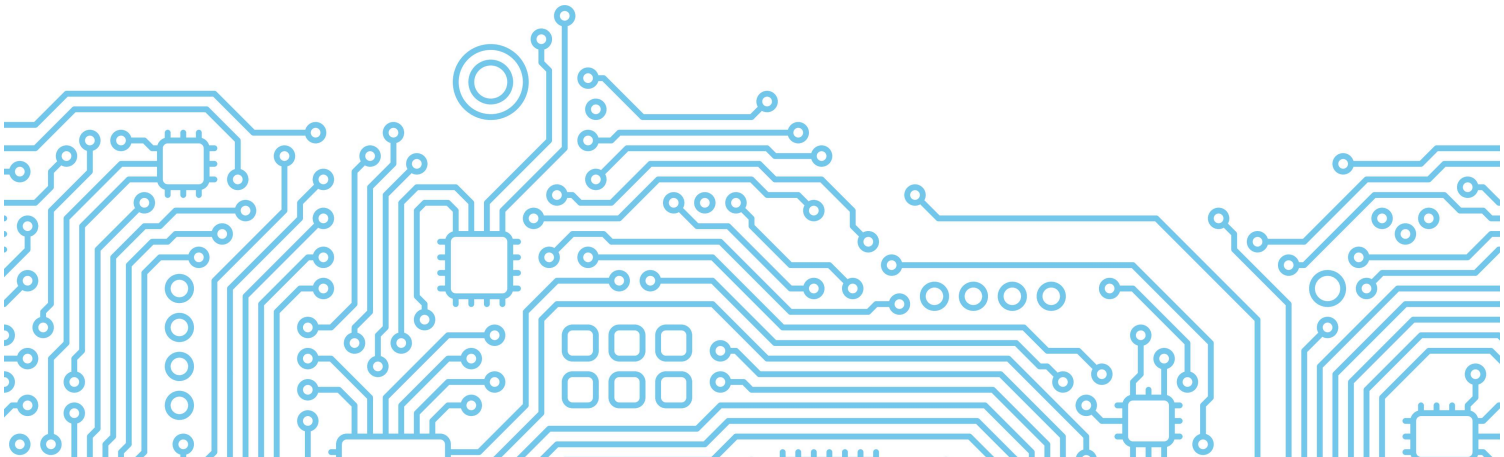
SM_AHU_R410A_3D INV_US1_NB_2104

LIGHT COMMERCIAL INVERTER SERIES

SERVICE MANUAL



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Outdoor Unit

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Please check the corresponding dimensional drawing according to the panel plate.

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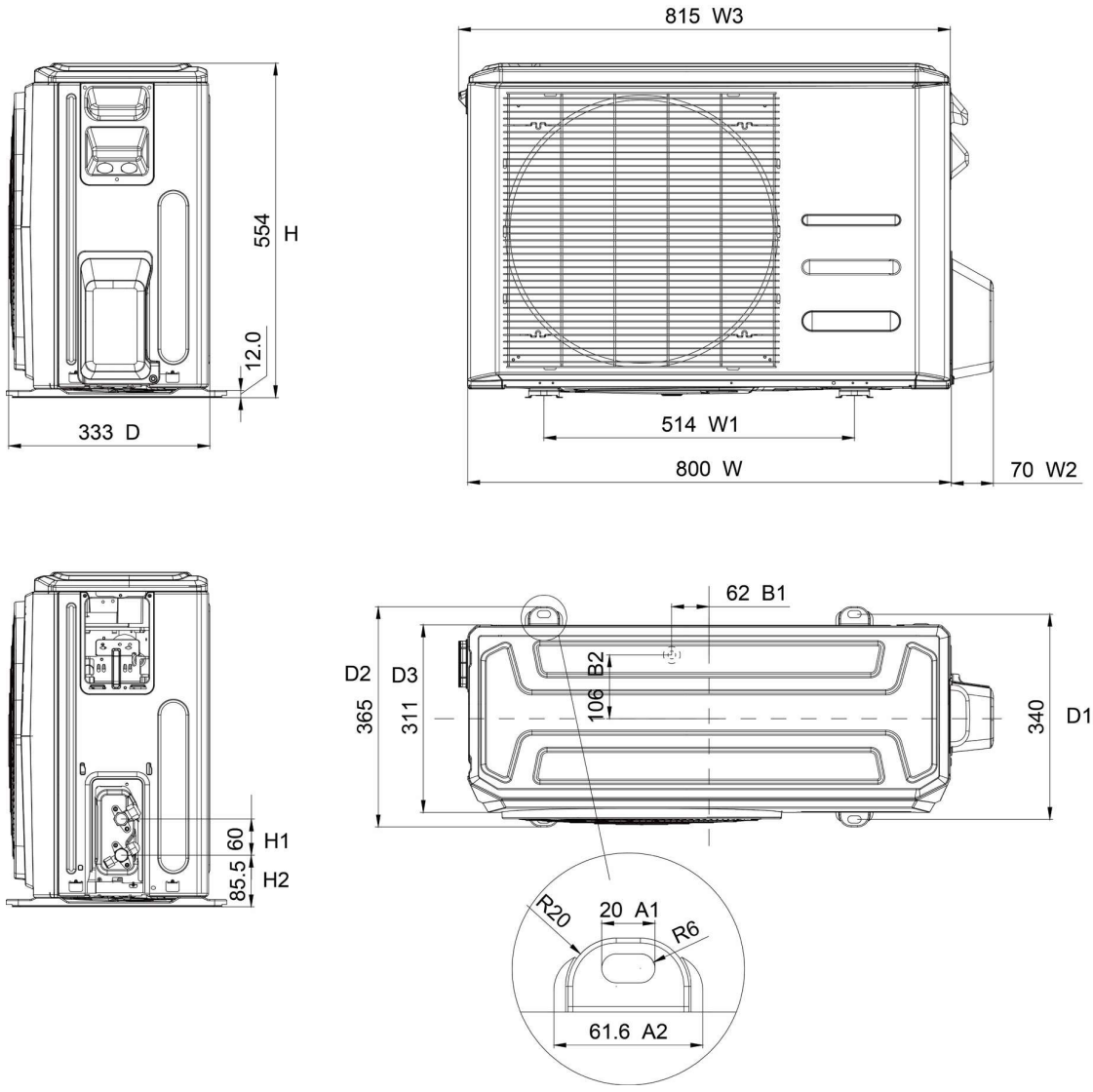
MOX430-24HFN1-M	X430
MOD30U-30HFN1-M	D30
MOD30U-36HFN1-M	D30
MOE30U-48HFN1-M	E30
MOE30U-60HFN1-M	E30

Panel Plate B30



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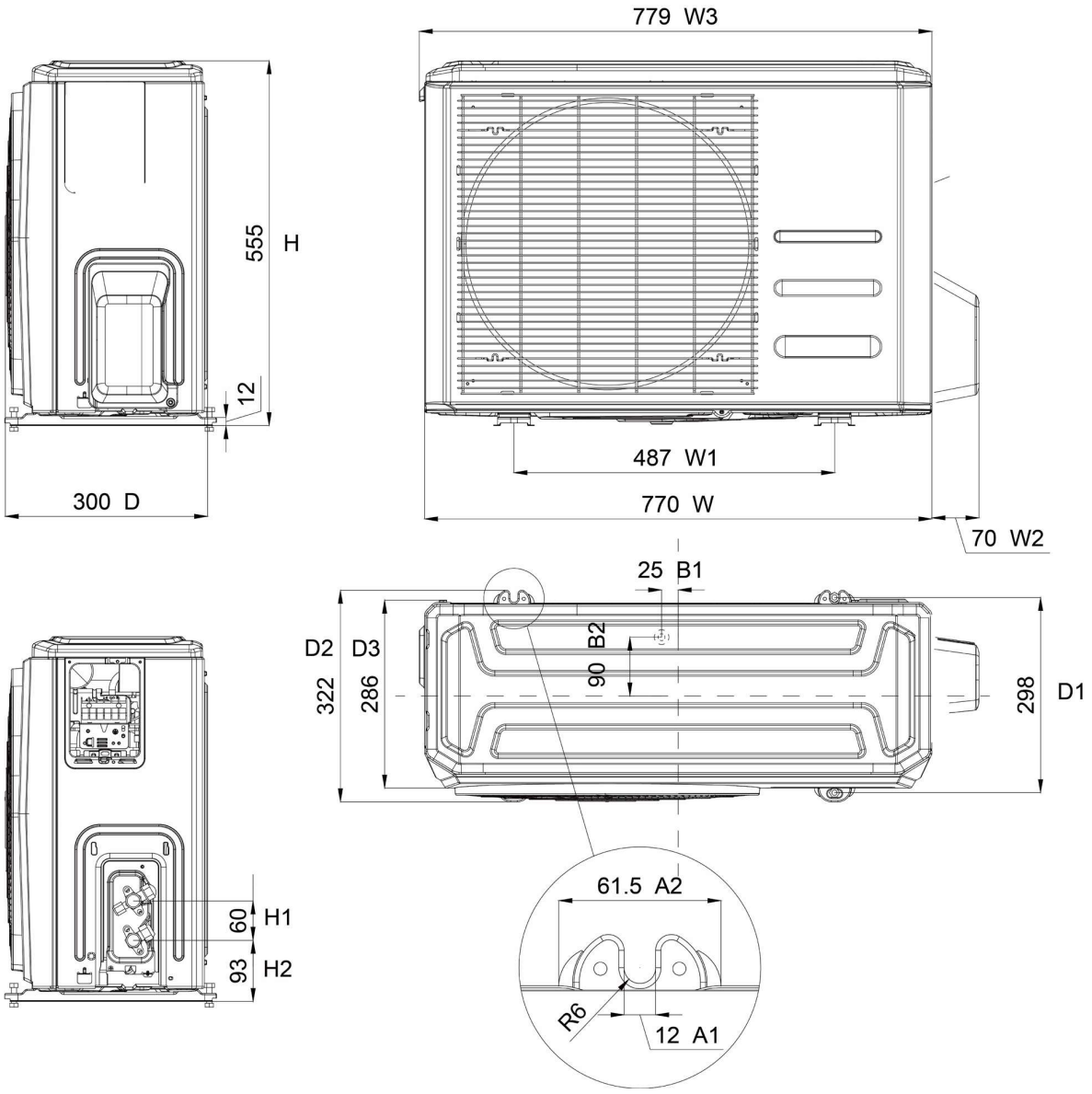
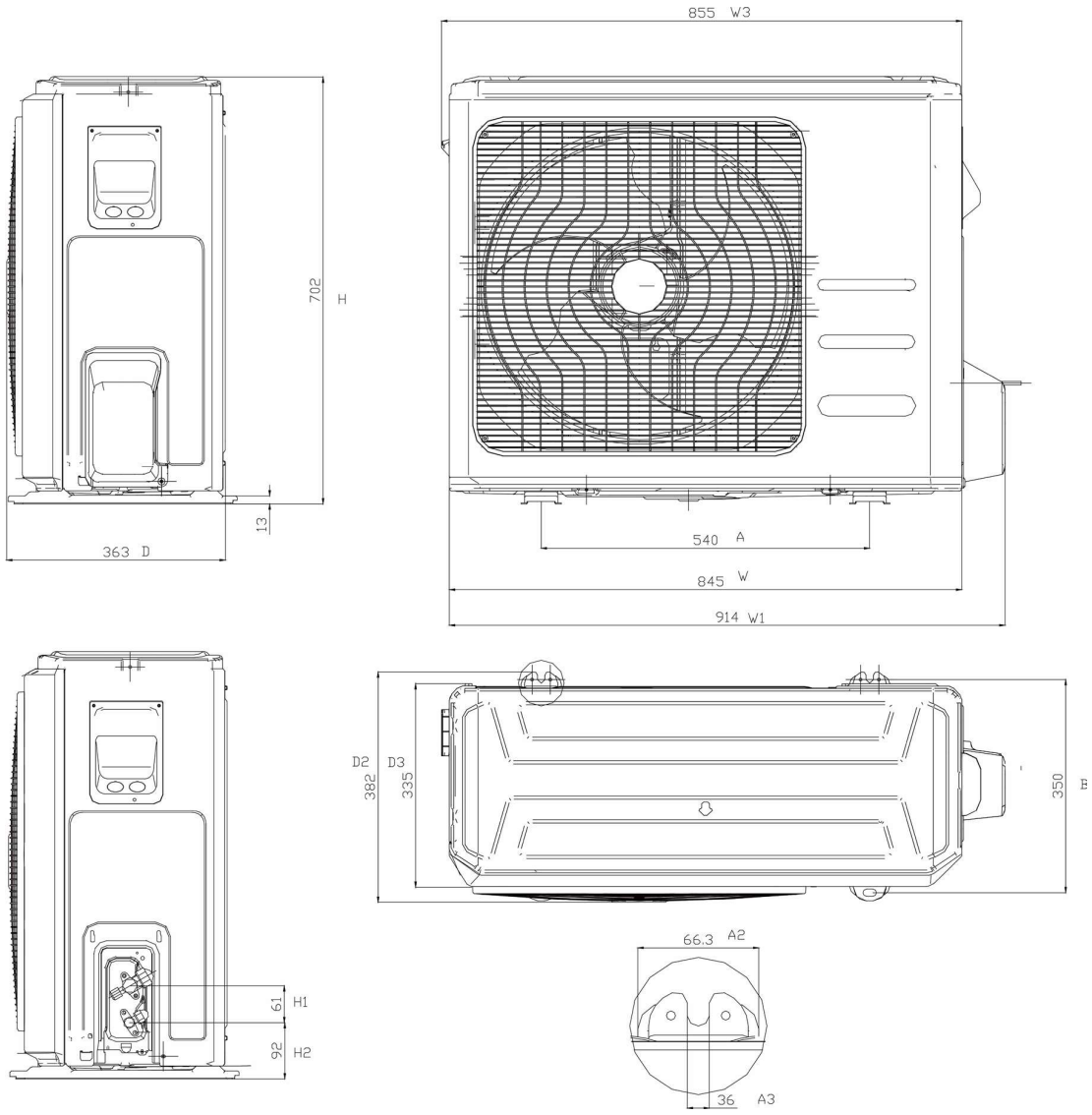
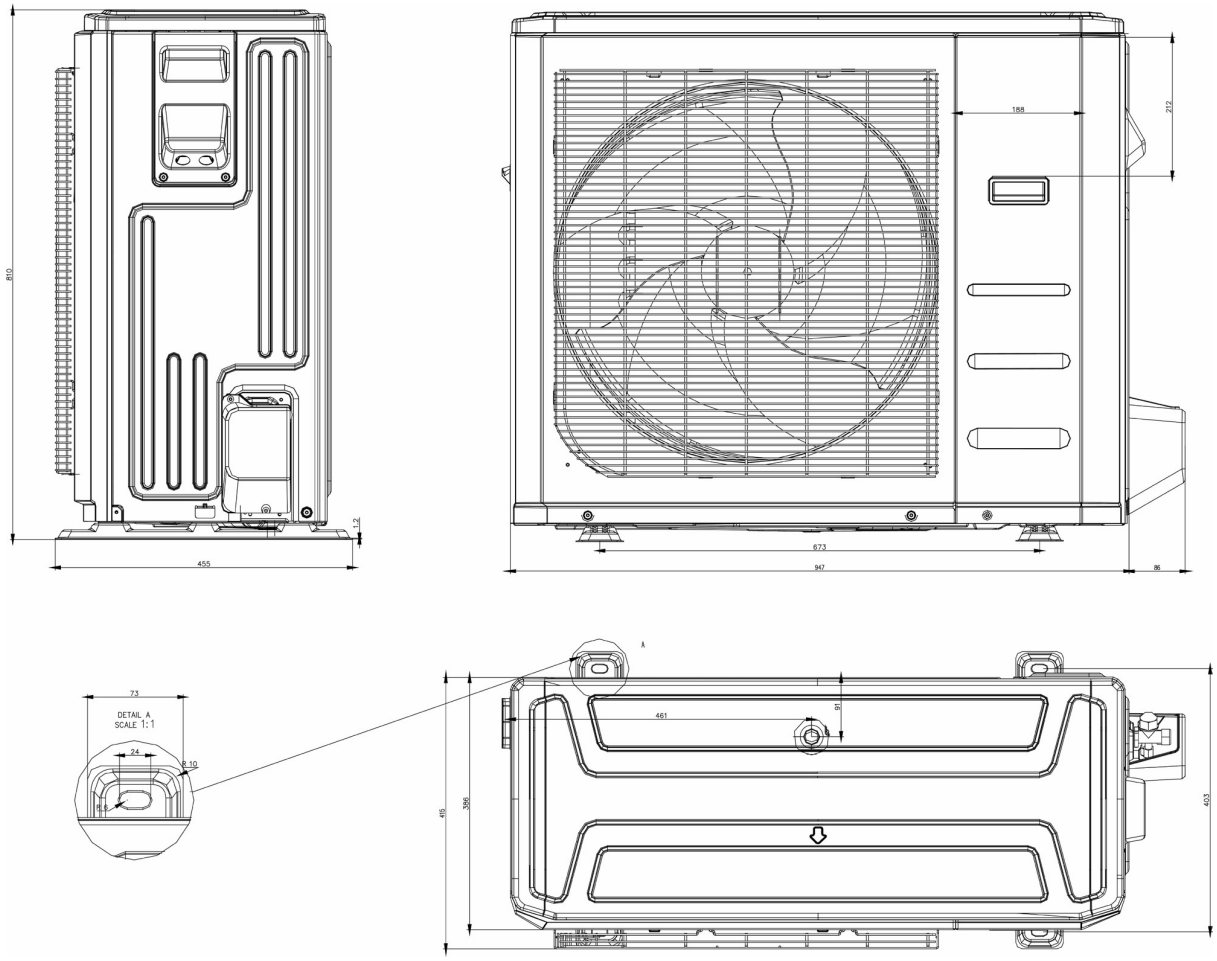


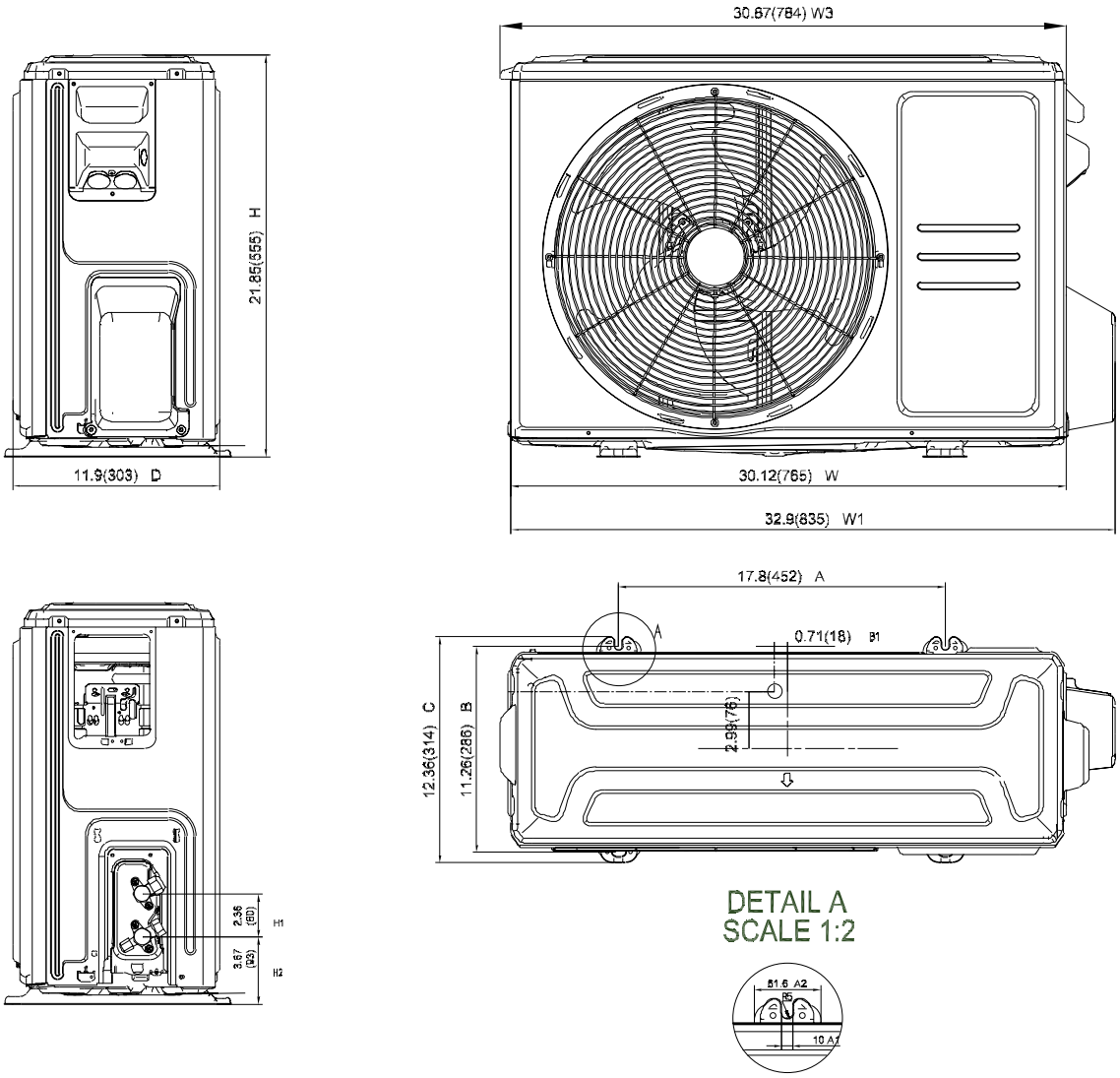
Panel Plate CA30



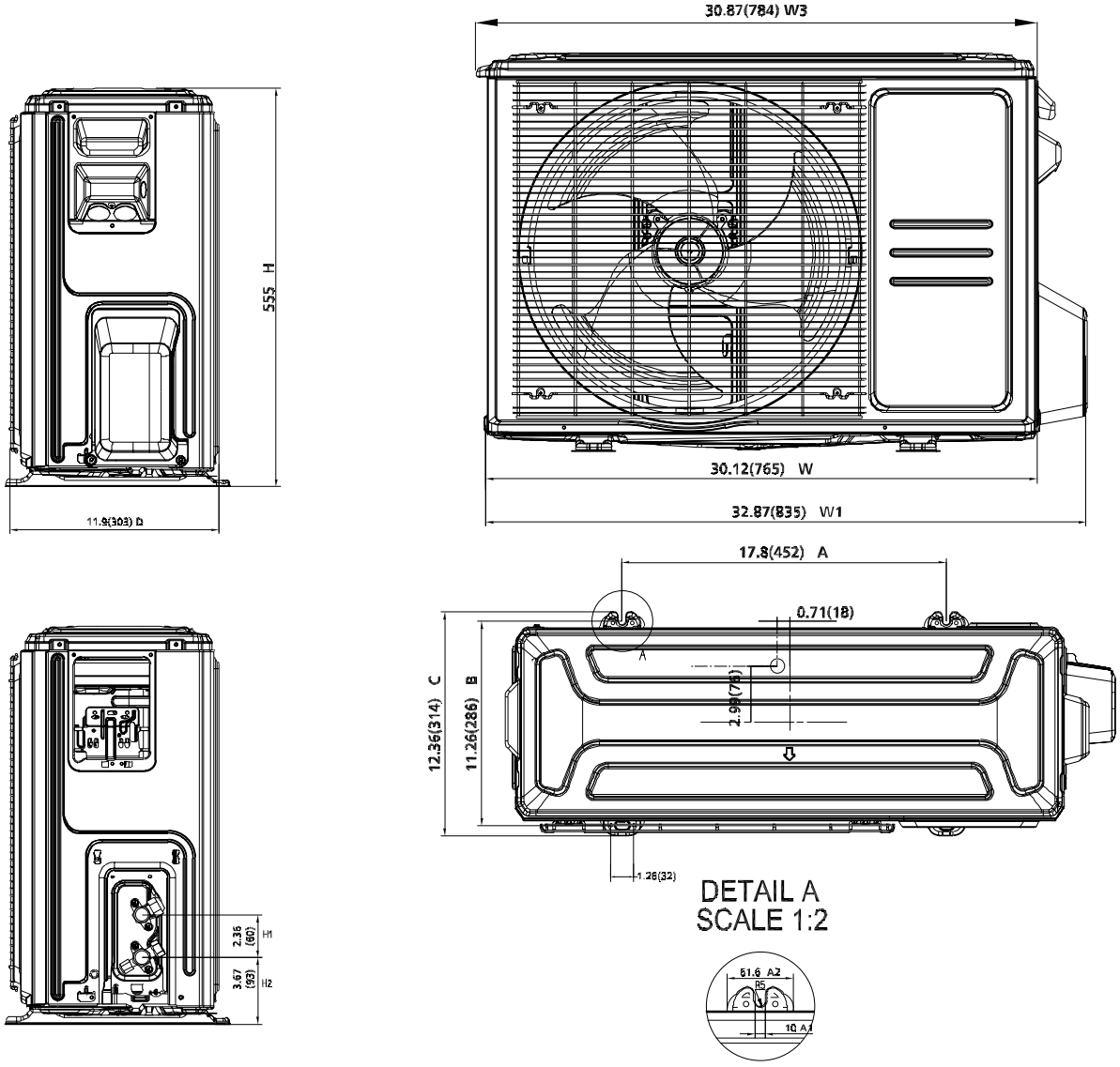
Panel Plate D30



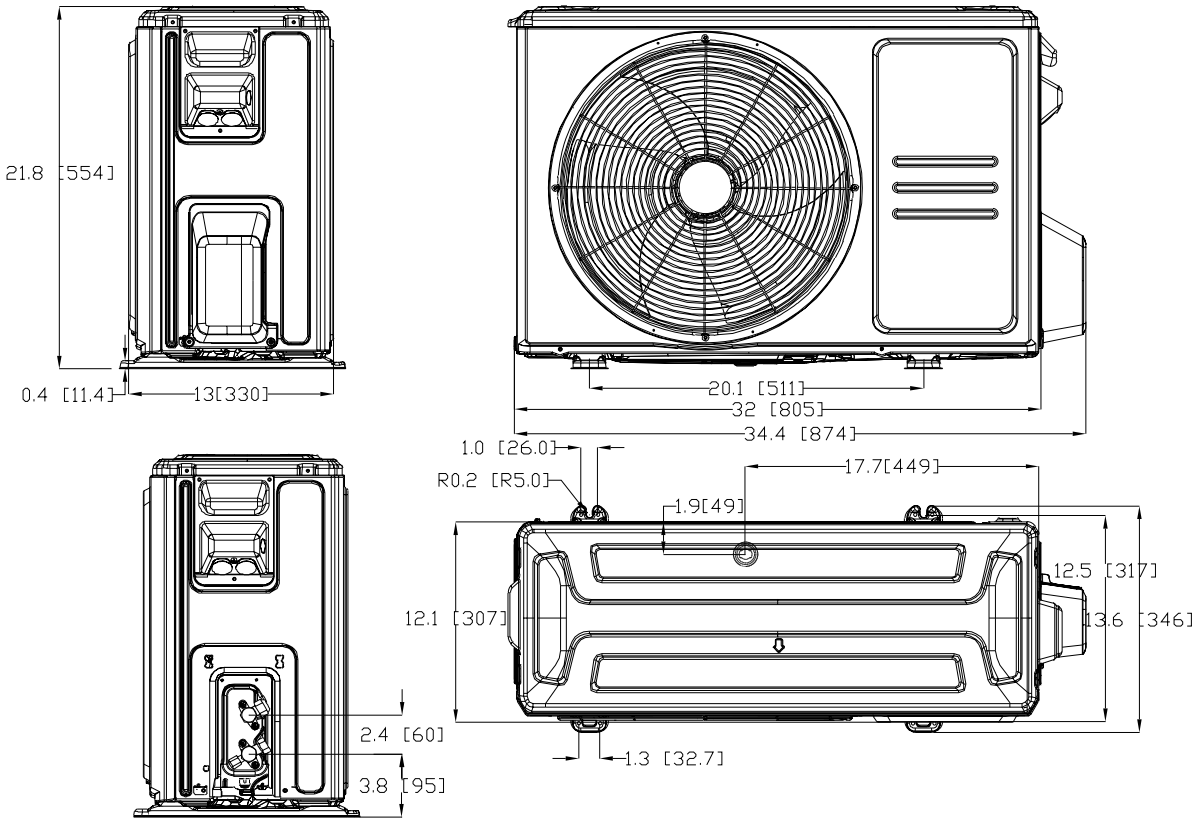
Panel Plate X230 (Rounded grille)



