V20A	ETAC-07HP230V20A
Product Code			CC060016300 CC060016301	CC060016400 CC060016401
Power Supply	Rated Voltage	V ~	208/230	208/230
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7600/7700	7600/7700
Heating Capacity		Btu/h	-	6100/6300
Cooling Power Input		W	620/640	655/665
Heating Power Input		W	-	540/560
Cooling Power Current		A	3.0/2.8	3.0/2.8
Heating Power Current		A	-	2.5/2.4
Electric Heating Power Input		W	2452/3000	2452/3000
Electric Heating Power Current		A	12.2/13.2	12.2/13.2
Rated Input		W	736	736
Rated Current		A	3	3
Air Flow Volume(H/M/L)		m^3/h	500/470/440	500/470/440
Dehumidifying Volume		L/h	0.8	0.8
EER		Btu/w.h	12.20/12.0	11.60/11.60
COP		W/W	-	3.30/3.30
Application Area		m^2	10-16	10-16
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	2	2
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	46	46
Gross Weight		kg	57	57
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.51	0.58
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	840/790/740	1030/970/890
	Output of Fan Motor	W	18	21
	Fan Motor RLA	A	0.15	0.36
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	2452/3000	2452/3000
	Evaporator Form		Alumium Tube	Alumium Tube
	Pipe Diameter	mm	Φ7.94	Φ7.94
	Row-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	49/48/47	51/50/49
	Sound Power Level (H/M/L)	dB (A)	59/58/57	61/60/59

Outdoor Side	Compressor Manufacturer/ Trademark		PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD	PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD
	Compressor Model		5RS062FAA21	5RS062FAA21
	Compressor Oil		FV50S	FV50S
	Compressor Type		Rotary	Rotary
	L.R.A.	A	19	19
	Compressor RLA	A	2.8	2.8
	Compressor Power Input	W	630	630
	Overload Protector		B130-140-241E	B130-140-241E
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	2-1.3	2-1.3
	Coil Length (LXDXW)	mm	635X22.8X343	635X22.8X343
	Fan Motor Speed	rpm	1370	1370
	Output of Fan Motor	W	40	40
	Fan Motor RLA	A	0.42	0.42
	Fan Motor Capacitor	μF	2	2
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	61/59/57	61/59/57
	Sound Power Level (H/M/L)	dB (A)	71/69/67	71/69/67
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-09HC230V20A	ETAC-09HP230V20A
Product Code			CC060016500 CC060016501	CC060016600 CC060016601
Power Supply	Rated Voltage	V ～	208/230	208/230
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	8800/9000	8800/9000
Heating Capacity		Btu/h	-	7900/8100
Cooling Power Input		W	770/800	770/800
Heating Power Input		W	-	700/720
Cooling Power Current		A	3.9/3.7	3.9/3.7
Heating Power Current		A	-	3.8/3.4
Electric Heating Power Input		W	2452/3000	2452/3000
Electric Heating Power Current		A	12.2/13.2	12.2/13.2
Rated Input		W	893	972
Rated Current		A	4.78	5.36
Air Flow Volume(H/M/L)		m^3/h	500/470/440	530/500/470
Dehumidifying Volume		L/h	1	1
EER		Btu/w.h	11.40/11.30	11.40/11.30
COP		W/W	-	3.30/3.30
Application Area		m^2	12-18	12-18
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	2	2
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	47	48
Gross Weight		kg	58	59
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.61	0.71
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	1030/970/890	1030/970/890
	Output of Fan Motor	W	21	21
	Fan Motor RLA	A	0.36	0.36
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	2452/3000	2452/3000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7.94
	Row-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	699X25.4X248	699X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	51/50/49	51/50/49
	Sound Power Level (H/M/L)	dB (A)	61/60/59	61/60/59

Outdoor Side	Compressor Manufacturer/ Trademark		MITSUBISHI ELECTRIC (GUANGZHOU) COMPRESSOR CO.,LTD	MITSUBISHI ELECTRIC (GUANGZHOU) COMPRESSOR CO.,LTD
	Compressor Model		KN073NGFMC	KN073NGFMC
	Compressor Oil		PVE	PVE
	Compressor Type		Rotary	Rotary
	L.R.A.	A	17	17
	Compressor RLA	A	3.7	3.7
	Compressor Power Input	W	740	740
	Overload Protector		-	-
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X34.2X343	635X34.2X343
	Fan Motor Speed	rpm	1370	1370
	Output of Fan Motor	W	40	40
	Fan Motor RLA	A	0.42	0.42
	Fan Motor Capacitor	μF	2	2
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	61/59/57	61/59/57
	Sound Power Level (H/M/L)	dB (A)	71/69/67	71/69/67
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-12HC230V20A	ETAC-12HP230V20A
Product Code			CC060016700 CC060016701	CC060016800 CC060016801
Power Supply	Rated Voltage	V ~	208/230	208/230
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	11800/12000	11800/12000
Heating Capacity		Btu/h	-	10500/10700
Cooling Power Input		W	1120/1120	1120/1120
Heating Power Input		W	-	990/1010
Cooling Power Current		A	5.3/5.1	5.3/5.1
Heating Power Current		A	-	4.7/4.5
Electric Heating Power Input		W	2452/3000	2452/3000
Electric Heating Power Current		A	12.2/13.2	12.2/13.2
Rated Input		W	1394	1447
Rated Current		A	7.57	7.87
Air Flow Volume(H/M/L)		m^3/h	530/500/470	530/500/470
Dehumidifying Volume		L/h	1.3	1.3
EER		Btu/w.h	10.50/10.70	10.50/10.70
COP		W/W	-	3.10/3.10
Application Area		m^2	16-24	16-24
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	2	2
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	49	50
Gross Weight		kg	60	61
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.76	0.76
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	1100/1000/920	1100/1000/920
	Output of Fan Motor	W	23	23
	Fan Motor RLA	A	0.36	0.36
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	2452/3000	2452/3000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/52/51	53/52/51
	Sound Power Level (H/M/L)	dB (A)	63/62/61	63/62/61

Outdoor Side	Compressor Manufacturer/ Trademark		RECHI PRECISION CO.,LTD	RECHI PRECISION CO.,LTD
	Compressor Model		44A282AK&FEKC	44A282AK&FEKC
	Compressor Oil		NMOC Ze-Gles RB68EP	NMOC Ze-Gles RB68EP
	Compressor Type		Rotary	Rotary
	L.R.A.	A	29.5	29.5
	Compressor RLA	A	5	5
	Compressor Power Input	W	1125	1125
	Overload Protector		B245-140K-141H	B245-140K-141H
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X34.2X343	635X34.2X343
	Fan Motor Speed	rpm	1370	1370
	Output of Fan Motor	W	65	65
	Fan Motor RLA	A	0.67	0.67
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Side	m^3/h	-	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	63/61/59	63/61/59
	Sound Power Level (H/M/L)	dB (A)	73/71/59	73/71/59
	Defrosting Method		-	-

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

Parameter		Unit	Value	Value
Model			ETAC-12HC230V30	ETAC-012HP230V30A
Product Code			CC060016900 CC060016901	CC060017000 CC060017001
Power Supply	Rated Voltage	V ～	208/230	208/230
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	11800/12000	11800/12000
Heating Capacity		Btu/h	-	10500/10700
Cooling Power Input		W	1120/1120	1120/1120
Heating Power Input		W	-	990/1010
Cooling Power Current		A	5.3/5.1	5.3/5.1
Heating Power Current		A	-	4.7/4.5
Electric Heating Power Input		W	4087/5000	4087/5000
Electric Heating Power Current		A	20.5/21.5	20.5/21.5
Rated Input		W	1394	1447
Rated Current		A	7.57	7.87
Air Flow Volume(H/M/L)		m^3/h	530/500/470	530/500/470
Dehumidifying Volume		L/h	1.3	1.3
EER		Btu/w.h	10.50/10.70	10.50/10.70
COP		W/W	-	3.10/3.10
Application Area		m^2	16-24	16-24
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	2	2
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	50	50
Gross Weight		kg	61	61
Refrigerant			R410A	R410A
Refrigerant Charge		kg	0.76	0.76
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	1100/1000/920	1100/1000/920
	Output of Fan Motor	W	23	23
	Fan Motor RLA	A	0.36	0.36
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	4087/5000	4087/5000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/52/51	53/52/51
	Sound Power Level (H/M/L)	dB (A)	63/62/61	63/62/61

Outdoor Side	Compressor Manufacturer/ Trademark		RECHI PRECISION CO.,LTD	RECHI PRECISION CO.,LTD
	Compressor Model		44A282AK&FEKC	44A282AK&FEKC
	Compressor Oil		NMOC Ze-Gles RB68EP	NMOC Ze-Gles RB68EP
	Compressor Type		Rotary	Rotary
	L.R.A.	A	29.5	29.5
	Compressor RLA	A	5	5
	Compressor Power Input	W	1125	1125
	Overload Protector		B245-140K-141H	B245-140K-141H
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ5	Φ5
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X34.2X343	635X34.2X343
	Fan Motor Speed	rpm	1370	1370
	Output of Fan Motor	W	65	65
	Fan Motor RLA	A	0.67	0.67
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Side	m^3/h	/	-
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	63/61/59	63/61/59
	Sound Power Level (H/M/L)	dB (A)	73/71/59	73/71/59
	Defrosting Method		-	-

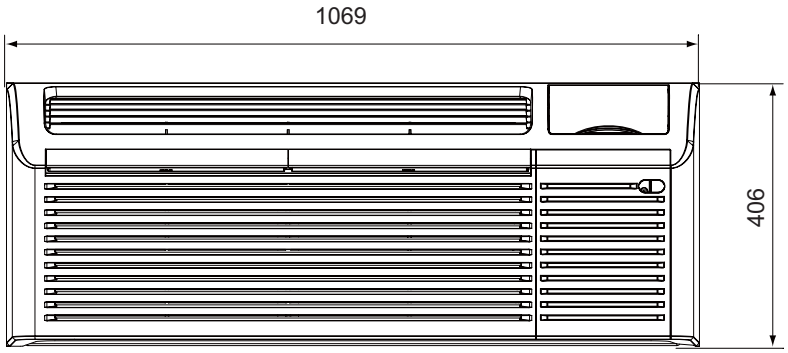
The above data is subject to change without notice. Please refer to the nameplate of the unit.

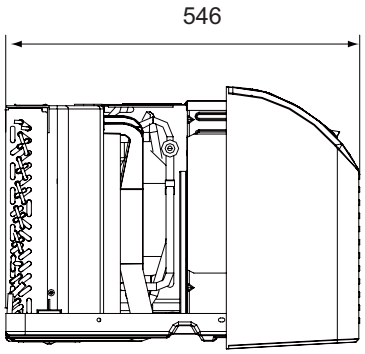
Parameter		Unit	Value	Value
Model			ETAC-15HC230V30A	ETAC-15HP230V30A
Product Code			CC060017100 CC060017101	CC060017200 CC060017201
Power Supply	Rated Voltage	V ～	208/230	230
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	14600/15000	15000
Heating Capacity		Btu/h	-	13800
Cooling Power Input		W	1510/1530	1530
Heating Power Input		W	-	1390
Cooling Power Current		A	7.5/6.7	6.7
Heating Power Current		A	-	6
Electric Heating Power Input		W	4087/5000	5000
Electric Heating Power Current		A	20.5/21.5	20.5/21.5
Rated Input		W	2025	2025
Rated Current		A	11.03	11.03
Air Flow Volume(H/M/L)		m^3/h	580/550/520	580/550/520
Dehumidifying Volume		L/h	1.5	1.5
EER		Btu/w.h	9.70/9.80	9.80
COP		W/W	-	2.90
Application Area		m^2	21-31	21-31
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	2	2
Dimension (WXHXD)		mm	1069X406X546	1069X406X546
Dimension of Carton Box (LXWXH)		mm	1141X642X460	1141X642X460
Dimension of Package (LXWXH)		mm	1144X645X475	1144X645X475
Net Weight		kg	53	54
Gross Weight		kg	64	65
Refrigerant			R410A	R410A
Refrigerant Charge		kg	1.08	1.08
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ121X706	Φ121X706
	Fan Motor Speed(H/M/L)	r/min	1100/1000/920	1100/1000/920
	Output of Fan Motor	W	23	23
	Fan Motor RLA	A	0.36	0.36
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	4087/5000	5000
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	698X38.1X248	698X38.1X248
	Swing Motor Model		-	-
	Output of Swing Motor	W	-	-
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/52/51	53/52/51
	Sound Power Level (H/M/L)	dB (A)	63/62/61	63/62/61

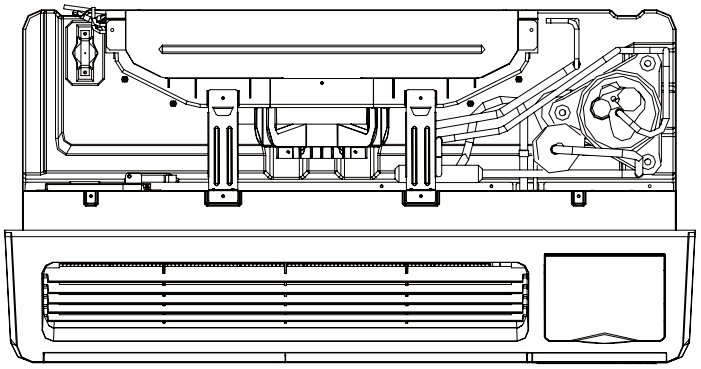
Outdoor Side	Compressor Manufacturer/ Trademark		PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD	PANASONIC WANBAO COMPRESSOR (GUANGZHOU) CO.,LTD
	Compressor Model		5PS146FAA21	5PS146FAA21
	Compressor Oil		FV50S	FV50S
	Compressor Type		Rotary	Rotary
	L.R.A.	A	32.6	32.6
	Compressor RLA	A	6.6	6.6
	Compressor Power Input	W	1480	1480
	Overload Protector		B205-150-141C	B205-150-141C
	Throttling Method		Capillary	Capillary
	Operation Temp	ºC	16 ～ 30	16 ～ 30
	Ambient Temp (Cooling)	ºC	13 ～ 46	13 ～ 46
	Ambient Temp (Heating)	ºC	≤24	≤24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7.94	Φ7.94
	Rows-fin Gap	mm	3-1.4	3-1.4
	Coil Length (LXDXW)	mm	635X57.2X352	635X57.2X352
	Fan Motor Speed	rpm	1370	1370
	Output of Fan Motor	W	65	65
	Fan Motor RLA	A	0.77	0.77
	Fan Motor Capacitor	μF	2.5	2.5
	Air Flow Volume of Outdoor Side	m^3/h	-	/
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
	Sound Pressure Level (H/M/L)	dB (A)	63/61/59	63/61/59
	Sound Power Level (H/M/L)	dB (A)	73/71/59	73/71/59
	Defrosting Method		-	-

