



# Service Manual

**GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI**

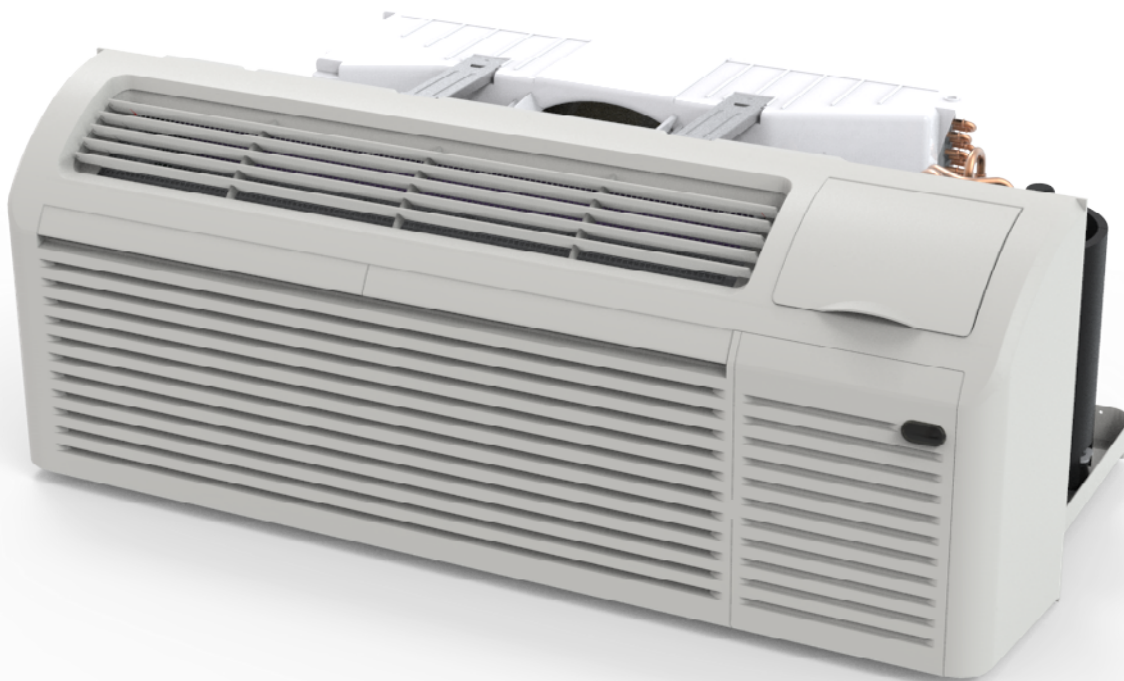


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# 1. Summary

Models:



Model list:

No.	Model	Product Code
1	KPA07B5D	CC060062400
2	KPA09B5D	CC060061800
3	KPA12B5D	CC060062500
4	KPA15B5D	CC060061900
5	KPE07B5D	CC060061700
6	KPE09B5D	CC060061600
7	KPE12B5D	CC060062300
8	KPE15B5D	CC060061500
9	KPA07B5P	CC060062200
10	KPA09B5P	CC060063200
11	KPA12B5P	CC060062800
12	KPA15B5P	CC060062900
13	KPE07B5P	CC060062000
14	KPE09B5P	CC060062100
15	KPE12B5P	CC060062600
16	KPE15B5P	CC060062700

## 2. Specifications

Model			KPE07B5D	KPA07B5D
Product Code			CC060061700	CC060062400
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7400/7200	7200/7000
Heating Capacity		Btu/h	/	6000/5800
Cooling Power Input		W	560/540	550/540
Heating Power Input		W	/	490/470
Electric Heating Power Input		W	3500/2860,2500/2040	3500/2860,2500/2040
Cooling Current Input		A	2.4/2.6	2.4/2.6
Heating Current Input		A	/	2.1/2.3
Electric Heating Current Input		A	15.2/13.8,10.9/9.8	15.2/13.8,10.9/9.8
Rated Input(Cooling/Heating)		W	680/-	680/570
Rated Current(Cooling/Heating)		A	3.3/-	3.3/2.7
Air Flow Volume(H/M/L)		CFM	312/-/282	312/-/282
Dehumidifying Volume		Pint/h	1.69	1.69
EER		(Btu/h)/W	13.3/13.3	13.0/13.0
COP		(Btu/h)/W	/	12.3/12.3
Application Area		yd <sup>2</sup>	12-19	12-19
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(Outdoor)			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		P.S.I	500	500
Permissible Excessive Operating Pressure for the Suction Side		P.S.I	276	276
Dimension (WXHXD)		inch	42X16X21 11/32	42X16X21 11/32
Dimension of Carton Box (LXWXH)		inch	45 3/64X25 9/32X17 7/8	45 3/64X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 5/32X25 25/64X18 15/32	45 5/32X25 25/64X18 15/32
Net Weight		lb	110.3	114.7
Gross Weight		lb	132.3	134.5
Refrigerant			R32	R32
Refrigerant Charge		oz	17.64	27.51
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ121×706	Φ121×706
	Cooling Speed (H/M/L)	r/min	990/-/880	1000/-/890
	Heating Speed (H/M/L)	r/min	/	1000/-/890
	Fan Motor Power Output	W	18	18
	Fan Motor RLA	A	0.1	0.1
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	50/-/46	50/-/46
Sound Power Level (H/M/L)	dB (A)	60/-/56	60/-/56	

Outdoor Side	Compressor Manufacturer		ZHUHAI LANDA COMPRESSORCO.,LTD	ZHUHAI LANDA COMPRESSORCO.,LTD
	Compressor Model		QXF-A056rD130	QXF-A056rD130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	13	13
	Compressor RLA	A	2.16	2.16
	Compressor Power Input	W	495	495
	Compressor Overload Protector		UP3-042	UP3-042
	Throttling Method		Capillary	Capillary
	Set Temperature Range	°F	61~86	61~86
	Cooling Operation Ambient Temperature Range	°F	64~115	64~115
	Heating Operation Ambient Temperature Range	°F	/	-19.4-77
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ5	Φ7
	Condenser Rows-fin Gap	mm	3-1.4	3-1.3
	Condenser Coil Length (LXDXW)	mm	780X34.2X343	780X38.1X343
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.21	0.3
	Fan Motor Capacitor	μF	2	2
	Outdoor Unit Air Flow Volume	CFM	471	471
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
Sound Pressure Level (H/M/L)	dB (A)	62/-/57	62/-/58	
Sound Power Level (H/M/L)	dB (A)	72/-/67	72/-/68	
Defrosting Method		/	/	

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

Model			KPA07B5P	KPE07B5P
Product Code			CC060062200	CC060062000
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7300	7500
Heating Capacity		Btu/h	6000	/
Cooling Power Input		W	560	560
Heating Power Input		W	490	/
Cooling Power Current		A	2.1	2.1
Heating Power Current		A	1.8	/
Rated Input		W	Cooling:745 heating:565 Electric Heating:3500/2500	Cooling:745 Electric Heating:3500/2500
Rated Current		A	Cooling:2.9,heating:2.2 Electric Heating:13.3/9.5	Cooling:2.9 Electric Heating:13.3/9.5
EER		(Btu/h)/W	13	13.3
SEER			/	/
COP		(Btu/h)/W	12.3	/
Air Flow Volume		CFM	312/282	312/282
Dehumidifying Volume		Pint/h	1.69	1.69
Application Area		yd <sup>2</sup>	12-19	12-19
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHxD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 3/32 × 15 63/64 × 21 1/2
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 19/32 × 17 7/8
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 5/32 × 25 45/64 × 18 15/32
Net Weight		lb	112.4	110.2
Gross Weight		lb	124.6	122.4
Refrigerant		/	R32	R32
Refrigerant Charge		oz	27.51	17.64

Indoor Side	Electric Heater Power Input	W	3450/2450	3450/2450
	Electric Heater Power Current	A	13.1/9.3	13.1/9.3
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1000/890	1000/890
	Heating Speed	r/min	1000/890	1000/890
	Fan Motor Power Output	W	10	10
	Fan Motor RLA	A	0.14	0.14
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698 × 242 × 38.1	698 × 242 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	°F	61~86	61~86
	Sound Pressure Level	dB (A)	50/46	50/46
	Sound Power Level	dB (A)	60/56	60/56
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.	ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-A056yD130	QXF-A056yD130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	12	12
	Compressor RLA	A	2.2	2.2
	Compressor Overload Protector	--	486	486
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.3	0.3
	Fan Motor Capacitor	μF	1.5	1.5
	Outdoor Unit Air Flow Volume	CFM	471	471
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780 × 343 × 38.1	780 × 343 × 34.2
	Cooling Operation Ambient Temperature Range	°F	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	°F	-19.4~75	-19.4~75
	Sound Pressure Level	dB (A)	62/58	62/57
	Sound Power Level	dB (A)	72/68	72/67

Model			KPE09B5D	KPA09B5D
Product Code			CC060058900	CC060059200
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	10200/9900	9700/9400
Heating Capacity		Btu/h	/	8500/8200
Cooling Power Input		W	810/790	800/780
Heating Power Input		W	/	690/670
Electric Heating Power Input		W	5050/4130,3500/2860,2500/2040	5050/4130,3500/2860,2500/2040
Cooling Current Input		A	3.6/3.9	3.6/3.9
Heating Current Input		A	/	3.1/3.2
Electric Heating Current Input		A	22.0/19.9/,15.2/13.8/,10.9/9.8	22.0/19.9/,15.2/13.8/,10.9/9.8
Rated Input(Cooling/Heating)		W	1190/-	1070/930
Rated Current(Cooling/Heating)		A	5.0/-	4.6/3.9
Air Flow Volume(H/M/L)		CFM	330/-/282	330/-/282
Dehumidifying Volume		Pint/h	2.11	2.11
EER		(Btu/h)/W	12.5	12.1/12.1
COP		(Btu/h)/W	/	12.3/12.3
Application Area		yd <sup>2</sup>	14-21	14-21
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(Outdoor)			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		P.S.I	500	500
Permissible Excessive Operating Pressure for the Suction Side		P.S.I	276	276
Dimension (WXHXD)		inch	42X16X21 11/32	42X16X21 11/32
Dimension of Carton Box (LXWXH)		inch	45 3/64X25 9/32X17 7/8	45 3/64X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 5/32X25 25/64X18 15/32	45 5/32X25 25/64X18 15/32
Net Weight		lb	110.3	114.7
Gross Weight		lb	132.3	134.5
Refrigerant			R32	R32
Refrigerant Charge		oz	17.3	24.7
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ121×706	Φ121×706
	Cooling Speed (H/M/L)	r/min	1060/-/940	1060/-/940
	Heating Speed (H/M/L)	r/min	/	1060/-/940
	Fan Motor Power Output	W	21	21
	Fan Motor RLA	A	0.2	0.18
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	699X38.1X248	699X38.1X248
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/-/50	50/-/46
Sound Power Level (H/M/L)	dB (A)	63/-/60	60/-/56	



Outdoor Side	Compressor Manufacturer		ZHUHAI LANDA COMPRESSORCO.,LTD	ZHUHAI LANDA COMPRESSORCO.,LTD
	Compressor Model		QXF-B100rT130	QXF-A078rD130
	Compressor Oil		68SL or equivalent	68SL or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	17	17
	Compressor RLA	A	3.1	3.1
	Compressor Power Input	W	689	689
	Compressor Overload Protector		HPA-318	HPA-318
	Throttling Method		Capillary	Capillary
	Set Temperature Range	°F	61~86	61~86
	Cooling Operation Ambient Temperature Range	°F	64~115	55-83
	Heating Operation Ambient Temperature Range	°F	/	-19.4-77
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ5	Φ7
	Condenser Rows-fin Gap	mm	3-1.4	3-1.3
	Condenser Coil Length (LXDXW)	mm	780X34.2X343	780X38.1X343
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.21	0.3
	Fan Motor Capacitor	μF	2	2
	Outdoor Unit Air Flow Volume	CFM	471	471
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
Sound Pressure Level (H/M/L)	dB (A)	61/-/57	62/-/58	
Sound Power Level (H/M/L)	dB (A)	71/-/67	72/-/68	
Defrosting Method		/	/	

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

Model			KPE09B5P	KPA09B5P
Product Code			CC060059700	CC060059800
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	10000	9800
Heating Capacity		Btu/h	/	8600
Cooling Power Input		W	800	810
Heating Power Input		W	/	690
Electric Heating Power Input		W	5050/3500/2500	5050/3500/2500
Cooling Current Input		A	3.2	3.1
Heating Current Input		A	/	2.6
Electric Heating Current Input		A	19.1/13.3/9.5	19.1/13.3/9.5
Rated Input(Cooling/Heating)		W	1120/-	1220/920
Rated Current(Cooling/Heating)		A	3.9/-	3.6/3.3
Air Flow Volume(H/M/L)		CFM	330/-/282	330/-/282
Dehumidifying Volume		Pint/h	2.11	2.11
EER		(Btu/h)/W	12.5	12.1
COP		W/W	/	12.5
Application Area		yd <sup>2</sup>	14-21	14-21
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(Outdoor)			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		P.S.I	500	500
Permissible Excessive Operating Pressure for the Suction Side		P.S.I	276	276
Dimension (WXHXD)		inch	42X16X21 11/32	42X16X21 11/32
Dimension of Carton Box (LXWXH)		inch	45 3/64X25 9/32X17 7/8	45 3/64X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 5/32X25 25/64X18 15/32	45 5/32X25 25/64X18 15/32
Net Weight		lb	110.3	114.7
Gross Weight		lb	132.3	134.5
Refrigerant			R32	R32
Refrigerant Charge		oz	17.3	24.7
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	inch	Φ121×706	Φ121×706
	Cooling Speed (H/M/L)	r/min	1060/-/940	1060/-/940
	Heating Speed (H/M/L)	r/min	/	1060/-/940
	Fan Motor Power Output	W	21	21
	Fan Motor RLA	A	0.18	0.18
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	699X38.1X248	699X38.1X248
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	50/-/46	50/-/46
Sound Power Level (H/M/L)	dB (A)	50/-/46	50/-/46	

Outdoor Side	Compressor Manufacturer		ZHUHAI LANDA COMPRESSORCO.,LTD	ZHUHAI LANDA COMPRESSORCO.,LTD
	Compressor Model		QXF-A078yD130	QXF-A078yD130
	Compressor Oil		FW68DA or equivalent	68SL or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	15	15
	Compressor RLA	A	3.4	3.4
	Compressor Power Input	W	682	682
	Compressor Overload Protector		HPA-512	HPA-512
	Throttling Method		Capillary	Capillary
	Set Temperature Range	°F	61~86	61~86
	Cooling Operation Ambient Temperature Range	°F	64~115	64~115
	Heating Operation Ambient Temperature Range	°F	/	-19.4-77
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ5	Φ7
	Condenser Rows-fin Gap	mm	3-1.4	3-1.3
	Condenser Coil Length (LXDXW)	mm	780X34.2X343	780X34.2X343
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.3	0.3
	Fan Motor Capacitor	μF	1.5	1.5
	Outdoor Unit Air Flow Volume	CFM	471	471
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
Sound Pressure Level (H/M/L)	dB (A)	62/-/57	62/-/58	
Sound Power Level (H/M/L)	dB (A)	72/-/67	72/-/68	
Defrosting Method		/	/	

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

Model			KPE12B5D	KPA12B5D
Product Code			CC060059000	CC060059100
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	12300/12100	12100/11900
Heating Capacity		Btu/h	/	10900/10700
Cooling Power Input		W	1060/1020	1040/1000
Heating Power Input		W	/	940/900
Electric Heating Power Input		W	5050/4130,3500/2860,2500/2040	5050/4130,3500/2860,2500/2040
Cooling Current Input		A	4.7/5.0	4.6/4.9
Heating Current Input		A	/	4.1/4.3
Electric Heating Current Input		A	22.0/19.9/,15.2/13.8/,10.9/9.8	22.0/19.9/,15.2/13.8/,10.9/9.8
Rated Input(Cooling/Heating)		W	1270/-	1270/1130
Rated Current(Cooling/Heating)		A	6.2/-	6.2/5.3
Air Flow Volume(H/M/L)		CFM	341/-/306	341/-/306
Dehumidifying Volume		Pint/h	2.75	2.75
EER		(Btu/h)/W	11.6/11.8	11.6/11.8
COP		(Btu/h)/W	/	11.6/11.8
Application Area		yd <sup>2</sup>	19-29	19-29
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(Outdoor)			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		P.S.I	500	500
Permissible Excessive Operating Pressure for the Suction Side		P.S.I	276	276
Dimension (WXHXD)		inch	42X16X21 11/32	42X16X21 11/32
Dimension of Carton Box (LXWXH)		inch	45 3/64X25 9/32X17 7/8	45 3/64X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 5/32X25 25/64X18 15/32	45 5/32X25 25/64X18 15/32
Net Weight		lb	114.66	119.07
Gross Weight		lb	136.71	141.12
Refrigerant			R32	R32
Refrigerant Charge		oz	21.16	28.92
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ121×706	Φ121×706
	Cooling Speed (H/M/L)	r/min	1130/-/970	1130/-/970
	Heating Speed (H/M/L)	r/min	/	1130/-/970
	Fan Motor Power Output	W	23	23
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/-/50	53/-/50
Sound Power Level (H/M/L)	dB (A)	63/-/60	63/-/60	

Outdoor Side	Compressor Manufacturer		ZHUHAI LANDA COMPRESSORCO.,LTD	ZHUHAI LANDA COMPRESSORCO.,LTD
	Compressor Model		QXF-B100rT130	QXF-B100rT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	30	30
	Compressor RLA	A	4	4
	Compressor Power Input	W	872	872
	Compressor Overload Protector		HPA-425	HPA-425
	Throttling Method		Capillary	Capillary
	Set Temperature Range	°F	61~86	61~86
	Cooling Operation Ambient Temperature Range	°F	64~115	64~115
	Heating Operation Ambient Temperature Range	°F	/	-19.4-77
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ5	Φ5
	Condenser Rows-fin Gap	mm	3-1.4	3-1.3
	Condenser Coil Length (LXDXW)	mm	780X34.2X343	780X38.1X343
	Fan Motor Speed	rpm	1550/1390	1550/1390
	Fan Motor Power Output	W	65	65
	Fan Motor RLA	A	0.52	0.52
	Fan Motor Capacitor	μF	2.5	2.5
	Outdoor Unit Air Flow Volume	CFM	564	564
Fan Type		Axial-flow	Axial-flow	
Fan Diameter	mm	Φ349	Φ349	
Sound Pressure Level (H/M/L)	dB (A)	66/-/63	66/-/63	
Sound Power Level (H/M/L)	dB (A)	76/-/73	76/-/73	
Defrosting Method		/	/	

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

Model			KPE12B5P	KPA12B5P
Product Code			CC060060000	CC060059900
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	12300	12000
Heating Capacity		Btu/h	/	10900
Cooling Power Input		W	1060	1030
Heating Power Input		W	/	940
Electric Heating Power Input		W	5050/3500/2500	5050/3500/2500
Cooling Current Input		A	4.0	4.0
Heating Current Input		A	/	3.5
Electric Heating Current Input		A	19.1/13.3/9.5	19.1/13.3/9.5
Rated Input(Cooling/Heating)		W	1270/-	1270/1100
Rated Current(Cooling/Heating)		A	4.8/-	4.8/4.2
Air Flow Volume(H/M/L)		CFM	341/-/306	341/-/306
Dehumidifying Volume		Pint/h	2.75	2.75
EER		(Btu/h)/W	11.6	11.6
COP		W/W	/	11.6
Application Area		yd <sup>2</sup>	19-29	19-29
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(Outdoor)			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		P.S.I	500	500
Permissible Excessive Operating Pressure for the Suction Side		P.S.I	276	276
Dimension (WXHXD)		inch	42X16X21 11/32	42X16X21 11/32
Dimension of Carton Box (LXWXH)		inch	45 3/64X25 9/32X17 7/8	45 3/64X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 5/32X25 25/64X18 15/32	45 5/32X25 25/64X18 15/32
Net Weight		lb	114.66	119.07
Gross Weight		lb	136.71	141.12
Refrigerant			R32	R32
Refrigerant Charge		oz	21.16	28.92
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	inch	Φ121×706	Φ121×706
	Cooling Speed (H/M/L)	r/min	1130/-/950	1130/-/950
	Heating Speed (H/M/L)	r/min	/	1130/-/950
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/-/50	53/-/50
Sound Power Level (H/M/L)	dB (A)	63/-/60	63/-/60	

Outdoor Side	Compressor Manufacturer		ZHUHAI LANDA COMPRESSORCO.,LTD	ZHUHAI LANDA COMPRESSORCO.,LTD
	Compressor Model		QXF-B100yT130	QXF-B100yT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	21	21
	Compressor RLA	A	3.3	3.3
	Compressor Power Input	W	855	855
	Compressor Overload Protector		HPA-518	HPA-518
	Throttling Method		Capillary	Capillary
	Set Temperature Range	°F	61~86	61~86
	Cooling Operation Ambient Temperature Range	°F	64~115	64~115
	Heating Operation Ambient Temperature Range	°F	/	-19.4-77
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ5	Φ5
	Condenser Rows-fin Gap	mm	3-1.4	3-1.3
	Condenser Coil Length (LXDXW)	mm	780X34.2X343	780X38.1X343
	Fan Motor Speed	rpm	1550/1380	1340/1120
	Fan Motor Power Output	W	45	45
	Fan Motor RLA	A	0.4	0.4
	Fan Motor Capacitor	μF	2.0	2.0
	Outdoor Unit Air Flow Volume	CFM	565	565
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
Sound Pressure Level (H/M/L)	dB (A)	66/-/63	66/-/63	
Sound Power Level (H/M/L)	dB (A)	76/-/73	76/-/73	
Defrosting Method		/	/	

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

Model			KPE15B5D	KPA15B5D
Product Code			CC060059600	CC060059500
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	14700/14300	14500/14300
Heating Capacity		Btu/h	/	13700/13500
Cooling Power Input		W	1390/1350	1390/1350
Heating Power Input		W	/	1290/1250
Electric Heating Power Input		W	5050/4130,3500/2860,2500/2040	5050/4130,3500/2860,2500/2040
Cooling Current Input		A	6.0/6.5	6.0/6.5
Heating Current Input		A	/	5.6/5.9
Electric Heating Current Input		A	22.0/19.9/,15.2/13.8/,10.9/9.8	22.0/19.9/,15.2/13.8/,10.9/9.8
Rated Input(Cooling/Heating)		W	1890/-	1890/1650
Rated Current(Cooling/Heating)		A	8.2/-	8.2/7.9
Air Flow Volume(H/M/L)		CFM	341/-/306	341/-/306
Dehumidifying Volume		Pint/h	3.17	3.17
EER		(Btu/h)/W	10.6/10.6	10.4/10.6
COP		(Btu/h)/W	/	10.6/10.8
Application Area		yd <sup>2</sup>	25-37	25-37
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(Outdoor)			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		P.S.I	500	500
Permissible Excessive Operating Pressure for the Suction Side		P.S.I	276	276
Dimension (WXHXD)		inch	42X16X21 11/32	42X16X21 11/32
Dimension of Carton Box (LXWXH)		inch	45 3/64X25 9/32X17 7/8	45 3/64X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 5/32X25 25/64X18 15/32	45 5/32X25 25/64X18 15/32
Net Weight		lb	114.7	120.2
Gross Weight		lb	136.7	142.2
Refrigerant			R32	R32
Refrigerant Charge		oz	19.75	29.63
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ121×706	Φ121×706
	Cooling Speed (H/M/L)	r/min	1130/-/970	1130/-/970
	Heating Speed (H/M/L)	r/min	/	1130/-/970
	Fan Motor Power Output	W	23	23
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/-/50	53/-/50
Sound Power Level (H/M/L)	dB (A)	63/-/60	63/-/60	