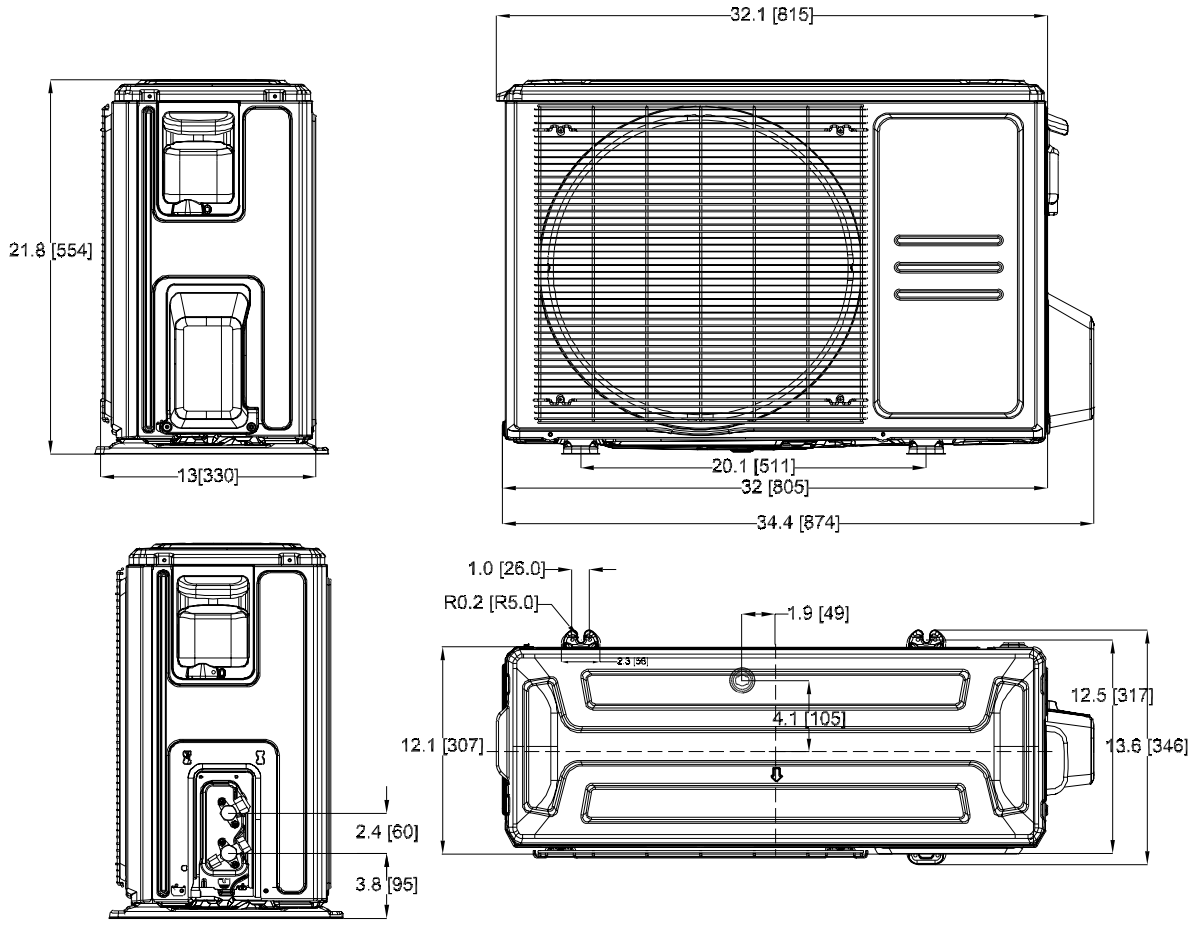
Panel Plate X230(Square grille)



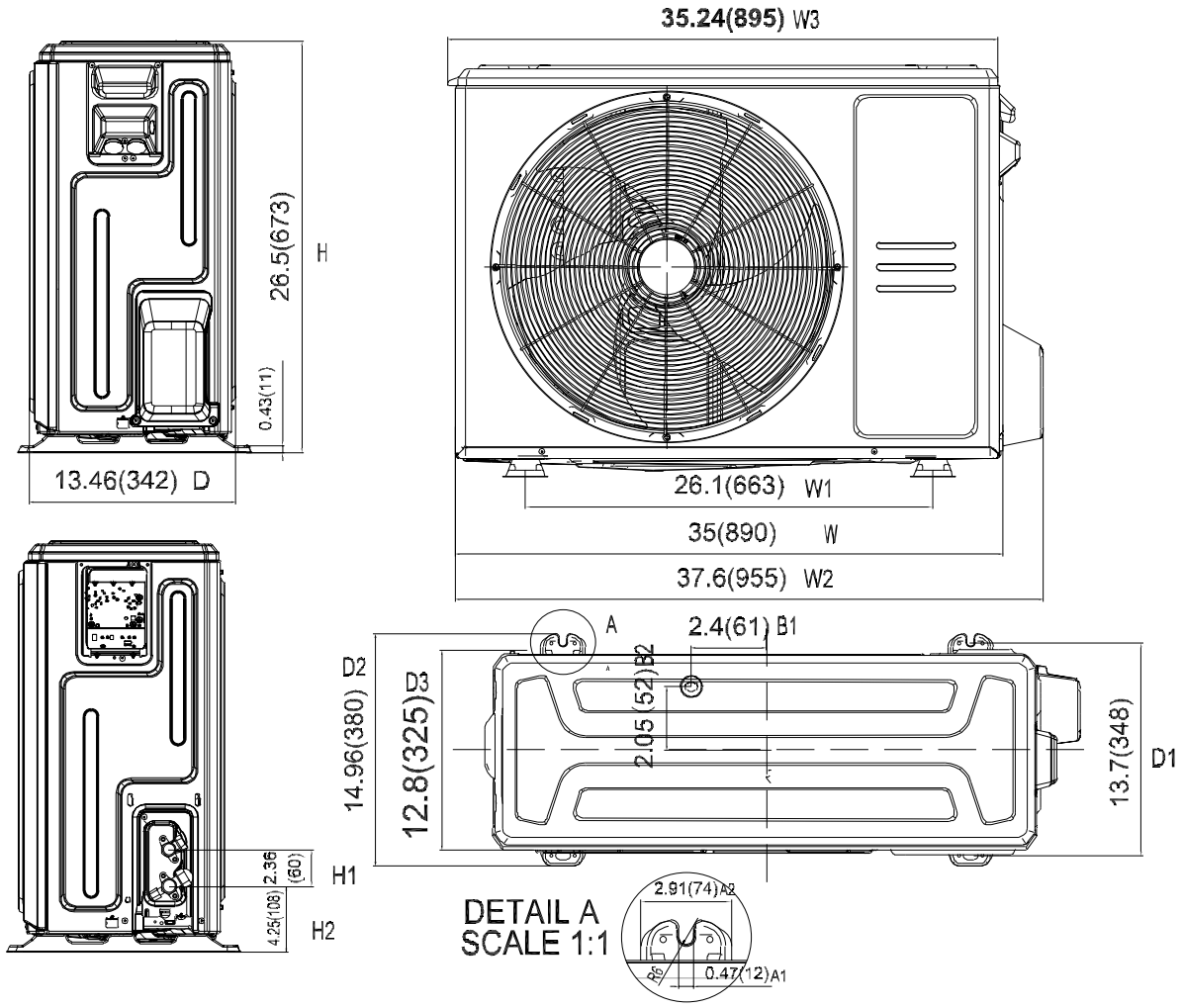
Panel Plate X330(Rounded grille)



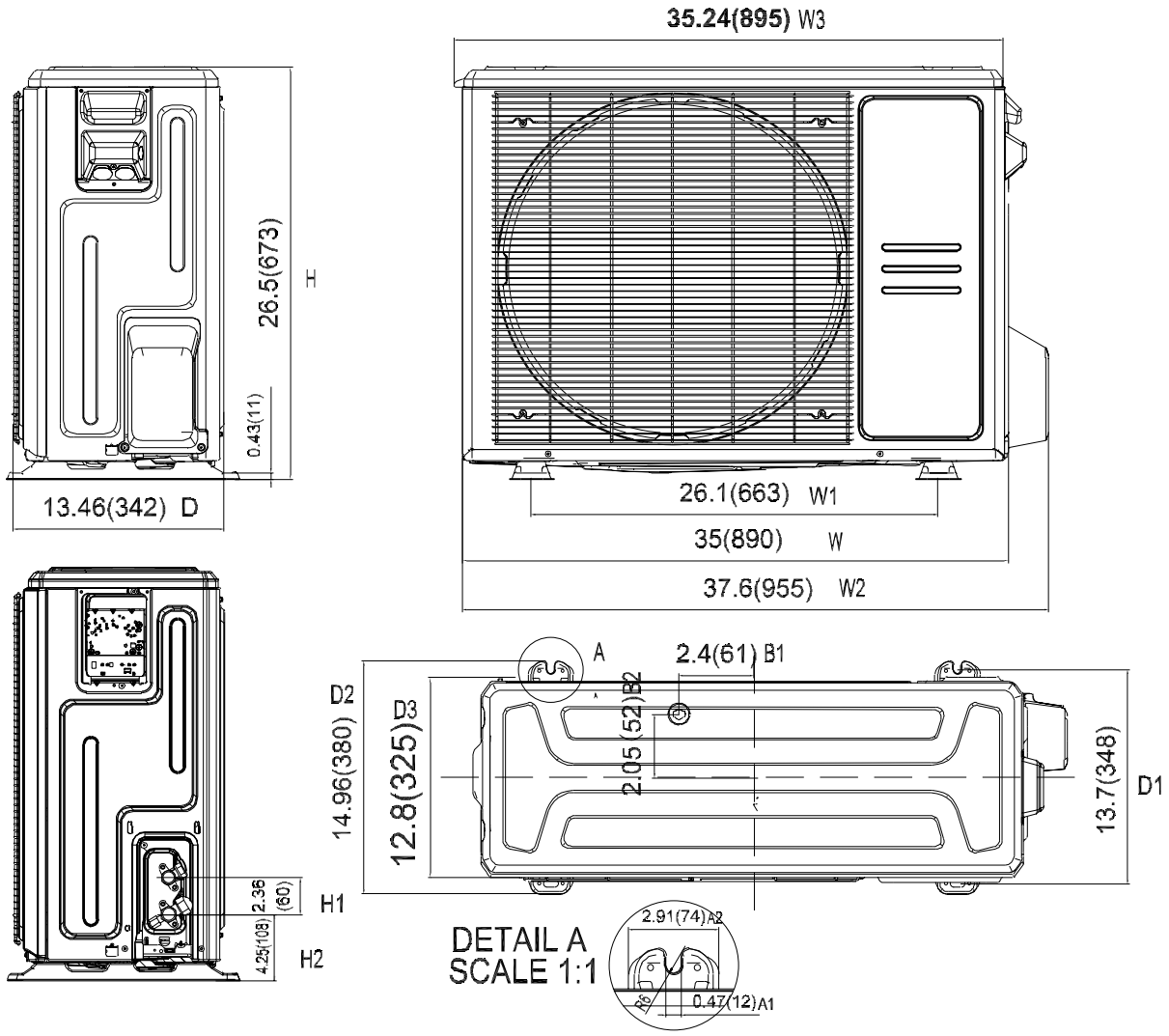
Panel Plate X330(Square grille)



Panel Plate X430(Rounded grille)



Panel Plate X430(Square grille)



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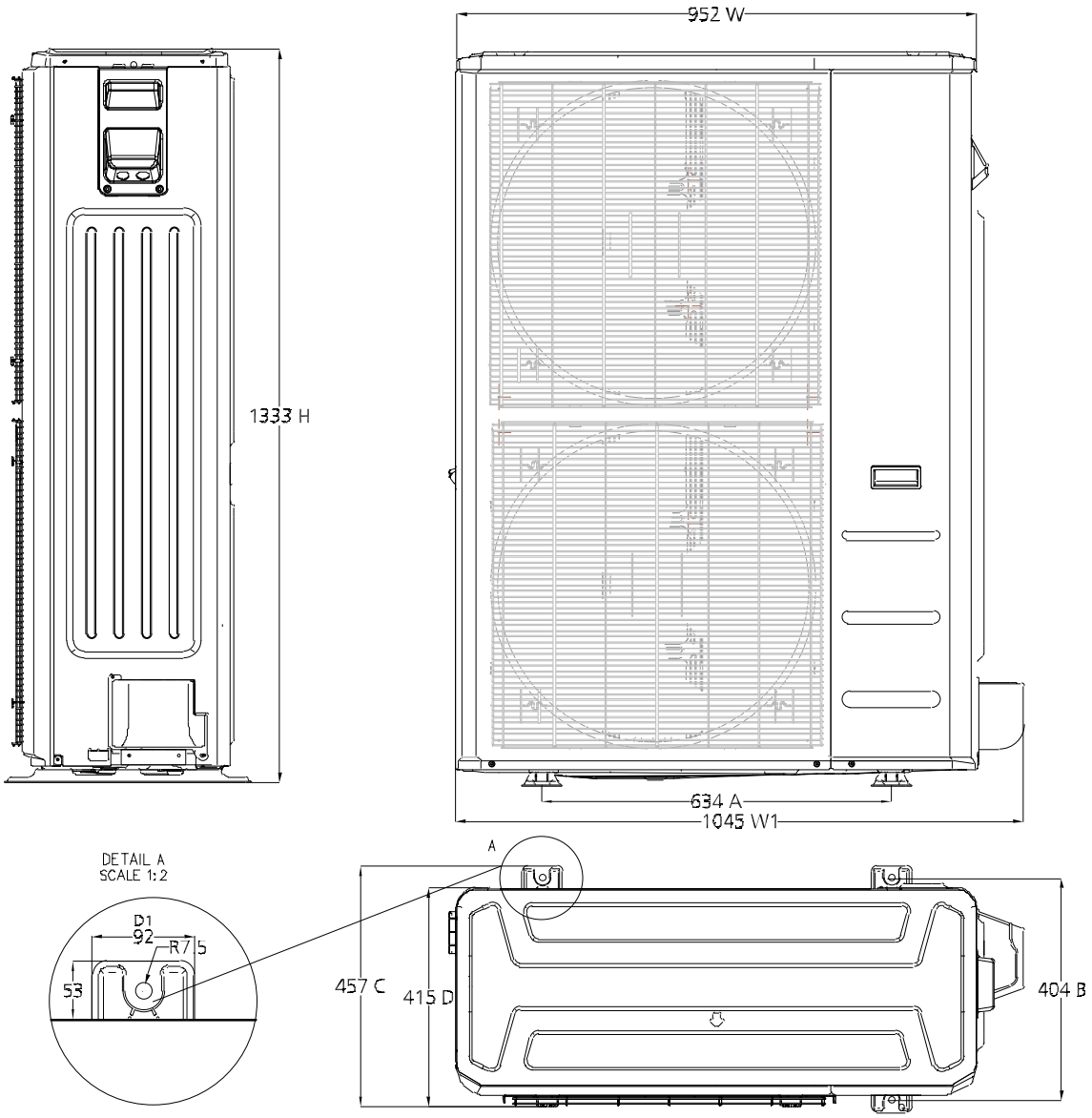
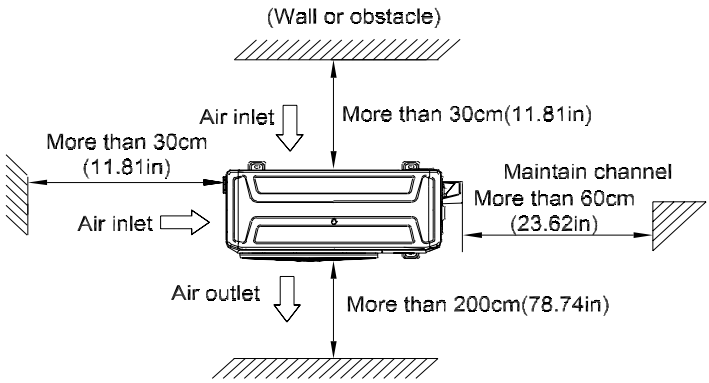
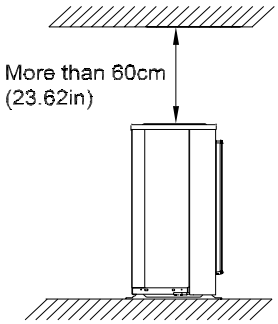


2. Service Place





3. Capacity Correction Factor for Height Difference

Capacity(Btu/h)	12k		Pipe Length (m)			
Cooling			7.5	10	20	25
Height difference H (m)	Indoor Upper than Outdoor	10		0.974	0.953	0.942
		5	0.995	0.984	0.962	0.951
		0	1.000	0.989	0.967	0.956
	Outdoor Upper than Indoor	-5	1.000	0.989	0.967	0.956
		-10		0.989	0.967	0.956
Heating			7.5	10	15	20
Height difference H (m)	Indoor Upper than Outdoor	10		0.994	0.981	0.974
		5	1.000	0.994	0.981	0.974
		0	1.000	0.994	0.981	0.974
	Outdoor Upper than Indoor	-5	0.992	0.986	0.973	0.966
		-10		0.978	0.965	0.958

Capacity(Btu/h)	18k		Pipe Length (m)			
Cooling			7.5	10	20	30
Height difference H (m)	Indoor Upper than Outdoor	20			0.941	0.919
		10		0.974	0.951	0.928
		5	0.995	0.983	0.960	0.937
		0	1.000	0.988	0.965	0.942
	Outdoor Upper than Indoor	-5	1.000	0.988	0.965	0.942
		-10		0.988	0.965	0.942
		-20			0.965	0.942
Heating			7.5	10	20	30
Height difference H (m)	Indoor Upper than Outdoor	20			0.987	0.978
		10		0.996	0.987	0.978
		5	1.000	0.996	0.987	0.978
		0	1.000	0.996	0.987	0.978
	Outdoor Upper than Indoor	-5	0.992	0.988	0.979	0.970
		-10		0.980	0.971	0.962
		-20			0.963	0.955

Capacity (Btu/h)	24k		Pipe Length (m)					
Cooling			7.5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.917	0.898	0.879
		20			0.946	0.926	0.907	0.887
		10		0.975	0.955	0.936	0.916	0.896
		5	0.995	0.985	0.965	0.945	0.925	0.905
		0	1.000	0.990	0.970	0.950	0.930	0.910
	Outdoor Upper than Indoor	-5	1.000	0.990	0.970	0.950	0.930	0.910
		-10		0.990	0.970	0.950	0.930	0.910
		-20			0.970	0.950	0.930	0.910
		-25				0.950	0.930	0.910
Heating			7.5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.984	0.978	0.972
		20			0.991	0.984	0.978	0.972
		10		0.997	0.991	0.984	0.978	0.972
		5	1.000	0.997	0.991	0.984	0.978	0.972
		0	1.000	0.997	0.991	0.984	0.978	0.972
	Outdoor Upper than Indoor	-5	0.992	0.989	0.983	0.977	0.970	0.964
		-10		0.981	0.975	0.969	0.963	0.957
		-20			0.967	0.961	0.955	0.949
		-25				0.953	0.947	0.941

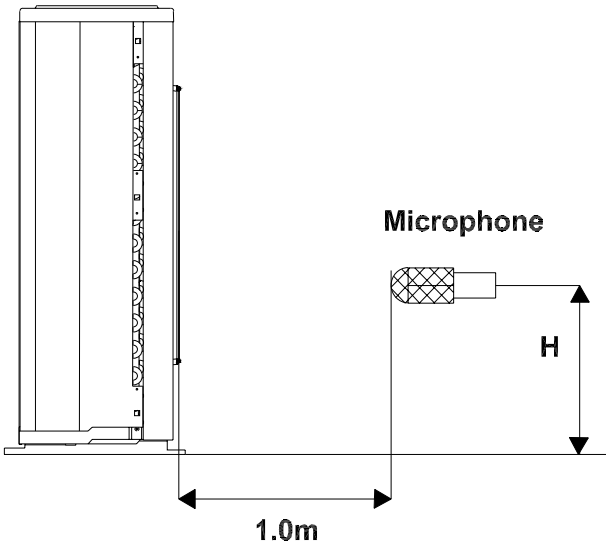
Capacity (Btu/h)	30k		Pipe Length (m)					
Cooling			7.5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.891	0.862	0.832
		20			0.930	0.900	0.871	0.841
		10		0.970	0.940	0.910	0.879	0.849
		5	0.995	0.980	0.949	0.919	0.888	0.858
		0	1.000	0.985	0.954	0.923	0.893	0.862
	Outdoor Upper than Indoor	-5	1.000	0.985	0.954	0.923	0.893	0.862
		-10		0.985	0.954	0.923	0.893	0.862
		-20			0.954	0.923	0.893	0.862
		-25				0.923	0.893	0.862
Heating			7.5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.961	0.945	0.929
		20			0.976	0.961	0.945	0.929
		10		0.992	0.976	0.961	0.945	0.929
		5	1.000	0.992	0.976	0.961	0.945	0.929
		0	1.000	0.992	0.976	0.961	0.945	0.929
	Outdoor Upper than Indoor	-5	0.992	0.984	0.969	0.953	0.937	0.922
		-10		0.976	0.961	0.945	0.930	0.914
		-20			0.953	0.938	0.922	0.907
		-25				0.930	0.915	0.900

Capacity (Btu/h)	36k		Pipe Length (m)					
Cooling			7.5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.889	0.850	0.812
		20			0.924	0.898	0.859	0.820
		10		0.959	0.933	0.907	0.868	0.828
		5	0.995	0.969	0.942	0.916	0.876	0.837
		0	1.000	0.974	0.947	0.921	0.881	0.841
	Outdoor Upper than Indoor	-5	1.000	0.974	0.947	0.921	0.881	0.841
		-10		0.974	0.947	0.921	0.881	0.841
		-20			0.947	0.921	0.881	0.841
		-30				0.921	0.881	0.841
Heating			7.5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.964	0.945	0.927
		20			0.976	0.964	0.945	0.927
		10		0.988	0.976	0.964	0.945	0.927
		5	1.000	0.988	0.976	0.964	0.945	0.927
		0	1.000	0.988	0.976	0.964	0.945	0.927
	Outdoor Upper than Indoor	-5	0.992	0.980	0.968	0.956	0.938	0.920
		-10		0.972	0.960	0.948	0.930	0.912
		-20			0.952	0.941	0.923	0.905
		-30				0.933	0.915	0.898

Capacity (Btu/h)	48k		Pipe Length (m)					
Cooling			7.5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.884	0.843	0.802
		20			0.920	0.893	0.852	0.810
		10		0.957	0.930	0.902	0.860	0.819
		5	0.995	0.967	0.939	0.911	0.869	0.827
		0	1.000	0.972	0.944	0.916	0.873	0.831
	Outdoor Upper than Indoor	-5	1.000	0.972	0.944	0.916	0.873	0.831
		-10		0.972	0.944	0.916	0.873	0.831
		-20			0.944	0.916	0.873	0.831
		-30				0.916	0.873	0.831
Heating			7.5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.958	0.936	0.915
		20			0.972	0.958	0.936	0.915
		10		0.986	0.972	0.958	0.936	0.915
		5	1.000	0.986	0.972	0.958	0.936	0.915
		0	1.000	0.986	0.972	0.958	0.936	0.915
	Outdoor Upper than Indoor	-5	0.992	0.978	0.964	0.950	0.929	0.908
		-10		0.970	0.956	0.942	0.921	0.900
		-20			0.949	0.935	0.914	0.893
		-30				0.927	0.907	0.886

Capacity (Btu/h)	60k		Pipe Length (m)					
Cooling			7.5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.870	0.823	0.775
		20			0.911	0.879	0.831	0.783
		10		0.953	0.920	0.888	0.840	0.791
		5	0.995	0.962	0.930	0.897	0.848	0.799
		0	1.000	0.967	0.934	0.902	0.852	0.803
	Outdoor Upper than Indoor	-5	1.000	0.967	0.934	0.902	0.852	0.803
		-10		0.967	0.934	0.902	0.852	0.803
		-20			0.934	0.902	0.852	0.803
		-30				0.902	0.852	0.803
Heating			7.5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.955	0.932	0.909
		20			0.970	0.955	0.932	0.909
		10		0.985	0.970	0.955	0.932	0.909
		5	1.000	0.985	0.970	0.955	0.932	0.909
		0	1.000	0.985	0.970	0.955	0.932	0.909
	Outdoor Upper than Indoor	-5	0.992	0.977	0.962	0.947	0.924	0.902
		-10		0.969	0.954	0.939	0.917	0.895
		-20			0.947	0.932	0.910	0.887
		-30				0.924	0.902	0.880

4. Noise Criterion Curves



Note: H= 0.5 × height of outdoor unit

Notes:

-Sound measured at 1.0m away from the center of the unit.

