



# Service Manual

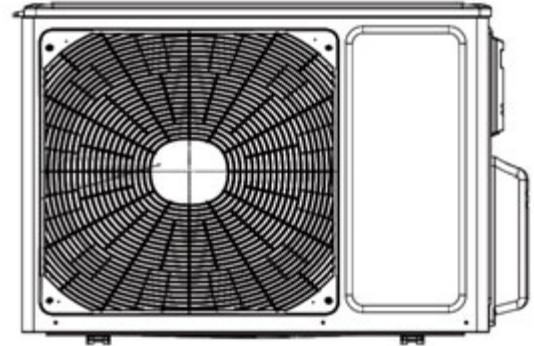
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Models: CHML-U14NK2  
CHML-U18NK3  
CHML-U21NK3  
CHML-U24NK3  
CHML-U28NK4  
(Refrigerant:R410A)

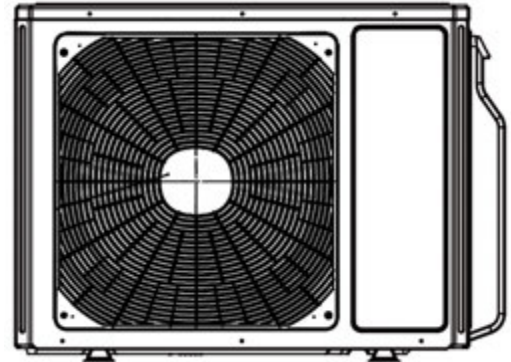
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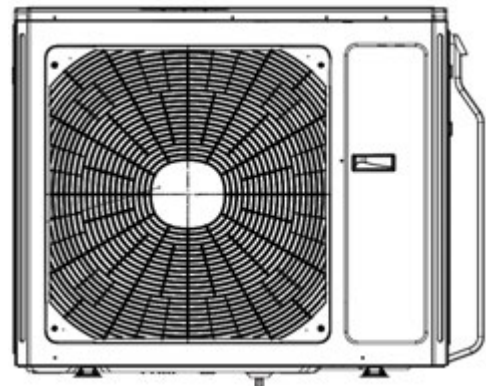
CHML-U14NK2



CHML-U18NK3  
CHML-U21NK3



CHML-U24NK3  
CHML-U28NK4



## 2. Specifications

Model			CHML-U14NK2(LCLH)	CHML-U14NK2
Product Code			CB228W06500	CB228W06501
Power supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Cooling capacity(max~min)		W	4100(2052~4396)	4100(2052~4396)
Heating capacity(max~min)		W	4400(2491~5422)	4400(2491~5422)
Cooling Power Input(max~min)		W	1200	1200
Heating Power Input(max~min)		W	1180	1180
Cooling Current Input		A	5.32	5.32
Heating Current Input		A	5.10	5.10
Rated Power Input		W	1780	1780
Rated Current		A	7.90	7.90
SEER		W/W	6.10	6.10
SCOP		W/W	4.00	4.00
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXA-B141zF030A	QXA-B141zF030A
	Compressor Refrigerant Oil Type		RB68EP	RB68EP
	Compressor Type		Inverter Rotary	Inverter Rotary
	L.R.A	A	25	25
	Compressor Rated Load Amp (RLA)		7.2	7.2
	Compressor Power Input		1440	1440
	Compressor Thermal Protector		"1NT11L-6233 KSD115°CHPC115/95U1"	"1NT11L-6233 KSD115°CHPC115/95U1"
	Throttling Method		Electron expansion valve	Electron expansion valve
	Cooling Operation Ambient Temperature Range		°C -15~43	18~43
	Heating Operation Ambient Temperature Range		°C -20~24	-15~24
	Condenser Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter		mm Φ9.52	Φ9.52
	Rows-Fin Gap(mm)		mm 2-1.4	2-1.4
	Coil length (l) X height (H) X coil width (L)		mm 800X44X559	800X44X559
	Fan Motor Speed (rpm) (H/M/L)		rpm 900	900
	Output of Fan Motor		W 30	30
	Fan Motor RLA		A /	/
	Fan Motor Capacitor		μF /	/
	Air Flow Volume of Outdoor Unit		m³/h 2600	2600
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter		mm Φ438-116	Φ438-116
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side		MPa 4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side		MPa 2.5	2.5
	Dimension (W/H/D)		mm 903X596X378	903X596X378
	Dimension of Package (L/W/H)		mm 945X417X630	945X417X630
	Dimension of Package(L/W/H)		mm 948X420X645	948X420X645
	Net Weight		kg 43	43
	Gross Weight		kg 46	46
	Refrigerant Charge		R410A	R410A
	Refrigerant Charge		kg 1.40	1.40



Outdoor Unit	Cross-sectional Area of Power Cable Conductor	mm <sup>2</sup>	/	/
	Recommended Power Cable(Core)	N	3	3
	Connection Pipe Connection Method	-	Flare Connection	Flare Connection
	Not Additional Gas Connection Pipe Length	m	10	10
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Connection Pipe Max. Height Distance(indoor and indoor)	m	5	5
	Max. equivalent connection pipe length(outdoor to last indoor)	m	10	10
	Connection Pipe Max. Length Distance(total length)	m	20	20

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

Model			CHML-U18NK3(LCLH)	CHML-U18NK3
Product Code			CB228W06300	CB228W06301
Power supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Cooling capacity(max~min)		W	5200(2140~5800)	5200(2140~5800)
Heating capacity(max~min)		W	5400(2579~5920)	5400(2579~5920)
Cooling Power Input(max~min)		W	1450	1450
Heating Power Input(max~min)		W	1450	1450
Cooling Current Input		A	6.88	6.88
Heating Current Input		A	6.43	6.43
Rated Power Input		W	1780	1780
Rated Current		A	7.90	7.90
SEER		W/W	6.1	6.1
SCOP		W/W	4.0	4.0
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXA-B141zF030A	QXA-B141zF030A
	Compressor Refrigerant Oil Type		RB68EP	RB68EP
	Compressor Type		Inverter Rotary	Inverter Rotary
	L.R.A	A	25	25
	Compressor Rated Load Amp (RLA)	A	7.2	7.2
	Compressor Power Input	W	1440	1440
	Compressor Thermal Protector		"1NT11L-6233 KSD115°CHPC115/95U1"	"1NT11L-6233 KSD115°CHPC115/95U1"
	Throttling Method		Electron expansion valve	Electron expansion valve
	Cooling Operation Ambient Temperature Range	°C	-15~43	18~43
	Heating Operation Ambient Temperature Range	°C	-20~24	-15~24
	Condenser Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ7
	Rows-Fin Gap(mm)	mm	2-1.4	2-1.4
	Coil length (l) X height (H) X coil width (L)	mm	851X38.1X660	851X38.1X660
	Fan Motor Speed (rpm) (H/M/L)	rpm	800	800
	Output of Fan Motor	W	60	60
	Fan Motor RLA	A	/	/
	Fan Motor Capacitor	μF	/	/
	Air Flow Volume of Outdoor Unit	m³/h	3200	3200
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ520-154	Φ520-154
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Dimension (WXHXD)	mm	963X700X396	963X700X396
	Dimension of Package (LXWXH)	mm	1026X455X735	1026X455X735
	Dimension of Package(LXWXH)	mm	1029X458X750	1029X458X750
	Net Weight	kg	51	51
	Gross Weight	kg	55	55
	Refrigerant Charge		R410A	R410A
	Refrigerant Charge	kg	1.60	1.60

Outdoor Unit	Cross-sectional Area of Power Cable Conductor	mm <sup>2</sup>	/	/
	Recommended Power Cable(Core)	N	3	3
	Connection Pipe Connection Method	-	Flare Connection	Flare Connection
	Not Additional Gas Connection Pipe Length	m	10	10
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Connection Pipe Max. Height Distance(indoor and indoor)	m	5	5
	Max. equivalent connection pipe length(outdoor to last indoor)	m	10	10
	Connection Pipe Max. Length Distance(total length)	m	20	20

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

Model			CHML-U21NK3(LCLH)	CHML-U21NK3
Product Code			CB228W06400	CB228W06401
Power supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Cooling capacity(max~min)		W	6100(2198~7327)	6100(2198~7327)
Heating capacity(max~min)		W	6500(3605~8499)	6500(3605~8499)
Cooling Power Input(max~min)		W	1910	1910
Heating Power Input(max~min)		W	1730	1730
Cooling Current Input		A	8.47	8.47
Heating Current Input		A	7.68	7.68
Rated Power Input		W	2870	2870
Rated Current		A	12.73	12.73
SEER		W/W	6.1	6.1
SCOP		W/W	4.0	4.0
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXAS-D23zX090B	QXAS-D23zX090B
	Compressor Refrigerant Oil Type		RB68EP	RB68EP
	Compressor Type		Inverter Rotary	Inverter Rotary
	L.R.A	A	25	25
	Compressor Rated Load Amp (RLA)		11.5	11.5
	Compressor Power Input		2550	2550
	Compressor Thermal Protector		"1NT11L-6233KSD115°C HPC115/95U1"	"1NT11L-6233KSD115°C HPC115/95U1"
	Throttling Method		Electron expansion valve	Electron expansion valve
	Cooling Operation Ambient Temperature Range		°C -15~43	°C 18~43
	Heating Operation Ambient Temperature Range		°C -20~24	°C -15~24
	Condenser Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter		mm Φ9.52	mm Φ9.52
	Rows-Fin Gap(mm)		mm 2-1.4	mm 2-1.4
	Coil length (l) X height (H) X coil width (L)		mm 851X38.1X660	mm 851X38.1X660
	Fan Motor Speed (rpm) (H/M/L)		rpm 800	rpm 800
	Output of Fan Motor		W 60	W 60
	Fan Motor RLA		A /	A /
	Fan Motor Capacitor		μF /	μF /
	Air Flow Volume of Outdoor Unit		m³/h 3200	m³/h 3200
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter		mm Φ520-154	mm Φ520-154
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side		MPa 4.3	MPa 4.3
	Permissible Excessive Operating Pressure for the Suction Side		MPa 2.5	MPa 2.5
	Dimension (WXHXD)		mm 963X700X396	mm 963X700X396
	Dimension of Package (LXWXH)		mm 1026X455X735	mm 1026X455X735
	Dimension of Package(LXWXH)		mm 1029X458X750	mm 1029X458X750
	Net Weight		kg 62	kg 62
	Gross Weight		kg 65.5	kg 65.5
	Refrigerant Charge		R410A	R410A
	Refrigerant Charge		kg 2.2	kg 2.2

Outdoor Unit	Cross-sectional Area of Power Cable Conductor	mm <sup>2</sup>	/	/
	Recommended Power Cable(Core)	N	3	3
	Connection Pipe Connection Method	-	Flare Connection	Flare Connection
	Not Additional Gas Connection Pipe Length	m	30	30
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Connection Pipe Max. Height Distance(indoor and indoor)	m	10	10
	Max. equivalent connection pipe length(outdoor to last indoor)	m	20	20
	Connection Pipe Max. Length Distance(total length)	m	60	60

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

Model			CHML-U24NK3(LCLH)	CHML-U24NK3
Product Code			CB228W06600	CB228W06601
Power supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Cooling capacity(max~min)		W	7100(2286~8499)	7100(2286~8499)
Heating capacity(max~min)		W	8500(3664~8792)	8500(3664~8792)
Cooling Power Input(max~min)		W	2180	2180
Heating Power Input(max~min)		W	2280	2280
Cooling Current Input		A	9.67	9.67
Heating Current Input		A	10.12	10.12
Rated Power Input		W	2870	2870
Rated Current		A	12.73	12.73
SEER		W/W	6.1	6.1
SCOP		W/W	4.0	4.0
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXAS-D23zX090B	QXAS-D23zX090B
	Compressor Refrigerant Oil Type		RB68EP	RB68EP
	Compressor Type		Inverter Rotary	Inverter Rotary
	L.R.A	A	25	25
	Compressor Rated Load Amp (RLA)	A	11.5	11.5
	Compressor Power Input	W	2550	2550
	Compressor Thermal Protector		"1NT11L-6233KSD115°C HPC115/95U1"	"1NT11L-6233KSD115°C HPC115/95U1"
	Throttling Method		Electron expansion valve	Electron expansion valve
	Cooling Operation Ambient Temperature Range	°C	-15~43	18~43
	Heating Operation Ambient Temperature Range	°C	-20~24	-15~24
	Condenser Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ7
	Rows-Fin Gap(mm)	mm	2-1.4	2-1.4
	Coil length (l) X height (H) X coil width (L)	mm	982.2X38.1X748	982.2X38.1X748
	Fan Motor Speed (rpm) (H/M/L)	rpm	800	800
	Output of Fan Motor	W	90	90
	Fan Motor RLA	A	/	/
	Fan Motor Capacitor	μF	/	/
	Air Flow Volume of Outdoor Unit	m³/h	3200	3200
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ520-120	Φ520-120
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Dimension (WXHDXD)	mm	1001X790X427	1001X790X427
	Dimension of Package (LXWXH)	mm	1080X485X840	1080X485X840
	Dimension of Package(LXWXH)	mm	1083X488X855	1083X488X855
	Net Weight	kg	68	68
	Gross Weight	kg	73	73
	Refrigerant Charge		R410A	R410A
	Refrigerant Charge	kg	2.2	2.2

Outdoor Unit	Cross-sectional Area of Power Cable Conductor	mm <sup>2</sup>	/	/
	Recommended Power Cable(Core)	N	3	3
	Connection Pipe Connection Method	-	Flare Connection	Flare Connection
	Not Additional Gas Connection Pipe Length	m	30	30
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Connection Pipe Max. Height Distance(indoor and indoor)	m	10	10
	Max. equivalent connection pipe length(outdoor to last indoor)	m	20	20
	Connection Pipe Max. Length Distance(total length)	m	60	60

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

Model			CHML-U28NK4(LCLH)	CHML-U28NK4
Product Code			CB228W06200	CB228W06201
Power supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Cooling capacity(max~min)		W	8000(2286~10258)	8000(2286~10258)
Heating capacity(max~min)		W	9300(3664~10258)	9300(3664~10258)
Cooling Power Input(max~min)		W	2540	2540
Heating Power Input(max~min)		W	2490	2490
Cooling Current Input		A	15.71	15.71
Heating Current Input		A	11.05	11.05
Rated Power Input		W	3580	3580
Rated Current		A	15.88	15.88
SEER		W/W	6.1	6.1
SCOP		W/W	4.0	4.0
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXAS-D23zX090B	QXAS-D23zX090B
	Compressor Refrigerant Oil Type		RB68EP	RB68EP
	Compressor Type		Inverter Rotary	Inverter Rotary
	L.R.A	A	25	25
	Compressor Rated Load Amp (RLA)	A	11.5	11.5
	Compressor Power Input	W	2550	2550
	Compressor Thermal Protector		"1NT11L-6233KSD115°C HPC115/95U1"	"1NT11L-6233KSD115°C HPC115/95U1"
	Throttling Method		Electron expansion valve	Electron expansion valve
	Cooling Operation Ambient Temperature Range	°C	-15~43	18~43
	Heating Operation Ambient Temperature Range	°C	-20~24	-15~24
	Condenser Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ7
	Rows-Fin Gap(mm)	mm	2-1.4	2-1.4
	Coil length (l) X height (H) X coil width (L)	mm	982.2X38.1X748	982.2X38.1X748
	Fan Motor Speed (rpm) (H/M/L)	rpm	800	800
	Output of Fan Motor	W	90	90
	Fan Motor RLA	A	/	/
	Fan Motor Capacitor	μF	/	/
	Air Flow Volume of Outdoor Unit	m³/h	4000	4000
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ520-120	Φ520-120
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Dimension (WXHDXD)	mm	1001X790X427	1001X790X427
	Dimension of Package (LXWXH)	mm	1080X485X840	1080X485X840
	Dimension of Package(LXWXH)	mm	1083X488X855	1083X488X855
	Net Weight	kg	69	69
	Gross Weight	kg	74	74
	Refrigerant Charge		R410A	R410A
	Refrigerant Charge	kg	2.60	2.60

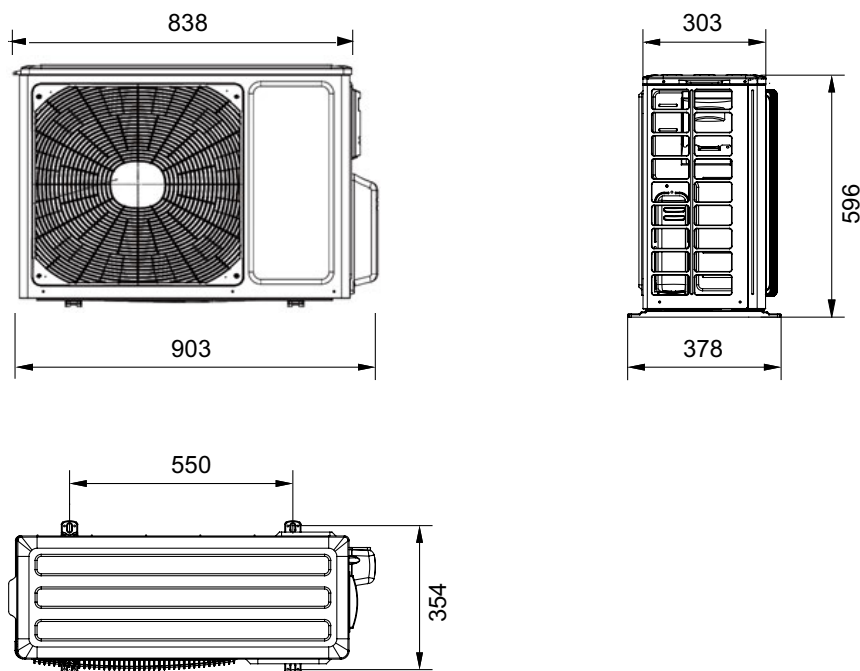


Outdoor Unit	Cross-sectional Area of Power Cable Conductor	mm <sup>2</sup>	/	/
	Recommended Power Cable(Core)	N	3	3
	Connection Pipe Connection Method	-	Flare Connection	Flare Connection
	Not Additional Gas Connection Pipe Length	m	40	40
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Outer Diameter of Liquid Pipe(C&H Allocation) (Metric)	mm	Φ6	Φ6
	Outer Diameter of Gas Pipe(C&H Allocation) (Metric)	mm	Φ9.52	Φ9.52
	Connection Pipe Max. Height Distance(indoor and indoor)	m	10	10
	Max. equivalent connection pipe length(outdoor to last indoor)	m	20	20
	Connection Pipe Max. Length Distance(total length)	m	70	70

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

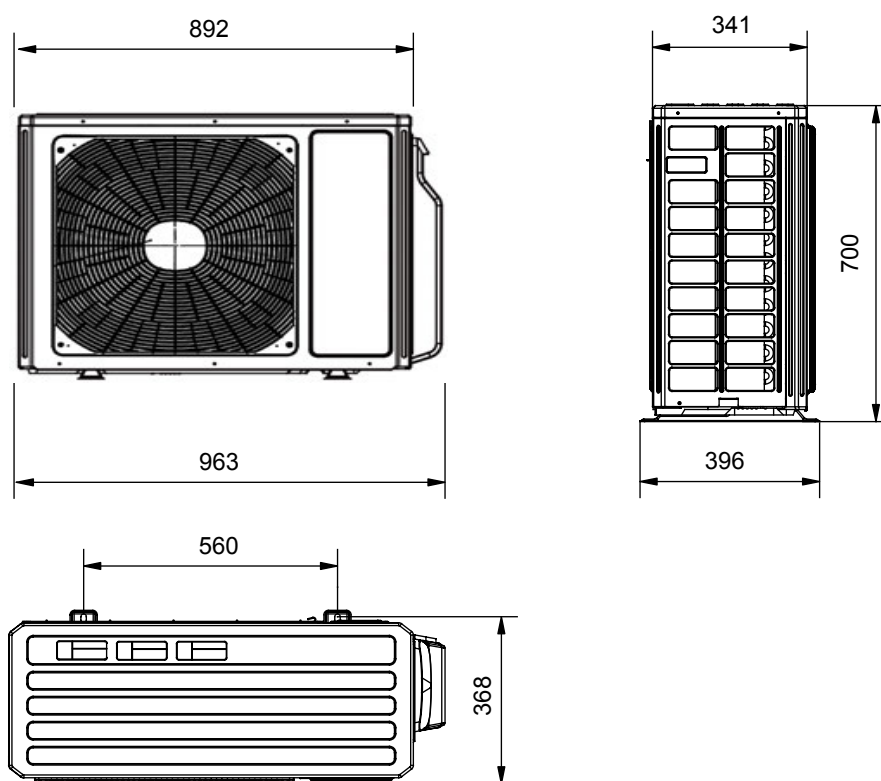
### 3. Outline Dimension Diagram

(1)Model:CHML-U14NK2



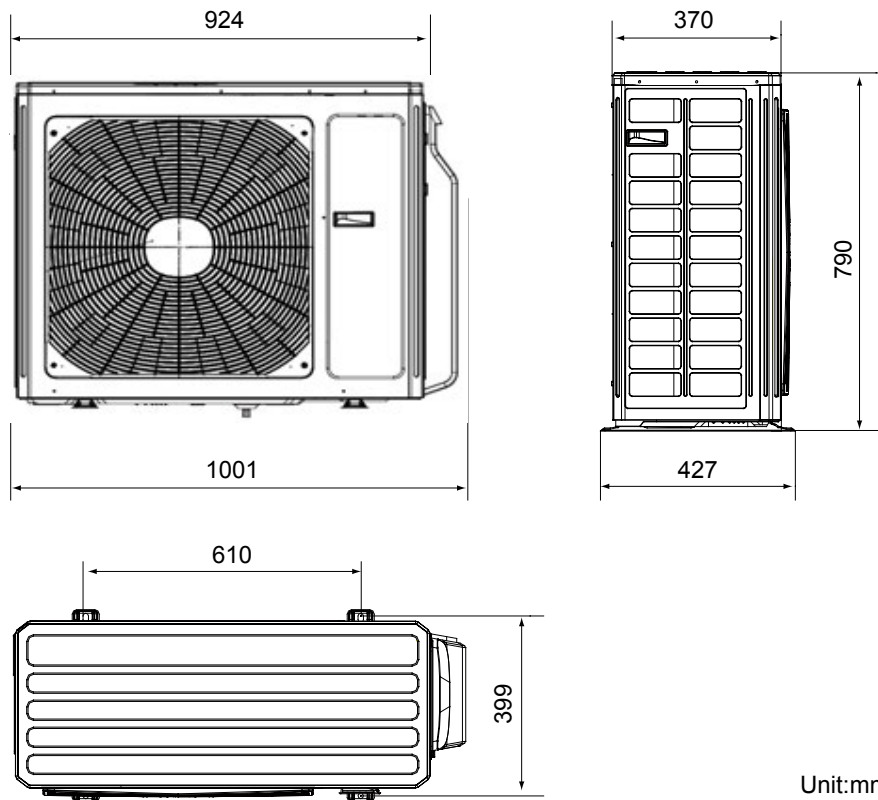
Unit:mm

(2)Models:CHML-U18NK3 CHML-U21NK3



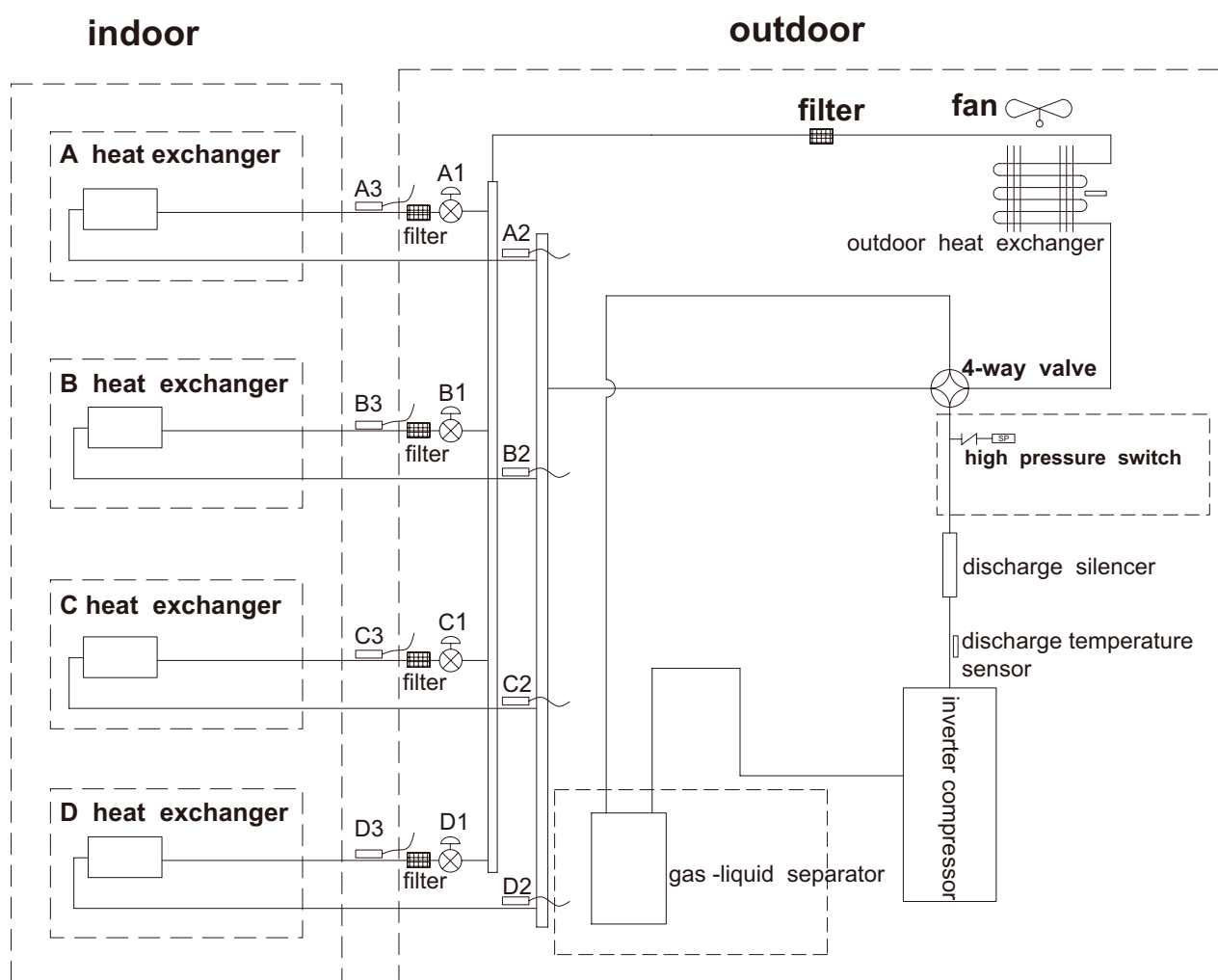
Unit:mm

(3)Models:CHML-U24NK3 CHML-U28NK4



Unit:mm

## 4. Refrigerant System Diagram



A1:A-unit electronic expansion valve    B1:B-unit electronic expansion valve  
 C1:C-unit electronic expansion valve    D1:D-unit electronic expansion valve  
 A2:A-unit gas pipe temperature sensor    B2:B-unit gas pipe temperature sensor  
 C2:C-unit gas pipe temperature sensor    D2:D-unit gas pipe temperature sensor  
 A3:A-unit liquid pipe temperature sensor    B3:B-unit liquid pipe temperature sensor  
 C3:C-unit liquid pipe temperature sensor    D3:D-unit liquid pipe temperature sensor

