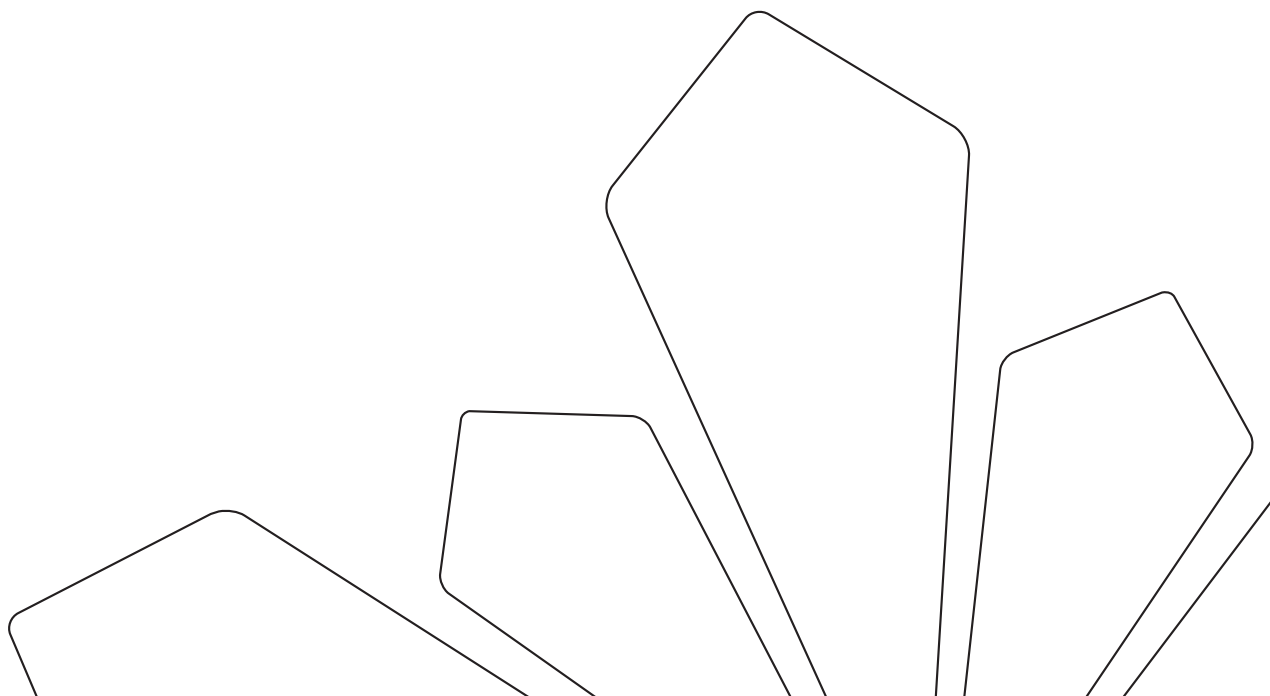




# AIR CONDITIONER

## INSTRUCTION MANUAL



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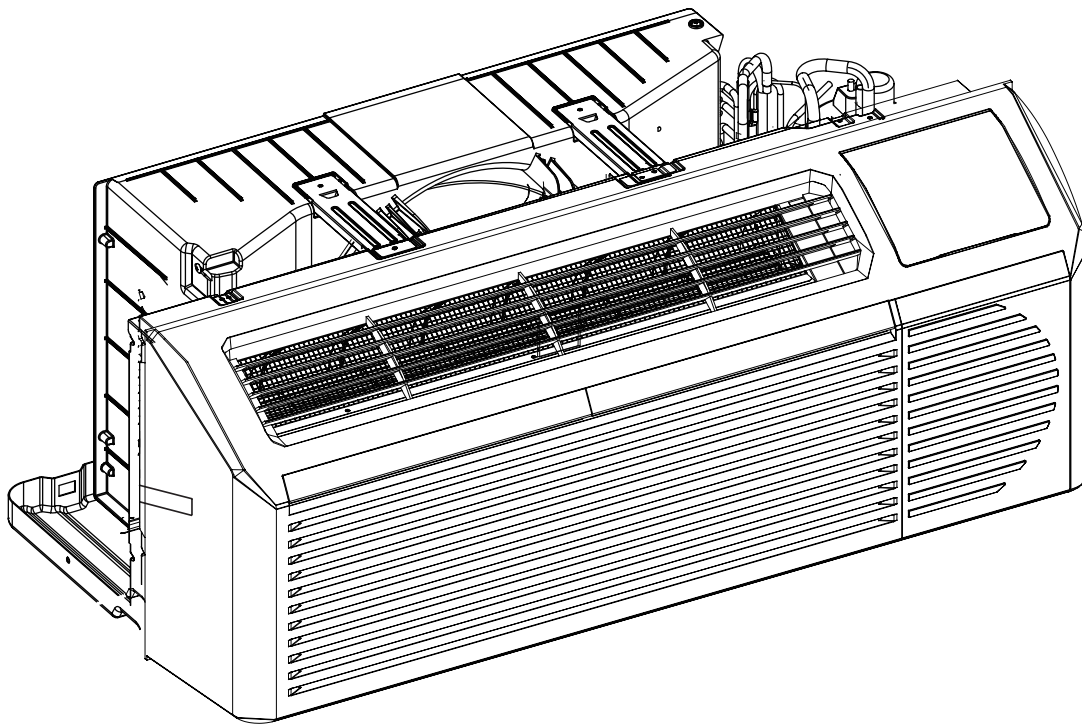
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# Part I : Technical Information

## 1. Summary

### Models

KPE07B2D KPA07B2D KPE09B2D KPA09B2D KPE12B2D KPA12B2D KPE15B2D KPA15B2D KPE07B2P KPA07B2P  
KPE09B2P KPA09B2P KPE12B2P KPA12B2P KPE15B2P KPA15B2P



## 2. Specifications

Parameter		Unit	Value	
Model			KPA07B2D	KPE15B2D
Product Code			CC060038000_X11438	CC060038200_X11438
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7200/7000	14500/14200
Heating Capacity		Btu/h	6000/5800	/
Cooling Power Input		W	550/535	1390/1365
Heating Power Input		W	485/470	/
Cooling Power Current		A	2.9/2.7	6.2/6.7
Heating Power Current		A	2.6/2.4	/
Electric Heating Power Input		W	3450/2820	3450/2820
Electric Heating Power Current		A	15.0/13.6	15.0/13.6
Rated Input		W	774	1860
Rated Current		A	3.8	10.2
Air Flow Volume(H/M/L)		CFM	312/-/282	341/-/306
Dehumidifying Volume		Pint/h	1.69	3.17
EER		(Btu/h)/W	13.0/13.0	10.4/10.4
COP		W/W	3.6/3.6	/
Application Area		yd <sup>2</sup>	12-19.1	25.1-37.1
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 5/16X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	108	118
Gross Weight		lb	132.3	142.2
Refrigerant			R410A	R410A
Refrigerant Charge		oz	33.9	35.27
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 51/64	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	990/-/880	1130/-/970
	Output of Fan Motor	W	18	23
	Fan Motor RLA	A	0.10	0.2
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 1/2X9 1/2X1 1/2	27 1/2X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	50/-/48	54/-/51
	Sound Power Level (H/M/L)	dB (A)	60/-/58	64/-/61



Outdoor  
Side

Parameter		Unit	Value	
Model			KPA07B2P	KPE07B2P
Product Code			CC060040000_X11438	CC060039900_X11438
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7200	7200
Heating Capacity		Btu/h	6000	/
Cooling Power Input		W	550	550
Heating Power Input		W	485	/
Cooling Power Current		A	2.4	2.4
Heating Power Current		A	2.2	/
Electric Heating Power Input		W	3450	3450
Electric Heating Power Current		A	13.1	13.1
Rated Input		W	774	774
Rated Current		A	2.9	2.9
Air Flow Volume(H/M/L)		CFM	530/-/480	312/-/282
Dehumidifying Volume		Pint/h	1.69	1.69
EER		(Btu/h)/W	13	13
COP		W/W	3.6	/
Application Area		yd <sup>2</sup>	12-19.1	12-19.1
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 9/32X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	108.0	103.6
Gross Weight		lb	132.3	127.9
Refrigerant			R410A	R410A
Refrigerant Charge		oz	33.9	22.9
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 51/64	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	1000/-/890	1000/-/890
	Output of Fan Motor	W	10	10
	Fan Motor RLA	A	0.11	0.11
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 1/2X9 1/2X1 1/2	27 1/2X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	50/-/48	50/-/48
	Sound Power Level (H/M/L)	dB (A)	60/-/58	60/-/58

[illegible]

Parameter		Unit	Value	
Model			KPE09B2D	KPE09B2P
Product Code			CC060039000_X11438	CC060040300_X11438
Power Supply	Rated Voltage	V~	230/208	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	9400/9200	9400
Heating Capacity		Btu/h	/	/
Cooling Power Input		W	775/760	775
Heating Power Input		W	/	/
Cooling Power Current		A	3.7/3.9	3.3
Heating Power Current		A	/	/
Electric Heating Power Input		W	3450/2820	3450
Electric Heating Power Current		A	15.0/13.6	13.1
Rated Input		W	951	951
Rated Current		A	5.9	4.2
Air Flow Volume(H/M/L)		CFM	330/-/294	330/-/294
Dehumidifying Volume		Pint/h	2.11	2.11
EER		(Btu/h)/W	12.1/12.1	12.1
COP		W/W	/	/
Application Area		yd <sup>2</sup>	14.4-21.5	14.4-21.5
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 9/32X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	112.5	113.6
Gross Weight		lb	136.7	137.8
Refrigerant			R410A	R410A
Refrigerant Charge		oz	23.6	23.6
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 51/64	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	1060/-/940	1060/-/940
	Output of Fan Motor	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
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 1/2X9 1/2X1 1/2	27 1/2X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	52/-/50	52/-/50
	Sound Power Level (H/M/L)	dB (A)	62/-/60	62/-/60

Outdoor  
Side

Parameter		Unit	Value	
Model			KPA09B2P	KPA09B2D
Product Code			CC060040400_X11438	CC060037700_X11438
Power Supply	Rated Voltage	V~	265	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	9400	9400/9200
Heating Capacity		Btu/h	8300	8300/8100
Cooling Power Input		W	775	775/760
Heating Power Input		W	695	695/675
Cooling Power Current		A	3.3	3.7/3.9
Heating Power Current		A	/	3.4/3.2
Electric Heating Power Input		W	3450	3450/2820
Electric Heating Power Current		A	13.1	15.0/13.6
Rated Input		W	951	951
Rated Current		A	4.2	5.9
Air Flow Volume(H/M/L)		CFM	330/-/294	330/-/294
Dehumidifying Volume		Pint/h	2.11	2.11
EER		(Btu/h)/W	12.1	12.1/12.1
COP		W/W	3.5	3.5/3.5
Application Area		yd <sup>2</sup>	14.4-21.5	14.4-21.5
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 9/32X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	116.9	116.9
Gross Weight		lb	141.1	141.1
Refrigerant			R410A	R410A
Refrigerant Charge		oz	33.9	33.9
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 51/64	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	1060/-/940	1060/-/940
	Output of Fan Motor	W	21	21
	Fan Motor RLA	A	0.18	0.2
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 1/2X9 1/2X1 1/2	27 1/2X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	52/-/50	52/-/50
	Sound Power Level (H/M/L)	dB (A)	62/-/60	62/-/60



Parameter		Unit	Value	
Model			KPA12B2D	KPE12B2D
Product Code			CC060037800_X11438	CC060038100_X11438
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	11800/11600	11800/11600
Heating Capacity		Btu/h	10600/10400	/
Cooling Power Input		W	1015/1000	1015/1000
Heating Power Input		W	910/895	/
Cooling Power Current		A	4.9/5.1	5.1/4.9
Heating Power Current		A	4.2/4.7	/
Electric Heating Power Input		W	3450/2820	3450/2820
Electric Heating Power Current		A	15.0/13.6	15.0/13.6
Rated Input		W	1306	1306
Rated Current		A	7.1	7.1
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	11.6/11.6
COP		W/W	3.4/3.4	/
Application Area		yd <sup>2</sup>	19.1-28.7	19.13-28.7
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 9/32X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	118	115.8
Gross Weight		lb	142.2	140
Refrigerant			R410A	R410A
Refrigerant Charge		oz	35.3	35.27
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 51/64	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	1130/-/970	1130/-/970
	Output of Fan Motor	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
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 1/2X9 1/2X1 1/2	27 1/2X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	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

Parameter		Unit	Value	
Model			KPE12B2P	KPA12B2P
Product Code			CC060040700_X11438	CC060040800_X11438
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	11800	11800
Heating Capacity		Btu/h	/	10600
Cooling Power Input		W	1015	1015
Heating Power Input		W	/	910
Cooling Power Current		A	4.2	4.2
Heating Power Current		A	/	3.7
Electric Heating Power Input		W	3450	3450
Electric Heating Power Current		A	13.1	13.1
Rated Input		W	1264	1264
Rated Current		A	5.17	5.17
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	/	3.4
Application Area		yd <sup>2</sup>	19.1-28.7	19.1-28.7
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 9/32X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	115.8	119.1
Gross Weight		lb	140.0	143.3
Refrigerant			R410A	R410A
Refrigerant Charge		oz	35.27	35.27
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 51/64	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	1130/-/950	1130/-/950
	Output of Fan Motor	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
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 33/64X9 1/2X1 1/2	27 33/64X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	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

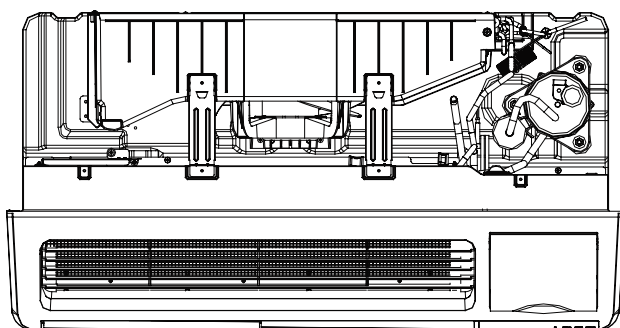
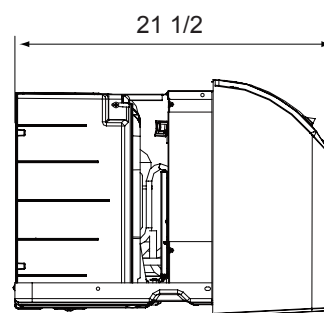
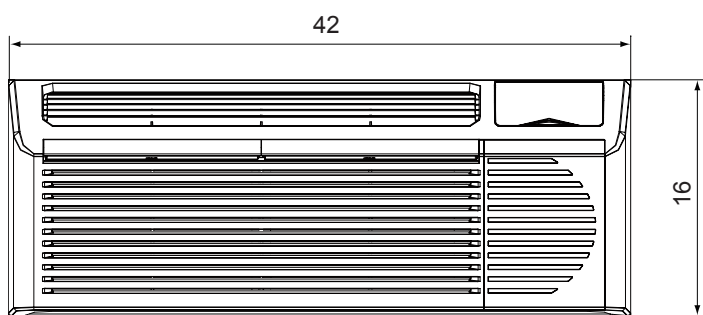
Parameter		Unit	Value	
Model			KPE15B2P	KPA15B2P
Product Code			CC060041100_X11438	CC060041200_X11438
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	14500	14500
Heating Capacity		Btu/h	/	13300
Cooling Power Input		W	1390	1390
Heating Power Input		W	/	1255
Cooling Power Current		A	5.4	5.4
Heating Power Current		A	/	5.0
Electric Heating Power Input		W	3450	3450
Electric Heating Power Current		A	13.1	13.1
Rated Input		W	1684	1684
Rated Current		A	7.1	7.1
Air Flow Volume(H/M/L)		CFM	341/-/306	341/-/306
Dehumidifying Volume		Pint/h	3.17	3.17
EER		(Btu/h)/W	10.4	10.4
COP		W/W	/	3.1
Application Area		yd <sup>2</sup>	21-31	21-31
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 9/32X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	116.9	119.1
Gross Weight		lb	141.1	143.3
Refrigerant			R410A	R410A
Refrigerant Charge		oz	35.27	38.80
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 51/64	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	1130/-/950	1130/-/950
	Output of Fan Motor	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
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 33/64X9 1/2X1 1/2	27 33/64X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	54/-/51	54/-/51
	Sound Power Level (H/M/L)	dB (A)	64/-/61	64/-/61

Outdoor  
Side

Parameter		Unit	Value	
Model			KPE07B2D	KPA15B2D
Product Code			CC060038700_X11438	CC060039500_X11438
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7200/7000	14500/14200
Heating Capacity		Btu/h	/	13300/13000
Cooling Power Input		W	550/535	1390/1365
Heating Power Input		W	/	1255/1225
Cooling Power Current		A	2.7/2.9	6.2/6.7
Heating Power Current		A	/	6.2/6.7
Electric Heating Power Input		W	3450/2820	3450/2820
Electric Heating Power Current		A	15.0/13.6	15.0/13.6
Rated Input		W	774	2162
Rated Current		A	3.8	12
Air Flow Volume(H/M/L)		CFM	530/-/480	341/-/306
Dehumidifying Volume		Pint/h	1.69	3.17
EER		(Btu/h)/W	13	10.4/10.4
COP		W/W	/	3.1/3.1
Application Area		yd <sup>2</sup>	11.95-19.13	21-31
Climate Type			T1	T1
Isolation			I	I
Moisture Protection			IPX4	IPX4
Permissible Excessive Operating Pressure for the Discharge Side		MPa	4.3	4.3
Permissible Excessive Operating Pressure for the Suction Side		MPa	2.5	2.5
Dimension (WXHXD)		inch	42X16X21 1/2	42X16X21 1/2
Dimension of Carton Box (LXWXH)		inch	45X25 9/32X17 7/8	45X25 9/32X17 7/8
Dimension of Package (LXWXH)		inch	45 3/64X25 13/32X18 1/2	45 3/64X25 13/32X18 1/2
Net Weight		lb	103.6	120.2
Gross Weight		lb	127.9	144.4
Refrigerant			R410A	R410A
Refrigerant Charge		oz	22.9	38.80
Indoor Side	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	inch	Φ4 3/4X27 13/16	Φ4 3/4X27 51/64
	Fan Motor Speed(H/M/L)	r/min	990/880/-	1130/-/970
	Output of Fan Motor	W	18	23
	Fan Motor RLA	A	0.1	0.2
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ9/32	Φ9/32
	Row-fin Gap	inch	3-1/16	3-1/16
	Coil Length (LXDXW)	inch	27 33/64X9 1/2X1 1/2	27 33/64X9 1/2X1 1/2
	Swing Motor Model		/	/
	Output of Swing Motor	W	/	/
	Fuse	A	3.15	3.15
	Sound Pressure Level (H/M/L)	dB (A)	50/-/48	54/-/51
	Sound Power Level (H/M/L)	dB (A)	60/-/58	64/-/61