-Data is valid at free field condition

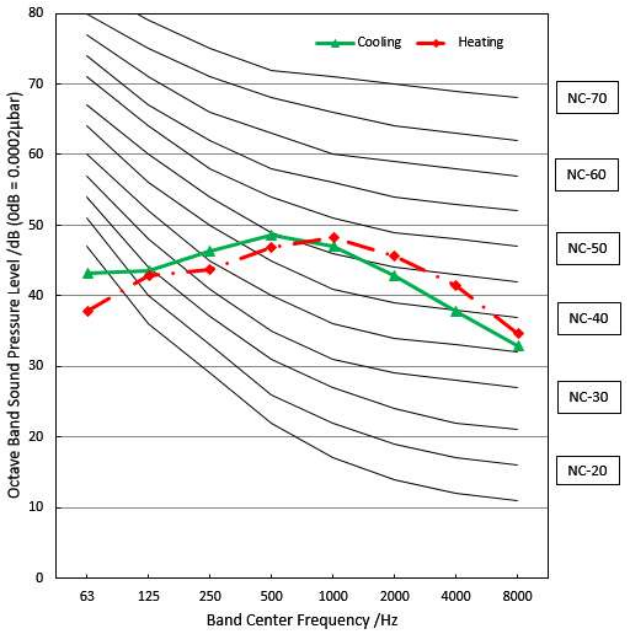
-Data is valid at nominal operation condition

-Reference acoustic pressure OdB=20μPa

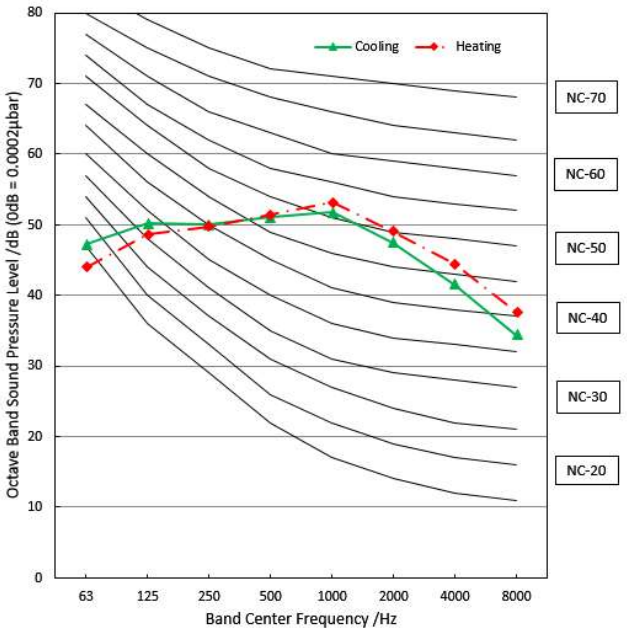
-Sound level will vary depending on arrange off actors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

-The operating conditions are assumed to be standard.

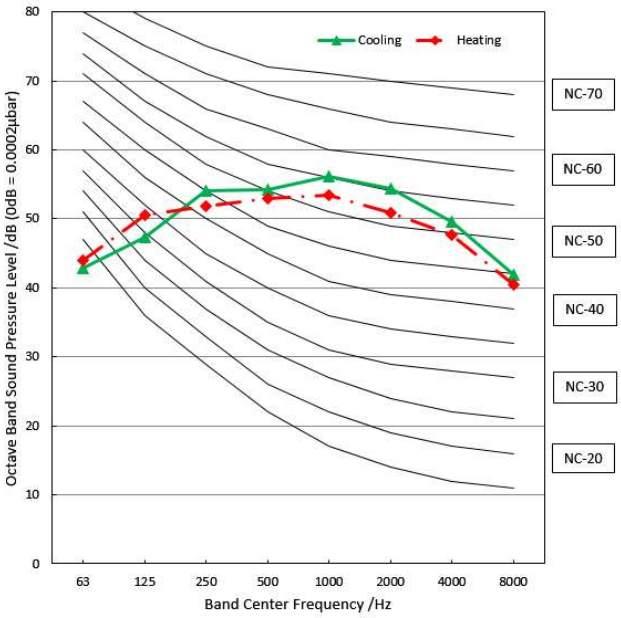
MOX330U-18HFN1-MR0



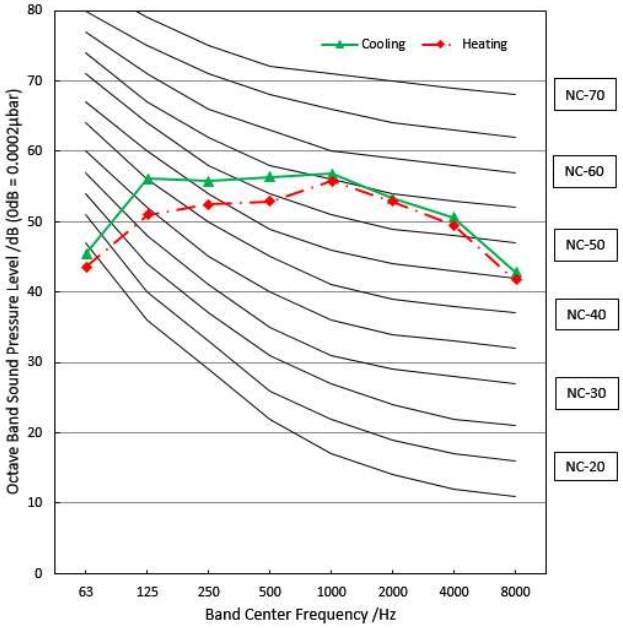
MOX430U-24HFN1-MR0



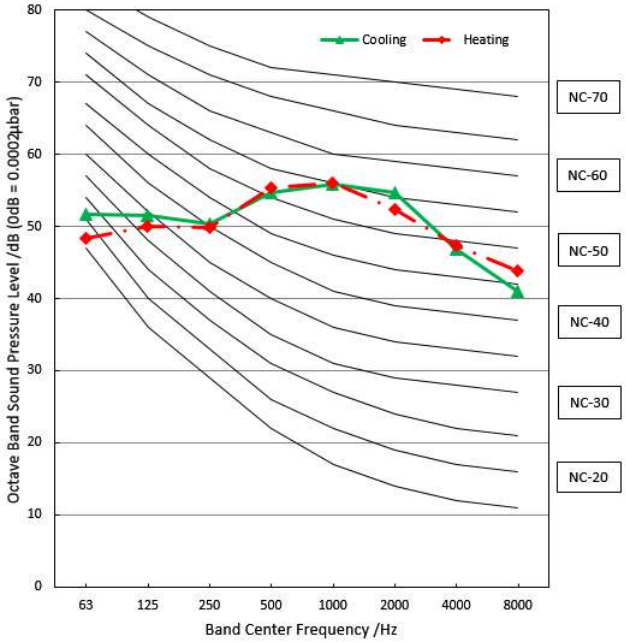
MOD30U-30HFN1-MR0



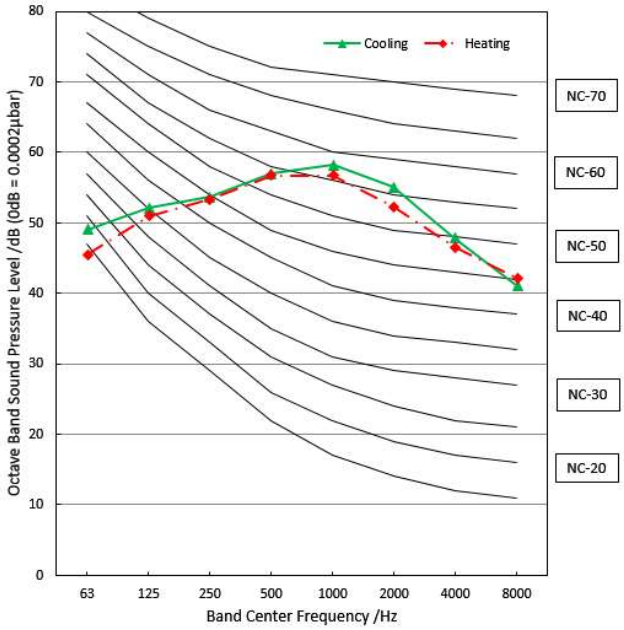
MOD30U-36HFN1-MR0



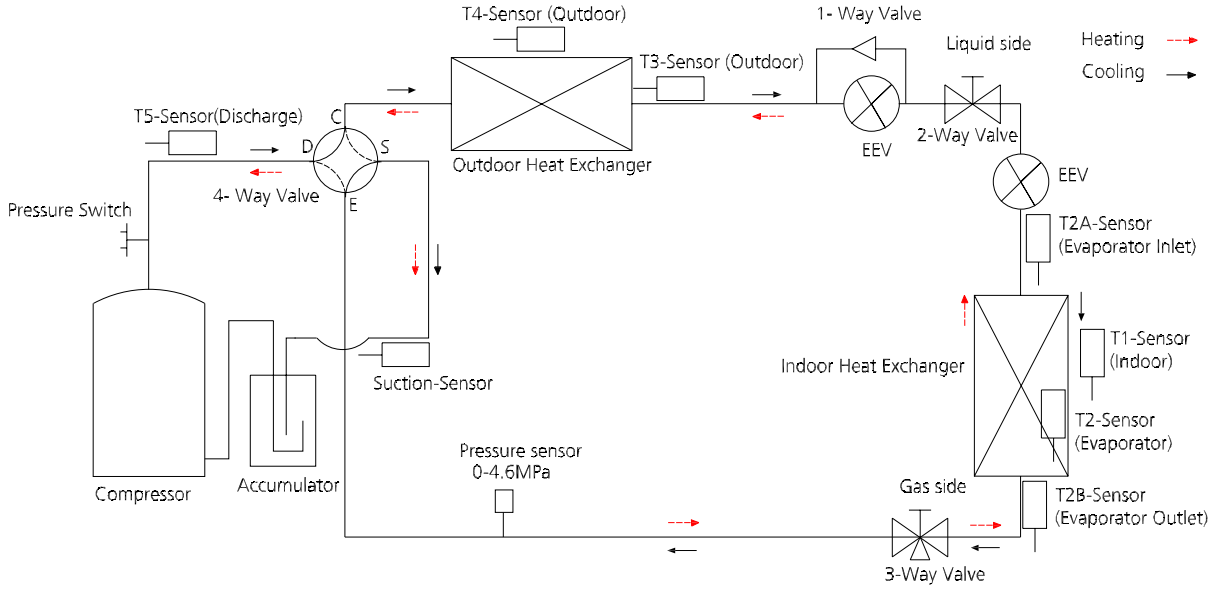
MOE30U-48HFN1-MR0



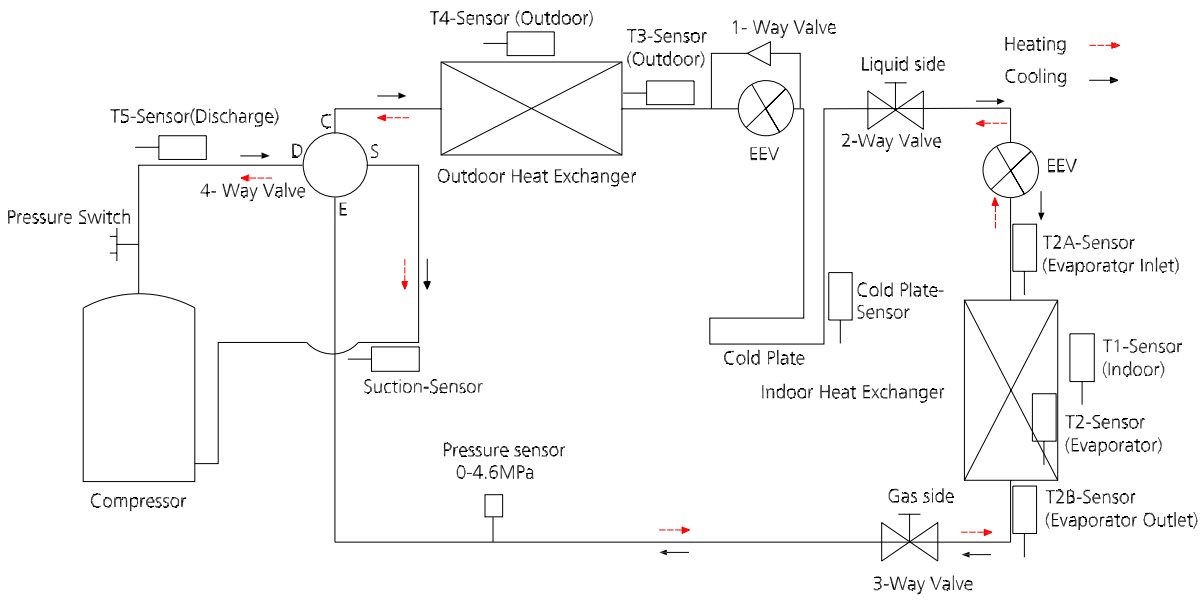
MOE30U-60HFN1-MR0



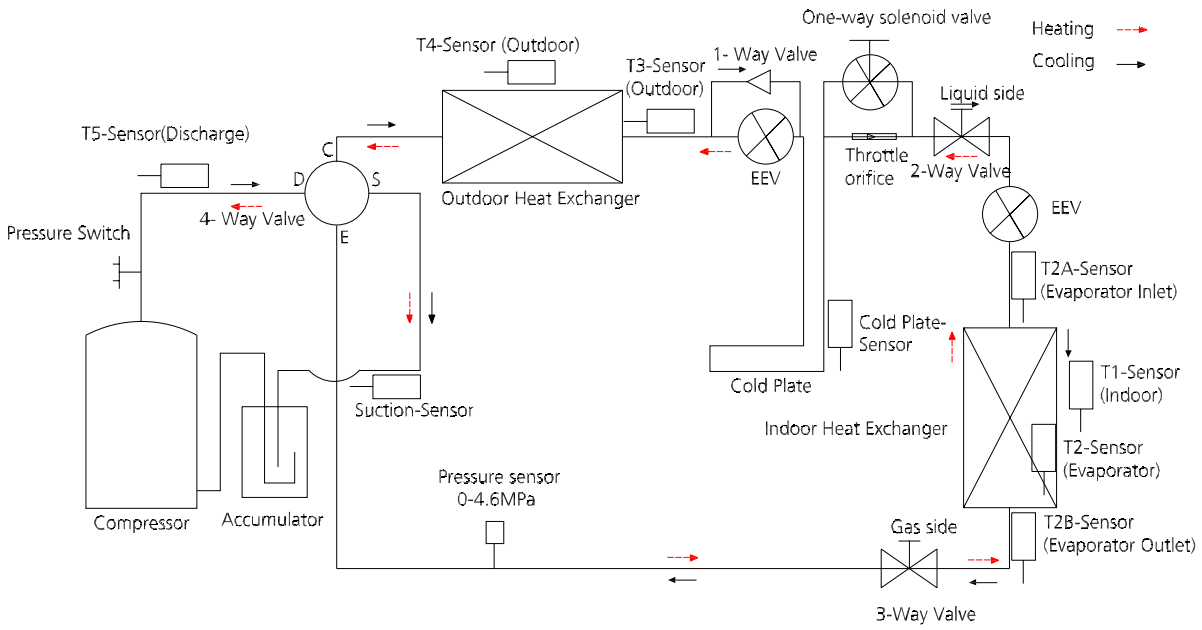
5. Refrigerant Cycle Diagrams



Model No.	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
18k	19(3/4)	9.52(3/8)	7.5/24.6	30/98.4	0	20/65.6	65g/m (0.69oz/ft)



Model No.	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
24k	19(3/4)	9.52(3/8)	7.5/24.6	50/164	0	25/82	65g/m (0.69oz/ft)



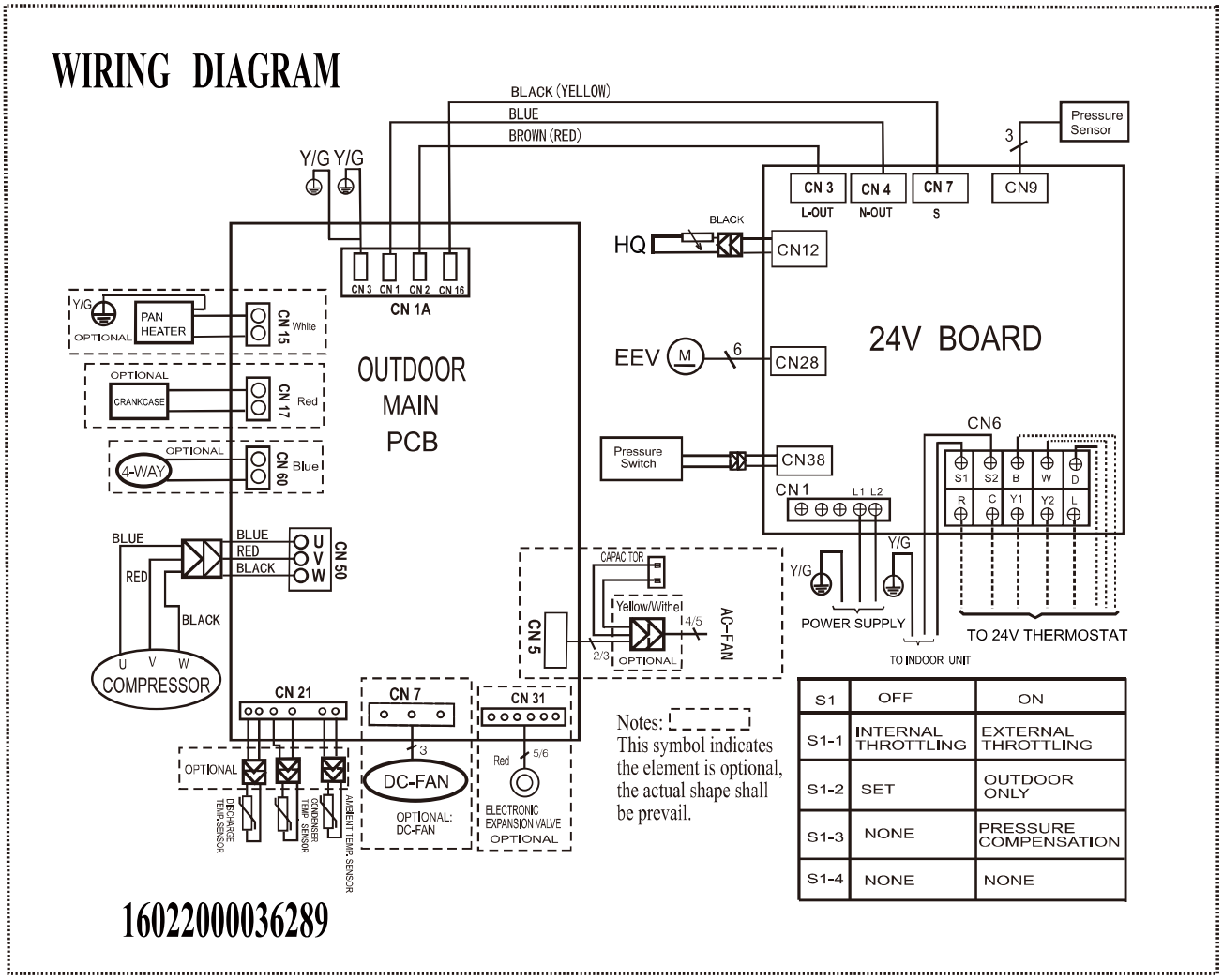
Model No.	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
30k	19(3/4)	9.52(3/8)	7.5/24.6	50/164	0	25/82	65g/m (0.69oz/ft)
36k/48k	19(3/4)	9.52(3/8)	7.5/24.6	65/213	0	30/98.4	
60k	22(7/8)	9.52(3/8)	7.5/24.6	65/213	0	30/98.4	

6. Electrical Wiring Diagrams

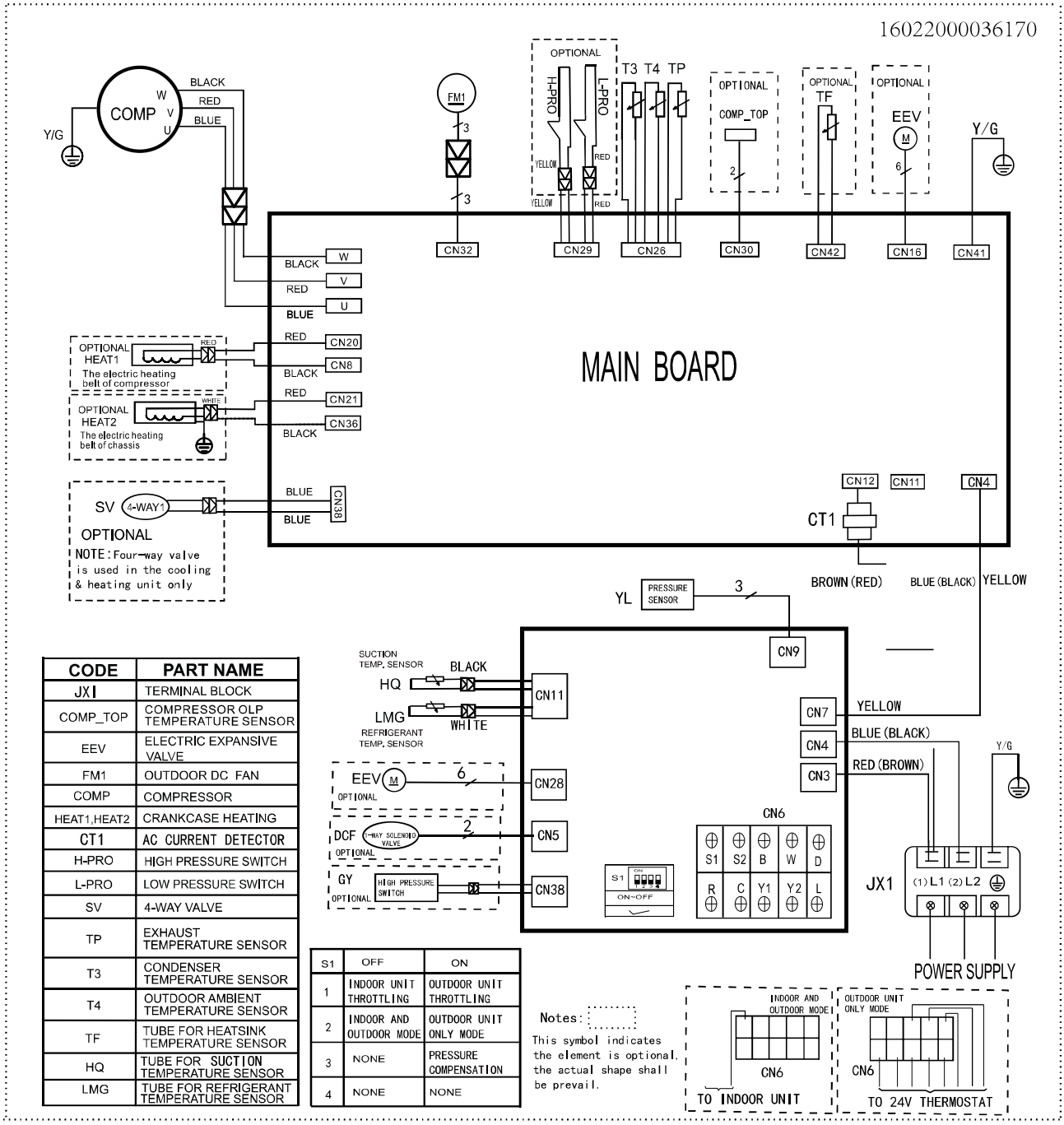
ODU Model	ODU Wiring Diagram
MOX330U-18HFN1-MR0	16022000036289
MOX430U-24HFN1-MR0	16022000036171
MOD30U-30HFN1-MR0	16022000036170
MOD30U-36HFN1-MR0	
MOE30U-48HFN1-MR0	16022000036169
MOE30U-60HFN1-MR0	

ODU Model	ODU Main Printed Circuit Board	Inverter Module Printed Board	24V Printed Board
MOX330U-18HFN1-MR0	17122000046453	/	17122000054047
MOX430U-24HFN1-MR0	17122000048064	/	17122000054047
MOD30U-30HFN1-MR0	17122000047742	/	17122000054047
MOD30U-36HFN1-MR0	17122000047742	/	17122000054047
MOE30U-48HFN1-MR0	17122000037804	17122000042012	17122000054047
MOE30U-60HFN1-MR0	17122000037804	17122000042012	17122000054047

Outdoor unit wiring diagram:16022000036289



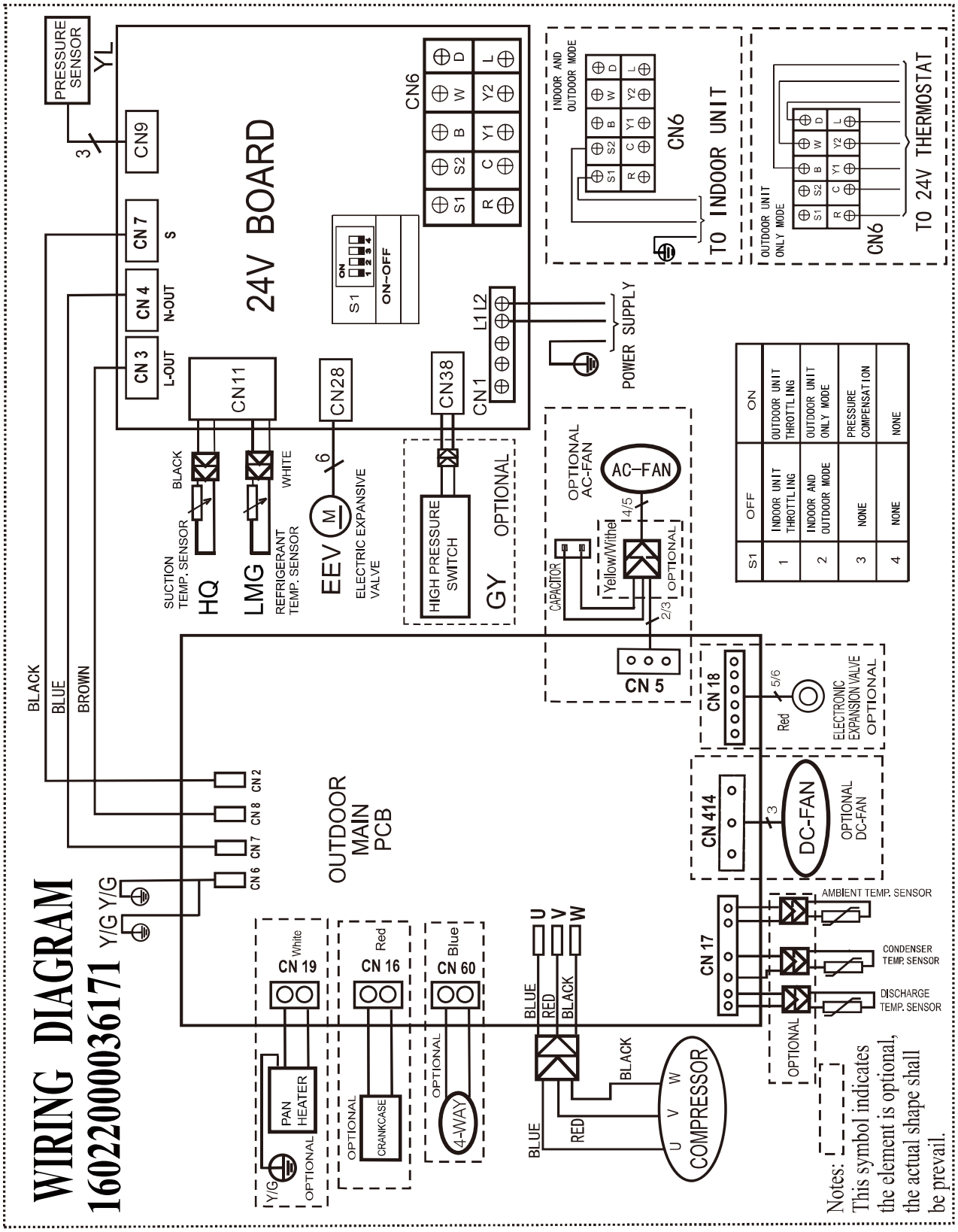
Outdoor unit wiring diagram:16022000036170