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

3. Outline and Installation Dimension



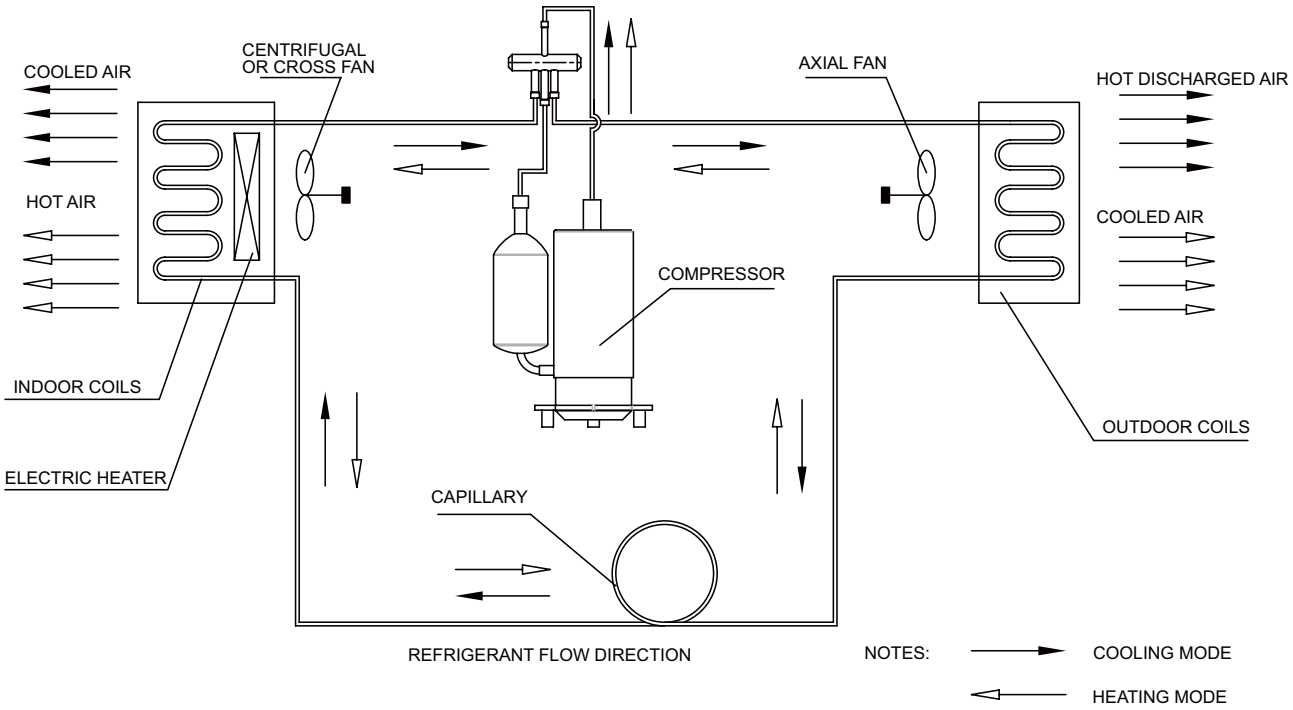




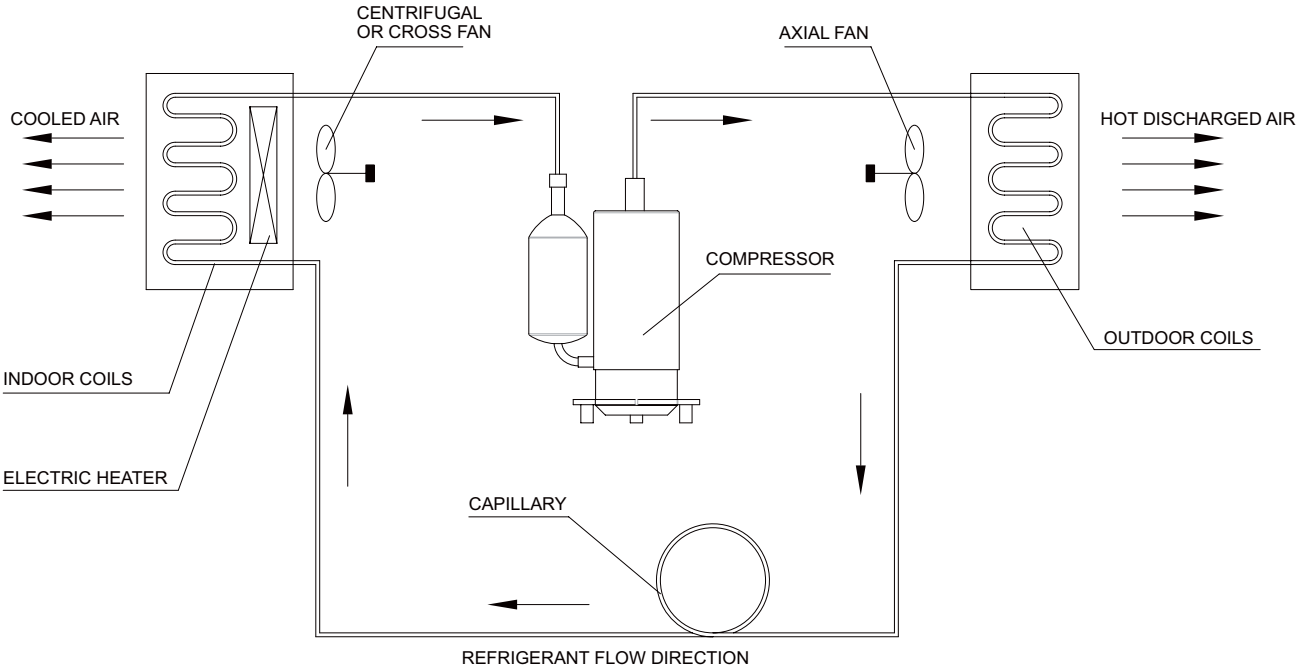
unit:mm

4. Refrigerant System Diagram

(1)Heat Pump with Electric Heater Models



(2) Cooling Only with Electric Heater Models



5. Schematic Diagram

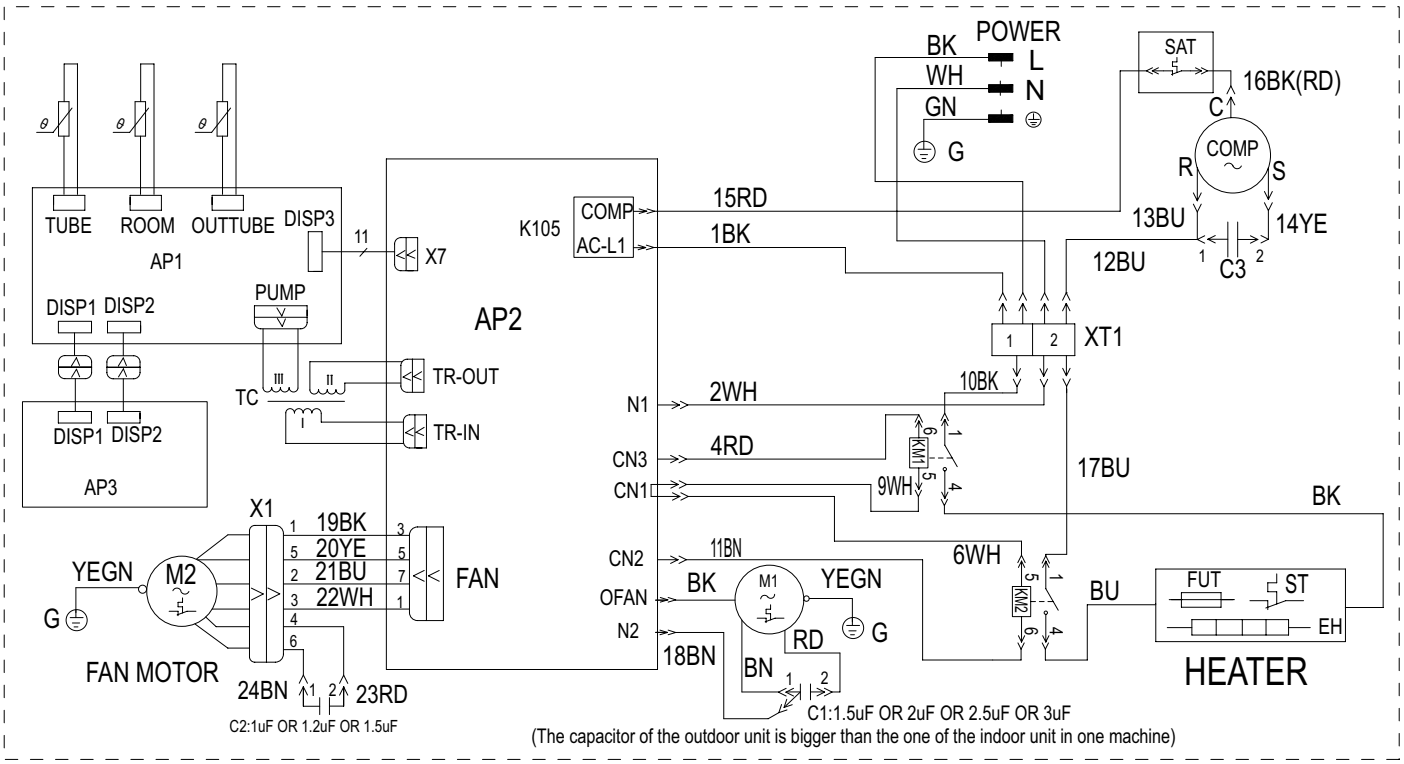
5.1 Electrical Data

Meaning of Marks

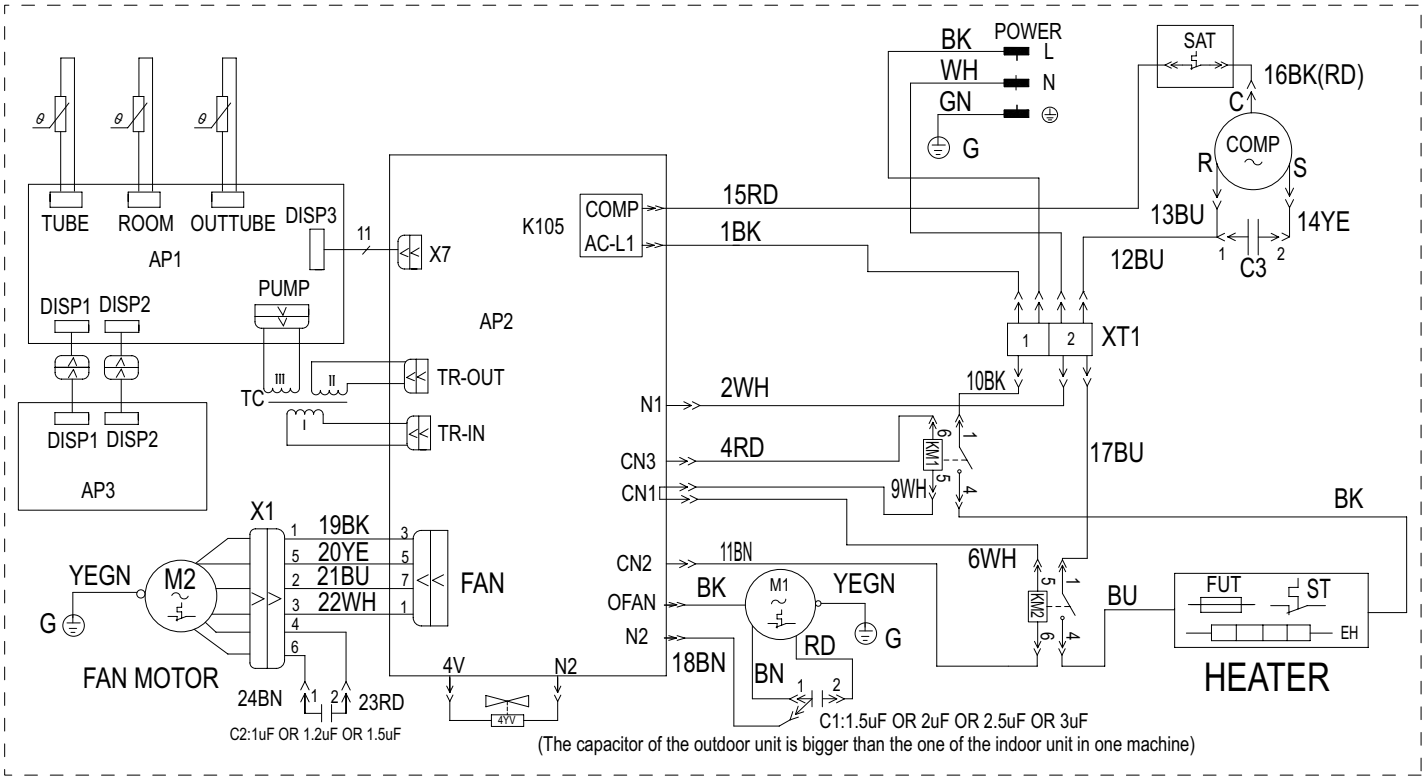
Symbol	Color symbol	Symbol	Color symbol
OG	ORANGE	BN	BROWN
VT	VIOLET	BU	BLUE
WH	WHITE	BK	BLACK
YE	YELLOW	Symbol	Parts name
RD	RED	COMP	COMPRESSOR
YEGN	YELLOW GREEN	⏚	PROTECTIVE EARTH