### 3. Outline Dimension Diagram

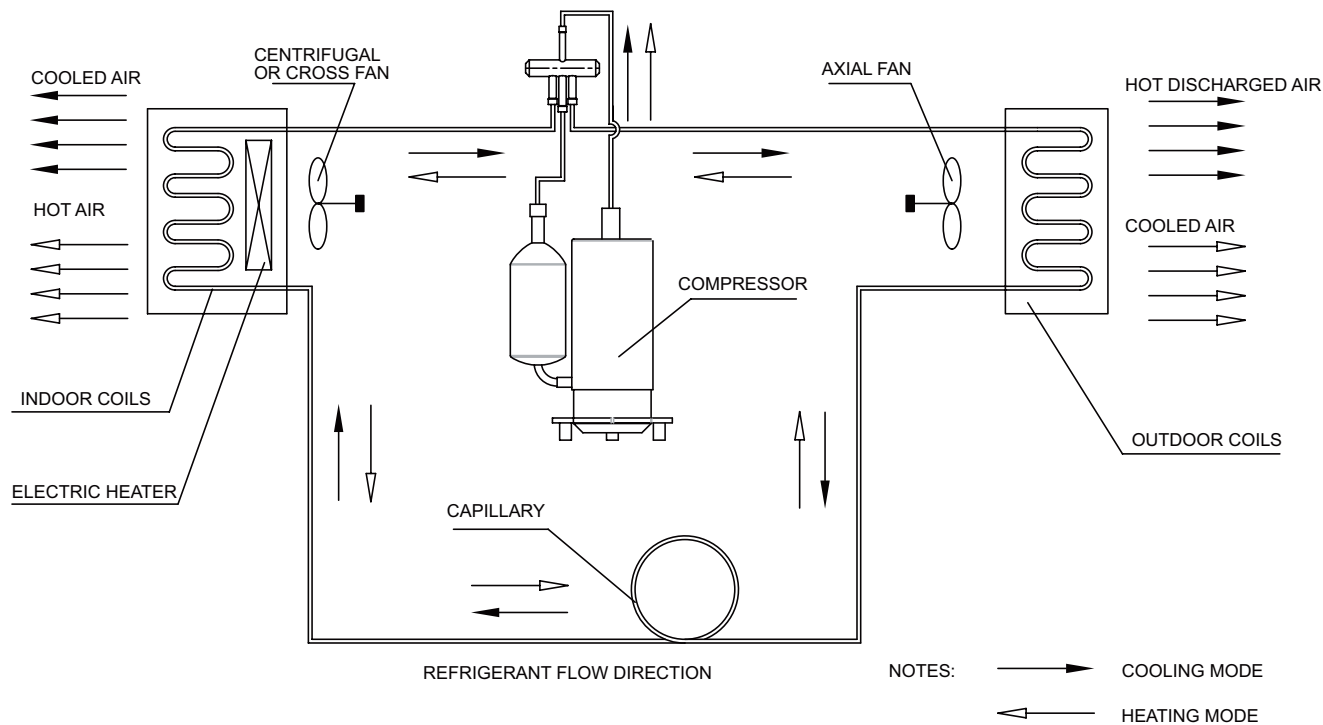


Unit:inch

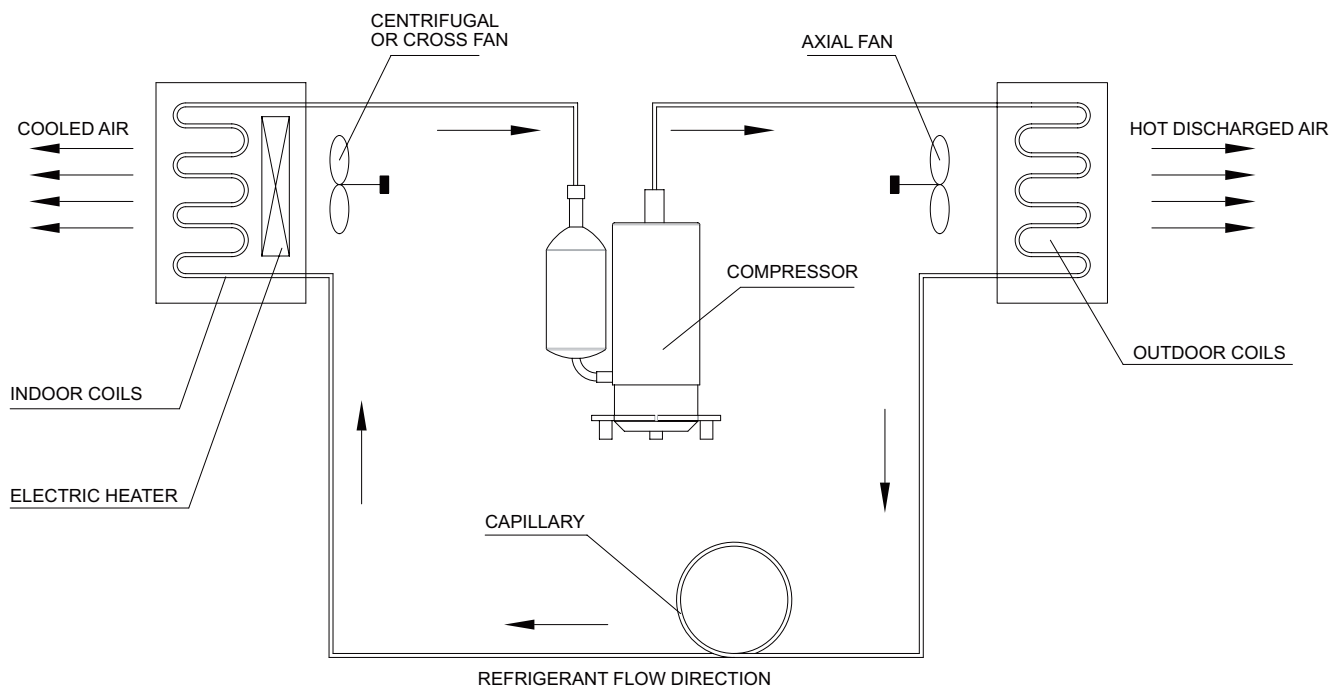


# 4. Refrigerant System Diagram

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




## (2) Cooling + Electric Heater



## 5. Electrical Part

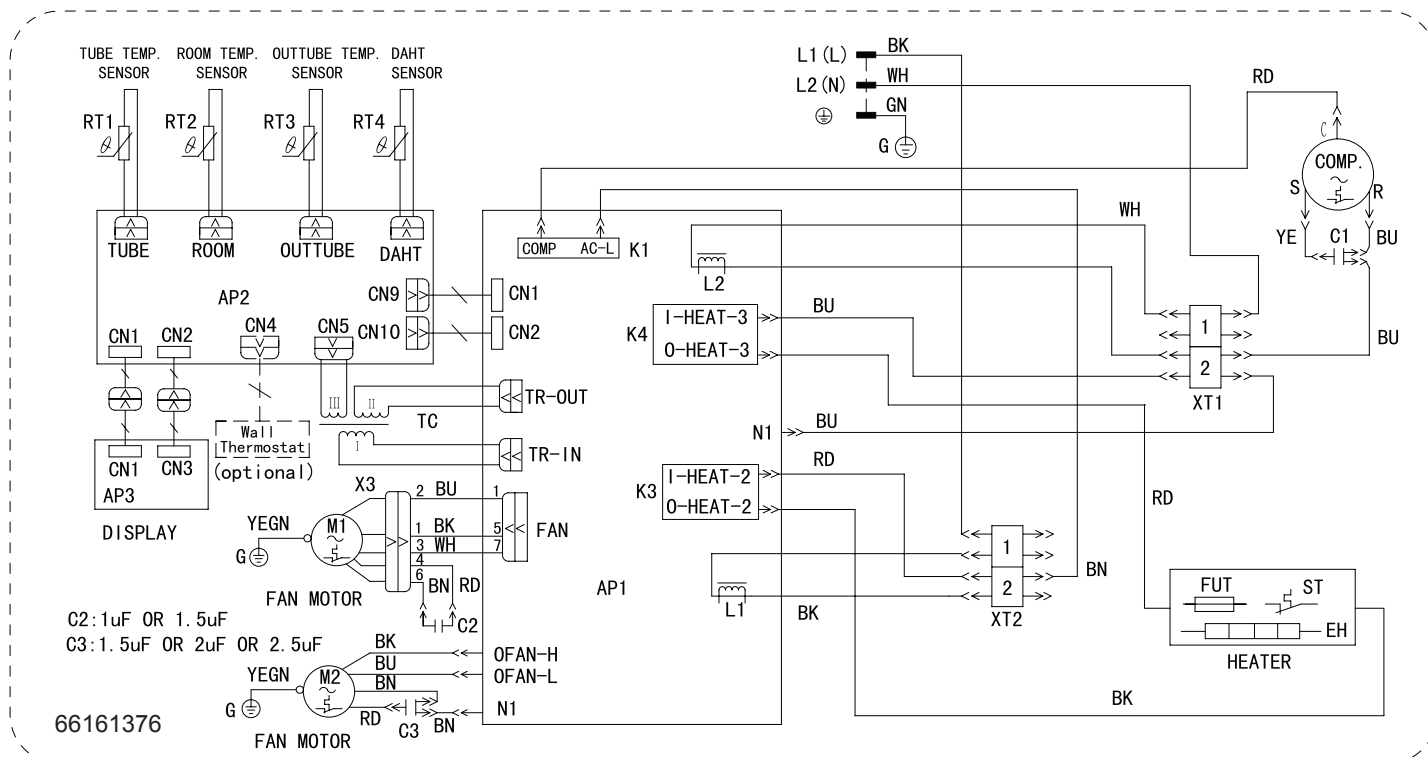
### 5.1 Wiring Diagram

#### ●Instruction

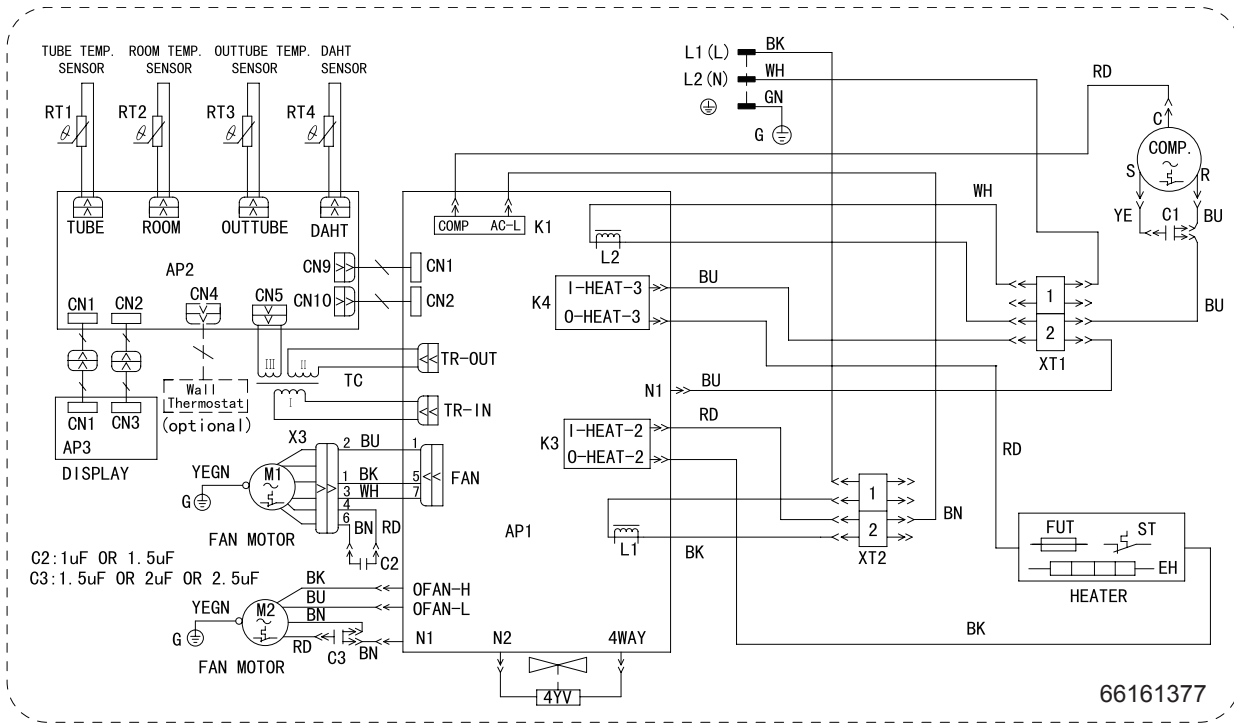
Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP.	Capacitor
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue		Grounding wire
YEGN	Yellow-Green	BK	Black	/	/

#### ●Electric Diagram

KPE12B2D KPE15B2D KPE09B2D KPE07B2P  
KPE09B2P KPE12B2P KPE15B2P KPE07B2D



KPA07B2D KPA09B2D KPA12B2D KPA07B2P  
KPA09B2P KPA12B2P KPA15B2P KPA15B2D

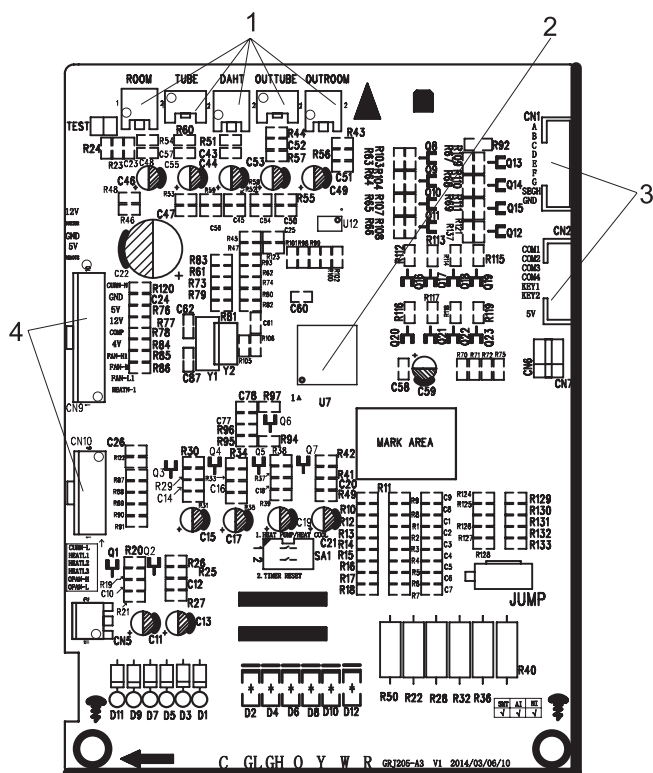


These circuit diagrams are subject to change without notice ,please refer to the one supplied with the unit.

## 5.2 PCB Printed Diagram

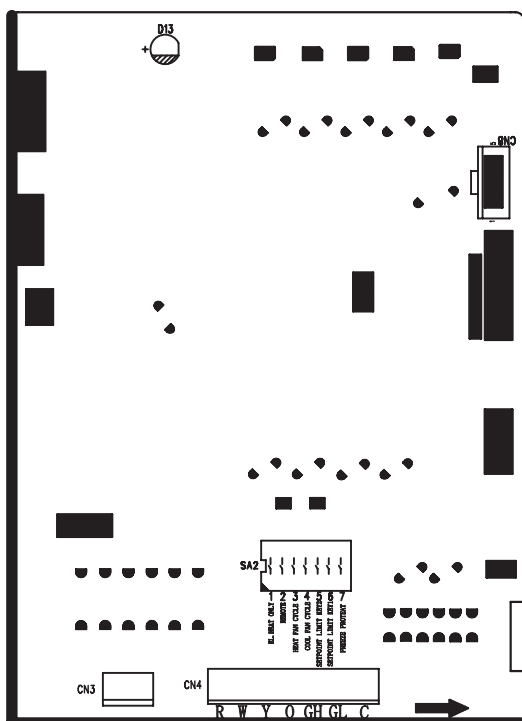
### 5.2.1 Silk Screen on Main Board 1

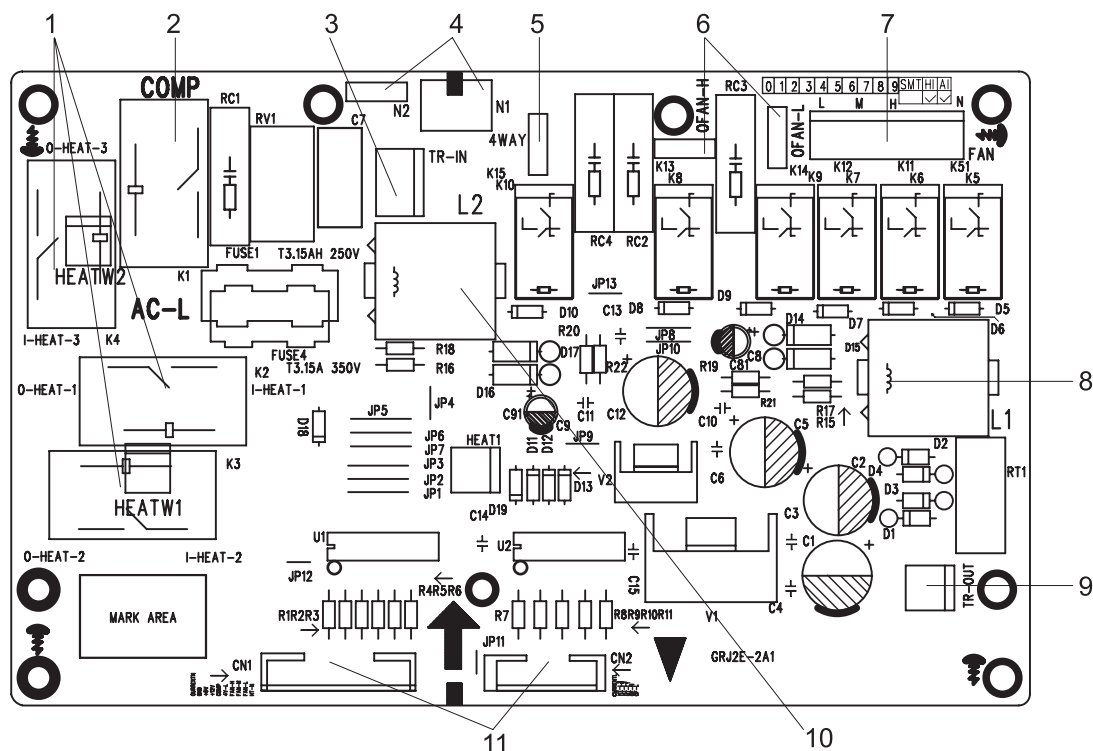
- **Top View**



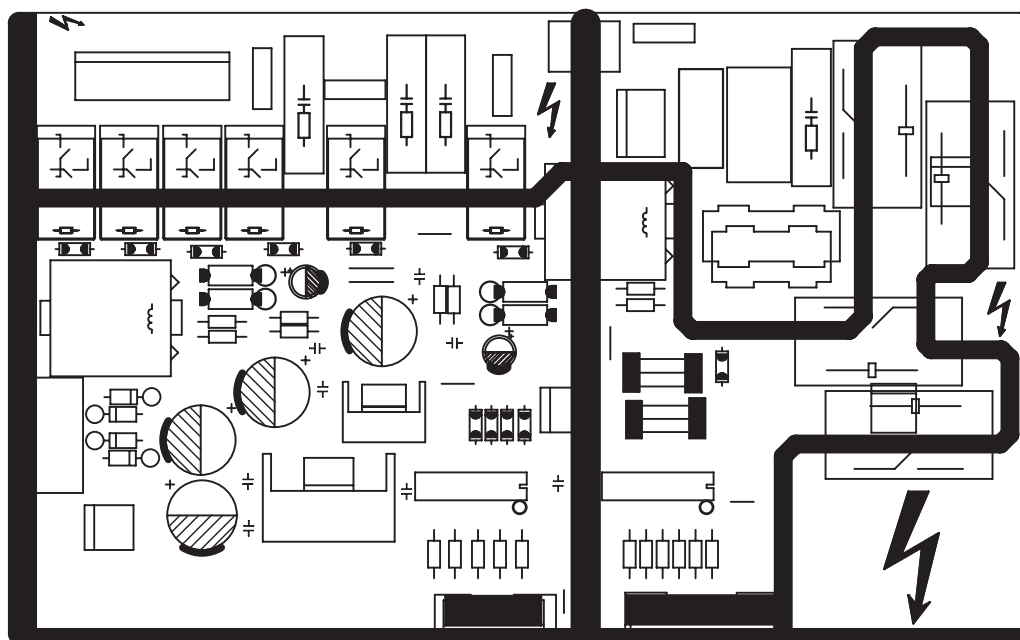
1	Terminal of temperature sensor
2	Main chip
3	Interface of display
4	Interface of main board

- **Bottom View**



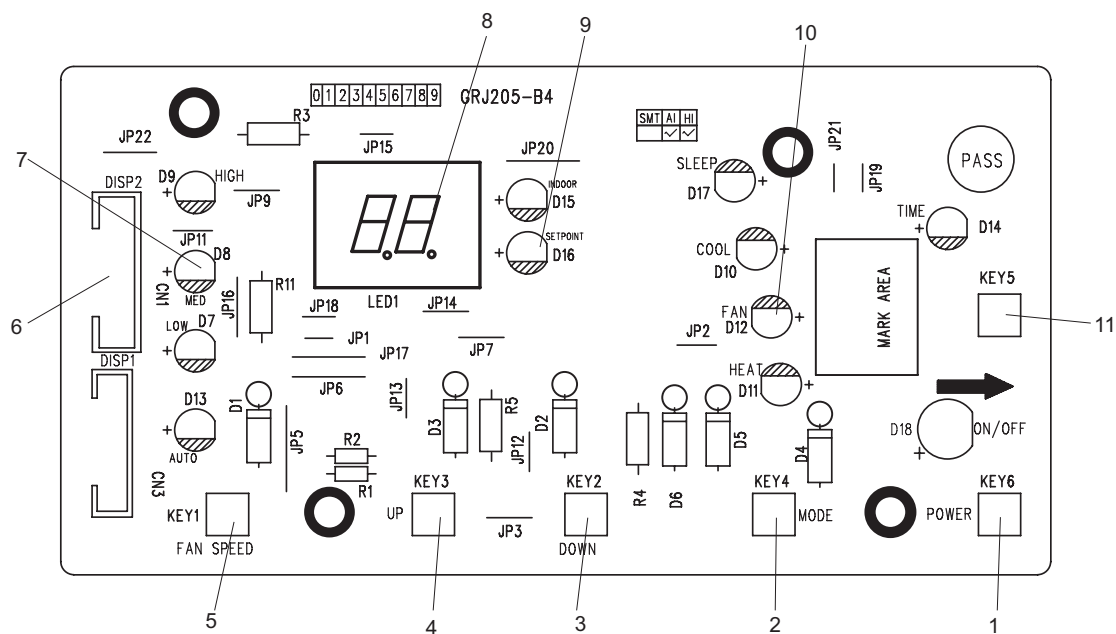


1	Relay of electric heating	5	Terminal of 4-way valve	9	Terminal of transformer
2	Relay of compressor	6	Terminal of outdoor fan	10	Current inductor
3	Terminal of transformer	7	Terminal of indoor fan	11	Interface of main board
4	Neutral wire interface	8	Current inductor	12	/



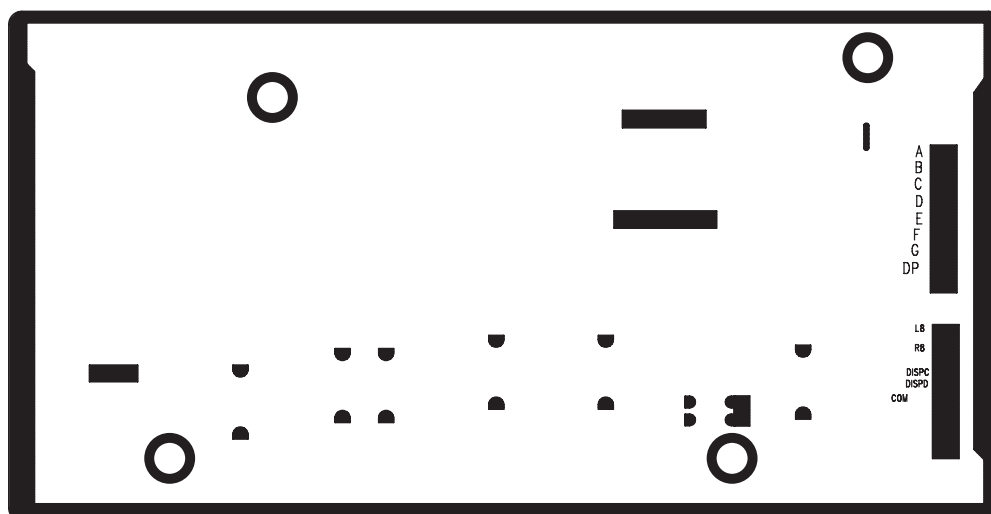
### 5.2.3 Silk Screen on Display Board

- **Top View**



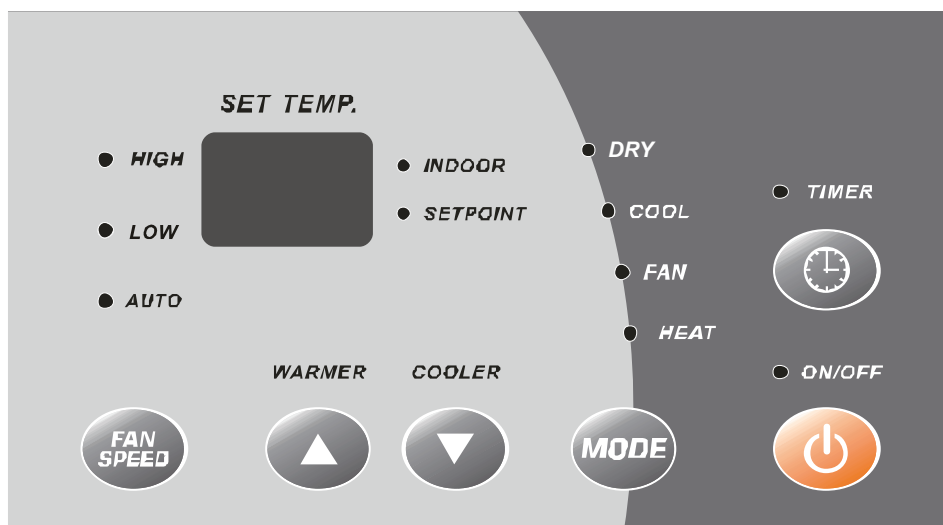
1	ON/OFF button	5	Fan button	9	Ambient temperature and set temperature indicator
2	Mode button	6	Wire connection interface between boards	10	Mode indicator- sleep, cool, heat and fan mode
3	"-"button	7	Fan speed indicator-high, medium, low and auto speed	11	Timer button
4	"+"button	8	Dual-8 nixie tube		

### ●Bottom View



## 6. Function and Control

### 6.1 Introduction of Control Panel



#### 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: 1. It is used for increasing temperature or timer setting.

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

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

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

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

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

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

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

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

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

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

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

6. Buzzer: optional

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

7. Auto fan speed

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

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

When indoor ambient temperature  $\geq 86^{\circ}\text{F}$  ( $30^{\circ}\text{C}$ ), the unit will start cooling automatically. When indoor ambient temperature reaches  $81^{\circ}\text{F}$  ( $27^{\circ}\text{C}$ ), the unit will stop operation.