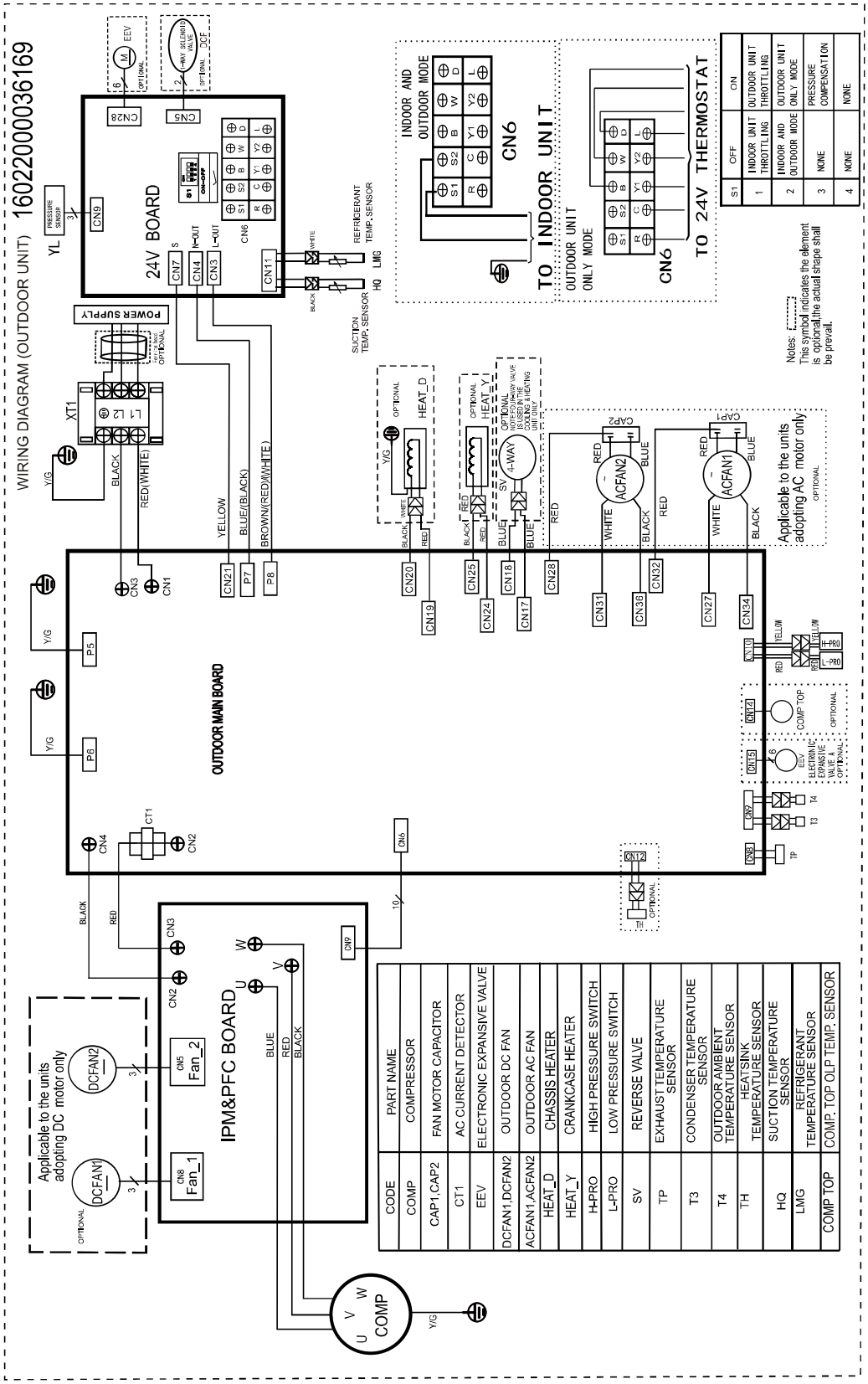
CODE	PART NAME
JX1	TERMINAL BLOCK
COMP_TOP	COMPRESSOR OLP TEMPERATURE SENSOR
EEV	ELECTRIC EXPANSIVE VALVE
FM1	OUTDOOR DC FAN
COMP	COMPRESSOR
HEAT1,HEAT2	CRANKCASE HEATING
CT1	AC CURRENT DETECTOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
SV	4-WAY VALVE
TP	EXHAUST TEMPERATURE SENSOR
T3	CONDENSER TEMPERATURE SENSOR
T4	OUTDOOR AMBIENT TEMPERATURE SENSOR
TF	TUBE FOR HEATSINK TEMPERATURE SENSOR
HQ	TUBE FOR SUCTION TEMPERATURE SENSOR
LMG	TUBE FOR REFRIGERANT TEMPERATURE SENSOR

S1	OFF	ON
1	INDOOR UNIT THROTTLING	OUTDOOR UNIT THROTTLING
2	INDOOR AND OUTDOOR MODE	OUTDOOR UNIT ONLY MODE
3	NONE	PRESSURE COMPENSATION
4	NONE	NONE

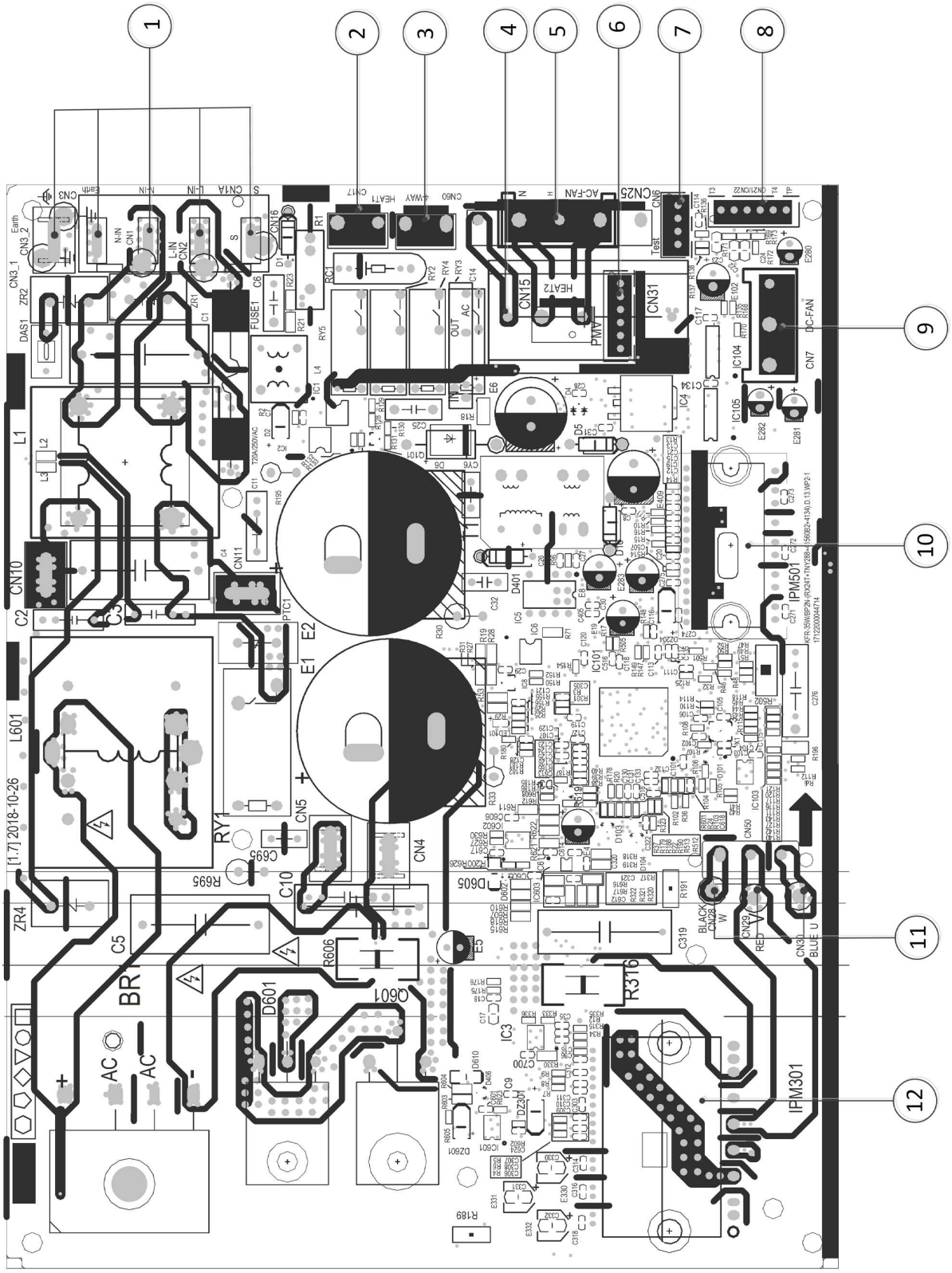
Outdoor unit wiring diagram:16022000036171



Outdoor unit wiring diagram:16022000036169



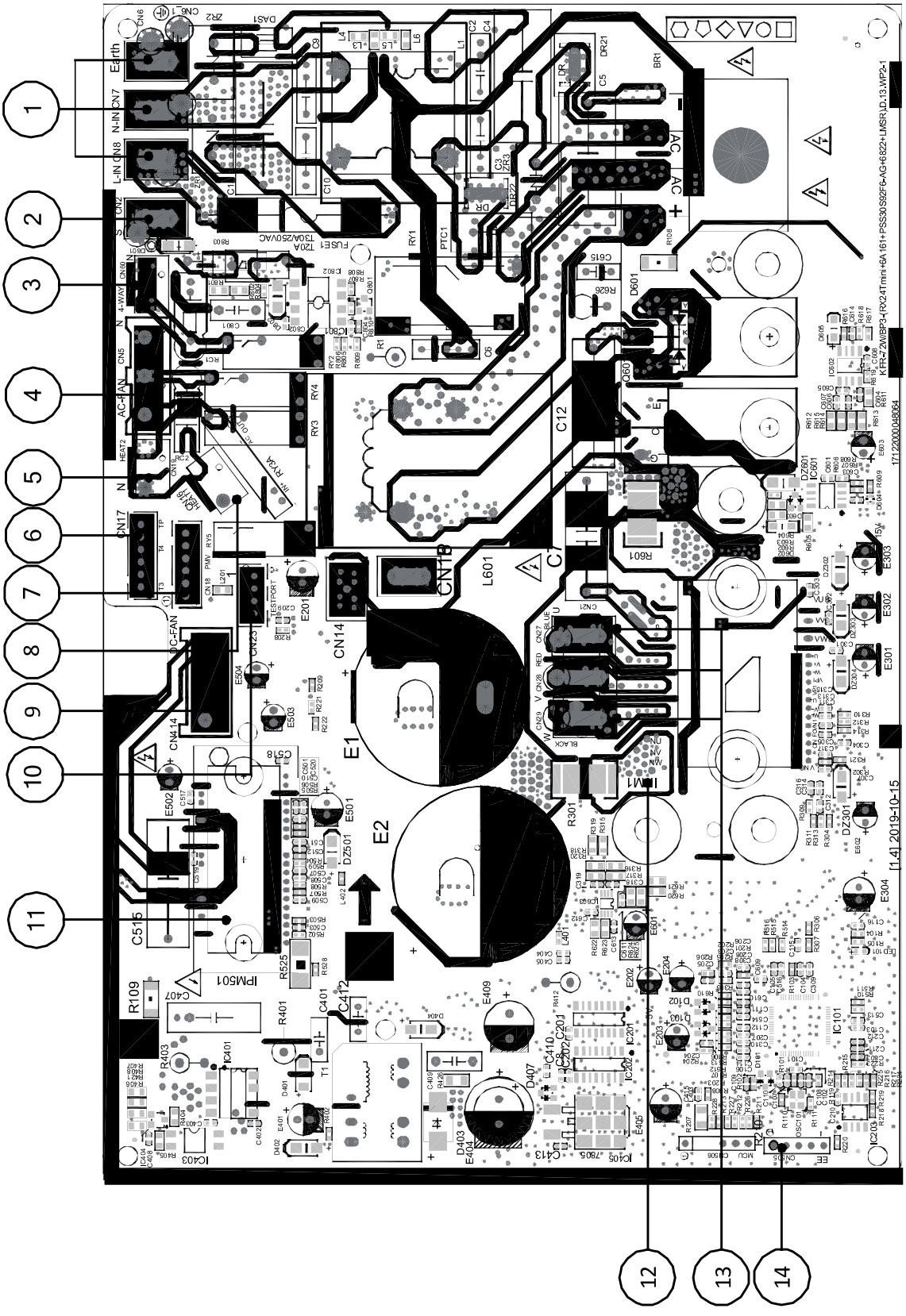
Outdoor unit printed circuit board diagram: 17122000044714, 17122000048121,17122000046453



No.	Name	CN#	Meaning
1	CN1A	CN3	Earth: connect to Ground
		CN1	N_in: connect to N-line (208-230V AC input)
		CN2	L_in: connect to L-line (208-230V AC input)
		CN16	S: connect to indoor unit communication
2	HEAT1	CN17	connect to compressor heater, 208-230V AC when is ON
3	4-WAY	CN60	connect to 4 way valve, 208-230V AC when is ON.
4	HEAT2	CN15	connect to chassis heater, 208-230V AC when is ON
5	AC-FAN	CN25	connect to AC fan
6	PMV	CN31	connect to Electric Expansion Valve
7	TESTPORT	CN6	used for testing
8	TP T4 T3	CN21/CN22	connect to pipe temp. sensor T3, ambient temp. sensor T4, exhaust temp. sensor TP
9	DC-FAN	CN7	connect to DC fan
10	FAN_IPM	IPM 501	IPM for DC fan
11	W	CN28	connect to compressor
	V	CN29	0V AC (standby)
	U	CN30	10-200V AC (running)
12	COMP_IPM	IPM 301	IPM for compressor

Note: This section is for reference only. Please take practicality as standard.

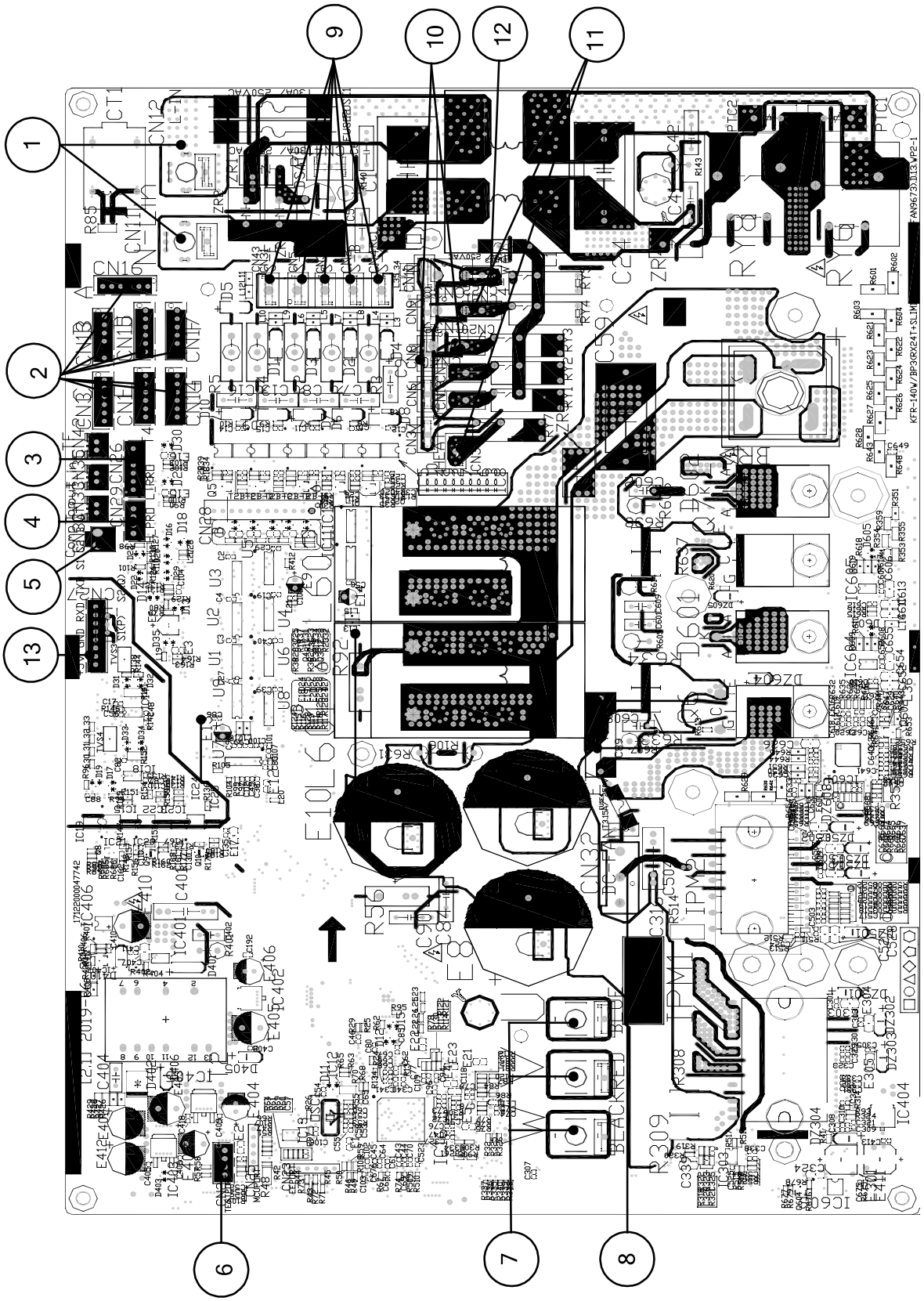
Outdoor unit printed circuit board diagram: 17122000048064



No.	Name	CN#	Meaning
1	Power Supply	CN6	Earth: connect to Ground
		CN7	N_in: connect to N-line (208-230V AC input)
		CN8	L_in: connect to L-line (208-230V AC input)
2	S	CN2	S: connect to indoor unit communication
3	4-WAY	CN60	connect to 4 way valve, 208-230V AC when is ON.
4	AC-FAN	CN5	connect to AC fan
5	HEAT2	CN19	connect to chassis heater, 208-230V AC when is ON
6	TP T4 T3	CN17	connect to pipe temp. sensor T3, ambient temp. sensor T4, exhaust temp. sensor TP
7	PMV	CN18	connect to Electric Expansion Valve
8	HEAT1	CN16	connect to compressor heater, 208-230V AC when is ON
9	DC-FAN	CN414	connect to DC fan
10	TESTPORT	CN23	used for testing
11	FAN_IPM	IPM501	IPM for DC fan
12	COMP_IPM	IPM1	IPM for compressor
13	U	CN27	connect to compressor
	V	CN28	0V AC (standby)
	W	CN29	200-300V AC (running)
14	EE_PORT	CN505	EEPROM programer port

Note: This section is for reference only. Please take practicality as standard.

Outdoor unit printed circuit board diagram: 17122000047742

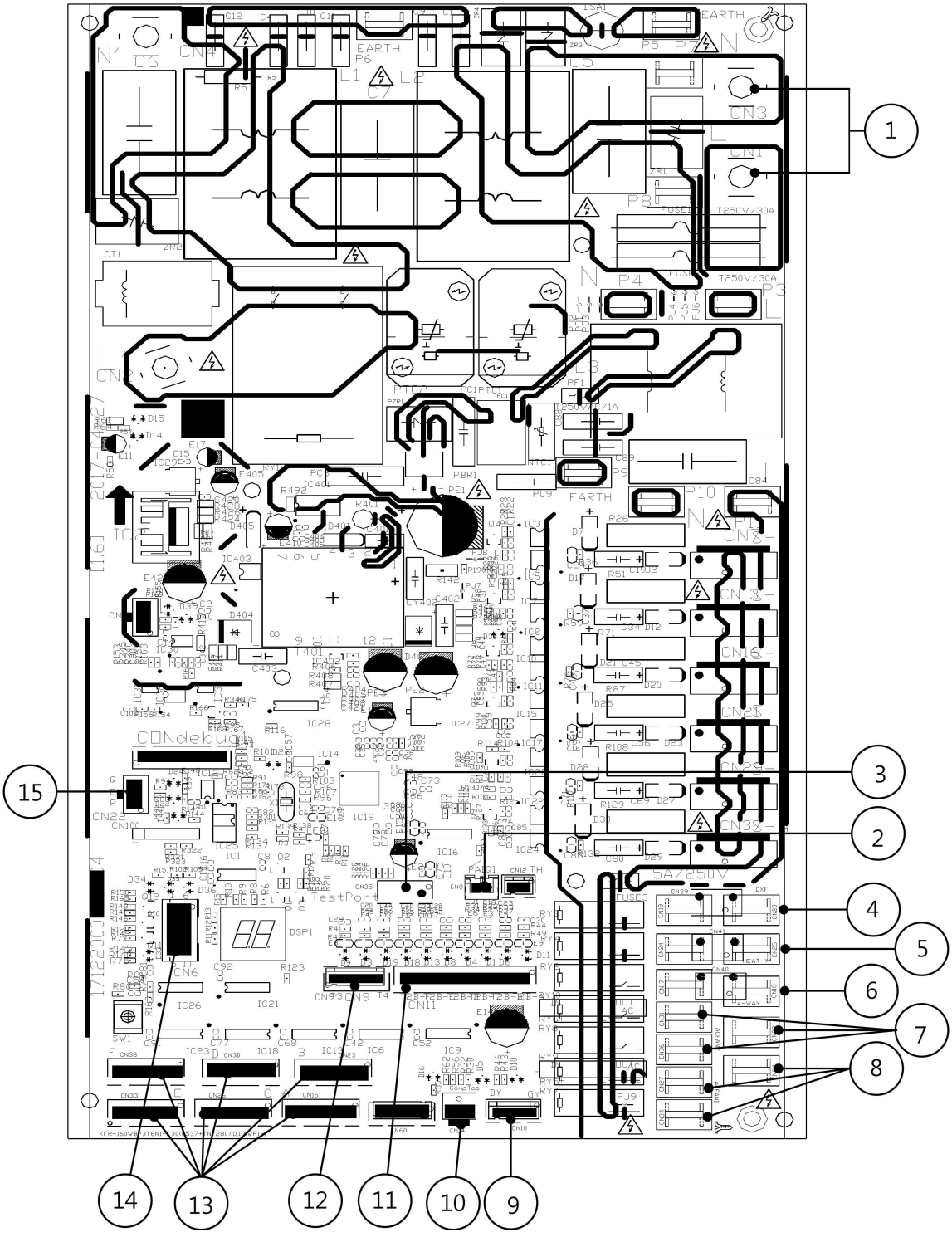


No.	Name	CN#	Meaning
1	Power Supply	CN11	N_in: connect to N-line (208-230V AC input)
		CN12	L_in: connect to L-line (208-230V AC input)
2	EEV-A	CN16	connect to electric expansion valve
	EEV-B	CN13	
	EEV-C	CN3	
	EEV-D	CN15	
	EEV-E	CN1	
	EEV-F	CN17	
	EEV-G	CN14	
3	T3 T4 TP	CN26	connect to pipe temp. sensor T3, ambient temp. sensor T4, exhaust temp. sensor TP
4	H-PRO,L-RPO	CN29	connect to high and low pressure swtich(pin1-pin2&pin3-pin4:5VDC pulse wave)
5	OLP TEMP. SENSOR	CN30	connect to compressor top temp. sensor (5VDC Pulse wave)
6	TESTPORT	CN24	used for testing
7	COMPRESSOR	U	connect to compressor
		V	0V AC (standby)
		W	10-200V AC (running)
8	DC-FAN	CN32	connect to DC fan
9	S-E	CN31	S: connect to indoor unit communication(pin1-pin2: 24VDC Pulse wave; pin2-pin3: 208-230V AC input)
	S-D	CN5	
	S-C(mono)	CN34	
	S-B	CN2	
	S-A	CN4	

No.	Name	CN#	Meaning
10	HEAT_D	CN8	connect to the heater, 208-230V AC when is ON
		CN20	
11	HEAT_Y	CN21	
		CN36	
12	4-WAY	CN38	connect to 4 way valve, 208-230V AC when is ON.
13	/	CN27	connect to key board CN1

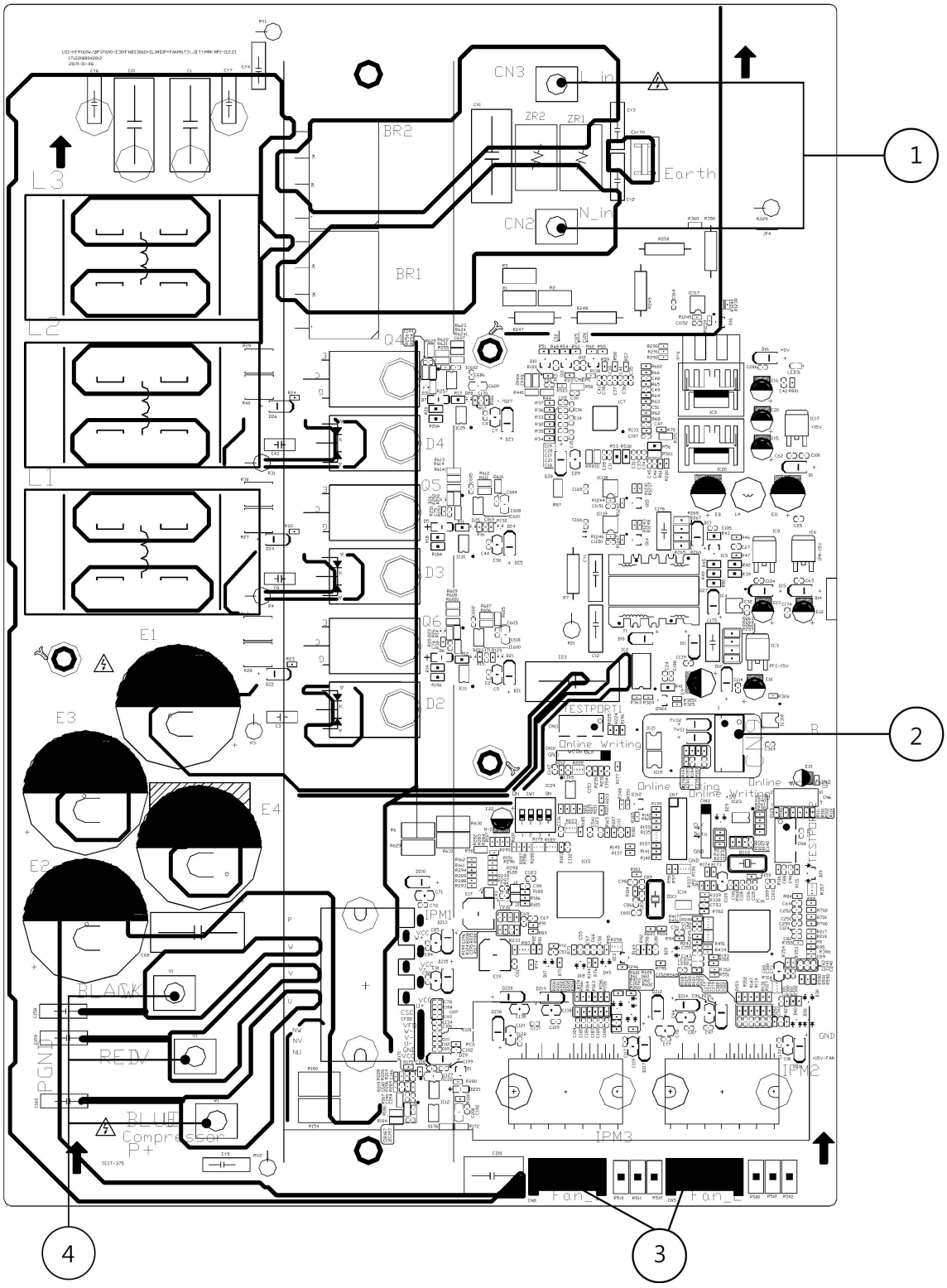
Note: This section is for reference only. Please take practicality as standard.