5.2 Electrical Wiring

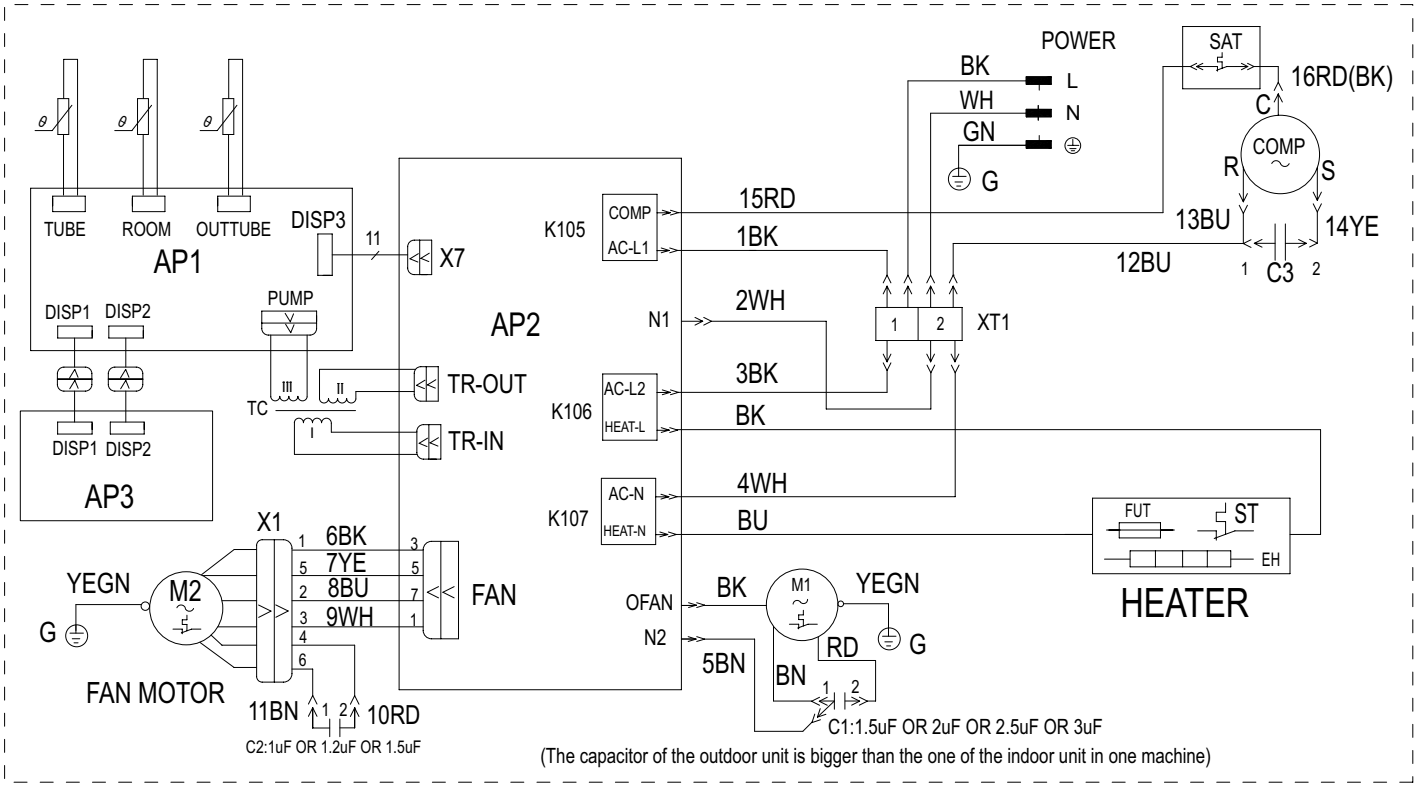
(1)ETAC-12HC265V30A,、ETAC-15HC265V30A



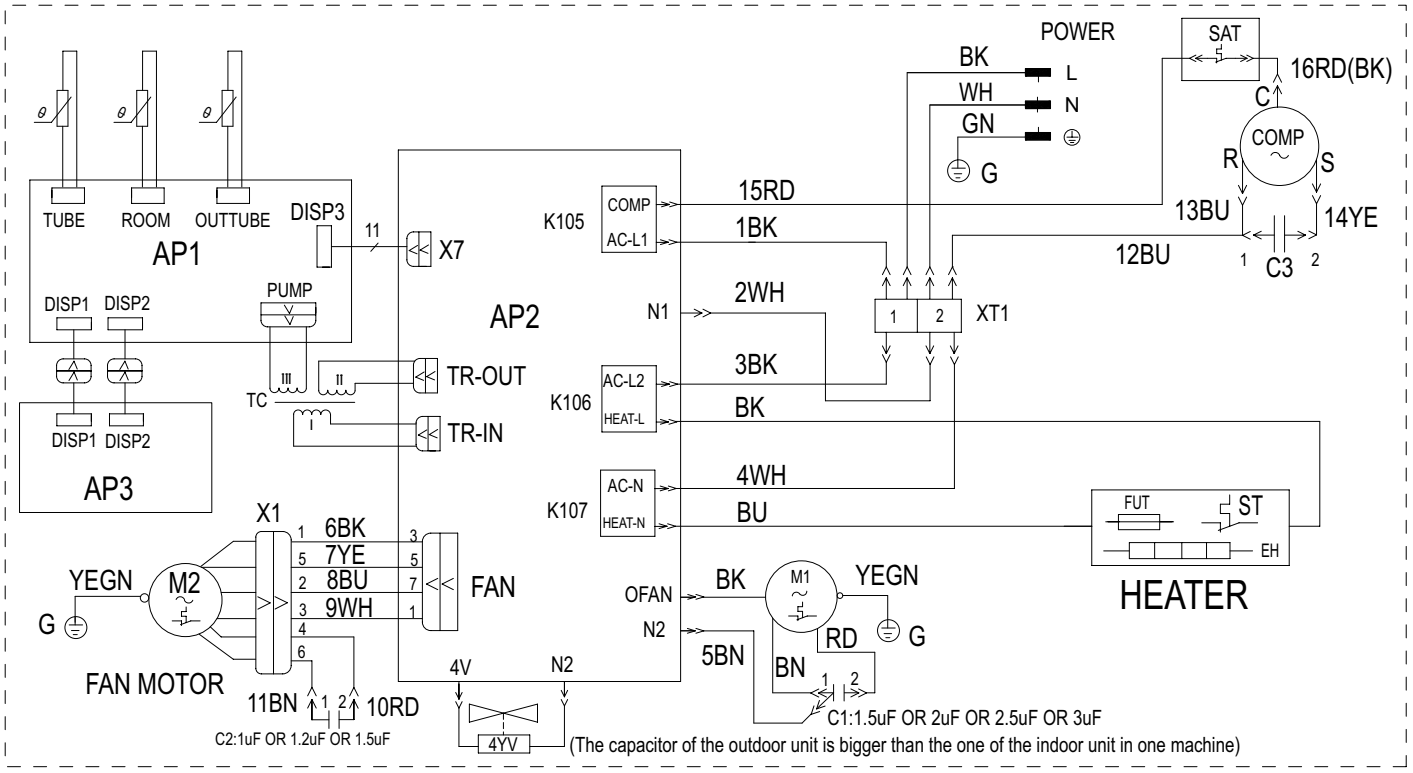
(2)ETAC-12HP265V30A、ETAC-15HP265V30A



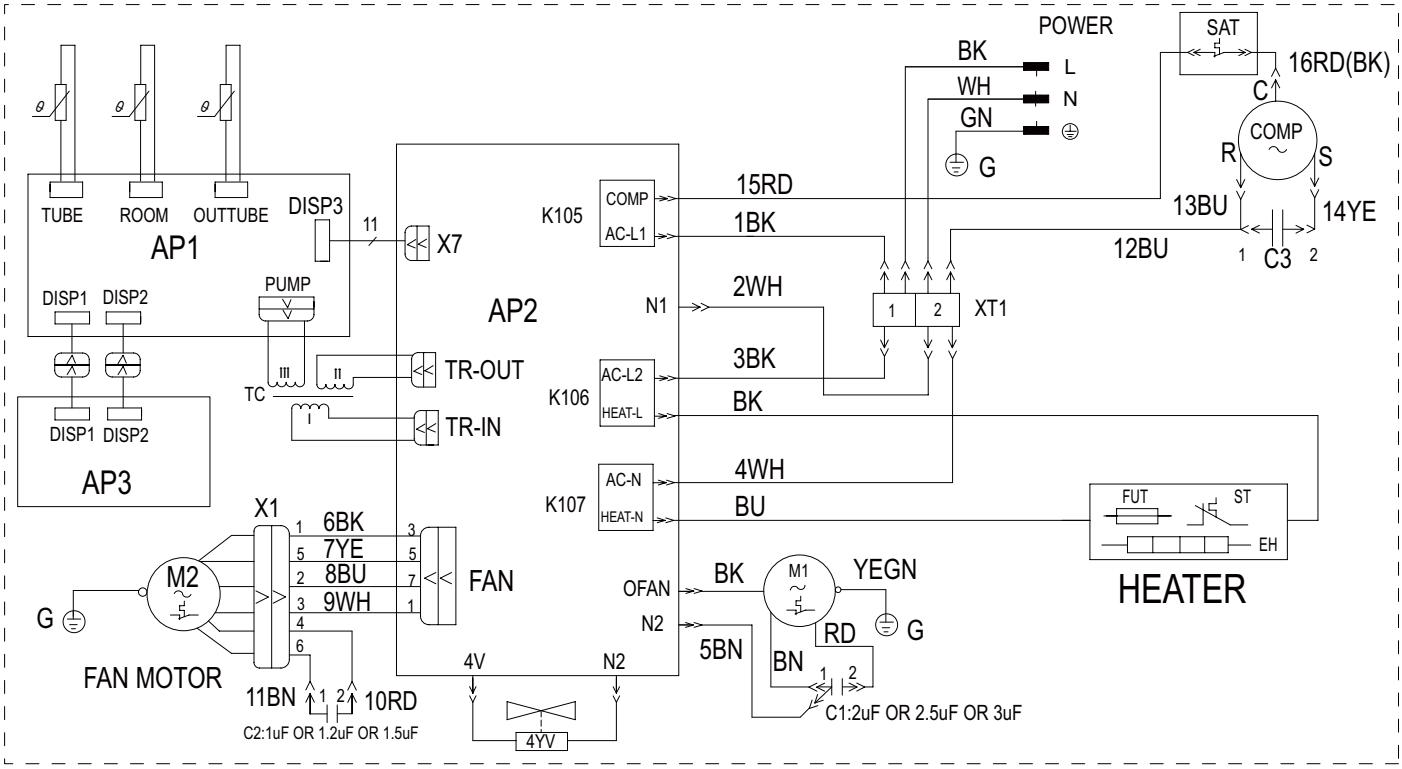
(3) ETAC-07HC265V20A、ETAC-09HC265V20A、ETAC-12HC265V20A



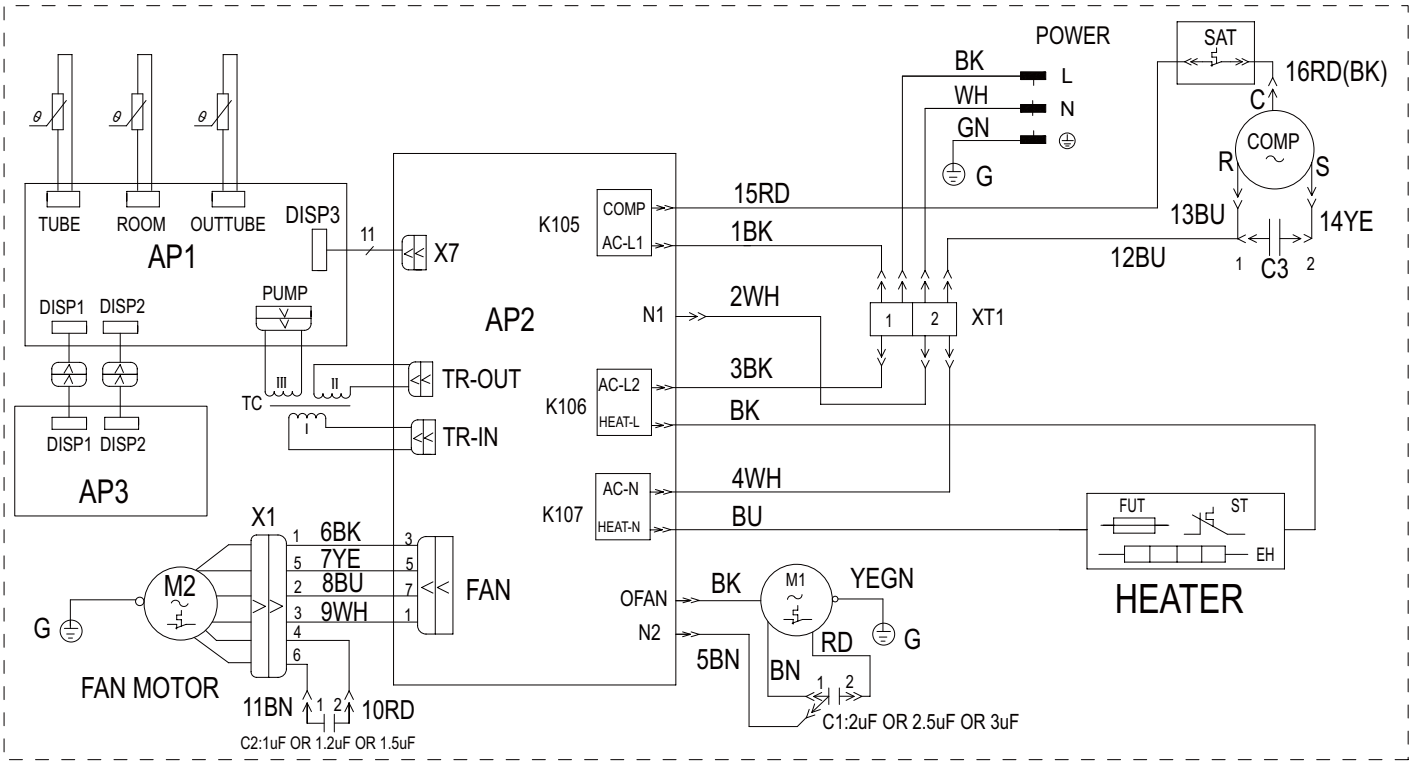
(4)ETAC-07HP265V20A、ETAC-09HP265V20A、ETAC-12HP265V20A



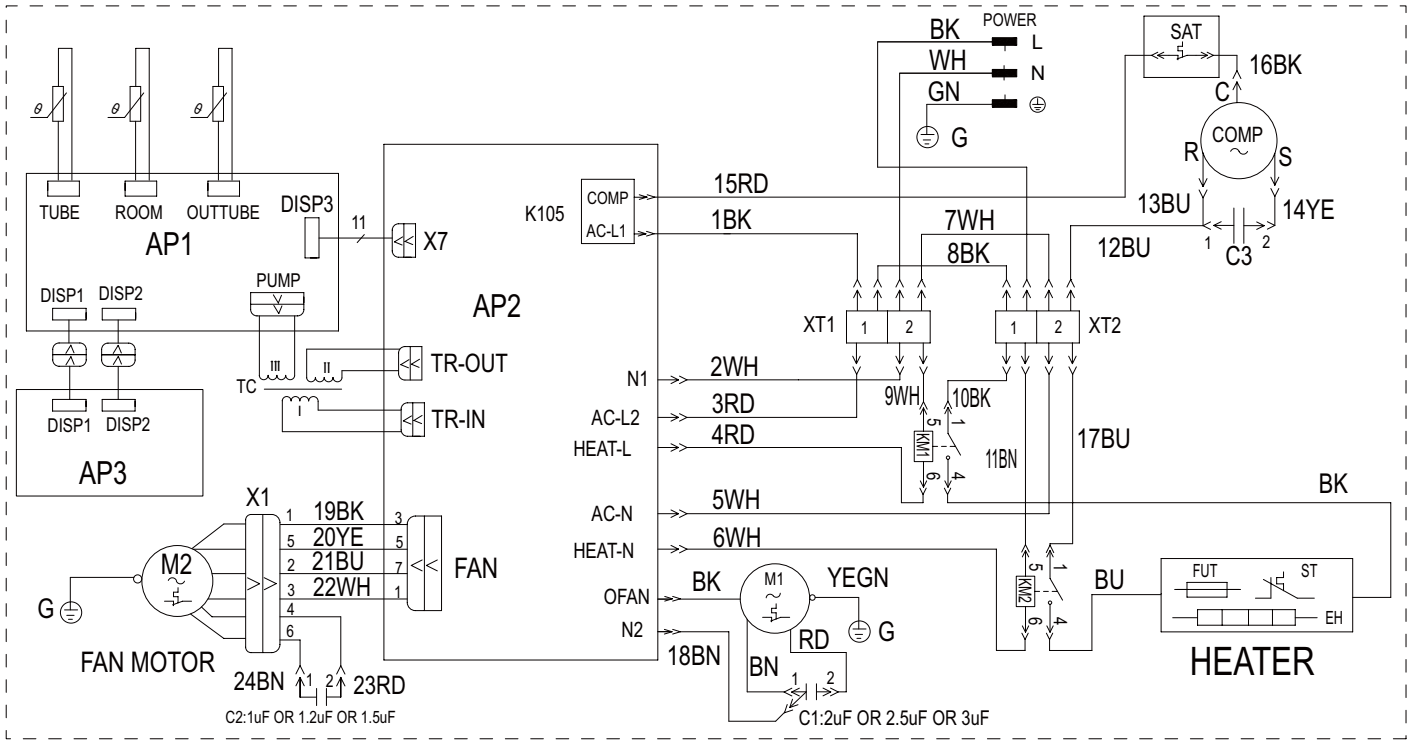
(5)ETAC-07HP230V20A、ETAC-09HP230V20A、ETAC-12HP230V20A



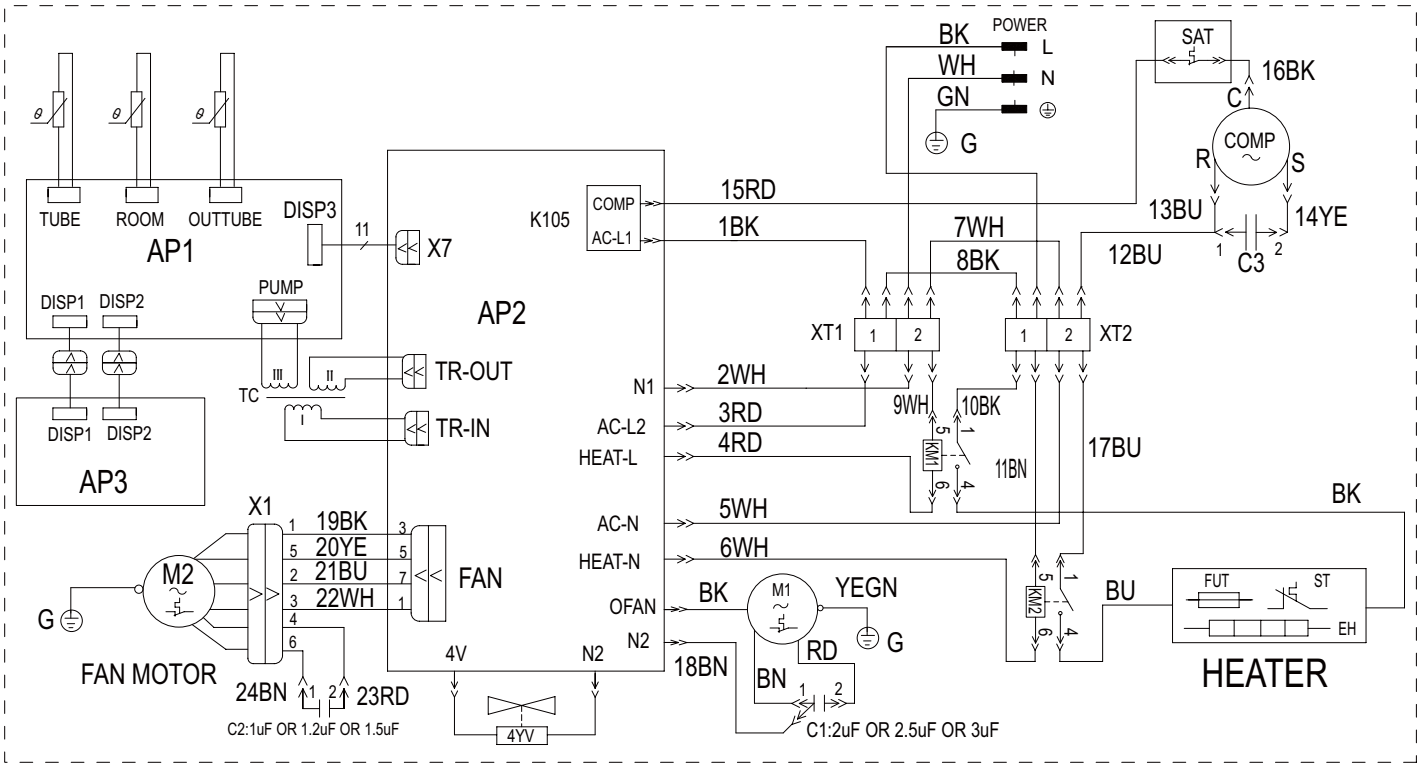
(6)ETAC-07HC230V20A、ETAC-09HC230V20A



(7)ETAC-12HC230V30A、ETAC-15HC230V30A



(8)ETAC-12HP230V30A、ETAC-15HP230V30A

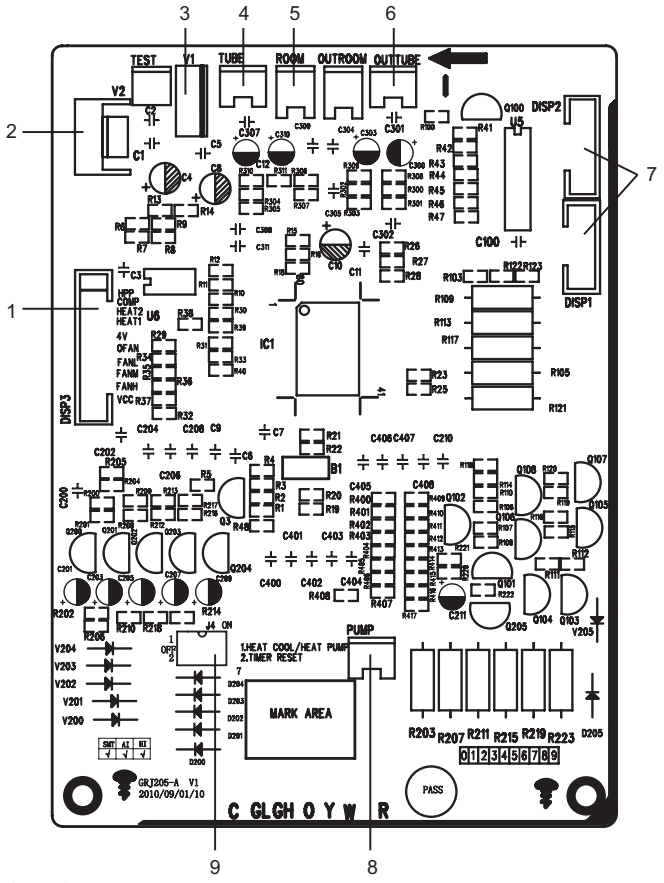


These circuit diagrames are subject to change without notice ,please refer to the one supplied with the unit.