9. F code remote controller: optional

## 6.2 Description of Each Control Operation

### 1. Basic function of system

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

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

##### 1.1.1 Working condition and process for cooling

a. When  $T_{\text{indoor amb.}} + T_{\text{indoor amb. compensation}} \geq T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the unit operates under cooling. Outdoor fan and indoor fan operates. Compressor will operates 10s later.

b.  $T_{\text{indoor amb.}} + T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the unit stops operation. Compressor and outdoor fan stop operation. Under fan cycle mode, indoor fan will stop operation after operating at set fan speed for 60s (except requiring the indoor fan to operate in protection mode); if fan cycle mode is not selected, indoor fan will operate in set fan speed.

c. 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.

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

#### 1.2 Dry mode

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

#### 1.3 Fan mode

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

#### 1.4 Heating mode

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

##### 1.4.1 Working status

###### 1.4.1.1 General type HEAT PUMP TYPE

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

a. When  $T_{\text{preset}} - 5^{\circ}\text{F}(3^{\circ}\text{C}) < T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 2^{\circ}\text{F}(1^{\circ}\text{C})$ , compressor operates at heating mode. Meanwhile, 4-way valve, indoor fan and outdoor fan start operation. 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 heating operates, it will quite until is satisfied condition b (enter into protection function is excluded). When it needs to heat, if compressor cant be started up due to protection function, electric heating will start heating instead of compressor 15s later. It will stop operation until satisfying the temperature point. (customized requirement); When  $T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \leq T_{\text{preset}} - 5^{\circ}\text{F}(3^{\circ}\text{C})$ , the electric heating operates. Indoor fan operates at set fan speed.

b. 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 heating stops operation. Under fan cycle mode, indoor fan operates at the condition of blowing residual heat; if fan cycle mode is not selected, indoor fan will operate in set fan speed.

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

###### 1.4.1.2 Pure electric heating type HEAT COOL TYPE

Operation condition and process

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

b. When  $T_{\text{indoor amb.}} - T_{\text{indoor amb. compensation}} \geq T_{\text{preset}} + 2^{\circ}\text{F}(1^{\circ}\text{C})$ , the electric heating stop operation. Under fan cycle mode, indoor fan operates at the condition of blowing residual heat; if fan cycle mode is not selected, indoor fan will operate in set fan speed.

c. 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 operates at previous operation status.

#### 1.5 OFF mode

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



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

#### 1.6 Low temperature protection

Under OFF, cool, dry or fan mode, this protection can be operated by wired controller.

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

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

## 2. Users interface display and button

### 2.1 Button function:

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

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

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

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

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

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

4) WARMER, COOLER:

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

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

5) TIMER:

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

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

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

### 2.2 Dual 8 Display and LED Display

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

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

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

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

2.2.4 Under cool, dry or heat mode, the dual-8 nixie tube displays set temperature (under fan mode, the dual-8 nixie tube displays indoor ambient temperature).

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

### 2.2.6 Malfunction Display

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

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

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 for evaporator	STATUS indicator will flash eight times and off 3s circularly

9		High temperature prevention protection for outdoor 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 fused	Dual-8 nixie tube displays "C7"

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

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

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

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

B. REMOTE (wired controller control)

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

C. FAN CYCLE FOR HEAT (This function can be only be controlled by control panel or remote controller)

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

D. FAN CYCLE for COOL (This function can be only be controlled by control panel or remote controller)

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

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

OFF OFF-(61-86°F) (16-30°C);

ON OFF-(63-80°F) (18-28°C);

OFF ON-(65-78°F) (19-26°C);

ON ON-(68-75°F) (20-24°C);

Default-(61-86°F) (16-30°C)

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

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

ON-shield; OFF-valid; default—OFF

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

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

Heat pump—ON;

Heat cool-OFF

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

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

B. Neglect for time delay (TIMER RESET)

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

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

Compressor minimum stop time-----9s

Compressor minimum running time-----9s

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

## 5. Configuration mode

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

Mode one: Fahrenheit /Centigrade display mode

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

F indicates Fahrenheit display mode

C indicated Centigrade display mode

Mode two: Temperature compensation value adjustment mode for dehumidifying

Press WARMER/COOLER button can increase or decreased temperature compensation value for 1°F (or °C). The range for indoor ambient temperature compensation value is -6~+6°F (-3~+3°C) (Dry mode LED is bright).

Mode three: Adjusting mode for cooling temperature offset

WARMER button can increase offset fset temperature 1°F(or °C). while COOLER button can decrease offset temperature 1°F(or °C).

The indoor ambient temperature offset adjusting range is -6 to +6°F(-3 to +3°C) (cooling mode LED is bright)

Mode four: Adjusting mode for heating temperature offset

WARMER button can increase offset temperature 1°F(or °C), while COOLER button can decrease offset temperature 1°F(or °C). The

indoor ambient temperature offset adjusting range is -6 to +6°F(-3 to +3 °C) (heating mode LED is bright)

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

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

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

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

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

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

- a. Press mode button
- b. Energization after power failure
- c. Restart the unit
- d. Turn on the unit after EM turn off unit
- e. Adjust the set temperature by WARMER OR COOLER button

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

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

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

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

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

Memory function

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

Restore factory settings

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

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

# Part II :Installation and Maintenance

## 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 20lb.
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 78.74inch.
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.

connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

- Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.

If there leaked gas around the unit, it may cause explosion and other accidents.

- Do not use extension cords for electrical connections. If the electric wire

is not long enough, please contact a local service center authorized and ask for a proper electric wire.

Poor connections may lead to electric shock or fire.

- Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.

Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

#### 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 indoor unit and outdoor 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.

## Main Tools for Installation and Maintenance

<b>1. Screw driver</b> 	<b>2. Electroprobe</b> 	<b>3. Open-end wrench, inner hexagon spanner</b> 
<b>4. Universal meter</b> 	<b>5. Vacuum pump</b> 	<b>6. Pressure meter</b> 
<b>7. Electronic leakage detector</b> 	<b>8. Soldering appliance, refrigerant container</b>  	




# 8. Installation Instructions

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

## CHASSIS INSTALLATION

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

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

**CAUTION**

**UNIT DAMAGE AND/OR OPERATION HAZARD**  
Failure to follow this caution may result in equipment damage or improper operation.

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

Table1—Retrofit Wall Sleeves

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

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

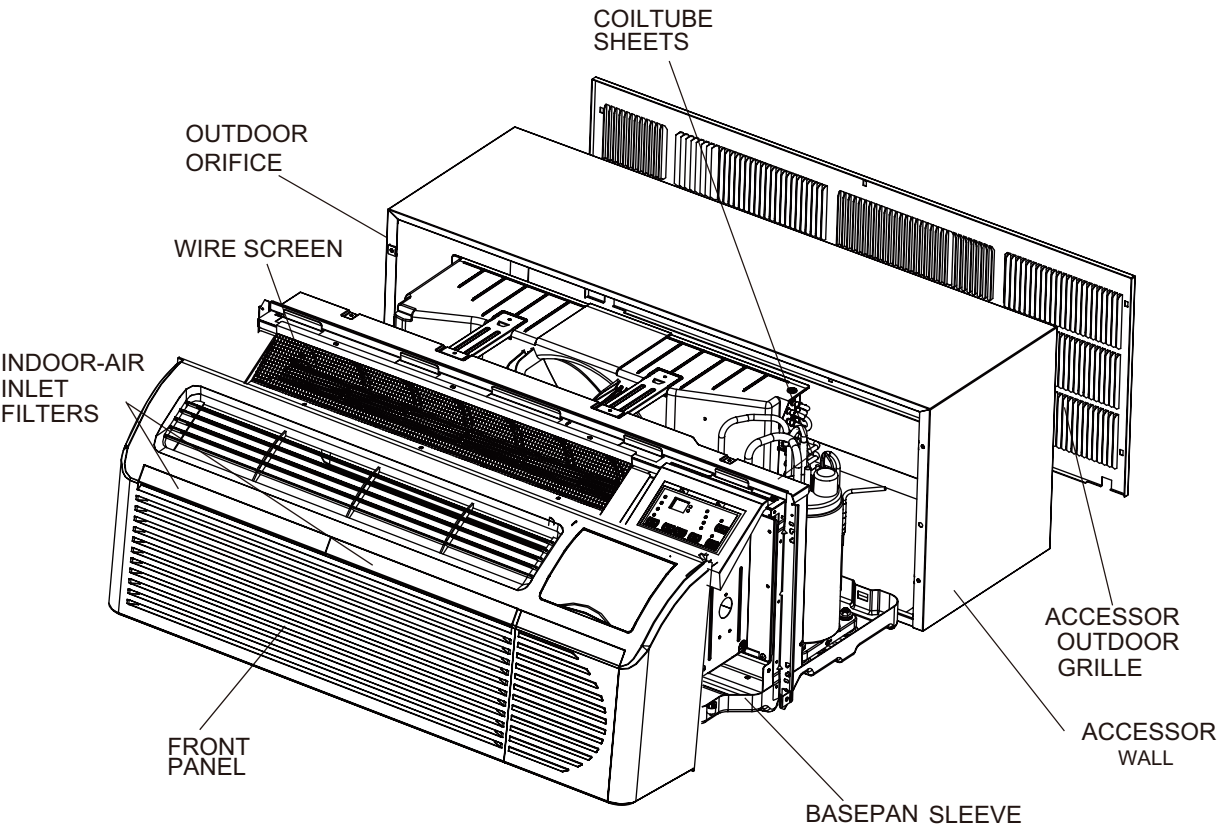


Fig. 1 – Unit Components

## RETRO FIT SLEEVE PREPARATION

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



### WARNING

#### 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. See Fig. 2.

GE Sleeves Only.

GE Metal Wall Sleeve-- GE metal sleeve is interchangeable with GREE wall sleeve. See Fig. 3.

GE Plastic Sleeve--Remove bottom seal from plastic sleeve. See Fig. 4.

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

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

Notes: GREE stamped grille is interchangeable with CARRIERS.

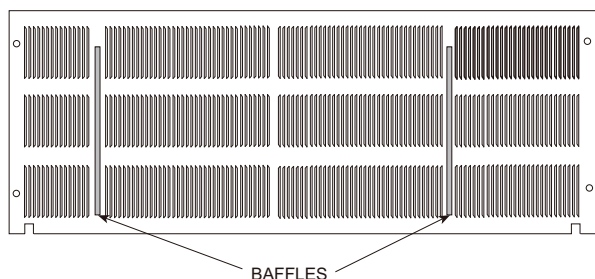


Fig. 2 – Remove Existing Outdoor Grille Baffles on Competitive Grille

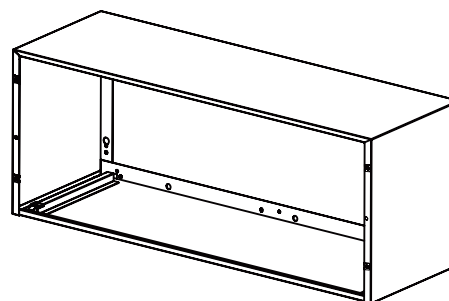


Fig. 3 – GE Metal Sleeve

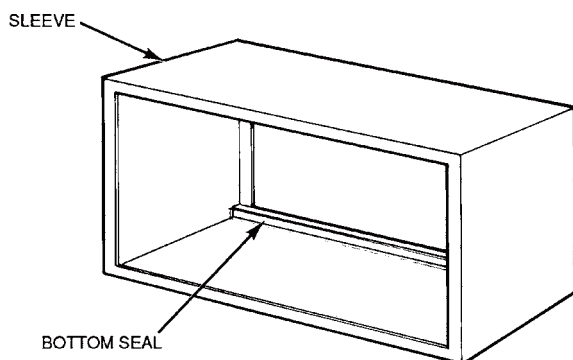


Fig. 4 – Remove Bottom Seal From GE Plastic Sleeve

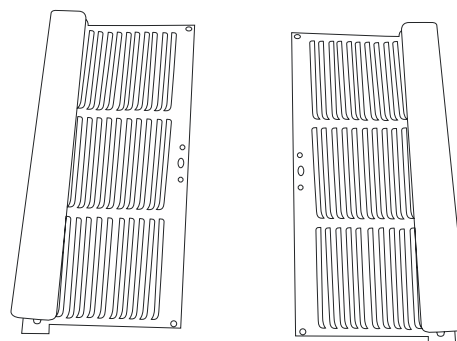


Fig. 5 – Accessory Baffle Kit

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



## INSTALL UNIT INTO WALL SLEEVE

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

**⚠ CAUTION**

**UNIT DAMAGE HAZARD**

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

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

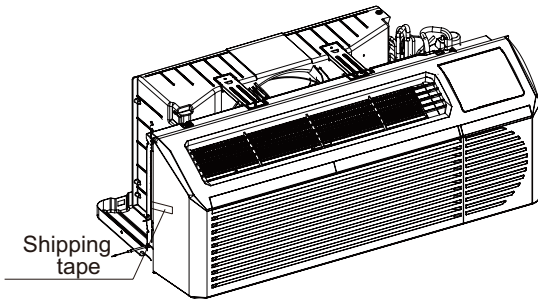


Fig. 6 – Shipping Tape Location

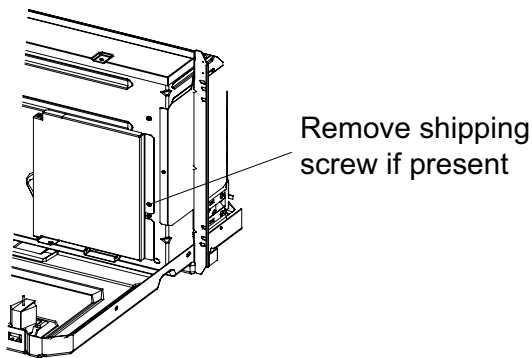
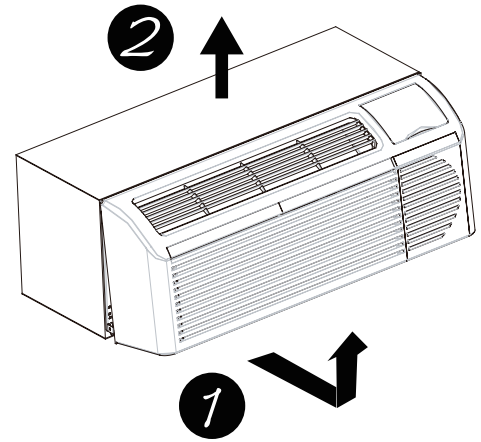


Fig. 7 – Shipping Screw Location



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

Fig. 8 – Removing Front Panel

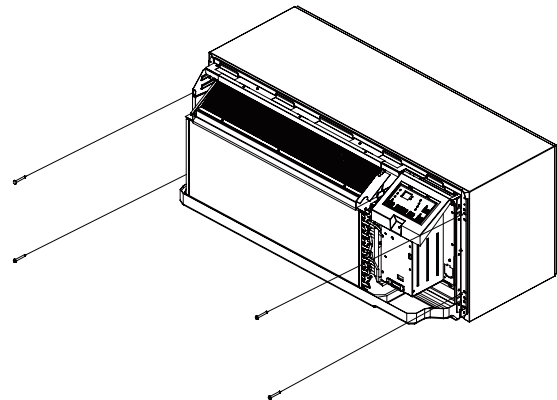
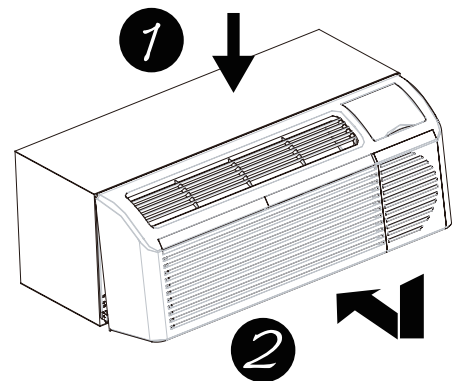


Fig. 9 – Securing Unit



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

## 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					
			Operation indicator	Cooling code	Heating code	Status indicator (PTAC)		
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;	1. Heat exchanger is too dirty or the air outlet/air inlet is blocked; 2. Compressor operates abnormally. There's abnormal sound or there's refrigerant leakage. Outer case temperature is too high; 3. The system is blocked (filth blockage, ice blockage, grease blockage; 4-way valve hasn't been opened completely); 4. Pipeline is broken or rusted; refrigerant is leaking.

7	Overload detection protection	H3					Cool/dry: indoor fan operates; compressor and outdoor fan stop operation;	1. Heat exchanger is too dirty or the air outlet/air inlet is blocked; 2. The fan operates abnormally; speed is too low or the fan can't operate; 3. Compressor operates abnormally. There's abnormal sound or there's refrigerant leakage. Outer case temperature is too high; 4. The system is blocked (filth blockage, ice blockage, grease blockage; 4-way valve hasn't been opened completely); 5. Refrigerant is leaking, which cause overheating protection for the compressor. 6. The unit is operate under high-temperature and high humidity environment.
8	Overcurrent protection of compressor	E5					Compressor, electric heating and outdoor fan stop operation; indoor fan operates.	1. Compressor is blocked; 2. Startup current of compressor is too big; 3. Operation voltage of unit is too low;
9	Compressor and relay of electric heater is stick together (PTAC)	A2					Indoor fan operates and other loads stop operation.	1. Relay is stick together;
10	Current detection for neutral wire and live wire is not balanced	U5					All loads are stopped	1. Wires are not connected or inserted correctly; 2. Electric heater is short-circuited or not connected tightly; 3. There's electric leakage;
11	Self-checking combination method of electric heating is not correct	A0					All loads are stopped	1. Wires are not inserted correctly; 2. Electric heater is broken;
12	Operation current for electric heating is abnormal	A4					All loads are stopped	1. Part of Electric heater is broken or short-circuited; 3. Electric heater is abnormal;
13	Circuit of temperature limiter is broken	C7					All loads are stopped	1. Temperature limiter is broken; 2. Connection wire of load of electric heater is broken.
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

Series code	Malfunction name	Display method of indoor unit (dial-8 code)					AC status	Possible causes
		Code	Indicator display					
			Operation indicator	Cooling code	Heating code	Status indicator (PTAC)		
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;

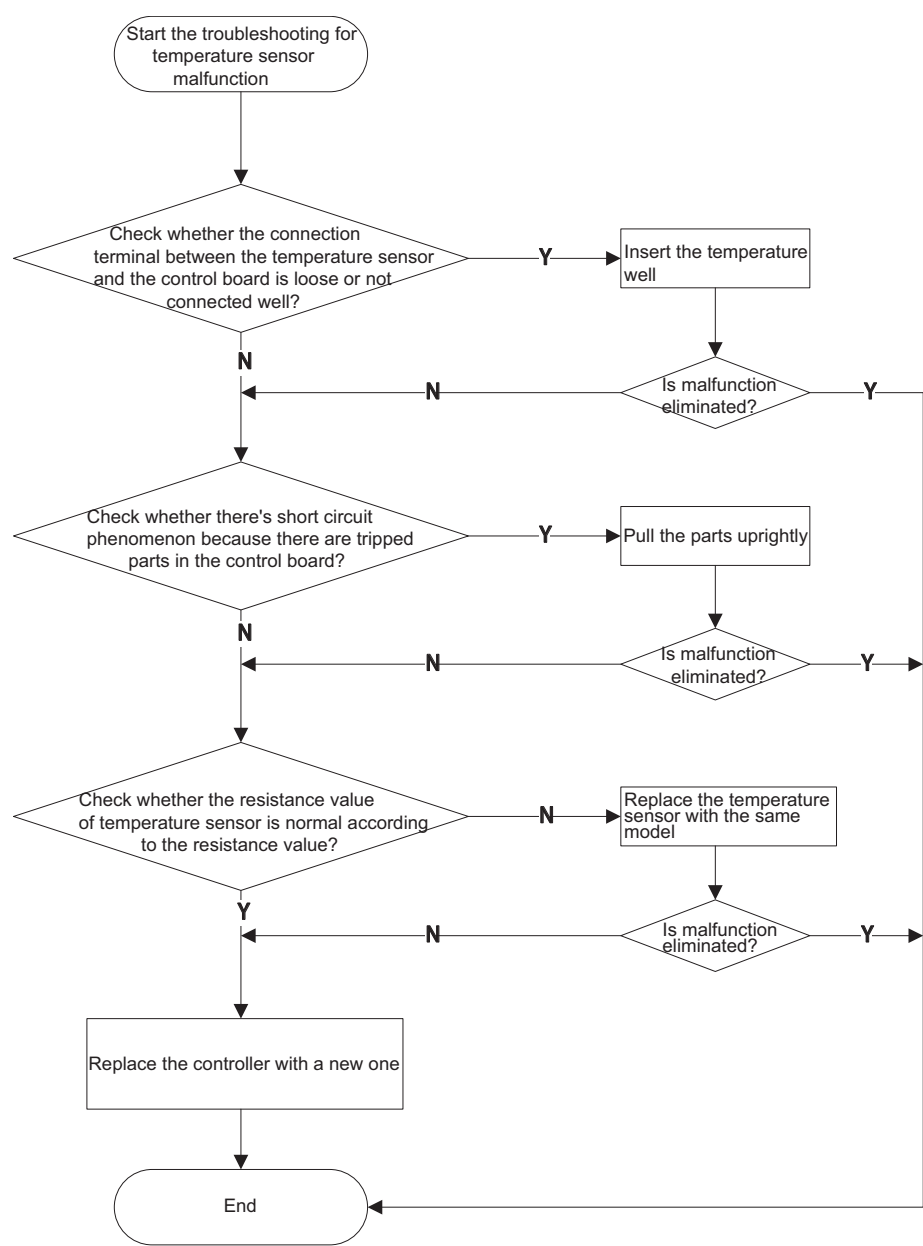
Detection and maintenance procedure for main malfunctions