## 5. Electrical Part

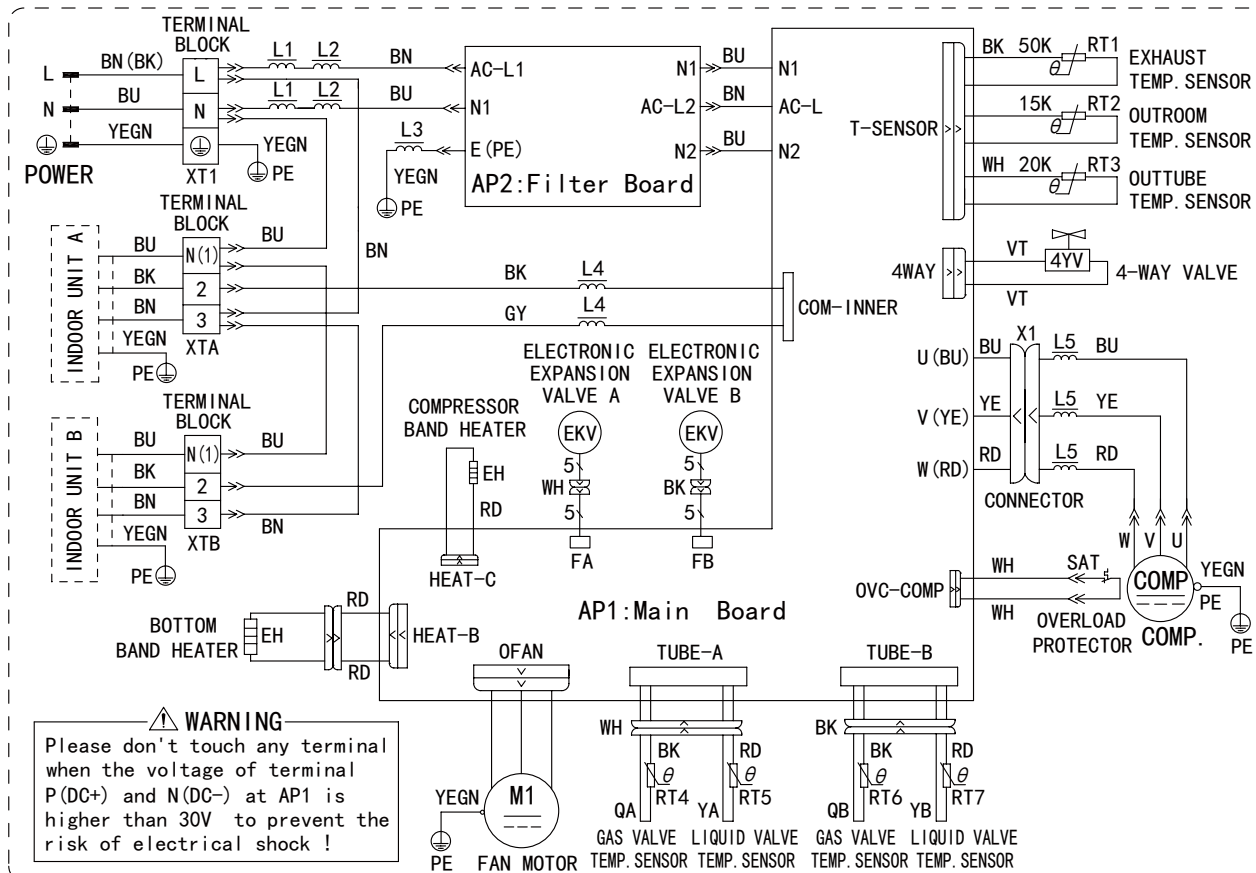
### 5.1 Wiring Diagram

#### • Instruction

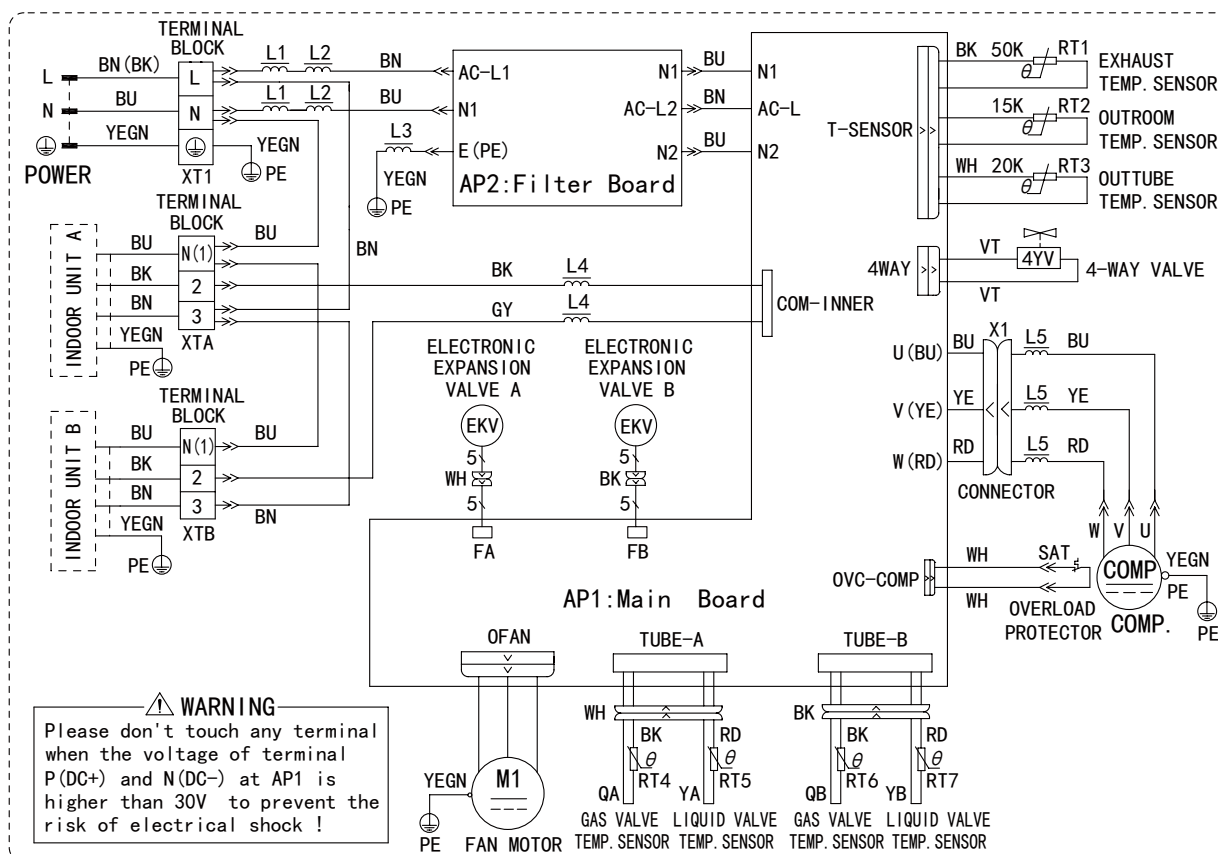
Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	C&HN	COMP	Compressor
YE	Yellow	BN	Brown		Grounding wire
RD	Red	BU	Blue		
YEGN	Yellow/C&Hn	BK	Black		
VT	Violet	OG	Orange		

#### • Outdoor Unit

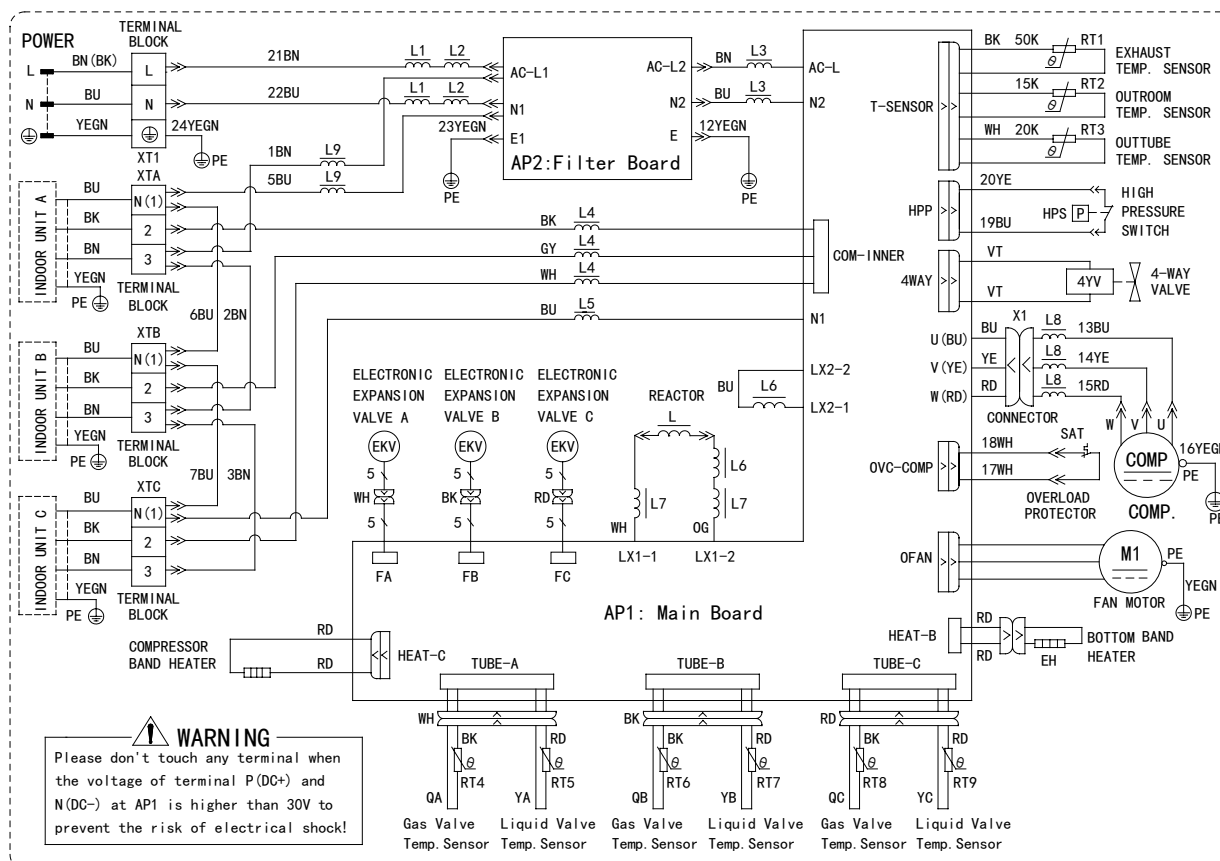
(1) Models: CHML-U14NK2(CB228W06500) CHML-U18NK3(CB228W06300)



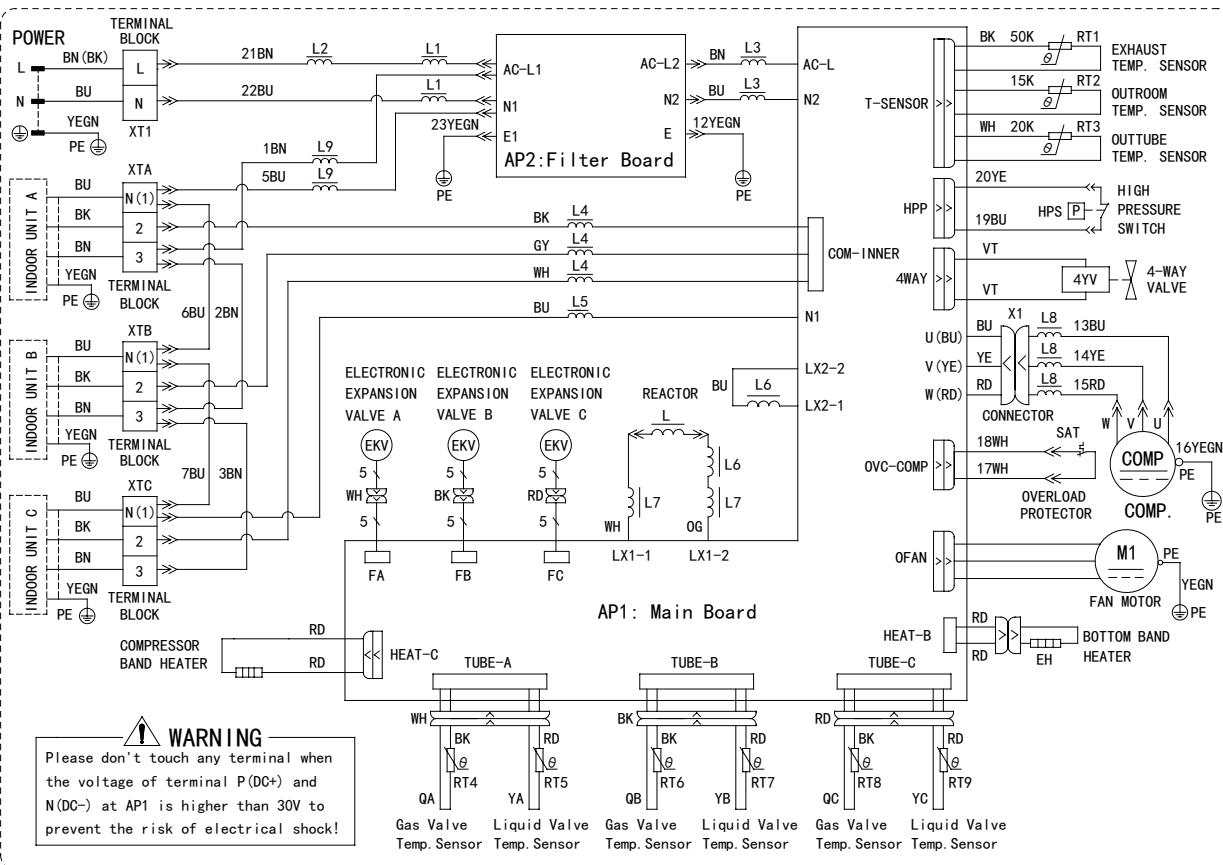
(2)Model:CHML-U14NK2(CB228W06501) CHML-U18NK3(CB228W06301)



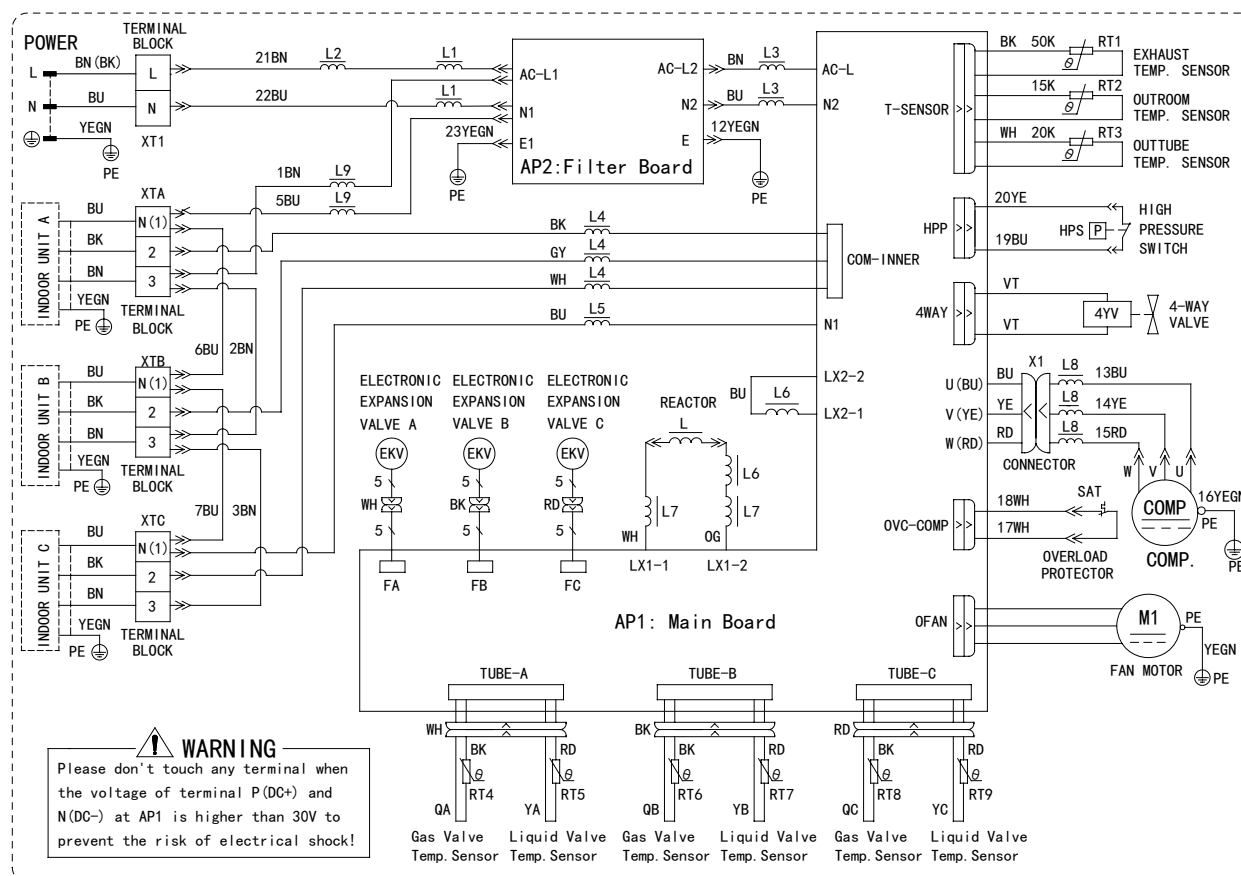
(3)Model:CHML-U21NK3(CB228W06400)



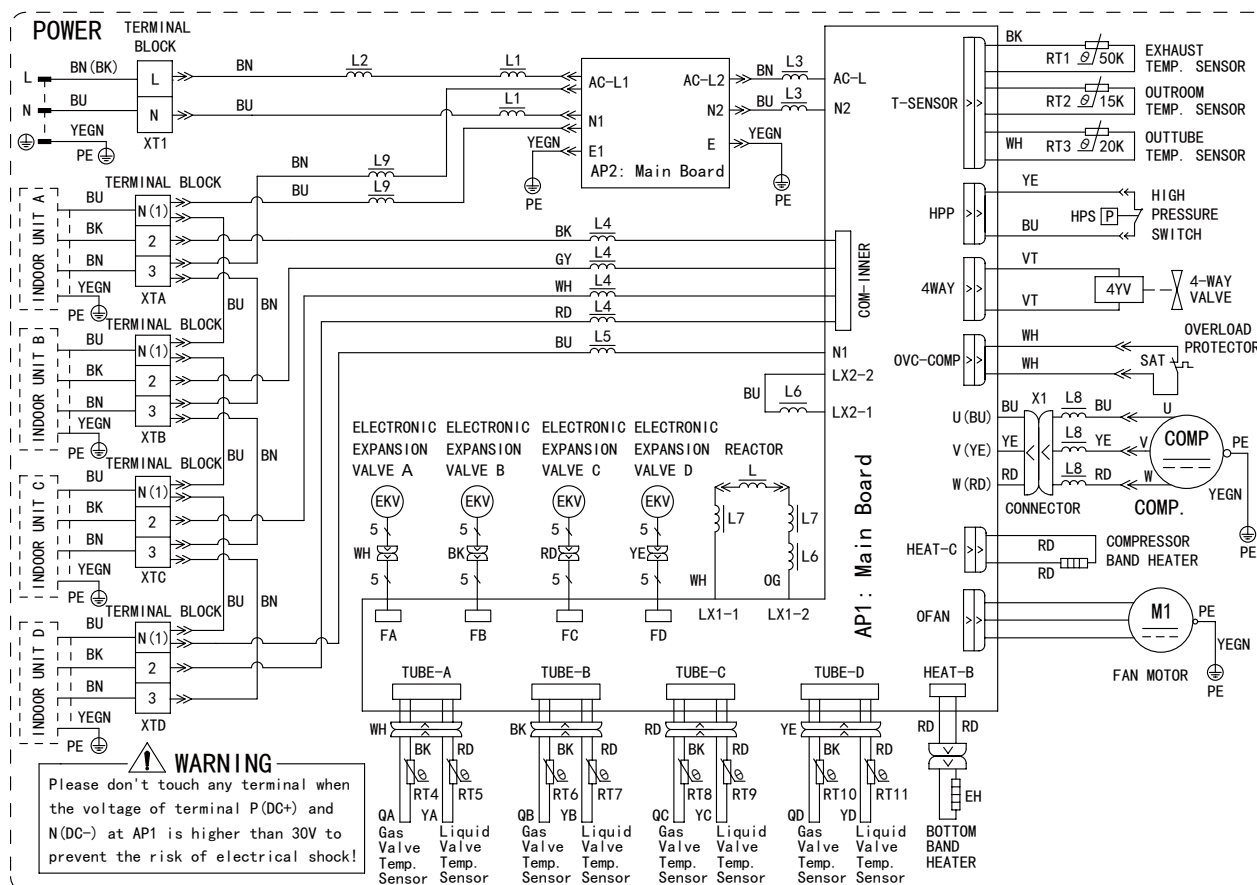
(5)Model:CHML-U24NK3(CB228W06600)



## (6)Model:CHML-U24NK4(CB228W06601)

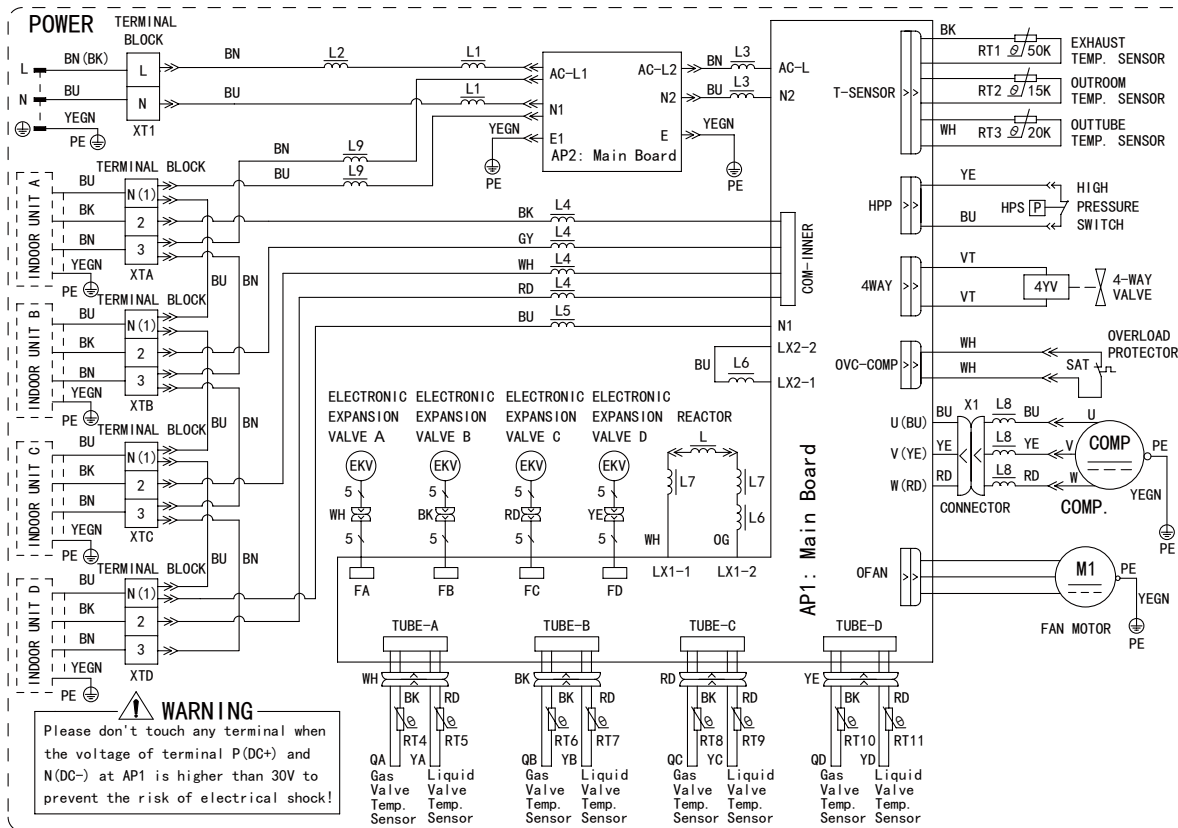


## (5)Model:CHML-U28NK4 (CB228W06200)





(6)Model:CHML-U28NK4(CB228W06201)