5.3 Printed Circuit Board

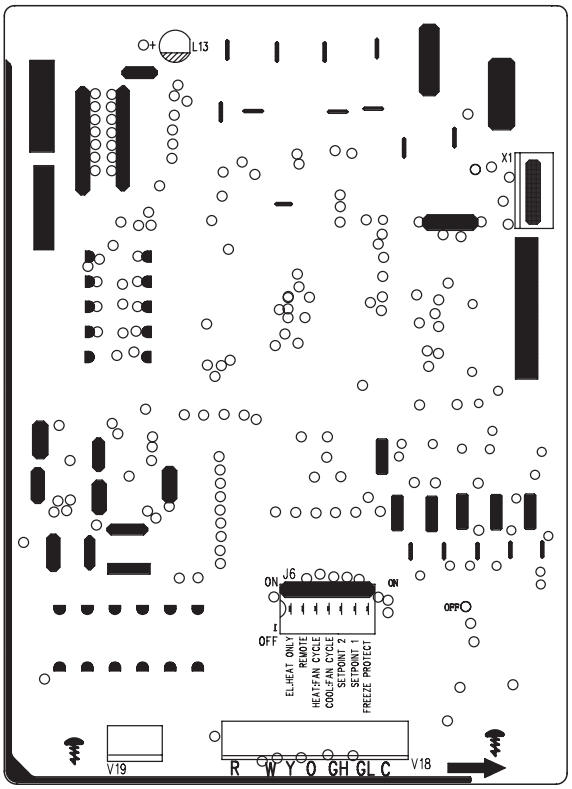
(1)Main Board 1

- **TOP VIEW**



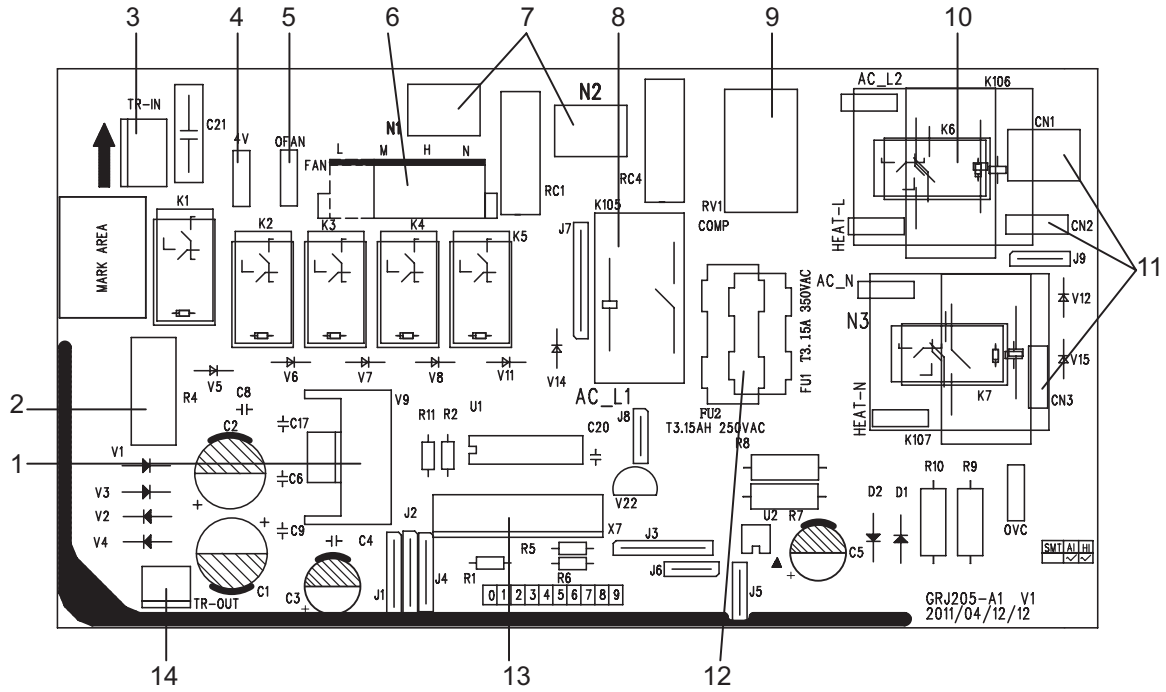
1	Interface of strong electroplax
2	7805 voltage-stabilizing block
3	7812 voltage-stabilizing block
4	Indoor tube temperature sensor
5	Indoor ambient temperature sensor
6	Outdoor tube temperature sensor
7	Interface of display
8	AC 24V power input
9	Heat pump and pure electric heating optional

- **BOTTOM VIEW**



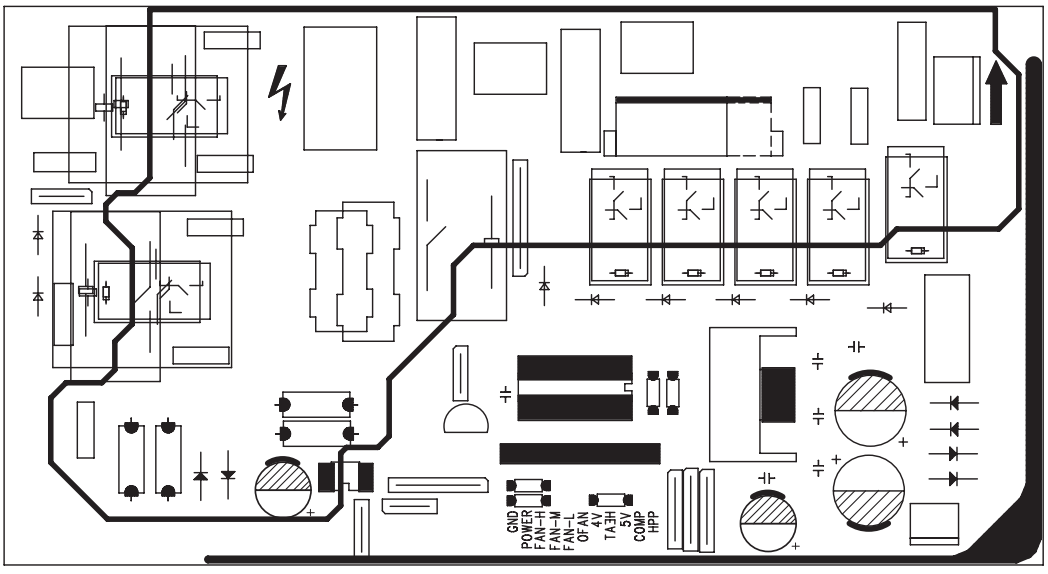
(2)Main Board 2

- **TOP VIEW**



1	7812 voltage-stabilizing block	6	Three kinds of fan speed	11	External control interface of relay
2	PTC resistance	7	Neutral wire	12	Fuse
3	230V / 265V input end of transformer	8	Relay of compressor	13	Interface of main board
4	4-way valve	9	Explosion-proof piezoresistor	14	Output terminal 12V of transformer
5	Outdoor fan	10	Electric heating relay	/	

- **BOTTOM VIEW**



6. Function and Control

6.1 Remote Control Operations

Signal transmitter

Remote control

ON/OFF

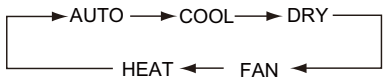
ON/OFF button

- Press this button, the unit will be turned on, press it once more, the unit will be turned off. When turning on or turning off the unit, the Timer, Sleep function will be canceled, but the presetting time is still remained.

MODE

MODE button

- Press this button, Auto, Cool, Dry, Fan, Heat mode can be selected circularly. Auto mode is default while power on. Under Auto mode,the temperature will not be displayed; Under Heat mode, the initial value is 28°C (°F); Under other modes, the initial value is 25°C (°F).



AUTO ◀

COOL ◀

DRY ◀

FAN ◀

HEAT ◀ (Only for cooling and heating unit.)
(As for cooling only unit, it won't have any action when it receives the signal of heating operation.)

SLEEP

SLEEP button

- Press this button, Sleep On and Sleep Off can be selected. After powered on,Sleep Off is defaulted. After the unit is turned off, the Sleep function is canceled. After Sleep function set up, the signal of Sleep will display. In this mode, the time of timer can be adjusted. Under Fan and Auto modes, this function is not available.

FAN

FAN button

- By pressing this key, you may select AUTO, FAN 1, FAN 2, FAN 3 or FAN 4, and may also cycle between them. FAN 4 only in cool or heat mode. After being energized, AUTO is defaulted. Only LOW fan can be set under DRY mode, pressing this key can not adjust the fan speed, but can send message.

Fan 1 Fan 2

Fan 3 Fan 4

Remote control

+

+ button

- For presetting temperature increasing. Press this button,can set up the temperature, when unit is on . Continuously press and hold this button for more than 2 seconds, the corresponding contents will be changed rapidly, until unpress the button then send the information, ℃(℉)is displaying all along. In Auto mode, the temperature can not be set up, but operate this button can send the signal. Centigrade setting range :16-30; Fahrenheit scale setting range 61-86.

-

- button

- Presetting temperature can be decreased. Press this button, the temperature can be set up, continuously press this button and hold for two seconds, the relative contents can quickly change, until unhold this button and send the order that the ℃ (℉) signal will be displayed all the time. The temperature adjustment is unavailable under the Auto mode, but the order can be sent by if pressing this button.

TIMER

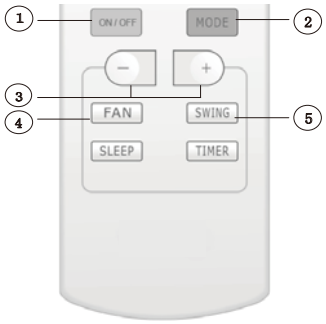
TIMER button

- By pressing this key under switch-off state, you may set the time for auto switch-on. The range of setting is 0.5 ~ 24 hours. The characters "T-ON" and "H" will flash for 5 seconds. Within 5 seconds, you may make one press of this key to complete the setting and send the message.If the setting is valid, the set time will be displayed for 2 seconds before display of the temperature message. During flash, you may press "+" key to increase the value and press "-" key to decrease the value. The time will increase or decrease by 0.5 hours with each press of this key. If pressing "+" or "-" key continuously, the time value will change rapidly. The remote controller can increase the set time by 0.5 hours every 0.25 seconds. After being energized, the fault is no timer setting, and there is no display of "T-ON" or "H". Press ON/OFF key to switch on the unit and cancel the auto switch-on.When the temperature display becomes constant, you may press this key again to display the remaining set time. The time value, "T-On" and "H" will display constantly for 2 seconds. After 2 seconds, the preset temperature will be displayed. Within these 2 seconds, you may press this key again to cancel the auto switch-on and send the message.

- By pressing this key under switch-on state, you may set the time for auto switch-off. The method of setting as the same as for auto switch-on.

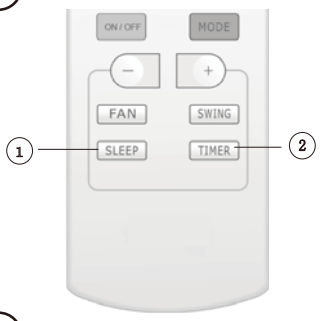
Guide for operation- General operation

1. After powered on, press ON/OFF button, the unit will start to run. (Note: When it is powered on, the guide louver of main unit will close automatically.)
2. Press MODE button, select desired running mode.
3. Pressing + or - button, to set the desired temperature. (It is unnecessary to set the temp. at AUTO mode.)
4. Pressing FAN button, set fan speed, can select AUTO, FAN 1, FAN 2, FAN 3 or FAN 4.
5. Pressing SWING button, to select the swing.



Guide for operation- Optional operation

1. Press SLEEP button, to set sleep.
2. Press TIMER button, can set the scheduled timer on or timer off.



Introduction for special function

★ About AUTO RUN

When AUTO RUN mode is selected, the setting temperature will not be displayed on the LCD, the unit will be in accordance with the room temp. automatically to select the suitable running method and to make ambient comfortable.

★ About LOCK

Under switch-on or switch-off state, you may hold "+" and "-" key simultaneously to lock and unlock the keypad. When locked, the display will show the LOCK icon, in which case the lock icon will flash three times upon operation of any key. After the keypad is unlocked, the lock icon on the display will be hidden. After being energized, the default is unlock.

★ About switch between Fahrenheit and Centigrade

Under switch-off state, you may hold "-" and "MODE" keys simultaneously to switch between °C and °F.

★ About Lamp

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

Changing batteries and notices

1.Slightly to press the place to take out the back cover of wireless remote control.(As shown in figure)

2. Take out the old batteries. (As show in figure)

3. Insert two new AAA1.5V dry batteries, and pay attention to the polarity. (As show in figure)

4. Attach the back cover of wireless remote control. (As show in figure)

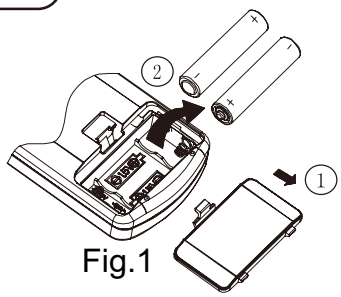


Fig.1

★ NOTE:

- When changing the batteries, do not use the old or different batteries, otherwise, it can cause the malfunction of the wireless remote control.
- If the wireless remote control will not be used for a long time, please take them out, and don't let the leakage liquid damage the wireless remote control.
- The operation should be in its receiving range.
- It should be placed at where is 1m away from the TV set or stereo sound sets.
- If the wireless remote control can not operate normally, please take them out, after 30s later and reinsert, if they cannot normally run, please change them.

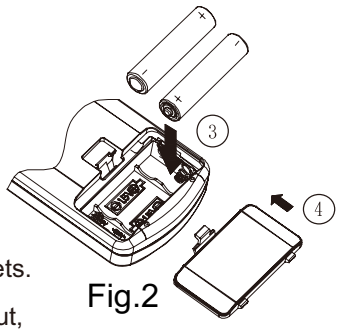
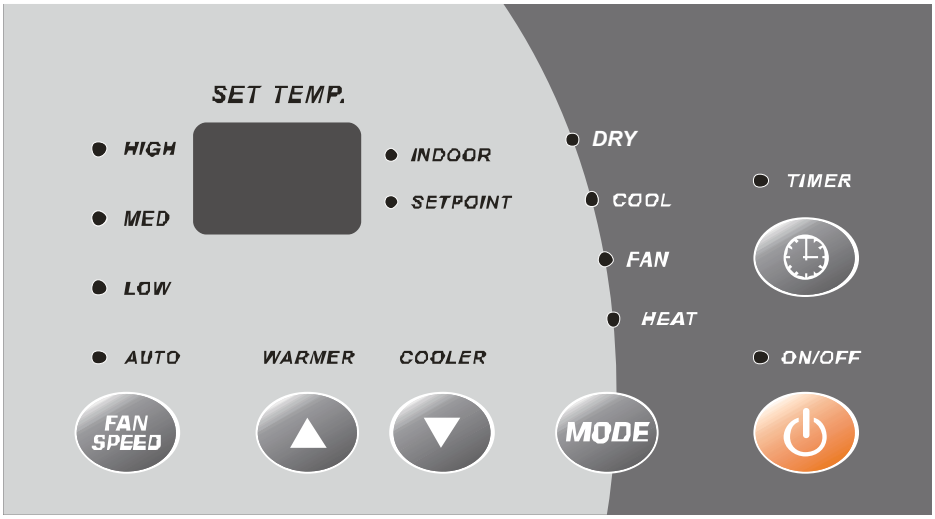


Fig.2

6.2 Panel Control Description



ABOUT THE CONTROLS ON YOUR UNIT

There are ON/OFF, WARMER, COOLER, MODE, FAN SPEED and TIMER six buttons in all;

1. Press ON/OFF button under OFF mode to turn on the unit. If press WARDMER or COOLER button under OFF mode, the dual 8 nixie tube will display indoor temperature for 15s and then turn off. If press MODE button under OFF mode, the controller will resume to the operation status before power-off. Operation indicator is in green.

2. Under ON status, every button is in valid

(1) ON/OFF: It is used for turning OFF the system.

(2) MODE: It is used for switching between Cool, Fan, Heat and Dry (optional).