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 :

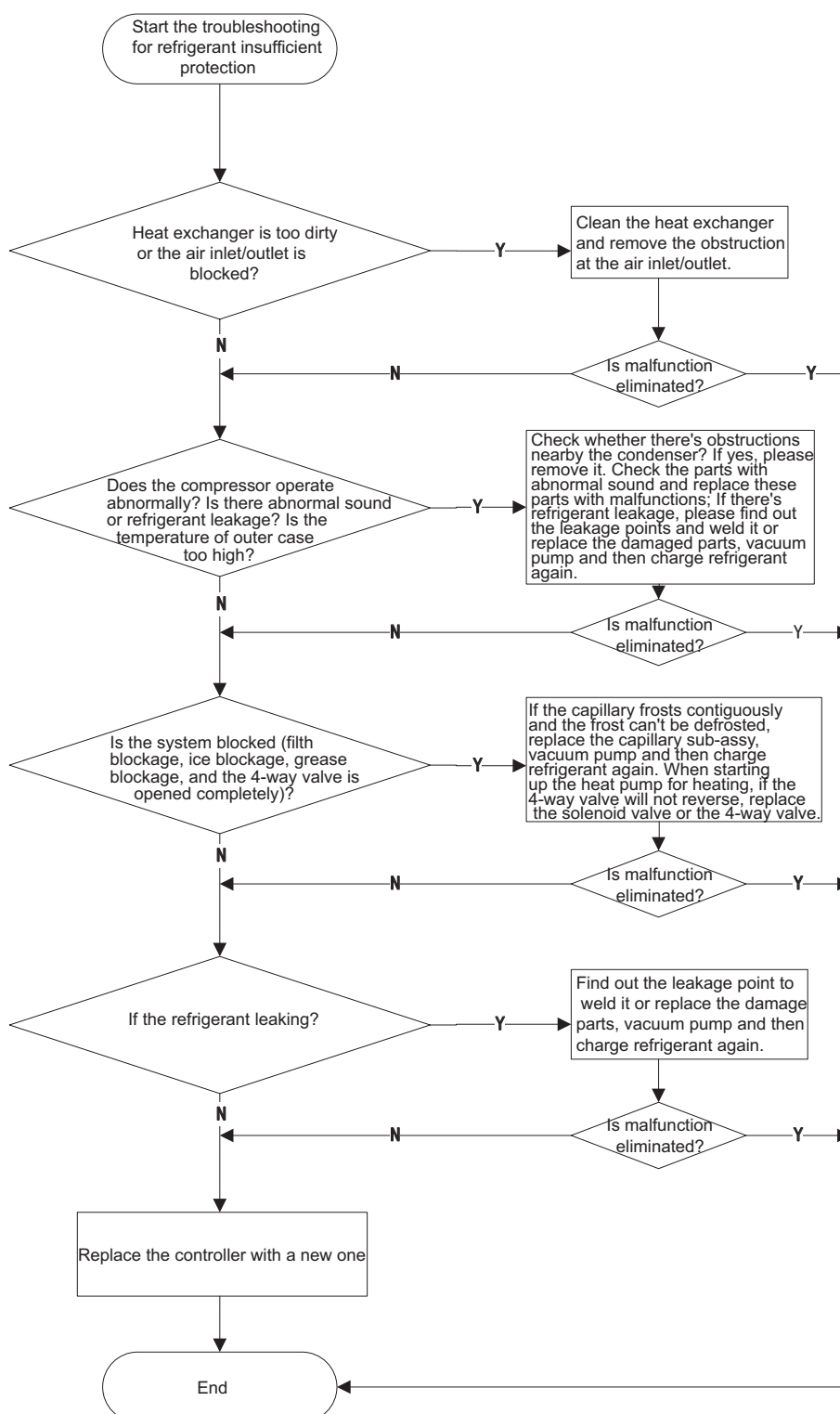


## 2. Troubleshooting for refrigerant insufficient protection F0

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 :

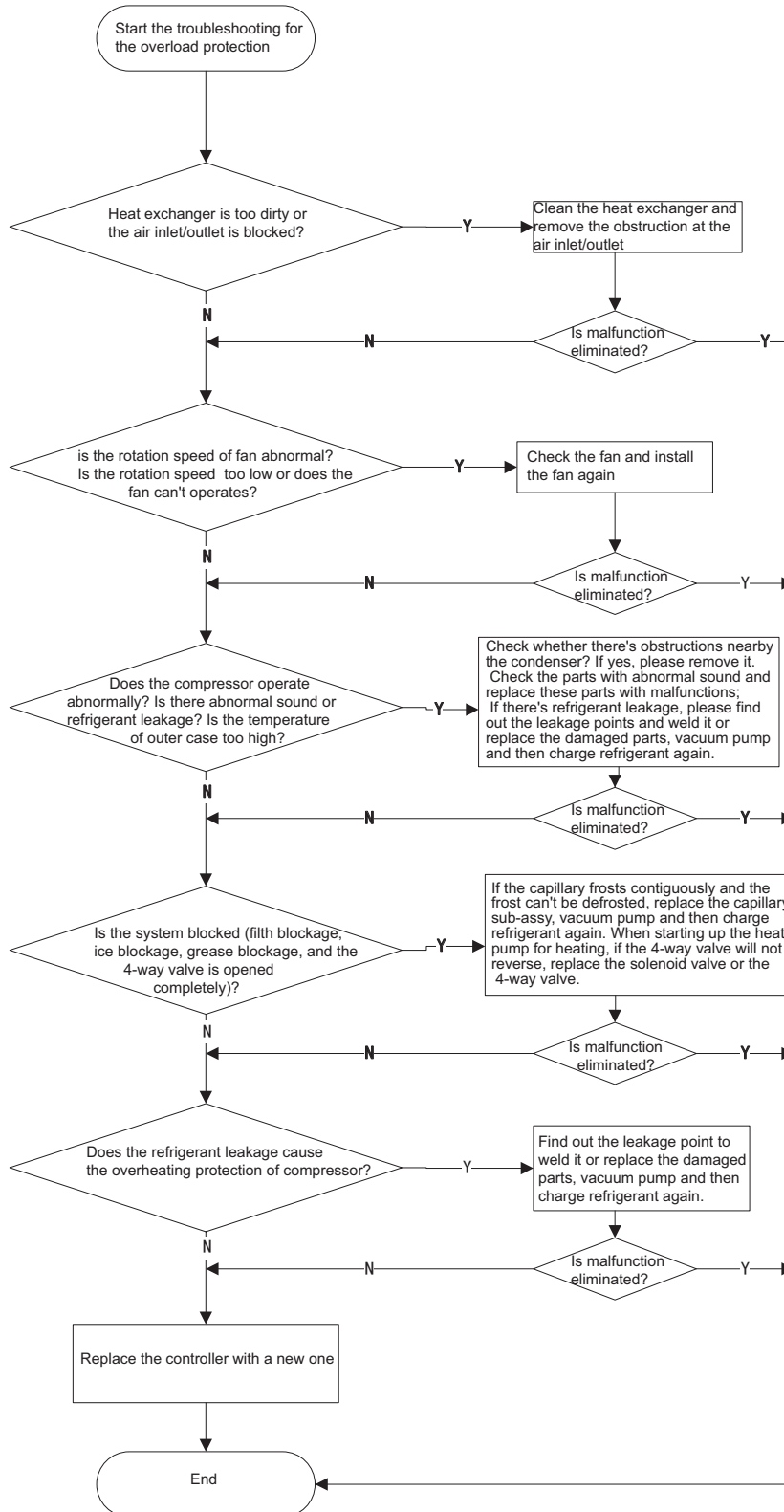


### 3. Troubleshooting for overload protection H3

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 :

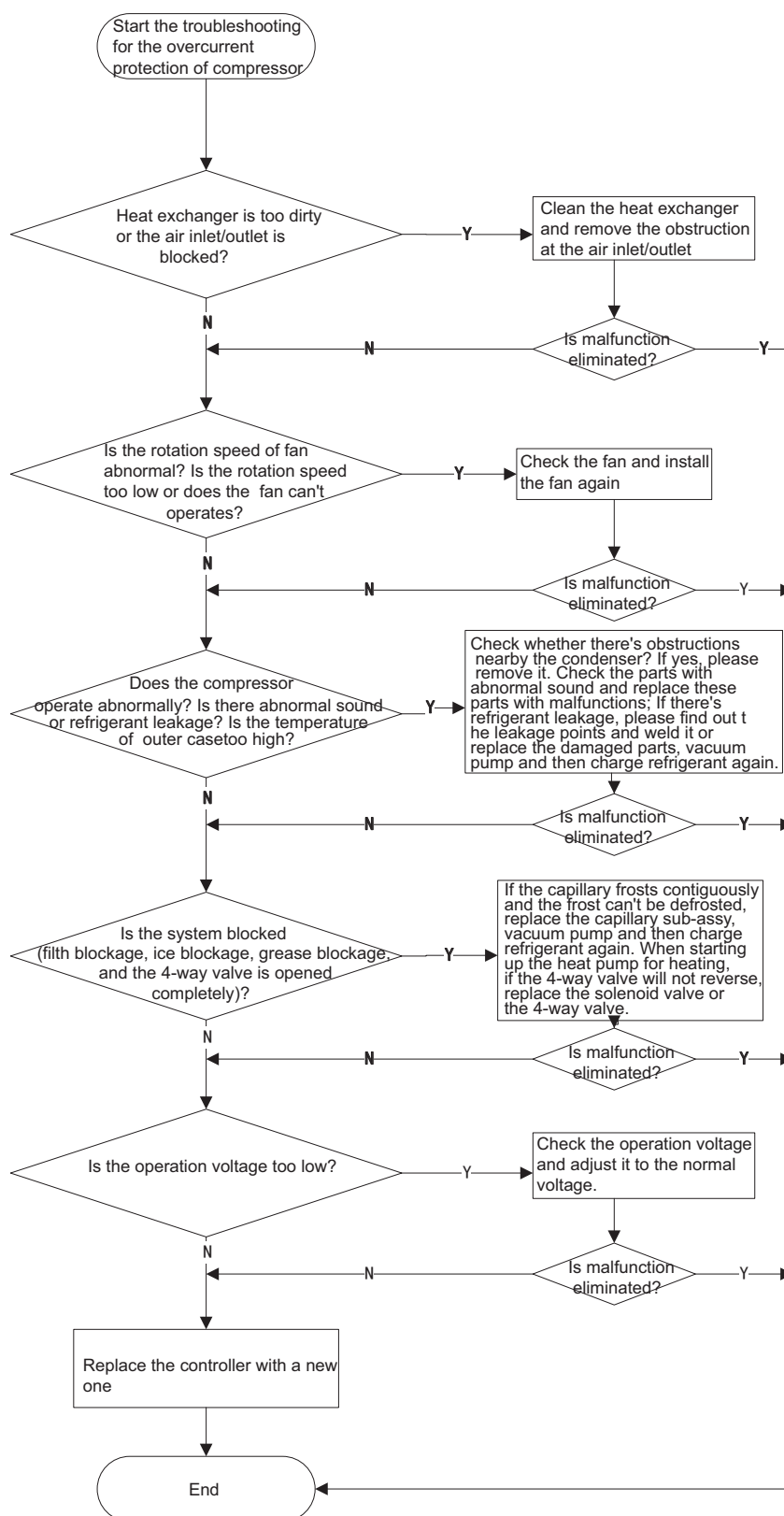


#### 4. Troubleshooting for overcurrent protection of compressor E5

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 :

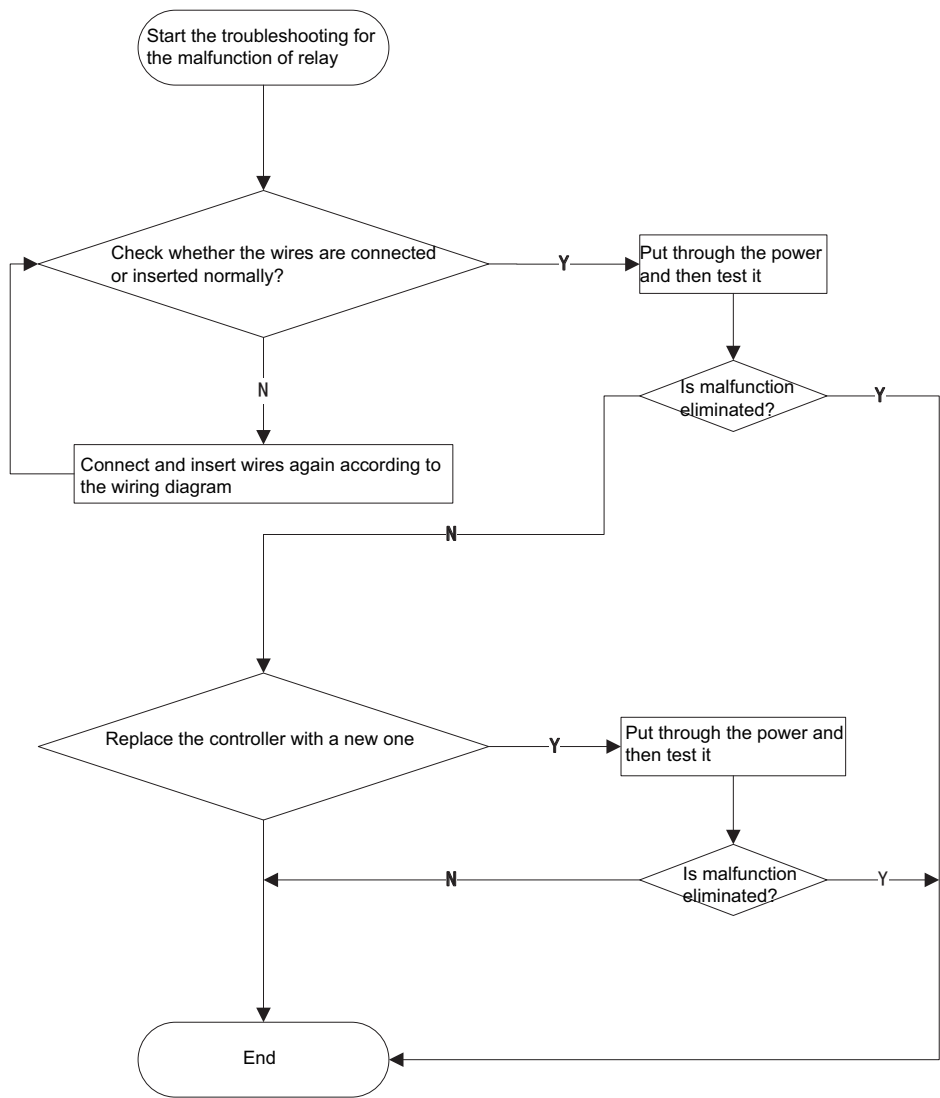




5. Malfunction of replay A2

Main check points:

- (1) wiring diagram (2) main board

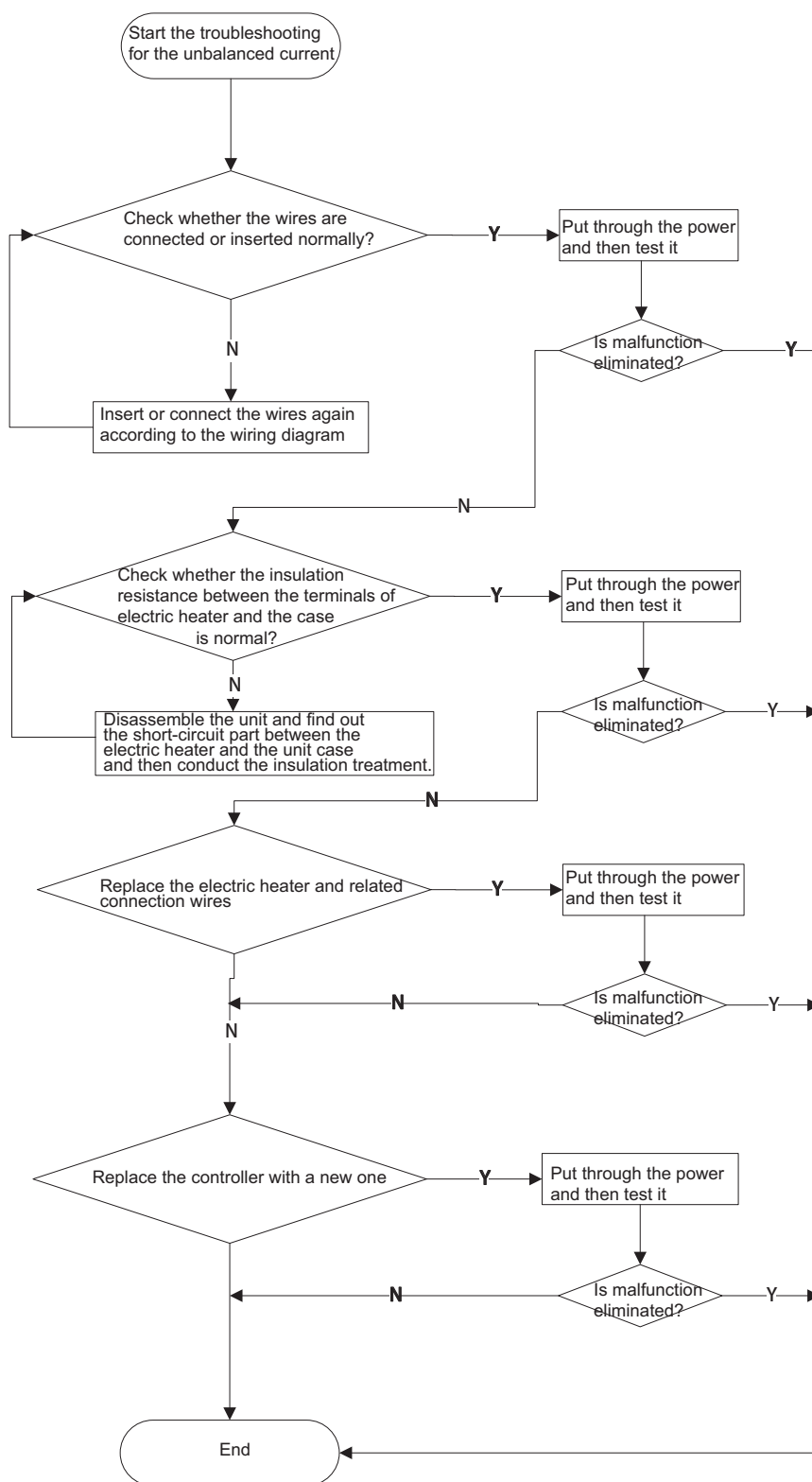


## 6. Malfunction of unbalanced current (PTAC) U5

Main check points:

(1) Wiring diagram (2) Main board

Inspection procedure in details is as below:

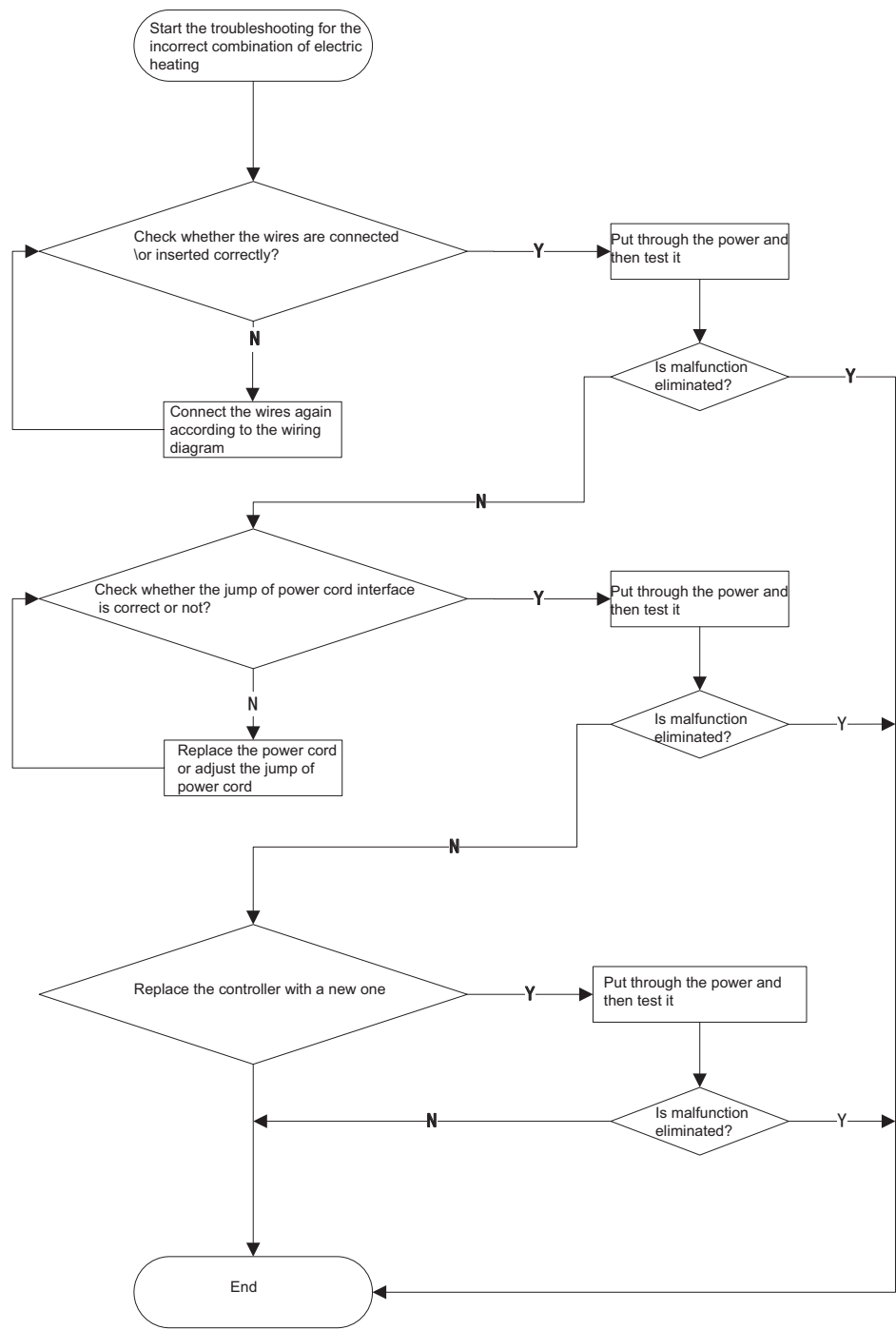


7. Combination method of electric heating is not correct A0

Main check points:

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

Detection procedure in details is as below:

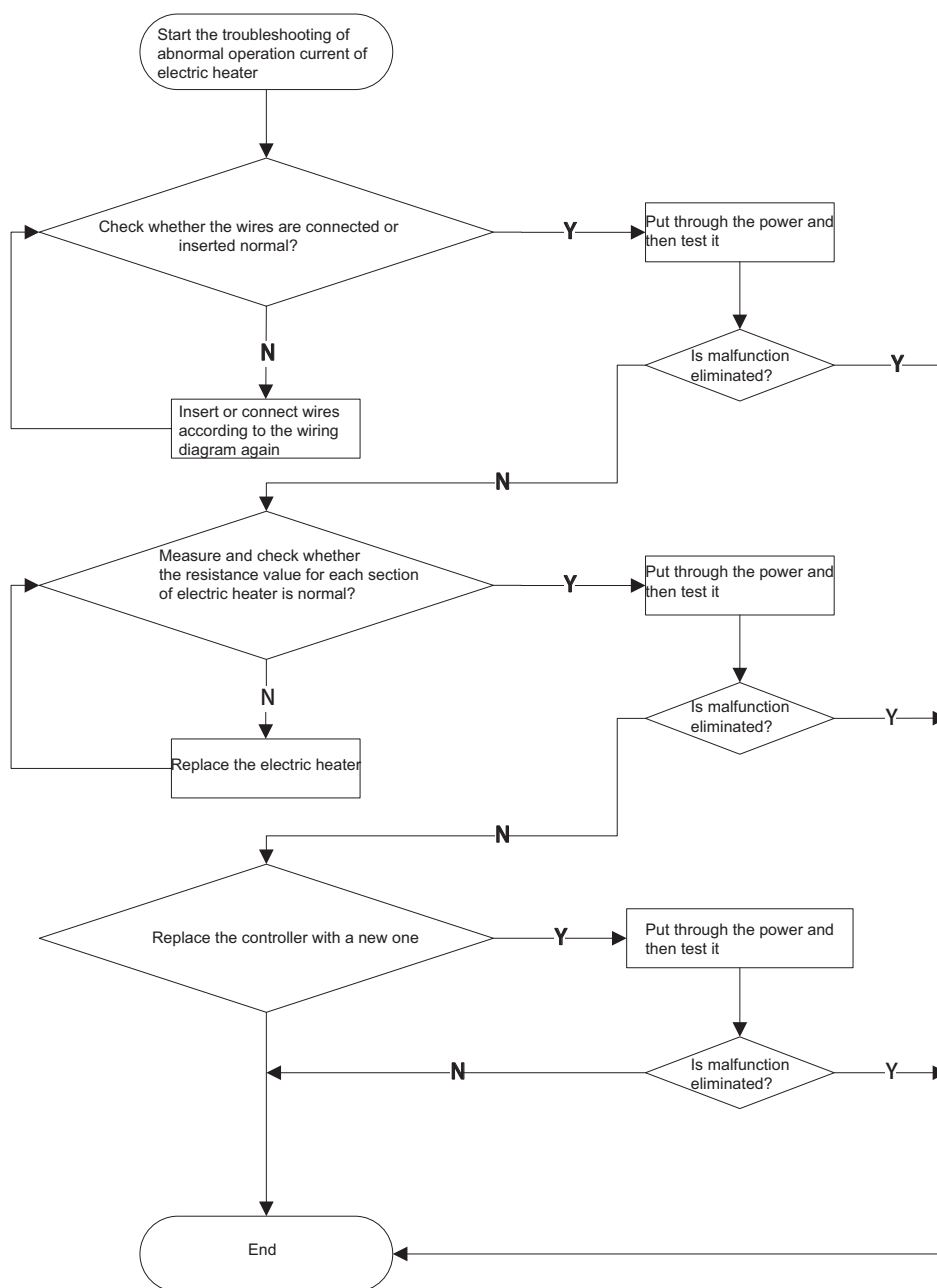


## 8. Operation current of electric heater is abnormal A4

Main check points:

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

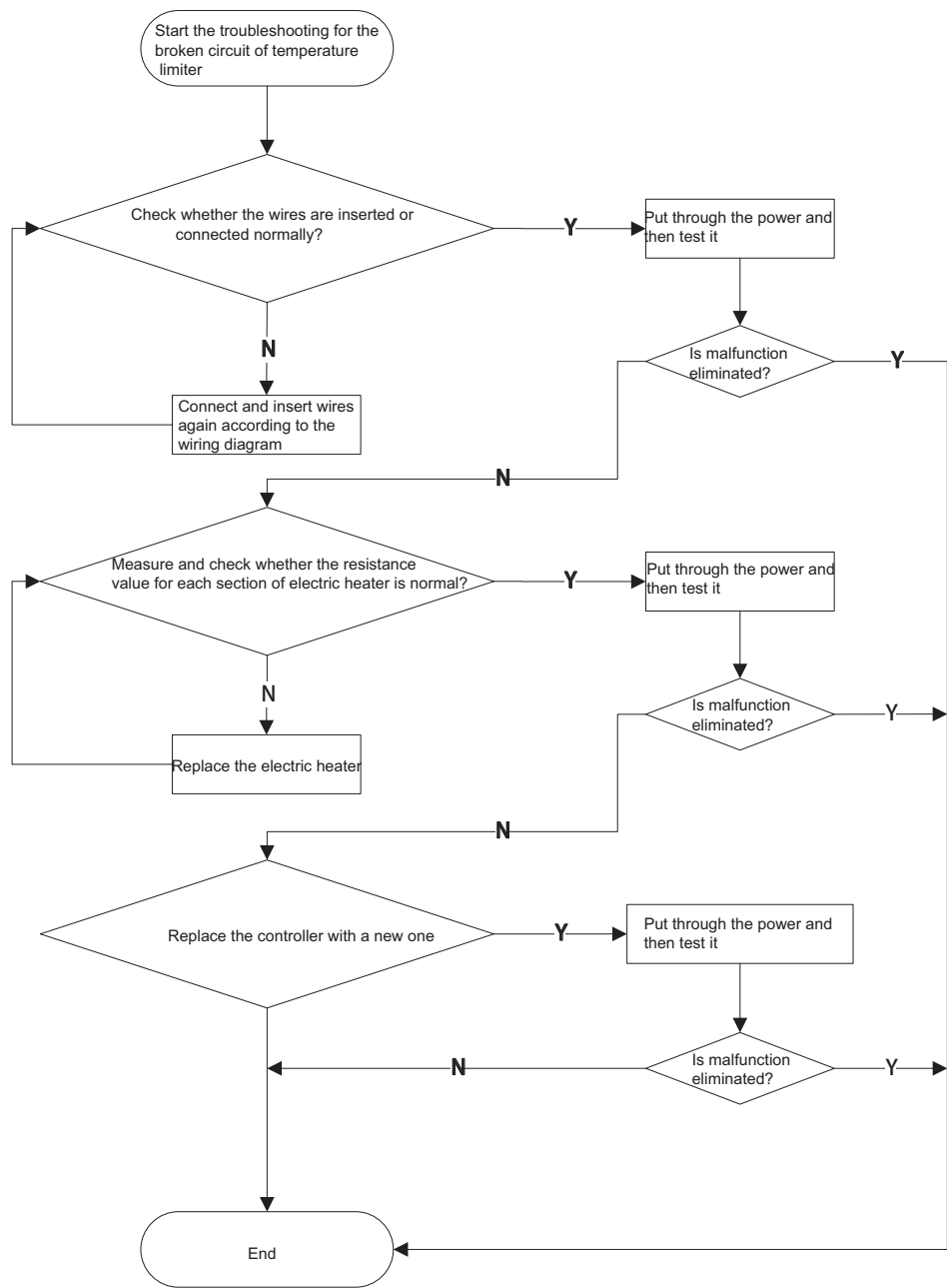
Detection procedure in details is as below:



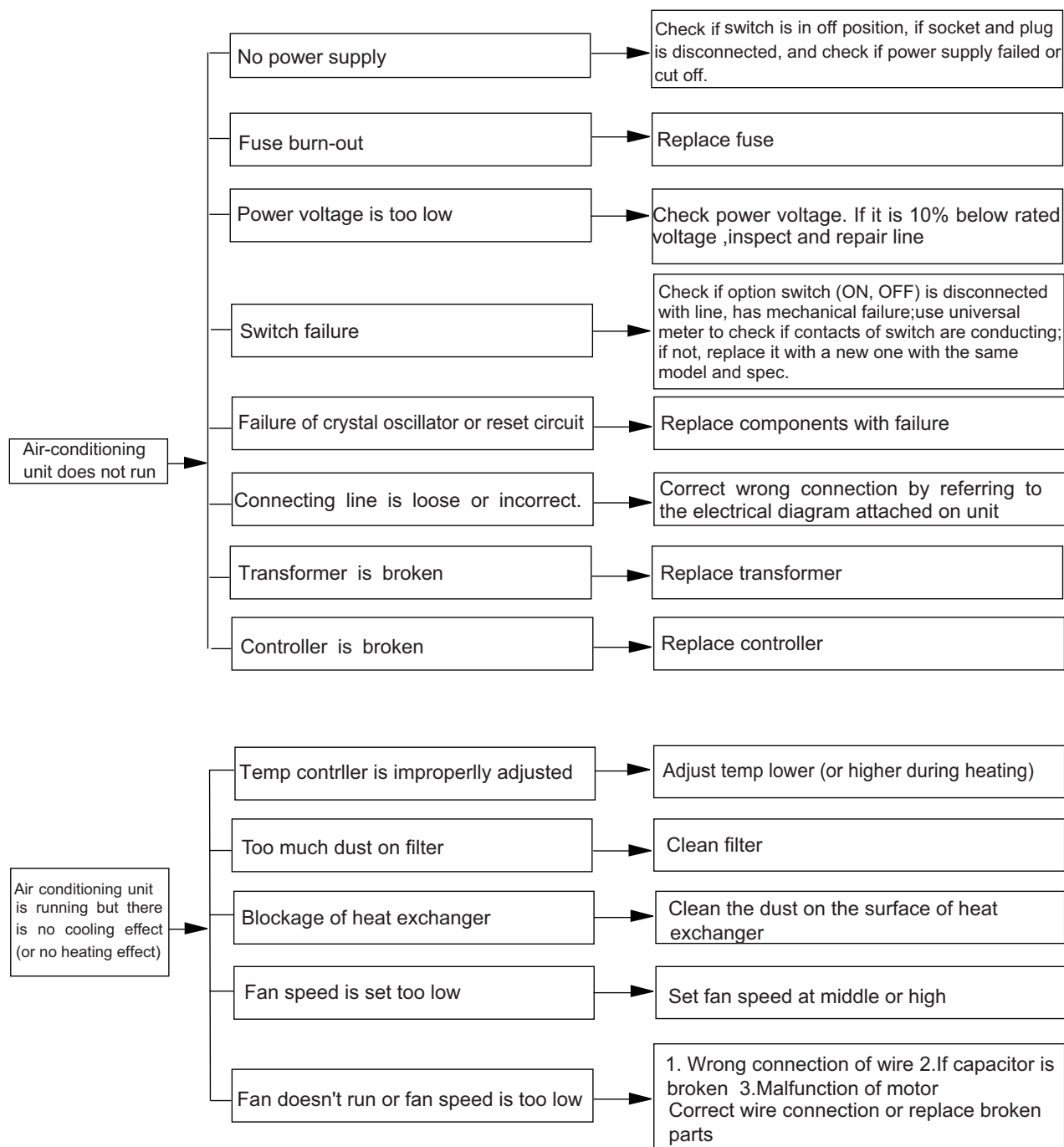
9. Circuit of temperature limiter is broken

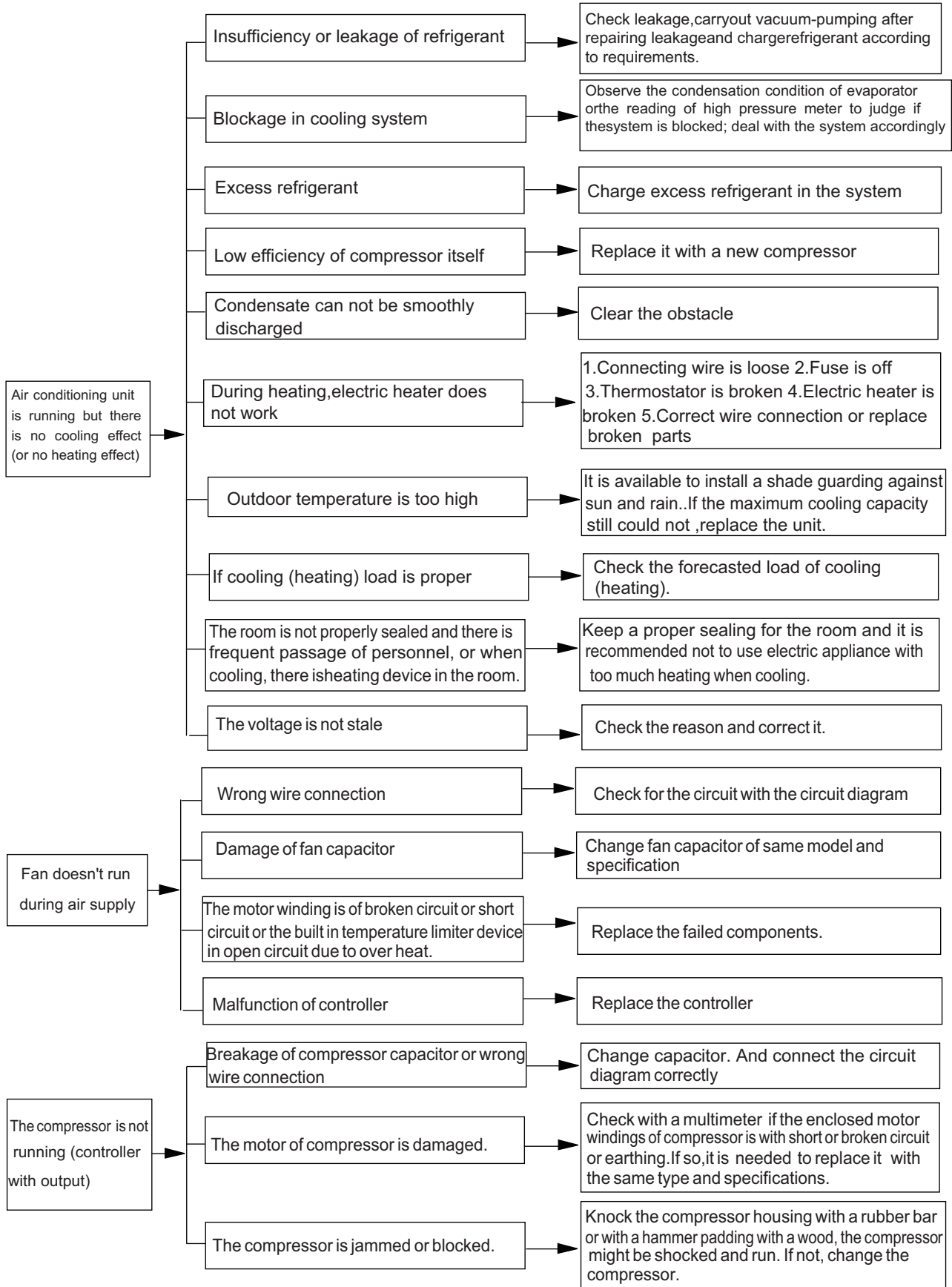
Main check points:

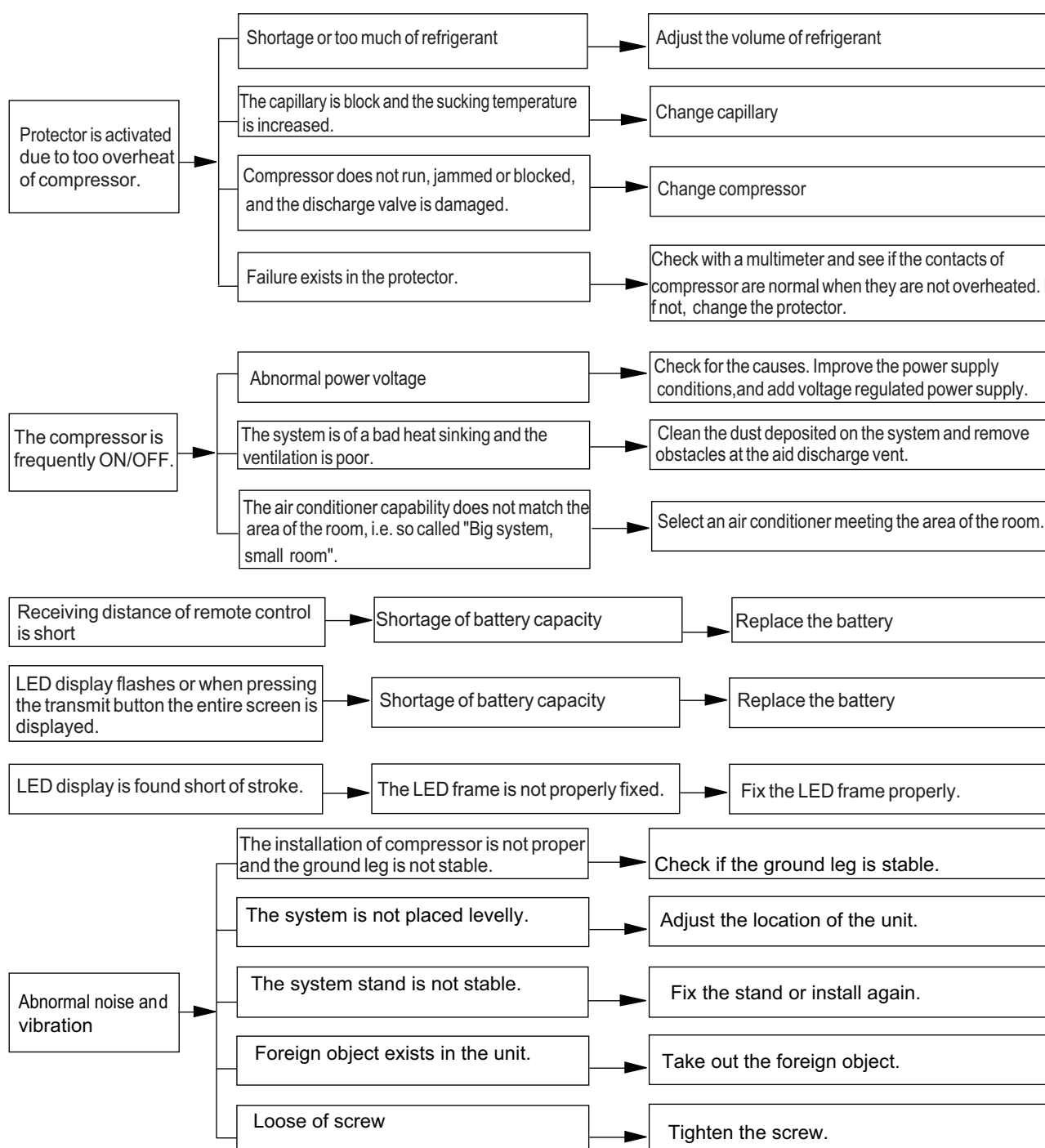
(1) wiring diagram (2) main board (3) electric heater



## 9.2 Malfunction Analysis







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



## 9.3 Maintenance Method 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 it's 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.
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	1. Make sure the air conditioner is grounded reliably. 2. Make sure wires of air conditioner is connected correctly. 3. 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

### 2. Poor Cooling for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller or Membrane	Adjust the set temperature.
Rotation speed is set too low	Small wind blow	Set the fan speed at high or medium.
Filter is blocked	Check the filter to see it's blocked	Clean the filter.
Installation position for unit is improper	Check whether the installation position is proper according to installation requirement for air conditioner	Adjust the installation position.
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; Unit's pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
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; Unit's pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked	Replace the capillary.
Malfunction of fan motor	The 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. Poor Heating for Electric Heater

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Electric heating relay on main board is damaged	Even heating condition is satisfied, electric heater can't be started up under heating mode	Replace the main board with the same model.
Connection needle stand between main board and display board is loose	Even heating condition is satisfied, electric heater can't be started up under heating mode	Insert the needle stand tightly.
Set temperature and ambient temperature are almost the same	Poor heating effect	Increase the set temperature.

Tube temperature protection	When ambient temperature is high, the detected temperature by indoor tube temperature sensor is high. The detected temperature by temperature sensor at air outlet is also high	Increase the set fan speed. When indoor tube temperature decreases to a certain value, it will resume automatically.
Protection of temperature limiter	Check whether the air inlet is blocked by curtains, clothes, etc.	Clean the filter. Move curtains, clothes and other obstacles.
Malfunction of temperature limiter	When turning on the unit, the heating effect is poor. Use universal meter to measure the two contact points of temperature limiter. If the resistance value is too big, the temperature limiter is damaged	Replace the temperature limiter.
Thermal fuse is burnt out	When turning on the unit, the heating effect is poor. Use universal meter to measure the two contact points of temperature limiter. If the resistance value is too big, the temperature limiter is damaged	Replace the thermal fuse.

#### 4. 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.
Connection needle stand between main board and display board is loose	Check whether the needle stand is loose	Insert the needle stand tightly.
Fan capacitor is damaged	1. Discharge the capacitor at first, and then use universal meter to measure the resistance of fan capacitor. It displays 0 or very small 2. If the resistance is very big, measure the voltage at both ends of capacitor. If the voltage at both ends of capacitor is same with the power input voltage, the fan capacitor is damaged	Replace fan 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 .
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.
Compressor relay on main board is damaged or needle stand of compressor is loose	Check whether relay can operate normally under cooling status	Replace the main board with the same model.
Capacitor of compressor is damaged	1. Discharge the capacitor at first, and then use universal meter to measure the resistance of fan capacitor. It displays 0 or very small 2. If the resistance is very big, measure the voltage at both ends of capacitor. If the voltage at both ends of capacitor is same with the power input voltage, the fan capacitor is damaged	Replace the capacitor of compressor.
Power voltage is low or high	After turning on the unit, poor cooling effect or the compressor is turned on or turned off frequently. Use universal meter to measure the power voltage	The fluctuation of the rate voltage is 10%. If the voltage is low or high, please equip with voltage regulator.
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and it's 0	Repair or replace compressor.
Cylinder of compressor is blocked	Compressor can't operate	Repair or replace compressor.