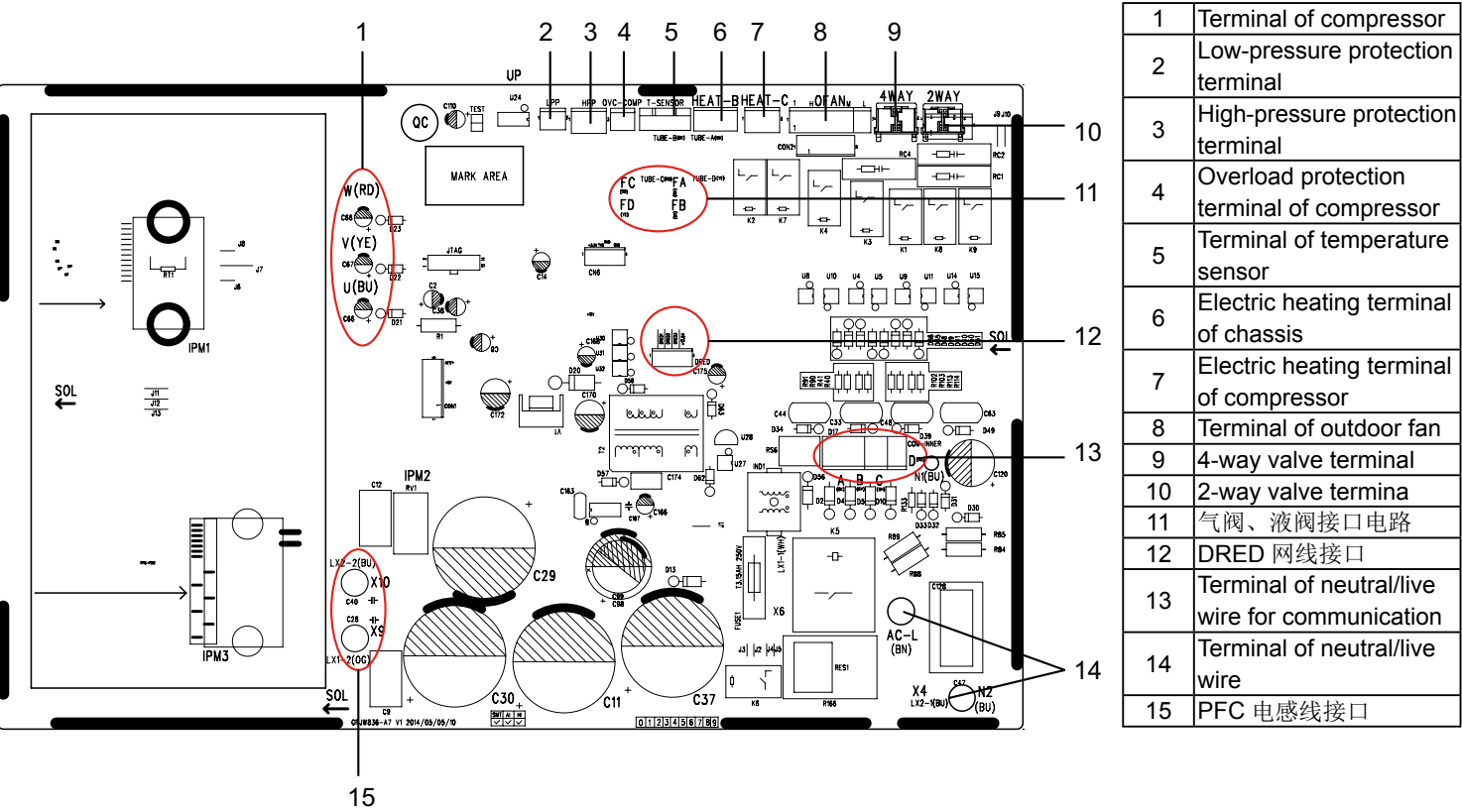


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

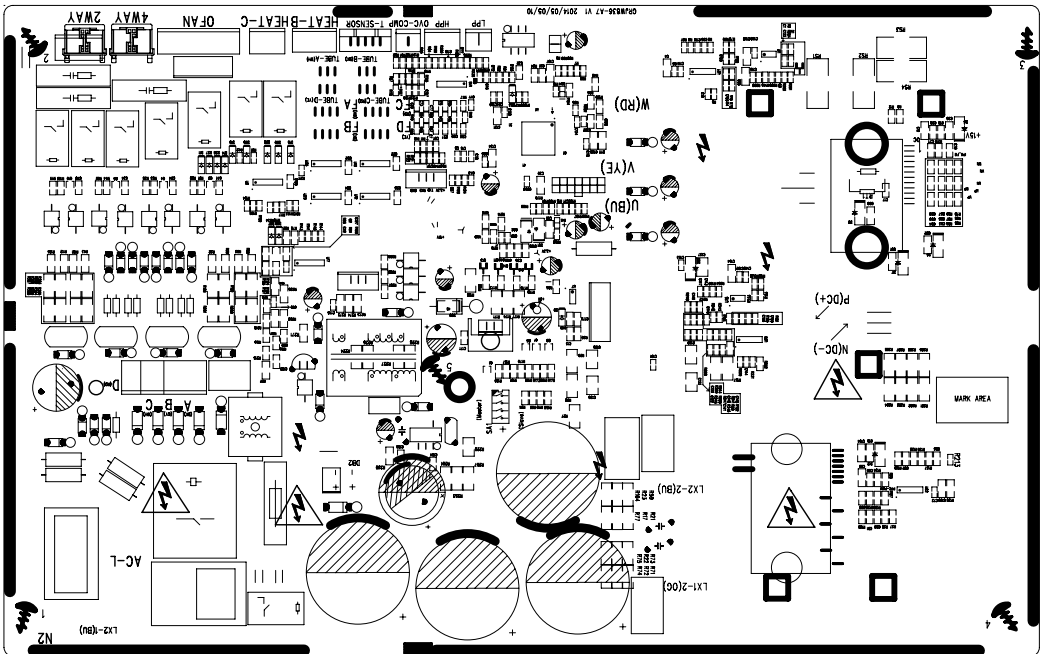


21/24/28K

• Top view



• Bottom view



## 6. Function and Control

### 1 Basic functions of the system

#### 1.1 Cooling Mode

##### 1.1.1 Cooling conditions and process:

If the compressor is in stop status and start the unit for cooling operation, when one of the indoor units reaches the cooling operation condition, the unit start cooling operation; in this case, the electronic expansion valve, the outdoor fan and the compressor start operation.

##### 1.1.2 Stop in cooling operation

##### 1.1.2.1 Compressor stops

The compressor stops immediately, the outdoor fan stops after 1min.

##### 1.1.2.2 Some of the indoor units reach the stop condition (the compressor does not stop)

The compressor operates immediately according to the required frequency. For the indoor unit with no requirement, the corresponding electronic expansion valve is closed to OP.

##### 1.1.3 Cooling mode transfers to heating mode

When the unit transfers to heating mode, the 4-way valve is energized after the compressor stops for 2min. The other disposals are the same as stopping in cooling mode.

##### 1.1.4 4-way valve: in this mode, the 4-way valve is closed.

##### 1.1.5 Outdoor fan control in cooling mode

The outdoor fan starts before 5s of the starting of compressor. The outdoor fan will run in high speed for 3min after starting and then it will run in set speed. The fan shall run at every speed for at least 80s. (When the quantity of running indoor unit is changed, the unit will enter the control described in 1.3.5.1 and 1.3.5.2);

When the compressor stops, the outdoor fan runs at present speed and stops after 1min.

#### 1.2 Dry Mode

##### 1.2.1 The dry conditions and process are the same as those in cooling mode;

##### 1.2.2 The status of 4-way valve: closed;

##### 1.2.3 The temperature setting range: 16 ~ 30℃;

##### 1.2.4 Protection function: the same as those in cooling mode;

##### 1.2.5 In dry mode, the maximum value A of the capacity requirement percentage of single unit is 90% of that in cooling mode.

The open condition of the electronic expansion valve, outdoor fan and compressor is the same as those in cooling mode.

#### 1.3 Heating Mode

##### 1.3.1 Heating conditions and process:

When one of the indoor units reaches the heating operation condition, the unit starts heating operation.

##### 1.3.2 Stop in heating operation:

##### 1.3.2.1 When all the indoor units reach the stop condition, the compressor stops and the outdoor fan stops after 1min;

##### 1.3.2.2 Some of the indoor units reach the stop condition

The compressor reduces the frequency immediately and operates according to the required frequency;

##### 1.3.2.3 Heating mode transfers to cooling mode(dry mode), fan mode

a. The compressor stops; b. the power of 4-way valve is cut off after 2min; c. the outdoor fan stops after 1min; d. the status of 4-way valve: energized;

### 1.3.3 Outdoor fan control in heating mode

The outdoor fan starts before 5s of the starting of compressor and then it will run in high speed for 40s;

The fan shall run at every speed for at least 80s;

When the compressor stops, the outdoor fan stops after 1min.

### 1.3.4 Defrosting function

When the defrosting condition is met, the compressor stops; the electronic expansion valve of all indoor units open in big angle; the outdoor fan stops after 40s of the stop of compressor, meanwhile, the 4-way valve reverses the direction; after the 4-way valve reverses the direction, the compressor starts; then begin to calculate the time of defrosting, the frequency of the compressor rises to reach the defrosting frequency.

### 1.3.5 Oil-returned control in heating mode

#### 1.3.5.1 Oil-returned condition

The whole unit is operating in low frequency for a long time

#### 1.3.5.2 Oil-returned process in heating mode

The indoor unit displays "H1"

#### 1.3.5.3 Oil-returned finished condition in heating mode

The duration reaches 5min

## 1.4 Fan Mode

The compressor, the outdoor fan and the 4-way valve are closed; temperature setting range is 16~30℃.

## 2. Protection Function

### 2.1 Mode Conflict Protection of indoor unit

When the setting mode is different of different indoor unit, the unit runs in below status:

- a. The mode of the first operating indoor unit is the basic mode, then compare the mode of the other indoor units to see if there is a conflict. Cooling mode (dry mode) is in conflict with heating mode.
- b. Fan mode is in conflict with heating mode and the heating mode is the basic mode. No matter which indoor unit operates first, the unit will run in heating mode.

### 2.2 Overload protection function

When the tube temperature is a little low, the compressor raises the operation frequency; when the tube temperature is a little high, the compressor frequency is restricted or lows down the operation frequency; when the tube temperature is too high, the compressor protection stops running.

If the discharge temperature protection continuously appears for 6 times, the compressor can't resume running. The compressor can resume running after cutting off the power and then putting through the power. (if the running time of the compressor is longer than 7min, the protection times record will be cleared)

### 2.3 Discharge Protection Function

When the discharge temperature is a little low, the compressor raises the operation frequency; when the discharge temperature is a little high, the compressor frequency is restricted or lows down the operation frequency; when the discharge temperature is too high, the compressor protection stops running.

If the discharge temperature protection continuously appears for 6 times, the compressor can't resume running. The compressor can resume running after cutting off the power and then putting through the power. (if the running time of the compressor is longer than 7min, the protection times record will be cleared)

## 2.4 Communication malfunction

Detection of the quantity of installed indoor units:

After 3min of energizing, if the outdoor unit does not receive the communication data of certain indoor unit, the outdoor unit will judge that indoor unit is not installed and will treat it as it is not installed. If the outdoor unit receives the communication data of that indoor unit later, the outdoor unit will treat that unit as it is installed.

## 2.5 Overcurrent Protection

a. Overcurrent protection of complete unit; b. phase wire current protection; c. compressor phase current protection

## 2.6 Compressor high-pressure protection

2.6.1 When the high-pressure switch is detected cut off for 3s continuously, the compressor will enter high-pressure protection as it stops when reaching set temperature. Meanwhile, the outdoor unit will send the signal of "high-pressure protection" to the indoor units;

2.6.2 After the appearance of high-pressure protection, when the high-pressure switch is detected closed for 6s continuously, the compressor can resume running only after cutting off the power and then putting through the power.

## 2.7 Compressor overload protection

If the compressor overload switch is detected having movement, the indoor unit will display the corresponding malfunction as it stops when the indoor temperature reaching set temperature. When the compressor stops for more than 3min and the compressor overload switch is reset, the unit will resume operation status automatically. If the protection appears for more than 6 times (if the running time of the compressor is longer than 30min, the protection times record will be cleared), the unit can not resume operation status automatically, but can resume running only after cutting off the power and then putting through the power.

## 2.8 Compressor Phase-lacking Protection

When the compressor starts, if one of the three phases is detected open, the compressor will enter phase-lacking protection. The malfunction will be cleared after 1min, the unit will restart and then detect if there is still has phase-lacking protection. If the phase-lacking protection is detected for 6 times continuously, the compressor will not restart but can resume running only after cutting off the power and then putting through the power. If the running time of the compressor is longer than 7min, the protection times record will be cleared.

## 2.9 IPM Protection

2.9.1 When the IPM module protection is detected, the unit will stop as the indoor temperature reaching set temperature, PFC is closed, display IPM protection malfunction. After the compressor stops for 3min, the unit will resume operation status automatically; if the IPM protection is detected for more than 6 times continuously (If the running time of the compressor is longer than 7min, the protection times record will be cleared), the system will stop and send the signal of module protection to indoor unit. The unit can not resume operation status automatically, but can resume running only after cutting off the power and then putting through the power.

2.9.2 IPM module overheating protection

2.9.2.1 When  $T_{IPM} > 85^{\circ}\text{C}$ , prohibit to raise frequency;

2.9.2.2 When  $T_{IPM} \geq 90^{\circ}\text{C}$ , the operation frequency of compressor lows down by 15% every 90s according to the present capacity requirement of the complete unit. It will keep 90s after lowing down the frequency. After lowing down the frequency, if  $T_{IPM} \geq 90^{\circ}\text{C}$ , the unit will circulate the above movement until reaching the minimum frequency; if  $85^{\circ}\text{C} < T_{IPM} < 90^{\circ}\text{C}$ , the unit will run at this frequency; when  $T_{IPM} \leq 85^{\circ}\text{C}$ , the unit will run at the frequency according to the capacity requirement;

2.9.2.3 When  $T_{IPM} \geq 95^{\circ}\text{C}$ , the compressor stops. After the compressor stops for 3min, if  $T_{IPM} < 85^{\circ}\text{C}$ , the compressor and the outdoor fan will resume operation.

# 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 installation and maintenance shall be performed by distributor or qualified person.
- 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 protective boards, 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. The power cord and power connection wires can't be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.

10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.

11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3m.

12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.

13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.

14. 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.

15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

#### Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the 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.



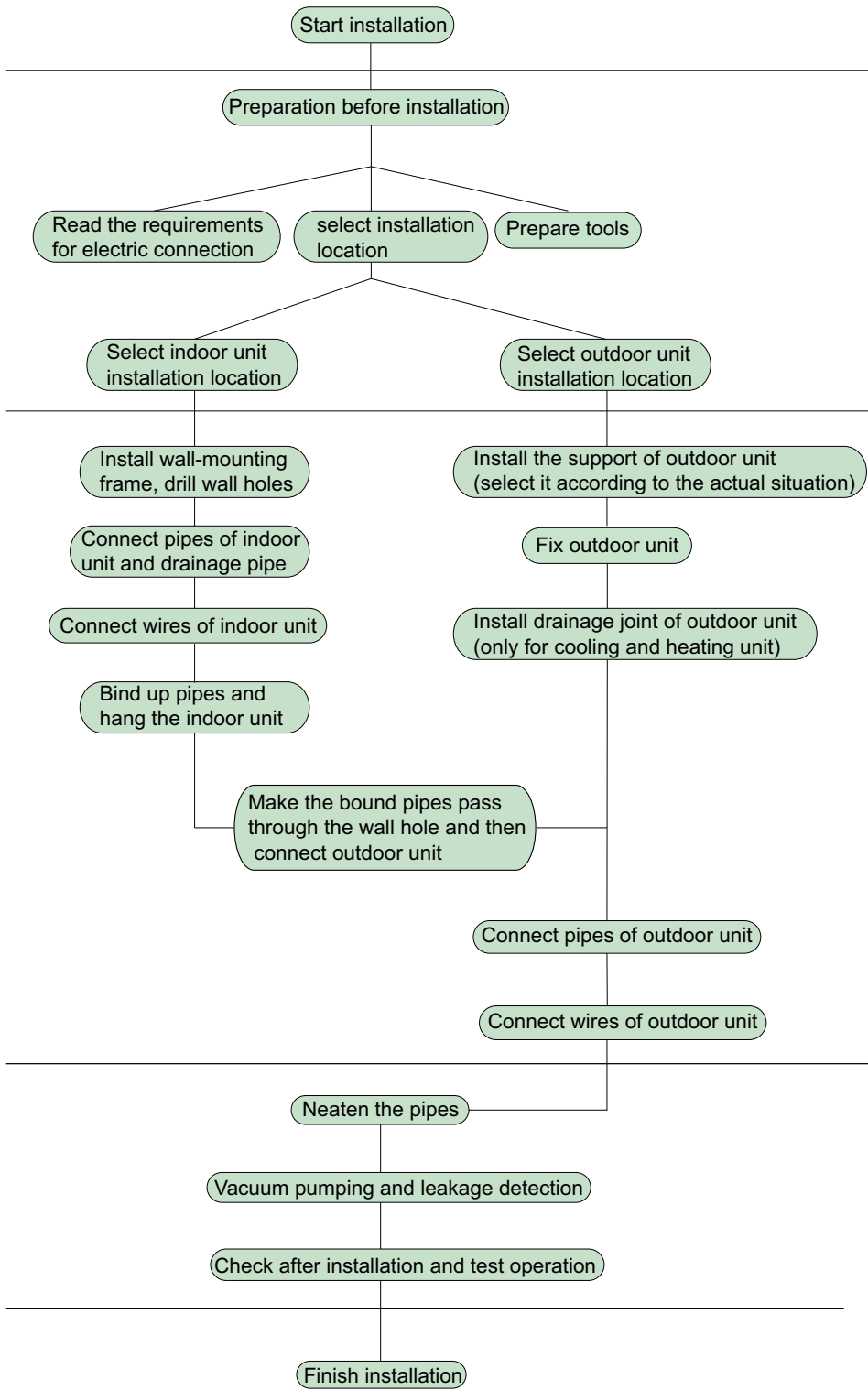
## Main Tools for Installation and Maintenance

<p>1. Level meter, measuring tape</p> 	<p>2. Screw driver</p> 	<p>3. Impact drill, drill head, electric drill</p> 
<p>4. Electroprobe</p> 	<p>5. Universal meter</p> 	<p>6. Torque wrench, open-end wrench, inner hexagon spanner</p> 
<p>7. Electronic leakage detector</p> 	<p>8. Vacuum pump</p> 	<p>9. Pressure meter</p> 
<p>10. Pipe pliers, pipe cutter</p> 	<p>11. Pipe expander, pipe bender</p> 	<p>12. Soldering appliance, refrigerant container</p> 



# 8. Installation Manual

## Installation procedures



Note: this flow is only for reference; please find the more detailed installation steps in this section.

## 8.1 Electrical Connections

### CHML-U14NK2 CHML-U18NK3

1. Remove the handle at the right side plate of the outdoor unit (one screw).
2. Remove the cable clamp, connect the power connection cable with the terminal at the row of connection and fix the connection. The fitting line distributing must be consistent with the indoor unit. terminal of line bank. Wiring should meet that of indoor unit.
3. Fix power connection wire by wire clamp.
4. Ensure wire has been fixed well.
5. Install the handle.

**!** Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Air switch capacity
CHML-U14NK2	10A
CHML-U18NK3	10A

**!** An all-pole disconnection switch having a contact separation of at least 3mm in all pole should be connected in fixed wiring.

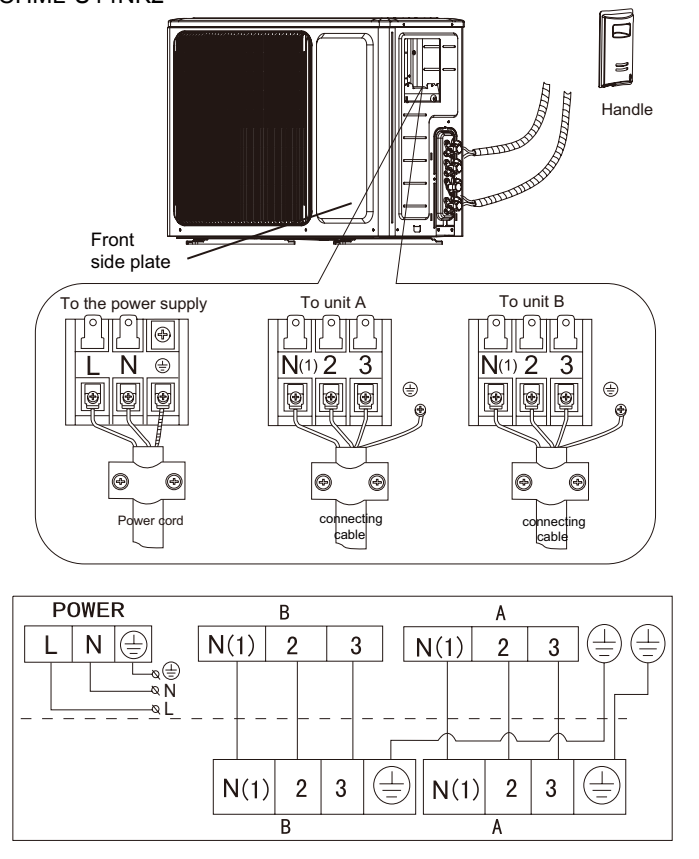
**!** Wrong wire connection may cause malfunction of some electric components. After fixing cable, ensure that leads between connection to fixed point have some space.

**!** The connection pipes and the connecting wirings of the unit A and unit B must be corresponding to each other respective.

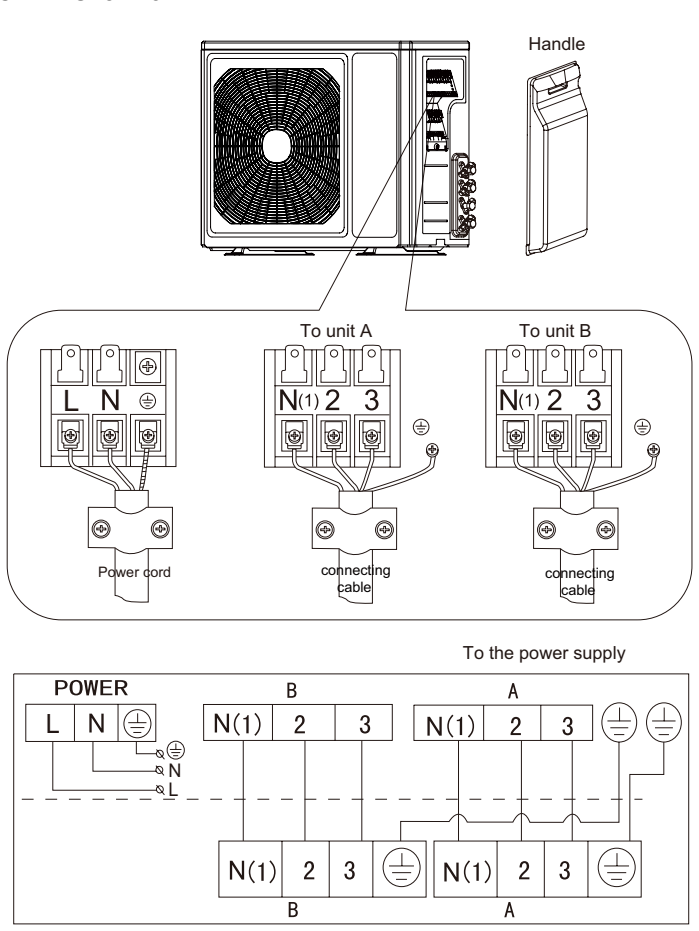
**!** The appliance shall be installed in accordance with national wiring regulations.