Outdoor Side	Compressor Manufacturer		ZHUHAI LANDA COMPRESSORCO.,LTD	ZHUHAI LANDA COMPRESSORCO.,LTD
	Compressor Model		QXF-B100rT130	QXF-B129rT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	35.2	35.2
	Compressor RLA	A	5	5
	Compressor Power Input	W	1180	1180
	Compressor Overload Protector		HPA-425	HPA-535L
	Throttling Method		Capillary	Capillary
	Set Temperature Range	°F	61~86	61~86
	Cooling Operation Ambient Temperature Range	°F	64~115	64~115
	Heating Operation Ambient Temperature Range	°F	/	-19.4-77
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ5	Φ7
	Condenser Rows-fin Gap	mm	3-1.4	3-1.3
	Condenser Coil Length (LXDXW)	mm	780X34.2X343	780X38.1X343
	Fan Motor Speed	rpm	1550/1390	1550/1390
	Fan Motor Power Output	W	65	65
	Fan Motor RLA	A	0.52	0.52
	Fan Motor Capacitor	μF	2.5	2.5
	Outdoor Unit Air Flow Volume	CFM	565	589
Fan Type		Axial-flow	Axial-flow	
Fan Diameter	mm	Φ349	Φ349	
Sound Pressure Level (H/M/L)	dB (A)	66/-/63	66/-/63	
Sound Power Level (H/M/L)	dB (A)	76/-/73	76/-/73	
Defrosting Method		/	/	

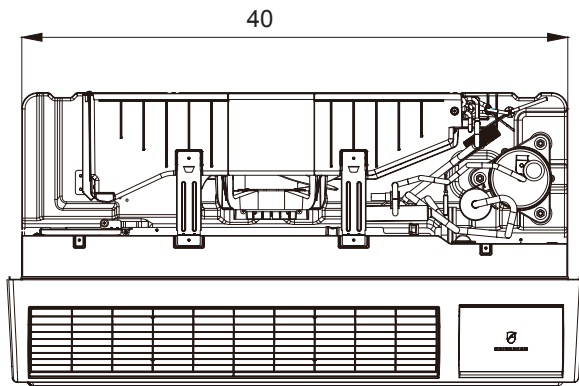
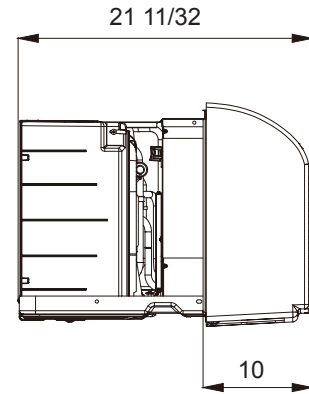
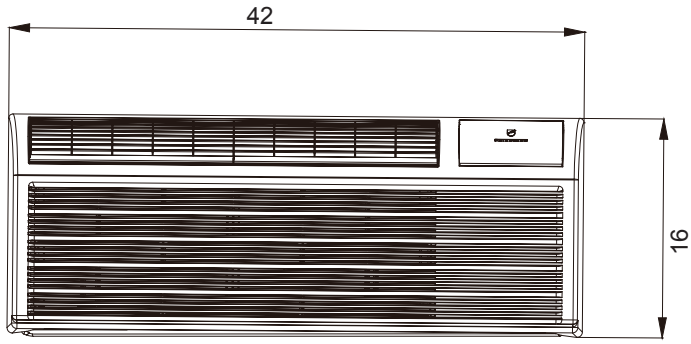
The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			KPE15B5P	KPA15B5P
Product Code			CC060059300	CC060059400
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	14800	14500
Heating Capacity		Btu/h	/	13300
Cooling Power Input		W	1400	1390
Heating Power Input		W	/	1250
Electric Heating Power Input		W	5050/3500/2500	5050/3500/2500
Cooling Current Input		A	5.3	5.3
Heating Current Input		A	/	4.7
Electric Heating Current Input		A	19.1/13.3/9.5	19.1/13.3/9.5
Rated Input(Cooling/Heating)		W	1890/-	1890/1650
Rated Current(Cooling/Heating)		A	7.0/-	7.0/6.2
Air Flow Volume(H/M/L)		CFM	341/-/306	341/-/306
Dehumidifying Volume		Pint/h	3.17	3.17
EER		(Btu/h)/W	11.6	10.4
COP		W/W	/	10.6
Application Area		yd <sup>2</sup>	25-37	25-37
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(Outdoor)			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		P.S.I	500	500
Permissible Excessive Operating Pressure for the Suction Side		P.S.I	276	276
Dimension (WXHXD)		inch	42X16X21 11/32	42X16X21 11/32
Dimension of Carton Box (LXWXH)		inch	45 3/64X25 9/32X17 7/8	45 3/64X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 5/32X25 25/64X18 15/32	45 5/32X25 25/64X18 15/32
Net Weight		lb	114.7	120.2
Gross Weight		lb	136.7	142.2
Refrigerant			R32	R32
Refrigerant Charge		oz	17.99	28.57
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	inch	Φ121×706	Φ121×706
	Cooling Speed (H/M/L)	r/min	1130/-/970	1130/-/970
	Heating Speed (H/M/L)	r/min	/	1130/-/970
	Fan Motor Power Output	W	23	23
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698X38.1X242	698X38.1X242
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	53/-/50	53/-/50
Sound Power Level (H/M/L)	dB (A)	63/-/60	63/-/60	

Outdoor Side	Compressor Manufacturer		ZHUHAI LANDA COMPRESSORCO.,LTD	ZHUHAI LANDA COMPRESSORCO.,LTD
	Compressor Model		QXF-B129yT130	QXF-B129yT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	26	26
	Compressor RLA	A	6.4	6.4
	Compressor Power Input	W	1120	1120
	Compressor Overload Protector		HPA-422H	HPA-422H
	Throttling Method		Capillary	Capillary
	Set Temperature Range	°F	61~86	61~86
	Cooling Operation Ambient Temperature Range	°F	64~115	64~115
	Heating Operation Ambient Temperature Range	°F	/	-19.4-77
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ5	Φ7
	Condenser Rows-fin Gap	mm	3-1.4	3-1.3
	Condenser Coil Length (LXDXW)	mm	780X34.2X343	780X38.1X343
	Fan Motor Speed	rpm	1550/1390	1550/1390
	Fan Motor Power Output	W	45	45
	Fan Motor RLA	A	0.4	0.4
	Fan Motor Capacitor	μF	2.5	2.5
	Outdoor Unit Air Flow Volume	CFM	565	588
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ349	Φ349
Sound Pressure Level (H/M/L)	dB (A)	66/-/63	66/-/63	
Sound Power Level (H/M/L)	dB (A)	76/-/73	76/-/73	
Defrosting Method		/	/	

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

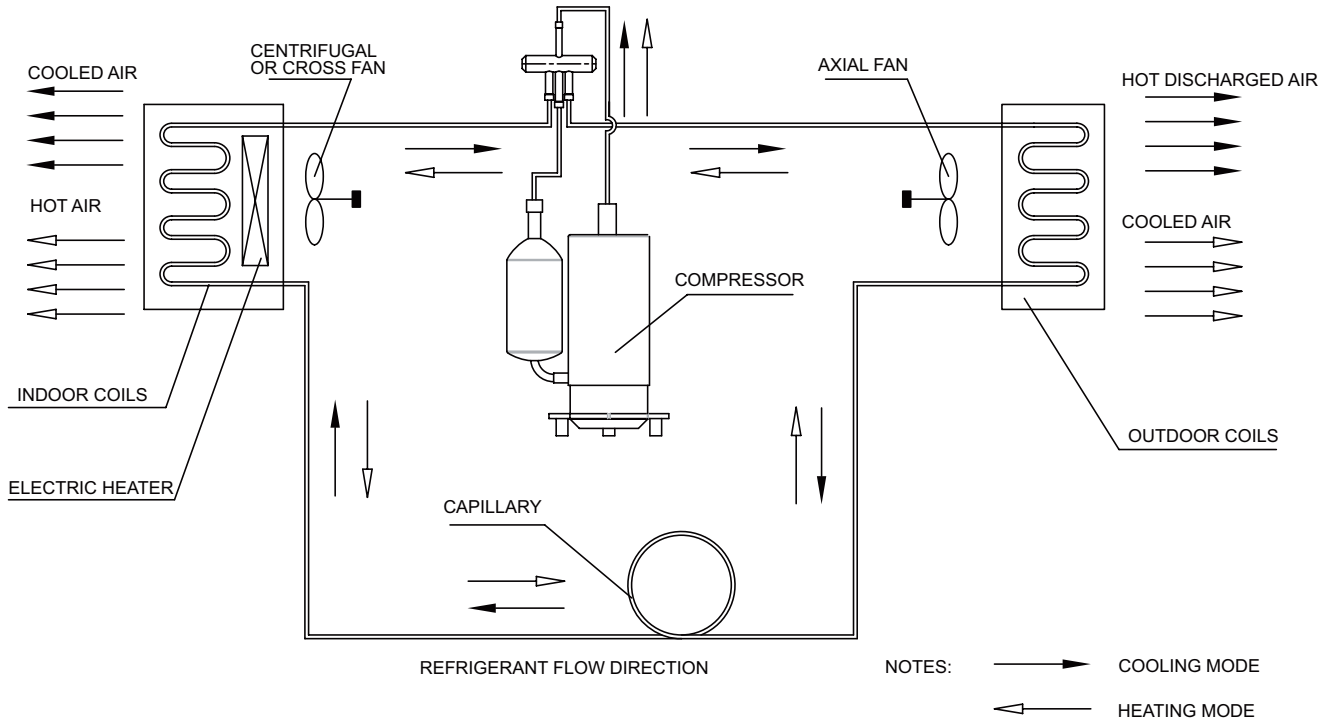
# 3. Outline Dimension Diagram



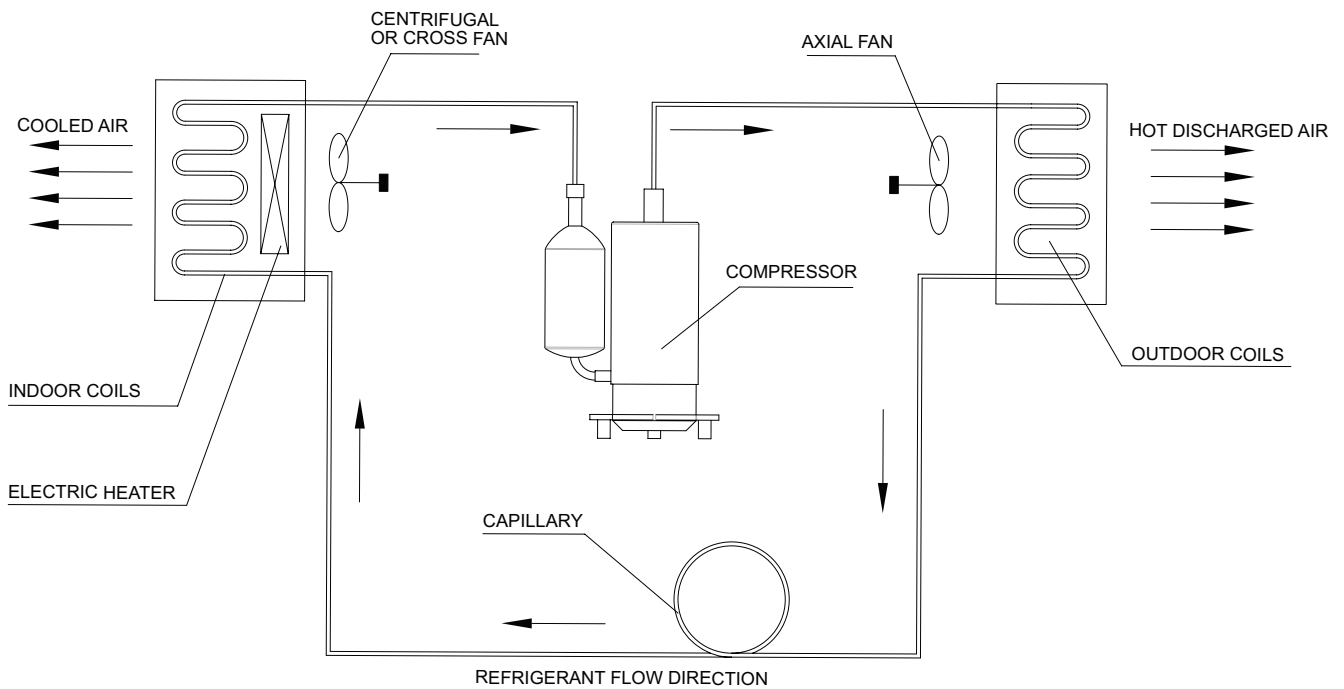
Unit:inch

# 4. Refrigerant System Diagram

## (1) Cooling + Heat Pump + Auxiliary Electric Heater




## (2) Cooling + Electric Heater



# 5. Electrical Part

## 5.1 Wiring Diagram

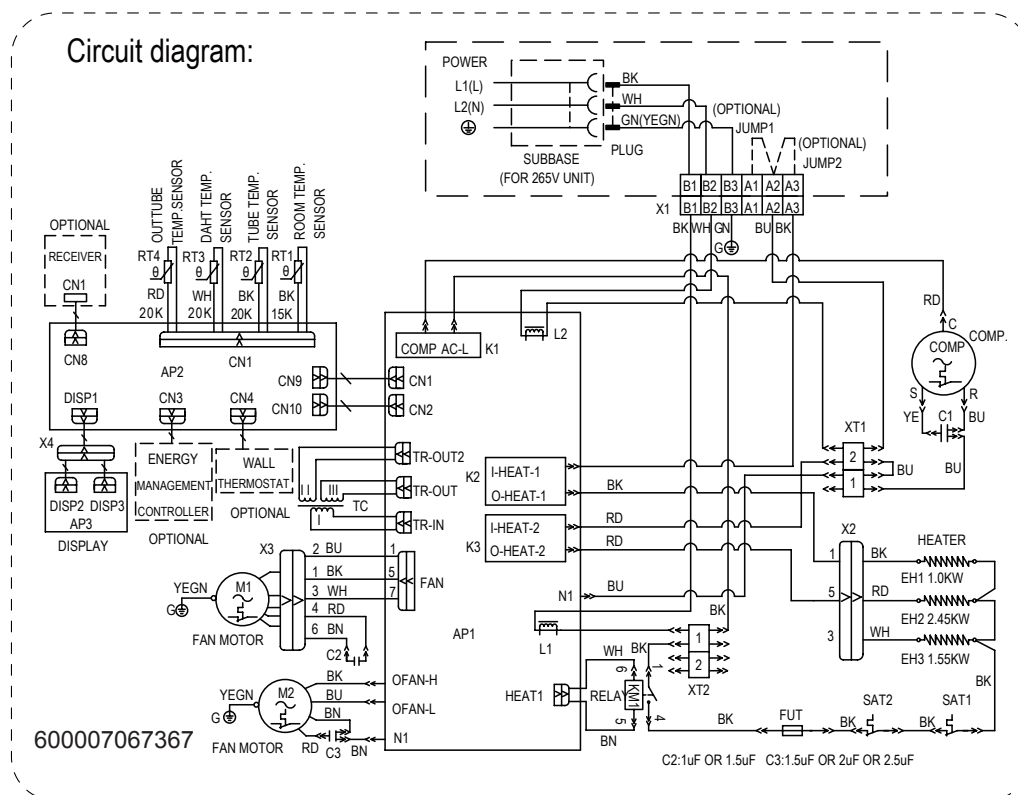
### • Instruction

Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP	Jumper cap
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue		Grounding wire
YEGN	Yellow/Green	BK	Black	/	/
VT	Violet	OG	Orange	/	/

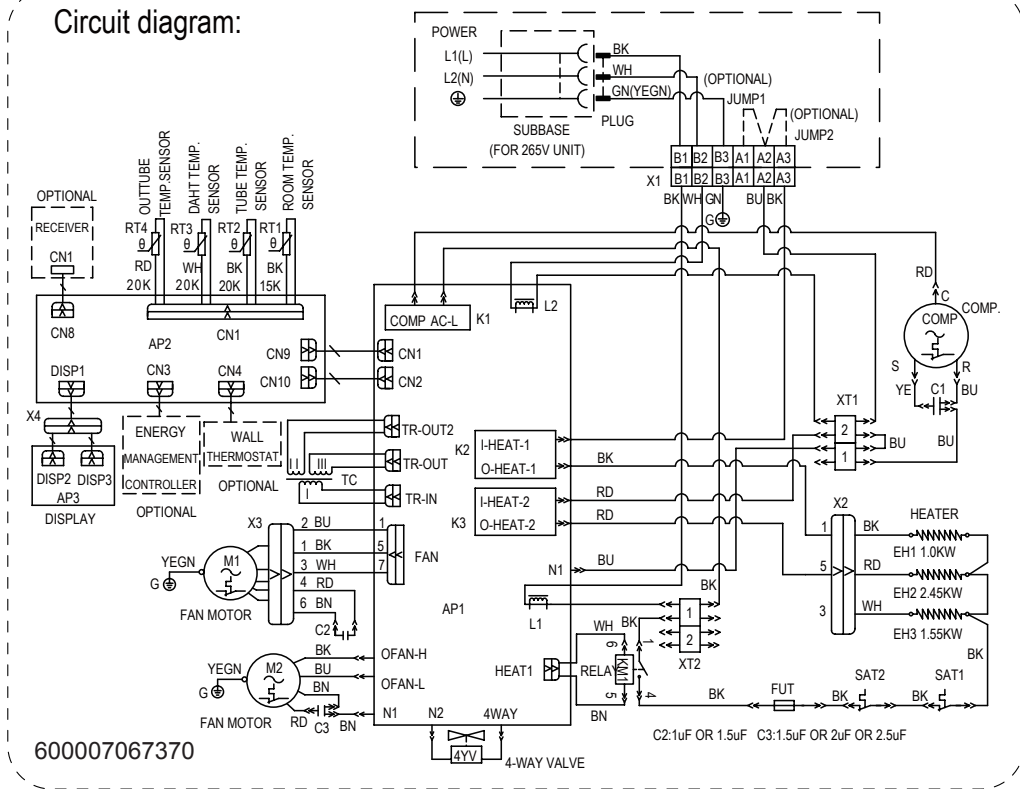
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lever for this model.

### • Electric Diagram

KPE07B5D

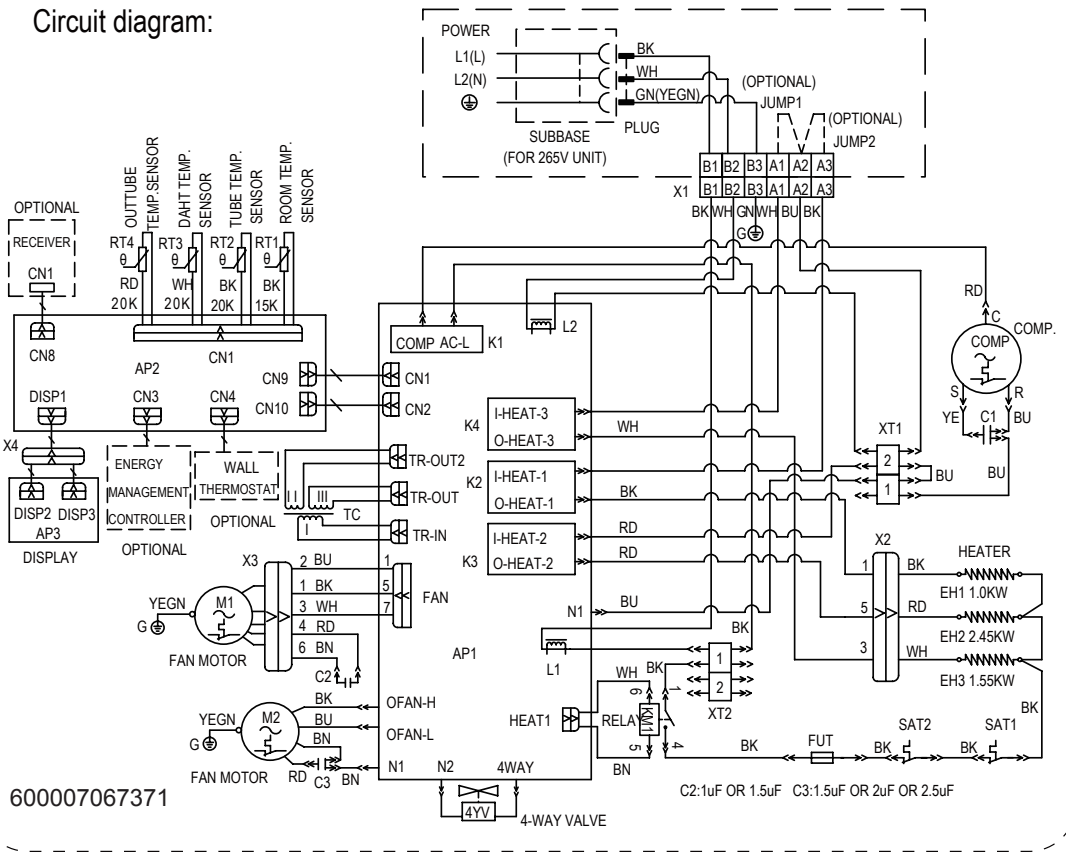


Circuit diagram:



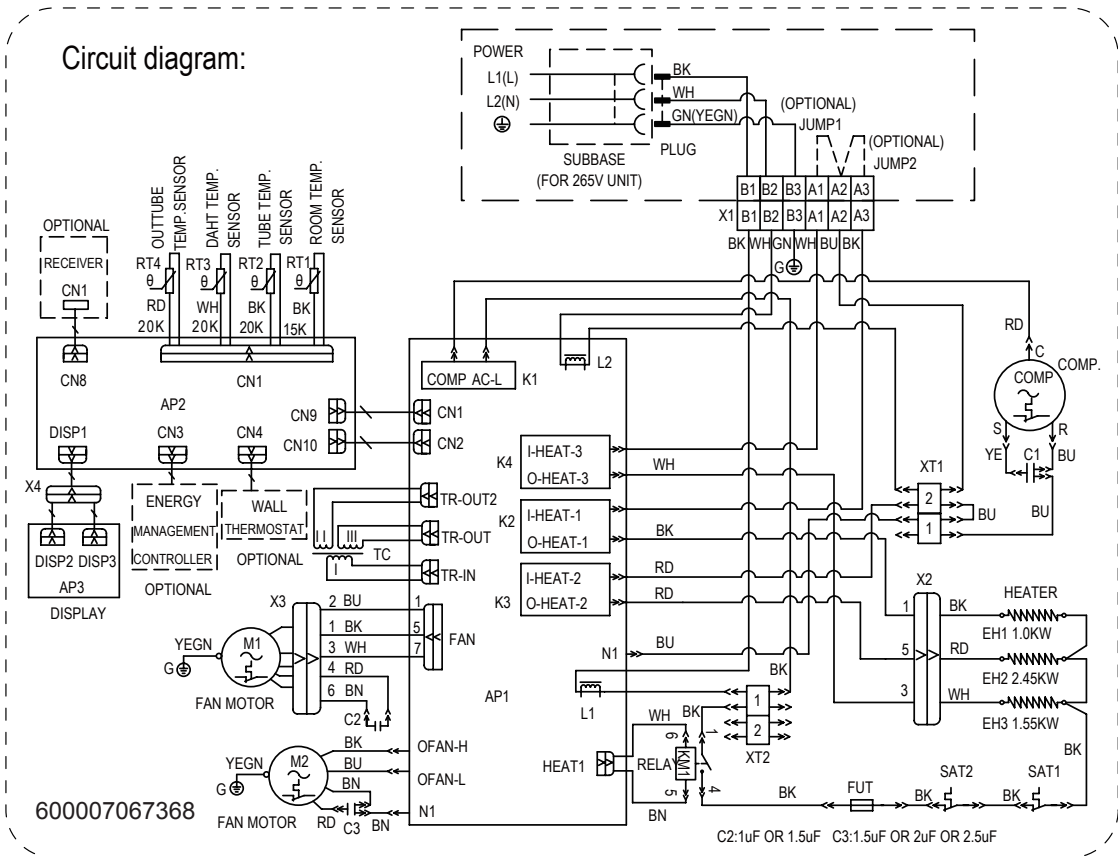
KPA09B5D KPA09B5P KPA12B5D KPA12B5P  
 KPA15B5D KPA15B5P

Circuit diagram:





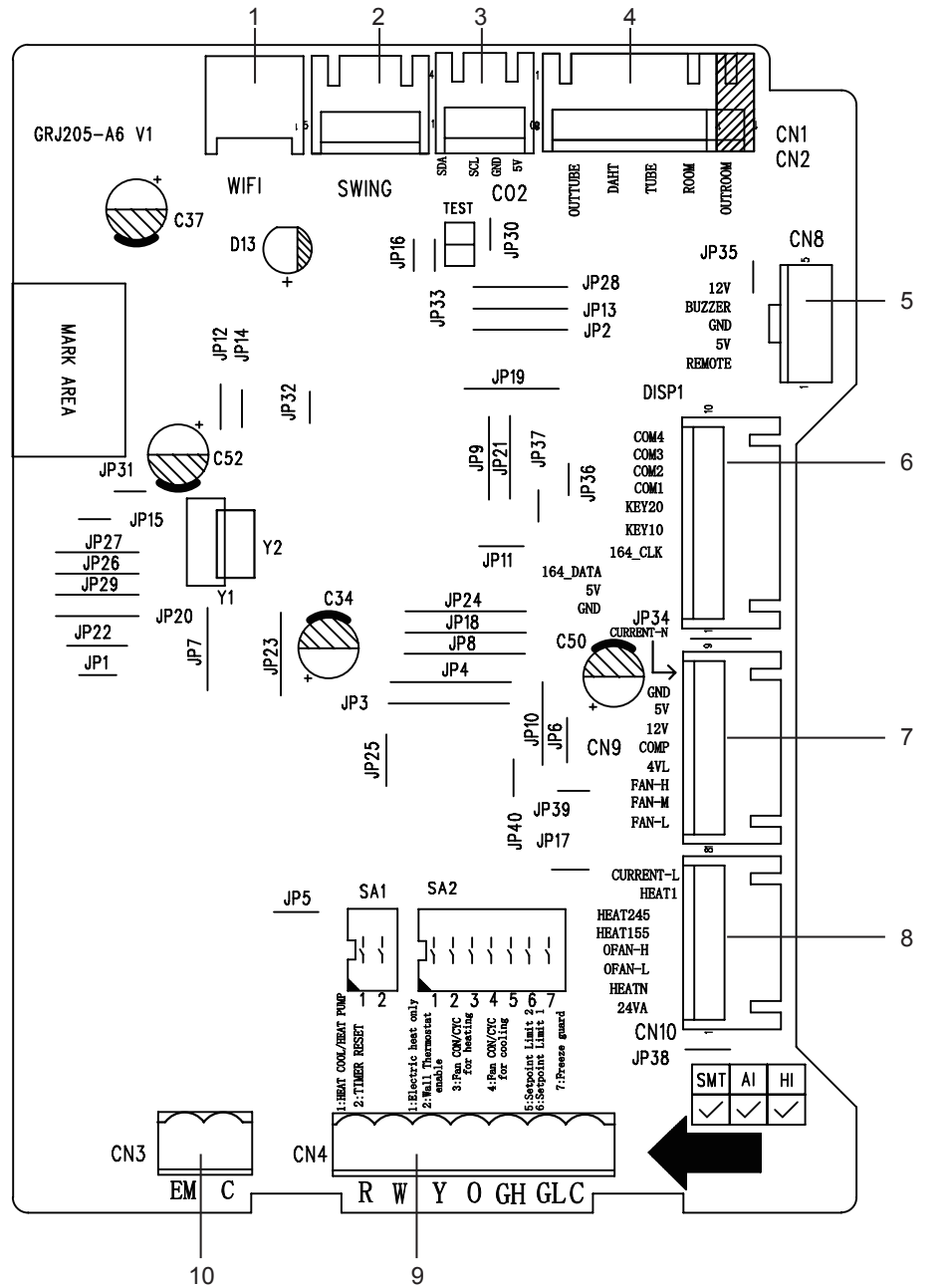
KPE09B5P KPE09B5D KPE12B5D KPE12B5P  
 KPE15B5D KPE15B5P



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

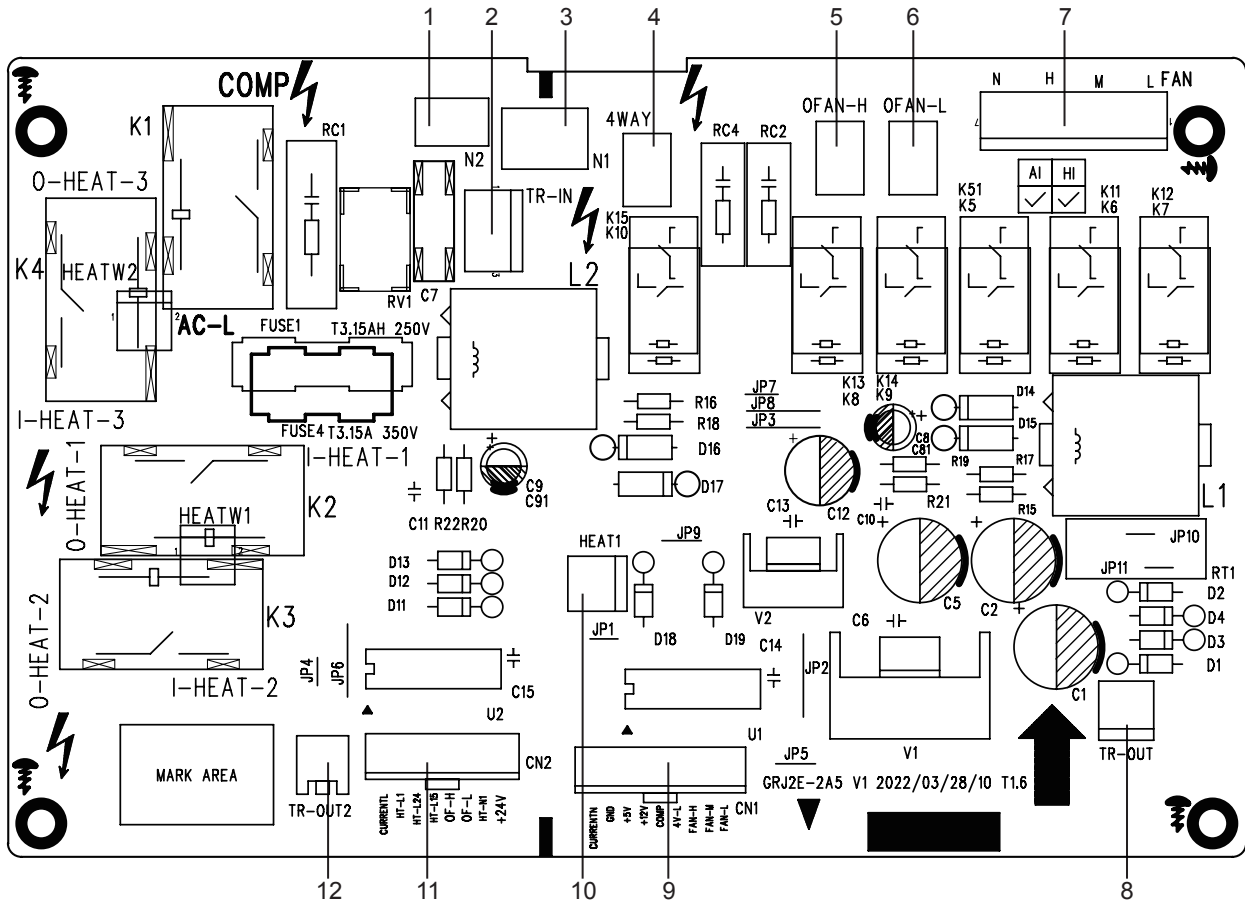
## 5.2 PCB Printed Diagram

### 5.2.1 Silk screen on main board 1



No.	Name	No.	Name
1	Terminal of wifi(reserved)	6	Terminal of display board
2	Terminal of swing motor(reserved)	7	Connection terminal 1 with hi-volt PCB
3	Terminal of device inspection(reserved)	8	Connection terminal 2 with hi-volt PCB
4	Terminal of temperature sensor	9	Terminal of wired controller
5	Remote controller receiving/buzzer interface (optional)	10	Connection terminal of energy management

## 5.2.2 Silk screen on main board 2



No.	Name	No.	Name
1	Neutral wire interface	7	Needle stand for indoor fan
2	Transformer AC input	8	Transformer AC output (12V)
3	Neutral wire interface	9	Terminal of main board
4	Four-way valve terminal	10	Control needle stand of relay
5	Terminal of outdoor fan(High -end)	11	Terminal of main board
6	Terminal of outdoor fan(Low -end)	12	Transformer AC output (24V)

# 6. Function and Control

## 6.1 Introduction of Control Pane

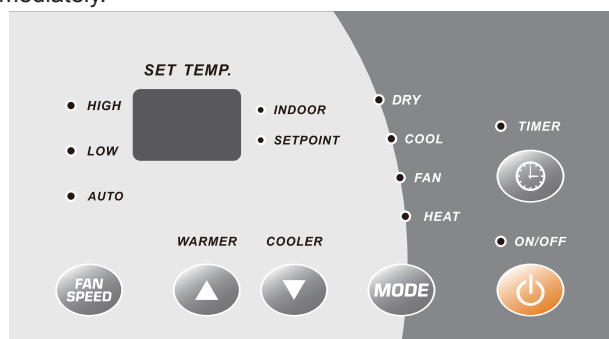
### 1. Summary

When the unit is turned on, power indicator is displayed in green (For GAE(A)\*\*\*C1D models); power indicator is displayed in blue (For GAE(A)\*\*\*B5A/GAE(A)\*\*\*B5D models). In this case, you can operate the unit through control panel.

### 2. Operation interface and buttons

#### B5 panel:

Button function: (Press the button and then the corresponding function will be started up after 2s) Display will be started up immediately.



#### 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 WARMER 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:

a. It is used for increasing temperature or timer setting.

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

(4) FAN : It is used for setting high, 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 on, 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 Time 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

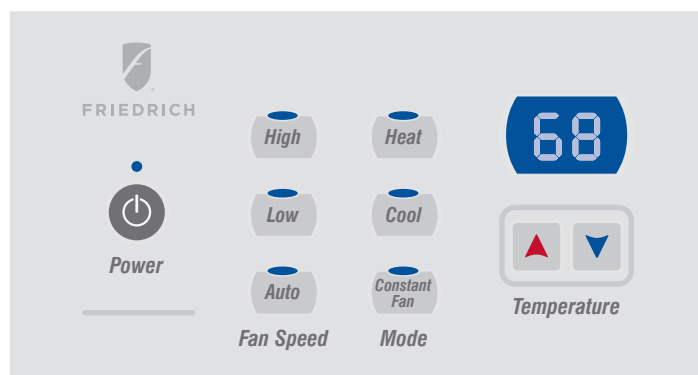
Fan speed can be automatically selected according to different modes or indoor temperature to achieve higher comfort.

8. Emergency cooling operation: Emergency cooling, Subject to your choice – allowed or rejected. When indoor ambient temperature  $\geq 30^{\circ}\text{C}$  ( $86^{\circ}\text{F}$ ), the unit will start cooling automatically.

When indoor ambient temperature reaches  $27^{\circ}\text{C}$  ( $81^{\circ}\text{F}$ ), the unit will stop operation.

9. Fcode remote controller: optional

#### C1 panel:



#### Button function:

1. In OFF mode, press Power button to turn on the unit: If pressing ▲ or ▼ button in OFF mode, dual 8 will be turned off after displaying indoor temperature for 15s; if pressing the Mode button in OFF mode, the controller will resume to the corresponding operation status. Operation indicator will be on (Mode button includes Cool button and Heat button).

2. In ON status, each button is valid.

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

② Cool button: In ON status, the unit will operate in cooling mode. In OFF mode, after pressing the Cool button, the controller will operate according to cooling mode. Other functions will operate according to the status before turning off the unit.

③ Heat button: In ON status, the unit will operate in heating mode. In OFF mode, after pressing the Heat button, the controller will operate according to heating mode. Other functions will operate according to the status before turning off the unit.

④ Constant Fan button: If constant fan mode is on, the fan motor will operate constantly. If constant mode is off, the fan will stop as the load stops. Fan speed is controlled by fan speed button (If

wired controller is connected, fan speed follows the command of wired controller. The controller will control if the fan shall operate or not).

⑤ Auto button: When the unit is on, press Auto button to select auto fan speed.

⑥ Low button: When the unit is on, press Low button to select low fan speed.

⑦ High button: When the unit is on, press High button to select high fan speed.

⑧ ▲ or ▼ button: Press ▲ or ▼ button to adjust set temperature within 61~86°F(16~30°C) and you can also select other set temperature range through configuration.

### Dual 8 Display and LED Display:

Two 8 segment nixie tube and 8 LED indicators (they are Auto, High, Low, Heat, Cool, Constant Fan, Power, STATUS(status indicator on main board)).

1.Mode LED display: when the unit is running in a certain kind of mode, the corresponding LED is bright.

2.Power LED: In ON status, the power LED is on; In OFF status, the power LED is off.

3.Fan speed display: when the unit is running at auto, high or low fan speed, the corresponding LED is bright.

4.Dual 8 display: In cooling and heating mode, it defaults to display set temperature (In fan mode, it displays indoor ambient temperature).

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

### 6.Error display

After energization, STATUS LED is always on. When there is error or protection, STATUS LED blinks. Detailed display is as below:In OFF mode, dual 8 won't display the error code (except the low temperature protection). In OFF status, number 8, 9 and 10 protection marks will be eliminated.When multiple protections are overlapped, they will be displayed circularly without priority.

No.	Malfunction Code	Description	STATUS indicator
1	F1	Indoor ambient temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays “F1” and STATUS indicator will flash once and off 3s circularly
2	F2	Indoor tube temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays “F2” and STATUS indicator will flash twice and off 3s circularly
3	F3	Outdoor ambient temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays “F3”
4	F4	Outdoor tube temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays “F4” and STATUS indicator will flash four times and off 3s circularly

5	FJ	Malfunction of temperature sensor at air outlet	Dual-8 nixie tube displays “FJ”
6	FP	Low temperature prevention protection	Dual-8 nixie tube displays “FP”
7		Wrong wire connection indication for wired controller	STATUS indicator will flash nine times and off 3s circularly
8		High temperature prevention protection forevaporator	STATUS indicator will flash eight times and off 3s circularly
9		High temperature prevention protection foroutdoor condenser	STATUS indicator will flash six times and off 3s circularly
10		Freeze prevention protection for evaporator	STATUS indicator will flash five times and off 3s circularly
11		Frost prevention (heat pump)	STATUS indicator will flash seven times and off 3s circularly
12	F0	Freon-lacking protection	Dual-8 nixie tube displays “F0”
13	H3	Overload detection protection	Dual-8 nixie tube displays “H3”
14	E5	Overcurrent protection of compressor	Dual-8 nixie tube displays “E5”
15	A2	Malfunction protection for electric heating Relay for Compressor or heater is broken	Dual-8 nixie tube displays “A2”
16	U5	Unbalanced Electric Current detected between Null line and live line	Dual-8 nixie tube displays “U5”
17	A0	Electric heater combination wrong	Dual-8 nixie tube displays “A0”
18	A4	Electric heater current abnormal	Dual-8 nixie tube displays “A4”
19	C7	Temperature limiter protection time too long or fured	Dual-8 nixie tube displays “C7”

If there is error of temperature sensor, only the indoor fan will respond in cooling mode, other loads will not respond, but the buttons are still valid.

## 6.2 Function Introduction

### 1. Cooling mode

Under cooling mode, cooling mode indicator is on and the set fan speed indicator is on. Dual 8 displays set temperature.

#### Working condition and process for cooling

① When  $T_{\text{indoor amb.}} + T_{\text{indoor amb. compensation}} \geq T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the unit operates under cooling. Outdoor fan and indoor fan operates in set speed. When the starting condition of compressor is reached, outdoor fan will operate and compressor will operate 10s later.

②  $T_{\text{indoor amb.}} + T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the unit stops operation. In this case, compressor and outdoor fan stop operation. Under indoor 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 at set fan speed.

③  $T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C}) < T_{\text{indoor amb.}} + T_{\text{indoor amb. compensation}} < T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the unit keeps previous operation status.

④ When the indoor fan is set at high speed, outdoor fan operates according to high speed.

⑤ When the indoor fan is set at low speed, outdoor fan operates according to low speed.

⑥ When the unit starts cooling mode for the first time and indoor fan is set at low speed, outdoor fan will start at high speed. After operating for 3.5min and outdoor tube temperature is below  $140^{\circ}\text{F}(60^{\circ}\text{C})$ , outdoor fan turns to low speed. First time of start-up includes: switch to low speed cooling from non-cooling mode; the unit starts low speed cooling for the first time or enters low speed cooling after power failure.

⑦ During cooling mode and there is no outdoor condenser high temperature protection, unit stop as reaching temperature point, unit stop for temperature sensor error or unit stop for freeze protection previously, when the start-up condition of outdoor fan is met, indoor fan will operate at high fan speed for 3s and then turn to set fan speed. If high temperature protection occurs during cooling mode, outdoor fan is forced to operate at high speed. When the start-up condition of outdoor fan in heating mode is met, outdoor fan will operate at high fan speed for 3s and then turn to set fan speed. When the indoor fan starts operation, indoor fan will operate at high fan speed for 3s and then turn to set fan speed.

⑧ Constant fan: Press this button under cooling or heating mode to turn on or turn off constant fan function. (It is invalid in wired controller mode) If constant fan mode is on, the fan motor will operate constantly. If constant mode is off, the fan will stop as the load stops. Fan speed is controlled by fan speed button (If wired controller is connected, fan speed follows the command of wired controller. The controller will control if the fan shall operate or not). The status will not change when switching modes, turning on unit, turning off unit, switching to wired controller mode, switching to panel mode, energizing after power failure; if operate for the first time or memory chip is broken, it defaults to be off.

### 2. Heating mode

Under heating mode, heating mode LED and set fan speed LED is on. Dual 8 displays set temperature. If select displaying ambient temperature in additional function setting, the dual 8 will display as the display way described in this mode. The set temperature and fan speed will keep the same when switching modes.

#### Working condition and process for heating

##### a. General type HEAT PUMP TYPE

Operation condition and process (electric heater and compressor Can't operate at the same time)

① When  $T_{\text{preset}} - 5^{\circ}\text{F}(3^{\circ}\text{C}) < T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C})$ , compressor operates at heating mode. Meanwhile, 4-way valve, indoor fan and outdoor fan start operation at set speed. Compressor can operate after 10s. If compressor operates and it satisfies  $T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 5^{\circ}\text{F}(3^{\circ}\text{C})$  and the minimum operation time for compressor, compressor and outdoor fan stop operation immediately. 1s later, electric heater will start.

Once the electric heater operates, it will quit until condition ② is satisfied (entering protection function is excluded). When compressor needs to heat, if compressor Can't be started up due to protection function, electric heater will start heating instead of compressor 15s later. It will stop operation until satisfying the temperature point (customized requirement); When  $T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 5^{\circ}\text{F}(3^{\circ}\text{C})$ , the electric heater operates. Indoor fan operates at set fan speed.

② When  $T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \geq T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$ , compressor or electric heater 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 at set fan speed.

③ When  $T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C}) < T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} < T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$  the unit keeps previous operation status.

##### b. Pure electric heating type HEAT COOL TYPE

Operation condition and process

① When  $T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the electric heater starts operation and indoor fan operates at set fan speed;

② When  $T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \geq T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the electric heater 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 at set fan speed.

③ When  $T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C}) < T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} < T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the unit will keep previous operation status.

### 3. Auto fan speed mode

#### a. Auto fan speed in cooling mode

① High speed:  $T_{\text{amb.}} + T_{\text{indoor amb. compensation}} \geq T_{\text{preset}} + 4^{\circ}\text{F}(2^{\circ}\text{C})$

② Low speed:  $T_{\text{amb.}} + T_{\text{indoor amb. compensation}} \leq T_{\text{preset}}$

③ Not change:  $T_{\text{preset}} < T_{\text{amb.}} + T_{\text{indoor amb. compensation}} < T_{\text{preset}} + 4^{\circ}\text{F}(2^{\circ}\text{C})$

When entering auto fan speed mode, it will operate according to auto high speed

#### b. Auto fan speed in heating mode

① High speed:  $T_{\text{amb.}} - T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 4^{\circ}\text{F}(2^{\circ}\text{C})$

② Low speed:  $T_{\text{amb.}} - T_{\text{indoor amb. compensation}} \geq T_{\text{preset}}$

③ Not change:  $T_{\text{preset}} - 4^{\circ}\text{F}(2^{\circ}\text{C}) < T_{\text{amb.}} - T_{\text{indoor amb. compensation}} < T_{\text{preset}}$

When entering auto fan speed mode, it will operate according to auto high speed.

Note: a. Under auto fan speed control in any mode, there will be a delay of 3.5min in minimum when switching the speed of indoor fan(there is no delay of 3.5min when switching mode).

#### 4. Additional function setting

After the unit is turned on for 30s, press Low button and ▼ button for 5s, the configuration mode will be started up. After entering configuration mode, if adjusting the temperature compensation value by buttons to turn to unit on or off condition, the load will be activated after 3s. While if entering unit on or off condition due to the change of the ambient temperature, it can be activated only after quitting the configuration mode.

In the configuration mode, the four configuration modes as below can be selected by Low button.

##### Mode one: Fahrenheit/Centigrade display mode

Fahrenheit and Centigrade display mode can be switched by pressing ▲ or ▼ button.

F indicates Fahrenheit display mode

C indicates Centigrade display mode

##### Mode two: Adjusting mode for cooling temperature compensation value

▲ button can increase compensation temperature by 1°F(°C), while ▼ button can decrease compensation temperature by 1°F(°C). The adjusting range of indoor ambient temperature compensation value is -6°F to 6°F(-3°C to 3°C) (cooling mode LED is on).

##### Mode three: Adjusting mode for heating temperature compensation value

▲ button can increase compensation temperature by 1°F(°C), while ▼ button can decrease compensation temperature by 1°F(°C). The adjusting range of indoor ambient temperature compensation value is -6°F to 6°F(-3°C to 3°C) (heating mode LED is on).

The compensation temperature defaults to 0 in cooling and heating mode. They can allocate different compensation temperature in cooling and heating mode respectively.

##### Mode four: Display switchover between set temperature and ambient temperature in heating and cooling mode

Press ▲ button or ▼ button to switch displaying set temperature or ambient temperature.

Set temperature display: the dual 8 displays SP. After quitting configuration mode, set temperature is displayed constantly in heating mode and cooling mode;

Ambient temperature display: the dual 8 displays AA. After quitting configuration mode, ambient temperature is displayed constantly in heating mode and cooling mode;

As for below circumstances, it will display set temperature for 10s and then turn to display ambient temperature.

- ① Press mode button (mode button includes Cool button and Heat button)
- ② Energization after power failure
- ③ Restart the unit

④ Turn on the unit after EM turns off unit

⑤ Adjust the set temperature by ▲ button or ▼ button

Quitting configuration mode: The configuration modes mentioned above will be quitted when mode button is pressed or no button is pressed within 30s.

#### 5. Resetting timer

Hold on pressing ▲ button and ▼ button simultaneously for 3s under the protection for compressor and electric heater minimum stop time or the protection for compressor minimum operation time, the protection time will be reduced.

#### 6. Memory function

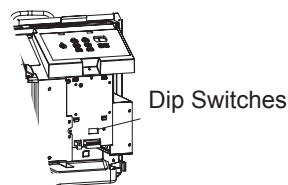
Energizing after power failure, the controller is running according to the mode before power failure. The operation mode, set fan speed, set temperature, T value in minimum stop time of compressor, Fahrenheit/Centigrade display mode, cooling compensation temperature, heating compensation temperature, temperature display mode set in configuration mode before power failure is memorized after power recovers. The unit operates in default fan mode when there is no memory. Fan speed is high with T value of zero and Fahrenheit display mode. Cooling compensation temperature is zero and heating compensation temperature is zero. Default set temperature is 71°F(22°C). Dual 8 displays set temperature under cooling and heating mode.

#### 7. Restore factory settings

In standby and OFF status, after pressing Low button and ▲ button for 3s and the dual 8 displays "00" for 3s (do not display others), which shows that the factory settings have been restored. Meanwhile, the configuration information defaults to display Fahrenheit, heating compensation temperature of 0, cooling compensation temperature of 0 and displaying set temperature. T value is zero, fan speed is high and set temperature is 71°F(22°C).