## 6. Air Conditioner is Leaking

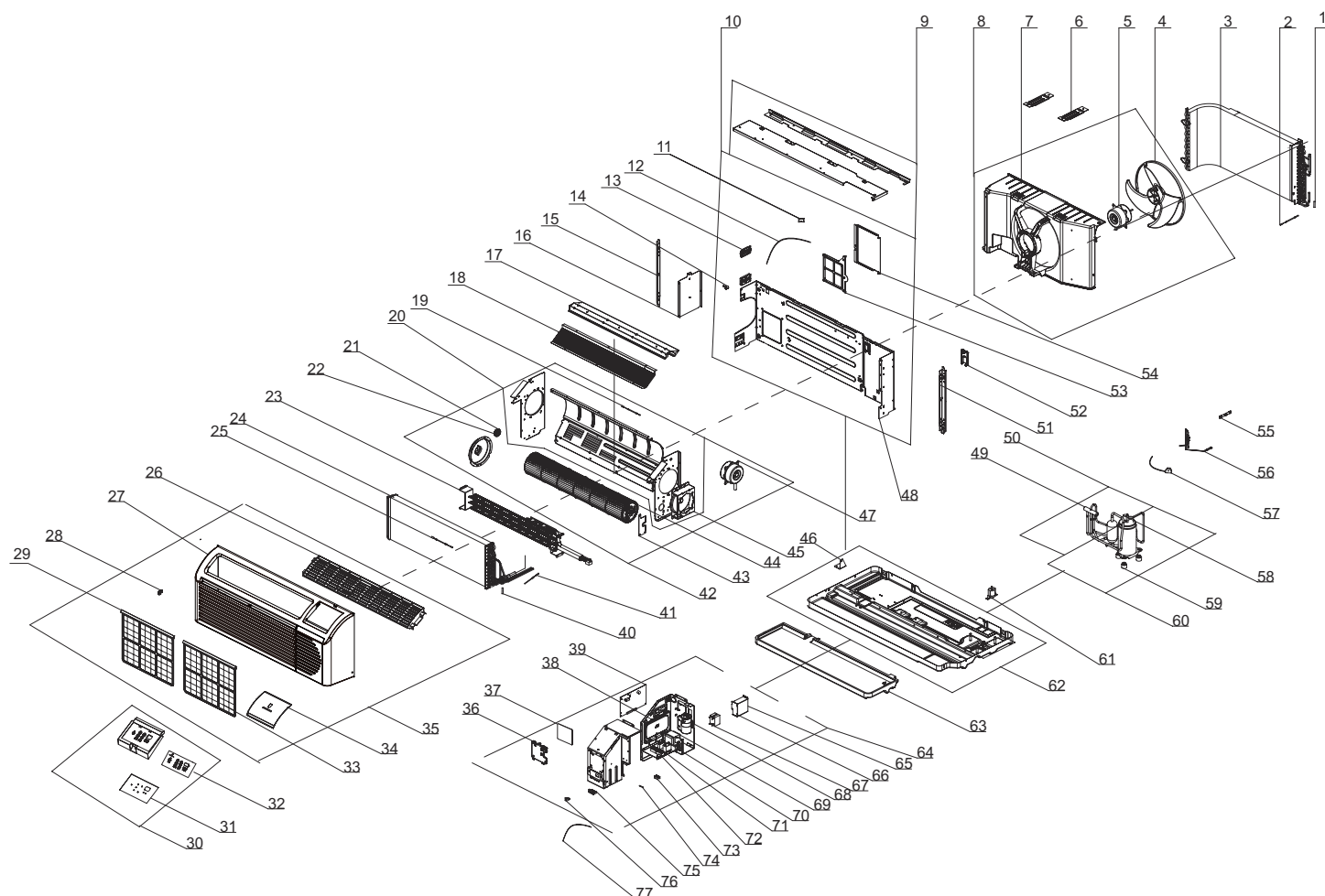
Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Drainage duct is blocked	There's water leakage at indoors	Eliminate the obstacles inside the drainage duct.
Air conditioner isn't inclined outwards	There's water leakage at indoors	The complete unit should incline outwards about 3°.

## 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 there's abnormal sound	There's the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, there's 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 unit or there're parts touching together inside the unit	There's abnormal sound from the unit	Remove foreign objects. Adjust all parts' position of unit, tighten screws and stick damping plaster between connected parts.
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

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



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

NO.	Description	Part Code			Qty
		KPA09B2D	KPA07B2D	KPA12B2D	
		CC060037700_X11438	CC060038000_X11438	CC060037800_X11438	
1	Temp Sensor Sleeving	05212423	05212423	05212423	1
2	Temperature Sensor	390000372	390000372	390000372	1
3	Condenser Assy	01101372	01100200378	01100200322	1
4	Axial Flow Fan	10331004	10331004	10331004	1
5	Fan Motor	1501104714	1501104714	15011803	1
6	Connection Board	01381021	01381021	01381021	2
7	Diversion Circle	10371218	10371218	10371218	1
8	Flow Guide Loop	1037121905	1037121905	1037121907	1
9	Top Cover Sub-Assy	0125104201P	0125104201P	0125104201P	1
10	Clapboard Sub-Assy	0123111901	0123111901	0123111901	1
11	Cable Clamp	71000151	71000151	71000151	2
12	Door Thread	02161505	02161505	02161505	1
13	Hand Lever	26231156	26231156	26231156	1
14	Hand Lever	26231157	26231157	26231157	1
15	Outer Support Sub-assy(Left)	01701038	01701038	01701038	1
16	Baffle Plate	01361018	01361018	01361018	1
17	Helicoid Tongue	02121029P	02121029P	02121029P	1
18	Rear Grill	01471007	01471007	01471007	1
19	Temperature Sensor	390001982	390001982	390001982	1
20	Air Duct Sub-assy	01221027P	01221027P	01221027P	1
21	Bearing Holder Sub-assy	26151139	26151139	26151139	1
22	Bearing Holder	26151138	26151138	26151138	1
23	Electric Heater	3200103902	3200103902	3200103902	1
24	Evaporator Assy	01001906	01100100084	01100100041	1
25	Ambient Temperature Sensor	3900012123	3900012123	3900012123	1
26	Air Outlet Grille	22411023	22411023	22411023	1
27	Front Panel	20001457	20001457	20001457	1
28	Front Panel Clip	02111013	02111013	02111013	2
29	Filter Sub-Assy	11121212	11121212	11121212	2
30	LCD Cover Sub-assy	2016138202	2016138202	2016138202	1
31	Membrane	6306130903	6306130903	6306130903	1
32	Display Board	30562073	30562073	30562073	1
33	Filter	11120037	11120037	11120037	1
34	Remote Control Cover	20121070T	20121070T	20121070T	1
35	Front Panel Assy	2000147506	2000147506	2000147506	1
36	Supporting Board	26111167	26111167	26111167	1
37	Main Board 1	30132167	30132167	30132167	1
38	Supporting Board	26111166	26111166	26111166	1
39	Main Board 2	30132163	30132163	30132163	1
40	Temp Sensor Sleeving	05212423	05212423	05212423	1
41	Temperature Sensor	390000596	390000596	390000596	1
42	Air Flue Assy	0122102610	0122102608	0122102612	1
43	Heater Wiring Block Board	02111009	02111009	02111009	1
44	Cross Flow Fan	10351004	10351004	10351004	1
45	Motor Support Sub-Assy	01701014P	01701014P	01701014P	1
46	Retaining Plate of Condenser	01741023	01741023	01741023	1

47	Fan Motor	1501180211	1501180209	1501180213	1
48	Clapboard	0123115801	0123115801	0123115801	1
49	4-Way Valve	430004022	430004022	430004032	1
50	4-Way Valve Assy	03021240	03021241	03015200051	1
51	Outer Support Sub-assy(Right)	01701039	01701039	01701039	1
52	Cable Cross Plate	26111215	26111215	26111215	1
53	Filter Sub-Assy	11121607	11121607	11121607	1
54	Air Inlet Door	01441018P	01441018P	01441018P	1
55	One Way Valve	07133001	07133001	07133001	1
56	Capillary Sub-assy	03000600082	03000600250	03000600252	1
57	Magnet Coil	4300040022	4300040022	4300040022	1
58	Compressor Overload Protector(Internal)	/	/	00180240	/
59	Compressor Gasket	76710287	76710287	76710287	3
60	Compressor and Fittings	00101346	00101Φ13 47/64	00101350	1
61	Drainage Valve	07101001	07101001	07101001	1
62	Chassis Sub-assy	01201241P	01201241P	01201241P	1
63	Foam (Water Tray)	12311048	12311048	12311048	1
64	Electric Box Assy	1000020070503	1000020070501	1000020070505	1
65	Junction box	/	/	/	/
66	Junction lid	/	/	/	/
67	Relay	/	/	/	/
68	Capacitor CBB65	33000081	3300008111	3300008101	1
69	Transformer	43110270	43110270	43110270	1
70	Capacitor CBB61S	3301074702	3301074702	3301074710	1
71	Capacitor CBB61	3301074716	3301074716	3301074716	1
72	Terminal Board	42011103	42011103	42011103	2
73	Radiator	49010252	49010252	49010252	1
74	Fuse	46010055	46010055	46010055	1
75	Wiring Terminal	42010039S	42010039S	42010039S	1
76	Wiring Terminal	42010037	42010037	42010037	1
77	Pwer cord (LCDI)	4002036304	4002036304	4002036304	1

Above data is subject to change without notice.

NO.	Description	Part Code			Qty
		KPA09B2P	KPA07B2P	KPA12B2P	
	Product Code	CC060040400_X11438	CC060040000_X11438	CC060040800_X11438	
1	Temp Sensor Sleevng	05212423	05212423	05212423	1
2	Temperature Sensor	390000372	390000372	390000372	1
3	Condenser Assy	01101372	01100200378	01100200322	1
4	Axial Flow Fan	10331004	10331004	10331004	1
5	Fan Motor	1501104715	1501104715	1501104716	1
6	Connection Board	01381021	01381021	01381021	2
7	Diversion Circle	10371218	10371218	10371218	1
8	Flow Guide Loop	1037121910	1037121910	1037121909	1
9	Top Cover Sub-Assy	0125104201P	0125104201P	0125104201P	1
10	Clapboard Sub-Assy	0123111901	0123111901	0123111901	1
11	Cable Clamp	71000151	71000151	71000151	2
12	Door Thread	02161505	02161505	02161505	1
13	Hand Lever	26231156	26231156	26231156	1
14	Hand Lever	26231157	26231157	26231157	1
15	Outer Support Sub-assy(Left)	01701038	01701038	01701038	1
16	Baffle Plate	01361018	01361018	01361018	1
17	Helicoid Tongue	02121029P	02121029P	02121029P	1
18	Rear Grill	01471007	01471007	01471007	1
19	Temperature Sensor	390001982	390001982	390001982	1
20	Air Duct Sub-assy	01221027P	01221027P	01221027P	1
21	Bearing Holder Sub-assy	26151139	26151139	26151139	1
22	Bearing Holder	26151138	26151138	26151138	1
23	Electric Heater	3200103903	3200103903	3200103903	1
24	Evaporator Assy	0100190601	01100100084	01100100041	1
25	Ambient Temperature Sensor	3900012123	3900012123	3900012123	1
26	Air Outlet Grille	22411023	22411023	22411023	1
27	Front Panel	20001457	20001457	20001457	1
28	Front Panel Clip	02111013	02111013	02111013	2
29	Filter Sub-Assy	11121212	11121212	11121212	2
30	LCD Cover Sub-assy	2016138202	2016138202	2016138202	1
31	Membrane	6306130903	6306130903	6306130903	1
32	Display Board	30562073	30562073	30562073	1
33	Filter	11120037	11120037	11120037	1
34	Remote Control Cover	20121070T	20121070T	20121070T	1
35	Front Panel Assy	2000147506	2000147506	2000147506	1
36	Supporting Board	26111167	26111167	26111167	1
37	Main Board 1	30132167	30132167	30132167	1
38	Supporting Board	26111166	26111166	26111166	1
39	Main Board 2	30132165	30132165	30132165	1
40	Temp Sensor Sleevng	05212423	05212423	05212423	1
41	Temperature Sensor	390000596	390000596	390000596	1
42	Air Flue Assy	0122102617	0122102615	0122102619	1
43	Heater Wiring Block Board	02111009	02111009	02111009	1
44	Cross Flow Fan	10351004	10351004	10351004	1
45	Motor Support Sub-Assy	01701014P	01701014P	01701014P	1
46	Retaining Plate of Condenser	01741023	01741023	01741023	1
47	Fan Motor	1501180212	1501180210	1501180214	1

48	Clapboard	0123115801	0123115801	0123115801	1
49	4-Way Valve	430004022	430004022	430004032	1
50	4-Way Valve Assy	03021240	03021241	03015200066	1
51	Outer Support Sub-assy(Right)	01701039	01701039	01701039	1
52	Cable Cross Plate	26111215	26111215	26111215	1
53	Filter Sub-Assy	11121607	11121607	11121607	1
54	Air Inlet Door	01441018P	01441018P	01441018P	1
55	One Way Valve	/	07133001	07133001	1
56	Capillary Sub-assy	03000600113	03000600254	03000600252	1
57	Magnet Coil	4300040026	4300040026	4300040026	1
58	Compressor Overload Protector(Internal)	00181156	00181156	00181156	1
59	Compressor Gasket	76710287	76710287	76710287	3
60	Compressor and Fittings	00101376	00101375	00101377	1
61	Drainage Valve	07101001	07101001	07101001	1
62	Chassis Sub-assy	01201241P	01201241P	01201241P	1
63	Foam (Water Tray)	12311048	12311048	12311048	1
64	Electric Box Assy	1000020073904	1000020073913	1000020073908	1
65	Junction box	/	/	/	/
66	Junction lid	/	/	/	/
67	Relay	/	/	/	/
68	Capacitor CBB65	33010044	3300008111	33000081	1
69	Transformer	43110269	43110269	43110269	1
70	Capacitor CBB61S	3301074701	3301074701	3301074701	1
71	Capacitor CBB61	/	3301074716	/	1
72	Terminal Board	42011103	42011103	42011103	2
73	Radiator	49010252	49010252	49010252	1
74	Fuse	46010022	46010022	46010022	1
75	Wiring Terminal	42010039S	42010039S	42010039S	1
76	Wiring Terminal	42010037	42010037	42010037	1
77	Pwer cord (LCDI)	40020005	40020005	4002056001	1

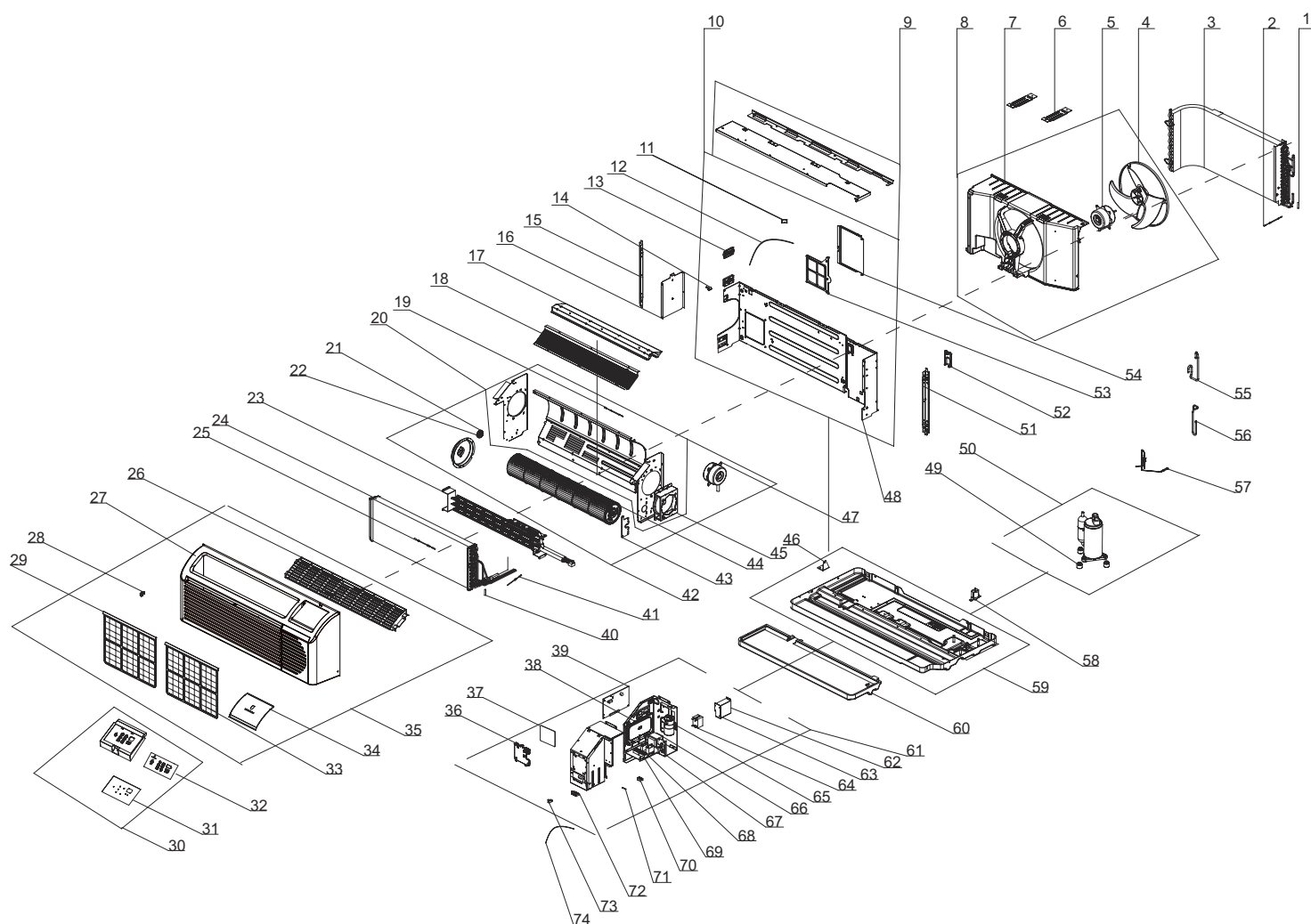
Above data is subject to change without notice.



NO.	Description	Part Code		Qty
		KPA15B2D	KPA15B2P	
	Product Code	CC060039500_X11438	CC060041200_X11438	
1	Temp Sensor Sleaving	05212423	05212423	1
2	Temperature Sensor	390000372	390000372	1
3	Condenser Assy	01100200323	01100200323	1
4	Axial Flow Fan	10331004	10331004	1
5	Fan Motor	1501180310	1501104716	1
6	Connection Board	01381021	01381021	2
7	Diversion Circle	10371218	10371218	1
8	Flow Guide Loop	1037121904	1037121909	1
9	Top Cover Sub-Assy	0125104201P	0125104201P	1
10	Clapboard Sub-Assy	0123111901	0123111901	1
11	Cable Clamp	71000151	71000151	2
12	Door Thread	02161505	02161505	1
13	Hand Lever	26231156	26231156	1
14	Hand Lever	26231157	26231157	1
15	Outer Support Sub-assy(Left)	01701038	01701038	1
16	Baffle Plate	01361018	01361018	1
17	Helicoid Tongue	02121029P	02121029P	1
18	Rear Grill	01471007	01471007	1
19	Temperature Sensor	390001982	390001982	1
20	Air Duct Sub-assy	01221027P	01221027P	1
21	Bearing Holder Sub-assy	26151139	26151139	1
22	Bearing Holder	26151138	26151138	1
23	Electric Heater	3200103902	3200103903	1
24	Evaporator Assy	01100100041	01100100041	1
25	Ambient Temperature Sensor	3900012123	3900012123	1
26	Air Outlet Grille	22411023	22411023	1
27	Front Panel	20001457	20001457	1
28	Front Panel Clip	02111013	02111013	2
29	Filter Sub-Assy	11121212	11121212	2
30	LCD Cover Sub-assy	2016138202	2016138202	1
31	Membrane	6306130903	6306130903	1
32	Display Board	30562073	30562073	1
33	Filter	11120037	11120037	1
34	Remote Control Cover	20121070T	20121070T	1
35	Front Panel Assy	2000147506	2000147506	1
36	Supporting Board	26111167	26111167	1
37	Main Board 1	30132167	30132167	1
38	Supporting Board	26111166	26111166	1
39	Main Board 2	30132163	30132165	1
40	Temp Sensor Sleaving	05212423	05212423	1
41	Temperature Sensor	390000596	390000596	1
42	Air Flue Assy	0122102612	0122102620	1
43	Heater Wiring Block Board	02111009	02111009	1
44	Cross Flow Fan	10351004	10351004	1
45	Motor Support Sub-Assy	01701014P	01701014P	1
46	Retaining Plate of Condenser	01741023	01741023	1

47	Fan Motor	1501180213	1501180214	1
48	Clapboard	0123115801	0123115801	1
49	4-Way Valve	430004032	430004032	1
50	4-Way Valve Assy	03015200091	03015200068	1
51	Outer Support Sub-assy(Right)	01701039	01701039	1
52	Cable Cross Plate	26111215	26111215	1
53	Filter Sub-Assy	11121607	11121607	1
54	Air Inlet Door	01441018P	01441018P	1
55	One Way Valve	07133001	07133001	1
56	Capillary Sub-assy	03000600253	03000600257	1
57	Magnet Coil	4300040022	4300040026	1
58	Compressor Overload Protector(Internal)	/	/	1
59	Compressor Gasket	76710287	76710216	3
60	Compressor and Fittings	00101348	00101378	1
61	Drainage Valve	07101001	07101001	1
62	Chassis Sub-assy	01201241P	0120124108P	1
63	Foam (Water Tray)	12311048	12311048	1
64	Electric Box Assy	1000020070505	1000020073908	1
65	Junction box	/	/	/
66	Junction lid	/	/	/
67	Relay	/	/	/
68	Capacitor CBB65	3300008101	33000081	1
69	Transformer	43110270	43110269	1
70	Capacitor CBB61S	/	3301074701	1
71	Capacitor CBB61	3301074716	/	1
72	Terminal Board	42011103	42011103	2
73	Radiator	49010252	49010252	1
74	Fuse	46010055	46010022	1
75	Wiring Terminal	42010039S	42010039S	1
76	Wiring Terminal	42010037	42010037	1
77	Pwer cord (LCDI)	4002036304	4002036305	1