Note: the above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.

CHML-U14NK2



CHML-U18NK3



CHML-U21NK3 CHML-U24NK3

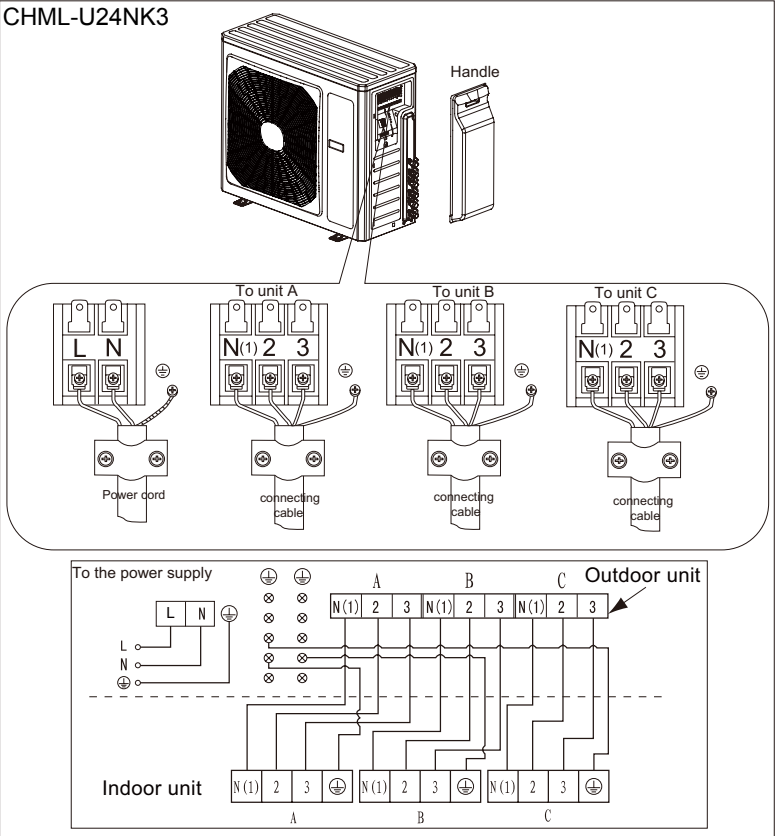
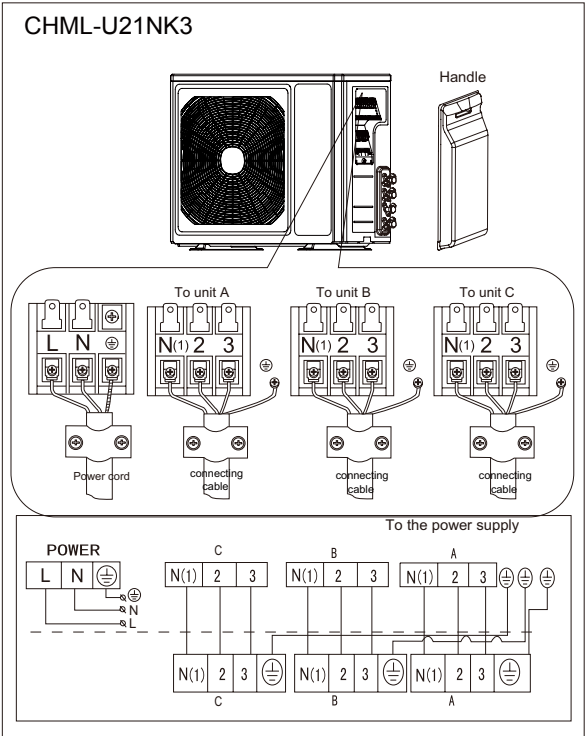
- 1. Remove the handle at the right side plate of the outdoor unit (one screw).
- 2. Remove the cable clamp, connect the power connection cable with the terminal at the row of connection and fix the connection. The fitting line distributing must be consistent with the indoor unit. terminal of line bank. Wiring should meet that of indoor unit.
- 3. Fix power connection wire by wire clamp.
- 4. Ensure wire has been fixed well.
- 5. Install the handle.

⚠ Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Air switch capacity
CHML-U21NK3	25A
CHML-U24NK3	25A

- ⚠ An all-pole disconnection switch having a contact separation of at least 3mm in all pole should be connected in fixed wiring.
- ⚠ Wrong wire connection may cause malfunction of some electric components. After fixing cable, ensure that leads between connection to fixed point have some space.
- ⚠ The connection pipes and the connectiong wirings of the unit A, unit B, unit C and unit D must be corresponding to each other respective.
- ⚠ The appliance shall be installed in accordance with national wiring regulations.

Note: The above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.



## CHML-U28NK4

1. Remove the handle at the right side plate of the outdoor unit (one screw).
2. Remove the cable clamp, connect the power connection cable with the terminal at the row of connection and fix the connection. The fitting line distributing must be consistent with the indoor unit. terminal of line bank. Wiring should meet that of indoor unit.
3. Fix power connection wire by wire clamp.
4. Ensure wire has been fixed well.
5. Install the handle.

⚠ Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Air switch capacity
CHML-U28NK4	25A

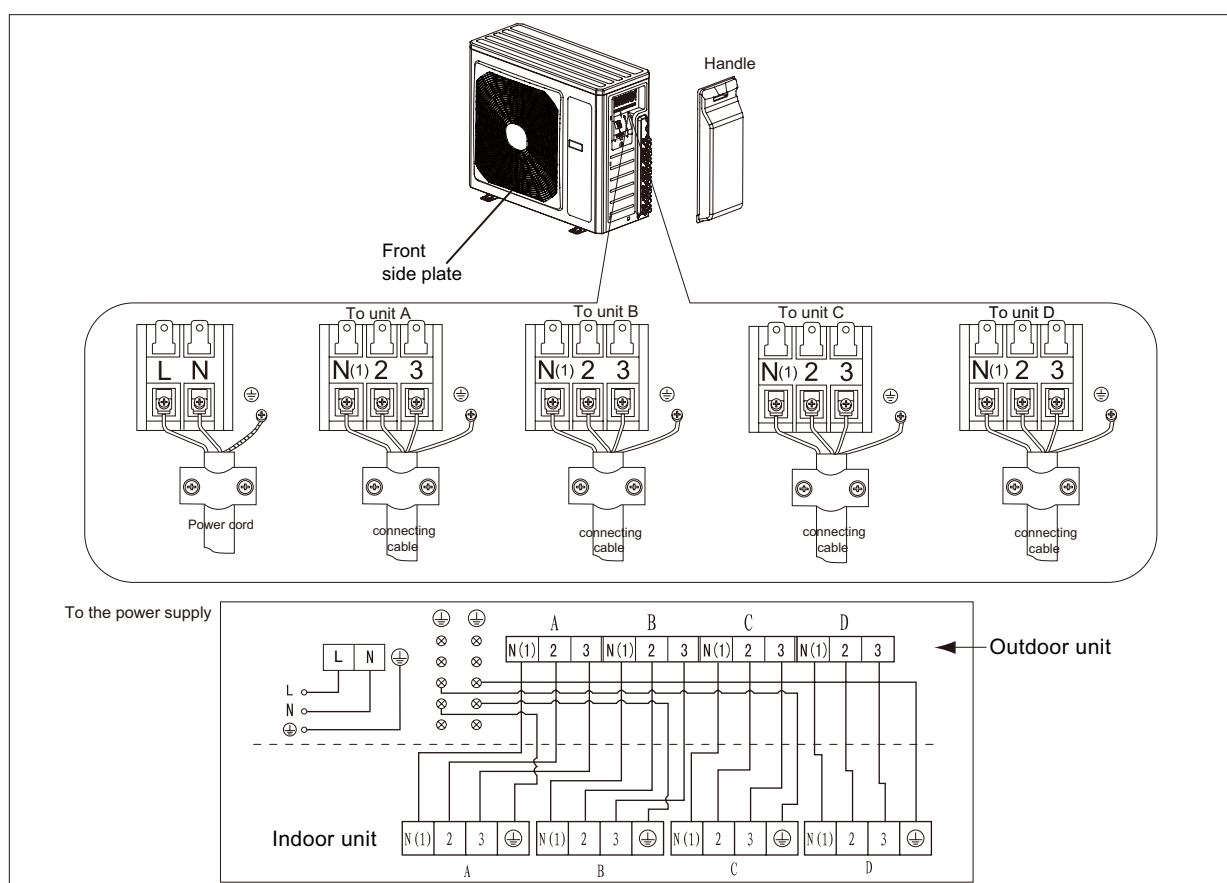
⚠ An all-pole disconnection switch having a contact separation of at least 3mm in all pole should be connected in fixed wiring.

⚠ Wrong wire connection may cause malfunction of some electric components. After fixing cable, ensure that leads between connection to fixed point have some space.

⚠ The connection pipes and the connecting wirings of the unit A, unit B, unit C and unit D must be corresponding to each other respective.

⚠ The appliance shall be installed in accordance with national wiring regulations.

Note: The above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.



## 8.2 Installing the Outdoor Unit

- !** Do not install the outdoor unit in pits or air vents
- When mounting the unit on a wall or the roof, make sure the support is firmly secured so that it cannot move in the event of intense vibrations or a strong wind.

### Installing the pipes

- !** Use suitable connecting pipes and equipment for the refrigerant R410A.

Models(m)	14/18K	21/24K	28K
Max. connection pipe length	20	60	70
Max. connection pipe length(Simpleone indoor unit)	10	20	20

The sum of the capacity codes of the indoor units should be among 50%-150% of that of the outdoor unit.

- !** The refrigerant pipes must not exceed the maximum heights m(14K&18K &24Kx2)or 10m(24Kx3&28K).
- !** Wrap all the refrigerant pipes and joints.
- !** Tighten the connections using two wrenches working in opposite directions.by Authorized Personnel Only.

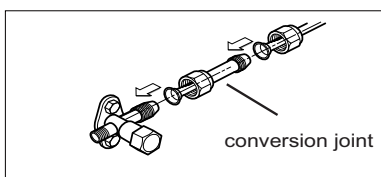
**Caution: Installation Must be Performed in Accordance with the NEC/CEC by Authorized Personnel Only.**

Humid air left inside the refrigerant circuit can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circuit using a vacuum pump.

- (1) Unscrew and remove the caps from the 2-way and 3-way valves.
- (2) Unscrew and remove the cap from the service valve.
- (3) Connect the vacuum pump hose to the service valve.
- (4) Operate the vacuum pump for 10-15 minutes until an absolute vacuum of 10 mm Hg has been reached.
- (5) With the vacuum pump still in operation, close the low-pressure knob on the vacuum pump coupling. Stop the vacuum pump.
- (6) Open the 2-way valve by 1/4 turn and then close it after 10 seconds. Check all the joints for leaks using liquid soap or an electronic leak device.
- (7) Turn the body of the 2-way and 3-way valves. Disconnect the vacuum pump hose.
- (8) Replace and tighten all the caps on the valves.

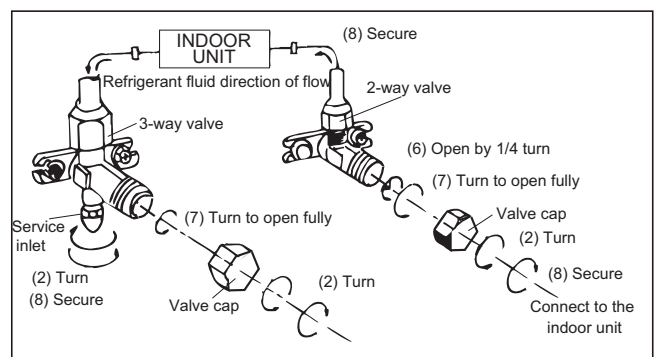
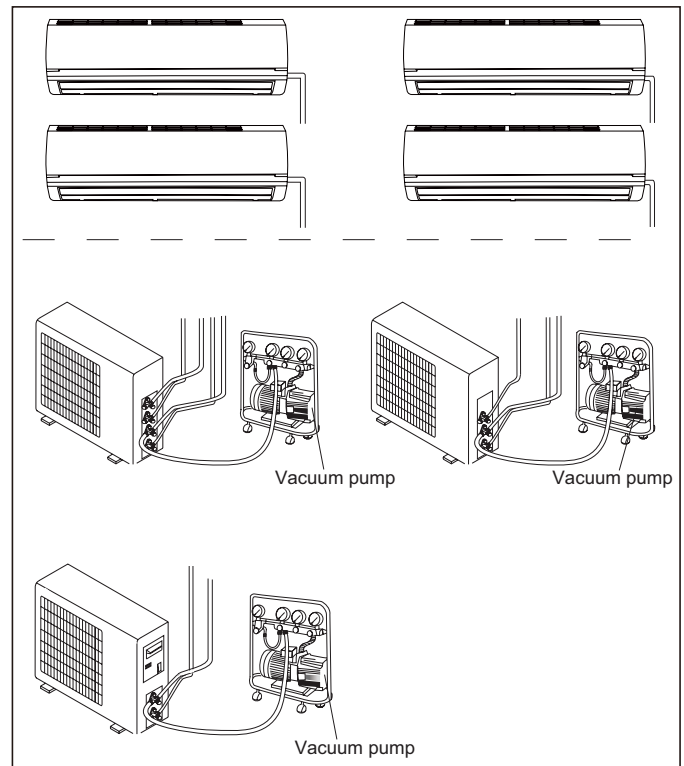
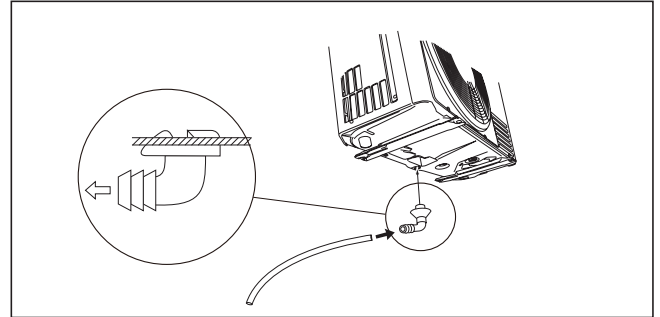
Diameter (mm)	Twisting moment (N.m)
Φ6	15-20
Φ9.52	35-40
Φ16	60-65
Φ12	45-50
Φ19	70-75

- (9) If the specification of outdoor unit gas valve is 3/8",but customer needs to install 1/2"indoor unit so that it is need to use a "pipe joint subassembly" (Code 06643008) to make a conversion joint with outdoor unit gas valve and connection pipe, as show in following.



### Install the drain fitting and the drain hose(for model with heat pump only)

Condensation is produced and flows from the outdoor unit when the appliance is operating in the heating mode. In order not to disturb neighbours and to respect the environment, install a drain fitting and a drain hose to channel the condensate water. Install the drain fitting and rubber washer on the outdoor unit chassis and connect a drain hose to it as shown in the figure.

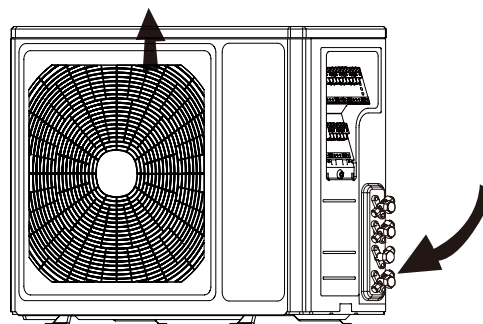


## 8.3 Installation Dimension Diagram

⚠ Use suitable instruments for the refrigerant R410A.

- Do not use any other refrigerant than R410A.

⚠ Do not use mineral oils to clean the unit.



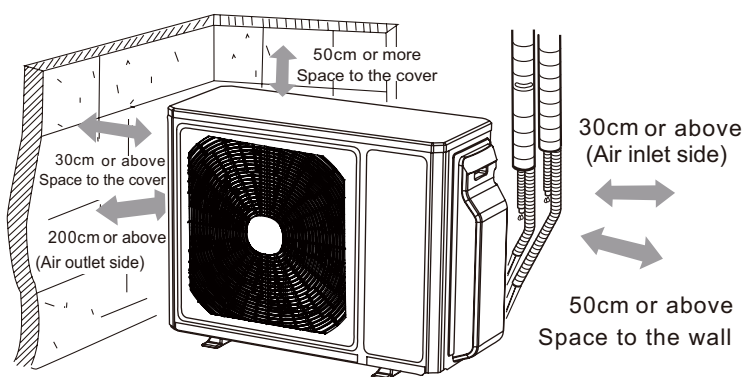
⚠ The installation must be done by trained and qualified service personnel with reliability according to this manual.

⚠ Contact service center before installation to avoid the malfunction due to unprofessional installation.

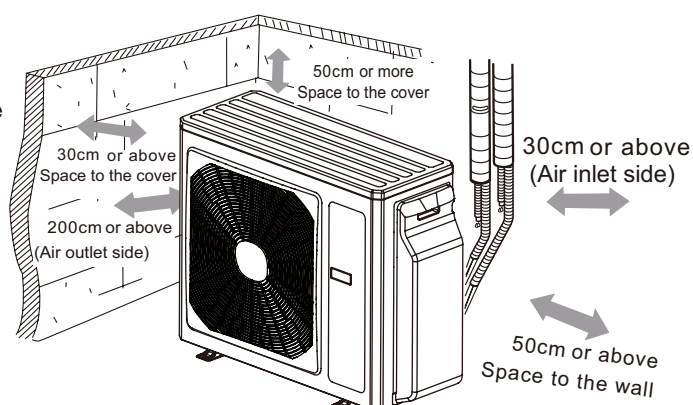
⚠ When picking up and moving the units, you must be guided by trained and qualified person.

⚠ Ensure that the recommended space is left around the appliance.

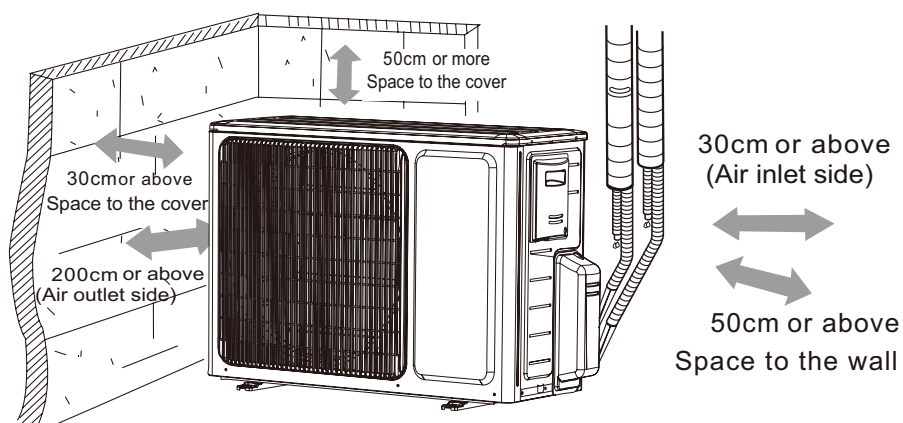
**18/21K**



**24/28K**



**14K**



## 8.4 Check after Installation

Check Items	Problems Owing to Improper Installation
Is the installation reliable?	The unit may drop, vibrate or make noises
Has the gas leakage been checked?	May cause unsatisfactory cooling (heating) effect
Is the thermal insulation of the unit sufficient?	May cause condensation and water dropping
Is the drainage smooth?	May cause condensation and water dropping
Does the power supply voltage accord with the rated voltage specified on the nameplate?	The unit may bread down or the components may be burned out
Are the lines and pipelines correctly installed?	The unit may bread down or the components may be burned out
Has the unit been safely grounded?	Risk of electrical leakage
Are the models of lines in conformity with requirements?	The unit may bread down or the components may be burned out
Are there any obstacles near the air inlet and outlet of the indoor and outdoor units?	The unit may bread down or the components may be burned out
Have the length of refrigerating pipe and refrigerant charge amount been recorded?	It is not easy to decide the charge amount of refrigerant.



## 9. Maintenance

### 9.1 Precautions before Performing Inspection or Repair

There are high-capacity electrolytic capacitors on the outdoor mainboard. Thus, even the power is cut off, there is high voltage inside the capacitors and it needs more than 20min to reduce the voltage to safety value. Touching the electrolytic capacitor within 20min after cutting the power will cause electric shock. If maintenance is needed, follow the steps below to discharge electricity of electrolytic capacitor after power off.

(1) Open the top cover of outdoor unit and then remove the cover of electric box cover.

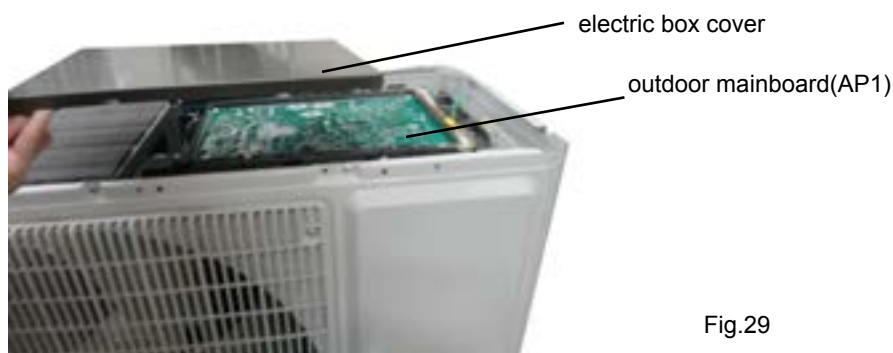


Fig.29

(2) As shown in the fig below, connect the plug of discharge resistance (about 100ohm, 20W) (if there is no discharge resistance, you can use the plug of soldering iron) to point A and B of electrolytic capacitor. There will be sparks when touching them. Press them forcibly for 30s to discharge electricity of electrolytic capacitor.

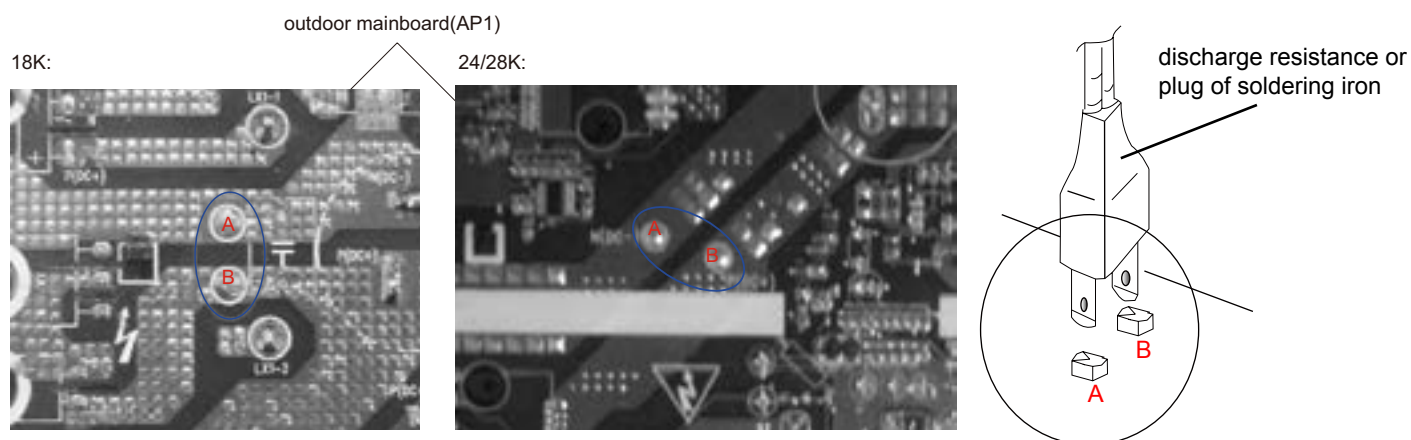


Fig.30

(3) After finish discharging electricity, measure the voltage between point A and B with universal meter to make sure if electricity discharging is completed, in order to prevent electric shock. If the voltage between the two points is below 20V, you can perform maintenance safely.



## 9.2 Flashing LED of Indoor/Outdoor Unit and Primary Judgement

### 1. Requirement of malfunction display

When several malfunctions happen at the same time, malfunction codes will be displayed circularly.

### 2. Malfunction display method

(1) Hardware malfunction: it will be displayed immediately, please refer to "Malfunction status sheet";

(2) Operation status: it will be displayed immediately, please refer to "Malfunction status sheet";

(3) Other malfunction: It will be displayed after the compressor has been stopped for 200s, please refer to "Malfunction status sheet".

(Note: when the compressor starts up again, malfunction display waiting time (200s) will be cleared.)

### 3. Malfunction display control

Indoor unit displays malfunction code as shown in the sheet below. ODU communication light will be off for 1s and then blink for 1s circularly.

### 4. Viewing malfunction code through remote controller

Enter viewing malfunction code: pressing light button for 6 times within 3S to view malfunction code;

Exit viewing malfunction code: pressing light button for 6 times within 3S or after the malfunction code is displayed for 5min.