#### 8. DIP SWITCHES

Auxiliary dip switch controls are located behind front panel, through an opening below the control panel. To access, remove front panel. Dip switches area ccessible without opening the control box. Unit must be powered OFF to effectively change their status. Factory settings for dip switches will be in the DOWN position. See Table 5-Dip Switch Functions for functions of each dip switch position.



Dip switch Location on Unit

For GAE(A)\*\*\*C1D models:

Dip Switches

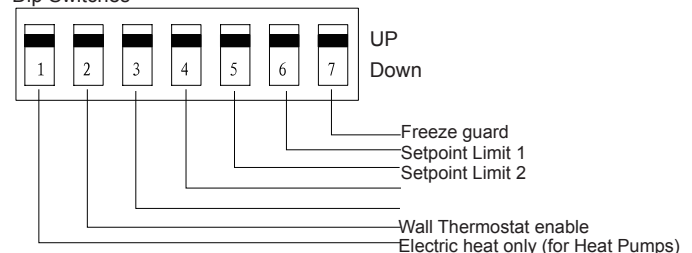


Table5(1)—DIP SWITCH FUNCTIONS

No.	UP	DOWN	REMARKS	DEFAULT
1	Electric Heat Only	Heat Pump	For Heat Pump Unit Only	DOWN
2	Wall Thermostat Enable	Control Panel Enable		DOWN
6*5	UP*UP 68~75°F 20~24°C UP* DOWN 63~80°F 17~28°C	DOWN* UP 65~78°F 18~26°C DOWN* DOWN 61~86°F 16~30°C (full range)	Two configurations (5* 6) combine to select set point range. When set point limit set, display always shows full range.	DOWN* DOWN 61~86°F 16~30°C
7	Freeze Guard Disable	Freeze Guard Enable		DOWN

**Electric Heating Only/Emergency Heat (For Heat Pump Units Only)**

This setting is typically used for Emergency Heating.

**Wall Thermostat Enable**

A wired wall thermostat can be connected to the unit. If it is, this dipswitch must be moved to the Wall Thermostat Enable Position, before the wall thermostat will begin control.

**Setpoint Temperature Limits**

Provides a restricted range of temperature control.

**Room Freeze Protection**

If unit senses a room temperature below 40°F, the fan motor and electric strip heat will turn on and warm the room to 50°F. The fan stops a short time after the temperature is satisfied.

For GAE(A)\*\*\*B5A/ GAE(A)\*\*\*B5D models:

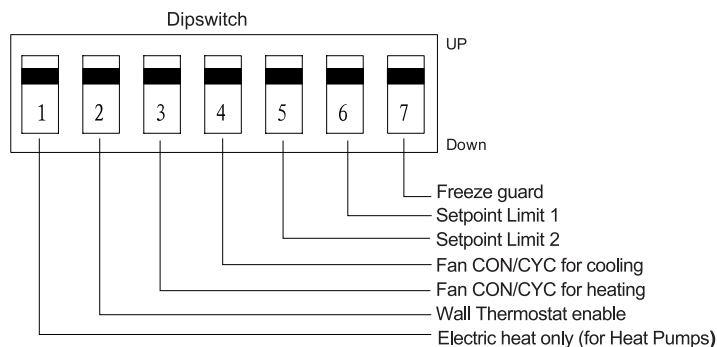


Table5(2)—DIP SWITCH FUNCTIONS

No.	UP	DOWN	REMARKS	DEFAULT
1	Electric Heat Only	Heat Pump	For Heat Pump Unit Only	DOWN
2	Wall Thermostat Enable	Control Panel Enable		DOWN
3	Fan Continuous Run for Heating	Fan Cycle for Heat		DOWN
4	Fan Cycle for Cool	Fan Continuous Run for Cooling		DOWN
6*5	UP*UP 68~75°F 20~24°C UP* DOWN 63~80°F 17~28°C	DOWN* UP 65~78°F 18~26°C DOWN* DOWN 61~86°F 16~30°C (full range)	Two configurations (5* 6) combine to select set point range. When set point limit set, display always shows full range.	DOWN* DOWN 61~86°F 16~30°C
7	Freeze Guard Disable	Freeze Guard Enable		DOWN

**Electric Heating Only / Emergency Heat (For Heat Pump Units Only)**

This function is only available for heat pump units.

**Wall Thermostat Enable**

A wired wall thermostat can be connected to the unit. If it is, this dipswitch must be moved to the Wall

Thermostat Enable Position, before the wall thermostat will begin control.

**Heat and Cool Fan CON/CYC Dip-switches**

Allows the fan to operate in continuous or cycle modes while the unit is in heating or cooling mode.

(continuous or cycle):

CON (Continuous)

Allows fan to run continuously, circulating air even when the temperature setting has been satisfied. This switch helps to maintain the room temperature closer to the thermostat setting.

CYC (Cycle)

This setting allows the fan to cycle on and off with the compressor or electric heater. The fan stops a short time after the temperature setting is satisfied.

**Setpoint Temperature Limits**

Provides a restricted range of temperature control.

**Room Freeze Protection**

If unit senses a room temperature below 40°F, the fan motor and electric strip heat will turn on and warm the room to 50°F. The fan stops a short time after the temperature is satisfied.



# 7. Notes for Installation and Maintenance

## Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.

The following contents are very important for installation and maintenance.

Please follow the instructions below.

- The installation or maintenance must accord with the instructions.
- Comply with all national electrical codes and local electrical codes.
- Pay attention to the warnings and cautions in this manual.
- All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.
- Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.



## Warnings

### Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire Can't be used for other purposes.
6. Must apply protective accessories such as cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. If power cord is broken, please get the specialized power cord from the manufacture or distributor.
9. If the power cord is not long enough, please get the specialized power cord from the manufacture or distributor. Prohibit prolong the wire by yourself.
10. Make sure all wires and pipes are connected properly.

11. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
12. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.
13. If the unit is to be installed in a humid place, the circuit breaker must be installed.

### Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the unit, a sufficient fixing bolt must be installed; make sure the installation support is firm.
4. Wear safety belt if the height of working is above 2m.
5. Use equipped components or appointed components during installation.
6. Make sure no foreign objects are left in the unit after finishing installation.

### Refrigerant Safety Precautions:

1. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
2. 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 or other hazards.
3. Make sure no refrigerant gas is leaking out when installation is completed.
4. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
5. Never touch the refrigerant piping or compressor without wearing glove to avoid scald or frostbite.

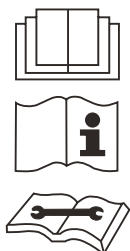
Improper installation may lead to fire hazard, explosion, electric shock or injury.

## Safety Precautions for Refrigerant

- To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32, which is specially cleaned. The refrigerant is flammable and odorless. Furthermore, it can lead to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.
- Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozone layer. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

### WARNING:

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer. Should repair be necessary, contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance shall be stored in a room without continuously operating ignition sources. (for example: open flames, an operating gas appliance or an operating electric heater.)
- Do not pierce or burn.
- Appliance shall be installed, operated and stored in a room with a floor area larger than  $Xm^2$ . (Please refer to table "a" in section of " Safety operation of flammable refrigerant " for space X.)
- Appliance filled with flammable gas R32. For repairs, strictly follow manufacturer's instructions only. Be aware that refrigerants may not contain an odour.
- Read specialist's manual.



## Safety Operation of Flammable Refrigerant

### Qualification requirement for installation and maintenance man

- All the work men who are engaging in the refrigeration system should bear the valid certification awarded by the authoritative organization and the qualification for dealing with the refrigeration system recognized by this industry. If it needs other technician to maintain and repair the appliance, they should be supervised by the person who bears the qualification for using the flammable refrigerant.
- It can only be repaired by the method suggested by the equipment's manufacturer.

## Installation notes

- The air conditioner is not allowed to use in a room that has running fire (such as fire source, working coal gas ware, operating heater).
- It is not allowed to drill hole or burn the connection pipe.
- The air conditioner must be installed in a room that is larger than the minimum room area. The minimum room area is shown on the nameplate or following table a.
- Leak test is a must after installation.

table a - Minimum room area (  $m^2$  )

Charge amount (kg)	floor location	window mounted	wall mounted	ceiling mounted
≤1.2	/	/	/	/
1.3	14.5	5.2	1.6	1.1
1.4	16.8	6.1	1.9	1.3
1.5	19.3	7	2.1	1.4
1.6	22	7.9	2.4	1.6
1.7	24.8	8.9	2.8	1.8
1.8	27.8	10	3.1	2.1
1.9	31	11.2	3.4	2.3
2	34.3	12.4	3.8	2.6
2.1	37.8	13.6	4.2	2.8
2.2	41.5	15	4.6	3.1
2.3	45.4	16.3	5	3.4
2.4	49.4	17.8	5.5	3.7
2.5	53.6	19.3	6	4

## Maintenance notes

- Check whether the maintenance area or the room area meet the requirement of the nameplate.
  - Its only allowed to be operated in the rooms that meet the requirement of the nameplate.
- Check whether the maintenance area is well-ventilated.
  - The continuous ventilation status should be kept during the operation process.
- Check whether there is fire source or potential fire source in the maintenance area.
  - The naked flame is prohibited in the maintenance area; and the "no smoking" warning board should be hanged.
- Check whether the appliance mark is in good condition.
  - Replace the vague or damaged warning mark.

## Welding

- If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:

- a. Shut down the unit and cut power supply
  - b. Eliminate the refrigerant
  - c. Vacuuming
  - d. Clean it with N<sub>2</sub> gas
  - e. Cutting or welding
  - f. Carry back to the service spot for welding
- Make sure that there isn't any naked flame near the outlet of the vacuum pump and it's well-ventilated.
  - The refrigerant should be recycled into the specialized storage tank.

#### **Filling the refrigerant**

- Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant won't contaminate with each other.
- The refrigerant tank should be kept upright at the time of filling refrigerant.
- Stick the label on the system after filling is finished (or haven't finished).
- Don't overfilling.
- After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when it's removed.

#### **Safety instructions for transportation and storage**

- Please use the flammable gas detector to check before unload and open the container.
- No fire source and smoking.
- According to the local rules and laws.

# 8. Installation

## Main Tools for Installation and Maintenance



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).

Retrofit Wall Sleeves

Manufacturer	Wall Sleeve Part Number
General Electric	Metal Sleeve RAB71
	Plastic Sleeve RAB77
Amana	Metal Sleeve WS900B
Trane	Metal Sleeve SLV149
Friedrich	T-Series Metal 11 <sup>1</sup> / <sub>2</sub> -in. Deep Wall Sleeve*
	Standard Depth Wall Sleeve 16 X 42 X 13 <sup>3</sup> / <sub>4</sub> -in. PXWS

### CAUTION

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).

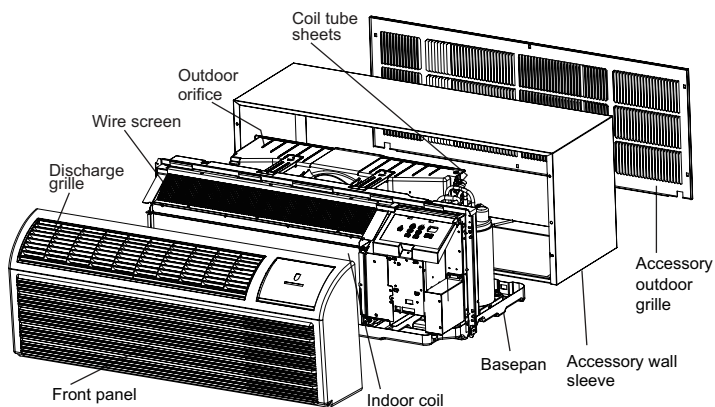
### UNIT DAMAGE AND/OR OPERATION HAZARD

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.

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

Unit Components



## RETRO FIT SLEEVE PREPARATION

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

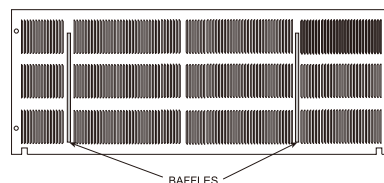
### Warnings

#### ELECTRICAL SHOCK HAZARD

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

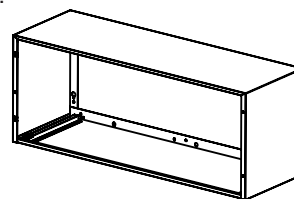
Disconnect all power to unit to avoid possible electrical shock during installation.

Remove any existing foam baffles that are installed on competitive outdoor grille, if present.

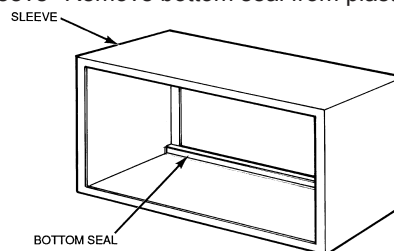


#### GE Sleeves Only

GE Metal Wall Sleeve--GE metal sleeve is interchangeable with GREE wall sleeve.



GE Plastic Sleeve--Remove bottom seal from plastic sleeve.

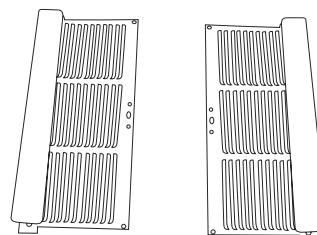


### INSTALLATION OF A GREE OR CARRIER WALL SLEEVE USING A NON-GE GRILLE

This application has become more common due to pre-manufactured windows with built-in grilles or renovations where a GREE or Carrier sleeve is used with an existing non-GE grille.

Use of a GREE or Carrier wall sleeve with a non-GE grille requires installation of an Accessory Baffle Kit, which ensures a good seal between the unit and exterior grille to prevent air recirculation.

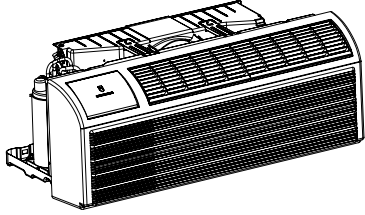
Air recirculation is a large contributor to performance loss and premature damage to major components.



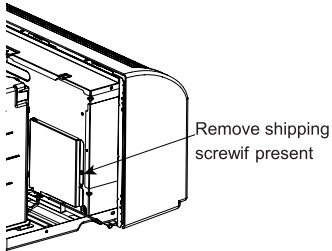
**Note:** contact your units supplier to get the kit and it may be different from the shape showed above.

## INSTALL UNIT INTO WALL SLEEVE

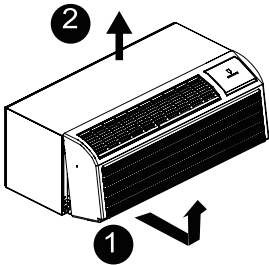
1. Carefully remove shipping tape from the front panel and vent door.



2. Remove shipping screw from the vent door, if present.



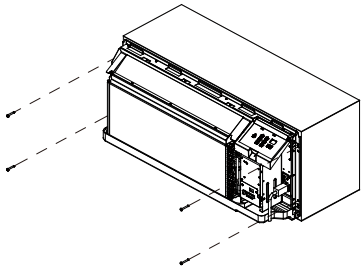
3. Remove front panel.



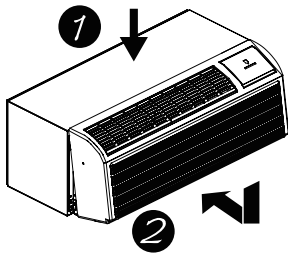
Pull out at the bottom to release it from the tabs (1). Then lift up (2).

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.



6. Reinstall front panel.



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

# 9. Maintenance

## 9.1 Error Code

Series code	Malfunction name	Display method of indoor unit (dial-8 code)					AC status	Possible causes
		Code	Indicator display			Status indicator (PTAC)		
			Operation indicator	Cooling code	Heating code			
1	Room temperature sensor is open/short-circuited	F1					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Room temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
2	Room tube temperature sensor is open/short-circuited	F2					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Tube temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
3	Outdoor ambient temperature sensor is open/short-circuited	F3					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Outdoor ambient temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
4	Outdoor tube temperature sensor is open/short-circuited	F4					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Outdoor tube temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
5	Temperature sensor at the air outlet is open/short-circuited	FJ					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	DAHT sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
6	Refrigerant insufficient protection	F0					Cool/dry: indoor fan operates; compressor and outdoor fan stop operation;	<ol style="list-style-type: none"> <li>1. Heat exchanger is too dirty or the air outlet/air inlet is blocked;</li> <li>2. Compressor operates abnormally. There's abnormal sound or there's refrigerant leakage. Outer case temperature is too high;</li> <li>3. The system is blocked (filth blockage, ice blockage, grease blockage; 4-way valve hasn't been opened completely);</li> <li>4. Pipeline is broken or rusted; refrigerant is leaking.</li> </ol>

Series code	Malfunction name	Display method of indoor unit (dial-8 code)					AC status	Possible causes
		Code	Indicator display			Status indicator (PTAC)		
			Operation indicator	Cooling code	Heating code			
7	Overload detection protection	H3					Cool/dry: indoor fan operates; compressor and outdoor fan stop operation;	<ol style="list-style-type: none"> <li>1. Heat exchanger is too dirty or the air outlet/air inlet is blocked;</li> <li>2. The fan operates abnormally; speed is too low or the fan can't operate;</li> <li>3. Compressor operates abnormally. There's abnormal sound or there's refrigerant leakage. Outer case temperature is too high;</li> <li>4. The system is blocked (filth blockage, ice blockage, grease blockage; 4-way valve hasn't been opened completely);</li> <li>5. Refrigerant is leaking, which cause overheating protection for the compressor.</li> <li>6. The unit is operate under high-temperature and high humidity environment.</li> </ol>
8	Overcurrent protection of compressor	E5					Compressor, electric heating and outdoor fan stop operation; indoor fan operates.	<ol style="list-style-type: none"> <li>1. Compressor is blocked;</li> <li>2. Startup current of compressor is too big;</li> <li>3. Operation voltage of unit is too low;</li> </ol>
9	Compressor and relay of electric heater is stick together (PTAC)	A2					Indoor fan operates and other loads stop operation.	<ol style="list-style-type: none"> <li>1. Relay is stick together;</li> </ol>
10	Current detection for neutral wire and live wire is not balanced	U5					All loads are stopped	<ol style="list-style-type: none"> <li>1. Wires are not connected or inserted correctly;</li> <li>2. Electric heater is short-circuited or not connected tightly;</li> <li>3. There's electric leakage;</li> </ol>
11	Self-checking combination method of electric heating is not correct	A0					All loads are stopped	<ol style="list-style-type: none"> <li>1. Wires are not inserted correctly;</li> <li>2. Electric heater is broken;</li> </ol>
12	Operation current for electric heating is abnormal	A4					All loads are stopped	<ol style="list-style-type: none"> <li>1. Part of Electric heater is broken or short-circuited;</li> <li>3. Electric heater is abnormal;</li> </ol>
13	Circuit of temperature limiter is broken	C7					All loads are stopped	<ol style="list-style-type: none"> <li>1. Temperature limiter is broken;</li> <li>2. Connection wire of load of electric heater is broken.</li> </ol>



Series code	Malfunction name	Display method of indoor unit (dial-8 code)					AC status	Possible causes
		Code	Indicator display			Status indicator (PTAC)		
			Operation indicator	Cooling code	Heating code			
14	Malfunction of jumper cap	C5					All loads stop operation	1. The control board hasn't been installed with the jumper cap; 2. The jumper cap is not connected well; 3. The jumper cap is damaged; 4. Detection circuit of jumper cap of control board is abnormal
15	Low temperature prevention protection	FP					Start up electric heating operation;	1. The ambient temperature is low or the resistance value of temperature sensor is abnormal;
16	Wrong wire connection reminding for the wired controller					Flash 9 times and off 3s circularly	The unit operates according to the signal of wired controller.	1. Wrong wire connection for the wired controller;
17	High temperature prevention protection for the evaporator					Flash 8 times and off 3s circularly	Indoor fan operates; compressor and outdoor fan operates or stop operation according to the tube temperature of evaporator. The electric heating is started up;	1. Normal phenomenon for heating;
18	High temperature prevention protection for outdoor condenser					Flash 6 times and off 3s circularly	Indoor fan operates; compressor stops operation, while outdoor fan operates or stop operation according to the tube temperature of condenser.	1. Normal phenomenon for cooling;
19	Freeze prevention protection for the evaporator					Flash 5 times and off 3s circularly	Indoor fan operates; compressor and outdoor fan stop operation;	1. Normal phenomenon for cooling;
20	Frost prevention (heat pump)					Flash 7 times and off 3s circularly	Indoor fan operates; compressor and outdoor fan stop operation. The electric heating is started up;	1. Normal phenomenon for heating;

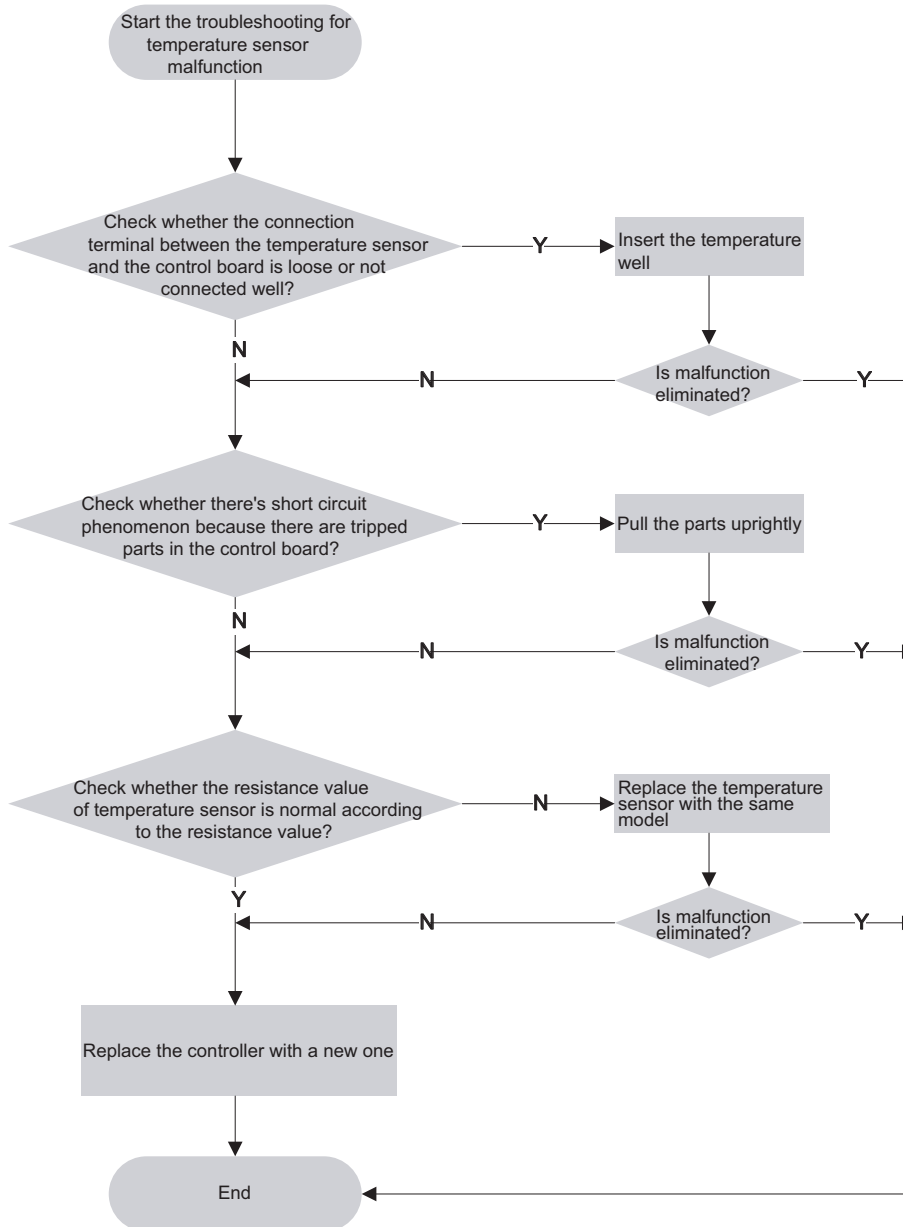
## 9.2 Procedure of Troubleshooting

### 1. Troubleshooting for temperature sensor F1 F2 F3 F4 FJ

Main check points:

(1) connection terminal (2)temperature sensor (3) main board

Detection procedure in details is as below :

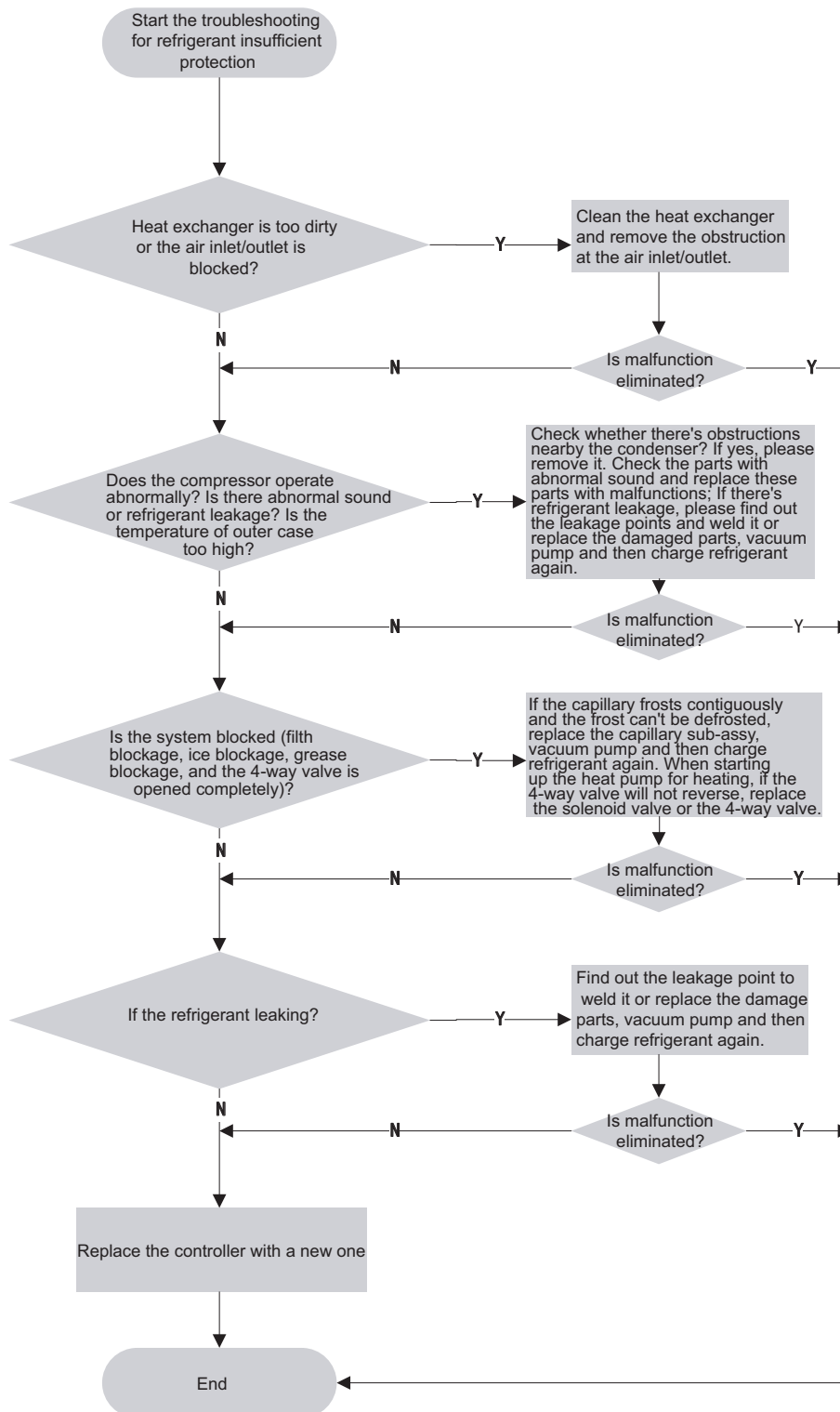


## 2. Troubleshooting for refrigerant insufficient protection F0

Main check points:

(1) compressor (2) refrigerant (3) filth blockage of air inlet/outlet, heat exchanger or system (4) main board

Detection procedure in details is as below :

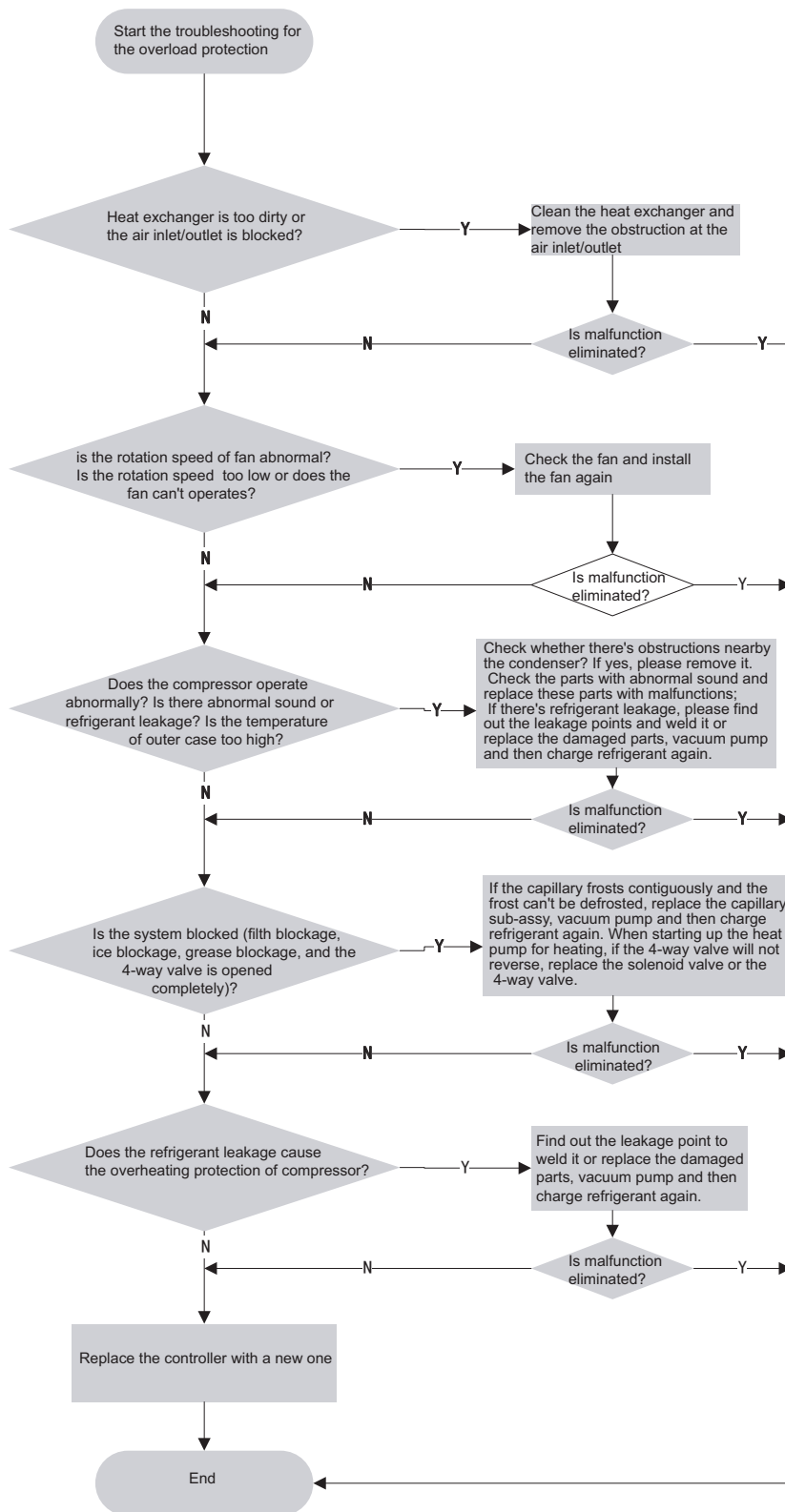


### 3. Troubleshooting for overload protection H3

Main check points:

(1) compressor (2) refrigerant (3) filth blockage for air inlet/outlet, heat exchanger or system (4) fan (5) main board

Detection procedure in details is as below :

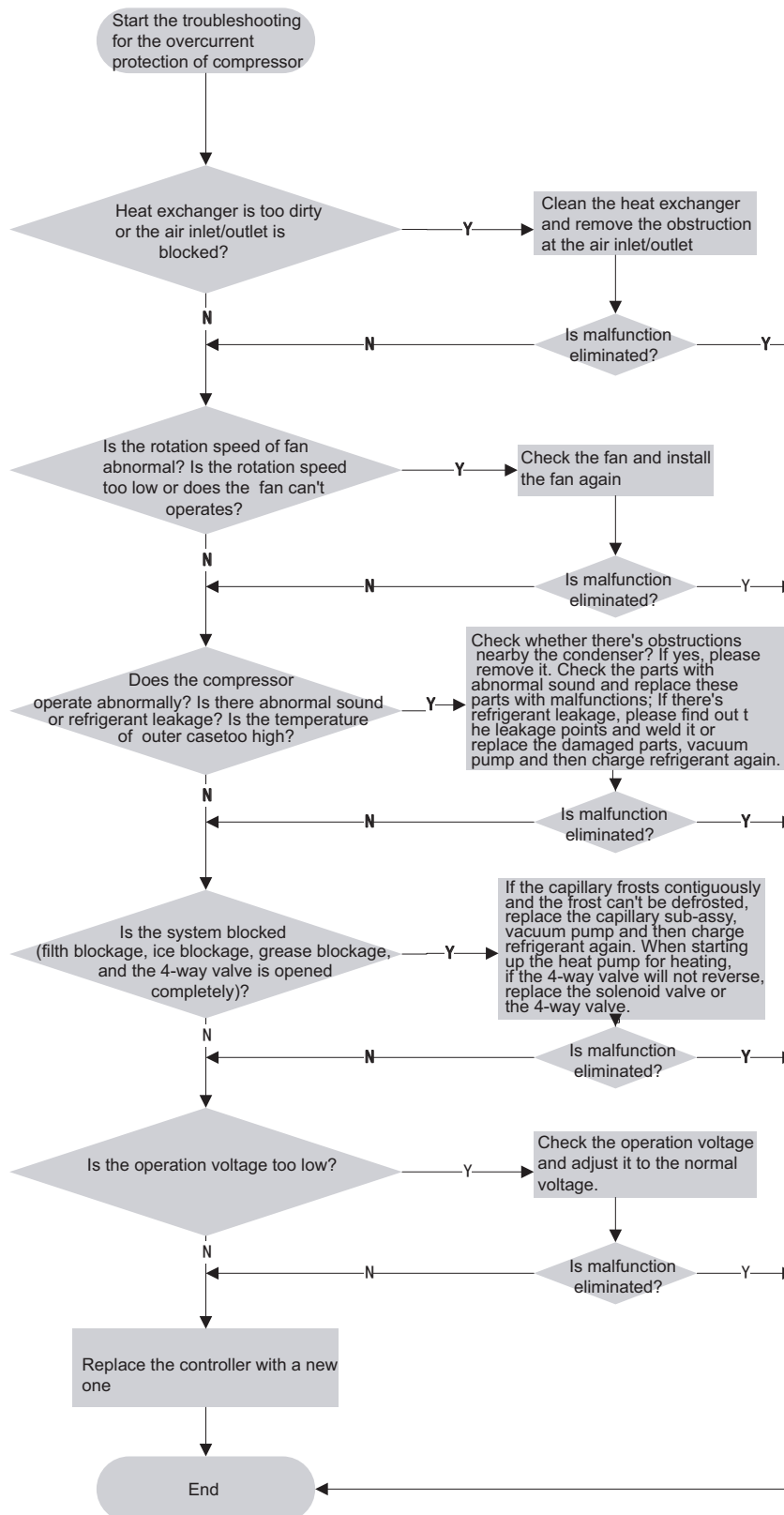


## 4. Troubleshooting for overcurrent protection of compressor E5

Main check points:

(1) compressor (2) refrigerant (3) filth blockage for air inlet/outlet, heat exchanger or system (4) fan (5) main board

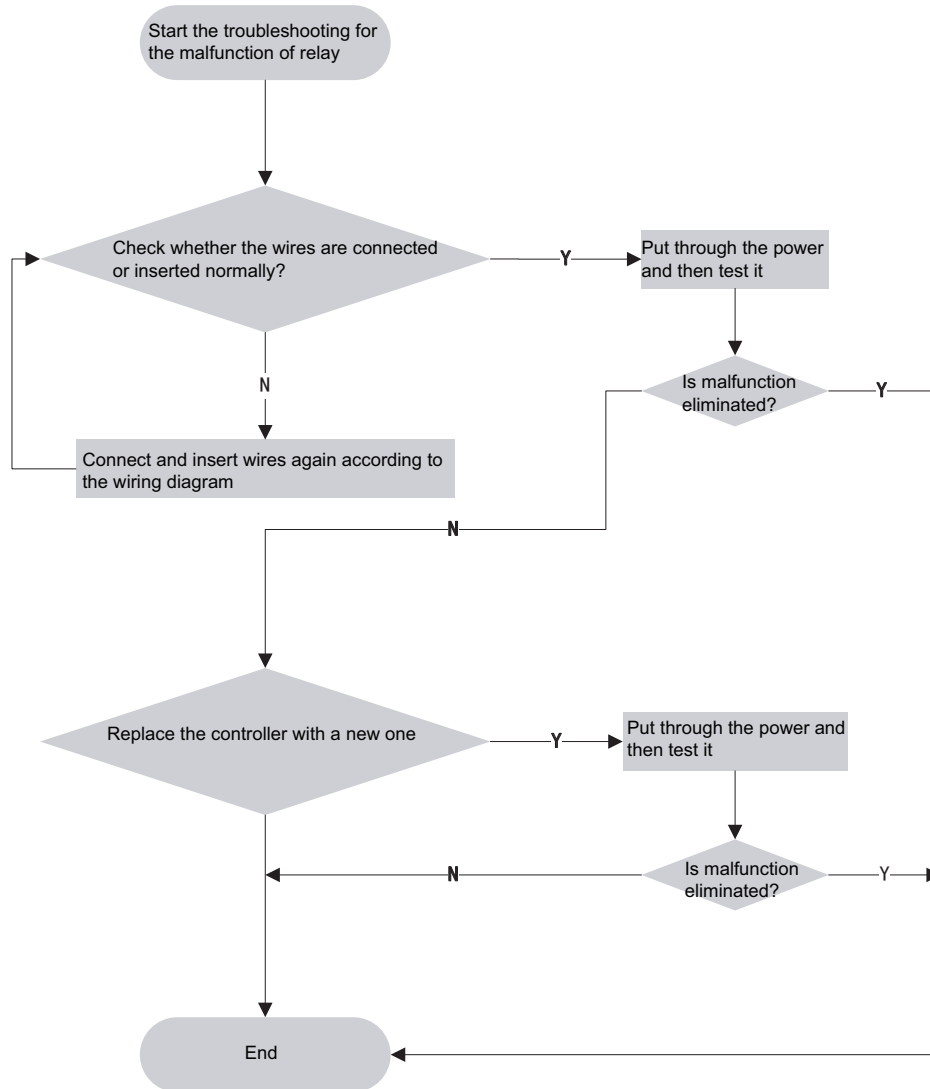
Detection procedure in details is as below :



## 5. Malfunction of replay A2

Main check points:

(1) wiring diagram (2) main board

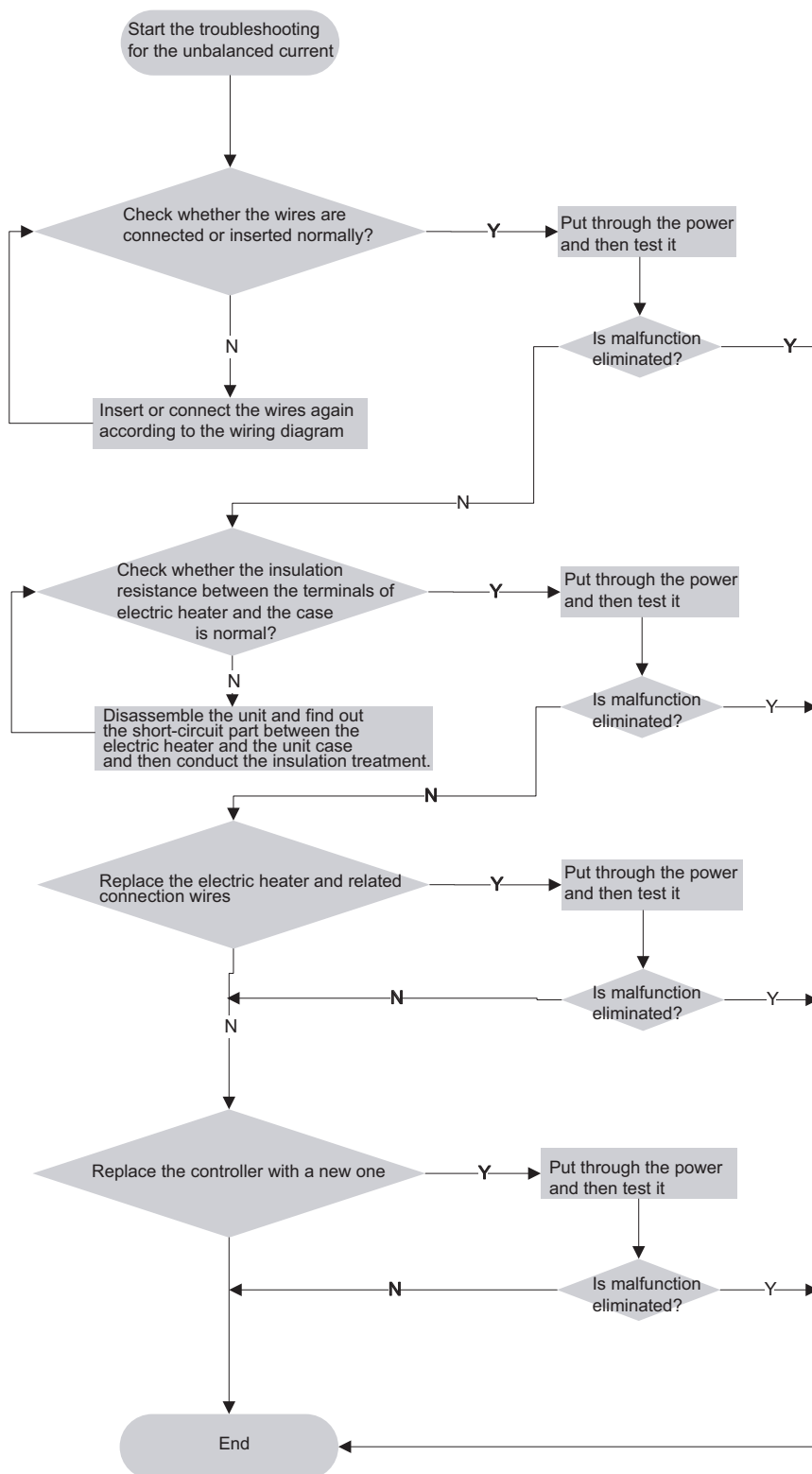


## 6. Malfunction of unbalanced current (PTAC) U5

Main check points:

(1) Wiring diagram (2) Main board

Inspection procedure in details is as below:

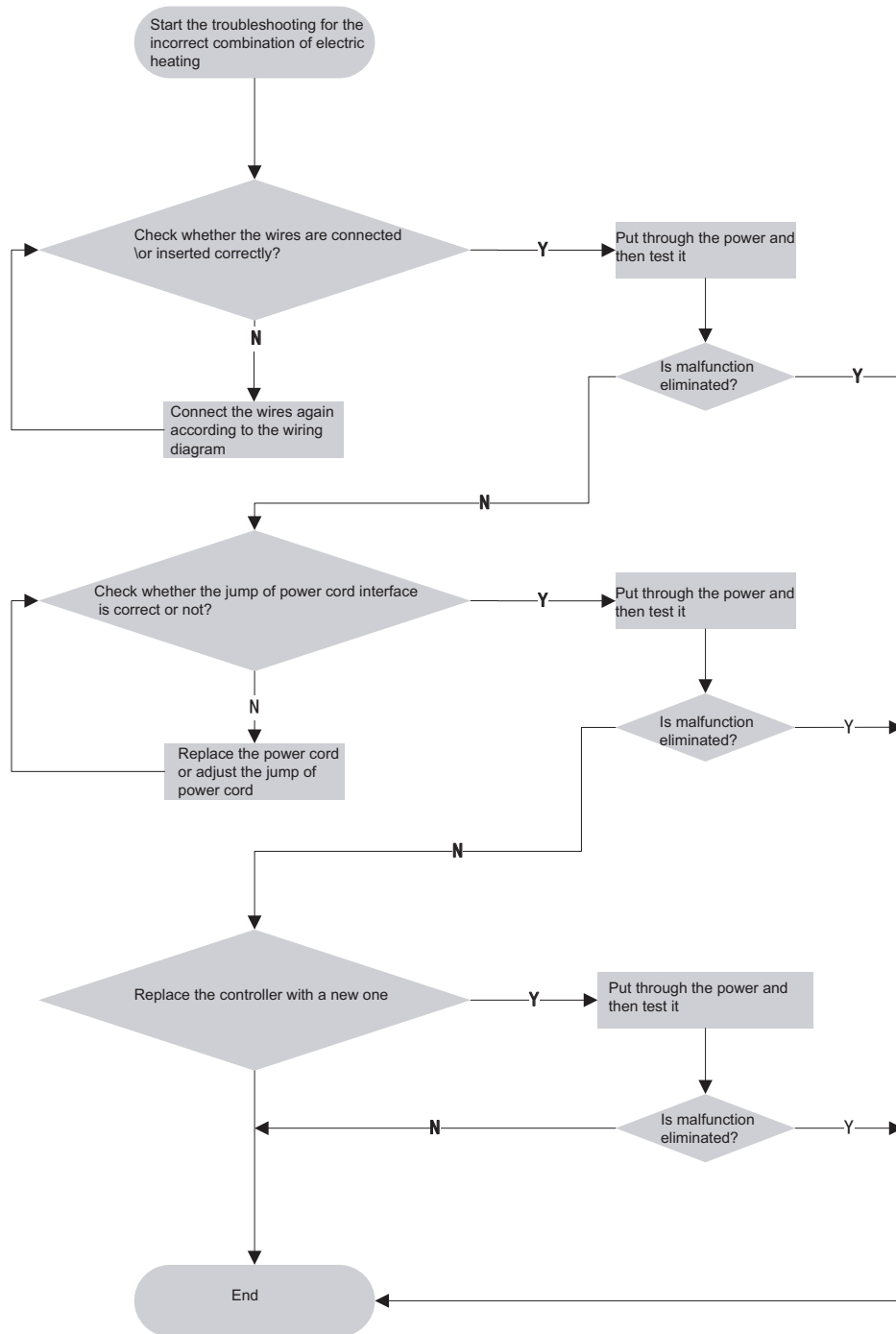


## 7. Combination method of electric heating is not correct A0

Main check points:

(1) wiring diagram (2) main board (3) power cord

Detection procedure in details is as below:



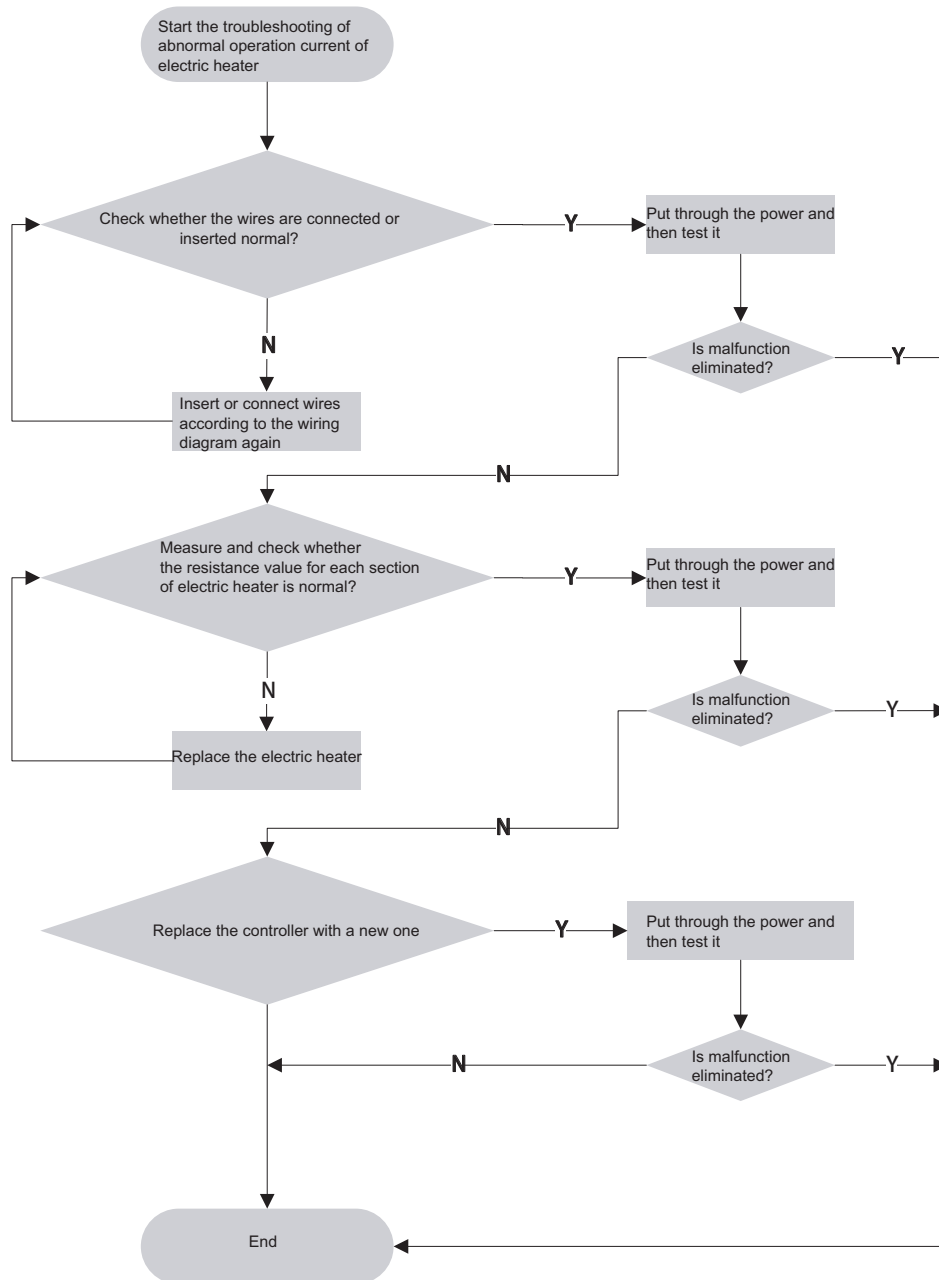


## 8. Operation current of electric heater is abnormal A4

Main check points:

(1) Wiring diagram (2) main board (3) electric heater

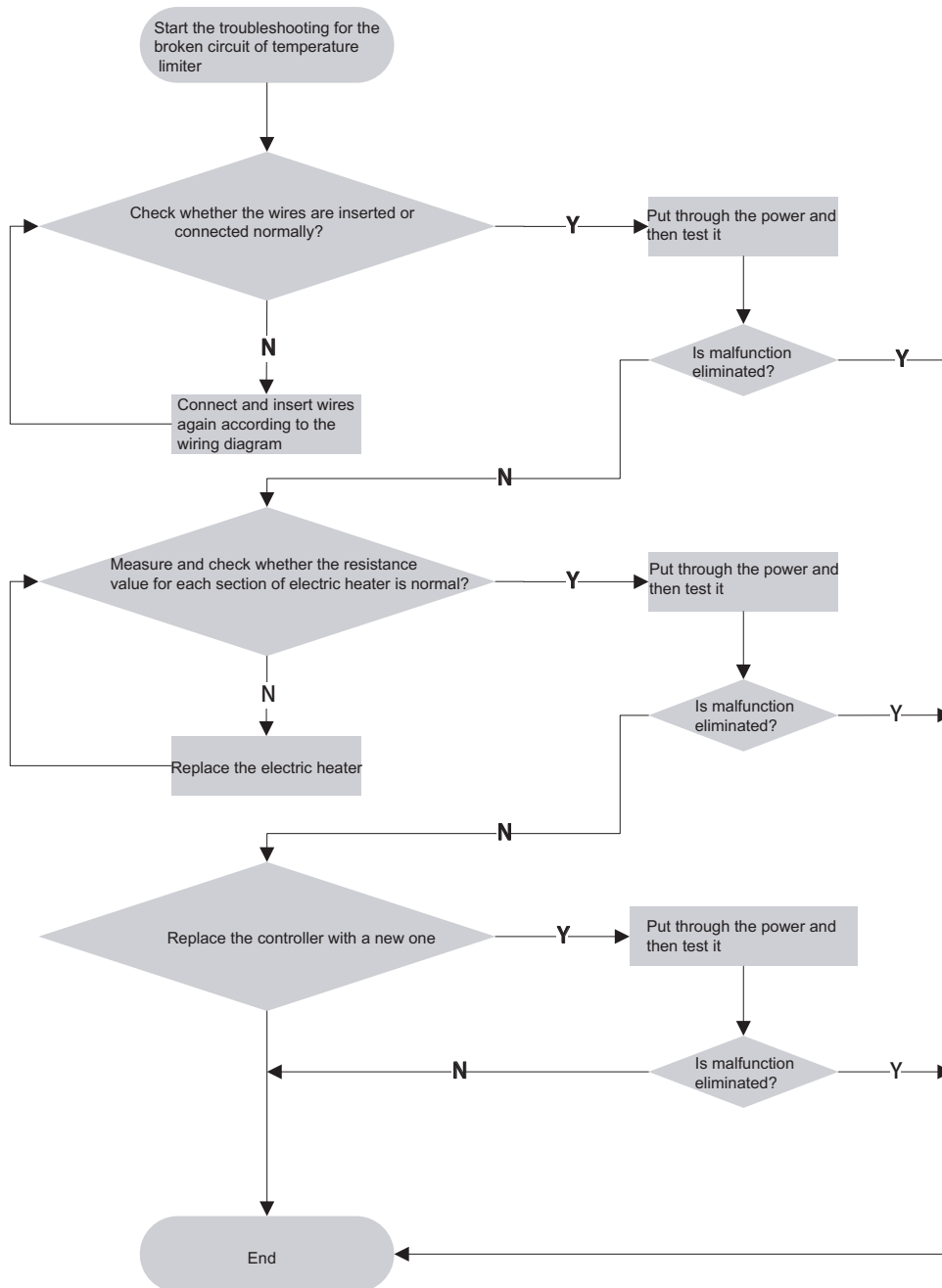
Detection procedure in details is as below:



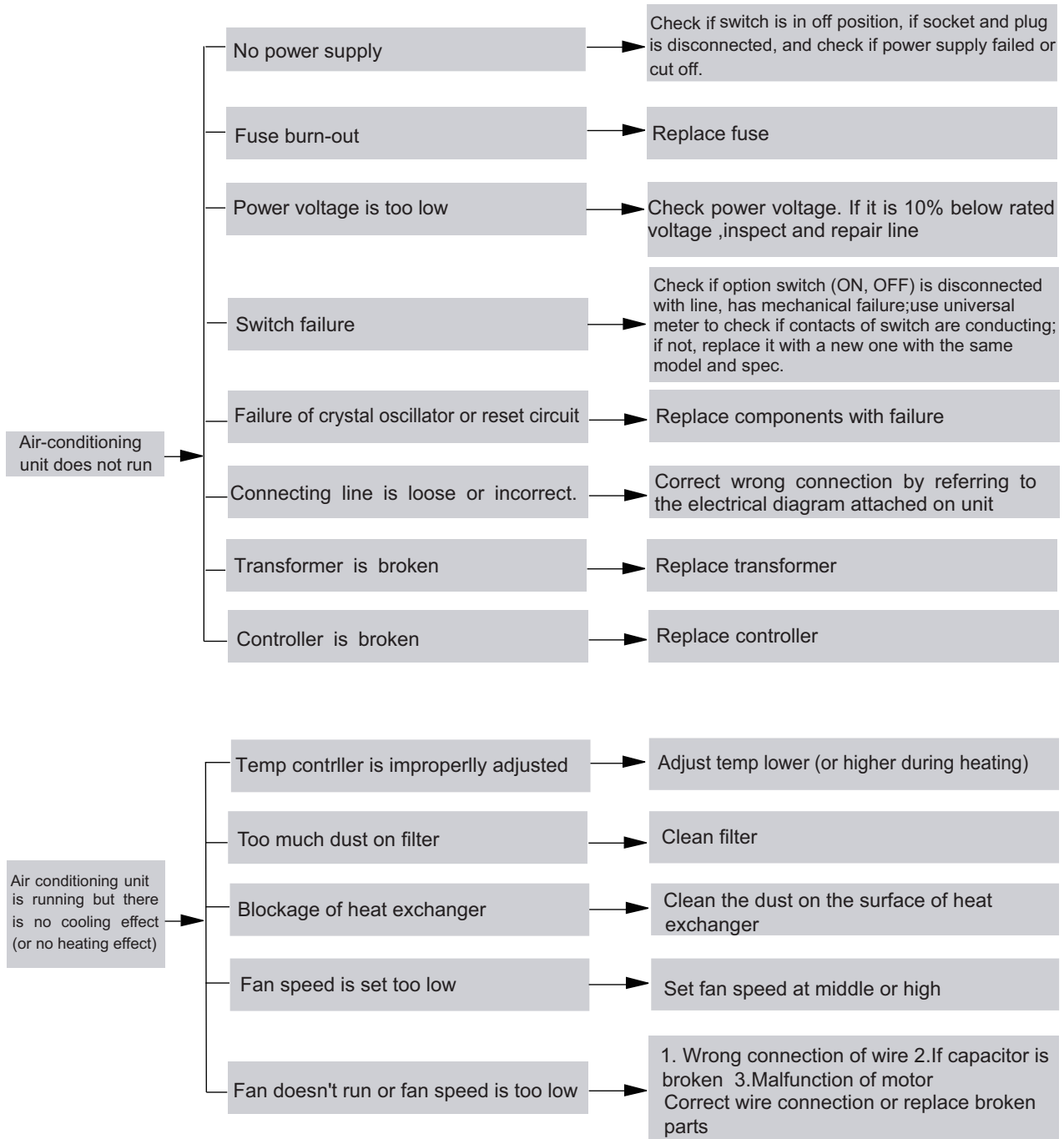
## 9. Circuit of temperature limiter is broken

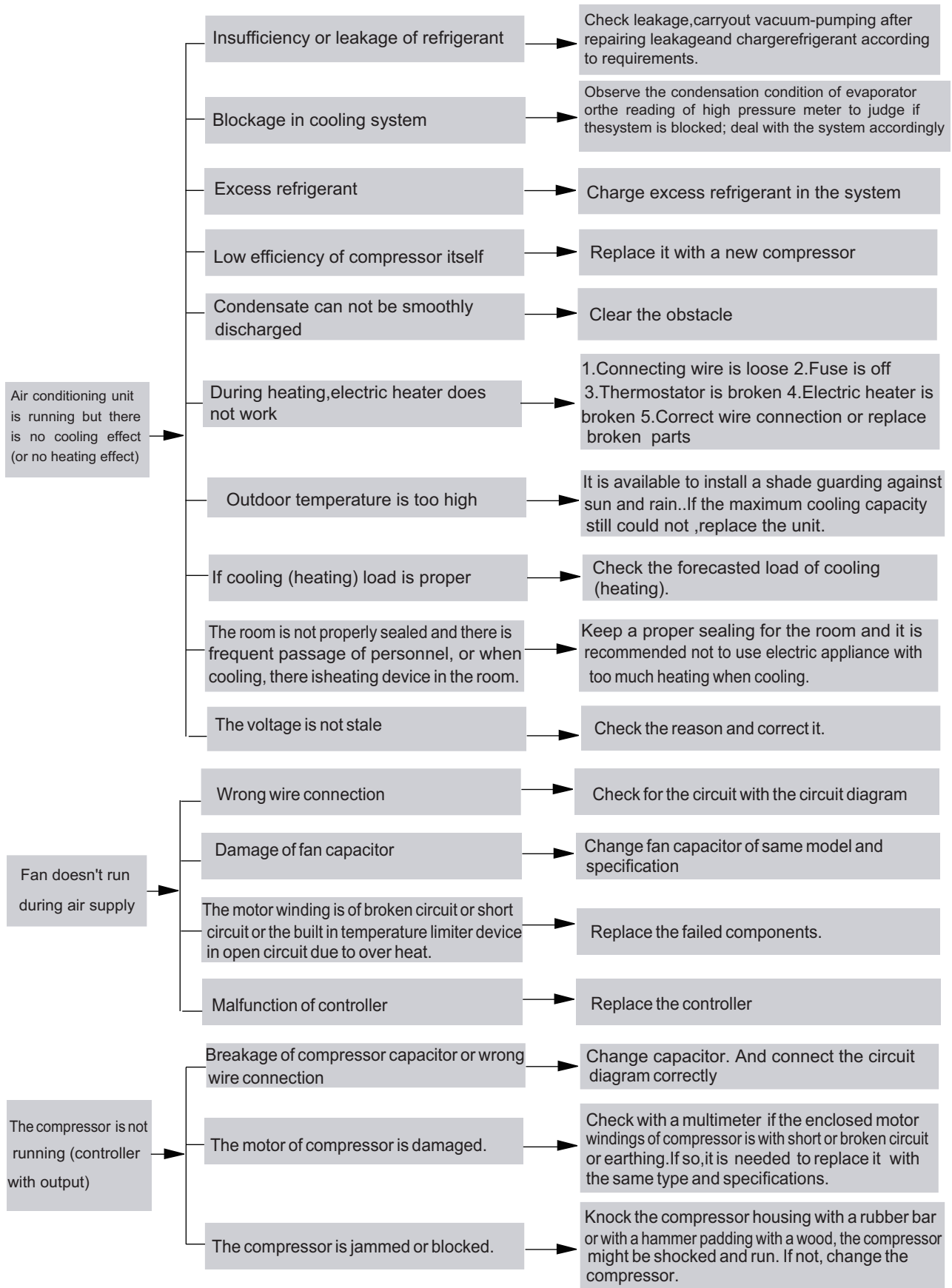
Main check points:

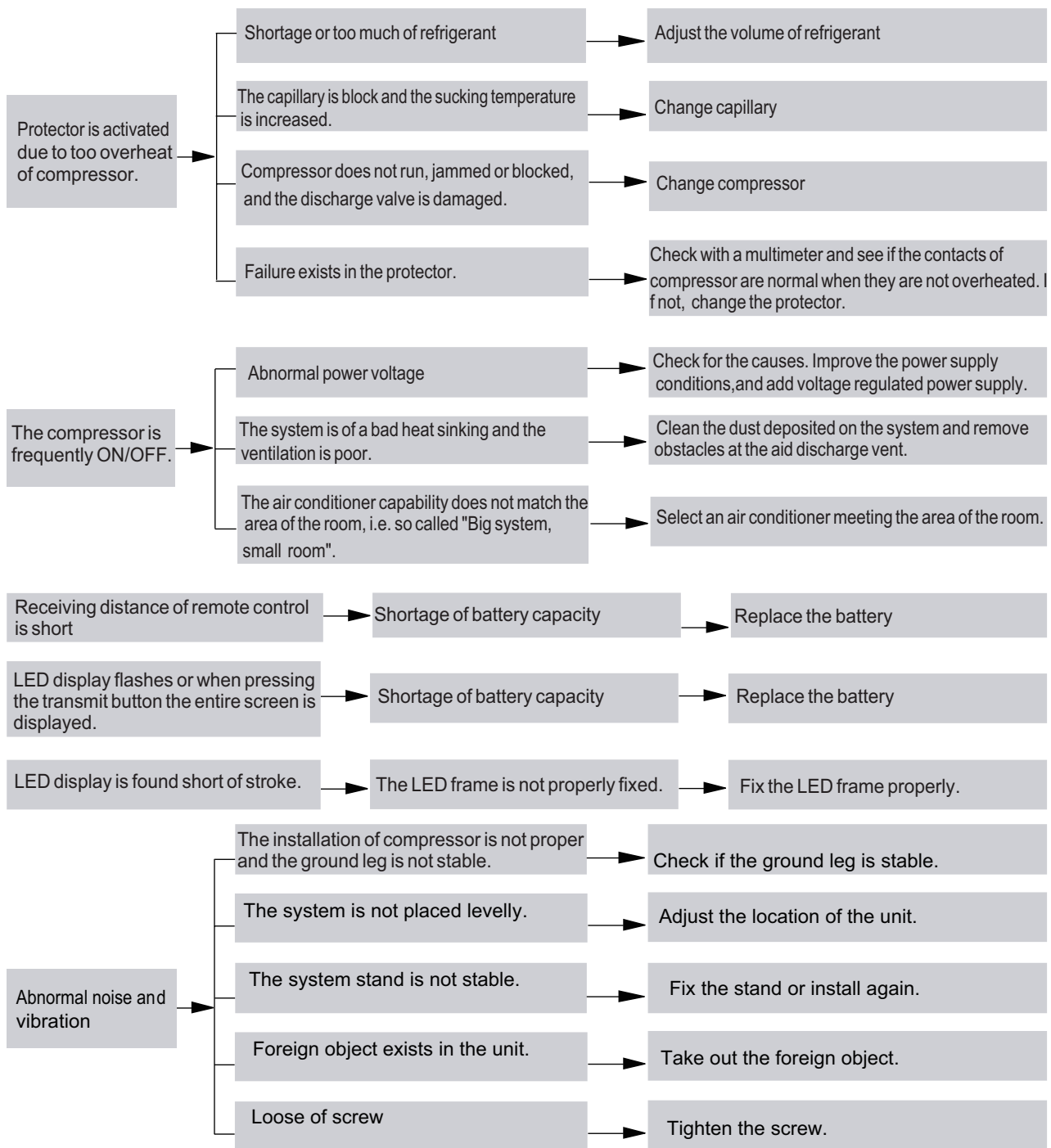
(1) wiring diagram (2) main board (3) electric heater



## 9.3 Malfunction Analysis







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

## 9.4 Troubleshooting for Normal Malfunction

### 1. Air Conditioner Can't be Started Up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isn't bright and the buzzer Can't give out sound	Confirm whether its due to power failure. If yes, wait for power recovery. If not, check power supply circuit and make sure the power plug is connected well.
Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals	Under normal power supply circumstances, operation indicator isn't bright after energization	Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly
Electric leakage for air conditioner	After energization, room circuit breaker trips off at once	Make sure the air conditioner is grounded reliably Make sure wires of air conditioner is connected correctly Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged; if yes, place the power cord.
Model selection for air switch is improper	After energization, air switch trips off	Select proper air switch
Malfunction of remote controller	After energization, operation indicator is bright, while no display on remote controller or buttons have no action.	Replace batteries for remote controller Repair or replace remote controller

### 2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small wind blow	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see its blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation position is proper according to installation requirement for air conditioner	Adjust the installation position, and install the rainproof and sunproof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Units pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
Malfunction of 4-way valve	Blow cold wind during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unitt pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked	Replace the capillary
Flow volume of valve is insufficient	The pressure of valves is much lower than that stated in the specification	Open the valve completely
Malfunction of horizontal louver	Horizontal louver Can't swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor Can't operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor Can't operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor Can't operate	Refer to point 5 of maintenance method for details

### 3. Horizontal Louver Can't Swing

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Stepping motor is damaged	Stepping motor Can't operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver Can't operate	Replace the main board with the same model

#### 4. ODU Fan Motor Can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of the ODU fan motor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the capacity of fan
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Motor of outdoor unit is damaged	When unit is on, cooling/heating performance is bad and ODU compressor generates a lot of noise and heat.	Change compressor oil and refrigerant. If no better, replace the compressor with a new one

#### 5. Compressor Can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and its 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor Can't operate	Repair or replace compressor

#### 6. Air Conditioner is Leaking

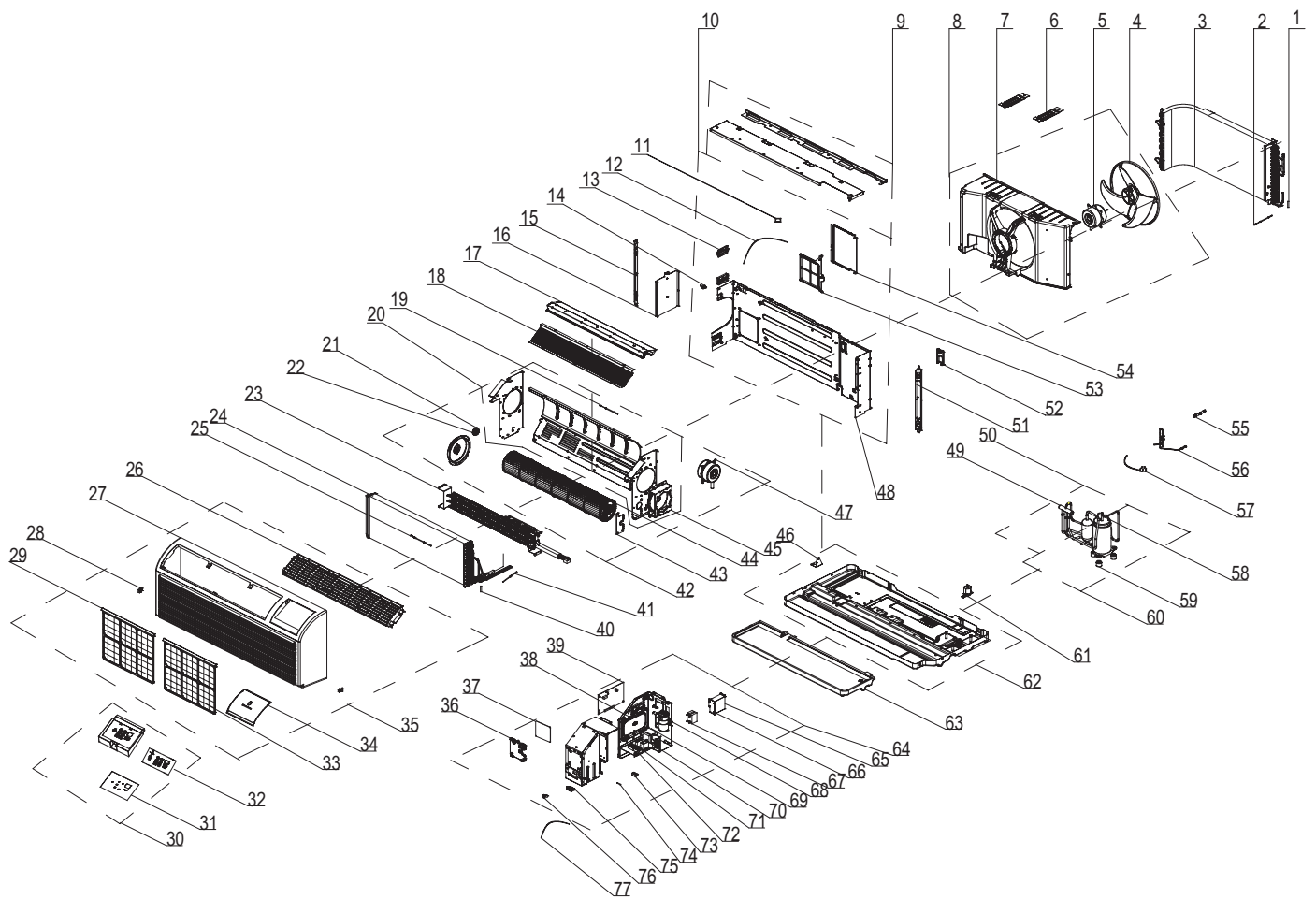
Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe connection place of indoor unit	Wrap it again and bundle it tightly

#### 7. Abnormal Sound and Vibration

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and theres abnormal sound	Theres the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, theres abnormal sound due to flow of refrigerant inside air conditioner	Water-running sound can be heard	Normal phenomenon. Abnormal sound will disappear after a few minutes.
Foreign objects inside the indoor unit or therere parts touching together inside the indoor unit	Theres abnormal sound fro indoor unit	Remove foreign objects. Adjust all parts position of indoor unit, tighten screws and stick damping plaster between connected parts
Foreign objects inside the outdoor unit or therere parts touching together inside the outdoor unit	Theres abnormal sound fro outdoor unit	Remove foreign objects. Adjust all parts position of outdoor unit, tighten screws and stick damping plaster between connected parts
Short circuit inside the magnetic coil	During heating, the way valve has abnormal electromagnetic sound	Replace magnetic coil
Abnormal shake of compressor	Outdoor unit gives out abnormal sound	Adjust the support foot mat of compressor, tighten the bolts
Abnormal sound inside the compressor	Abnormal sound inside the compressor	If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances.