Outdoor unit printed circuit board diagram: 17122000037804



No.	Name	CN#	Meaning
1	Power Supply	CN1	L1_in: connect to L1-line (230V AC input)
		CN3	L2_in: connect to L2-line (230V AC input)
2	TP	CN8	Exhaust temp. sensor TP
3	TESTPORT	CN35	used for testing
4	HEAT1	CN19/CN20	connect to chassis heater, 208-230V AC when is ON
5	HEAT2	CN24/CN25	connect to compressor heater, 208-230V AC when is ON
6	4-WAY	CN17/CN18	connect to 4 way valve, 208-230V AC when is ON.
7	AC-FAN2	CN31/CN36/CN28	connect to AC fan2
8	AC-FAN1	CN27/CN34/CN32	connect to AC fan1
9	H-PRO/L-PRO	CN10	connect to low&high pressure switch
10	Compressor Top	CN14	connect to compressor top temperature sensor
11	T2B	CN11	connect to pipe temp. sensor T2B
12	T4 T3	CN9	connect to pipe temp. sensor T3, ambient temp. sensor T4
13	PMV	CN15/CN23/CN26/ CN30/CN33/CN38	connect to Electric Expansion Valve(A~F)
14	/	CN6	connect to IPM&PFC board CN9
15	PQE	CN22	Communication to indoor unit

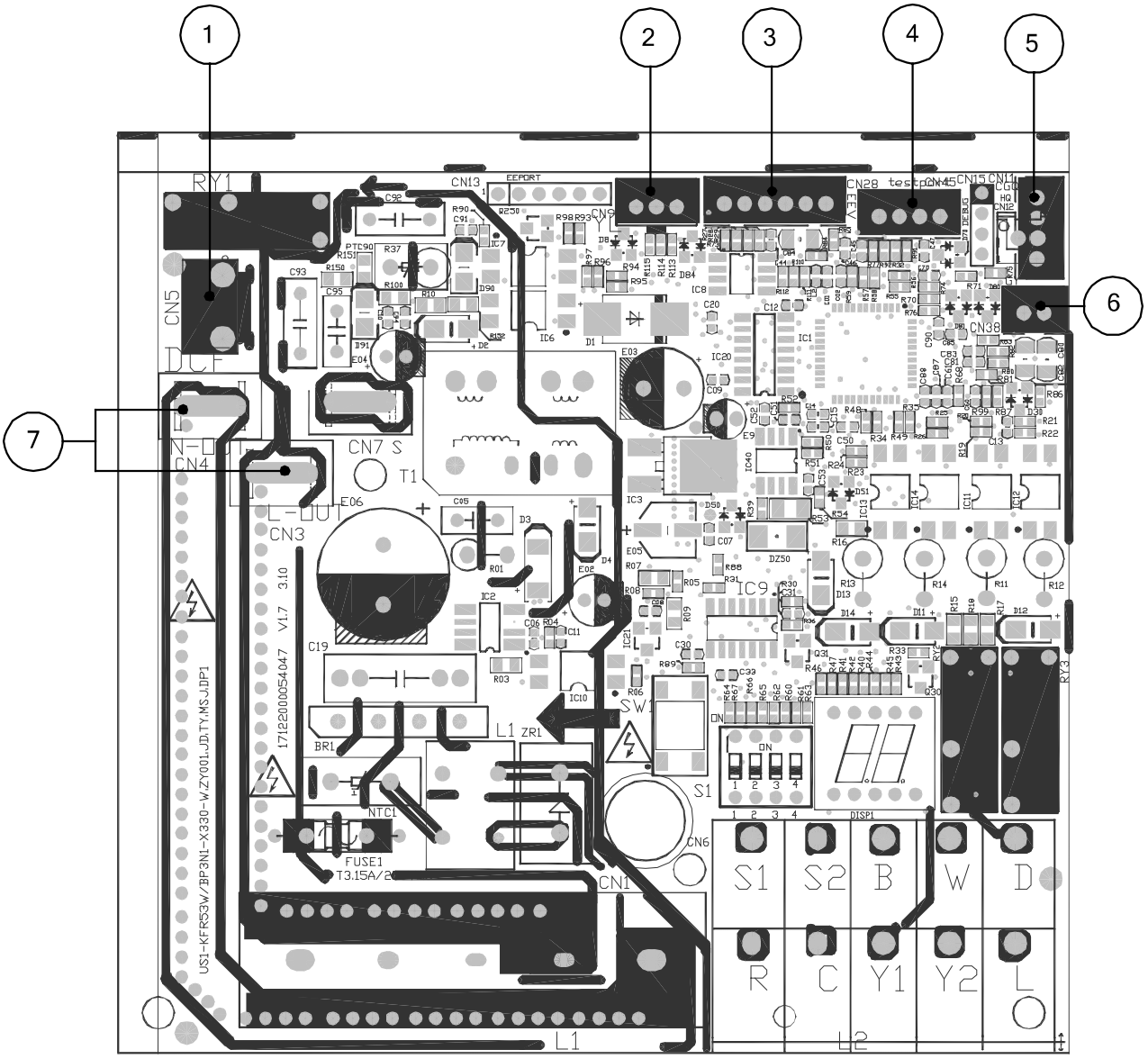
Outdoor unit IPM board diagram: 17122000042012



No.	Name	CN#	Meaning
1	Power Supply	CN3	connect to main board L-Out
		CN2	connect to main board N-Out
2	/	CN9	connect to main board CN6
3	FAN_DC	FAN_1/FAN_2	connect to outdoor DC fan 1& DC fan 2
4	CN_COMP	U1	connect to compressor
		V1	
		W1	

Note: This section is for reference only. Please take practicality as standard.

Outdoor unit printed circuit board diagram: 17122000054047



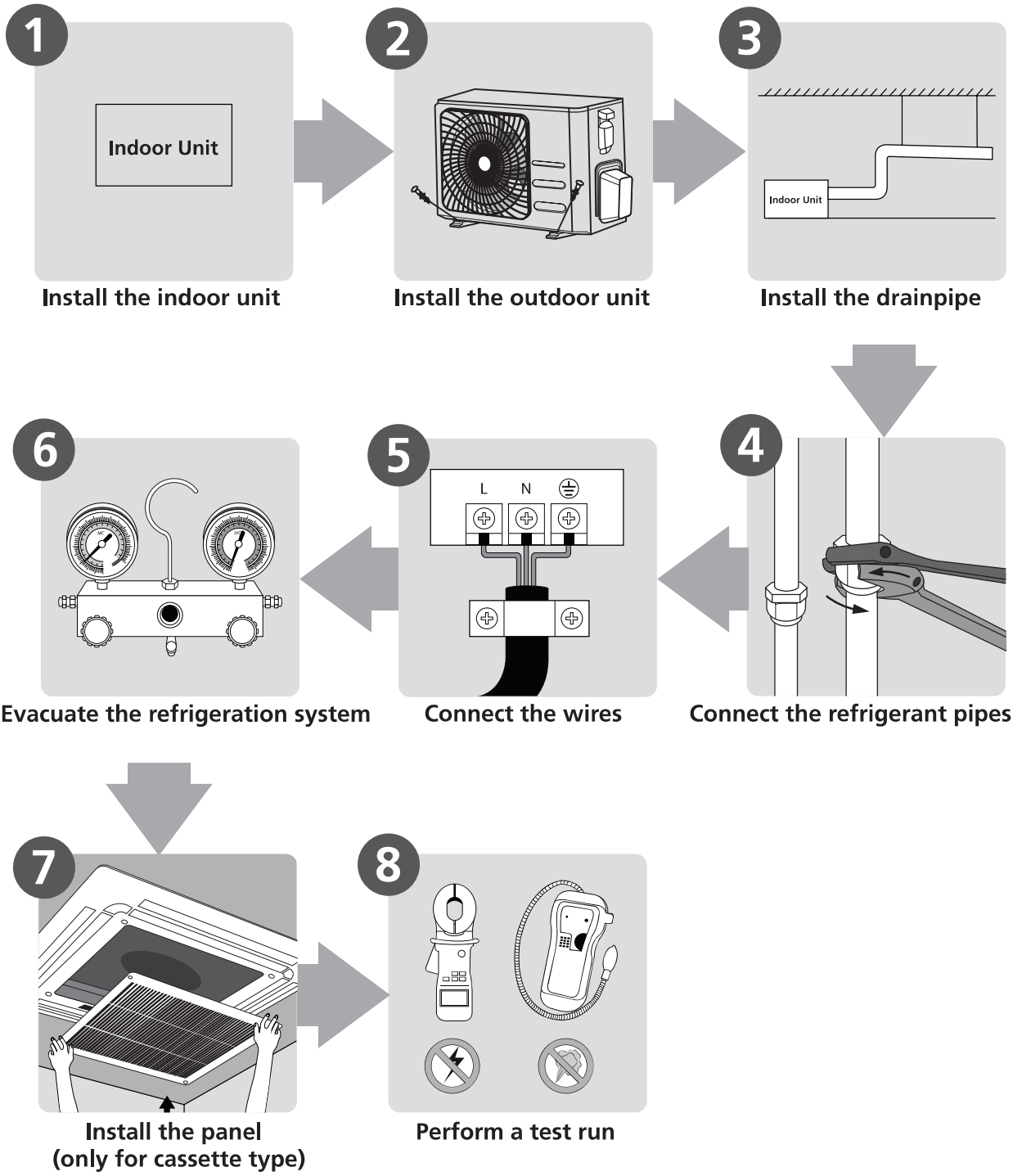
No.	Name	CN#	Meaning
1	/	CN5	connect to one-way solenoid valve
2	/	CN9	connect to pressure sensor (5VDC)
3	/	CN28	connect to electric expansion valve (12VDC)
4	TESTPORT	CN45	used for testing (5VDC)
5	/	CN11	connect to suction temp. sensor, cold plate temp. sensor (5VDC)
6	H-PRO	CN38	connect to high pressure switch (5VDC)
7	Power Supply	CN3	connect to main board L-Out
		CN4	connect to main board N-Out

Note: This section is for reference only. Please take practicality as standard.

Installation

Contents

1. Installation Overview



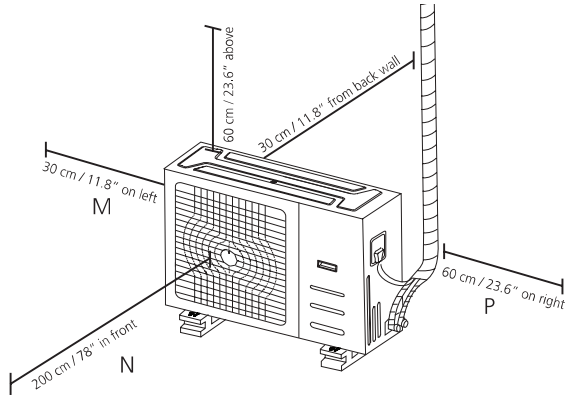
2. Location selection

2.1 Unit location selection can refer to installation manual.

2.2 DO NOT install the unit in the following locations:

- Where oil drilling or fracking is taking place.
- Coastal areas with high salt content in the air.
- Areas with caustic gases in the air, such as near hot springs.
- Areas with power fluctuations, such as factories.
- Enclosed spaces, such as cabinets.
- Areas with strong electromagnetic waves.
- Areas that store flammable materials or gas.
- Rooms with high humidity, such as bathrooms or laundry rooms.
- If possible, DO NOT install the unit where it is exposed to direct sunlight.

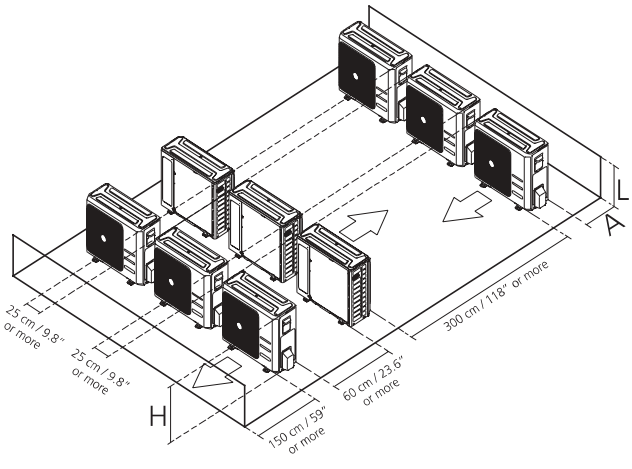
2.3 The minimum distance between the outdoor unit and walls described in the installation guide does not apply to airtight rooms. Be sure to keep the unit unobstructed in at least two of the three directions (M, N, P)



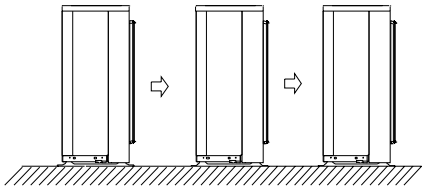
2.4 Rows of series installation

The relations between H, A and L are as follows.

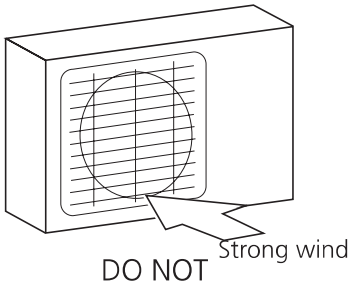
	L	A
L ≤ H	L ≤ 1/2H	25 cm / 9.8" or more
	1/2H < L ≤ H	30 cm / 11.8" or more
L > H	Can not be installed	



DO NOT install the rows of series like following figure.

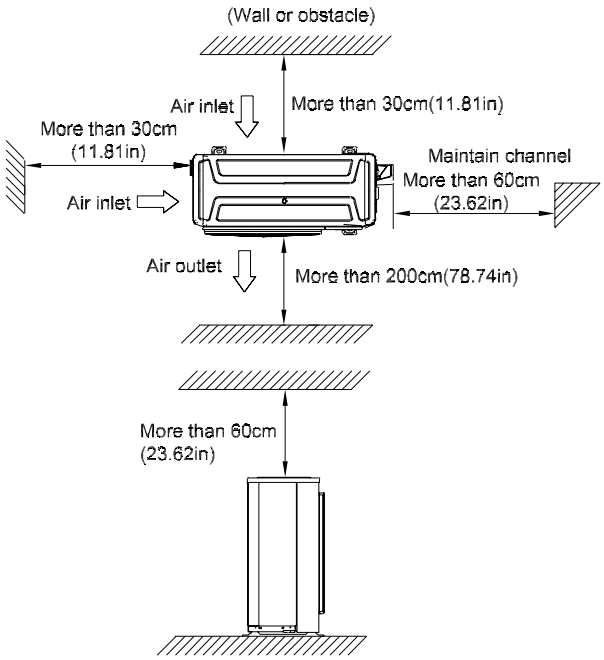


2.5. If the location is exposed to strong winds (for example: near a seaside), the unit must be placed against the wall to shelter it from the wind. If necessary, use an awning.

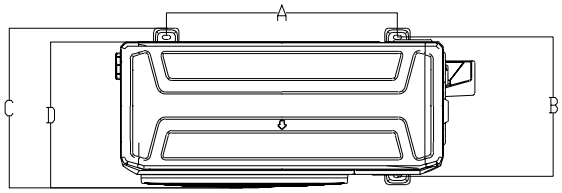


4. Outdoor unit installation

4.1 Service space for outdoor unit



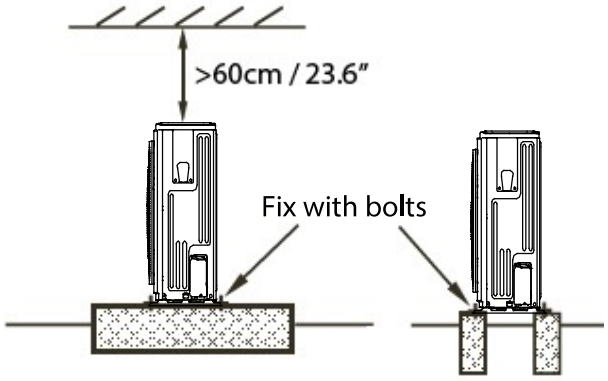
4.2 Bolt pitch



Panel Plate	Unit	D	A	B	C
B30	mm	333	514	340	365
	inch	13.11	20.23	13.39	14.37
CA30	mm	363	540	350	375
	inch	14.29	21.26	13.78	14.8
D30	mm	410	673	403	455
	inch	16.14	26.50	15.87	17.9
X2	mm	303	452	286	314
	inch	11.93	17.80	11.26	12.36
X3	mm	330	511	317	346
	inch	12.99	20.12	12.48	13.62
X4	mm	342	663	354	394
	inch	13.46	26.1	13.94	15.5
E30	mm	415	634	404	457
	inch	16.34	24.96	15.9	17.99
590	mm	350	590	378	400
	inch	13.78	23.23	14.88	15.75

4.3 Install Outdoor Unit

Fix the outdoor unit with anchor bolts(M10)



Caution

Since the gravity center of the unit is not at its physical center, so please be careful when lifting it with a sling.

Never hold the inlet of the outdoor unit to prevent it from deforming.

Do not touch the fan with hands or other objects.

Do not lean it more than 45, and do not lay it sidelong.

Make concrete foundation according to the specifications of the outdoor units.

Fasten the feet of this unit with bolts firmly to prevent it from collapsing in case of earthquake or strong wind.

5. Drainage Pipe Installation

Install the drainage pipe as shown below and take measures against condensation. Improperly installation could lead to leakage and eventually wet furniture and belongings.

5.1 Installation principle

- Ensure at least 1/100 slope of the drainage pipe
- Adopt suitable pipe diameter
- Adopt nearby condensate water discharge

5.2 Key points of drainage water pipe installation

1. Considering the pipeline route and elevation.
   - Before installing condensate water pipeline, determine its route and elevation to avoid intersection with other pipelines and ensure slope is straight.
2. Drainage pipe selection
   - The drainage pipe diameter shall not small than the drain hose of indoor unit
   - According to the water flowrate and drainage pipe slope to choose the suitable pipe, the water flowrate is decided by the capacity of indoor unit.

Relationship between water flowrate and capacity of indoor unit

Capacity (kBtu/h)	Water flowrate (l/h)
12	2.4
18	4
24	6
30	7
36	8
42	10
48	12
60	14

According to the above table to calculate the total water flowrate for the confluence pipe selection.

For horizontal drainage pipe (The following table is for reference)

PVC pipe	Reference value of inner diameter of pipe (mm)	Allowable maximum water flowrate (l/h)		Remark
		Slope 1/50	Slope 1/100	
PVC25	20	39	27	For branch pipe
PVC32	25	70	50	
PVC40	31	125	88	Could be used for confluence pipe
PVC50	40	247	175	
PVC63	51	473	334	

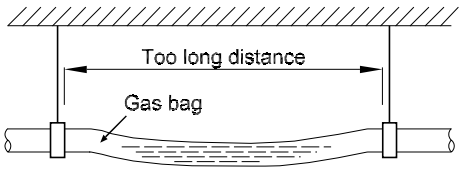
Attention: Adopt PVC40 or bigger pipe to be the main pipe.

For Vertical drainage pipe (The following table is for reference)

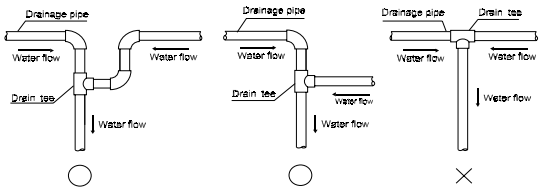
PVC pipe	Reference value of inner diameter of pipe (mm)	Allowable maximum water flowrate (l/h)	Remark
PVC25	20	220	For branch pipe
PVC32	25	410	
PVC40	31	730	Could be used for confluence pipe
PVC50	40	1440	
PVC63	51	2760	
PVC75	67	5710	
PVC90	77	8280	

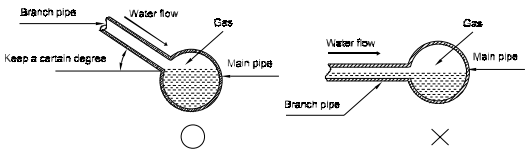
Attention: Adopt PVC40 or bigger pipe to be the main pipe.

3. Individual design of drainage pipe system
   - The drainage pipe of air conditioner shall be installed separately with other sewage pipe, rainwater pipe and drainage pipe in building.
   - The drainage pipe of the indoor unit with water pump should be apart from the one without water pump.
4. Supporter gap of drainage pipe
   - In general, the supporter gap of the drainage pipe horizontal pipe and vertical pipe is respectively 1m~1.5m and 1.5m~2.0m.
   - Each vertical pipe shall be equipped with not less than two hangers.
   - Overlarge hanger gap for horizontal pipe shall create bending, thus leading to air block.



5. The horizontal pipe layout should avoid converse flow or bad flow

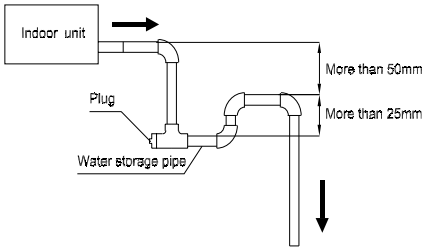




- The correct installation will not cause converse water flow and the slope of the branch pipes can be adjusted freely
- The false installation will cause converse water flow and the slope of the branch pipe can not be adjusted.

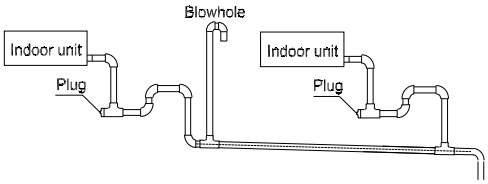
6. Water storage pipe setting

- If the indoor unit has high extra static pressure and without water pump to elevate the condensate water, such as high extra static pressure duct unit , the water storage pipe should be set to avoid converse flow or blow water phenomena.



7. Blowhole setting

- For the concentrated drainage pipe system, there should design a blowhole at the highest point of main pipe to ensure the condensate water discharge smoothly.
- The air outlet shall face down to prevent dirt entering pipe.
- Each indoor unit of the system should be installed it.
- The installation should be considering the convenience for future cleaning.



9. The end of drainage pipe shall not contact with ground directly.

5.3 Insulation work of drainage pipe

Refer the introduction to the insulation engineering parts.

6. Refrigerant Pipe Installation

6.1 Maximum length and drop height

Ensure that the length of the refrigerant pipe, the number of bends, and the drop height between the indoor and outdoor units meets the requirements shown in the following table.

Capacity(kBtu/h)	Max. Length (m/ft)	Max. Elevation (m/ft)
<15	25/82	10/32.8
15-23	30/98.4	20/65.6
24~35	50/164	25/82
36~60	65/213.3	30/98.4

Caution:

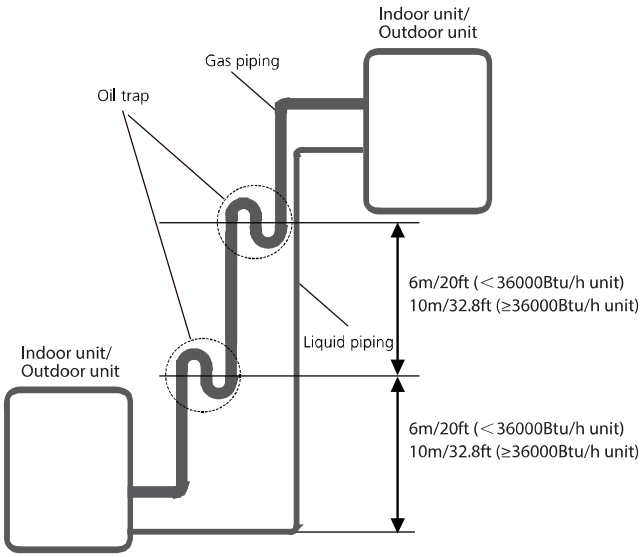
1. The capacity test is based on the standard length and the maximum permissive length is based on the system reliability.

2. Oil traps

-If oil flows back into the outdoor unit's compressor, this might cause liquid compression or deterioration of oil return. Oil traps in the rising gas piping can prevent this.

-An oil trap should be installed every 6m(20ft) of vertical suction line riser (<36000Btu/h unit).

-An oil trap should be installed every 10m(32.8ft) of vertical suction line riser (≥36000Btu/h unit).