Malfunction status sheet		
Malfunction name	Malfunction type	Nixie tube
Zero cross detection circuit malfunction	Hardware malfunction	U8
Malfunction protection of jumper cap	Hardware malfunction	C5
Feedback of without IDU motor	Hardware malfunction	H6
Indoor ambient temperature sensor is open/short circuited	Hardware malfunction	F1
Indoor evaporator temperature sensor is open/short circuited	Hardware malfunction	F2
Liquid valve temperature sensor is open/short circuited	Hardware malfunction	b5
Gas valve temperature sensor is open/short circuited	Hardware malfunction	b7
Modular temperature sensor is open/short circuited	Hardware malfunction	P7
Outdoor ambient temperature sensor is open/short circuited	Hardware malfunction	F4
Outdoor condenser inlet pipe temperature sensor is open/short circuited (commercial)	Hardware malfunction	A5
Outdoor condenser middle pipe temperature sensor is open/short circuited	Hardware malfunction	F4
Outdoor condenser outlet pipe temperature sensor is open/short circuited (commercial)	Hardware malfunction	A7
Outdoor discharge temperature sensor is open/short circuited	Hardware malfunction	F5
Communication malfunction	Hardware malfunction	E6
Malfunction of phase current detection circuit for compressor	Hardware malfunction	U1
Compressor demagnetization protection	Viewing malfunction code through remote controller within 200s; displayed directly on nixietube after 200s	HE
Malfunction of voltage dropping for DC bus-bar		U3
Module high temperature protection		P8
Refrigerant lacking or blockage protection of system (not available for residential ODU)		F0
Charging malfunction of capacitor	Hardware malfunction	PU
High pressure protection of system	Hardware malfunction	E1
Low pressure protection of system (reserved)	Hardware malfunction	E3

Compressor overload protection	Viewing malfunction code through remote controller within 200s; displayed directly on nixietube after 200s	H3
Indoor unit and outdoor unit do not match	Hardware malfunction	LP
Malfunction of memory chip	Hardware malfunction	EE
Wrong connection of communication wire or malfunction of electronic expansion valve	Hardware malfunction	dn
Malfunction of complete units current detection	Hardware malfunction	U5
Malfunction protection of outdoor fan 1	Hardware malfunction	L3
Detection status of wrong connection of communication wire or malfunction of electronic expansion valve	Operation status	dd
Mode conflict	Operation status	E7
Refrigerant recycling mode	Operation status	Fo
X-fan	Operation status	AL
Defrosting or oil return in heating mode	Operation status	H1
Start failure of compressor	Viewing malfunction code through remote controller within 200s; displayed directly on nixietube after 200s	Lc
High discharge temperature protection of compressor		E4
Overload protection		E8
Whole unit overcurrent protection		E5
Compressor phase current protection		P5
Compressor desynchronizing		H7
Compressor phase-lacking/phase-inverse protection		Ld
IPM modular protection		H5
DC bus-bar low voltage protection		PL
DC bus-bar high voltage protection		PH
PFC protection		HC
The four-way valve is abnormal		U7

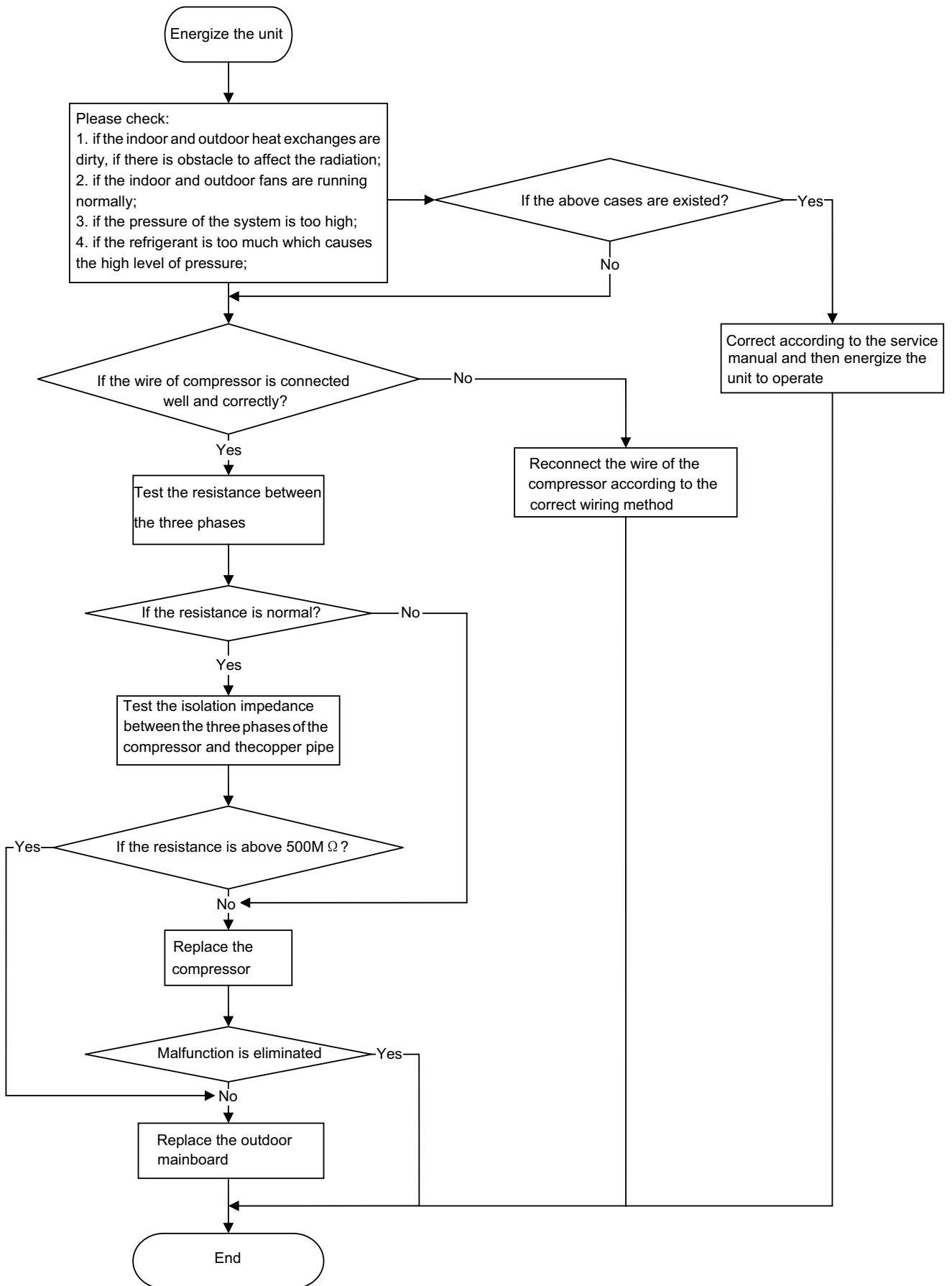
## 9.3 Malfunction Checking and Elimination

1 IPM protection malfunction:

Main checking point:

- If the input voltage of the unit is within normal range?
- If the connection wire of compressor is connected well? Is it loose? If the connection sequence is correct?
- If the resistance of compressor coil is normal? If the isolation of compressor coil with copper pipe is good?
- If the unit is overloaded? If the heat radiation of the unit is good?
- If the refrigerant charge is suitable?

Flow chart:



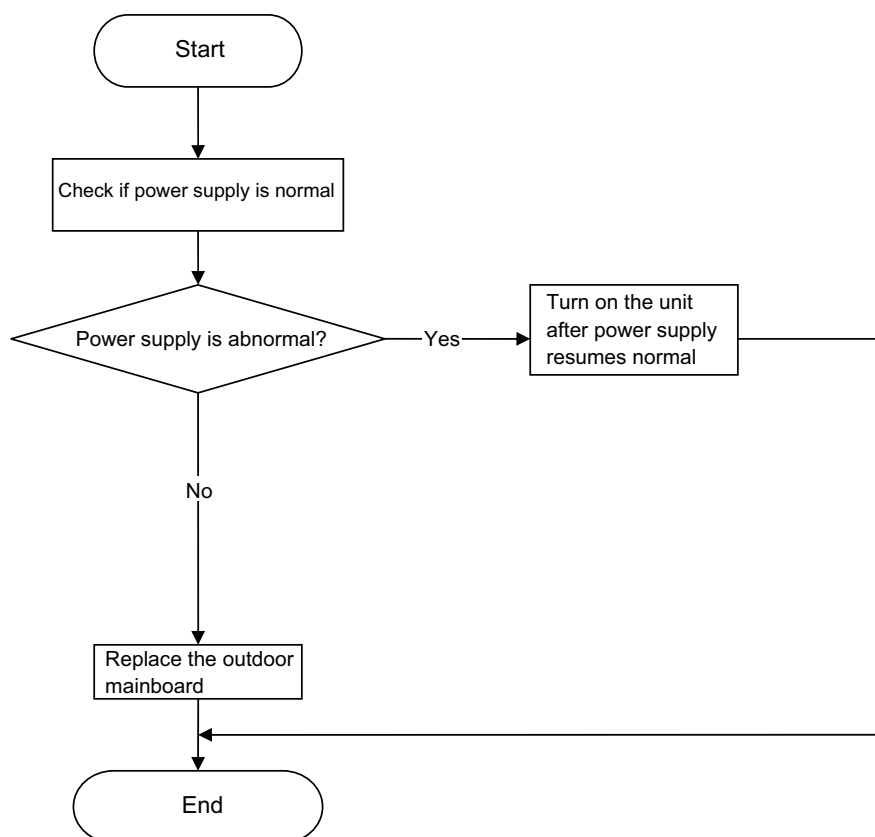
## 2. PFC protection malfunction, capacity charging malfunction

Main checking points:

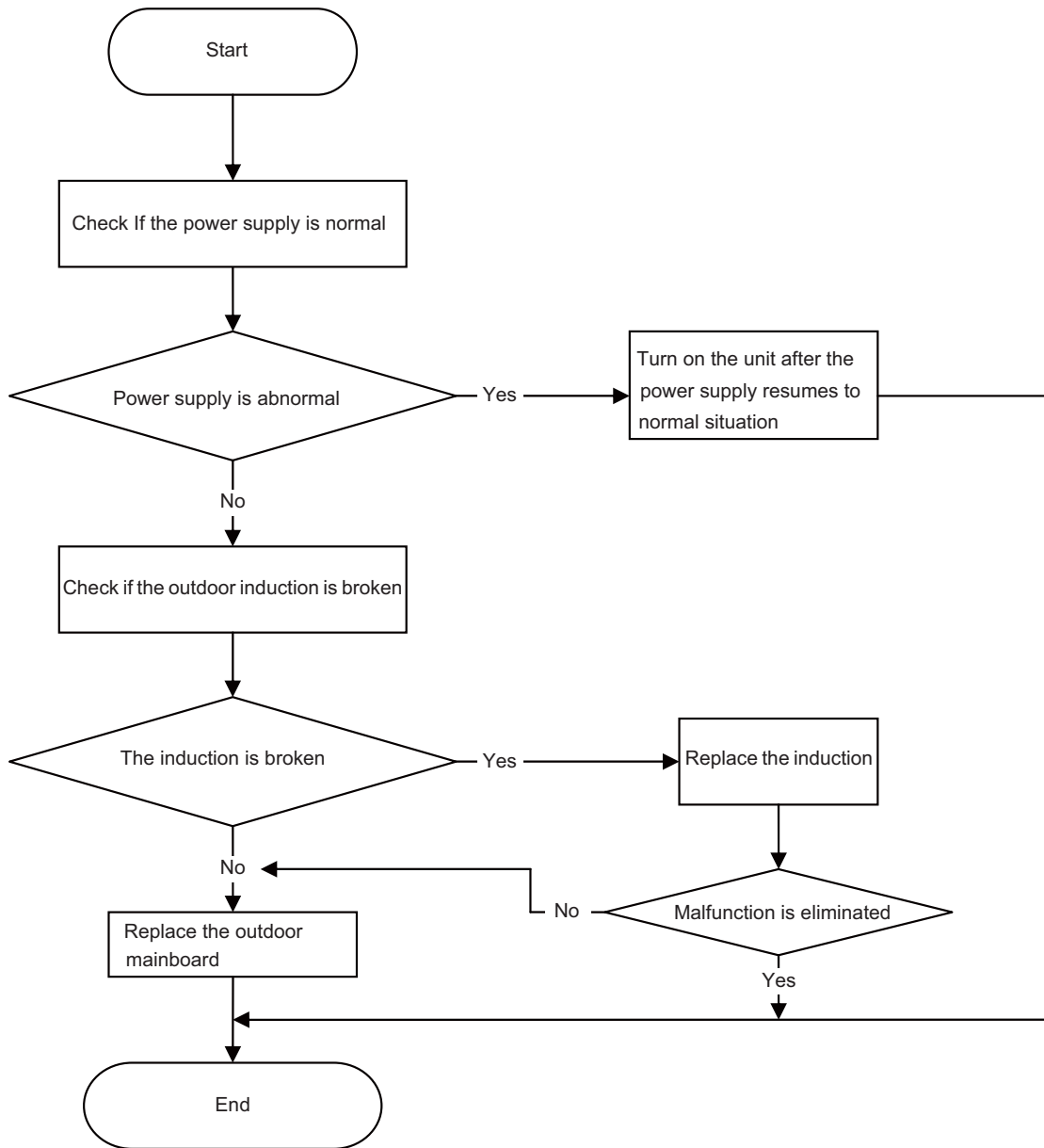
- If the wiring of the induction is connected well and if the induction is broken;
- If the mainboard is broken;

Flow chart:

For 14/18K



For 21/24/28K

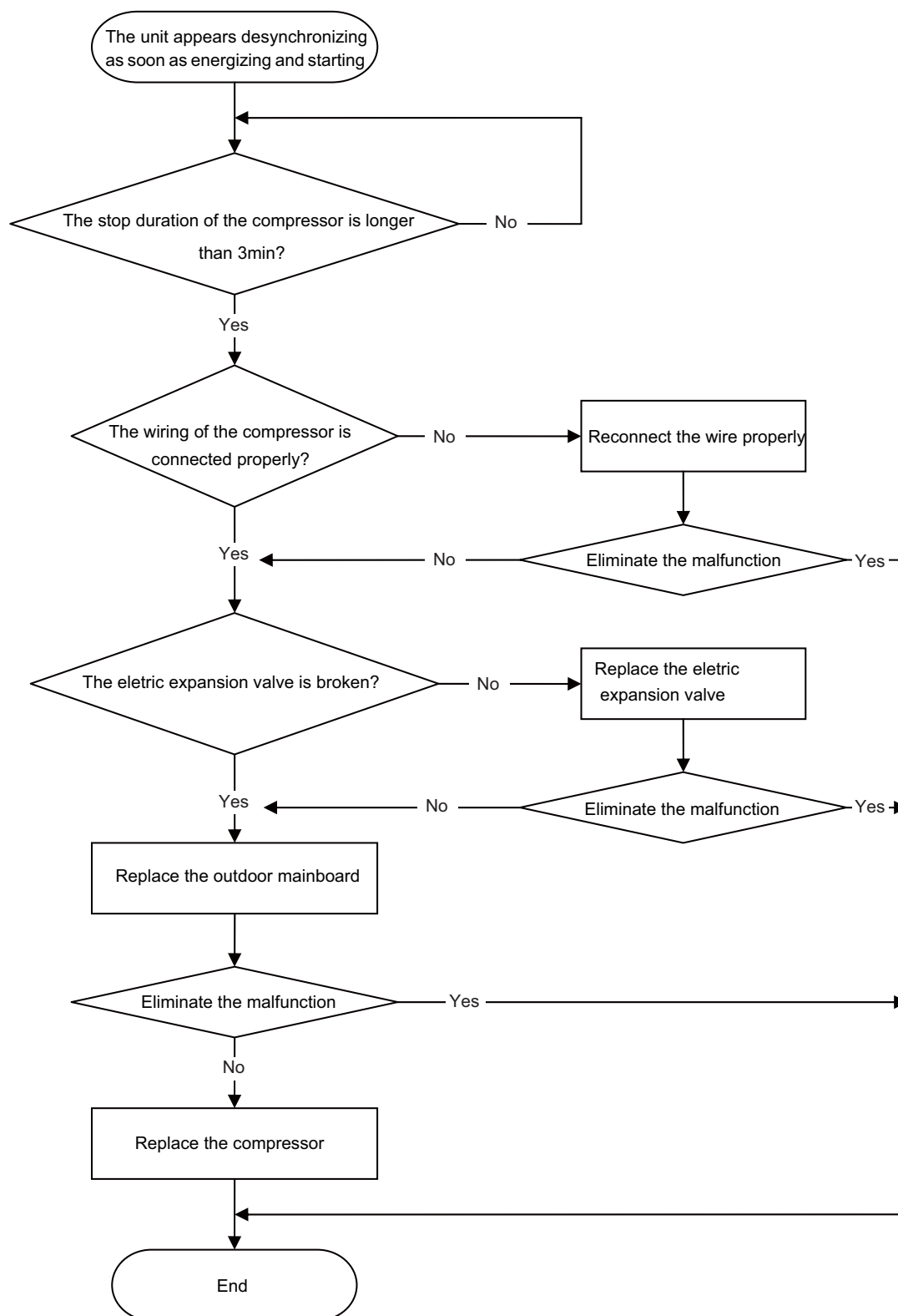


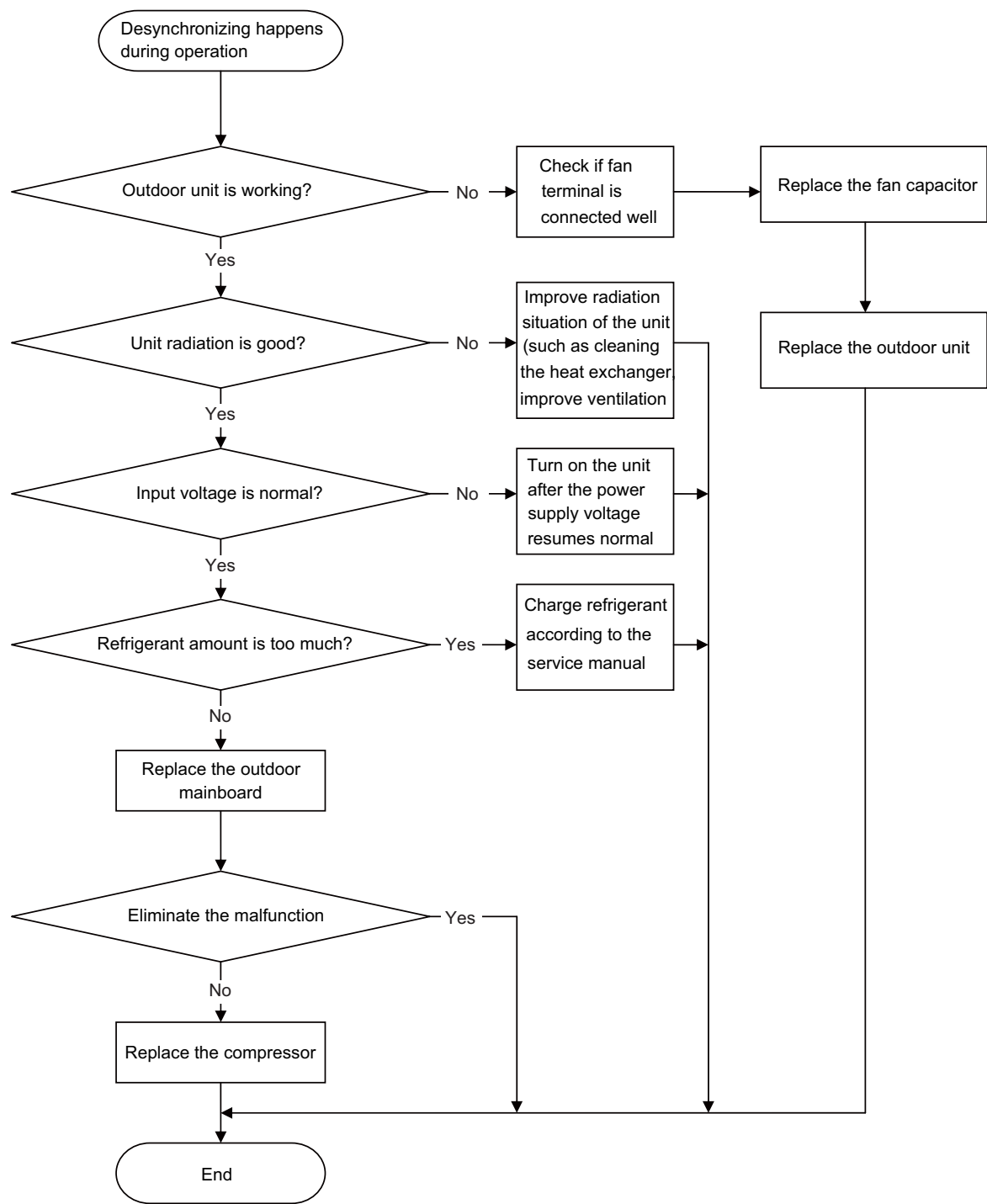
### 3. Compressor desynchronizing malfunction

Main checking points:

- If the pressure of the system is too high;
- If the electric expansion valve is working normally or it is broken;
- If the radiation of the unit is good;

Flow chart:



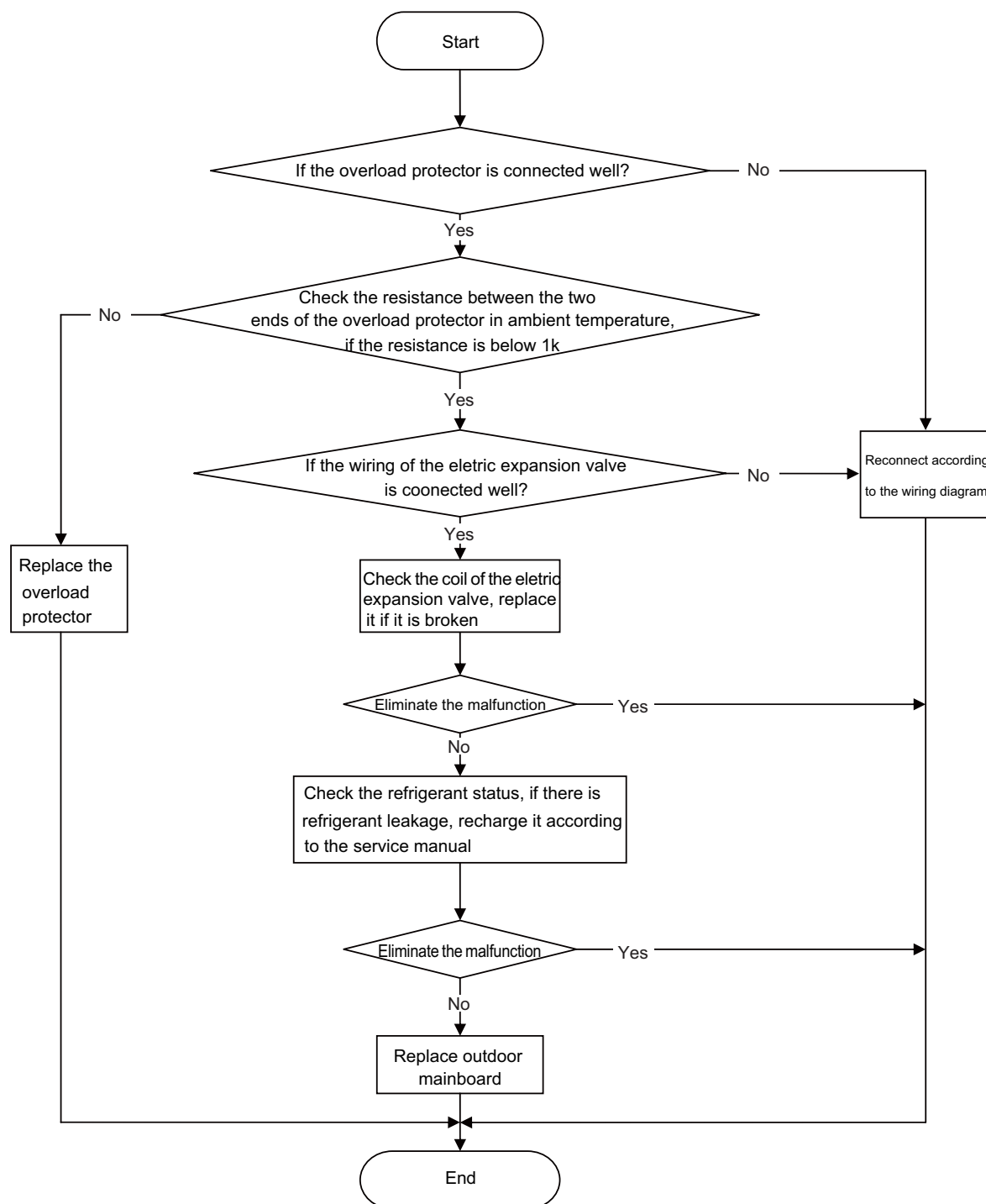


## 4. Compressor overload, discharge protection malfunction

Main checking points:

- If the electric expansion valve is connected well or it is broken;
- If there is refrigerant leakage;
- If the overload protector is broken;

Flow chart:



Note: the detection method of the coil of the electric expansion valve: there is five pieces of coil of the electric expansion valve, the resistance of one of them (the leftmost or the rightmost one) is almost the same as the resistance of other terminal (within 100  $\Omega$ ). Judge the condition of the electronic expansion valve through detecting these resistance.