(3) WARMER or COOLER: 1. It is used for increasing temperature or timer setting

2. It is used for decreasing temperature or timer setting.

(4) FAN:It is used for setting high, medium, low or auto fan speed. The corresponding LED will be on.

(5) TIMER:It is used for setting timer function

3. Timer function: It can be set either by buttons on control panel or by remote controller

(1) Timer ON: When the unit is off, timer ON can be set. Setting range is 0.5~24h. When timer ON time is reached, the system will operate according to the set mode.

(2) Timer OFF: When the unit is off, timer OFF can be set. Setting range is 0.5~24h. When timer OFF time is reached, the system will stop operation.

(3) Timer Setting: Press TIMER button to set timer function and Timer icon will be on. Dual 8 nixie tube will display selected time which can be adjusted by pressing “+”or“-”buttons. The range of timer setting is from “--” to 24h. 5s after timer setting, the timer function will be activated and TIMER LED will be on. If “--” is displayed, the system will stop timer setting.

(4) Timer Preview: when timer function has been set, press TIMER button to preview the remaining time of timer.

(5) If Timer function has been set, turning on/off the unit or power failure will cancel timer setting.

4. Sleep function: This function can be set only by remote controller. This mode will bring a more comfortable sleeping environment. Please contact customer service center or refer to the service manual for more details.

5. DRY function: Without reducing the room temp. , air conditioner can dehumidify and make the room air dry and comfortable.

6. Buzzer: optional

When controller is energized, or valid remote control signal/ button signal is received, the buzzer will give out a beep.

7. Auto fan speed

Fan speed can be automatically selected according to different modes or indoor temperature to achieve higher comfort.

8. Emergency cooling operation: Emergency cooling, Subject to your choice – allowed or rejected).

When indoor ambient temperature ≥30^{o}C, the unit will start cooling automatically. When indoor ambient temperature reaches 27^{o}C, the unit will stop operation.

9. F code remote controller: optional

6.3 Description of Each Control Operation

1. Basic function of system

1.1 Cooling mode (4-way valve is de-energized)

Under cooling mode, cooling mode indicator is ON and all the fan speed indicator is ON. Nixie tube displays set temperature and SETOPINT is ON.

1.1.1 Working condition and process for cooling

a. When Tindoor amb.+Tindoor amb. compendation≥Tpreset+2°F(1°C), the unit operates under cooling. Outdoor fan and indoor fan operates. Compressor will operates 10s later.

b. Tindoor amb.+Tindoor amb. compendation≤Tpreset-22°F(1°C), the unit sops operation. Compressor and outdoor fan stop operation. Under fan cycle mode, indoor fan will stop operation after operating at set fan speed for 60s (except requiring the indoor fan to operate in protection mode); if fan cycle mode is not selected, indoor fan will operate in set fan speed.

c. WhenTpreset-22°F(1°C)<Tindoor amb.+Tindoor amb. compendation<Tpreset+22°F(1°C), the unit keeps previous operation status.

1.1.2 Under this mode, nixie tube displays set temperature. The temperature setting and display range is 61-86°F(16-30°C); the actual operation temperature range of controller is 61-86°F(16-30°C); 63-80°F(18-28°C), 65-78°F(19-26°C), 68-75°F(20-24°C) can be selected by dial switch. (More details refer to special function)

1.2 Dry mode

Without reducing the room temp. , air conditioner can dehumidify and make the room air dry and comfortable.

1.3 Fan mode

Under this mode, fan mode indicator is ON and compressor stops operation. Temperature cant be adjusted (WARMER,COOLER button are invalid). Indoor fan can operate at high, middle or low speed. Nixie tube displays ambient temperature (display range is 0°C-50°C or 32°F-122°F). Indoor indicator is ON. The default mode of first energization (memory chip is empty) is fan mode; default fan speed is middle. If exceeding the display range, min value or max value is displayed.

1.4 Heating mode

Under heating mode, heating mode LED and set fan speed LED is ON. Nixie tube displays set temperature. If select to display ambient temperature in the fifth mode of 6.5 configuration mode, it will display as the way is this mode. The temperature and fan speed will keep the same when changing from button setting to mode setting.

1.4.1 Working status

1.4.1.1 General type HEAT PUMP TYPE

Operation condition and process (electric heating and compressor cant operate at the same time)

a. When Tpreset-5°F(3°C)<Tindoor amb.-Tindoor amb. compensation≤Tpreset-2°F(1°C), compressor operates at heating mode. Meanwhile, 4-way valve, indoor fan and outdoor fan start operation. Compressor can operate after 10s. If compressor operates and it satisfies Tindoor amb.-Tindoor amb. compensation≤Tpreset-5°F(3°C) and the minimum operation time for compressor, compressor and outdoor fan stop operation immediately. 1s later, electric heater will start. Once the electric heating operates, it will quite until is satisfied condition b (enter into protection function is excluded). When it needs to heat, if compressor cant be started up due to protection function, electric heating will start heating instead of compressor 15s later. It will stop operation until satisfying the temperature point. (customized requirement); When Tindoor amb.-Tindoor amb. compensation≤Tpreset-5°F(3°C), the electric heating operates. Indoor fan operates at set fan speed.

b. When Tindoor amb.-Tindoor amb. compensation≥Tpreset+2°F(1°C), compressor or electric heating stops operation. Under fan cycle mode, indoor fan operates at the condition of blowing residual heat; if fan cycle mode is not selected, indoor fan will operate in set fan speed.

c. When Tpreset-22°F(1°C)<Tindoor amb.-Tindoor amb. compensation<Tpreset+2°F(1°C), the unit keeps previous operation status.

1.4.1.2 Pure electric heating type HEAT COOL TYPE

Operation condition and process

a. When Tindoor amb-Tindoor amb. compensation≤Tpreset-2°F(1°C), the electric heating starts operation and indoor fan operates at set fan speed;

b. When Tindoor amb.-Tindoor amb. compensation≥Tpreset+2°F(1°C), the electric heating stop operation. Under fan cycle mode, indoor fan operates at the condition of blowing residual heat; if fan cycle mode is not selected, indoor fan will operate in set fan speed.

c. WhenTpreset-2°F(1°C)<Tindoor amb-Tindoor amb. compensation<Tpreset+2°F(1°C), the unit operates at previous operation status.

1.5 OFF mode

If the OFF mode is selected, all the display will be closed except the power indicator and all the output are invalid. (Except the low temperature protection). If press the WARMER or COOLER button, the dual 8 nixie tube will extinguish after it displayed the ambient temperature for 15s and the INDOOR indicator will also go out after brighting for 15s. If repressing the WARMER or COOLER button

in the process of displaying the ambient temperature, 15s later, it will be calculated again.

1.6 Low temperature protection

This is valid under OFF mode, cooling mode and fan mode.

Entry condition: if select low temperature protection valid with dial switch (see special function), if it detects that the indoor ambient temperature is lower than 40°F(5°C),air conditioner will enter into pure electric heating mode; low temperature protection will be started up.

Exit condition: when indoor ambient temperature is increase more than 50°F(10°C), low temperature protection will be stopped;

2. Users interface display and button

2.1 Button function:

There are ON/OFF, WARMER, COOLER, MODE, FAN SPEED, TIMER six buttons in all;

2.1.1 In OFF mode, press the ON/OFF button to turn on the unit: In OFF mode, if pressed the WARMER or COOLER button, the “dual 8” will be turned off after displaying the indoor temperature for 15s; If pressing the MODE button in OFF mode, the controller will resume to the running status before turning off the unit. The running LED is displaying in green color.

2.1.2 In ON status, all the buttons are in valid.

1) ON/OFF: After pressing the ON/OFF button, the unit can be switched between ON and OFF mode.

2) MODE: In ON status, after pressing the MODE button, the unit can be switched among cooling, fan and heating mode circularly; In OFF mode, after pressing the MODE button, the controller will run at the running status before turning off the unit.

3) FAN SPEED: In ON status, after pressing the FAN SPEED button, you can select the low, medium, high and auto fan speed.

4) WARMER, COOLER:

a. In TIMER setting status, the timer can be set within 0-24 hours. In 10 hour timer, the time is adjusted every 0.5 hour by pressing the button. In timer above 10 hour, the time is adjusted every 1 hour by pressing the button.

b. In temperature setting status, the temperature can be adjusted every 2°F (1°C). Temperature setting range is 61-86°F (16-30°C) and you can also select other setting temperature range through configuration.

5) TIMER:

a. In the status without timer, it will enter timer setting by pressing this button.

b. In the status with timer, it can show the residual time by pressing this button.

c. Press this button to cancel timer when showing the time or setting timer.

2.2 Dual 8 Display and LED Display

Two 8 segment nixie tube and 13 LED indicators (they are HIGH, MED, LOW, AUTO, COOL, FAN, HEAT, ON/OFF, SETOPINT (set temperature), INDOOR (ambient temperature), STATUS (status indicator on main board), SLEEP, TIMER)

2.2.1 Mode LED display: when the A/C is running in a certain kind of mode, the corresponding LED is bight.

2.2.2 Running/power LED: In ON status, the controller is in green color; In OFF status, the controller is red color.

2.2.3 Fan speed display: when the A/C is running at high, medium, low and auto fan speed, the corresponding LED is bright.

2.2.4 Dual 8 display: In cooling and heating mode, it is default to the display the setting temperature (In fan mode, it displays the indoor ambient temperature).

2.2.5 When the display data has three-position, the dual 8 is rolling to display. Display the “decimal” +“units place” at first, and then display “BLANK”+ “hundreds place”

2.2.6 Malfunction Display

After energization, STATUS LED is bright, while when theres malfunction or protection, STATUS LED will blink to display in any circumstances.

The details are as below: priority is decreasing from 1 to 8.

1	Indoor ambient temperature sensor is open circuit and short circuit	Dual 8 displays "F1", STATUS LED blinks once and goes out for 3s circularly.
2	Indoor tube temperature sensor is open circuit and short circuit	Indoor tube temp sensor is open circuit and short circuit
3	Outdoor tube temperature sensor is open circuit and short circuit	Dual 8 displays "F4", STATUSLED blinks 4 times and goes out for3s circularly.
4	Low temperature protection	Dual 8 displays “FP”
5	Wrong wire connection for wired controller	STATUS LED blinks9 times and goes out for3s circularly.
6	High temperature protection for evaporator	STATUS LED blinks8 times and goes out for3s circularly.
7	High temperature protection for outdoor condenser	STATUS LED blinks6 times and goes out for3s circularly.
8	Freeze protection for evaporator	STATUS LED blinks5 times and goes out for3s circularly.
9	Frost protection(heat pump)	STATUS LED blinks7 times and goes out for3s circularly.
10	High voltage protection	Dual 8 displays “E1” (the highest priority)

In OFF mode, dual 8 wont display the error code (except the low temperature protection), and number 6, 7, 8 protection marks will be eliminated. When multiple protections are overlapped, it activates only the protection with the highest priority.

3. Configuration that is easy for hotel personnel to repair (7 DIP switch, the configuration is valid only after power failure)

A. EL. HEAT ONLY (only electric heating) (valid in wired control mode, panel and remote controller)

ON-only electric heating; OFF-normal heating mode; default-OFF, this function is only applicable to HEAT PUMP

B. REMOTE (wired controller control)

ON-wired controller control is valid; OFF-panel control is valid; default-OFF

C. FAN CYCLE FOR HEAT (invalid in panel, remote controller, and wired controller mode)

ON-fan is constantly running; OFF-fan will be stopped according to the loads (HEAT, COMP); default-OFF (After putting through the wired controller, the fan speed is controlled by the wired controller. .Whether it runs or not, which is controlled by the controller.)

D. FAN CYCLE for COOL (invalid in panel, remote controller and wired controller mode)

ON-fan will be stopped according to the loads (HEAT. COMP); OFF-fan is constantly running; default-OFF (After putting though the wired controller, the fan is controller by the wired controller)

E. SETPOINT (SETPOINT1, SETPOINT2) (valid in panel, remote controller mode and invalid in wired controller mode)

OFF OFF-(61-86°F) (16-30°C);

ON OFF-(63-80°F) (18-28°C);

OFF ON-(65-78°F) (19-26°C);

ON ON-(68-75°F) (20-24°C);

Default-(61-86°F) (16-30°C)

If the display value of dual 8 exceeds the set point temperature limit, the display range is also 61~86°F(16-30°C); The actual working temperature range for the controller is the range of set point temperature limit.

F. Freeze protection is prohibited (valid in wired controller, panel and remote controller mode)

ON-shield; OFF-valid; default—OFF

4.Configuration that isnt needed the hotel maintenance personnel to control (configuration is valid after B dial-up is energized, while configuration is invalid after A dial-up is energized)

A. Heat pump and Heat Cool units for selection. (Heat Pump is electric heating + heat pump; Heat Cool is electric heating + cooling only)

Heat pump—ON;

Heat cool-OFF

Heat pump units should be equipped with Heat pump type wired controller.

Heat Cool units should be equipped with Heat Cool type wired controller.

B. Neglect for time delay (TIMER RESET)

When the dial-up is activated for once (from OFF to ON, or from ON to OFF), it will weaken all the current delay timer (once) (eg, the compressors min stop time, compressors min running time, electric heating min stop time). After validation, if the dial-up has no action, all the delay will resume normal. The specific delay time is as below:

Electric heating minimum OFF time----------1s

Compressor minimum stop time----------9s

Compressor minimum running time----------9s

Four-way valve delays for 2mins----------6s (available when the compressor is required)

5. Configuration mode

After the unit is turned on for 30s, press the fan speed button and the COOLER button for 5s, the configuration mode will be started up. After turning to the configuration mode, if adjusting the temperature offset by buttons to turn to switching condition, the load will be activated after 3s. While if turning to switching condition due to the change of the ambient temperature, it can be activated only after quitting the configuration mode. In the configuration mode, the five configuration modes as below can be selected by FAN SPEED button.

Mode one: Fahrenheit /Centigrade display mode

Fahrenheit and Centigrade display mode can be switched by pressing WARMER or COOLER button.

F indicates Fahrenheit display mode

C indicated Centigrade display mode

Mode two: Adjusting mode for cooling temperature offset

WARMER button can increase offset fset temperature 1°F(or °C). while COOLER button can decrease offset temperature 1°F(or °C). The indoor ambient temperature offset adjusting range is -6 to +6°F(-3 to +3°C) (cooling mode LED is bright)

Mode three: Adjusting mode for heating temperature offset

WARMER button can increase offset temperature 1°F(or °C), while COOLER button can decrease offset temperature 1°F(or °C). The indoor ambient temperature offset adjusting range is -6 to +6°F(-3 to +3 °C) (heating mode LED is bright)

The temperature offset is default 0 in cooling and heating mode. They can allocate different offset in cooling and heating mode respectively. The offset cant be adjusted in fan mode.

Mode four: Display switchover between setting temperature and ambient temperature in heating and cooling mode;

Press the WARMER button or COOLER button to switch the setting temperature and ambient temperature displaying;

Setting temperature displaying: the dual 8 displays SP. After quitting configuration mode, the heating mode and the cooling mode display the set temperature constantly;

Ambient temperature displaying: dual 8 displays AA. After quitting the configuration mode, the heating mode and the cooling mode display the ambient temperature.

As for below circumstances, it will display set temperature for 10s and then turn to display ambient temperature. (Note: if ambient temperature displaying is set, when turn on the unit in cooling mode or heating mode, timer will be displayed for 5s, then turn to display set temperature for 5s and then turn to display ambient temperature.)

a. Press mode button

b. Energization after power failure

c. Restart the unit

d. Turn on the unit after EM turn off unit

e. Adjust the set temperature by WARMER OR COOLER button

Mode five: switchover between allowing emergent cooling auto start-up and not allowing emergent cooling auto start-up.

Press WARMER OR COOLING to switchover between allowing emergent cooling auto start-up and not allowing emergent cooling auto start-up.

Allowing emergent cooling auto start-up: dual 8 displays CA.

Not allowing emergent cooling auto start-up: dual 8 displays Cd.

Method for quitting configuration mode: as for the above configuration modes, they will be quitted by pressing the mode button or when there is no action within 30s.

Memory function

Energizing after power failure, the controller is running according to the status before power failure.

Restore factory settings

In standby and OFF status, after pressing “fan speed” + ”WARMER” for 3s and the dual 8 displays “00” for 3s (do not display others), it shows that the factory settings has been restored. Meanwhile, the configuration information is default to display.

Fahrenheit and not allow emergent cooling auto start-up. Heating offset and cooling offset is 0 and the set temperature is displayed. T value is 0, the fan speed is medium, the set temperature is 71°F and timer is canceled.

7. Installation Instructions

Proper installation is the responsibility of the installer.
Product failure due to improper installation is not covered under the Warranty.

CHASSIS INSTALLATION

Units are shipped without a sleeve. In applications where unit is a replacement, it is recommended that a GREE or Carrier sleeve be used. These units can retrofit General Electric, Amana, Trane, and Friedrich sleeves/grilles (be sure outdoor grille is installed on the sleeve). See Table 1 for details.