6.2 The procedure of connecting pipes

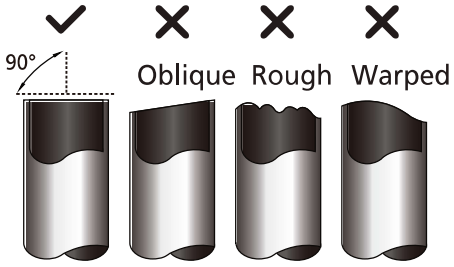
1.Choose the pipe size according to the specification table.

2.Confirm the cross way of the pipes.

3.Measure the necessary pipe length.

4.Cut the selected pipe with pipe cutter

- Make the section flat and smooth.

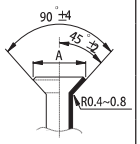


5. Insulate the copper pipe

- Before test operation, the joint parts should not be heat insulated.

6. Flare the pipe

- Insert a flare nut into the pipe before flaring the pipe
- According to the following table to flare the pipe.

Pipe diameter (inch(mm))	Flare dimension A (mm/inch)		Flare shape
	Min	Max	
1/4" (6.35)	8.4/0.33	8.7/0.34	
3/8" (9.52)	13.2/0.52	13.5/0.53	
1/2" (12.7)	16.2/0.64	16.5/0.65	
5/8" (15.9)	19.2/0.76	19.7/0.78	
3/4" (19)	23.2/0.91	23.7/0.93	
7/8" (22)	26.4/1.04	26.9/1.06	

- After flared the pipe, the opening part must be seal by end cover or adhesive tape to avoid duct or exogenous impurity come into the pipe.

7. Drill holes if the pipes need to pass the wall.

8. According to the field condition to bend the pipes so that it can pass the wall smoothly.

9. Bind and wrap the wire together with the insulated pipe if necessary.

10. Set the wall conduit

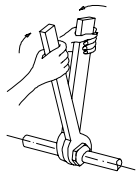
11. Set the supporter for the pipe.

12. Locate the pipe and fix it by supporter

- For horizontal refrigerant pipe, the distance between supporters should not be exceed 1m.
- For vertical refrigerant pipe, the distance between supporters should not be exceed 1.5m.

13. Connect the pipe to indoor unit and outdoor unit by using two spanners.

- Be sure to use two spanners and proper torque to fasten the nut, too large torque will damage the bell mouthing, and too small torque may cause leakage. Refer the following table for different pipe connection.

Pipe Diameter	Torque N.m(lb.ft)	Sketch map
1/4" (6.35)	15~16 (11~11.8)	
3/8" (9.52)	25~26 (18.4~19.18)	
1/2" (12.7)	35~36 (25.8~26.55)	
5/8" (15.9)	45~47 (33.19~34.67)	
3/4" (19)	65~67 (47.94~49.42)	
7/8" (22)	75-85 (55.3-62.7)	

7. Vacuum Drying and Leakage Checking

7.1 Purpose of vacuum drying

- Eliminating moisture in system to prevent the phenomena of ice-blockage and copper oxidation.

  Ice-blockage shall cause abnormal operation of system, while copper oxide shall damage compressor.
- Eliminating the non-condensable gas (air) in system to prevent the components oxidizing, pressure fluctuation and bad heat exchange during the operation of system.

7.2 Selection of vacuum pump

- The ultimate vacuum degree of vacuum pump shall be -756mmHg or above.
- Precision of vacuum pump shall reach 0.02mmHg or above.

7.3 Operation procedure for vacuum drying

Due to different construction environment, two kinds of vacuum drying ways could be chosen, namely ordinary vacuum drying and special vacuum drying.

7.3.1 Ordinary vacuum drying

1. When conduct first vacuum drying, connect pressure gauge to the infusing mouth of gas pipe and liquid pipe, and keep vacuum pump running for 1hour (vacuum degree of vacuum pump shall be reached -755mmHg).

2. If the vacuum degree of vacuum pump could not reach -755mmHg after 1 hour of drying, it indicates that there is moisture or leakage in pipeline system and need to go on with drying for half an hour.

3. If the vacuum degree of vacuum pump still could not reach -755mmHg after 1.5 hours of drying, check whether there is leakage source.

4 . Leakage test: After the vacuum degree reaches -755mmHg, stop vacuum drying and keep the pressure for 1 hour. If the indicator of vacuum gauge does not go up, it is qualified. If going up, it indicates that there is moisture or leak source.

7.3.2 Special vacuum drying

The special vacuum drying method shall be adopted when:

1. Finding moisture during flushing refrigerant pipe.

2. Conducting construction on rainy day, because rain water might penetrated into pipeline.

3. Construction period is long, and rain water might penetrated into pipeline.

4. Rain water might penetrate into pipeline during construction.

Procedures of special vacuum drying are as follows:

1. Vacuum drying for 1 hour.

2. Vacuum damage, filling nitrogen to reach 0.5Kgf/cm^2 .

Because nitrogen is dry gas, vacuum damage could achieve the effect of vacuum drying, but this method could not achieve drying thoroughly when there is too much moisture. Therefore, special attention shall be drawn to prevent the entering of water and the formation of condensate water.

3. Vacuum drying again for half an hour.

If the pressure reached -755mmHg, start to pressure leakage test. If it cannot reached the value, repeat vacuum damage and vacuum drying again for 1 hour.

4. Leakage test: After the vacuum degree reaches -755mmHg, stop vacuum drying and keep the pressure for 1 hour. If the indicator of vacuum gauge does not go up, it is qualified. If going up, it indicates that there is moisture or leak source.

8. Additional Refrigerant Charge

- After the vacuum drying process is carried out, the additional refrigerant charge process need to be performed.
- The outdoor unit is factory charged with refrigerant. The additional refrigerant charge volume is decided by the diameter and length of the liquid pipe between indoor and outdoor unit. Refer the following formula to calculate the charge volume.

	Diameter of liquid pipe (mm(inch))	Formula
R410A(Throttling part in the indoor unit)	6.35(1/4)	V=30(0.32)g/m(oz/ft)×(L-standard pipe length)
	9.52(3/8)	V=65(0.69)g/m(oz/ft)×(L-standard pipe length)
	12.7(1/2)	V=115(1.23)g/m(oz/ft)×(L-standard pipe length)
R410A(Throttling part in the outdoor unit)	6.35(1/4)	V=15(0.16)g/m(oz/ft)×(L-standard pipe length)
	9.52(3/8)	V=30(0.32)g/m(oz/ft)×(L-standard pipe length)
	12.7(1/2)	V=65(0.69)g/m(oz/ft)×(L-standard pipe length)
R32	6.35(1/4)	V=12(0.13)g/m(oz/ft)×(L-standard pipe length)
	9.52(3/8)	V=24(0.26)g/m(oz/ft)×(L-standard pipe length)
	12.7(1/2)	V=40(0.42)g/m(oz/ft)×(L-standard pipe length)

V: Additional refrigerant charge volume.

L : The length of the liquid pipe.

Note:

- Refrigerant may only be charged after performed the vacuum drying process.
- Always use gloves and glasses to protect your hands and eyes during the charge work.
- Use electronic scale or fluid infusion apparatus to weight refrigerant to be recharged. Be sure to avoid extra refrigerant charged, it may cause liquid hammer of the compressor or protections.
- Use supplementing flexible pipe to connect refrigerant cylinder, pressure gauge and outdoor unit. And The refrigerant should be charged in liquid state. Before recharging, The air in the flexible pipe and manifold gauge should be exhausted.
- After finished refrigerant recharge process, check whether there is refrigerant leakage at the connection joint part.(Using gas leakage detector or soap water to detect).

9 . Engineering of Insulation

9.1 Insulation of refrigerant pipe

1. Operational procedure of refrigerant pipe insulation

Cut the suitable pipe → insulation (except joint section) → flare the pipe → piping layout and connection→ vacuum drying → insulate the joint parts

2. Purpose of refrigerant pipe insulation

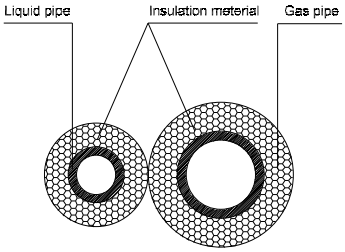
- During operation, temperature of gas pipe and liquid pipe shall be over-heating or over-cooling extremely. Therefore, it is necessary to carry out insulation; otherwise it shall debase the performance of unit and burn compressor.
- Gas pipe temperature is very low during cooling. If insulation is not enough, it shall form dew and cause leakage.
- Temperature of gas pipe is very high (generally 50-100℃) during heating. Insulation work must be carried out to prevent hurt by carelessness touching.

3. Insulation material selection for refrigerant pipe

- The burning performance should over 120℃
- According to the local law to choose insulation materials
- The thickness of insulation layer shall be above 10mm.If in hot or wet environment place, the layer of insulation should be thicker accordingly.

4. Installation highlights of insulation construction

- Gas pipe and liquid pipe shall be insulated separately, if the gas pipe and liquid pipe were insulated together; it will decrease the performance of air conditioner.



- The insulation material at the joint pipe shall be 5~10cm longer than the gap of the insulation material.
- The insulation material at the joint pipe shall be inserted into the gap of the insulation material.
- The insulation material at the joint pipe shall be banded to the gap pipe and liquid pipe tightly.
- The linking part should be use glue to paste together
- Be sure not bind the insulation material over-tight, it may extrude out the air in the material to cause bad insulation and cause easy aging of the material.

9.2 Insulation of drainage pipe

1. Operational procedure of refrigerant pipe insulation

Select the suitable pipe → insulation (except joint section) → piping layout and connection→ drainage test→ insulate the joint parts

2. Purpose of drainage pipe insulation

The temperature of condensate drainage water is very low. If insulation is not enough, it shall form dew and cause leakage to damage the house decoration.

3. Insulation material selection for drainage pipe

- The insulation material should be flame retardant material, the flame retardancy of the material should be selected according to the local law.
- Thickness of insulation layer is usually above 10mm.
- Use specific glue to paste the seam of insulation material, and then bind with adhesive tape. The width of tape shall not be less than 5cm. Make sure it is firm and avoid dew.

4. Installation and highlights of insulation construction

- The single pipe should be insulated before connecting to another pipe, the joint part should be insulated after the drainage test.
- There should be no insulation gap between the insulation material.

10. Engineering of Electrical Wring

1. Highlights of electrical wiring installation

- All field wiring construction should be finished by qualified electrician.
- Air conditioning equipment should be grounded according to the local electrical regulations.
- Current leakage protection switch should be installed.
- Do not connect the power wire to the terminal of signal wire.
- When power wire is parallel with signal wire, put wires to their own wire tube and remain at least 300mm gap.
- According to table in indoor part named "the specification of the power" to choose the wiring, make sure the selected wiring not small than the date showing in the table.
- Select different colors for different wire according to relevant regulations.
- Do not use metal wire tube at the place with acid or alkali corrosion, adopt plastic wire tube to replace it.
- There must be not wire connect joint in the wire tube If joint is a must, set a connection box at the place.
- The wiring with different voltage should not be in one wire tube.
- Ensure that the color of the wires of outdoor and the terminal No. are same as those of indoor unit respectively.

Table: Minimum Cross-Sectional Area able of Power and Signal Cables

For North America:

Rated Current of Appliance (A)	AWG
≤ 6	18
6 - 10	16
10 - 16	14
16 - 25	12
25 - 32	10

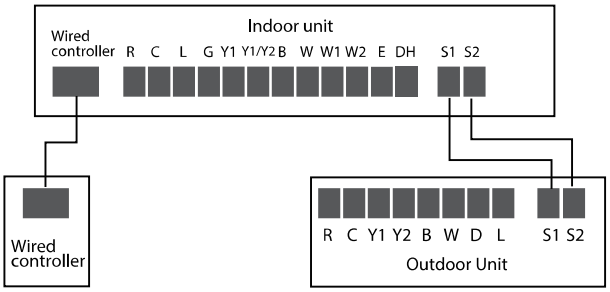
For the other regions:

Rated Current of Appliance (A)	Nominal Cross-Sectional Area(mm^2)
≤ 6	0.75
6 - 10	1
10 - 16	1.5
16 - 25	2.5
25 - 32	4
32 - 45	6

2. Specific wiring method

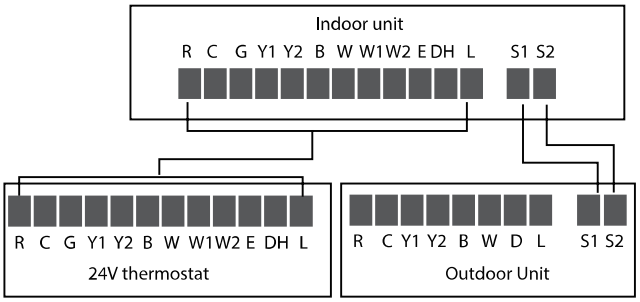
Connection method A:

Refer to the wiring method of internal and external machine communication and wired controller as follows:



Connection method B:

To use a 24V thermostat, you need to refer to the following wiring:

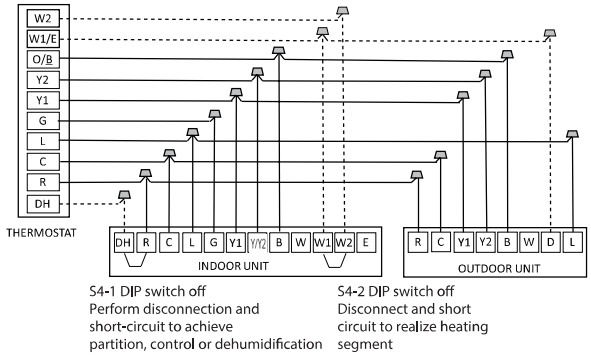


NOTE: The wiring method of the thermostat and the internal machine refers to the wiring of the non-communication scheme.

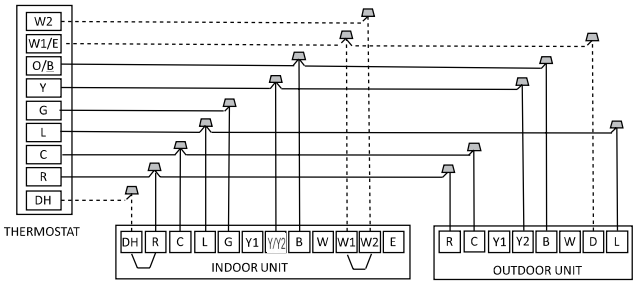
Connection method C:

Non-communication scheme wiring reference

- Wiring for 4H and 2C thermostat



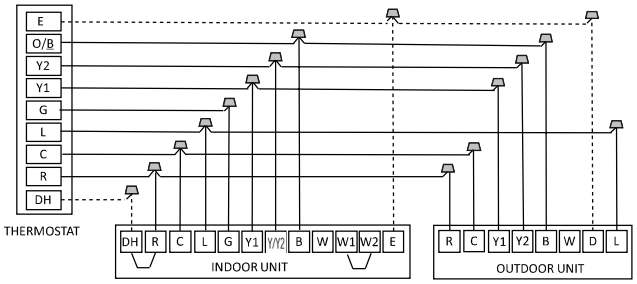
- Wiring for 3H and 1C thermostat



S4-1 DIP switch off
Perform disconnection and short-circuit to achieve partition, control or dehumidification

S4-2 DIP switch off
Disconnect and short circuit to realize heating segment

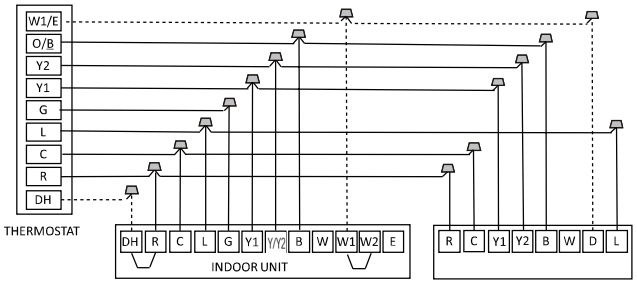
- Wiring for 3H and 2C thermostat



S4-1 DIP switch off
Perform disconnection and short-circuit to achieve partition, control or dehumidification

Emergency heating control two groups of electric heating at the same time

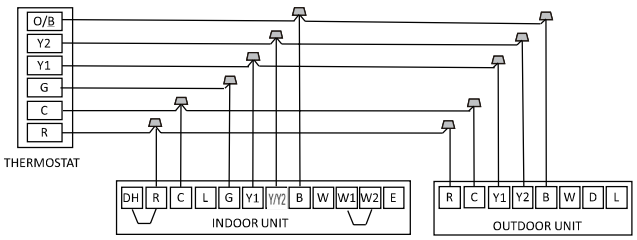
- Wiring for 3H and 2C thermostat



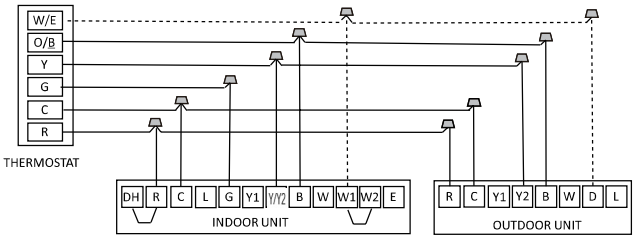
S4-1 DIP switch off
Perform disconnection and short-circuit to achieve partition, control or dehumidification

S4-2 DIP switch off
Disconnect and short circuit to realize heating segment

- Wiring for 2H and 2C thermostat

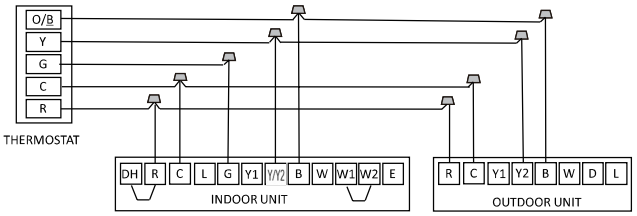


- Wiring for 2H and 1C thermostat

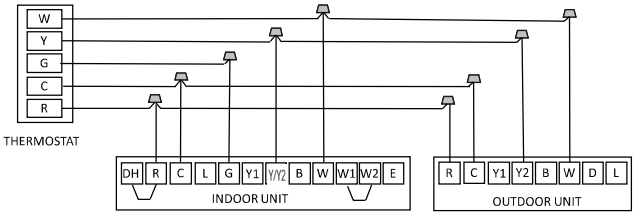


S4-2 DIP switch off
Disconnect and short circuit to realize heating segment

- Wiring for 1H and 1C thermostat



- Wiring for 1H and 1C thermostat



Note:

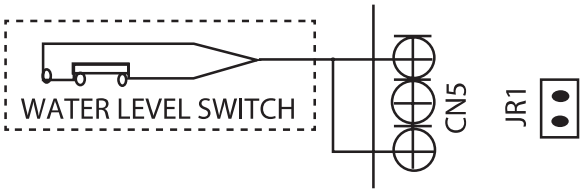
When the indoor and outdoor unit is connected without communication (connection mode C), indoor sensor fault and fan fault, the indoor unit plate outputs L signal to the temperature controller, and the temperature controller shall send out stop command to the outdoor unit .

If the temperature controller provided by the customer is not equipped with the output stop instruction of the outdoor unit , the outdoor units are not allowed to run in the non-communication mode. Please use connection mode B.

3. Optional function wiring

3.1 Liquid level switch interface

The unit has a liquid level detection interface. If you choose this function, you need to purchase a liquid level switch by yourself, connect to the CN5 interface, and remove JR1.



Outdoor Unit Disassembly

Contents

1. Outdoor Unit Disassembly

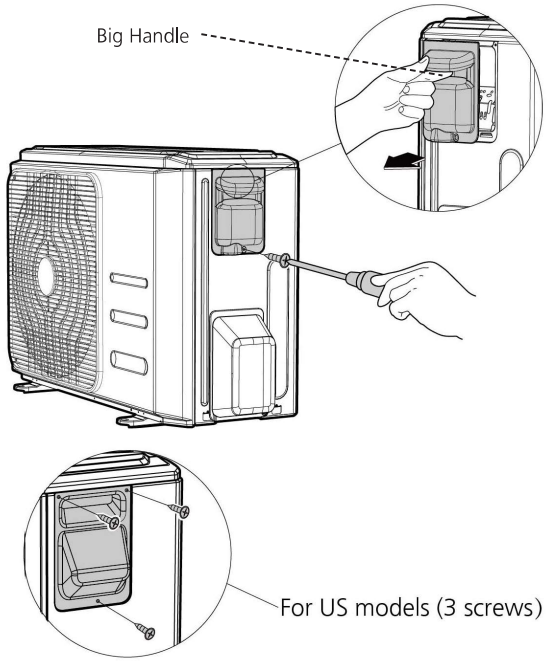
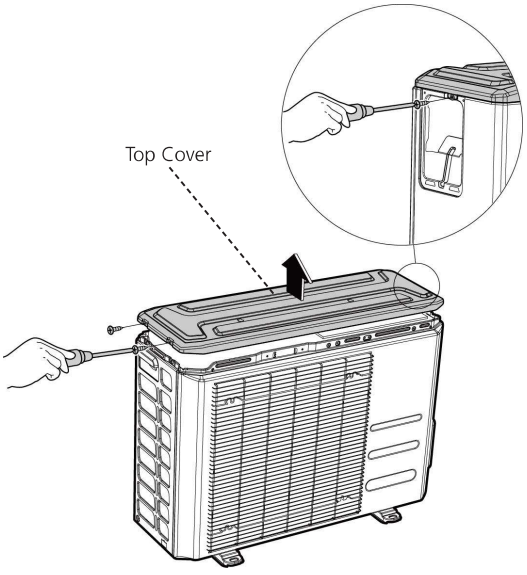
1.1 Outdoor Unit Table

Outdoor Unit Model	Panel Plate	PCB Board
18k	X330	PCB Board 16
24K	X430	PCB Board 6
30k	D30	PCB Board 13
36k	D30	PCB Board 13
48k	E30	PCB Board 11
60k	E30	PCB Board 11

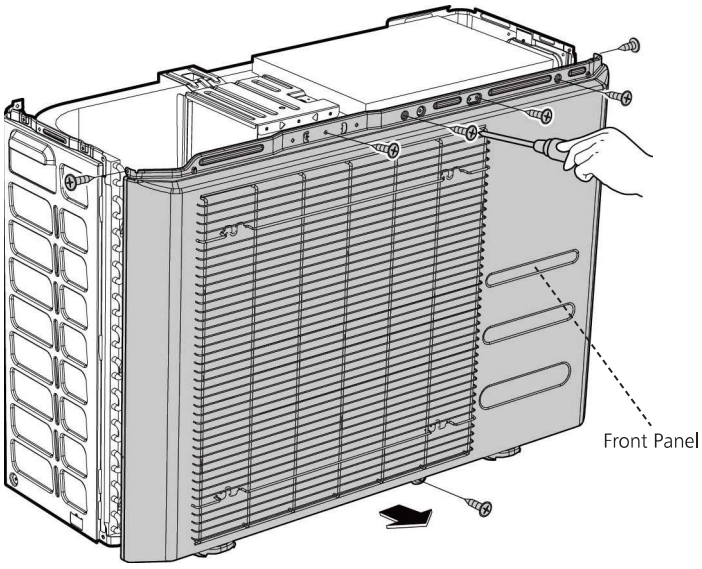
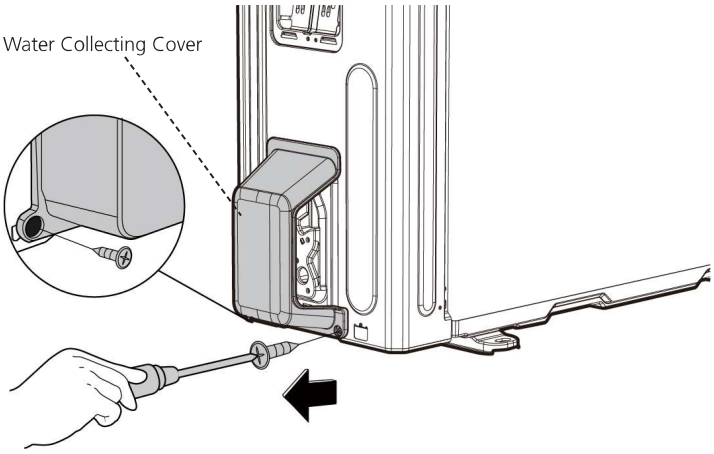
2. Outdoor Unit Disassembly

2.1 Panel Plate

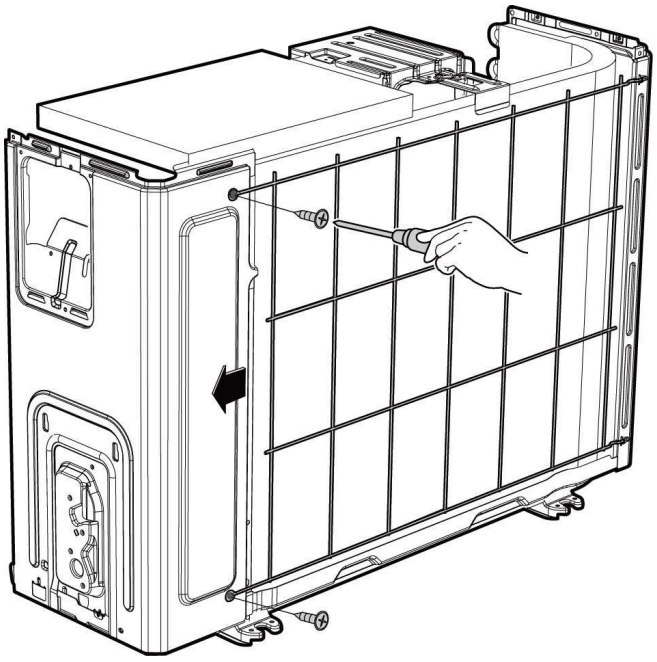
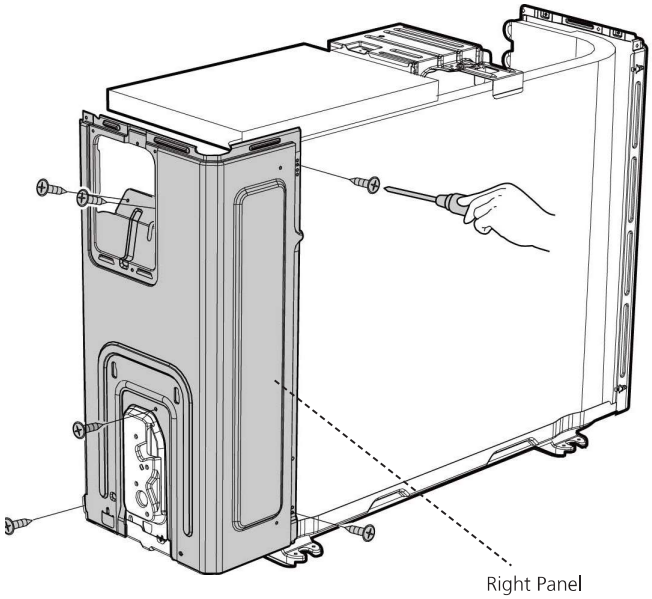
1. BA30

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screws of the big handle and then remove the big handle (1 screws) (see CJ_BA30_001). 3) Remove the screws of the top cover and then remove the top cover (3 screws). One of the screws is located underneath the big handle (see CJ_ BA30_002).	 **CJ_BA30_001**  **CJ_BA30_002**

Note: This section is for reference only. Actual unit appearance may vary.