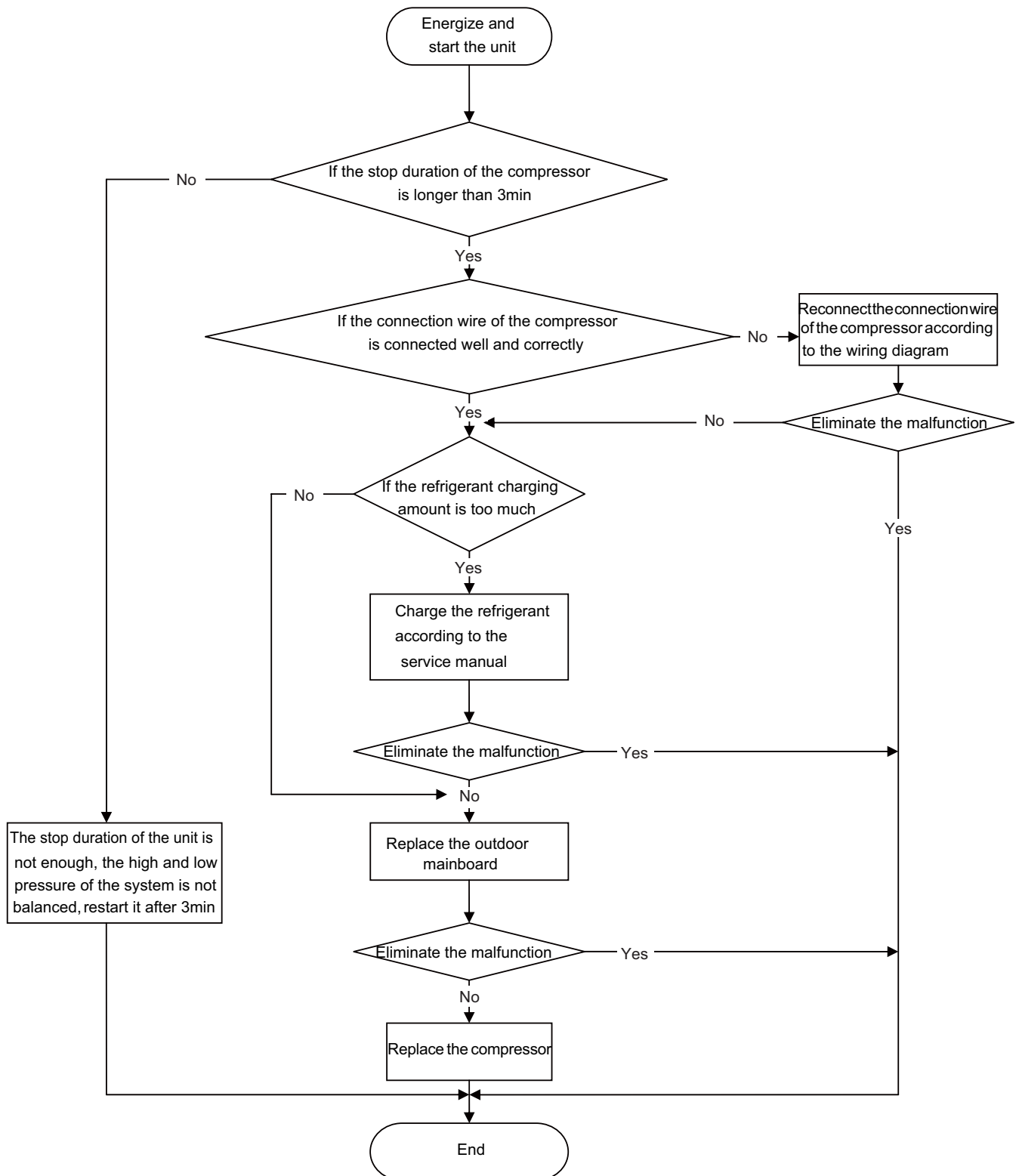


## 5. Start failuremalfunction

Main checking points:

- If the connection wire of the compressor is connected properly;
- If the stop duration of the compressor is sufficient;
- If the compressor is broken;
- If the refrigerant charging amount is too much;

Flow chart:

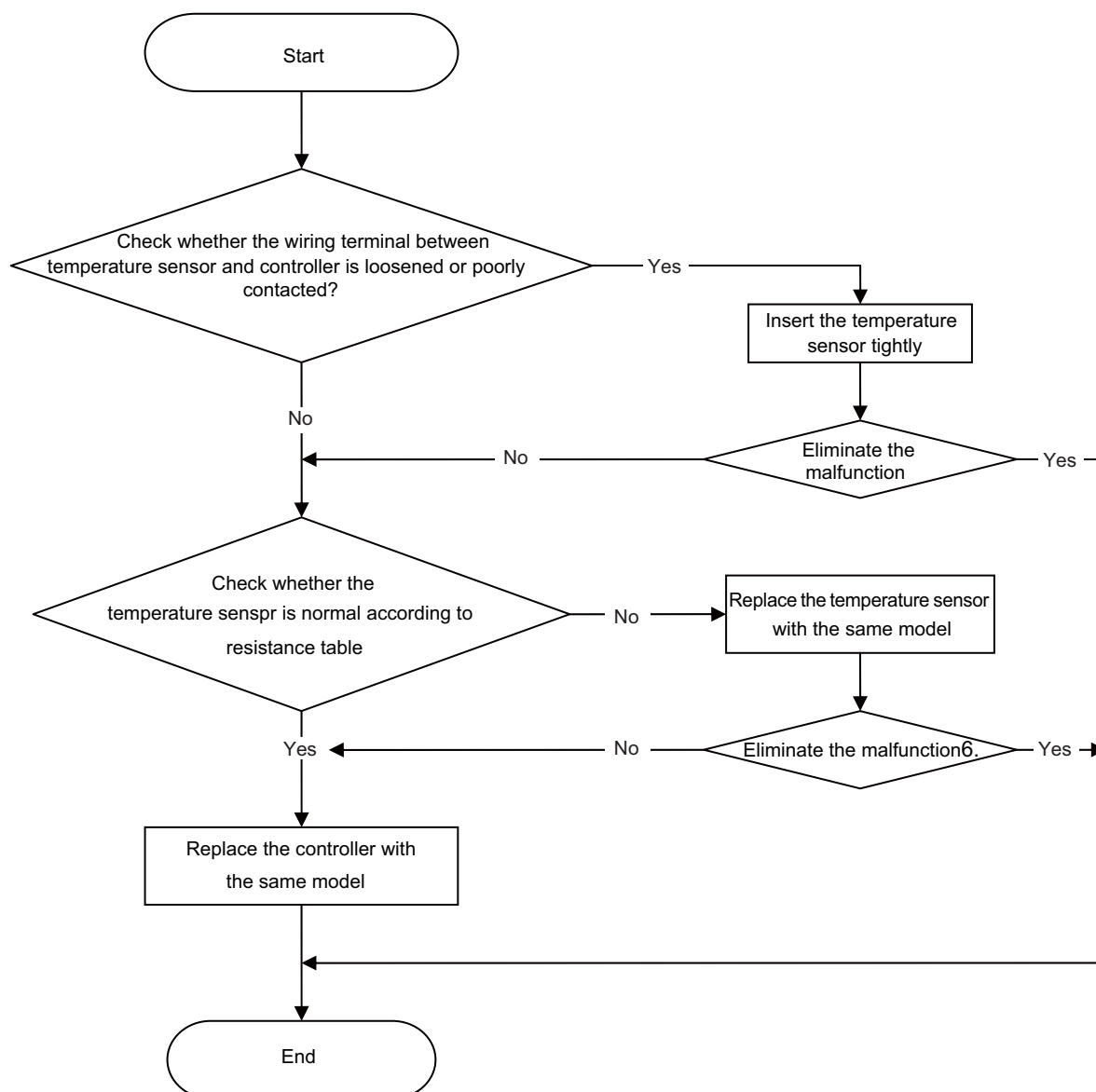


## 6. Temperature sensor malfunction

Main checking points:

- If the temperature sensor is damaged or broken
- If the terminal of the temperature sensor is loosened or not connected;
- If the mainboard is broken;

Flow chart:



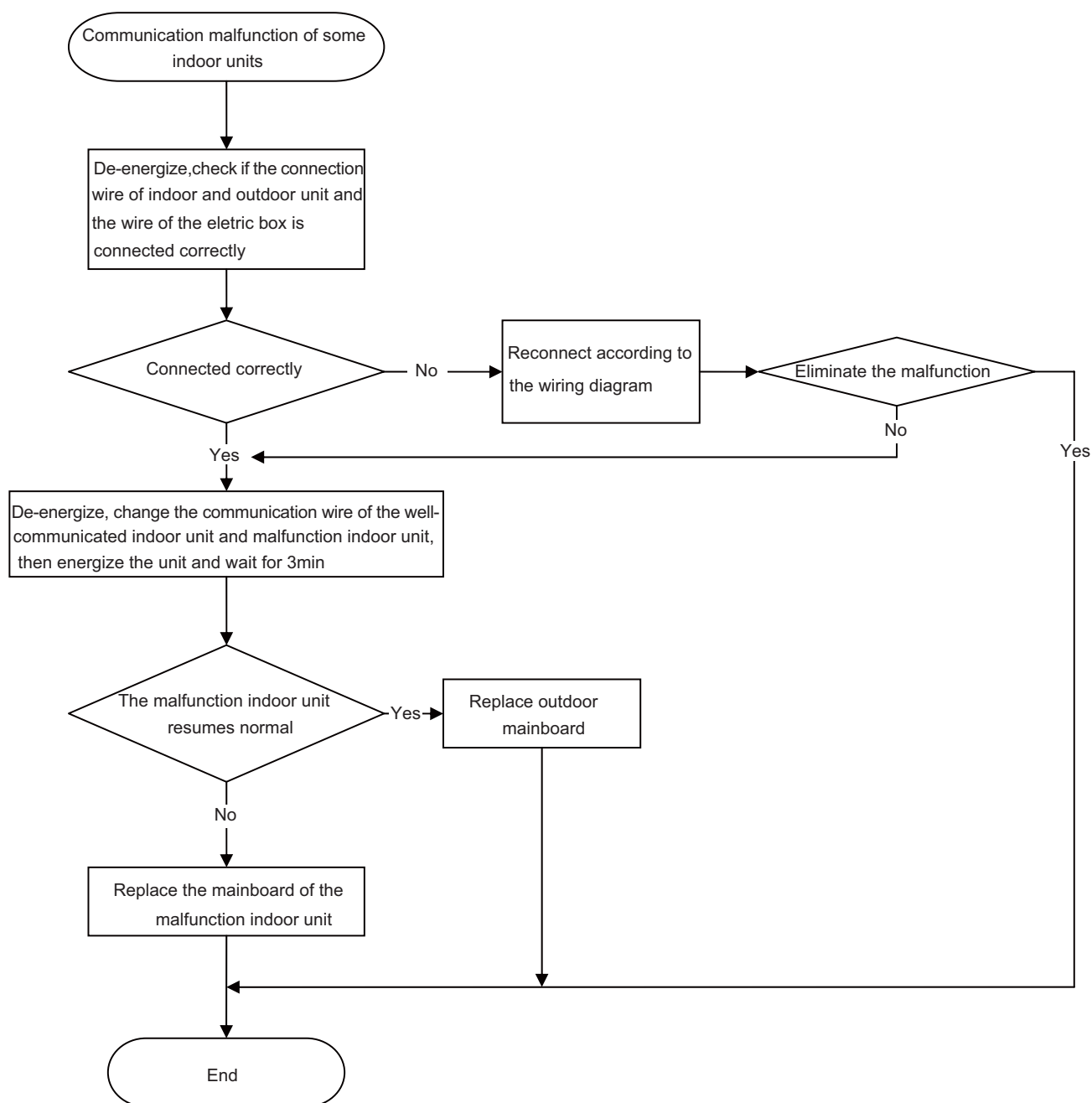


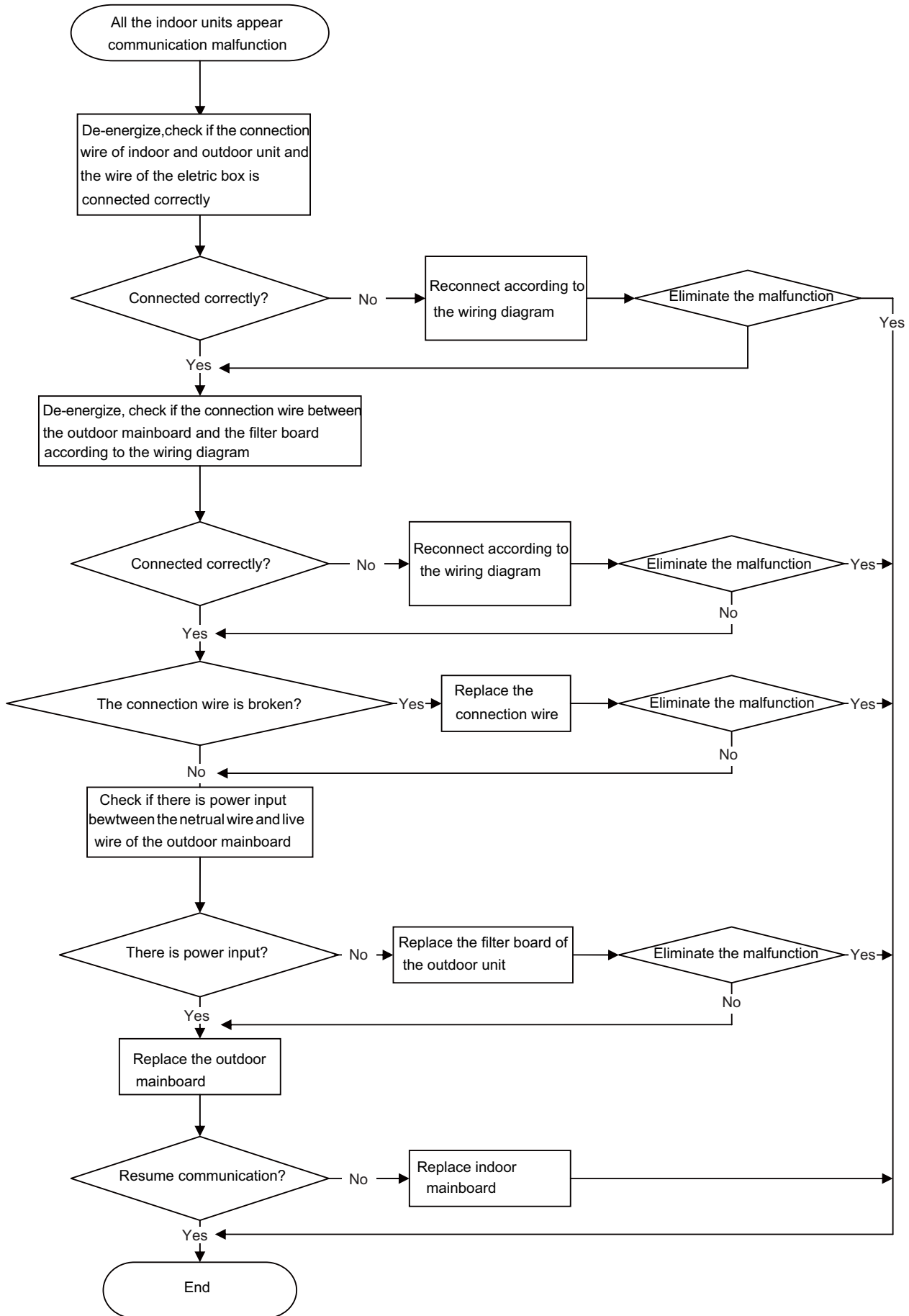
## 8. Communication malfunction

Main checking points:

- If the connection wire between the indoor unit and outdoor unit is connected well, if the wires inside the unit is connected well;
- If the indoor mainboard or outdoor main board is broken;

Flow chart:



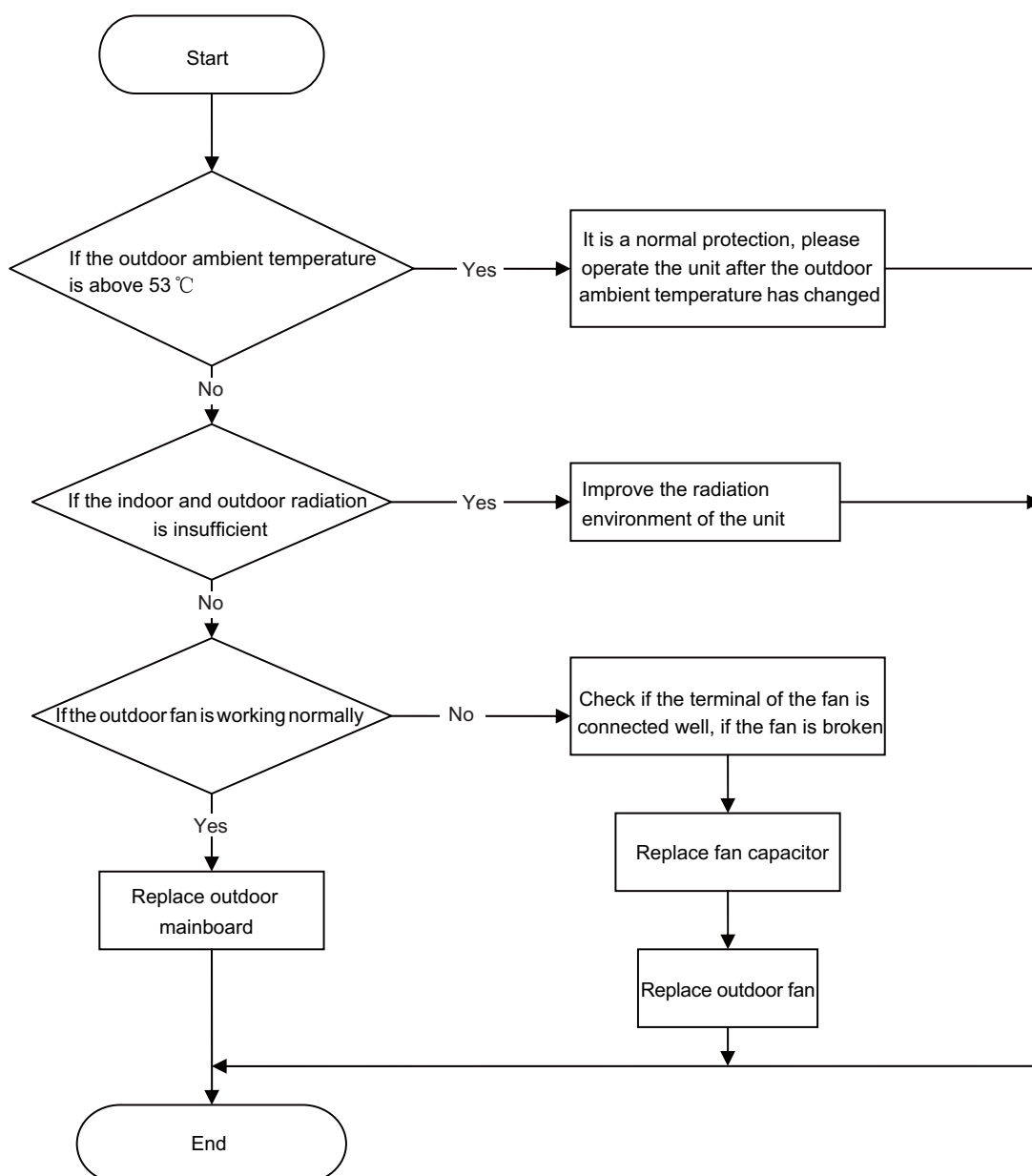


## 9. Anti-high temperature and overload malfunction

Main checking points:

- If the outdoor ambient temperature is within the normal range;
- If the indoor fan and outdoor fan are running normally;
- If the indoor and outdoor radiation environment is good;

Flow chart:



## 9.4 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.
Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals	Under normal power supply circumstances, operation indicator isn't bright after energization	Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly
Electric leakage for air conditioner	After energization, room circuit breaker trips off at once	Make sure the air conditioner is grounded reliably Make sure wires of air conditioner is connected correctly Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged; if yes, place the power cord.
Model selection for air switch is improper	After energization, air switch trips off	Select proper air switch
Malfunction of remote controller	After energization, operation indicator is bright, while no display on remote controller or buttons have no action.	Replace batteries for remote controller Repair or replace remote controller

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

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

### 3. Horizontal Louver Can't Swing

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

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

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

#### 5. Compressor Can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and 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
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe connection place of indoor unit	Wrap it again and bundle it tightly

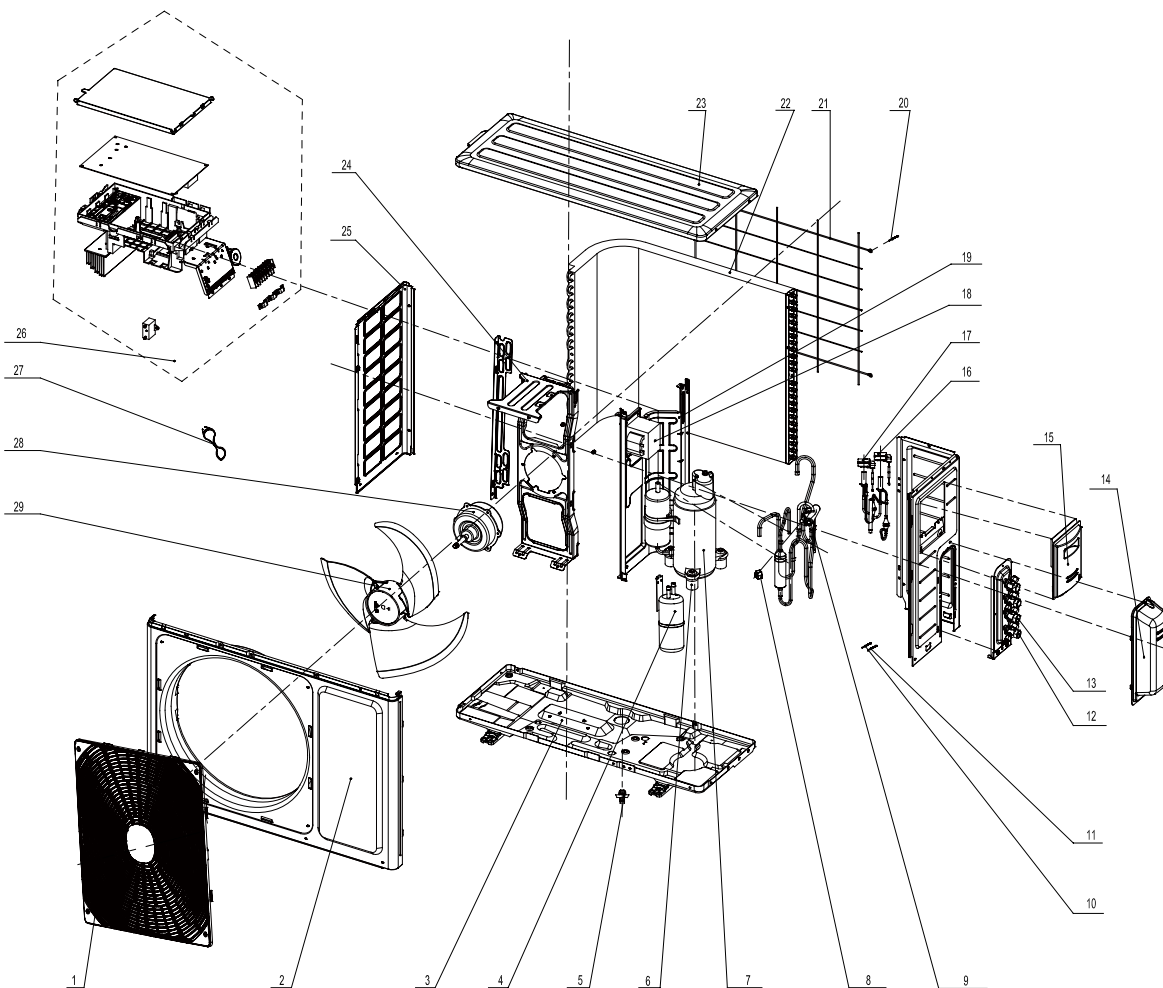
#### 7. Abnormal Sound and Vibration

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and 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 indoor unit or there're parts touching together inside the indoor unit	There's abnormal sound fro indoor unit	Remove foreign objects. Adjust all parts' position of indoor unit, tighten screws and stick damping plaster between connected parts
Foreign objects inside the outdoor unit or there're parts touching together inside the outdoor unit	There's abnormal sound fro outdoor unit	Remove foreign objects. Adjust all parts' position of outdoor unit, tighten screws and stick damping plaster between connected parts
Short circuit inside the magnetic coil	During heating, the way valve has abnormal electromagnetic sound	Replace magnetic coil
Abnormal shake of compressor	Outdoor unit gives out abnormal sound	Adjust the support foot mat of compressor, tighten the bolts
Abnormal sound inside the compressor	Abnormal sound inside the compressor	If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances.