For any sleeve retrofit applications, be sure that the foam seals (factory--installed on the tube sheets) provide a good seal between the grille and outdoor coil tube sheets. These foam seals provide a barrier to separate outdoor coil leaving air from mixing with the outdoor incoming air (known as air recirculation).

⚠ CAUTION

UNIT DAMAGE AND/OR OPERATION HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

For retrofit applications, foam seals on outdoor coil tube sheets must make a seal between the coil and the grille or loss of performance and premature damage to the major components can result.

Table1—Retrofit Wall Sleeves

Manufa cturer	Wall Sleeve Part Number
General Elect ric	Metal Sleeve RAB71
	Plastic Sleeve RAB77
Amana	Metal Sleeve WS900B
Trane	Metal Sleeve SLV149
Fried rich	T---Series Metal $11^{1/2}$---in. Deep Wall Sleeve
	Standard Depth Wall Sleeve 16 X 42 X $13^{3/4}$---in. PXWS

* FR---SLEEVE---EXT accessory is required for retrofit into Friedrich (T---Series) wall sleeves.

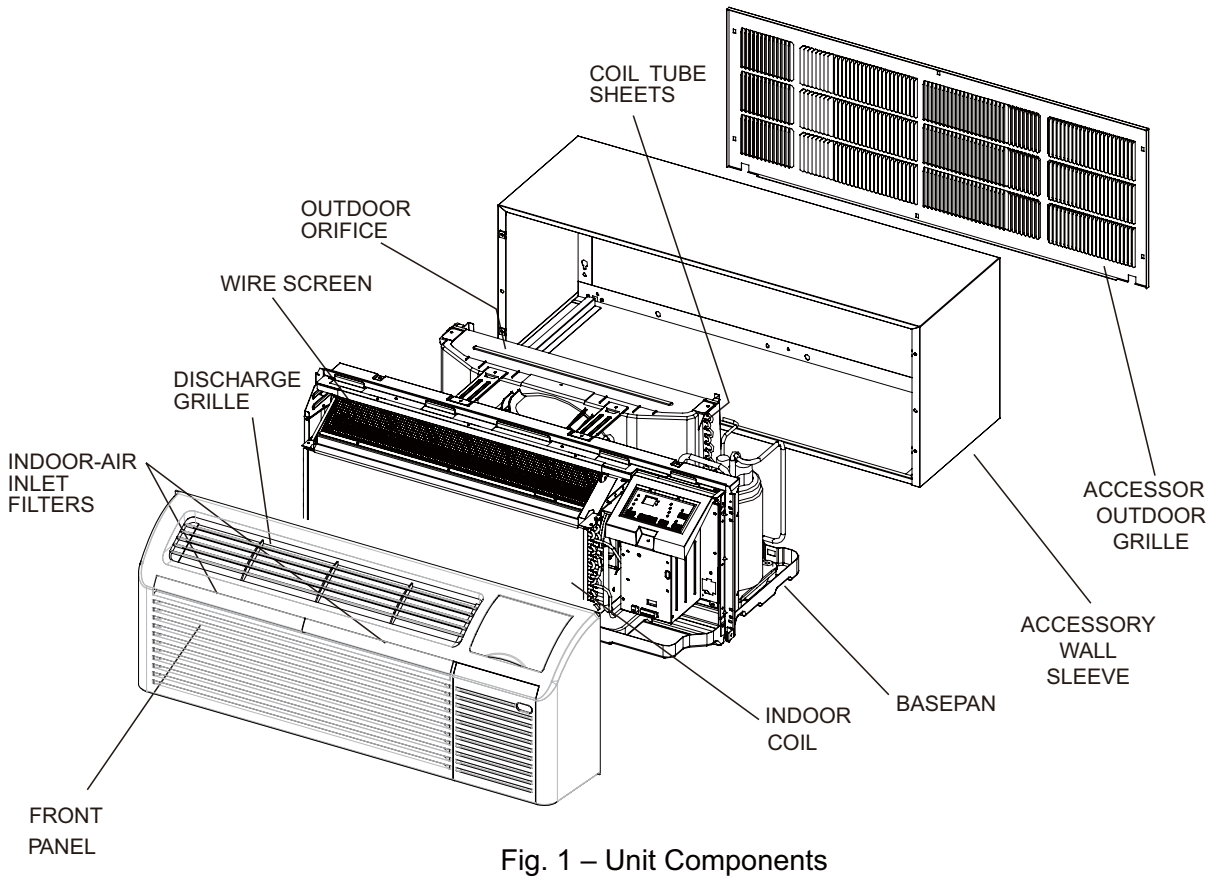


Fig. 1 – Unit Components

RETRO FIT SLEEVE PREPARATION

IMPORTANT: Inspect wall sleeve thoroughly prior to installation. Manufacturer does not assume responsibilit y for costs or damages due to defects in sleeve or for improper installation.

⚠ WARNING

ELECTRI CAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Disconnect all power to unit to avoid possible electrical shock during installation.

Remove any existing foam baffles that are installed on competitive outdoor grille,if present.See Fig.2.
GE Sleeves Only.
GE Metal Wall Sleeve-- GE metal sleeve is interchangeable with GREE wall sleeve . See Fig.3.
GE Plastic Sleeve--Remove bottom seal from plastic sleeve.See Fig.4.

INSTALLATION OF A GREE OR CARRIER WALL SLEEVE USING A NON-GREEGRILLE

This application has become more common due to pre--manufactured windows with built--in grilles or renovations where a GREE or carrier Carrier sleeve is used with an existing non-GREEgrille.Use of a GREE or carrter Carrier wall sleeve with a non--GREE grille requires installation of an Accessory Baffle Kit (see Fig.5),which ensures a good seal between the unit and exterior grille to prevent air recirculation. Air recirculation is a large contributor to performance loss and premature damage to major components.
Notes: GREE stamped grille is interchangeable with CARRIERS.

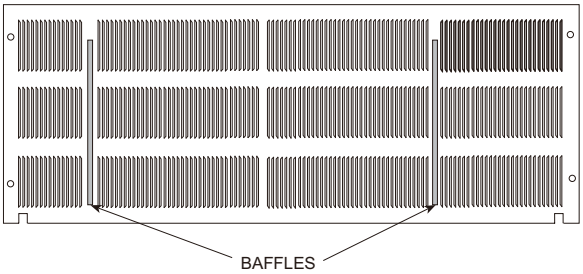


Fig. 2 – Remove Existing Outdoor Grille Baffles on Competitive Grille

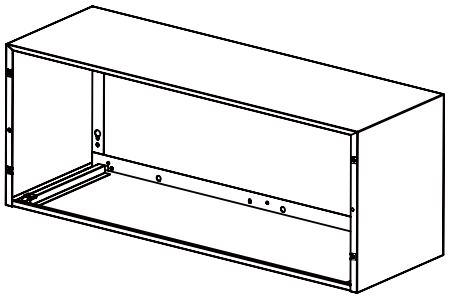


Fig. 3 – GE Metal Sleeve

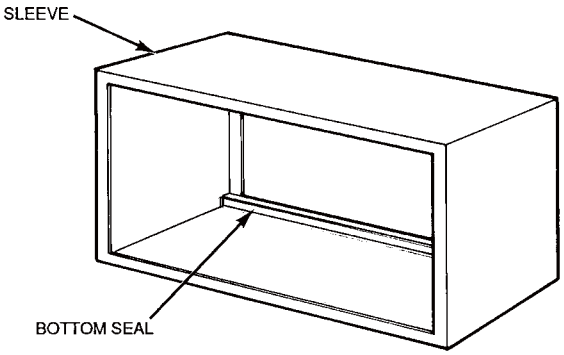


Fig. 4 – Remove Bottom Seal From GE Plastic Sleeve

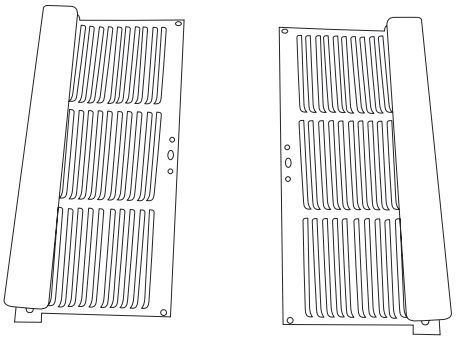


Fig. 5 – Accessory Baffle Kit

Note: contact your units supplier to get the kit and it may be different from the shape showed above.

INSTALL UNIT INTO WALL SLEEVE

1. Carefully remove shipping tape from the front panel and vent door. See Fig. 6.
2. Remove shipping screw from the vent door, if present. See Fig. 7.
3. Remove front panel. See Fig. 8.
4. Lift unit level and slide unit into wall sleeve until foam seal rests firmly against front of wall sleeve.
5. Secure with four screws (supplied) through the unit flange holes. See Fig. 9.
6. Reinstall front panel. See Fig.10.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Failure to remove shipping tape and screw will prevent fresh air vent door from opening and may result in damage to vent door cable.

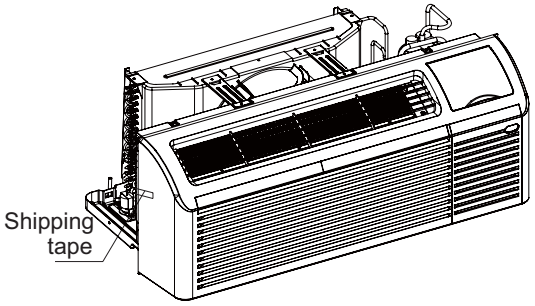


Fig. 6 – Shipping Tape Location

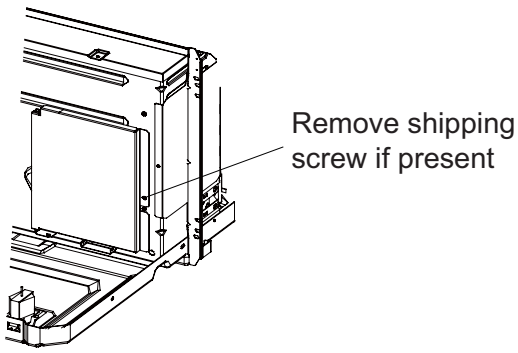
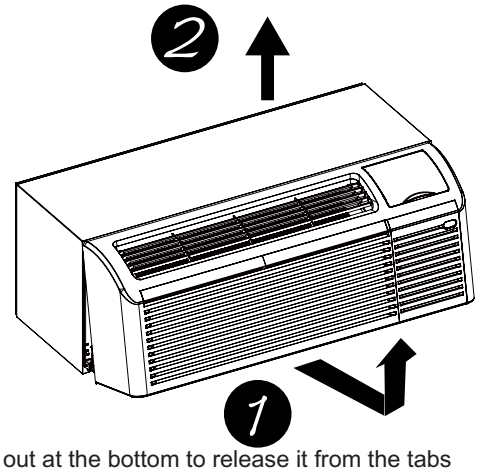


Fig. 7 – Shipping Screw Location



Pull out at the bottom to release it from the tabs (1). Then lift up (2).

Fig. 8 – Removing Front Panel

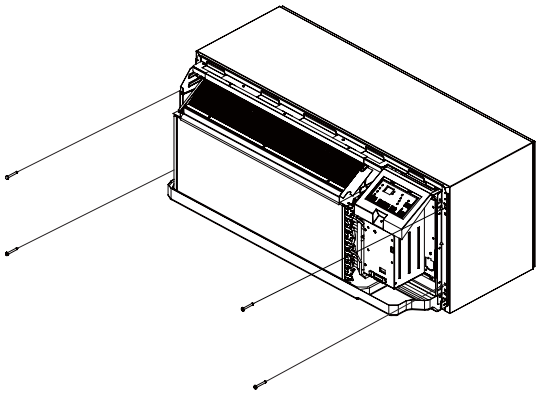
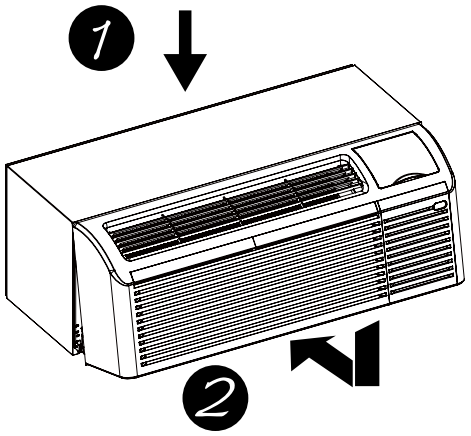


Fig. 9 – Securing Unit



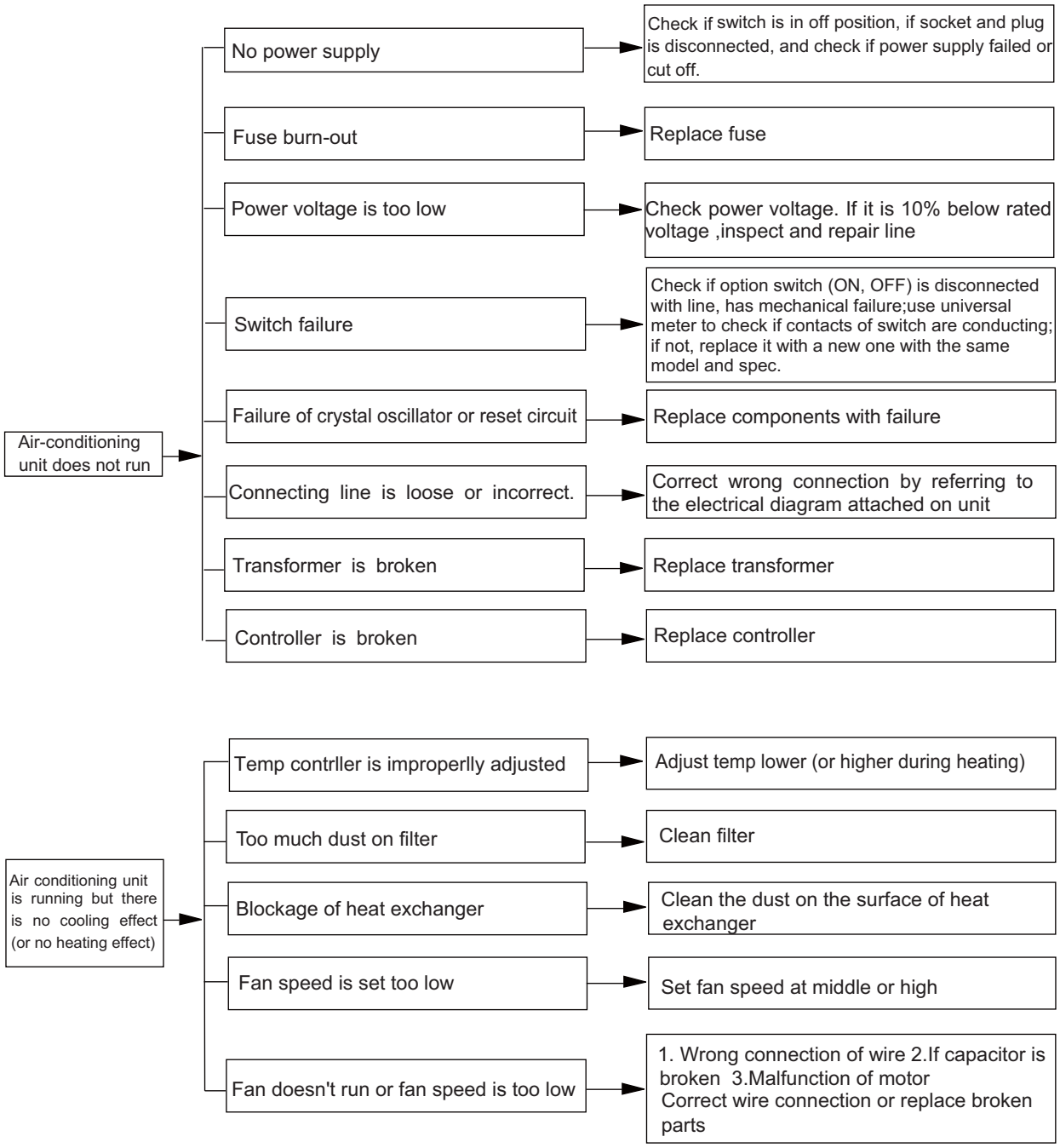
Place tabs over top rail (1). Push Inward at bottom until panel snaps into place (2).