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

NO.	Description	Part Code			Qty
		KPE12B2D	KPE07B2D	KPE07B2P	
	Product Code	CC060038100_X11438	CC060038700_X11438	CC060039900_X11438	
1	Temp Sensor Sleaving	05212423	05212423	05212423	1
2	Temperature Sensor	390000372	390000372	390000372	1
3	Condenser Assy	01101372	01101373	01101373	1
4	Axial Flow Fan	10331004	10331004	10331004	1
5	Fan Motor	15011803	1501104714	1501104715	1
6	Connection Board	01381021	01381021	01381021	2
7	Diversion Circle	10371218	10371218	10371218	1
8	Flow Guide Loop	1037121907	1037121905	1037121910	1
9	Top Cover Sub-Assy	0125104201P	0125104201P	0125104201P	1
10	Clapboard Sub-Assy	0123111901	0123111901	0123111901	1
11	Cable Clamp	71000151	71000151	71000151	2
12	Door Thread	02161505	02161505	02161505	1
13	Hand Lever	26231156	26231156	26231156	1
14	Hand Lever	26231157	26231157	26231157	1
15	Outer Support Sub-assy(Left)	01701038	01701038	01701038	1
16	Baffle Plate	01361018	01361018	01361018	1
17	Helicoid Tongue	02121029P	02121029P	02121029P	1
18	Rear Grill	01471007	01471007	01471007	1
19	Temperature Sensor	390001982	390001982	390001982	1
20	Air Duct Sub-assy	01221027P	01221027P	01221027P	1
21	Bearing Holder Sub-assy	26151139	26151139	26151139	1
22	Bearing Holder	26151138	26151138	26151138	1
23	Electric Heater	3200103902	3200103902	3200103903	1
24	Evaporator Assy	01100100041	01100100043	0110010004301	1
25	Ambient Temperature Sensor	3900012123	3900012123	3900012123	1
26	Air Outlet Grille	22411023	22411023	22411023	1
27	Front Panel	20001457	20001457	20001457	1
28	Front Panel Clip	02111013	02111013	02111013	2
29	Filter Sub-Assy	11121212	11121212	11121212	2
30	LCD Cover Sub-assy	2016138202	2016138202	2016138202	1
31	Membrane	6306130903	6306130903	6306130903	1
32	Display Board	30562073	30546007	30562073	1
33	Filter	11120037	11120037	11120037	1
34	Remote Control Cover	20121070T	20121070T	20121070T	1
35	Front Panel Assy	2000147506	2000147506	2000147506	1
36	Supporting Board	26111167	26111167	26111167	1
37	Main Board 1	30132168	30132168	30132168	1
38	Supporting Board	26111166	26111166	26111166	1
39	Main Board 2	30132163	30132163	30132165	1
40	Temp Sensor Sleaving	05212423	05212423	05212423	1
41	Temperature Sensor	390000596	390000596	390000596	1
42	Air Flue Assy	0122102612	0122102608	0122102615	1
43	Heater Wiring Block Board	02111009	02111009	02111009	1
44	Cross Flow Fan	10351004	10351004	10351004	1
45	Motor Support Sub-Assy	01701014P	01701014P	01701014P	1
46	Retaining Plate of Condenser	01741023	01741023	01741023	1

47	Fan Motor	1501180213	1501180209	1501180210	1
48	Clapboard	0123115801	0123115801	0123115801	1
49	Compressor and Fittings	00101350	00101349	00101375	1
50	Compressor Gasket	76710287	76710287	76710287	3
51	Outer Support Sub-assy(Right)	01701039	01701039	01701039	1
52	Cable Cross Plate	26111215	26111215	26111215	1
53	Filter Sub-Assy	11121607	11121607	11121607	1
54	Air Inlet Door	01441018P	01441018P	01441018P	1
55	Inhalation Tube	03521020	03631666	03631666	1
56	Discharge Tube	03511003	03511010	/	1
57	Capillary Sub-assy	03000600104	03000600079	03000600111	1
58	Drainage Valve	07101001	07101001	07101001	1
59	Chassis Sub-assy	01201241P	01201241P	01201241P	1
60	Foam (Water Tray)	12311048	12311048	12311048	1
61	Electric Box Assy	1000020070504	10000200705	1000020073901	1
62	Junction lid	/	/	/	/
63	Junction box	/	/	/	/
64	Relay	/	/	/	/
65	Capacitor CBB61S	3301074710	3301074702	3301074701	1
66	Transformer	43110270	43110270	43110269	1
67	Capacitor CBB65	3300008101	3300008111	3300008111	1
68	Capacitor CBB61	3301074716	3301074716	3301074716	1
69	Terminal Board	42011103	42011103	42011103	2
70	Radiator	49010252	49010252	49010252	1
71	Fuse	46010055	46010055	46010022	1
72	Wiring Terminal	42010037	42010037	42010037	1
73	Wiring Terminal	42010039S	42010039S	42010039S	1
74	Pwer cord (LCDI)	4002036304	4002036304	4002036304	1

Above data is subject to change without notice.

NO.	Description	Part Code			Qty
		KPE09B2D	KPE09B2P	KPE12B2P	
	Product Code	CC060039000_X11438	CC060040300_X11438	CC060040700_X11438	
1	Temp Sensor Sleaving	05212423	05212423	05212423	1
2	Temperature Sensor	390000372	390000372	390000372	1
3	Condenser Assy	01101373	01101373	01101372	1
4	Axial Flow Fan	10331004	10331004	10331004	1
5	Fan Motor	1501104714	1501104715	1501104716	1
6	Connection Board	01381021	01381021	01381021	2
7	Diversion Circle	10371218	10371218	10371218	1
8	Flow Guide Loop	1037121905	1037121910	1037121909	1
9	Top Cover Sub-Assy	0125104201P	0125104201P	0125104201P	1
10	Clapboard Sub-Assy	0123111901	0123111901	0123111901	1
11	Cable Clamp	71000151	71000151	71000151	2
12	Door Thread	02161505	02161505	02161505	1
13	Hand Lever	26231156	26231156	26231156	1
14	Hand Lever	26231157	26231157	26231157	1
15	Outer Support Sub-assy(Left)	01701038	01701038	01701038	1
16	Baffle Plate	01361018	01361018	01361018	1
17	Helicoid Tongue	02121029P	02121029P	02121029P	1
18	Rear Grill	01471007	01471007	01471007	1
19	Temperature Sensor	390001982	390001982	390001982	1
20	Air Duct Sub-assy	01221027P	01221027P	01221027P	1
21	Bearing Holder Sub-assy	26151139	26151139	26151139	1
22	Bearing Holder	26151138	26151138	26151138	1
23	Electric Heater	3200103902	3200103903	3200103903	1
24	Evaporator Assy	01001906	0100190601	01100100041	1
25	Ambient Temperature Sensor	3900012123	3900012123	3900012123	1
26	Air Outlet Grille	22411023	22411023	22411023	1
27	Front Panel	20001457	20001457	20001457	1
28	Front Panel Clip	02111013	02111013	02111013	2
29	Filter Sub-Assy	11121212	11121212	11121212	2
30	LCD Cover Sub-assy	2016138202	2016138202	2016138202	1
31	Membrane	6306130903	6306130903	6306130903	1
32	Display Board	30562073	30562073	30562073	1
33	Filter	11120037	11120037	11120037	1
34	Remote Control Cover	20121070T	20121070T	20121070T	1
35	Front Panel Assy	2000147506	2000147506	2000147506	1
36	Supporting Board	26111167	26111167	26111167	1
37	Main Board 1	30132168	30132168	30132168	1
38	Supporting Board	26111166	26111166	26111166	1
39	Main Board 2	30132163	30132165	30132165	1
40	Temp Sensor Sleaving	05212423	05212423	05212423	1
41	Temperature Sensor	390000596	390000596	390000596	1
42	Air Flue Assy	0122102610	0122102617	0122102619	1
43	Heater Wiring Block Board	02111009	02111009	02111009	1
44	Cross Flow Fan	10351004	10351004	10351004	1
45	Motor Support Sub-Assy	01701014P	01701014P	01701014P	1
46	Retaining Plate of Condenser	01741023	01741023	01741023	1

47	Fan Motor	1501180211	1501180212	1501180214	1
48	Clapboard	0123115801	0123115801	0123115801	1
49	Compressor and Fittings	00101346	00101376	00101377	1
50	Compressor Gasket	76710287	76710287	76710287	3
51	Outer Support Sub-assy(Right)	01701039	01701039	01701039	1
52	Cable Cross Plate	26111215	26111215	26111215	1
53	Filter Sub-Assy	11121607	11121607	11121607	1
54	Air Inlet Door	01441018P	01441018P	01441018P	1
55	Inhalation Tube	03631665	03631665	03500600167	1
56	Discharge Tube	/	/	/	1
57	Capillary Sub-assy	03000600080	03000600080	03000600104	1
58	Drainage Valve	07101001	07101001	07101001	1
59	Chassis Sub-assy	01201241P	01201241P	01201241P	1
60	Foam (Water Tray)	12311048	12311048	12311048	1
61	Electric Box Assy	1000020070502	1000020073911	1000020073907	1
62	Junction lid	/	/	/	/
63	Junction box	/	/	/	/
64	Relay	/	/	/	/
65	Capacitor CBB61S	3301074702	3301074701	3301074701	1
66	Transformer	43110270	43110269	43110269	1
67	Capacitor CBB65	33000081	33010044	33000081	1
68	Capacitor CBB61	/	/	/	1
69	Terminal Board	42011103	42011103	42011103	2
70	Radiator	49010252	49010252	49010252	1
71	Fuse	46010055	46010022	46010022	1
72	Wiring Terminal	42010037	42010037	42010037	1
73	Wiring Terminal	42010039S	42010039S	42010039S	1
74	Pwer cord (LCDI)	4002036304	4002036304	4002056001	1

Above data is subject to change without notice.

NO.	Description	Part Code		Qty
		KPE15B2P	KPE15B2D	
	Product Code	CC060041100_X11438	CC060038200_X11438	
1	Temp Sensor Sleeving	05212423	05212423	1
2	Temperature Sensor	390000372	390000372	1
3	Condenser Assy	01101372	01101372	1
4	Axial Flow Fan	10331004	10331004	1
5	Fan Motor	1501104716	15011803	1
6	Connection Board	01381021	01381021	2
7	Diversion Circle	10371218	10371218	1
8	Flow Guide Loop	1037121909	1037121907	1
9	Top Cover Sub-Assy	0125104201P	0125104201P	1
10	Clapboard Sub-Assy	0123111901	0123111901	1
11	Cable Clamp	71000151	71000151	2
12	Door Thread	02161505	02161505	1
13	Hand Lever	26231156	26231156	1
14	Hand Lever	26231157	26231157	1
15	Outer Support Sub-assy(Left)	01701038	01701038	1
16	Baffle Plate	01361018	01361018	1
17	Helicoid Tongue	02121029P	02121029P	1
18	Rear Grill	01471007	01471007	1
19	Temperature Sensor	390001982	390001982	1
20	Air Duct Sub-assy	01221027P	01221027P	1
21	Bearing Holder Sub-assy	26151139	26151139	1
22	Bearing Holder	26151138	26151138	1
23	Electric Heater	3200103903	3200103902	1
24	Evaporator Assy	01100100041	01100100041	1
25	Ambient Temperature Sensor	3900012123	3900012123	1
26	Air Outlet Grille	22411023	22411023	1
27	Front Panel	20001457	20001457	1
28	Front Panel Clip	02111013	02111013	2
29	Filter Sub-Assy	11121212	11121212	2
30	LCD Cover Sub-assy	2016138202	2016138202	1
31	Membrane	6306130903	6306130903	1
32	Display Board	30562073	30562073	1
33	Filter	11120037	11120037	1
34	Remote Control Cover	20121070T	20121070T	1
35	Front Panel Assy	2000147506	2000147506	1
36	Supporting Board	26111167	26111167	1
37	Main Board 1	30132168	30132168	1
38	Supporting Board	26111166	26111166	1
39	Main Board 2	30132165	30132163	1
40	Temp Sensor Sleeving	05212423	05212423	1
41	Temperature Sensor	390000596	390000596	1
42	Air Flue Assy	0122102620	0122102612	1
43	Heater Wiring Block Board	02111009	02111009	1
44	Cross Flow Fan	10351004	10351004	1
45	Motor Support Sub-Assy	01701014P	01701014P	1
46	Retaining Plate of Condenser	01741023	01741023	1



47	Fan Motor	1501180214	1501180213	1
48	Clapboard	0123115801	0123115801	1
49	Compressor and Fittings	00101378	00101348	1
50	Compressor Gasket	76710216	76710287	3
51	Outer Support Sub-assy(Right)	01701039	01701039	1
52	Cable Cross Plate	26111215	26111215	1
53	Filter Sub-Assy	11121607	11121607	1
54	Air Inlet Door	01441018P	01441018P	1
55	Inhalation Tube	03500600158	03521021	1
56	Discharge Tube	/	03511003	1
57	Capillary Sub-assy	03000600133	03000600176	1
58	Drainage Valve	07101001	07101001	1
59	Chassis Sub-assy	0120124108P	01201241P	1
60	Foam (Water Tray)	12311048	12311048	1
61	Electric Box Assy	1000020073907	1000020070504	1
62	Junction lid	/	/	/
63	Junction box	/	/	/
64	Relay	/	/	/
65	Capacitor CBB61S	3301074701	3301074710	1
66	Transformer	43110269	43110270	1
67	Capacitor CBB65	33000081	3300008101	1
68	Capacitor CBB61	/	3301074716	1
69	Terminal Board	42011103	42011103	2
70	Radiator	49010252	49010252	1
71	Fuse	46010022	46010055	1
72	Wiring Terminal	42010037	42010037	1
73	Wiring Terminal	42010039S	42010039S	1
74	Pwer cord (LCDI)	4002056001	4002036304	1

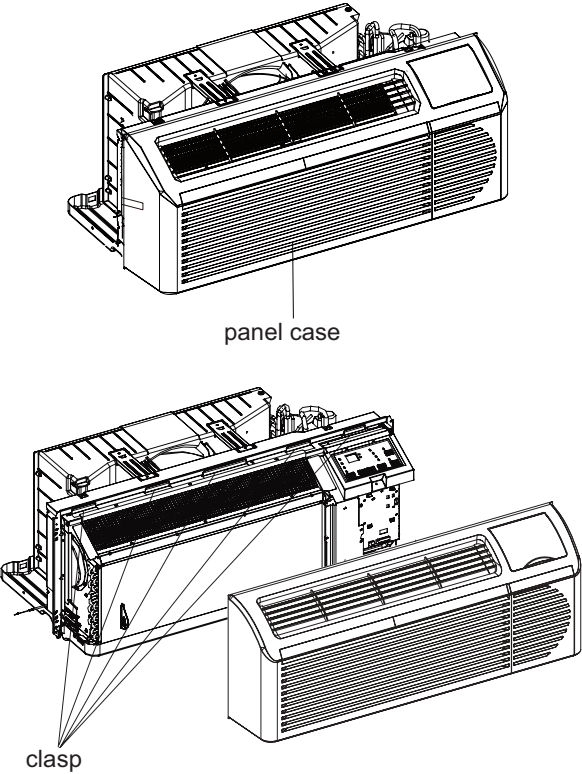
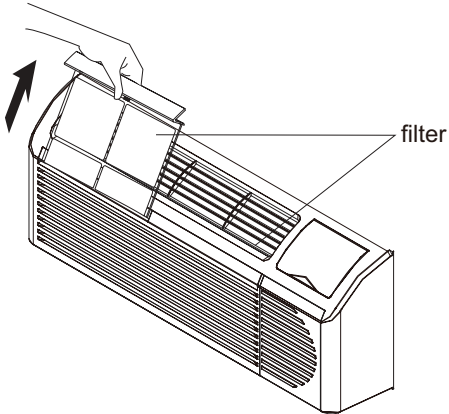
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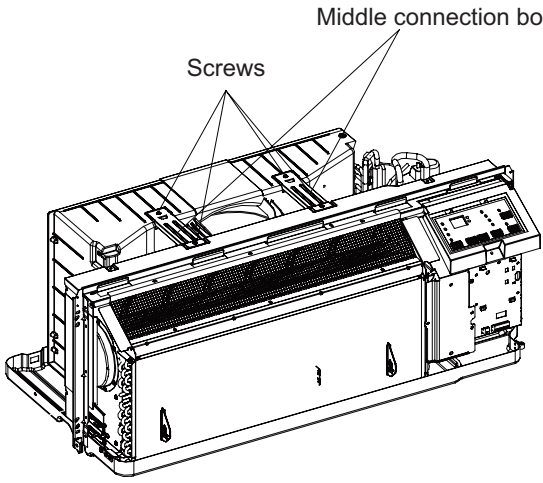
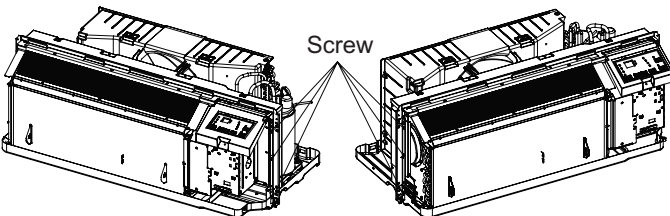
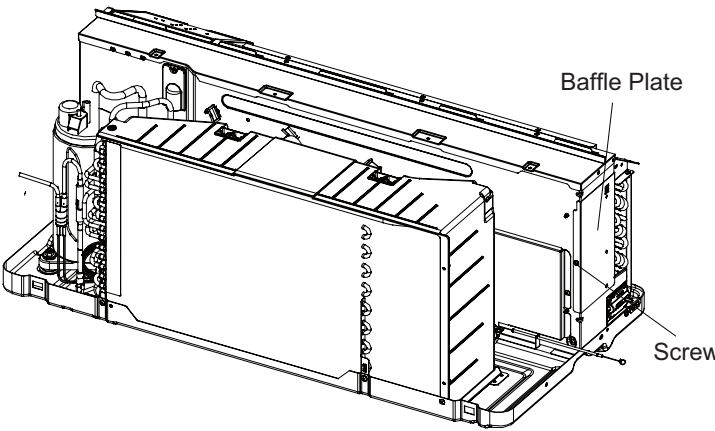
## 11. Removal Procedure

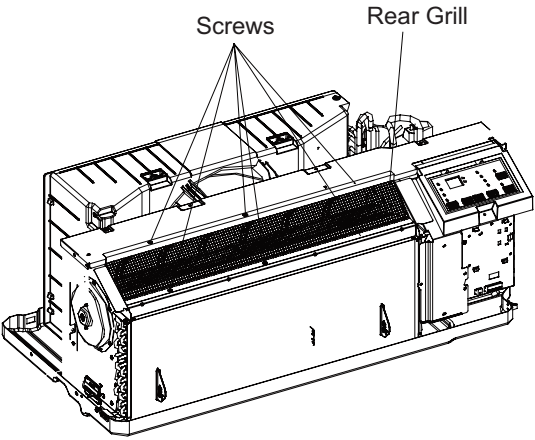
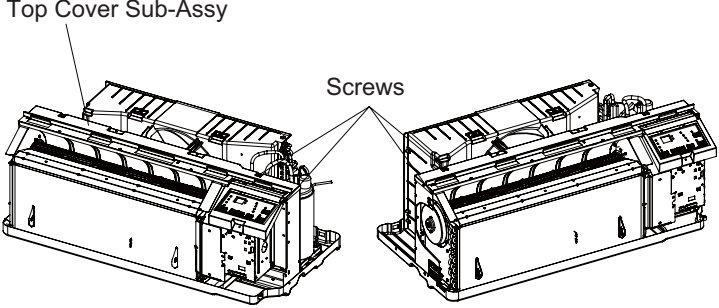
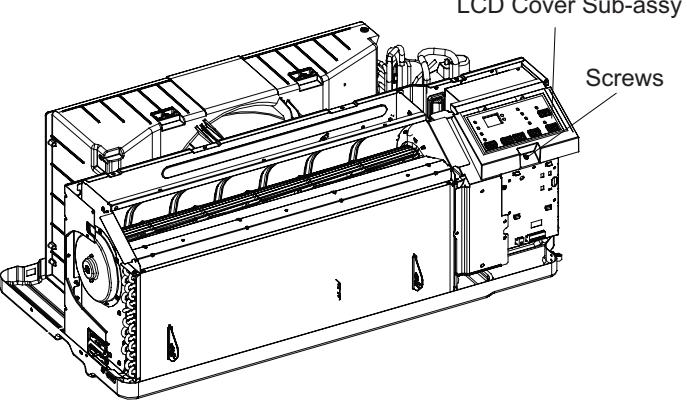


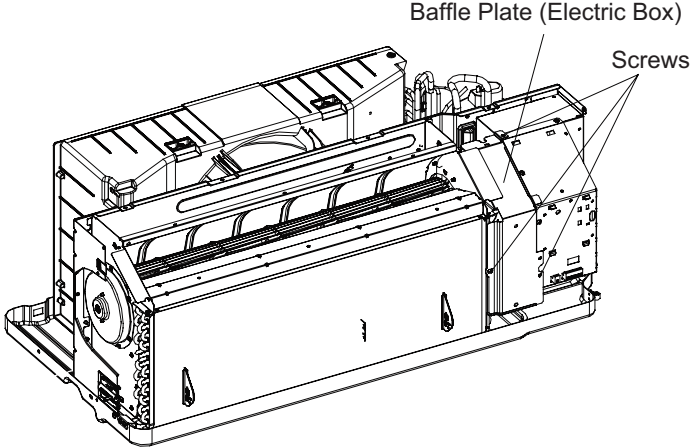
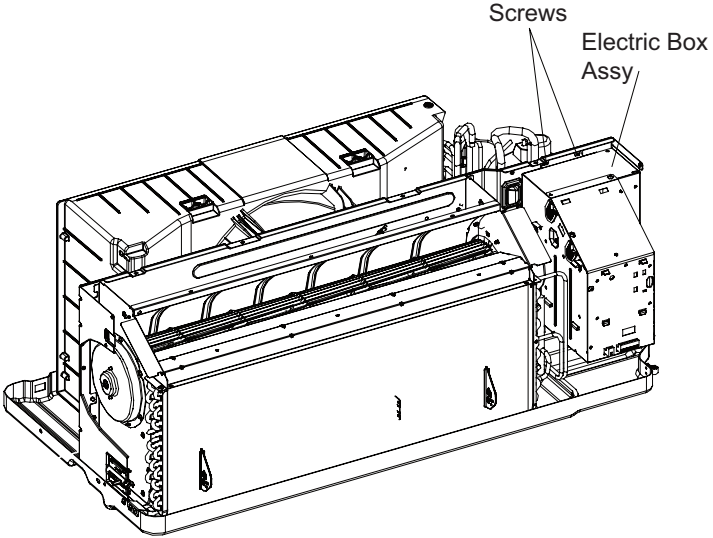
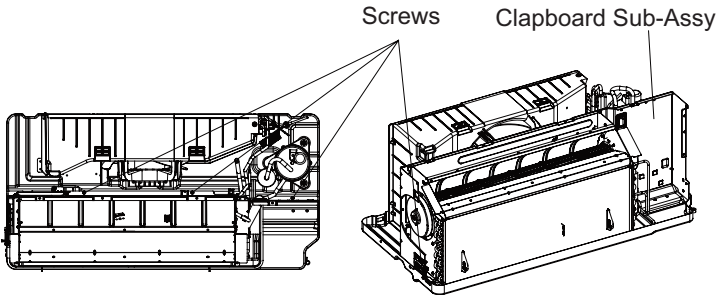
Caution: pull out the power, discharge the refrigerant completely before removal.