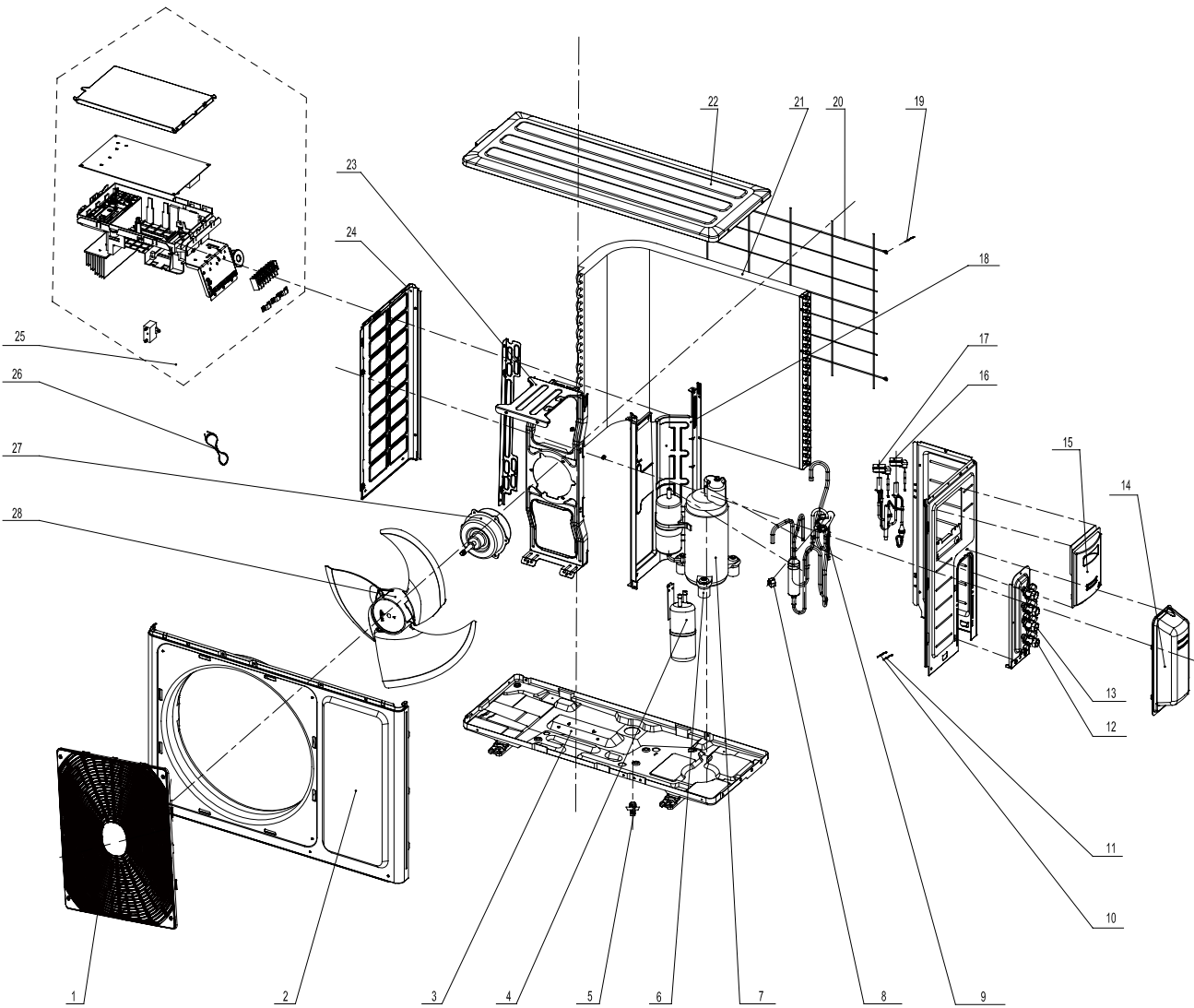
## 10. Exploded View and Parts List

Model:CHML-U14NK2(CB228W06501)



NO.	Description	Part Code	Qty
		CHML-U14NK2	
		Product Code	
		CB228W06501	
1	Front Grill	22413046	1
2	Cabinet	01433034P	1
3	Chassis Sub-assy	01700000013P	1
4	Gas-liquid Separator	07223048	1
5	Drainage Joint	26113009	1
6	Compressor Gasket	76710247	3
7	Compressor and fittings	00105249G	1
8	Magnet Coil	4300040045	1
9	4-way Valve Assy	03015200041	1
10	Temperature Sensor	39000073	1
11	Temperature Sensor	3900007301	1
12	Cut off Valve	07130239	1
13	Cut off Valve	071302391	1
14	Valve cover	22242101	1
15	Big Handle	26233048	1
16	Electric expand valve fitting	43000084	1
17	Electric expand valve fitting	4300008401	1
18	Clapboard Sub-Assy	01233206	1
19	Temperature Sensor	3900030901	1
20	Rear Grill	01473060	1
21	Condenser Assy	01124309	1
22	Coping	01253034P	1
23	Motor Support Sub-Assy	01703238	1
24	Left Side Plate	01303169P	1
25	Electric Box Assy	10000201940	1
26	Connecting Cable	4002050421	0
27	Fan Motor	1501308507	1
28	Axial Flow Fan	10333022	1

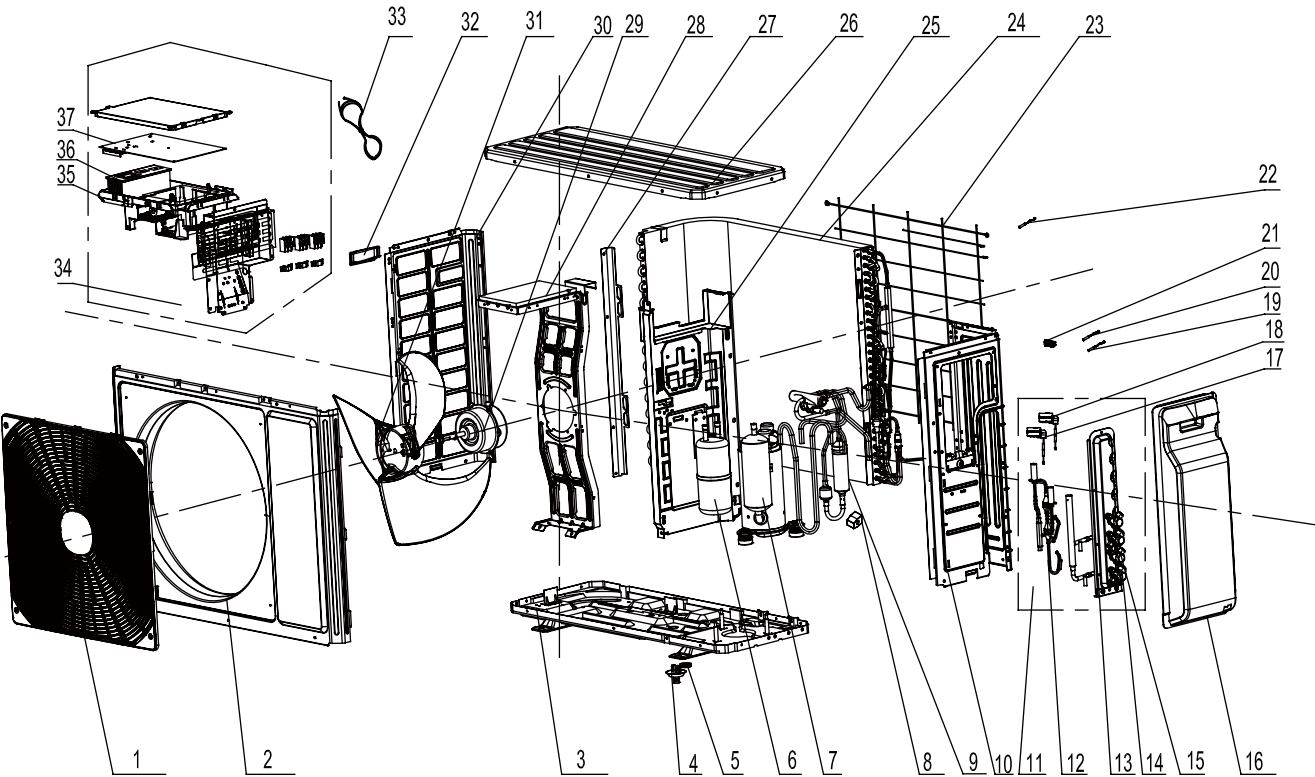
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NO.	Description	Part Code	Qty
		CHML-U14NK2	
		Product Code	
		CB228W06500	
1	Front Grill	22413046	1
2	Cabinet	01433034P	1
3	Chassis Sub-assy	01700000013P	1
4	Gas-liquid Separator	07223048	1
5	Drainage Joint	26113009	1
6	Compressor Gasket	76710247	3
7	Compressor and fittings	00105249G	1
8	Magnet Coil	4300040045	1
9	4-way Valve Assy	03015200041	1
10	Temperature Sensor	39000073	1
11	Temperature Sensor	3900007301	1
12	Cut off Valve	07130239	1
13	Cut off Valve	071302391	1
14	Valve cover	22242101	1
15	Big Handle	26233048	1
16	Electric expand valve fitting	43000084	1
17	Electric expand valve fitting	4300008401	1
18	Clapboard Sub-Assy	01233206	1
19	Temperature Sensor	3900030901	1
20	Rear Grill	01473060	1
21	Condenser Assy	01124309	1
22	Coping	01253034P	1
23	Motor Support Sub-Assy	01703238	1
24	Left Side Plate	01303169P	1
25	Electric Box Assy	10000201928	1
26	Connecting Cable	4002050421	0
27	Fan Motor	1501308507	1
28	Axial Flow Fan	10333022	1

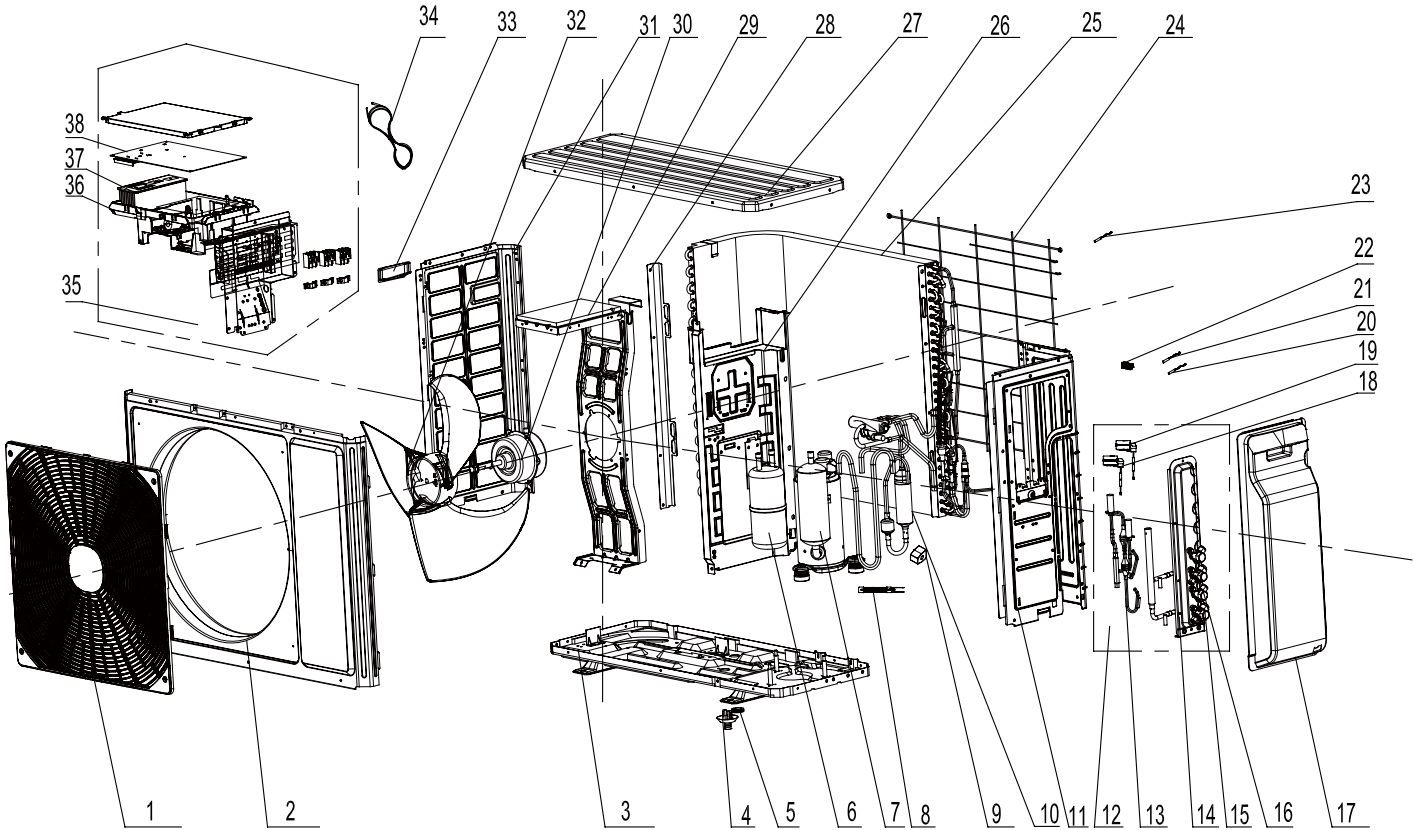
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Model:CHML-U18NK3(CB228W06301)



NO.	Description	Part Code	Qty
		CHML-U18NK3	
		Product Code	
		CB228W06301	
1	Front Grill	22413045	1
2	Front Panel	01535013P	1
3	Chassis Sub-assy	0280326301P	1
4	Drainage Connector	06123401	1
5	Drainage hole Cap	06813401	3
6	Gas-liquid Separator Assy	07225017	1
7	Compressor and fittings	00105249G	1
8	Magnet Coil	4300040045	1
9	4-Way Valve Assy	03073156	1
10	Right Side Plate	01303268P	1
11	Valve Support Assy	07133845	1
12	Electronic Expansion Valve assy	07133846	1
13	Valve Support Sub-Assy	0171312802P	1
14	Cut off Valve	07130239	1
15	Cut off Valve	071302391	1
16	Valve Cover	20123029	1
17	Electric Expand Valve Fitting	43000084	1
18	Electric Expand Valve Fitting	4300008401	1
19	Temperature Sensor	39000073	1
20	Temperature Sensor	3900007301	1
21	Wiring Clamp	26115004	1
22	Temperature Sensor	3900030901	1
23	Rear Grill	01473043	1
24	Condenser Assy	01163938	1
25	Clapboard Assy	0123315301	1
26	Coping	01255005P	1
27	Supporting Board(Condenser)	01795010	1
28	Motor Support Sub-Assy	01705036	1
29	Fan Motor	1501506402	1
30	Left Side Plate	01305093P	1
31	Axial Flow Fan	10335008	1
32	handle	26233053	1
33	Connecting Cable	4002050421	0
34	Electric Box Assy	10000201939	1
35	Electric Box	20113027	1
36	Radiator	49010252	1
37	Main Board	30138000730	1

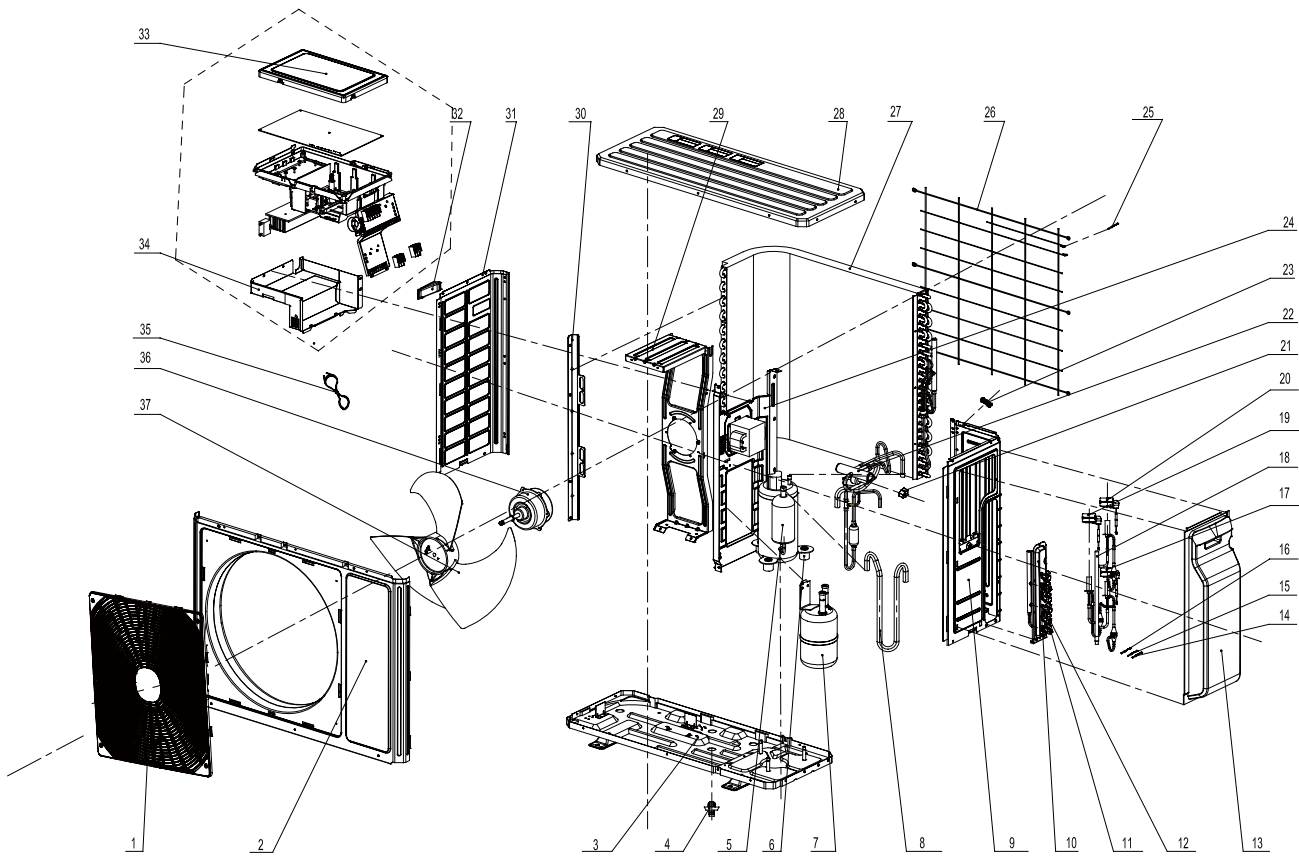
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NO.	Description	Part Code	Qty
		CHML-U18NK3	
		Product Code	
		CB228W06300	
1	Front Grill	22413045	1
2	Front Panel	01535013P	1
3	Chassis Sub-assy	02803263P	1
4	Drainage Connector	06123401	1
5	Drainage hole Cap	06813401	1
6	Gas-liquid Separator Assy	07225017	1
7	Compressor and fittings	00105249G	1
8	Electrical Heater	7651300403	1
9	Magnet Coil	4300040045	1
10	4-Way Valve Assy	03073156	1
11	Right Side Plate	01303268P	1
12	Valve Support Assy	07133845	1
13	Electronic Expansion Valve assy	07133846	1
14	Valve Support Sub-Assy	0171312802P	1
15	Cut off Valve	07130239	1
16	Cut off Valve	071302391	1
17	Valve Cover	20123029	1
18	Electric Expand Valve Fitting	43000084	1
19	Electric Expand Valve Fitting	4300008401	1
20	Temperature Sensor	39000073	1
21	Temperature Sensor	3900007301	1
22	Wiring Clamp	26115004	1
23	Temperature Sensor	3900030901	1
24	Rear Grill	01473043	1
25	Condenser Assy	01163938	1
26	Clapboard Assy	0123315301	1
27	Coping	01255005P	1
28	Supporting Board(Condenser)	01795010	1
29	Motor Support Sub-Assy	01705036	1
30	Fan Motor	1501506402	1
31	Left Side Plate	01305093P	1
32	Axial Flow Fan	10335008	1
33	handle	26233053	1
34	Connecting Cable	4002050421	0
35	Electric Box Assy	10000201927	1
36	Electric Box	20113027	1
37	Radiator	49010252	1
38	Main Board	30138000731	1

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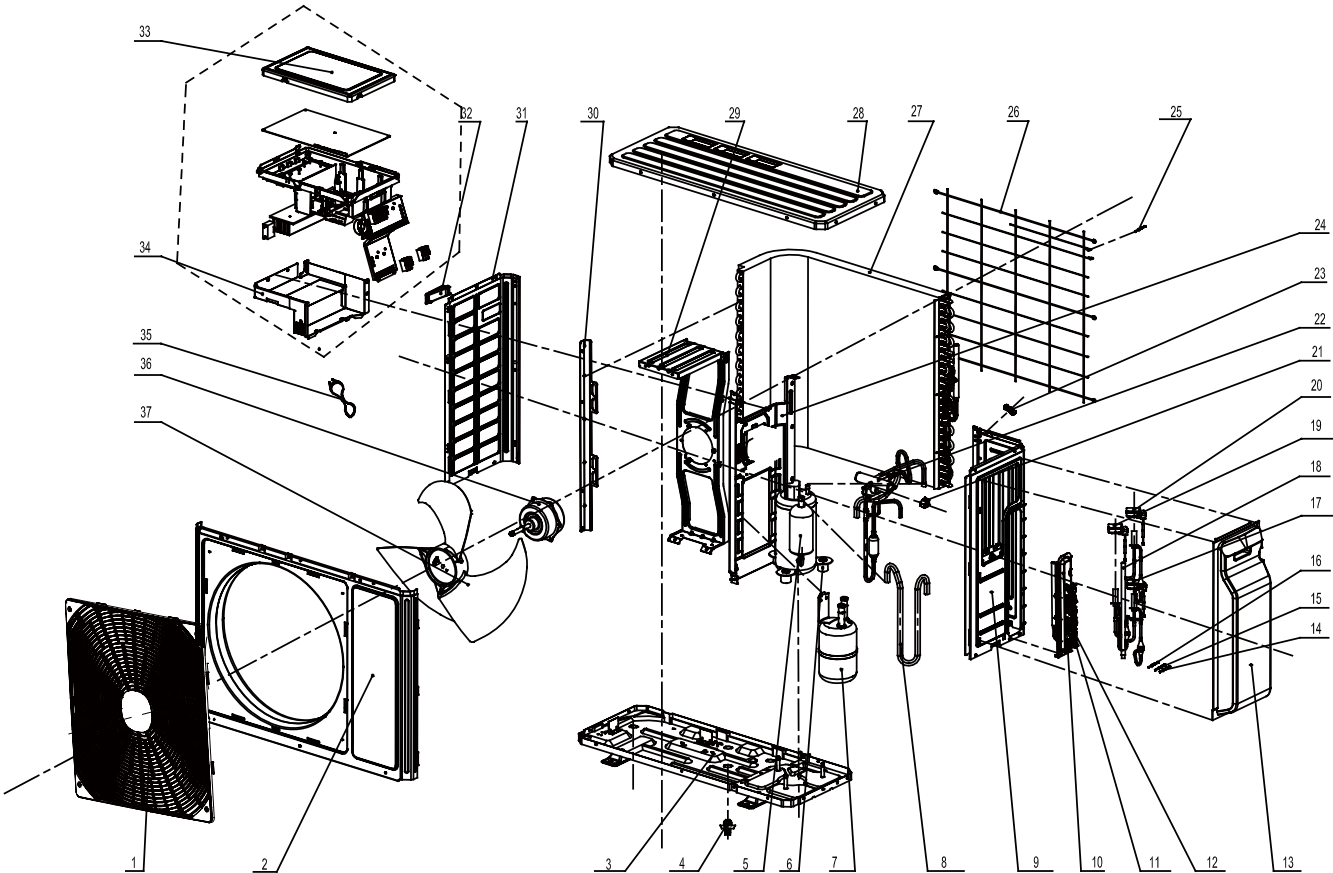




NO.	Description	Part Code	Qty
		CHML-U21NK3	
		Product Code	
		CB228W06401	
1	Front grill	22413045	1
2	Front Panel	01535013P	1
3	Chassis Sub-assy	01700000120P	1
4	Drainage Connector	06123401	1
5	Compressor and fittings	0010524501	1
6	Compressor Gasket	76713066	3
7	Gas-liquid Separator Assy	07225017	1
8	Inhalation Tube	03500600586	1
9	Right Side Plate	01303268P	1
10	Valve support assy	0713395501	1
11	Cut off Valve	07130239	1
12	Cut off Valve	071302391	1
13	Valve cover	20123029	1
14	Temperature Sensor	3900007302	1
15	Temperature Sensor	3900007301	1
16	Temperature Sensor	39000073	1
17	Electric expand valve fitting	4300008402	1
18	Electronic Expansion Valve assy	0713395601	1
19	Electric expand valve fitting	4300008401	1
20	Electric expand valve fitting	43000084	1
21	Magnet Coil	4300040045	1
22	4-way Valve Assy	03073380	1
23	Wiring clamp	26115004	1
24	Clapboard assy	01233116	1
25	Temperature Sensor	3900030901	1
26	Rear Grill	01473043	1
27	Condenser Assy	01163875	1
28	Coping	01255005P	1
29	Motor Support Sub-Assy	0170512001	1
30	Condenser support plate	01173415	1
31	Left Side Plate	01305093P	1
32	Handle	26233053	1
33	Electric box (fireproofing)	01413148	1
34	Electric Box Assy	10000201938	1
35	Connecting Cable	400205405	0
36	Fan Motor	1501506402	1
37	Axial Flow Fan	10335008	1