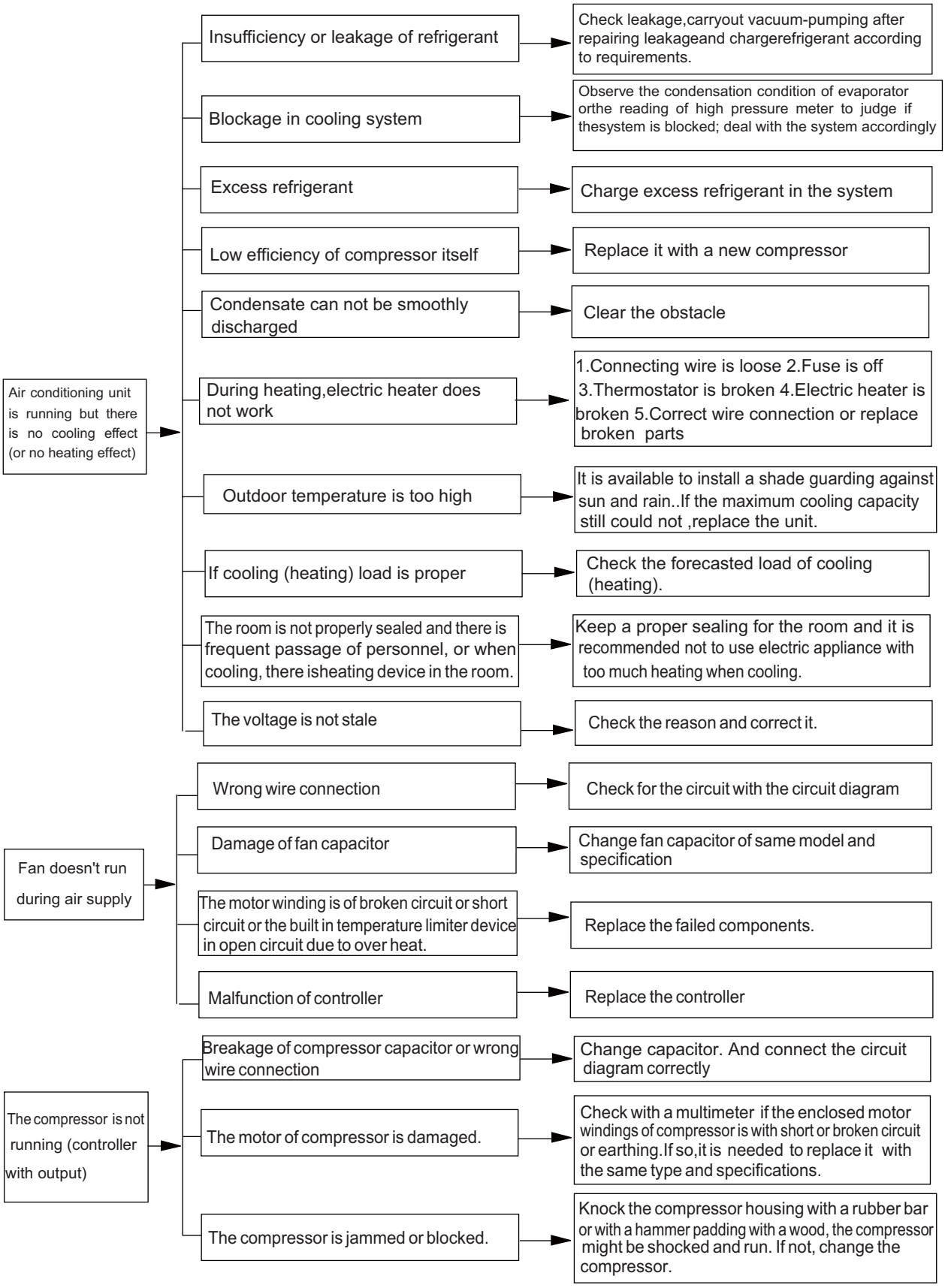
8. Troubleshooting

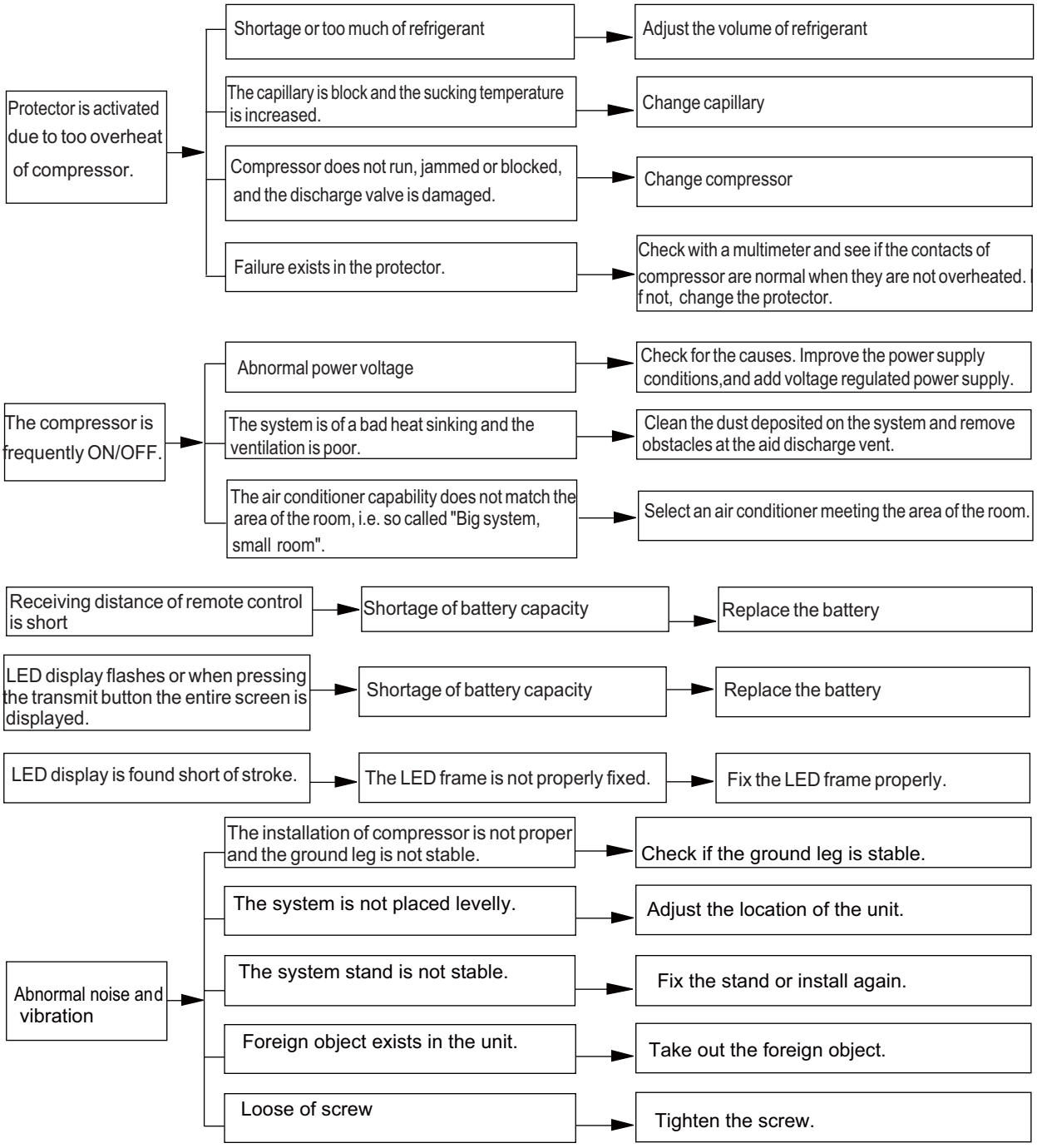
8.1 Error Code List

No.	Malfunction Name	Error Code	A/C Status	Possible Causes
1	Indoor ambient temperature sensor is open/short-circuited	F1	The unit will stop operation as it reaches the temperature point.	1.The wiring terminal between indoor ambient temperature sensor and controller is loosened or poorly contacted; 2.There's short circuit due to trip-over of the parts on controller; 3.Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4.Main board is broken.
2	Indoor evaporator temperature sensor is open/short-circuited	F2	The unit will stop operation as it reaches the temperature point.	1.The wiring terminal between indoor evaporator temperature sensor and controller is loosened or poorly contacted; 2.There's short circuit due to the trip-over of the parts on controller; 3.Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4.Main board is broken.
3	Outdoor ambient temperature sensor is open/short-circuited	F4	The unit will stop operation as it reaches the temperature point.	1.The wiring terminal between outdoor ambient temperature sensor and controller is loosened or poorly contacted; 2.There's short circuit due to the trip-over of the parts on controller; 3.Outdoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4.Main board is broken.
4	low temperature prevention protection	FP	A/C enters into pure electric heating mode, and low temperature protection is started up.	1.Indoor ambient temperature is lower than 40°F(5°C) continuously.; 2.Indoor ambient temperature sensor is damaged; 3.Main board is broken.

8.2 Malfunction Analysis




Air conditioning unit is running but there is no cooling effect (or no heating effect)
Insufficiency or leakage of refrigerant
Check leakage,carryout vacuum-pumping after repairing leakageand chargerefrigerant according to requirements.
Blockage in cooling system
Observe the condensation condition of evaporator orthe reading of high pressure meter to judge if thesystem is blocked; deal with the system accordingly
Excess refrigerant
Charge excess refrigerant in the system
Low efficiency of compressor itself
Replace it with a new compressor
Condensate can not be smoothly discharged
Clear the obstacle
During heating,electric heater does not work
1.Connecting wire is loose 2.Fuse is off 3.Thermostator is broken 4.Electric heater is broken 5.Correct wire connection or replace broken parts
Outdoor temperature is too high
It is available to install a shade guarding against sun and rain..If the maximum cooling capacity still could not ,replace the unit.
If cooling (heating) load is proper
Check the forecasted load of cooling (heating).
The room is not properly sealed and there is frequent passage of personnel, or when cooling, there isheating device in the room.
Keep a proper sealing for the room and it is recommended not to use electric appliance with too much heating when cooling.
The voltage is not stale
Check the reason and correct it.
Fan doesn't run during air supply
Wrong wire connection
Check for the circuit with the circuit diagram
Damage of fan capacitor
Change fan capacitor of same model and specification
The motor winding is of broken circuit or short circuit or the built in temperature limiter device in open circuit due to over heat.
Replace the failed components.
Malfunction of controller
Replace the controller
The compressor is not running (controller with output)
Breakage of compressor capacitor or wrong wire connection
Change capacitor. And connect the circuit diagram correctly
The motor of compressor is damaged.
Check with a multimeter if the enclosed motor windings of compressor is with short or broken circuit or earthing.If so,it is needed to replace it with the same type and specifications.
The compressor is jammed or blocked.
Knock the compressor housing with a rubber bar or with a hammer padding with a wood, the compressor might be shocked and run. If not, change the compressor.



Notice: The above malfunction analysis is only for reference. There is no malfunction related to heaitng for cooling only unit.

Appendix

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

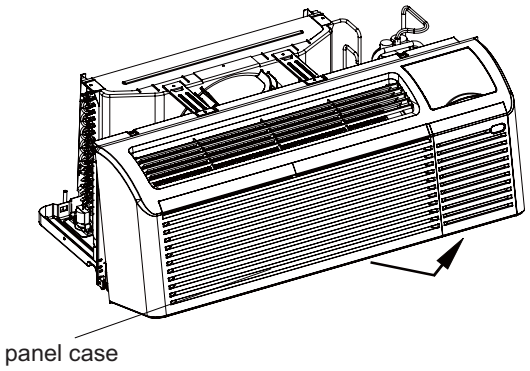
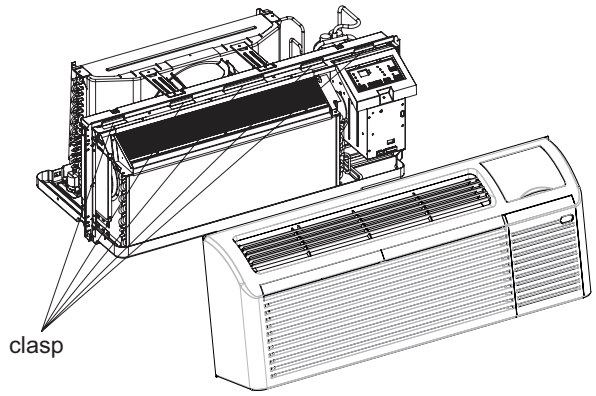
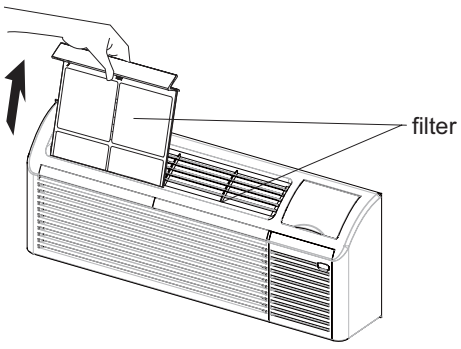
Appendix 2: Resistance Table of Outdoor and Indoor Tube Temperature Sensors(20K)									
Temp. （℃）	Resistance(kΩ)		Temp. （℃）	Resistance(kΩ)		Temp. （℃）	Resistance(kΩ)		Temp. （℃）	Resistance(kΩ)
-19	181.4		20	25.01		59	5.13		98	1.427
-18	171.4		21	23.9		60	4.948		99	1.386
-17	162.1		22	22.85		61	4.773		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

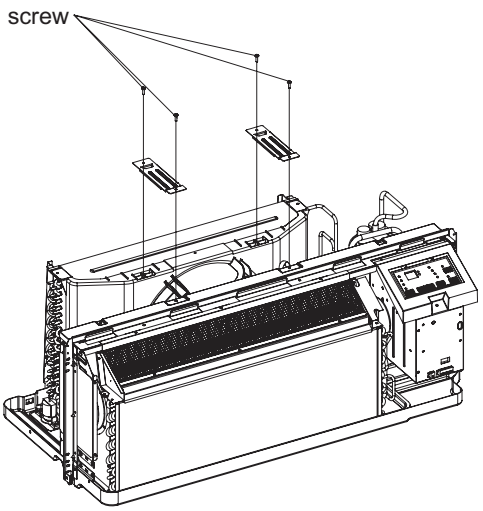
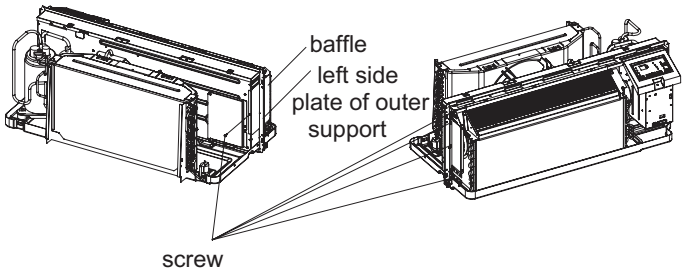
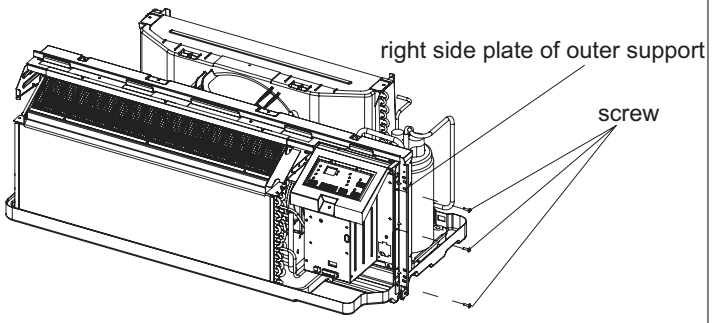
Note: The information above is for reference only.

9 . Removal Procedure

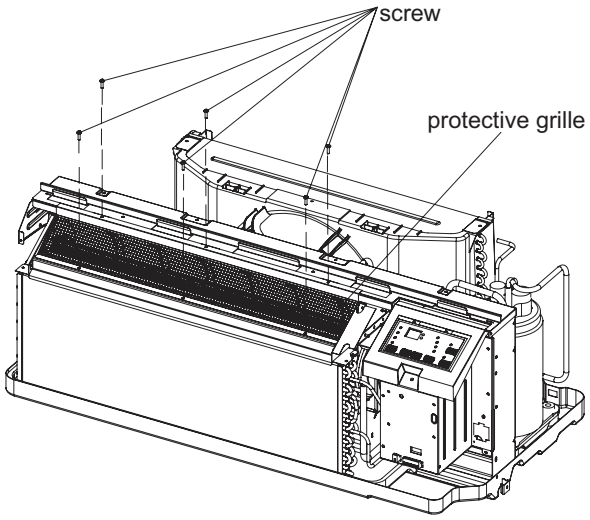
Warning **Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.**

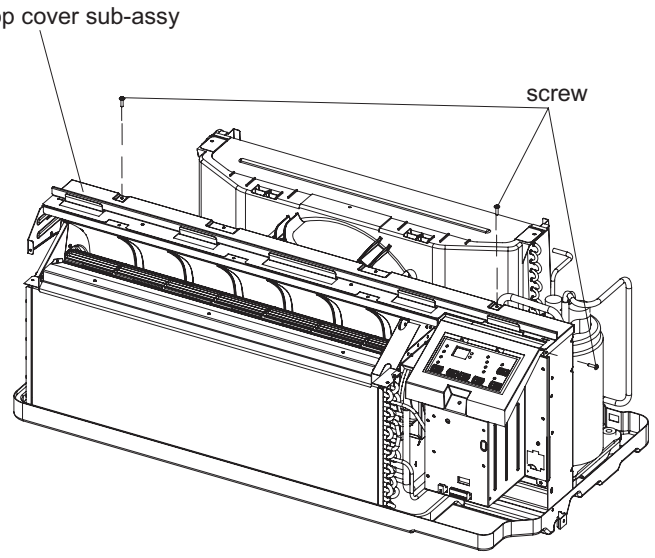
Note: Take heat pump+electric heating unit as example for the disassemly; cooling only+electric heating is a little different.