# 10. Exploded View and Parts List

Cooling + Heat Pump + Auxiliary Electric Heater models



The component is only for reference; please refer to the actual product.

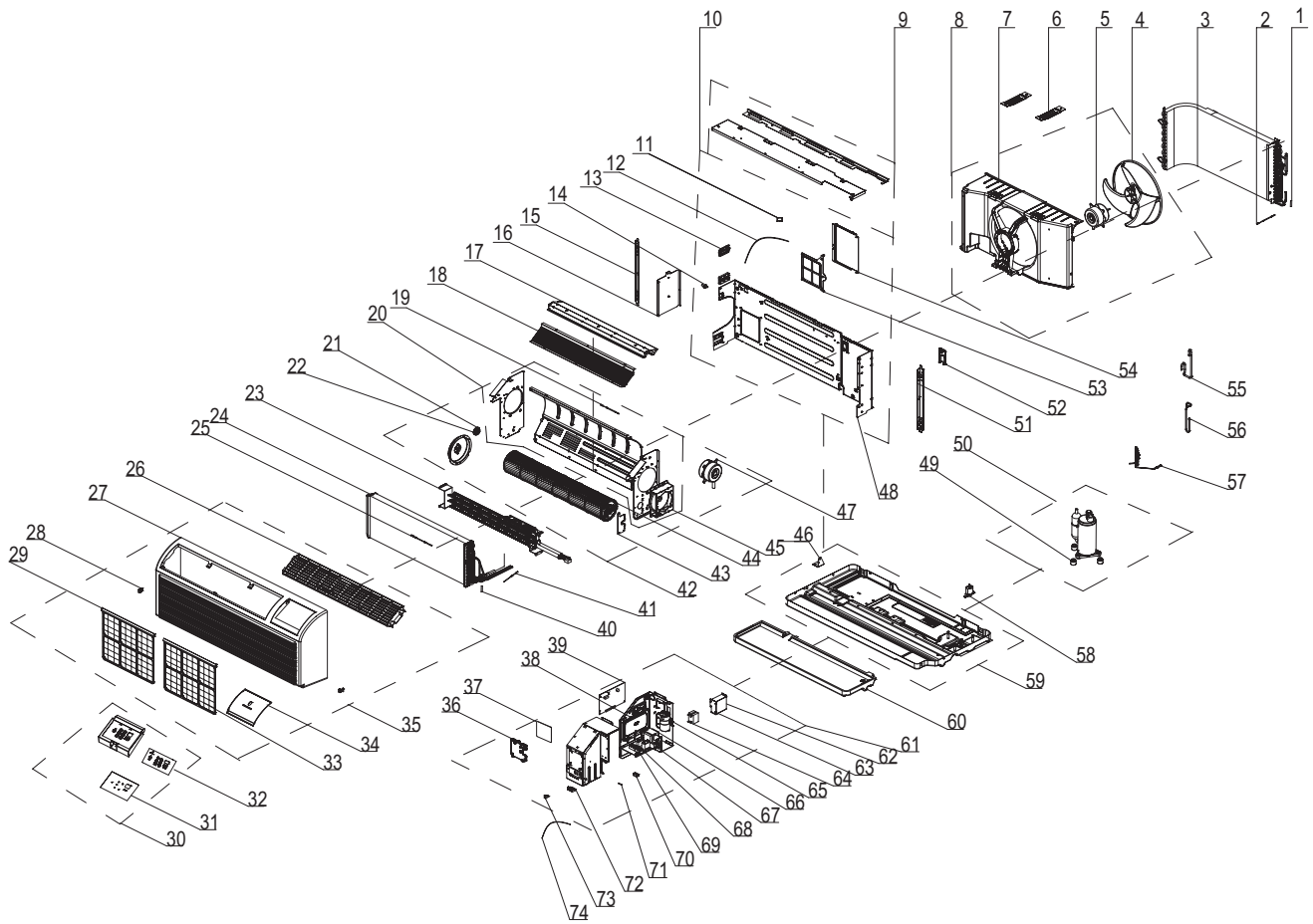


NO.	Description
1	Temp Sensor Sleeving
2	Temperature Sensor
3	Condenser Assy
4	Axial Flow Fan
5	Fan Motor
6	Connection Board
7	Diversion Circle
8	Flow Guide Loop
9	Top Cover Sub-Assy
10	Clapboard Sub-Assy
11	Cable Clamp
12	Door Thread
13	Hand Lever
14	Hand Lever
15	Outer Support Sub-assy(Left)
16	Baffle Plate
17	Helicoid Tongue
18	Rear Grill
19	Temperature Sensor
20	Air Duct Sub-assy
21	Bearing Holder Sub-assy
22	Bearing Holder
23	Electric Heater
24	Evaporator Assy
25	Ambient Temperature Sensor
26	Air Outlet
27	Front Panel
28	Front Panel Clip
29	Filter Sub-Assy
30	LCD Cover Sub-assy
31	Membrane
32	Display Board
33	Filter
34	Remote Control Cover
35	Front Panel Assy
36	Supporting Board
37	Main Board 1
38	Supporting Board
39	Main Board 2
40	Temp Sensor Sleeving

NO.	Description
41	Temperature Sensor
42	Air Flue Assy
43	Heater Wiring Block Board
44	Cross Flow Fan
45	Motor Support Sub-Assy
46	Retaining Plate of Condenser
47	Fan Motor
48	Clapboard
49	4-Way Valve
50	4-Way Valve Assy
51	Outer Support Sub-assy(Right)
52	Cable Cross Plate
53	Filter Sub-Assy
54	Air Inlet Door
55	One Way Valve
56	Capillary Sub-assy
57	Magnet Coil
58	Compressor Overload Protector(Internal)
59	Compressor Gasket
60	Compressor and Fittings
61	Drainage Valve
62	Chassis Sub-assy
63	Foam (Water Tray)
64	Electric Box Assy
65	Junction box
66	Junction lid
67	Relay
68	Capacitor CBB65
69	Transformer
70	Capacitor CBB61S
71	Capacitor CBB61
72	Terminal Board
73	Radiator
74	Chassis Sub-assy
75	Wiring Terminal
76	Wiring Terminal
77	Power Cord

Some models may not contain some parts, please refer to the actual product.

## Cooling + Electric Heater models



The component is only for reference; please refer to the actual product.

NO.	Description
1	Temp Sensor Sleaving
2	Temperature Sensor
3	Condenser Assy
4	Axial Flow Fan
5	Fan Motor
6	Connection Board
7	Diversion Circle
8	Flow Guide Loop
9	Top Cover Sub-Assy
10	Clapboard Sub-Assy
11	Cable Clamp
12	Door Thread
13	Hand Lever
14	Hand Lever
15	Outer Support Sub-assy(Left)
16	Baffle Plate
17	Helicoid Tongue
18	Rear Grill
19	Temperature Sensor
20	Air Duct Sub-assy
21	Bearing Holder Sub-assy
22	Bearing Holder
23	Electric Heater
24	Evaporator Assy
25	Ambient Temperature Sensor
26	Air Outlet
27	Front Panel
28	Front Panel Clip
29	Filter Sub-Assy
30	LCD Cover Sub-assy
31	Membrane
32	Display Board
33	Filter
34	Remote Control Cover
35	Front Panel Assy
36	Supporting Board
37	Main Board 1
38	Supporting Board
39	Main Board 2
40	Temp Sensor Sleaving

NO.	Description
41	Temperature Sensor
42	Air Flue Assy
43	Heater Wiring Block Board
44	Cross Flow Fan
45	Motor Support Sub-Assy
46	Retaining Plate of Condenser
47	Fan Motor
48	Clapboard
49	Compressor and Fittings
50	Compressor Gasket
51	Outer Support Sub-assy(Right)
52	Cable Cross Plate
53	Filter Sub-Assy
54	Air Inlet Door
55	Inhalation Tube
56	Discharge Tube 1
57	Capillary Sub-assy
58	Drainage Valve
59	Chassis Sub-assy
60	Foam (Water Tray)
61	Electric Box Assy
62	Junction box
63	Junction lid
64	Relay
65	Capacitor CBB65
66	Transformer
67	Capacitor CBB61S
68	Capacitor CBB61
69	Terminal Board
70	Radiator
71	Fuse
72	Wiring Terminal
73	Wiring Terminal
74	Pwer cord (LCDI)

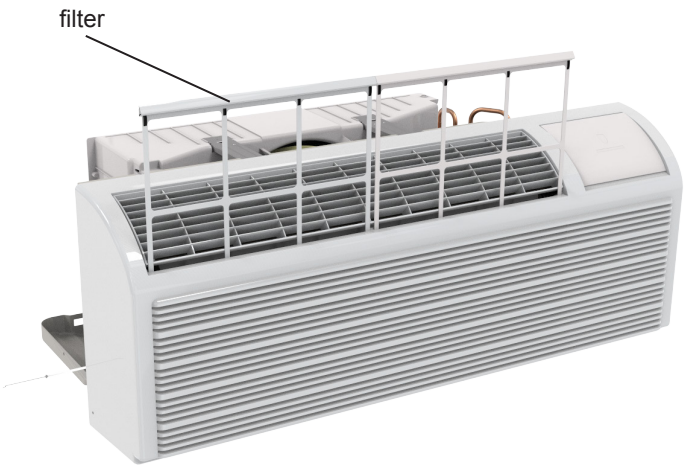
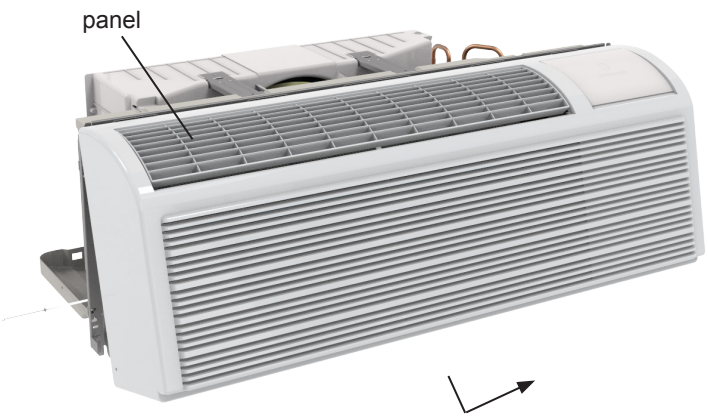
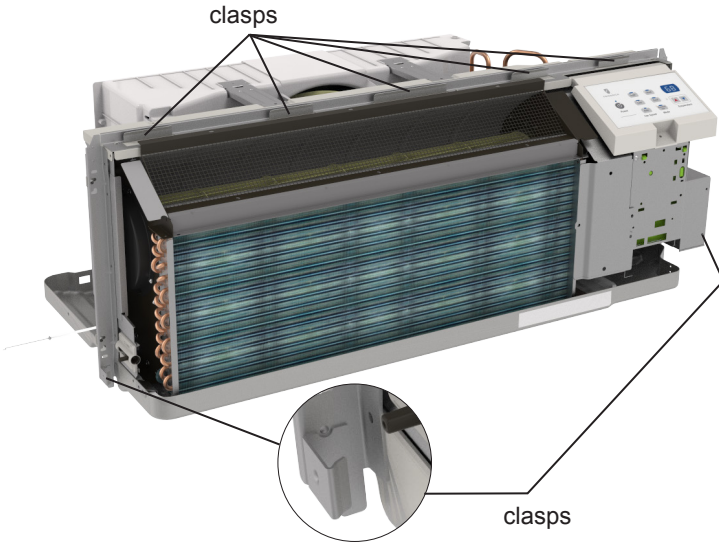
Some models may not contain some parts, please refer to the actual product.

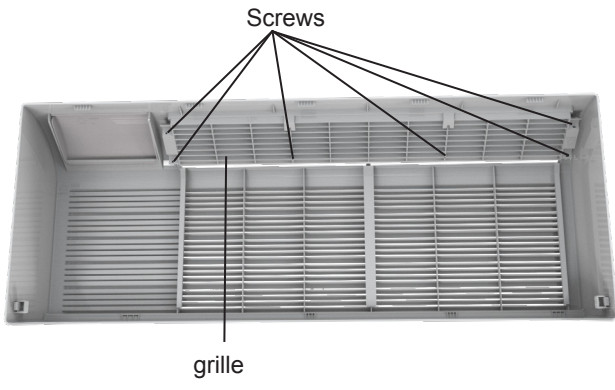
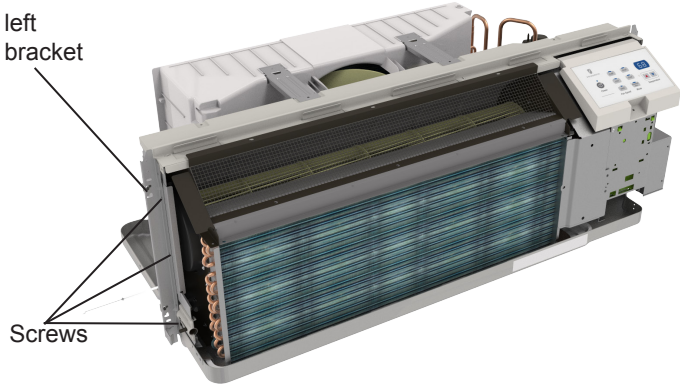
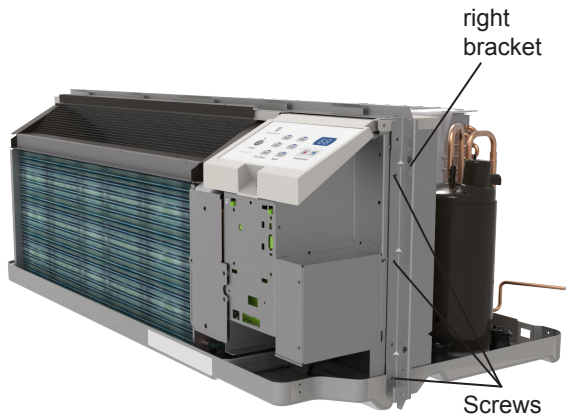
# 11. Removal Procedure

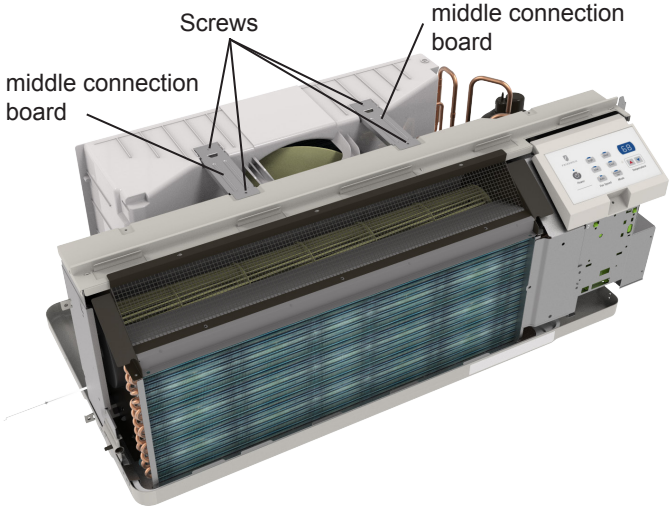
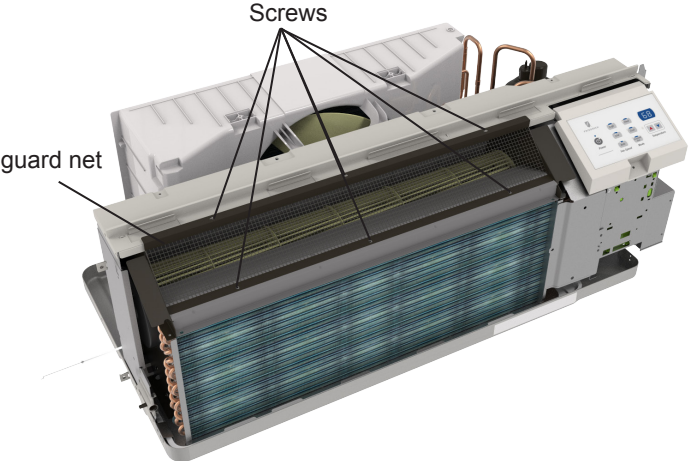
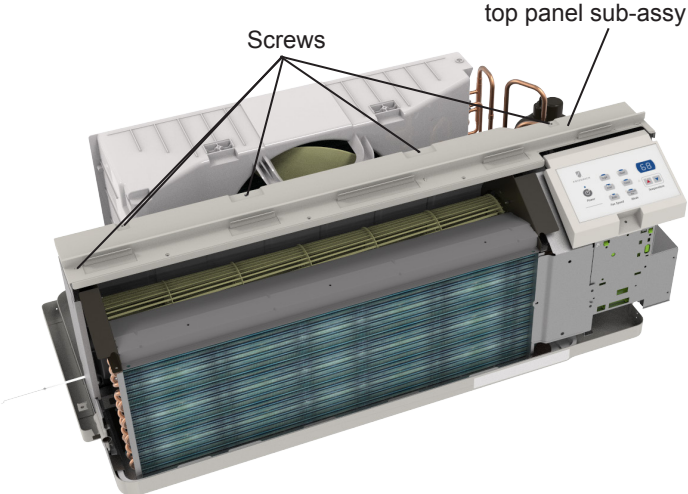
Note: Take heat pump+electric heating unit as example for the disassembly; cooling only+electric heating is a little different



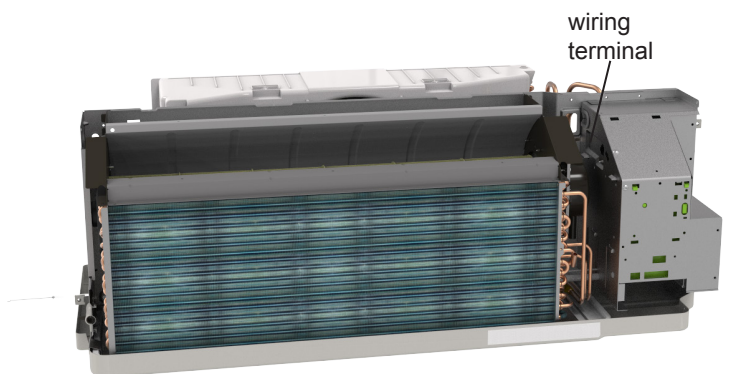
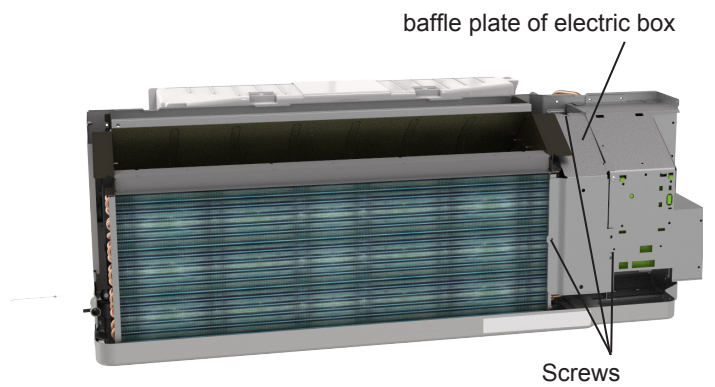
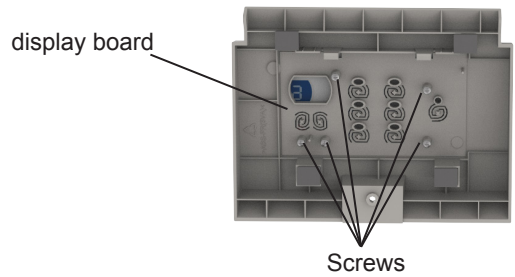
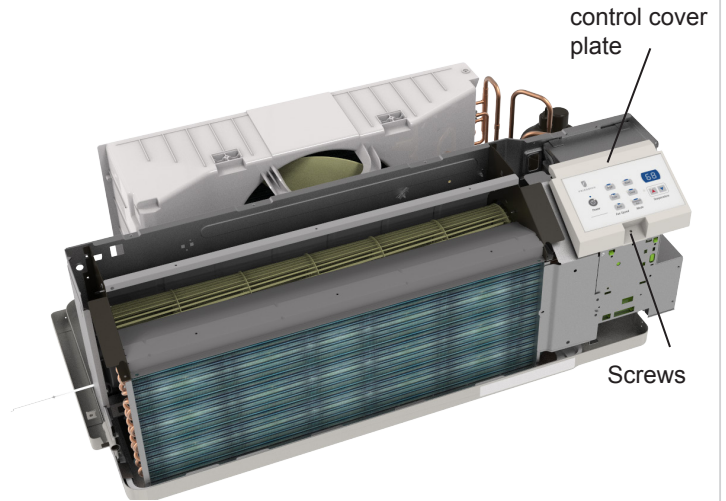
**Caution:** pull out the power, discharge the refrigerant completely before removal.