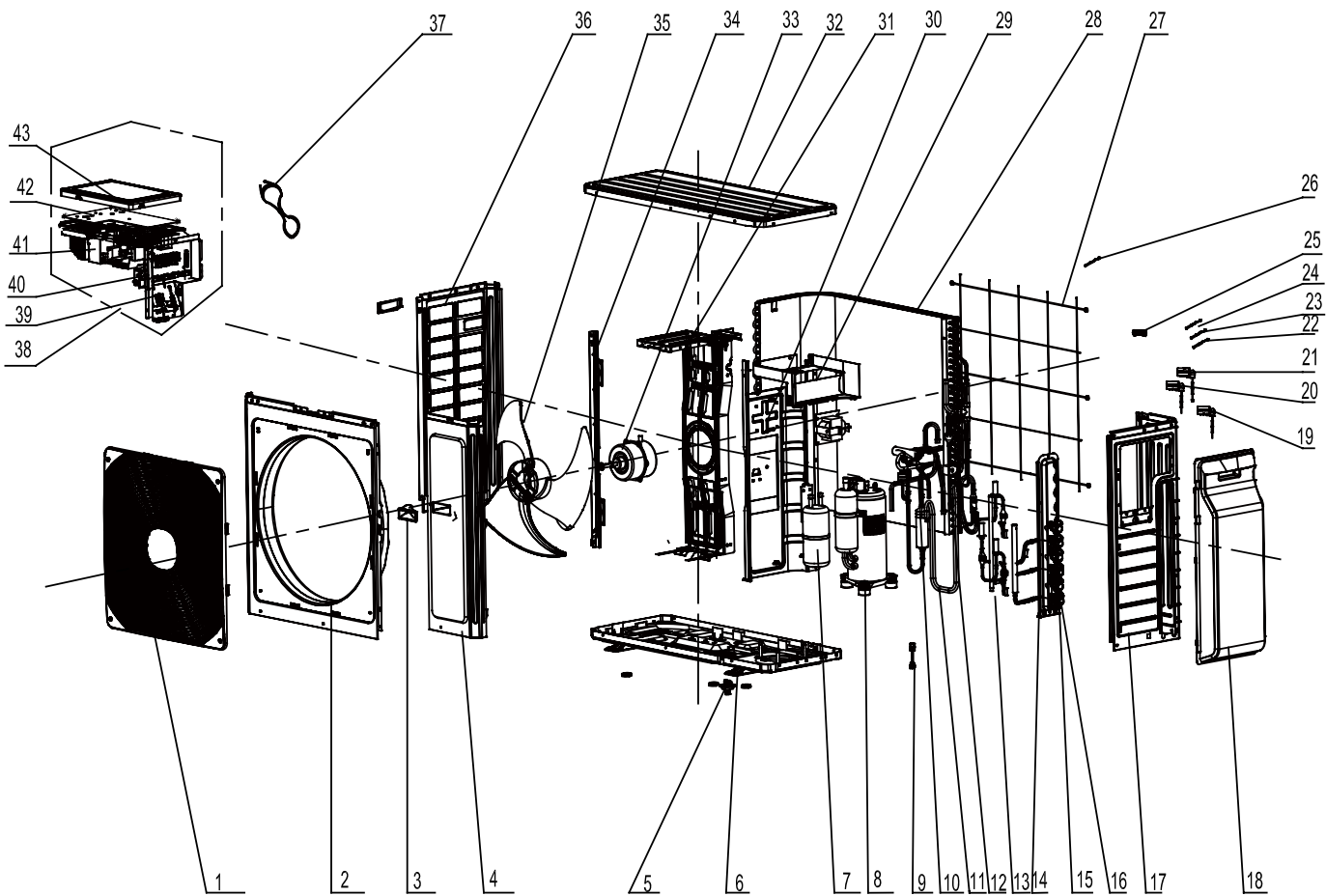
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Model:CHML-U21NK3(CB228W06400)



NO.	Description	Part Code	Qty
		CHML-U21NK3	
		Product Code	
		CB228W06400	
1	Front grill	22413045	1
2	Front Panel	01535013P	1
3	Chassis Sub-assy	01700000120P	1
4	Drainage Connector	06123401	1
5	Compressor and fittings	0010524501	1
6	Compressor Gasket	76713066	3
7	Gas-liquid Separator Assy	07225017	1
8	Inhalation Tube	03500600586	1
9	Right Side Plate	01303268P	1
10	Valve support assy	0713395501	1
11	Cut off Valve	07130239	1
12	Cut off Valve	071302391	1
13	Valve cover	20123029	1
14	Temperature Sensor	3900007302	1
15	Temperature Sensor	3900007301	1
16	Temperature Sensor	39000073	1
17	Electric expand valve fitting	4300008402	1
18	Electronic Expansion Valve assy	0713395601	1
19	Electric expand valve fitting	4300008401	1
20	Electric expand valve fitting	43000084	1
21	Magnet Coil	4300040045	1
22	4-way Valve Assy	03073380	1
23	Wiring clamp	26115004	1
24	Clapboard assy	01233116	1
25	Temperature Sensor	3900030901	1
26	Rear Grill	01473043	1
27	Condenser Assy	01163875	1
28	Coping	01255005P	1
29	Motor Support Sub-Assy	0170512001	1
30	Condenser support plate	01173415	1
31	Left Side Plate	01305093P	1
32	Handle	26233053	1
33	Electric box (fireproofing)	01413148	1
34	Electric Box Assy	10000201930	1
35	Connecting Cable	400205405	0
36	Fan Motor	1501506402	1
37	Axial Flow Fan	10335008	1

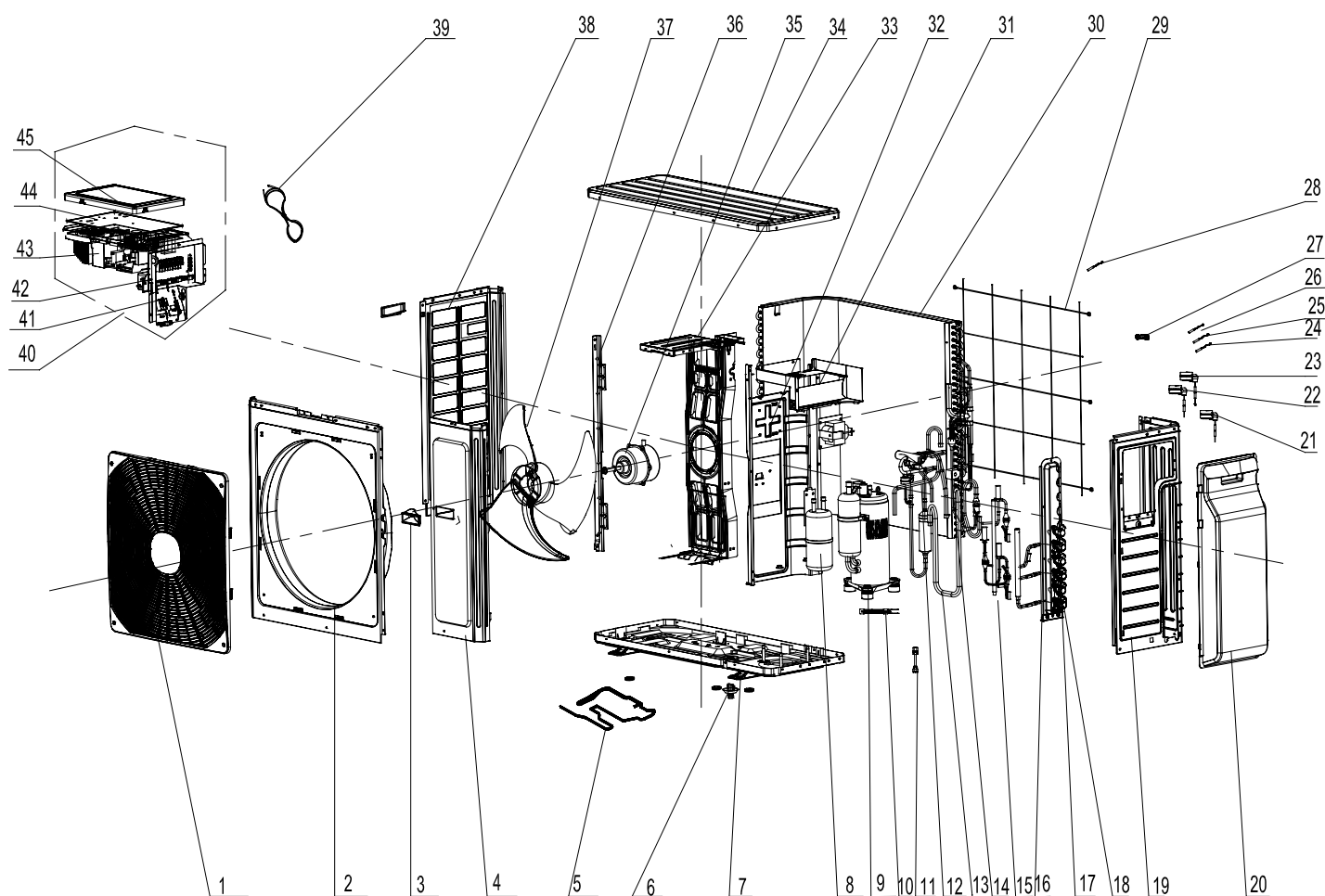
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NO.	Description	Part Code	Qty
		CHML-U24NK3	
		Product Code	
		CB228W06601	
1	Front Grill	22413026	1
2	Cabinet	01435004P	1
3	Left Handle	26235401	1
4	Front Side Plate	01305086P	1
5	Drainage Connector	06123401	1
6	Chassis Sub-assy	0280328001P	1
7	Gas-liquid Separator Assy	07225017	1
8	Compressor and Fittings	0010524501	1
9	Tube Connector Sub-assy	06643008	2
10	4-Way Valve Assy	03073181	1
11	Connection Pipe	05113723	1
12	Magnet Coil	4300040045	1
13	Electronic Expansion Valve assy	0713395301	1
14	Valve Support Assy	0713395401	1
15	Cut off Valve	07130239	1
16	Cut off Valve	071302391	1
17	Right Side Plate	01314100009P	1
18	Valve Cover	26904100012	1
19	Electric Expand Valve Fitting	4300008402	1
20	Electric Expand Valve Fitting	4300008401	1
21	Electric Expand Valve Fitting	43000084	1
22	Temperature Sensor	3900007306	1
23	Temperature Sensor	3900007305	1
24	Temperature Sensor	39000073	1
25	Wiring Clamp	26115004	1
26	Temperature Sensor	3900030901	1
27	Rear Grill	01574100003	1
28	Condenser Assy	01163980	1
29	Electric Box (Fireproofing)	01413426	1
30	Clapboard Sub-Assy	01233190	1
31	Motor Support Sub-Assy	01705025	1
32	Coping	01255006P	1
33	Fan Motor	1501403402	1
34	Condenser Support Plate	01175092	1
35	Axial Flow Fan	10335014	1
36	Left Side Plate	01305043P	1
37	Connecting Cable	4002054026	0
38	Electric Box Assy	10000201937	1
39	Terminal Board	420111041	3
40	Connection Support	01703211	1
41	Electric Box	20113015	1
42	Main Board	30138000733	1
43	Electric Box Cover Sub-Assy	02603217	1

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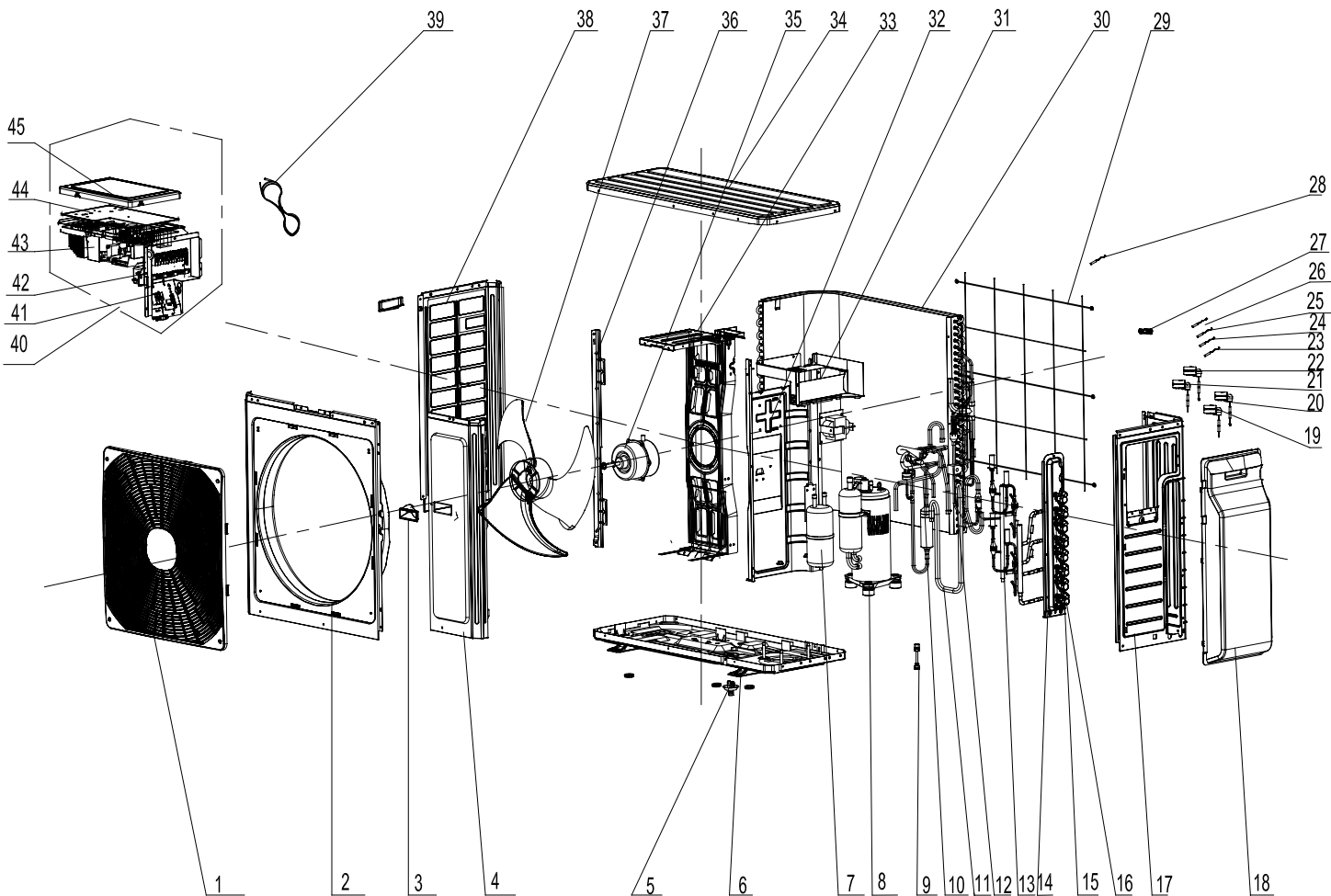
Model:CHML-U24NK3(CB228W06600)



NO.	Description	Part Code	Qty
		CHML-U24NK3	
		Product Code	
		CB228W06600	
1	Front Grill	22413026	1
2	Cabinet	01435004P	1
3	Left Handle	26235401	1
4	Front Side Plate	01305086P	1
5	Electrical Heater (Chassis)	7651000411	1
6	Drainage Connector	06123401	1
7	Chassis Sub-assy	02803280P	1
8	Gas-liquid Separator Assy	07225017	1
9	Compressor and Fittings	0010524501	1
10	Electric Heater(Compressor)	7651873215	1
11	Tube Connector Sub-assy	06643008	2
12	4-Way Valve Assy	03073181	1
13	Connection Pipe	05113723	1
14	Magnet Coil	4300040045	1
15	Electronic Expansion Valve assy	0713395301	1
16	Valve Support Assy	0713395401	1
17	Cut off Valve	07130239	1
18	Cut off Valve	071302391	1
19	Right Side Plate	01314100009P	1
20	Valve Cover	26904100012	1
21	Electric Expand Valve Fitting	4300008402	1
22	Electric Expand Valve Fitting	4300008401	1
23	Electric Expand Valve Fitting	43000084	1
24	Temperature Sensor	3900007306	1
25	Temperature Sensor	3900007305	1
26	Temperature Sensor	39000073	1
27	Wiring Clamp	26115004	1
28	Temperature Sensor	3900030901	1
29	Rear Grill	01574100003	1
30	Condenser Assy	01163980	1
31	Electric Box (Fireproofing)	01413426	1
32	Clapboard Sub-Assy	01233190	1
33	Motor Support Sub-Assy	01705025	1
34	Coping	01255006P	1
35	Fan Motor	1501403402	1
36	Condenser Support Plate	01175092	1
37	Axial Flow Fan	10335014	1
38	Left Side Plate	01305043P	1
39	Connecting Cable	4002054026	0
40	Electric Box Assy	10000201933	1
41	Terminal Board	420111041	3
42	Connection Support	01703211	1
43	Electric Box	20113015	1
44	Main Board	30138000732	1
45	Electric Box Cover Sub-Assy	02603217	1

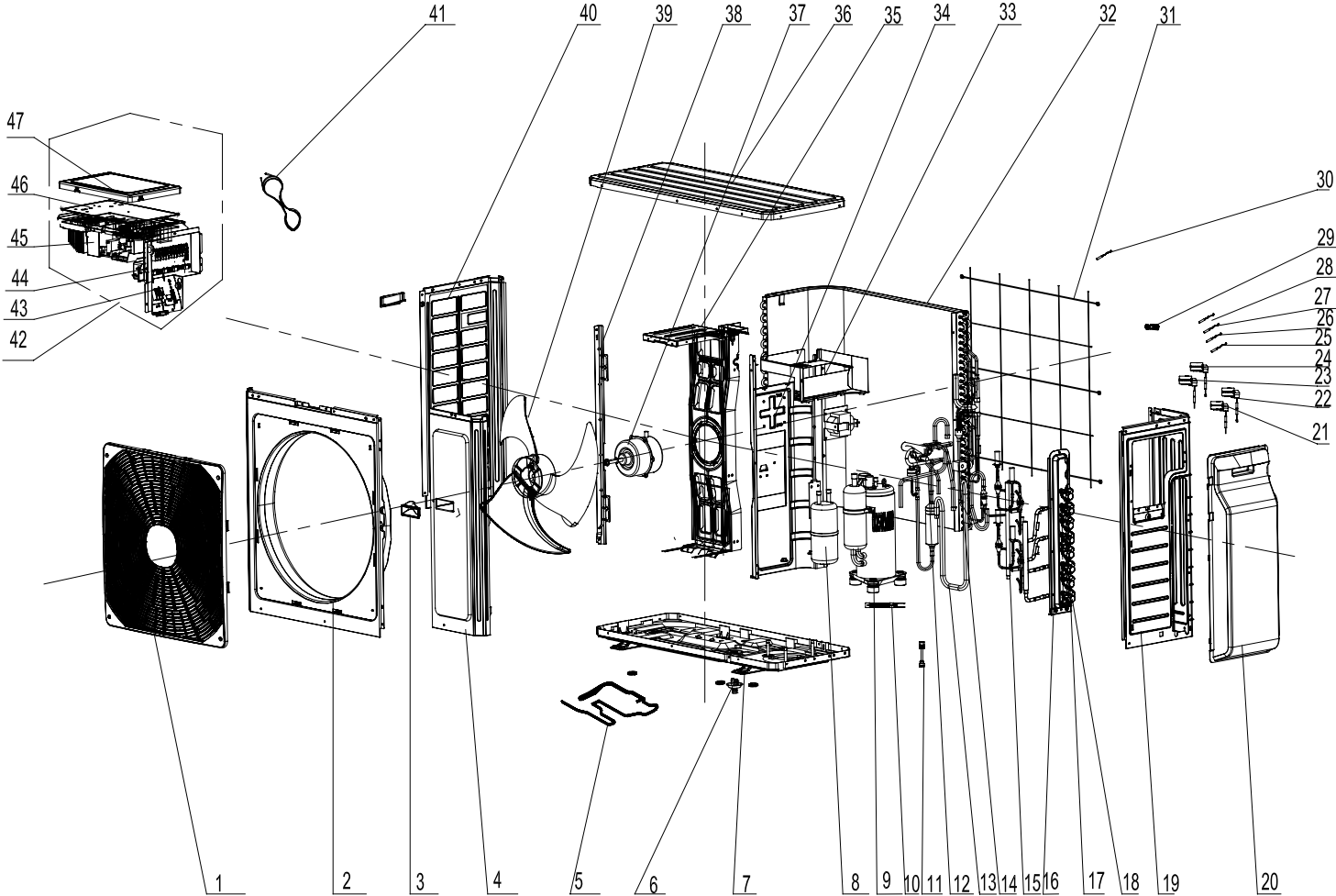
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NO.	Description	Part Code	Qty
		CHML-U28NK4	
		Product Code	
		CB228W06201	
1	Front Grill	22413048	1
2	Cabinet	01435004P	1
3	Left Handle	26235401	1
4	Front Side Plate	01305086P	1
5	Drainage Connector	06123401	1
6	Chassis Sub-assy	0280328001P	1
7	Gas-liquid Separator Assy	07225017	1
8	Compressor and Fittings	0010524501	1
9	Tube Connector Sub-assy	06643008	2
10	4-Way Valve Assy	03073181	1
11	Connection Pipe	05113723	1
12	Magnet Coil	4300040045	1
13	Electronic Expansion Valve assy	07133953	1
14	Valve Support Assy	07133954	1
15	Cut off Valve	07130239	1
16	Cut off Valve	071302391	1
17	Right Side Plate	01314100009P	1
18	Valve Cover	26904100012	1
19	Electric Expand Valve Fitting	4300008403	1
20	Electric Expand Valve Fitting	4300008402	1
21	Electric Expand Valve Fitting	4300008401	1
22	Electric Expand Valve Fitting	43000084	1
23	Temperature Sensor	3900007307	1
24	Temperature Sensor	3900007306	1
25	Temperature Sensor	3900007305	1
26	Temperature Sensor	39000073	1
27	Wiring Clamp	26115004	1
28	Temperature Sensor	3900030901	1
29	Rear Grill	01574100003	1
30	Condenser Assy	01163980	1
31	Electric Box (Fireproofing)	01413426A	1
32	Clapboard Sub-Assy	01233190	1
33	Motor Support Sub-Assy	01705025	1
34	Coping	01255006P	1
35	Fan Motor	1501403402	1
36	Condenser Support Plate	01175092	1
37	Axial Flow Fan	10335014	1
38	Left Side Plate	01305043P	1
39	Connecting Cable	4002054026	0
40	Electric Box Assy	10000201936	1
41	Terminal Board	420111041	4
42	Connection Support	01703211	1
43	Electric Box	20113015	1
44	Main Board	30138000736	1
45	Electric Box Cover Sub-Assy	02603217	1

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NO.	Description	Part Code	Qty
		CHML-U28NK4	
	Product Code	CB228W06200	
1	Front Grill	22413048	1
2	Cabinet	01435004P	1
3	Left Handle	26235401	1
4	Front Side Plate	01305086P	1
5	Electrical Heater (Chassis)	7651000411	1
6	Drainage Connector	06123401	1
7	Chassis Sub-assy	02803280P	1
8	Gas-liquid Separator Assy	07225017	1
9	Compressor and Fittings	0010524501	1
10	Electric Heater(Compressor)	7651873215	1
11	Tube Connector Sub-assy	06643008	2
12	4-Way Valve Assy	03073181	1
13	Connection Pipe	05113723	1
14	Magnet Coil	4300040045	1
15	Electronic Expansion Valve assy	07133953	1
16	Valve Support Assy	07133954	1
17	Cut off Valve	07130239	1
18	Cut off Valve	071302391	1
19	Right Side Plate	01314100009P	1
20	Valve Cover	26904100012	1
21	Electric Expand Valve Fitting	4300008403	1
22	Electric Expand Valve Fitting	4300008402	1
23	Electric Expand Valve Fitting	4300008401	1
24	Electric Expand Valve Fitting	43000084	1
25	Temperature Sensor	3900007307	1
26	Temperature Sensor	3900007306	1
27	Temperature Sensor	3900007305	1
28	Temperature Sensor	39000073	1
29	Wiring Clamp	26115004	1
30	Temperature Sensor	3900030901	1
31	Rear Grill	01574100003	1
32	Condenser Assy	01163980	1
33	Electric Box (Fireproofing)	01413426A	1
34	Clapboard Sub-Assy	01233190	1
35	Motor Support Sub-Assy	01705025	1
36	Coping	01255006P	1
37	Fan Motor	1501403402	1
38	Condenser Support Plate	01175092	1
39	Axial Flow Fan	10335014	1
40	Left Side Plate	01305043P	1
41	Connecting Cable	4002054026	0
42	Electric Box Assy	10000201934	1
43	Terminal Board	420111041	4
44	Connection Support	01703211	1
45	Electric Box	20113015	1
46	Main Board	30138000737	1
47	Electric Box Cover Sub-Assy	02603217	1

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