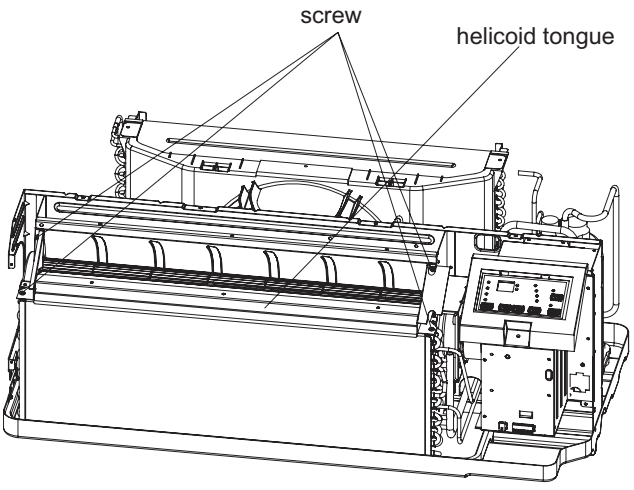
Steps	Procedure	
1.Remove panel		
a	Hold the panel and pat both sides of panel to separate the panels and then remove the front panel.	
		
b	Hold the front part of filter by hand, lift up the filter and then remove the filter.	

Steps	Procedure	
2.Remove middle connection board		
	Press the 2 clasps of filter to make it separated from the groove and then pull the filter outwards to remove it.	
3.Remove left and right support sub-assy		
a	Remove the 4 screws fixing the left of the support and the screw fixing the baffle; remove the left support and baffle.	
b	Remove the 3 screws fixing the right side of the support sub-assy and then remove the right support.	

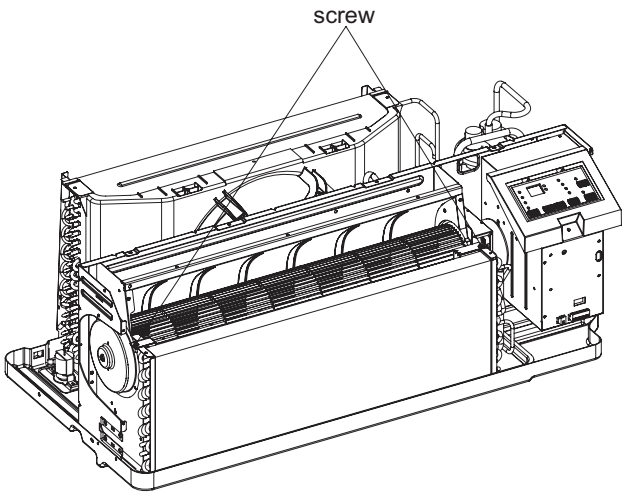
Steps	Procedure
4.Remove protective grille	
	Remove the 6 screws fixing the protective grille and then remove the protective grille.
5.Remove top cover sub-assy	
	Remove the 3 screws fixing the top cover and then remove the top cover.
6.Remove helicoid tongue	
	Remove the 4 screws fixing the helicoid tongue and then remove the helicoid tongue.

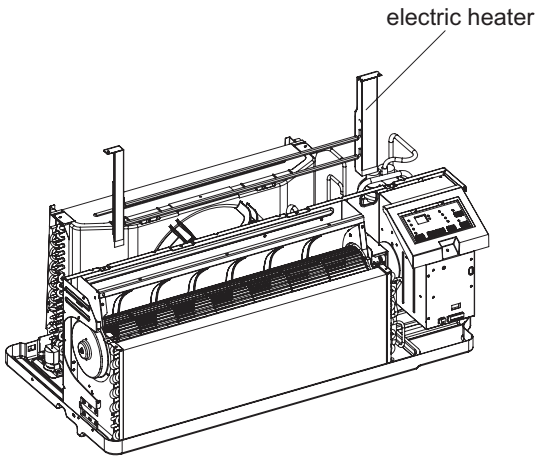


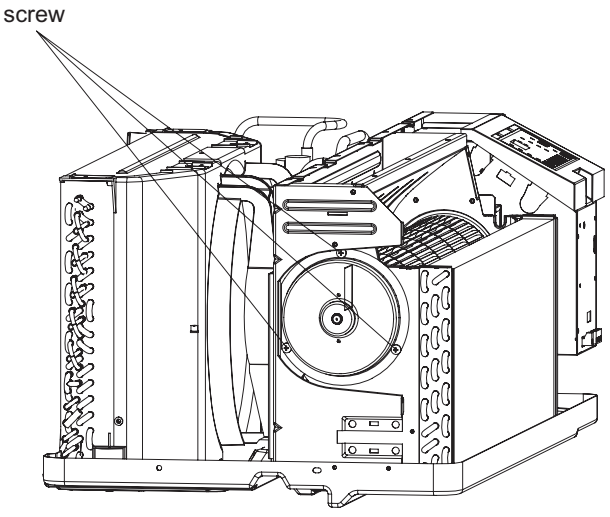


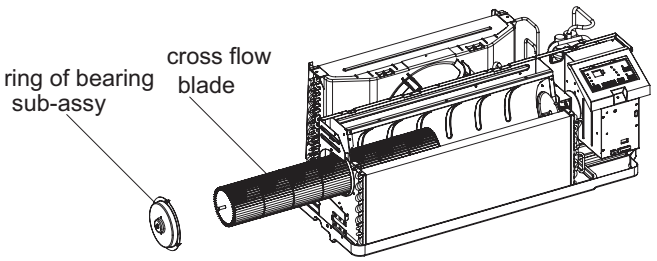
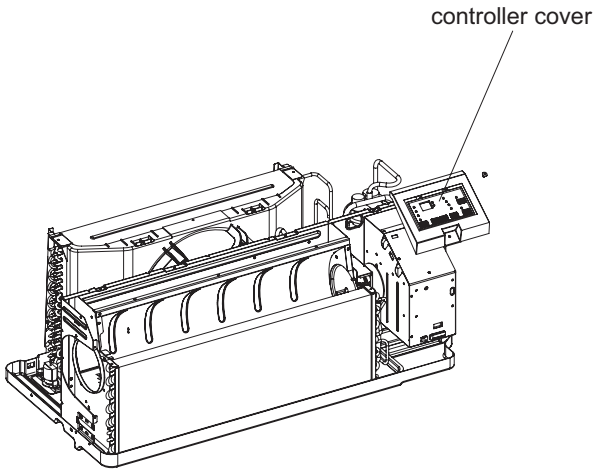
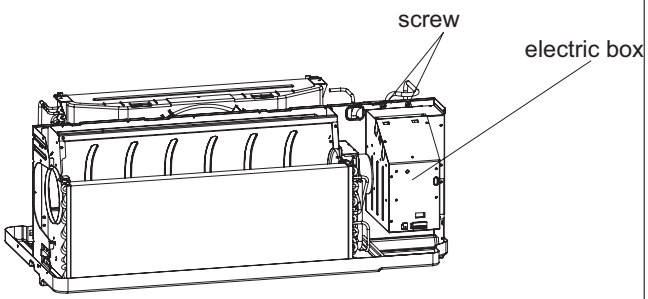


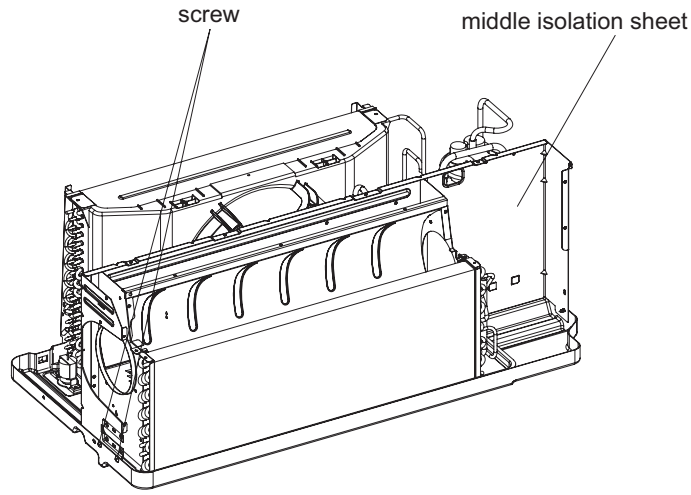
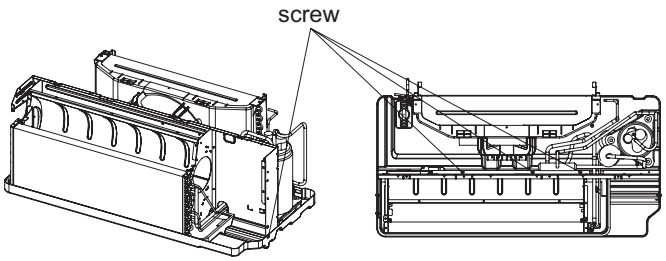
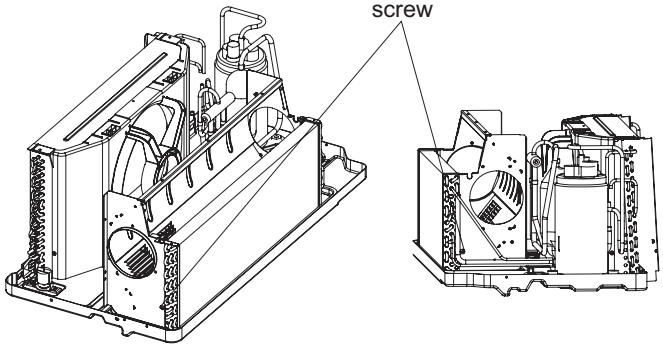
Steps	Procedure
7.Remove electric heater	
	Remove the 2 screws fixing the electric heater and then remove the electric heater along the slide guide.
8.Remove cross flow blade	
	Remove the 3 screws fixing the ring of bearing sub-assy and then remove the ring of bearing sub-assy and the cross flow blade.

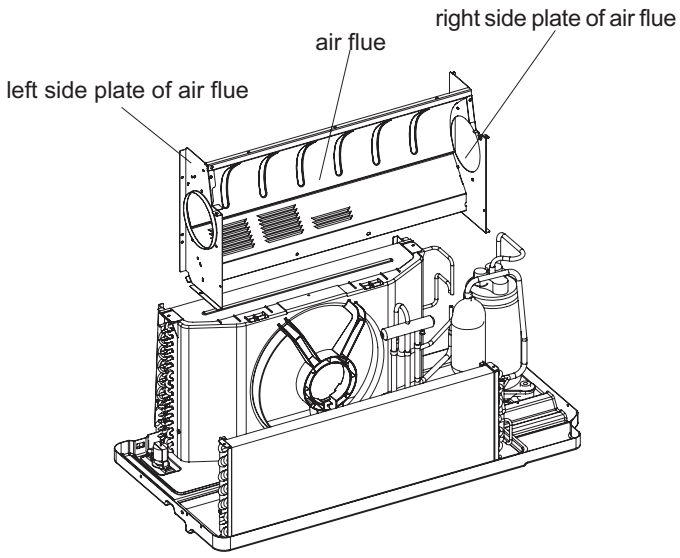
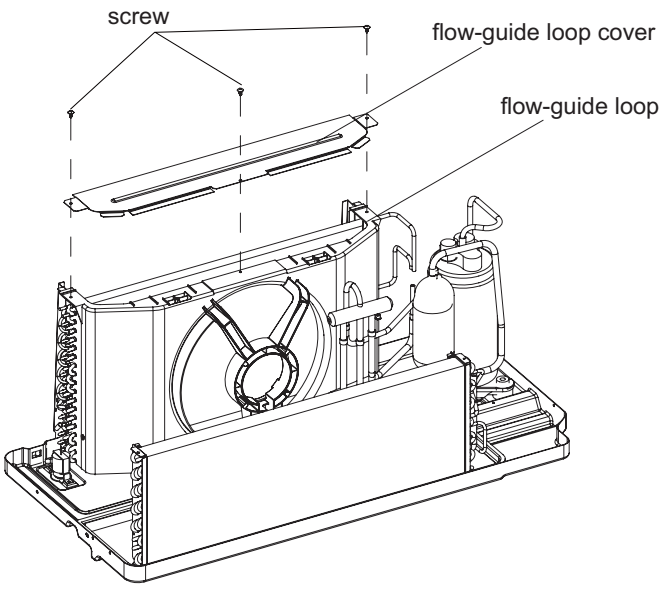
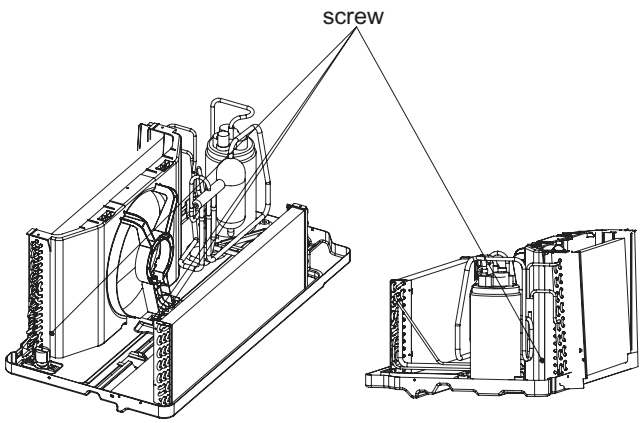




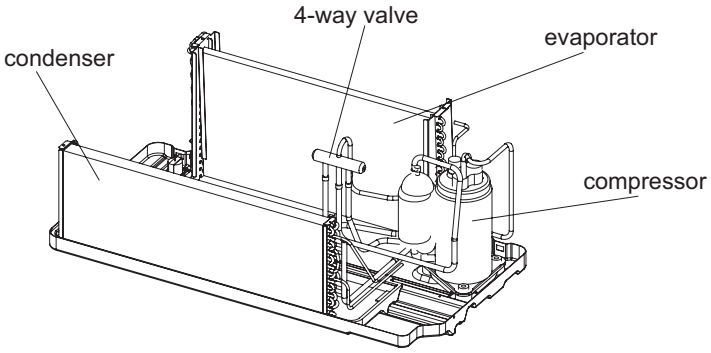


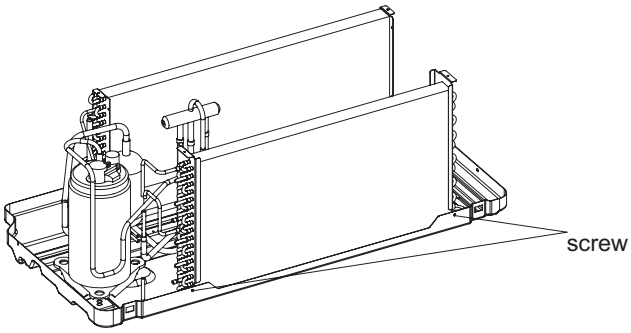
Steps	Procedure	
		
9.Remove controller and electric box		
a	Remove the screw fixing the controller cover to remove the controller cover.	
b	Remove the 2 screws fixing the electric box and disconnect the wire of the electric box to remove the electric box.	

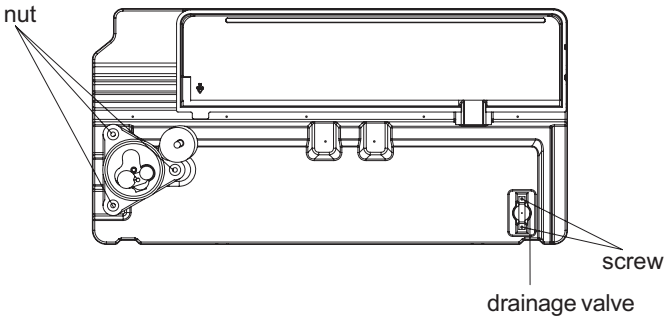
Steps	Procedure
10.Remove middle isolation sheet	
Remove the 6 screws fixing the middle isolation sheet and then remove the middle isolation sheet.	
11.Remove left side plate, right side plate and air flue	
Remove the 2 screws fixing the left side pate and right side plate; remove the left side plate, right side plate and air flue.	

Steps	Procedure	
		
12.Remove flow-guide loop		
	Remove the 3 screws fixing the flow-guide loop cover; remove the flow-guide loop cover; remove the 4 screws fixing the flow-guide loop; remove the flow-guide loop. (no need to remove the flow-guide loop cover if not necessary)	

Steps	Procedure
13.Remove condenser and evaporator	
	Remove the 2 screws fixing the condenser; unsolder the welding joints of the suction pipe, discharge pipe, compressor, 4-way valve with the condenser and evaporator, and then remove the condenser and evaporator. (before unsoldering, discharge the refrigerant in the pipeline completely)
14.Remove compressor and drainage valve	
	Remove the 3 foot nuts with washer fixing the compressor and then remove the compressor. Remove the 2 screws fixing the drainage valve and then remove the drainage valve.







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