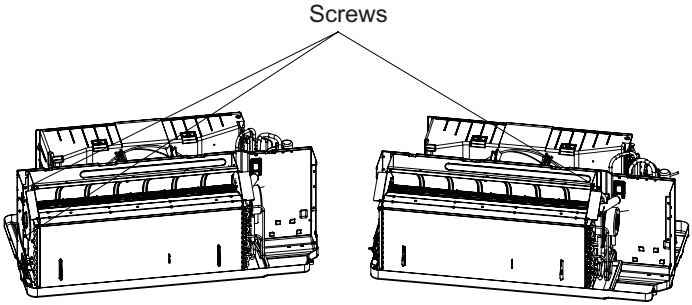
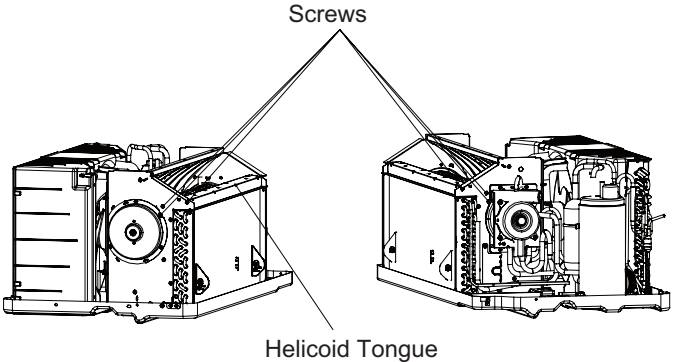
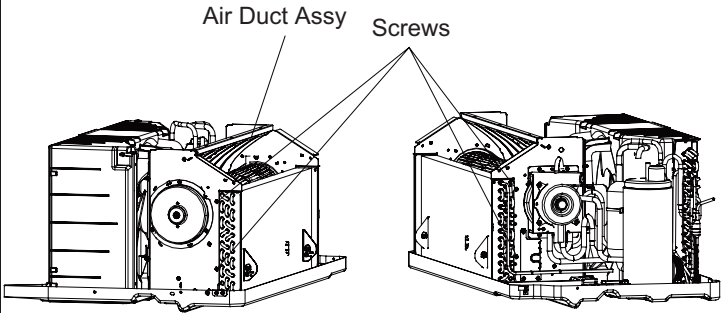
Note: Take heat pump+electric heating unit as example for the disassembly; cooling only+electric heating is a little different.

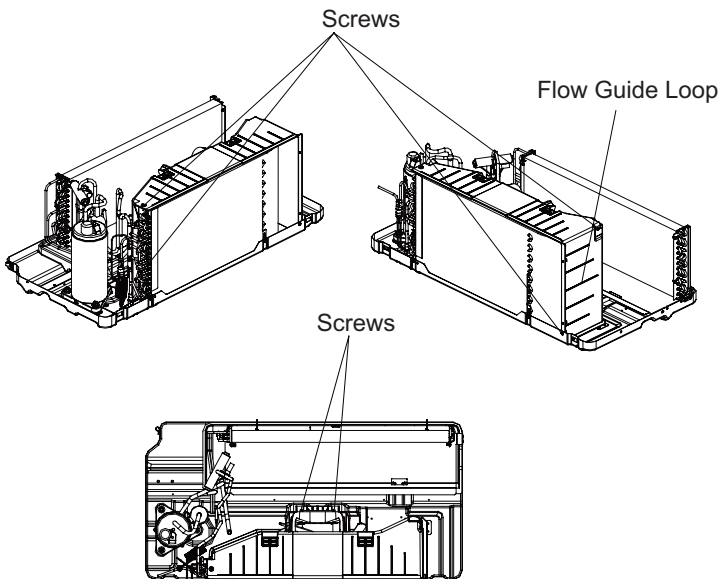
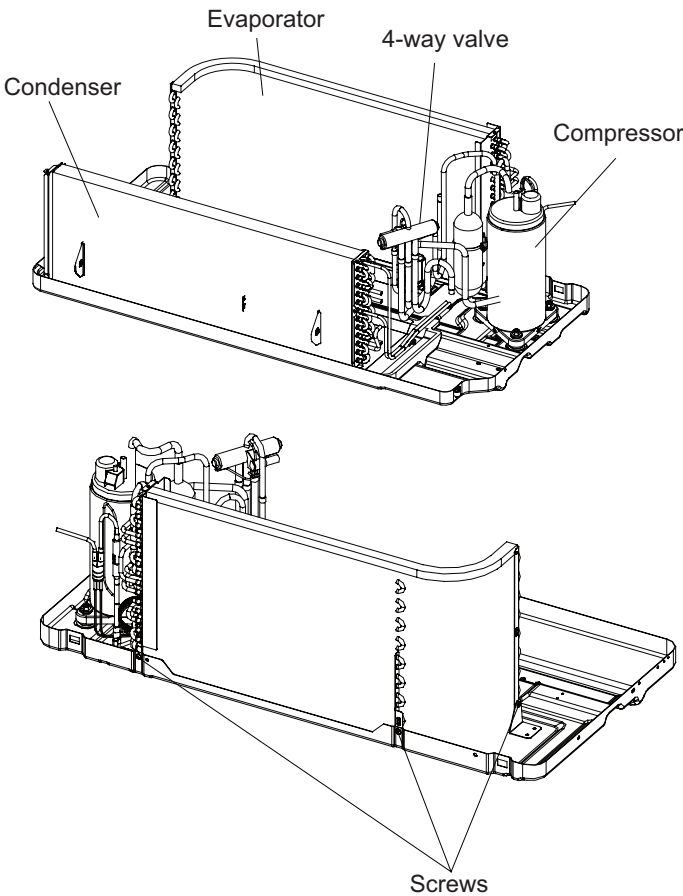
Steps	Procedure
<b>1.Remove panel</b>	
a	<p>Hold the panel and pat both sides of panel to separate the panels and then remove the front panel.</p> 
b	<p>Hold the front part of filter by hand, lift up the filter and then remove the filter.</p> 

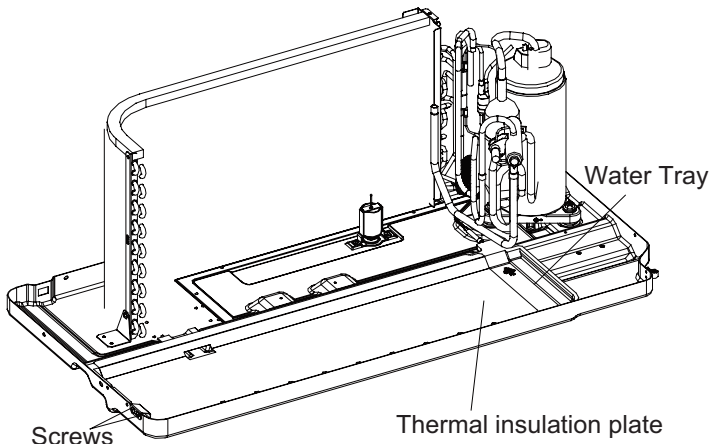
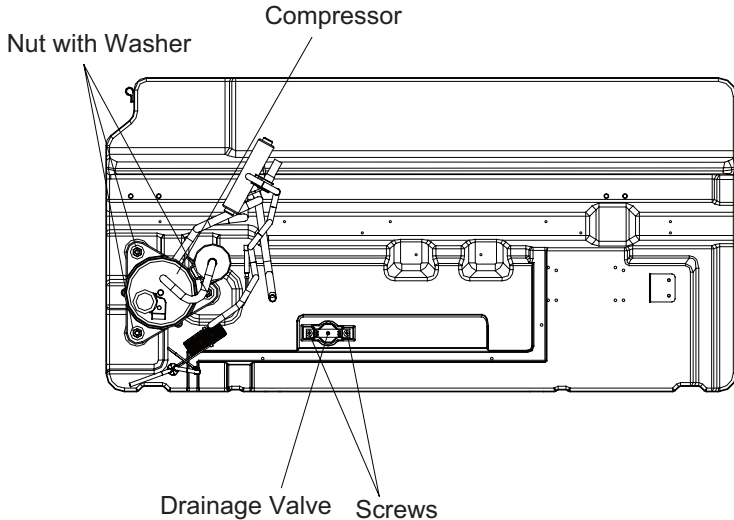
Steps	Procedure
<p><b>2.Remove middle connection board</b></p> <p>Press the 2 clasps of filter to make it separated from the groove and then pull the filter outwards to remove it.</p>	 <p>Diagram illustrating the removal of the middle connection board. The board is shown being pulled out of the main unit. Labels indicate 'Screws' and the 'Middle connection board'.</p>
<p><b>3.Remove Outer Support Sub-assy</b></p> <p>Remove 6 screws on outer support and then remove the outer support.</p>	 <p>Diagram illustrating the removal of the outer support sub-assembly. Two views are shown: one with the support attached and one with it removed. A label indicates a 'Screw'.</p>
<p><b>4.Remove Baffle Plate</b></p> <p>Remove 1 screw on baffle plate and remove the baffle plate.</p>	 <p>Diagram illustrating the removal of the baffle plate. The plate is shown being lifted out of the main unit. Labels indicate the 'Baffle Plate' and a 'Screw'.</p>

Steps	Procedure	
<b>5.Remove Rear Grill</b>		
	Remove 6 screws on rear grille and then remove the rear grille.	
<b>6.Remove Top Cover Sub-Assy</b>		
	Remove 4 screws on top cover sub-assy and then remove the top cover sub-assy.	
<b>7.Remove LCD Cover Sub-assy</b>		
	Remove 1 screw on the control cover plate sub-assy and then remove the control cover plate sub-assy.	

Steps	Procedure	
<b>8.Remove Baffle Plate (Electric Box)</b>		
	Remove three screws on baffle plate (electric box) and then remove the baffle plate (electric box).	 <p>Baffle Plate (Electric Box)</p> <p>Screws</p>
<b>9.Remove Electric Box Assy</b>		
	Remove two screw on electric box, hold the bottom part of electric box and move it upwards to separate the clasps, and then remove the electric box.	 <p>Screws</p> <p>Electric Box Assy</p>
<b>10.Remove Clapboard Sub-Assy</b>		
a	Remove 4 screws on isolation sheet sub-assy and chassis sub-assy, and 3 screws on isolation sheet sub-assy and air duct, and then remove the clapboard sub-assy.	 <p>Screws</p> <p>Clapboard Sub-Assy</p>

Steps	Procedure	
b		 <p>The diagram shows two perspective views of a rectangular electronic device. In both views, several screws on the top surface are highlighted with lines pointing to a common label 'Screws'.</p>
<b>11.Remove Helicoid Tongue</b>		
	Remove 6 screws on helicoid tongue and then remove the helicoid tongue.	 <p>The diagram shows two perspective views of the device. In both views, six screws on a specific component are highlighted with lines pointing to a common label 'Screws'. The component itself is labeled 'Helicoid Tongue'.</p>
<b>12.Remove Air Duct Assy</b>		
	Remove 4 screws on air duct and then remove the air duct.	 <p>The diagram shows two perspective views of the device. In both views, an air duct assembly on top is highlighted with lines pointing to a common label 'Air Duct Assy'. Four screws securing it are also highlighted with lines pointing to a common label 'Screws'.</p>

Steps	Procedure	
13.Remove Flow Guide Loop	<p>Remove 3 screw on flow guide loop and chassis, and three screws on condenser, and then remove the flow guide loop.</p>	
14.Remove condenser and evaporator	<p>Remove the 3 screws fixing the Evaporator; unsolder the welding joints of the suction pipe, discharge pipe, compressor, 4-way valve with the condenser and evaporator, and then remove the condenser and evaporator. (before unsoldering, discharge the refrigerant in the pipeline completely)</p>	

Steps	Procedure	
15.Remove thermal insulation plate and Water Tray	<p>Remove 2 screws on thermal insulation plate and then remove thermal insulation plate and water tray.</p>	
16.Remove Drainage Valve and Compressor	<p>Remove 3 nuts on compressor and 2 screws on drainage valve, and then remove compressor and drainage valve.</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)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
61	60.8	16	69/70	69.8	21	78/79	78.8	26
62/63	62.6	17	71/72	71.6	22	80/81	80.6	27
64/65	64.4	18	73/74	73.4	23	82/83	82.4	28
66/67	66.2	19	75/76	75.2	24	84/85	84.2	29
68	68	20	77	77	25	86	86	30

Ambient temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)
32/33	32	0	55/56	55.4	13	79/80	78.8	26
34/35	33.8	1	57/58	57.2	14	81	80.6	27
36	35.6	2	59/60	59	15	82/83	82.4	28
37/38	37.4	3	61/62	60.8	16	84/85	84.2	29
39/40	39.2	4	63	62.6	17	86/87	86	30
41/42	41	5	64/65	64.4	18	88/89	87.8	31
43/44	42.8	6	66/67	66.2	19	90	89.6	32
45	44.6	7	68/69	68	20	91/92	91.4	33
46/47	46.4	8	70/71	69.8	21	93/94	93.2	34
48/49	48.2	9	72	71.6	22	95/96	95	35
50/51	50	10	73/74	73.4	23	97/98	96.8	36
52/53	51.8	11	75/76	75.2	24	99	98.6	37
54	53.6	12	77/78	77	25			

## Appendix 2: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor(15K)

Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)
-2.2	138.1	68	18.75	138.2	3.848	208.4	1.071
-0.4	128.6	69.8	17.93	140	3.711	210.2	1.039
1.4	121.6	71.6	17.14	141.8	3.579	212	1.009
3.2	115	73.4	16.39	143.6	3.454	213.8	0.98
5	108.7	75.2	15.68	145.4	3.333	215.6	0.952
6.8	102.9	77	15	147.2	3.217	217.4	0.925
8.6	97.4	78.8	14.36	149	3.105	219.2	0.898
10.4	92.22	80.6	Φ13 47/64	150.8	2.998	221	0.873
12.2	87.35	82.4	13.16	152.6	2.896	222.8	0.848
14	82.75	84.2	12.6	154.4	2.797	224.6	0.825
15.8	78.43	86	12.07	156.2	2.702	226.4	0.802
17.6	74.35	87.8	11.57	158	2.611	228.2	0.779
19.4	70.5	89.6	11.09	159.8	2.523	230	0.758
21.2	66.88	91.4	10.63	161.6	2.439	231.8	0.737
23	63.46	93.2	10.2	163.4	2.358	233.6	0.717
24.8	60.23	95	9.779	165.2	2.28	235.4	0.697
26.6	57.18	96.8	9.382	167	2.206	237.2	0.678
28.4	54.31	98.6	9.003	168.8	2.133	239	0.66
30.2	51.59	100.4	8.642	170.6	2.064	240.8	0.642
32	49.02	102.2	8.297	172.4	1.997	242.6	0.625
33.8	46.6	104	7.967	174.2	1.933	244.4	0.608
35.6	44.31	105.8	7.653	176	1.871	246.2	0.592
37.4	42.14	107.6	7.352	177.8	1.811	248	0.577
39.2	40.09	109.4	7.065	179.6	1.754	249.8	0.561
41	38.15	111.2	6.791	181.4	1.699	251.6	0.547
42.8	36.32	113	6.529	183.2	1.645	253.4	0.532
44.6	34.58	114.8	6.278	185	1.594	255.2	0.519
46.4	32.94	116.6	6.038	186.8	1.544	257	0.505
48.2	31.38	118.4	5.809	188.6	1.497	258.8	0.492
50	29.9	120.2	5.589	190.4	1.451	260.6	0.48
51.8	28.51	122	5.379	192.2	1.408	262.4	0.467
53.6	27.18	123.8	5.197	194	1.363	264.2	0.456
55.4	25.92	125.6	4.986	195.8	1.322	266	0.444
57.2	24.73	127.4	4.802	197.6	1.282	267.8	0.433
59	23.6	129.2	4.625	199.4	1.244	269.6	0.422
60.8	22.53	131	4.456	201.2	1.207	271.4	0.412
62.6	21.51	132.8	4.294	203	1.171	273.2	0.401
64.4	20.54	134.6	4.139	204.8	1.136	275	0.391
66.2	19.63	136.4	3.99	206.6	1.103	276.8	0.382

Resistance Table of Tube Temperature Sensors for Indoor and Outdoor(20K)

Temp.(°F)	Resistance(kΩ)		Temp.(°F)	Resistance(kΩ)		Temp.(°F)	Resistance(kΩ)		Temp.(°F)	Resistance(kΩ)
-2.2	181.4		68	25.01		138.2	5.13		208.4	1.427
-0.4	171.4		69.8	23.9		140	4.948		210.2	1.386
1.4	162.1		71.6	22.85		141.8	4.773		212	1.346
3.2	153.3		73.4	21.85		143.6	4.605		213.8	1.307
5	145		75.2	20.9		145.4	4.443		215.6	1.269
6.8	137.2		77	20		147.2	4.289		217.4	1.233
8.6	129.9		78.8	19.14		149	4.14		219.2	1.198
10.4	123		80.6	18.13		150.8	3.998		221	1.164
12.2	116.5		82.4	17.55		152.6	3.861		222.8	1.131
14	110.3		84.2	16.8		154.4	3.729		224.6	1.099
15.8	104.6		86	16.1		156.2	3.603		226.4	1.069
17.6	99.13		87.8	15.43		158	3.481		228.2	1.039
19.4	94		89.6	14.79		159.8	3.364		230	1.01
21.2	89.17		91.4	14.18		161.6	3.252		231.8	0.983
23	84.61		93.2	13.59		163.4	3.144		233.6	0.956
24.8	80.31		95	13.04		165.2	3.04		235.4	0.93
26.6	76.24		96.8	12.51		167	2.94		237.2	0.904
28.4	72.41		98.6	12		168.8	2.844		239	0.88
30.2	68.79		100.4	11.52		170.6	2.752		240.8	0.856
32	65.37		102.2	11.06		172.4	2.663		242.6	0.833
33.8	62.13		104	10.62		174.2	2.577		244.4	0.811
35.6	59.08		105.8	10.2		176	2.495		246.2	0.77
37.4	56.19		107.6	9.803		177.8	2.415		248	0.769
39.2	53.46		109.4	9.42		179.6	2.339		249.8	0.746
41	50.87		111.2	9.054		181.4	2.265		251.6	0.729
42.8	48.42		113	8.705		183.2	2.194		253.4	0.71
44.6	46.11		114.8	8.37		185	2.125		255.2	0.692
46.4	43.92		116.6	8.051		186.8	2.059		257	0.674
48.2	41.84		118.4	7.745		188.6	1.996		258.8	0.658
50	39.87		120.2	7.453		190.4	1.934		260.6	0.64
51.8	38.01		122	7.173		192.2	1.875		262.4	0.623
53.6	36.24		123.8	6.905		194	1.818		264.2	0.607
55.4	34.57		125.6	6.648		195.8	1.736		266	0.592
57.2	32.98		127.4	6.403		197.6	1.71		267.8	0.577
59	31.47		129.2	6.167		199.4	1.658		269.6	0.563
60.8	30.04		131	5.942		201.2	1.609		271.4	0.549
62.6	28.68		132.8	5.726		203	1.561		273.2	0.535
64.4	27.39		134.6	5.519		204.8	1.515		275	0.521
66.2	26.17		136.4	5.32		206.6	1.47		276.8	0.509

Resistance Table of Discharge Temperature Sensor for Outdoor(50K)

Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)
-20.2	853.5	50	98	120.2	18.34	190.4	4.754
-18.4	799.8	51.8	93.42	122	17.65	192.2	4.609
-16.6	750	53.6	89.07	123.8	16.99	194	4.469
-14.8	703.8	55.4	84.95	125.6	16.36	195.8	4.334
-13	660.8	57.2	81.05	127.4	15.75	197.6	4.204
-11.2	620.8	59	77.35	129.2	15.17	199.4	4.079
-9.4	580.6	60.8	73.83	131	14.62	201.2	3.958
-7.6	548.9	62.6	70.5	132.8	14.09	203	3.841
-5.8	516.6	64.4	67.34	134.6	13.58	204.8	3.728
-4	486.5	66.2	64.33	136.4	13.09	206.6	3.619
-2.2	458.3	68	61.48	138.2	12.62	208.4	3.514
-0.4	432	69.8	58.77	140	12.17	210.2	3.413
1.4	407.4	71.6	56.19	141.8	11.74	212	3.315
3.2	384.5	73.4	53.74	143.6	11.32	213.8	3.22
5	362.9	75.2	51.41	145.4	10.93	215.6	3.129
6.8	342.8	77	49.19	147.2	10.54	217.4	3.04
8.6	323.9	78.8	47.08	149	10.18	219.2	2.955
10.4	306.2	80.6	45.07	150.8	9.827	221	2.872
12.2	289.6	82.4	43.16	152.6	9.489	222.8	2.792
14	274	84.2	41.34	154.4	9.165	224.6	2.715
15.8	259.3	86	39.61	156.2	8.854	226.4	2.64
17.6	245.6	87.8	37.96	158	8.555	228.2	2.568
19.4	232.6	89.6	36.38	159.8	8.268	230	2.498
21.2	220.5	91.4	34.88	161.6	7.991	231.8	2.431
23	209	93.2	33.45	163.4	7.726	233.6	2.365
24.8	198.3	95	32.09	165.2	7.47	235.4	2.302
26.6	199.1	96.8	30.79	167	7.224	237.2	2.241
28.4	178.5	98.6	29.54	168.8	6.998	239	2.182
30.2	169.5	100.4	28.36	170.6	6.761	240.8	2.124
32	161	102.2	27.23	172.4	6.542	242.6	2.069
33.8	153	104	26.15	174.2	6.331	244.4	2.015
35.6	145.4	105.8	25.11	176	6.129	246.2	1.963
37.4	138.3	107.6	24.13	177.8	5.933	248	1.912
39.2	131.5	109.4	23.19	179.6	5.746	249.8	1.863
41	125.1	111.2	22.29	181.4	5.565	251.6	1.816
42.8	119.1	113	21.43	183.2	5.39	253.4	1.77
44.6	113.4	114.8	20.6	185	5.222	255.2	1.725
46.4	108	116.6	19.81	186.8	5.06	257	1.682
48.2	102.8	118.4	19.06	188.6	4.904	258.8	1.64

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