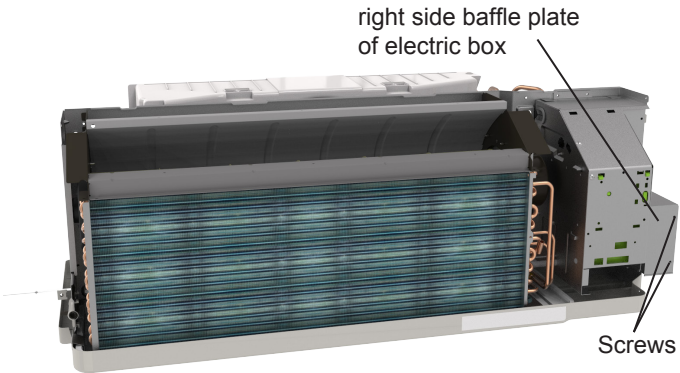
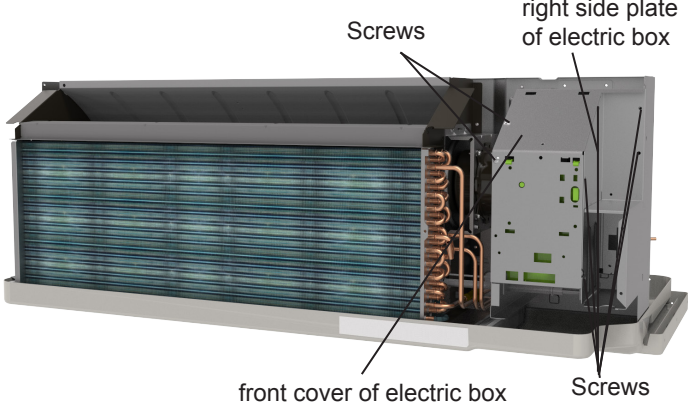
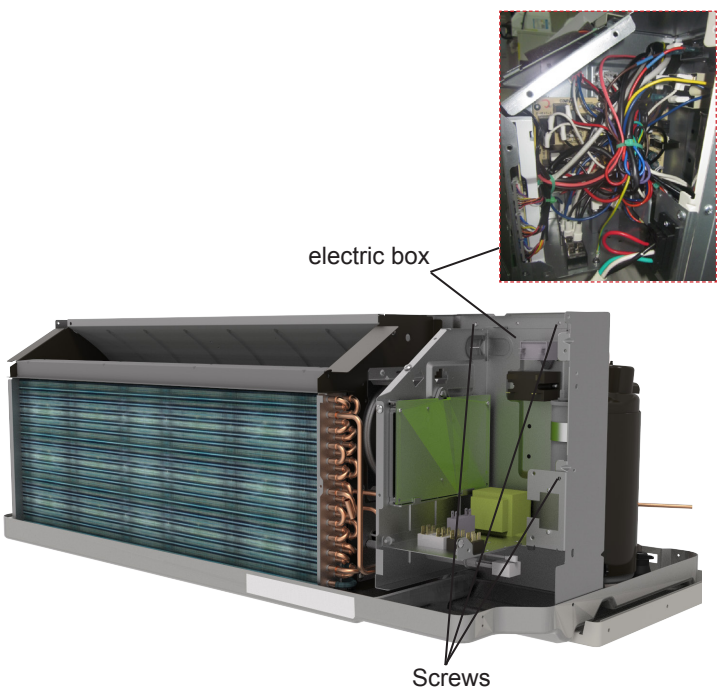
Step	Procedure
<b>1. Remove panel</b>	<p>Hold front end of filter with hand and then pull the filter upwards to remove it.</p>  <p>Drag the lower part of panel, pull it outwards and upwards to left separate from clasps, and then remove the front panel.</p>  

Step	Procedure	
	<p>Remove 6 screws fixing the grille and then remove the grille.</p>	
<b>2.Remove left and right brackets and guard board</b>		
	<p>Remove 3 screws fixing left bracket and then remove the left bracket.</p>	
	<p>Remove 3 screws fixing right bracket and then remove the right bracket.</p>	

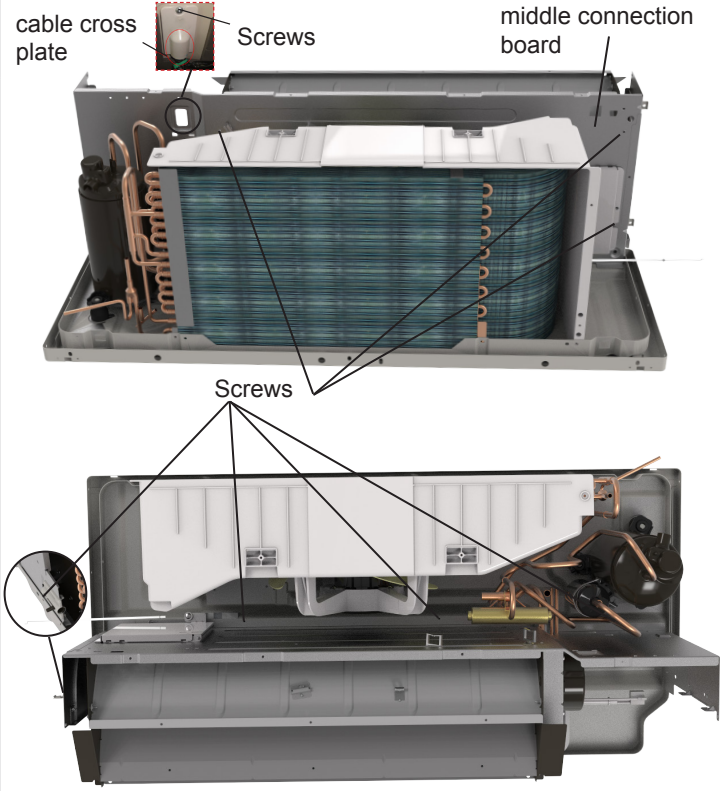
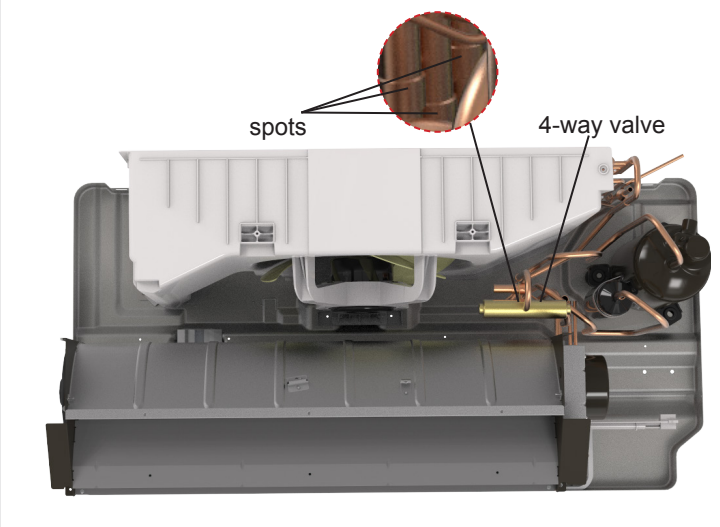
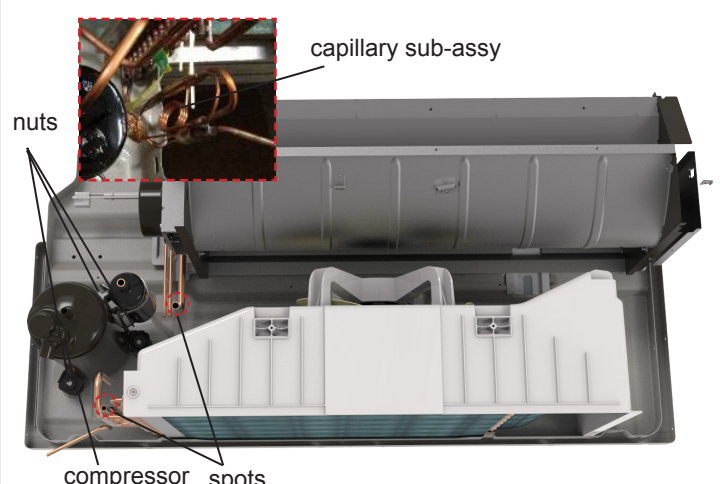
Step	Procedure
<p><b>3.Remove middle connection board</b></p>	<p>Remove 4 screws fixing the middle connection board and then remove the middle connection board.</p> 
<p><b>4.Remove guard net</b></p>	<p>Remove 6 screws fixing the guard net and then remove the guard net.</p> 
<p><b>5.Remove top panel sub-assy</b></p>	<p>Remove 5 screws fixing the top panel subassy and then remove the top panel subassy.</p> 

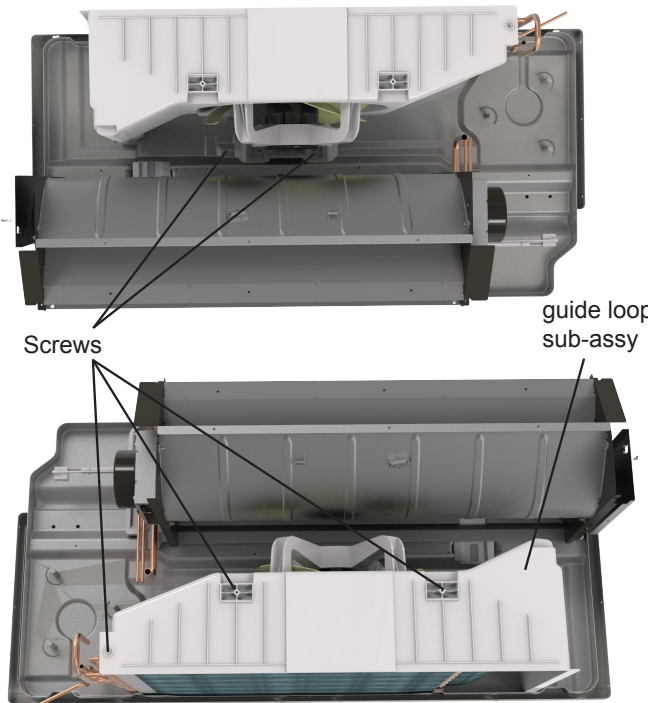
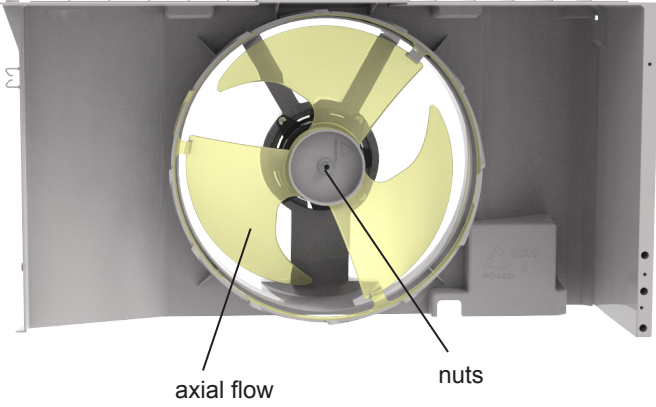
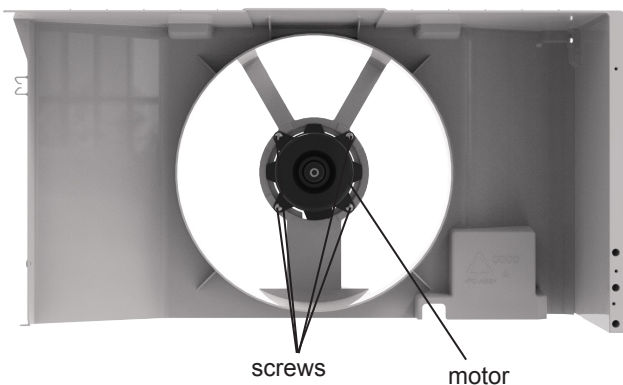
Step	Procedure
<b>6.Remove electric box</b>	
	<p>Remove one screw fixing the control cover plate, pull out the wiring terminal connecting control cover plate and electric box and then remove the control cover plate.</p>
	<p>Remove 5 screws fixing display board and then remove the display board.</p>
	<p>Remove screws fixing baffle plate of electric box and then remove the baffle plate of electric box.</p>
	<p>Pull out the motor wiring terminal.</p>



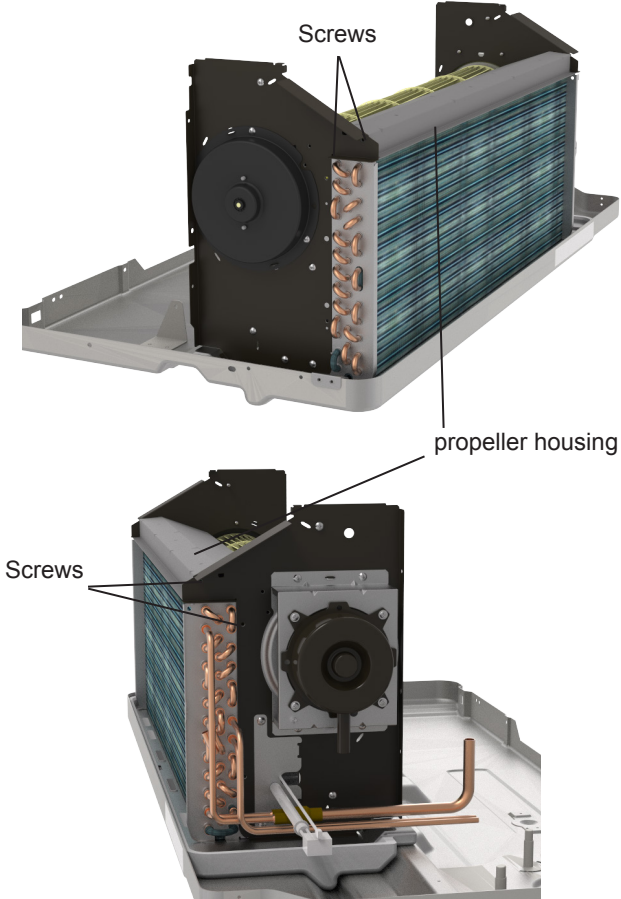
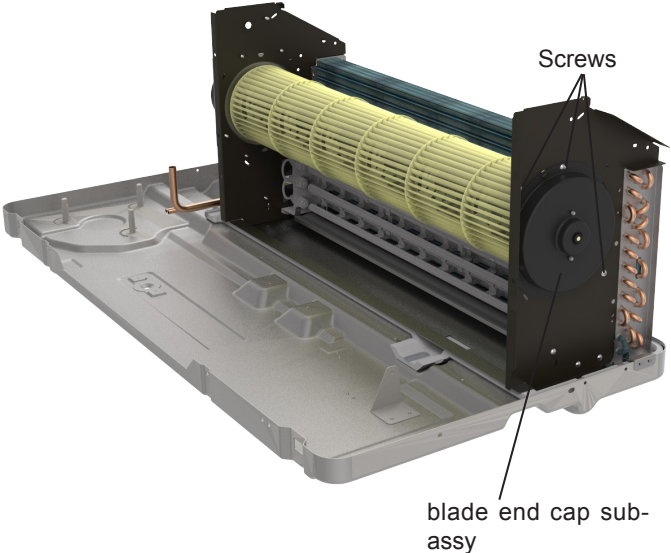
Step	Procedure
	<p>Remove screws fixing right side baffle plate of electric box and then remove the right side baffle plate of electric box.</p> 
	<p>(1) Remove screws fixing right side plate of electric box and then remove the right side plate of electric box.  (2) Remove 2 screws fixing front cover of electric box and then remove the front cover of electric box.</p> 
	<p>Remove screws fixing electric box and then remove the electric box.</p> 

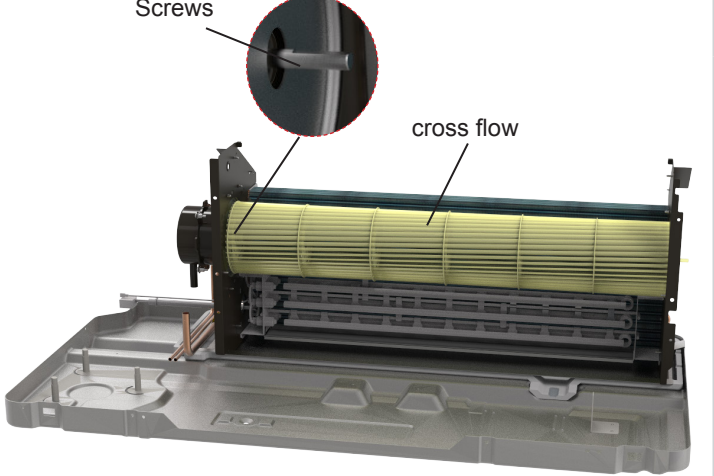
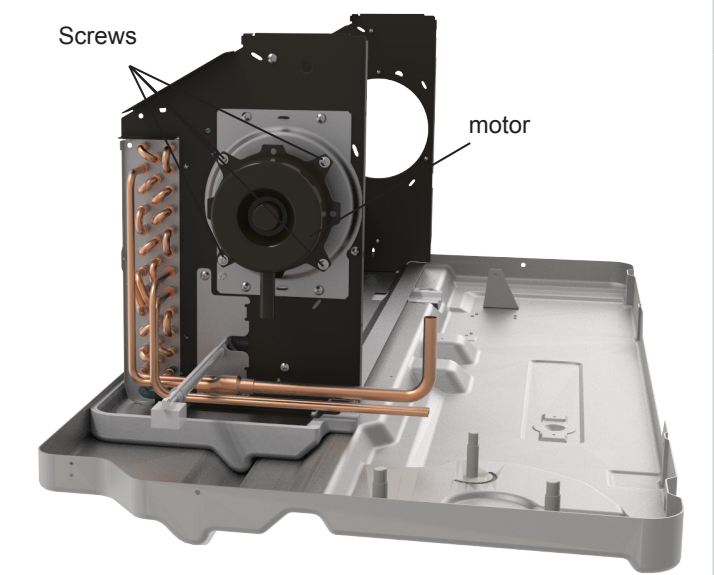
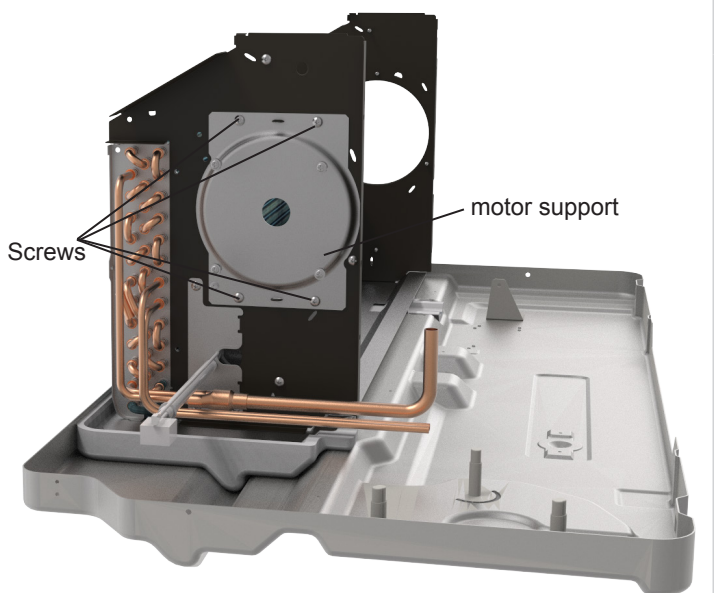


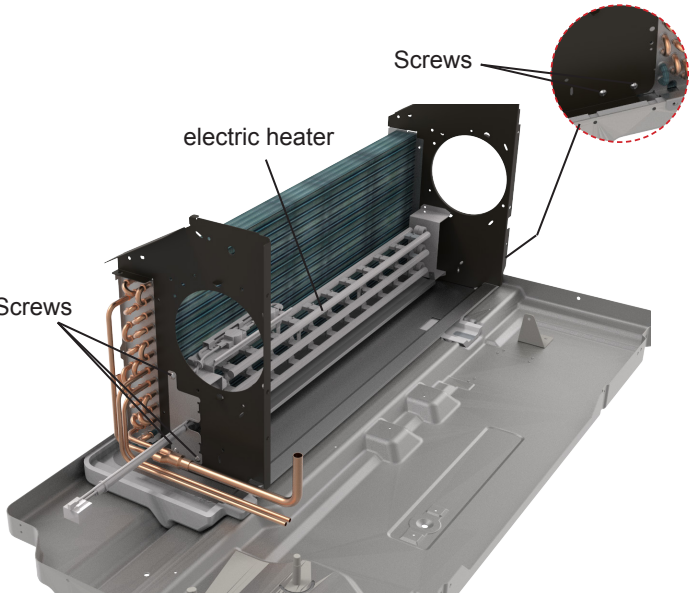
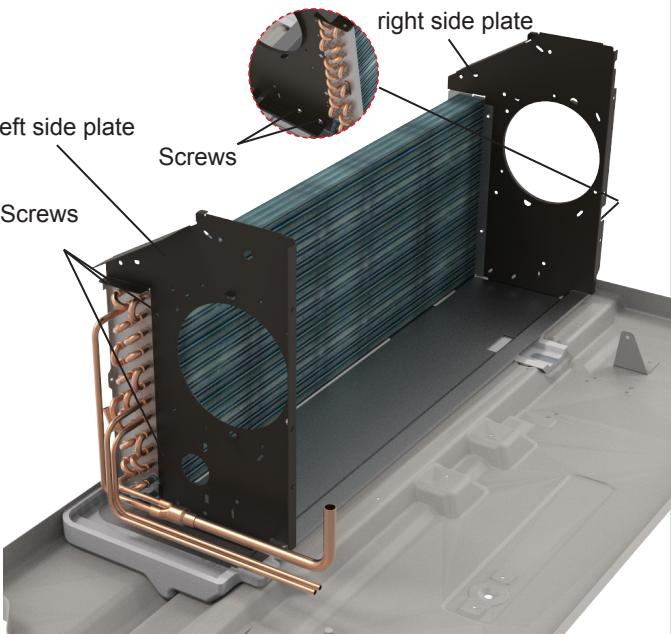
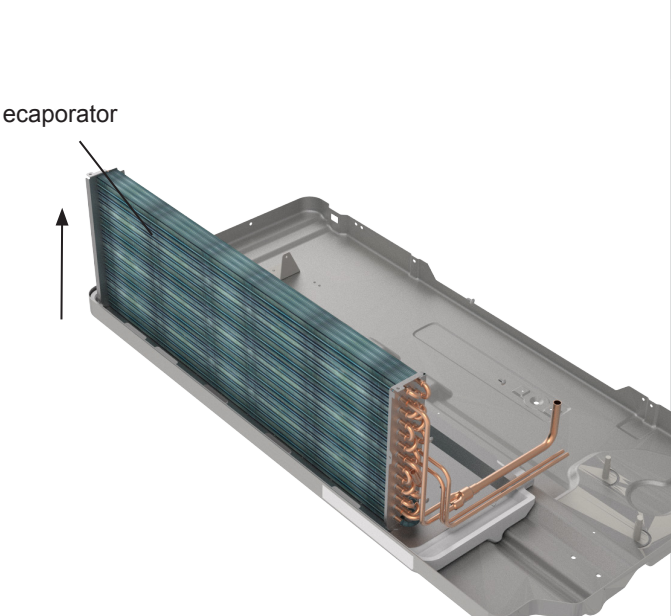
Step	Procedure
<p><b>7.Remove middle connection board</b></p>	<p>Remove 7 screws fixing the middle connection board and then remove the middle connection board.</p> <p>Remove one screw fixing the cable cross plate and then remove the cable cross plate.</p> 
<p><b>8.Remove 4-way valve</b></p>	<p>Unsolder spot weld between 4-way valve and compressor, condenser and evaporator, and then remove 4-way valve.</p> 
<p><b>9.Remove compressor and capillary sub-assy</b></p>	<p>Remove 3 nuts fixing compressor and then remove compressor.</p> <p>Unsolder spot weld between capillary subassy compressor and condenser and then remove capillary sub-assy.</p> 

Step	Procedure
<p><b>10.Remove guide loop sub-assy</b></p>	<p>Remove screws fixing the guide loop subassy,and then pull the guide loop upwards to remove it.</p> 
<p><b>11.Remove axial flow</b></p>	<p>Remove nuts fixing axial flow blade and then pull the axial flow blade outwards to remove it.</p> 
<p><b>12.Remove outdoor motor</b></p>	<p>Remove 4 screws fixing motor and then remove the motor.</p> 



Step	Procedure
<p data-bbox="77 214 456 248"><b>15.Remove propeller housing</b></p>	<p data-bbox="188 738 816 799">Remove 4 screws fixing the propeller housing and then remove the propeller housing.</p> 
<p data-bbox="77 1288 532 1323"><b>16.Remove blade end cap sub-assy</b></p>	<p data-bbox="188 1672 816 1734">Remove 3 screws fixing the blade end cap sub-assy and then remove the Blade end cap sub-assy.</p> 

Step	Procedure
<b>17.Remove cross flow blade</b>	 <p>Remove one screw fixing cross flow blade and then remove the cross flow blade.</p>
<b>18.Remove indoor motor</b>	 <p>Remove 4 screws fixing motor and then remove the motor.</p>
<b>19.Remove motor support and electric heater</b>	 <p>Remove 4 screws fixing motor support and then remove the motor support.</p>

Step	Procedure	
	<p>Remove screws fixing electric heater, and then pull the electric heater vertically to remove it.</p>	
<p><b>20. Remove left side plate and right side plate</b></p>	<p>Remove screws fixing left side plate and right side plate, and then remove the left side plate and right side plate.</p>	
<p><b>21. Remove evaporator</b></p>	<p>Pull the evaporator upwards to remove it.</p>	

# Appendix:

## Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree:  $T_f = T_c \times 1.8 + 32$

### Set temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
61	60.8	16
62/63	62.6	17
64/65	64.4	18
66/67	66.2	19
68	68	20

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
69/70	69.8	21
71/72	71.6	22
73/74	73.4	23
75/76	75.2	24
77	77	25

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
78/79	78.8	26
80/81	80.6	27
82/83	82.4	28
84/85	84.2	29
86	86	30

### Ambient temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
32/33	32	0
34/35	33.8	1
36	35.6	2
37/38	37.4	3
39/40	39.2	4
41/42	41	5
43/44	42.8	6
45	44.6	7
46/47	46.4	8
48/49	48.2	9
50/51	50	10
52/53	51.8	11
54	53.6	12

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
55/56	55.4	13
57/58	57.2	14
59/60	59	15
61/62	60.8	16
63	62.6	17
64/65	64.4	18
66/67	66.2	19
68/69	68	20
70/71	69.8	21
72	71.6	22
73/74	73.4	23
75/76	75.2	24
77/78	77	25

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
79/80	78.8	26
81	80.6	27
82/83	82.4	28
84/85	84.2	29
86/87	86	30
88/89	87.8	31
90	89.6	32
91/92	91.4	33
93/94	93.2	34
95/96	95	35
97/98	96.8	36
99	98.6	37

## Appendix 2: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor (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



Resistance Table of Ambient Temperature Sensor (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

Resistance Table of Ambient 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



GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

**For product improvement, specifications and appearance in this manual are subject to change without prior notice.**