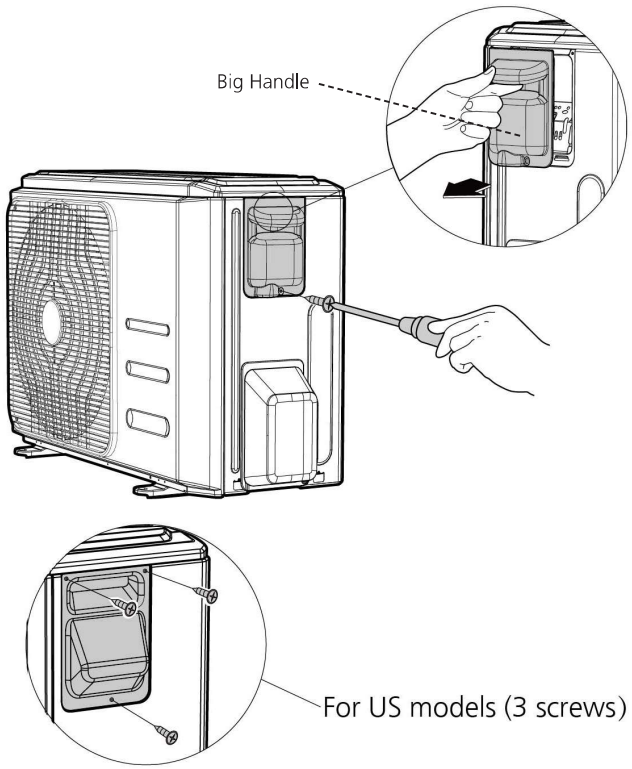
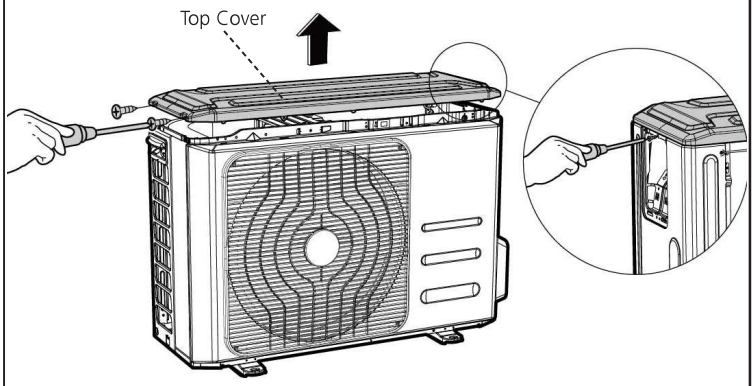
Procedure	Illustration
4) Remove the screws of the front panel and then remove the front panel (7 screws) (see CJ_BA30_003).	 CJ_BA30_003
5) Remove the screws of water collecting cover (2 screws) (see CJ_BA30_004).	 CJ_BA30_004

Note: This section is for reference only. Actual unit appearance may vary.

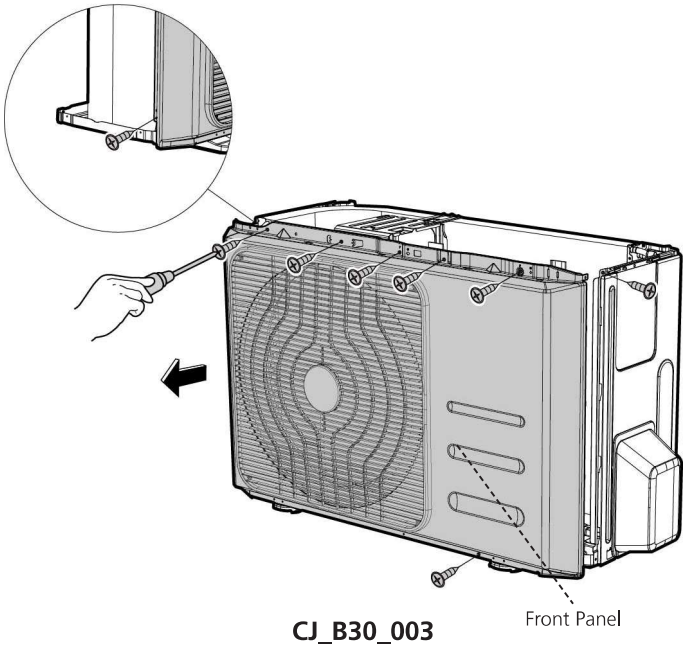
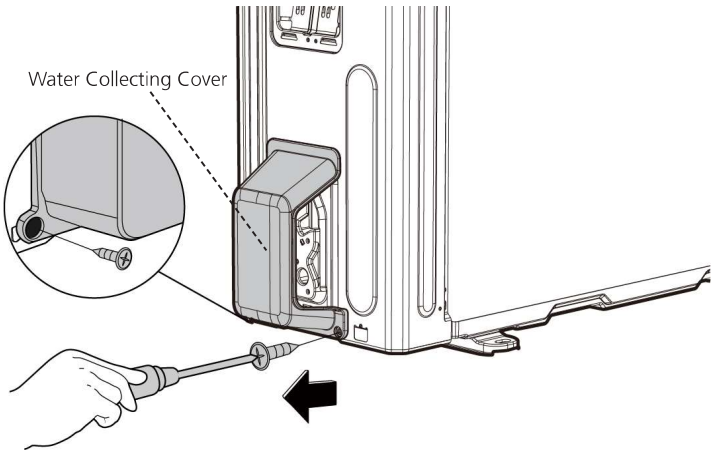
Procedure	Illustration
6) Remove the screws of the rear net and then remove the rear net (2 screws) (see CJ_BA30_005). (for some models)	 CJ_BA30_005
7) Remove the screws of the right panel and then remove the right panel (6 screws) (see CJ_BA30_006).	 CJ_BA30_006

Note: This section is for reference only. Actual unit appearance may vary.

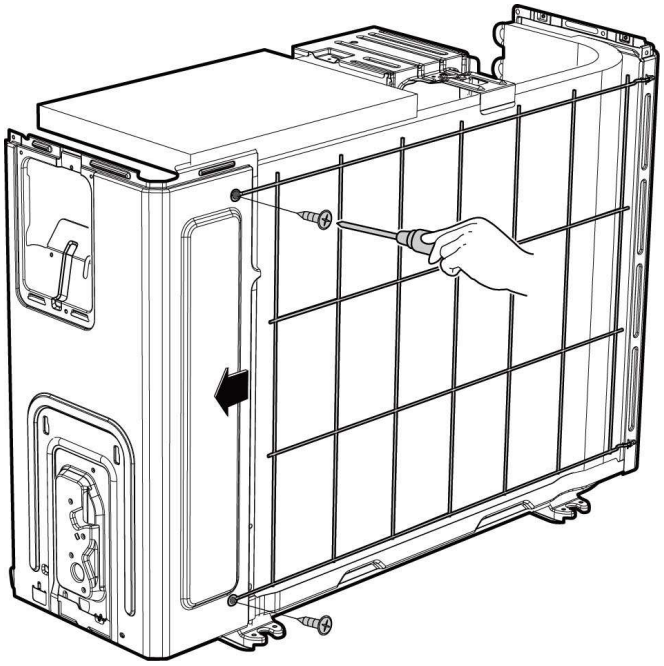
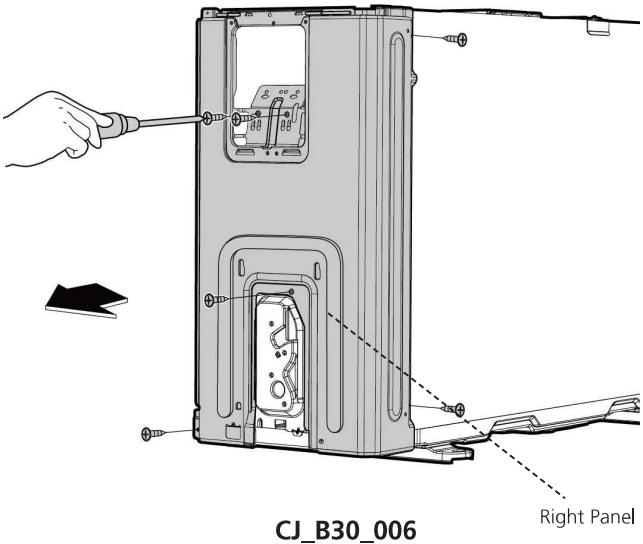
2. B30

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screws of the big handle and then remove the big handle (1 screws) (see CJ_B30_001).	 CJ_B30_001
3) Remove the screws of the top cover and then remove the top cover (3 screws). One of the screws is located underneath the big handle (see CJ_B30_002).	 CJ_B30_002

Note: This section is for reference only. Actual unit appearance may vary.

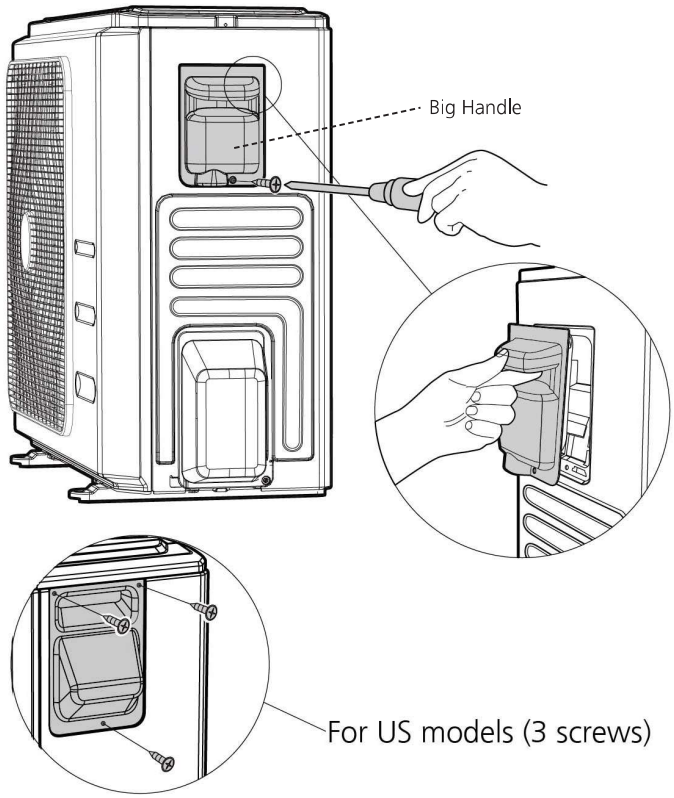
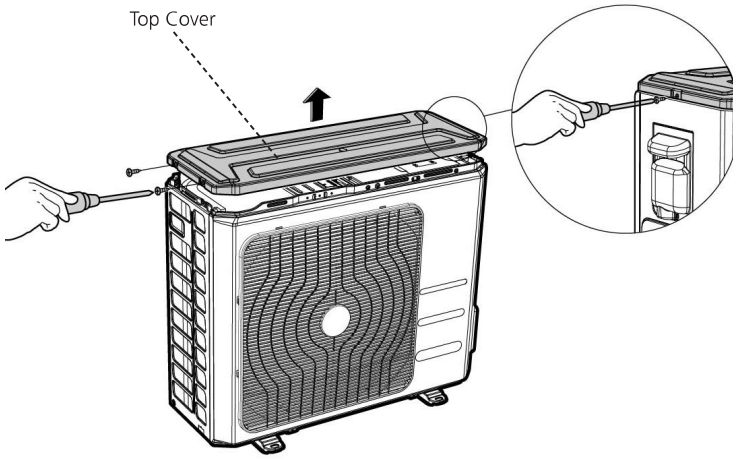
Procedure	Illustration
4) Remove the screws of the front panel and then remove the front panel (8 screws) (see CJ_B30_003).	 CJ_B30_003
5) Remove the screws of water collecting cover and then remove the water collecting cover (2 screws) (see CJ_B30_004).	 CJ_B30_004

Note: This section is for reference only. Actual unit appearance may vary.

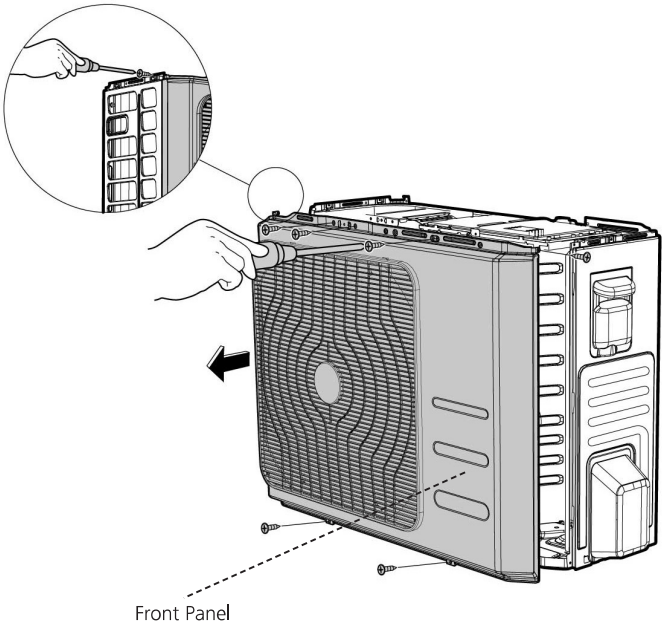
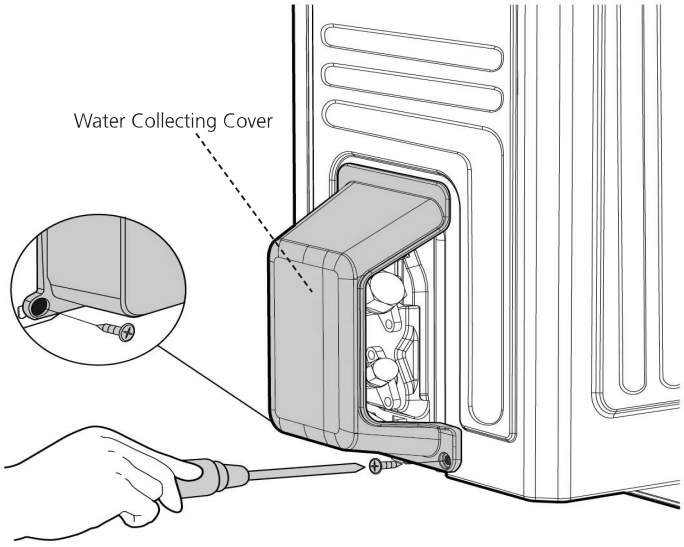
Procedure	Illustration
6) Remove the screws of the rear net and then remove the rear net (2 screws) (see CJ_B30_005). (for some models)	 CJ_B30_005
7) Remove the screws of the right panel and then remove the right panel (5 screws) (see CJ_B30_006).	 CJ_B30_006

Note: This section is for reference only. Actual unit appearance may vary.

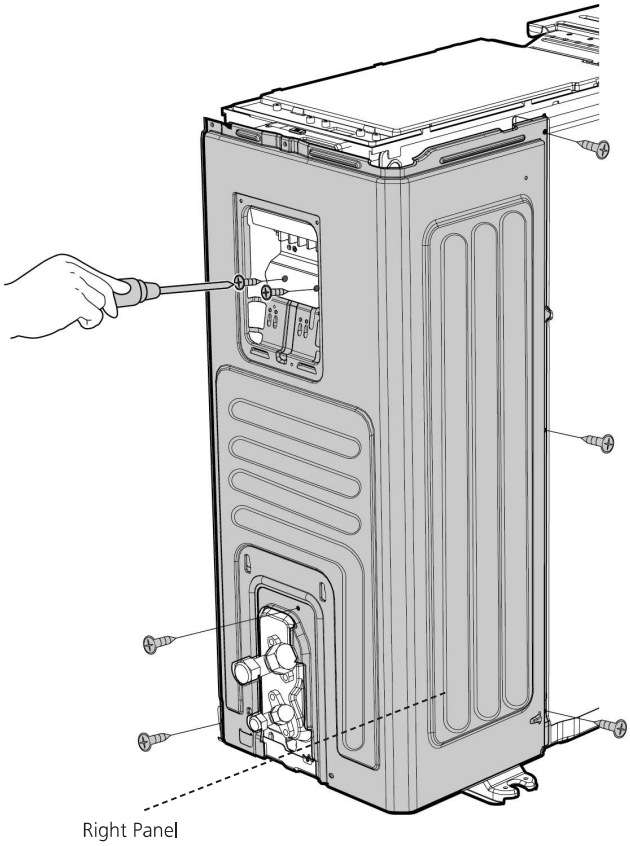
3. CA30

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screws of the big handle and then remove the big handle (1 screws) (see CJ_CA30_001).	 **CJ_CA30_001**
3) Remove the screws of the top cover and then remove the top cover (3 screws). One of the screws is located underneath the big handle (see CJ_CA30_002).	 **CJ_CA30_002**

Note: This section is for reference only. Actual unit appearance may vary.

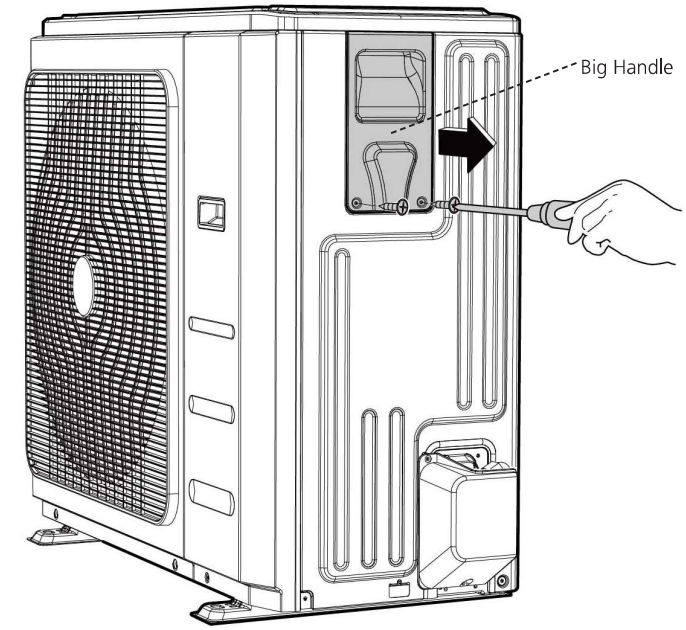
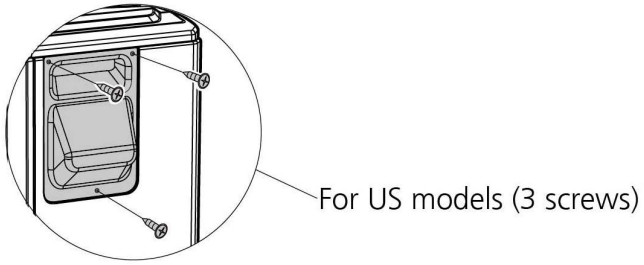
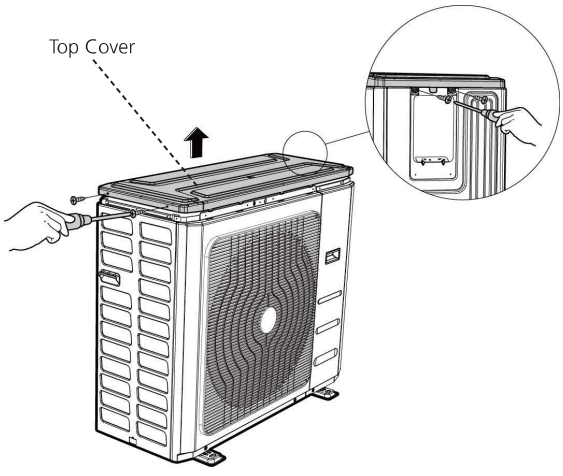
Procedure	Illustration
4) Remove the screws of the front panel and then remove the front panel (7 screws) (see CJ_CA30_003).	 **CJ_CA30_003**
5) Remove the screws of water collecting cover and then remove the water collecting cover (2 screws) (see CJ_CA30_004).	 **CJ_CA30_004**

Note: This section is for reference only. Actual unit appearance may vary.

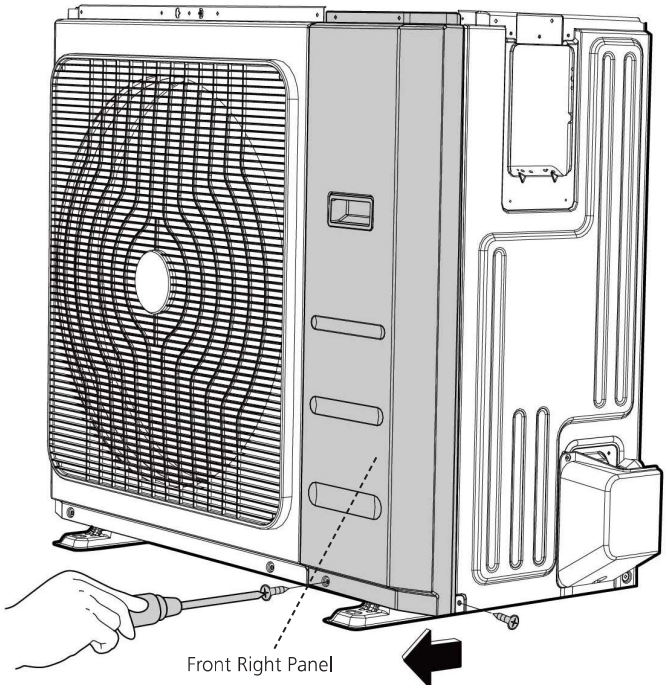
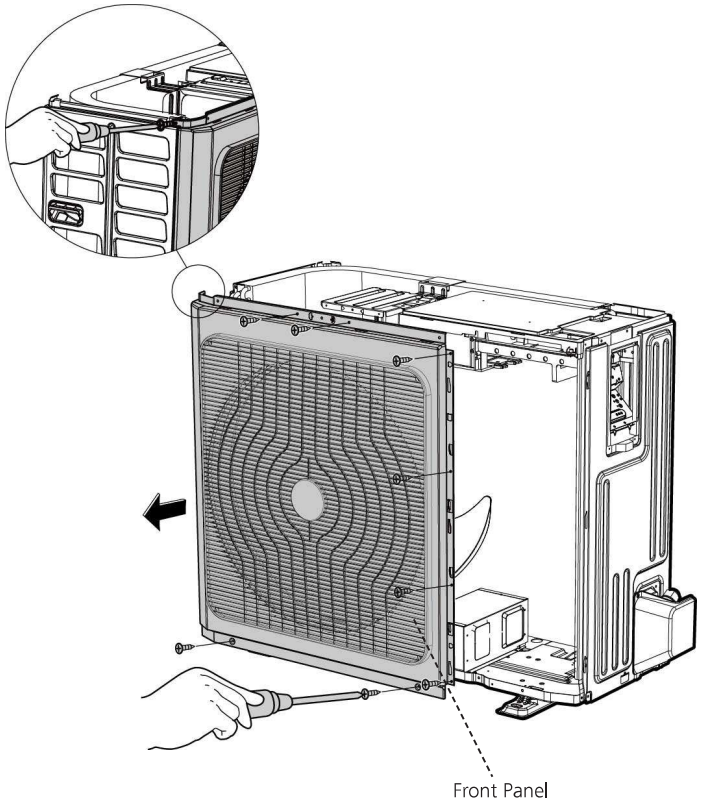
Procedure	Illustration
6) Remove the screws of the rear net and then remove the rear net (2 screws) (see CJ_CA30_005). (for some models)	 CJ_CA30_005
7) Remove the screws of the right panel and then remove the right panel (7 screws) (see CJ_CA30_006).	 CJ_CA30_006

Note: This section is for reference only. Actual unit appearance may vary.

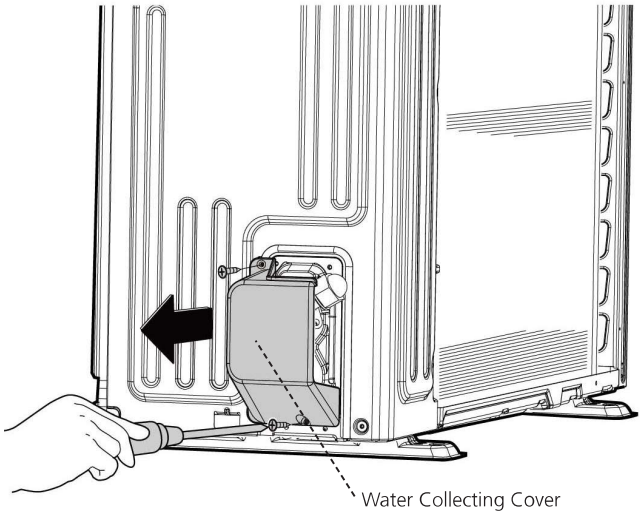
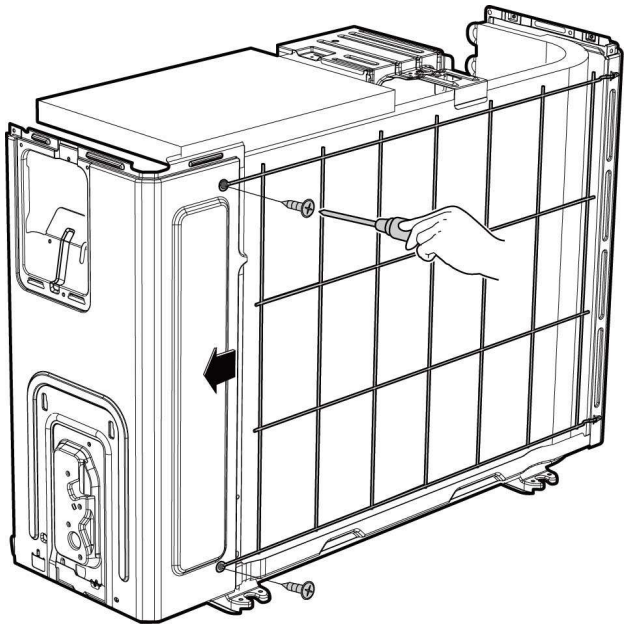
4. D30

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screws of the big handle and then remove the big handle (2 screws) (see CJ_D30_001). 3) Remove the screws of the top cover and then remove the top cover (4 screws). Two of the screws is located underneath the big handle (see CJ_D30_002).	  **CJ_D30_001**  **CJ_D30_002**

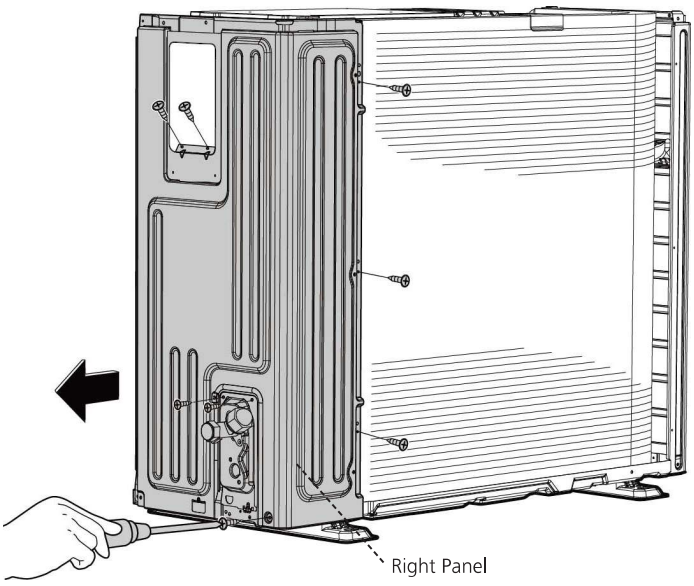
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
4) Remove the screws of the front right panel and then remove the front right panel (2 screws) (see CJ_D30_003).	 CJ_D30_003
5) Remove the screws of the front panel and then remove the front panel (9 screws) (see CJ_D30_004).	 CJ_D30_004

Note: This section is for reference only. Actual unit appearance may vary.

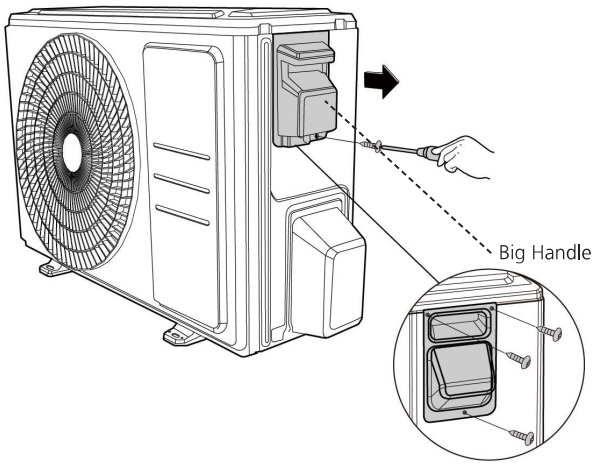
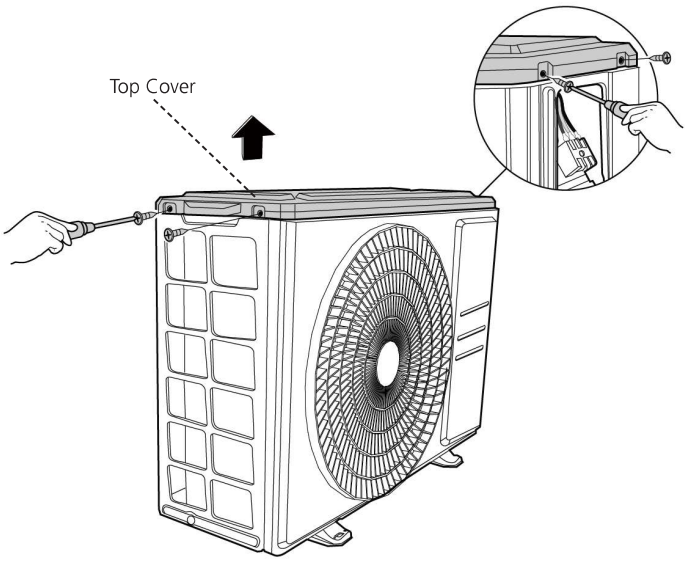
Procedure	Illustration
6) Remove the screws of water collecting cover and then remove the water collecting cover (2 screws) (see CJ_D30_005).	 **CJ_D30_005**
7) Remove the screws of the rear net and then remove the rear net (2 screws) (see CJ_D30_006). (for some models)	 **CJ_D30_006**

Note: This section is for reference only. Actual unit appearance may vary.

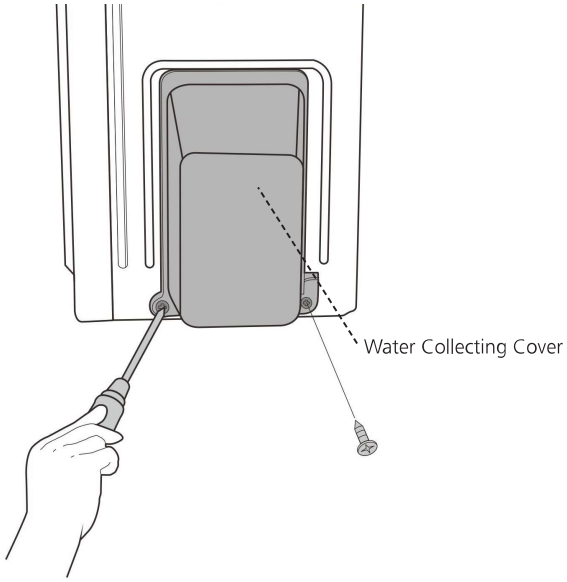
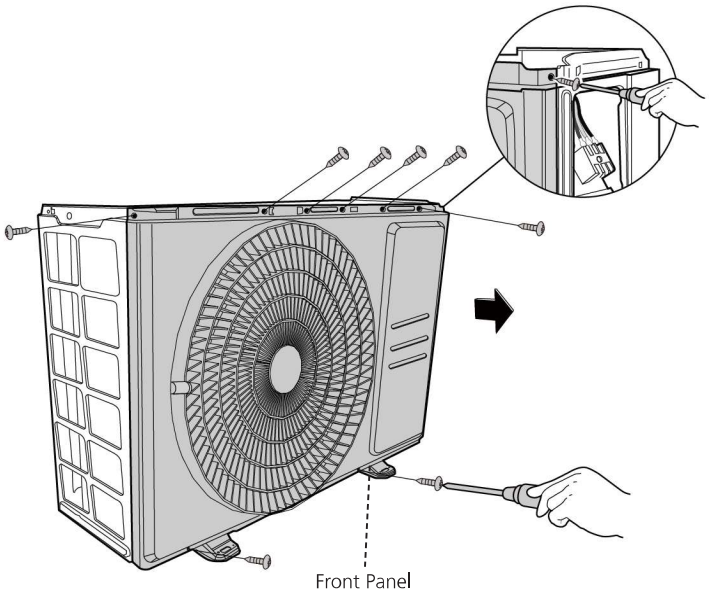
Procedure	Illustration
8) Remove the screws of the right panel and then remove the right panel (8 screws) (see CJ_D30_007).	 CJ_D30_007

Note: This section is for reference only. Actual unit appearance may vary.

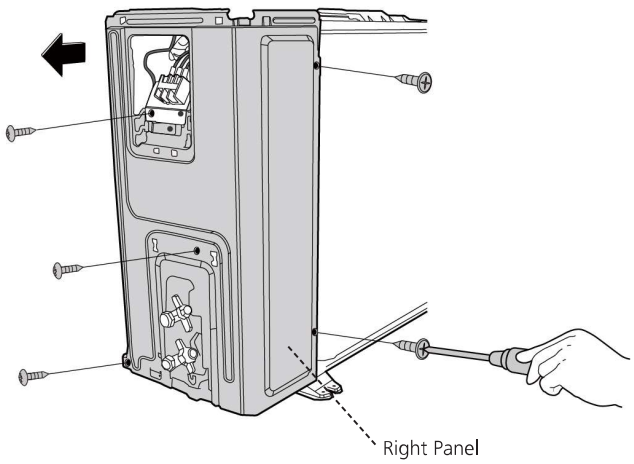
5. X230/X330

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screw of the big handle and then remove the big handle (1 screws) (see CJ_X230_001).	 CJ_X230_001
3) Remove the screws of the top cover and then remove the top cover (4 screws). One of the screws is located underneath the big handle (see CJ_X230_002).	 CJ_X230_002

Note: This section is for reference only. Actual unit appearance may vary.

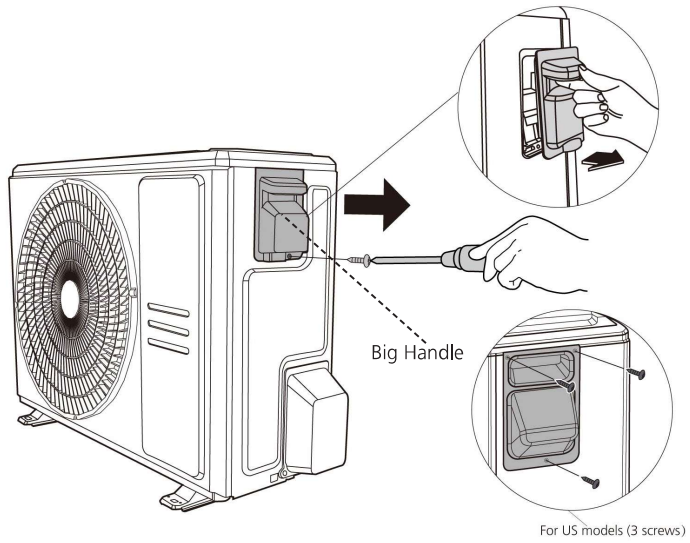
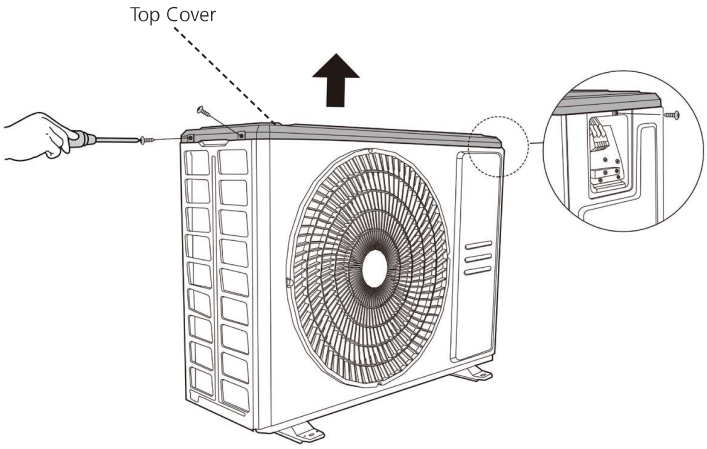
Procedure	Illustration
4) Remove the screws of water collecting cover and then remove the water collecting cover (2 screws) (see CJ_X230_003).	 CJ_X230_003
5) Remove the screws of the front panel and then remove the front panel (7 screws(onoff models) or 9 screws(inverter models) (see CJ_X230_004).	 CJ_X230_004

Note: This section is for reference only. Actual unit appearance may vary.

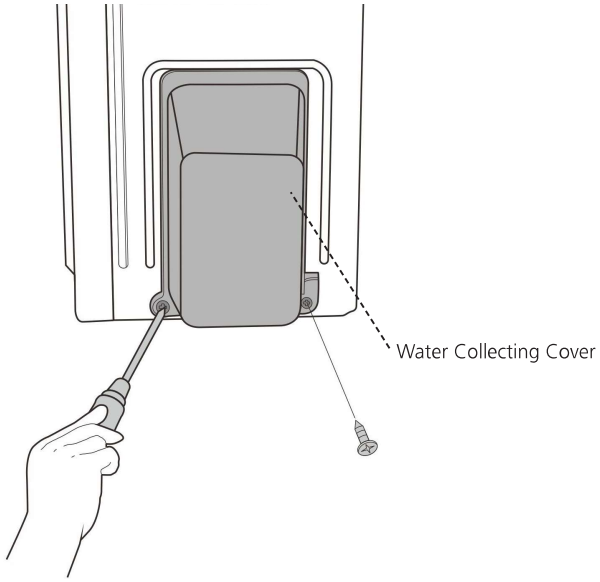
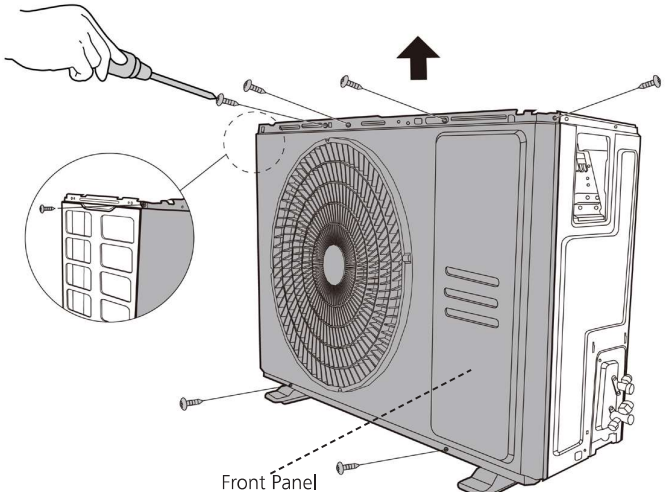
Procedure	Illustration
6) Remove the screws of the right panel and then remove the right panel (5 screws) (see CJ_X230_005).	 CJ_X230_005

Note: This section is for reference only. Actual unit appearance may vary.

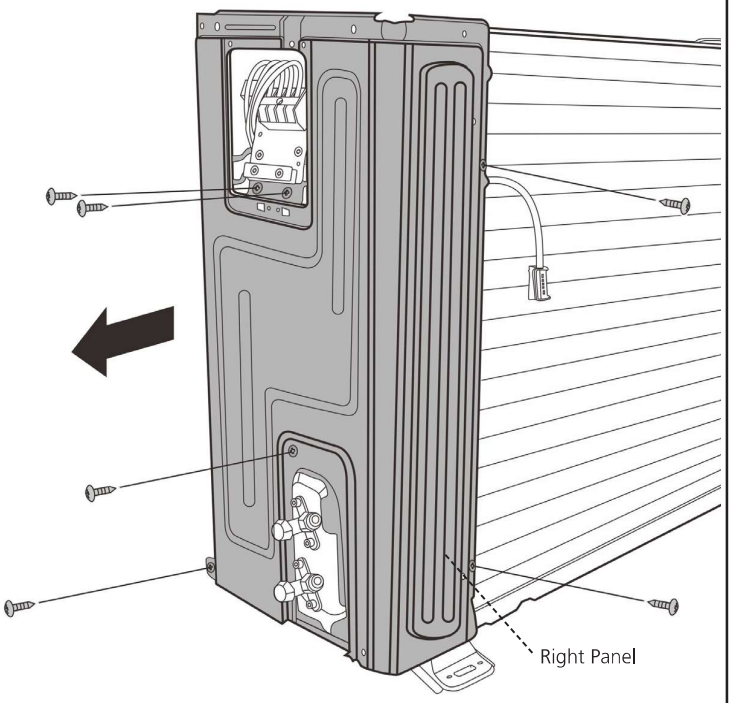
6.X430

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screw of the big handle and then remove the big handle (1 screw) (see CJ_X430_001).	 **CJ_X430_001**
3) Remove the screws of the top cover and then remove the top cover (3 screws). One of the screws is located underneath the big handle (see CJ_X430_002).	 **CJ_X430_002**

Note: This section is for reference only. Actual unit appearance may vary.

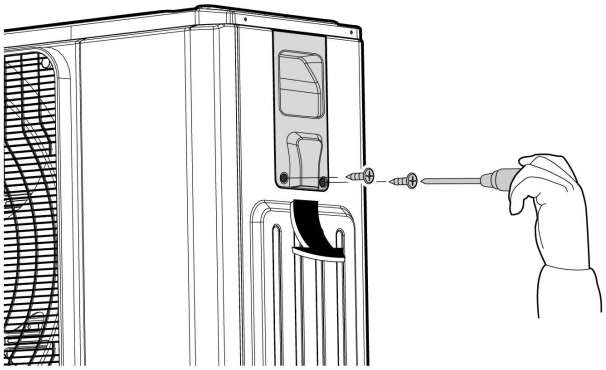
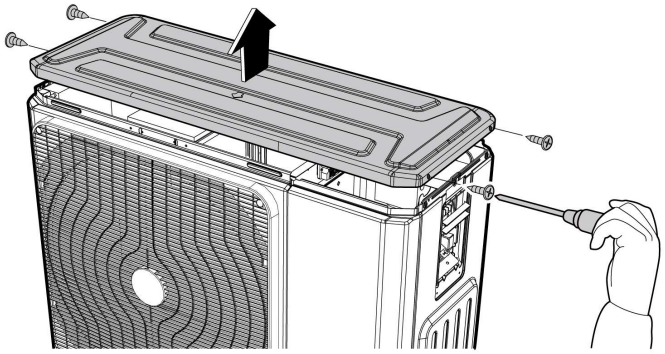
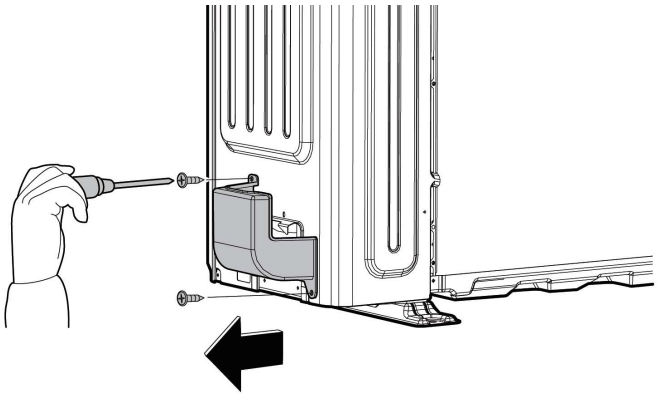
Procedure	Illustration
4) Remove the screws of water collecting cover and then remove the water collecting cover (2 screws) (see CJ_X430_003).	 CJ_X430_003
5) Remove the screws of the front panel and then remove the front panel (7 screws(onoff models) or 9 screws(inverter models) (see CJ_X430_004).	 CJ_X430_004

Note: This section is for reference only. Actual unit appearance may vary.

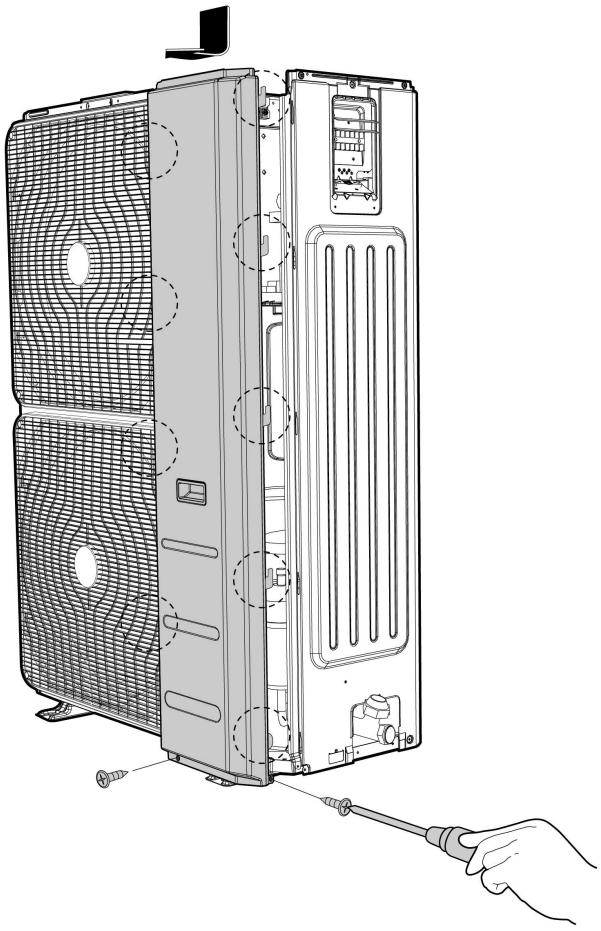
Procedure	Illustration
6) Remove the screws of the right panel and then remove the right panel (6 screws) (see CJ_X430_005).	 CJ_X430_005

Note: This section is for reference only. Actual unit appearance may vary.

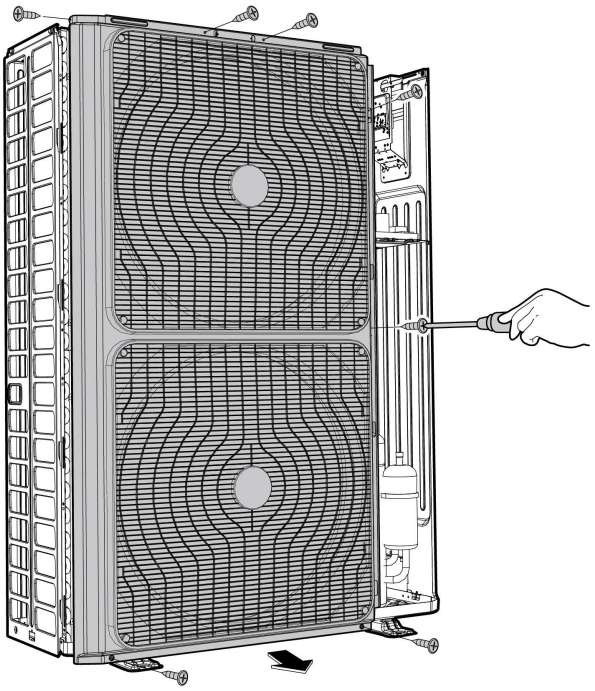
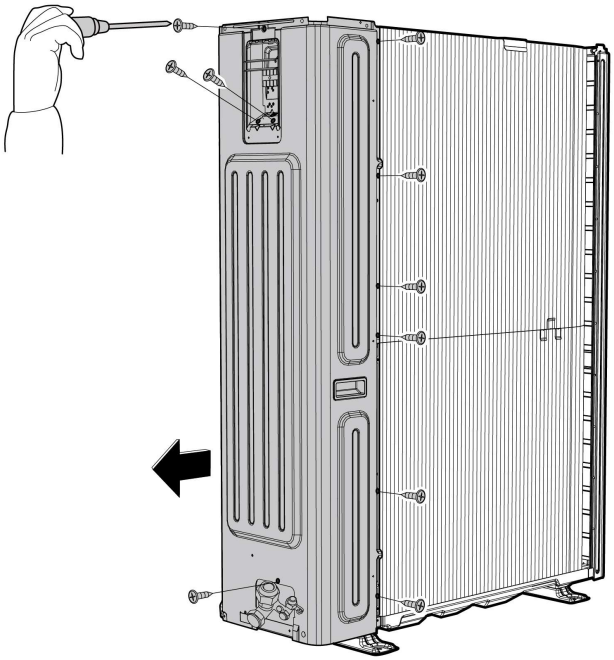
6. E30/590

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screws of the big handle and then remove the big handle (2 screws) (see CJ_E30_001).	 CJ_E30_001
3) Remove the screws of the top cover and then remove the top cover (4 screws). Two of the screws is located underneath the big handle (see CJ_ E30_002).	 CJ_E30_002
4) Remove the screws of water collecting cover and then remove the water collecting cover (2 screw) (see CJ_ E30_003).	 CJ_E30_003

Note: This section is for reference only. Actual unit appearance may vary.

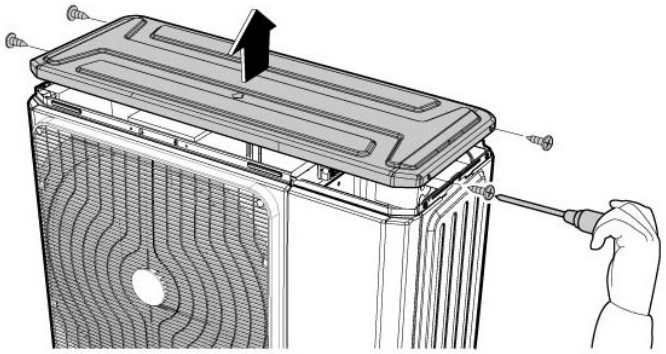
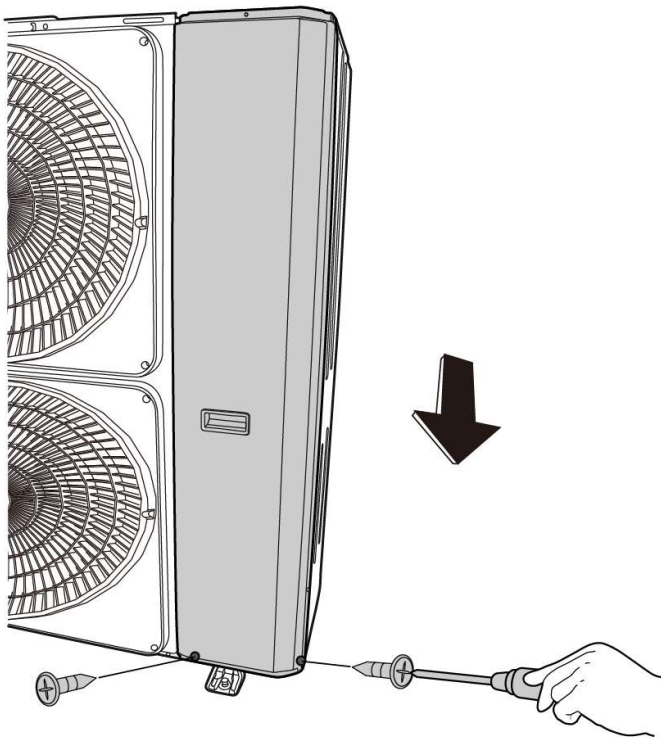
Procedure	Illustration
5) Remove the screws of the front right panel and then remove the front right panel (2 screws) (see CJ_E30_004).	 CJ_E30_004

Note: This section is for reference only. Actual unit appearance may vary.

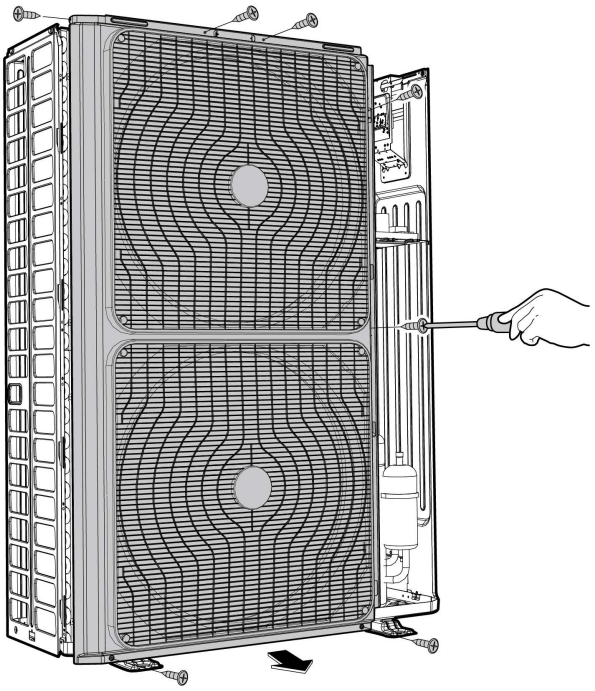
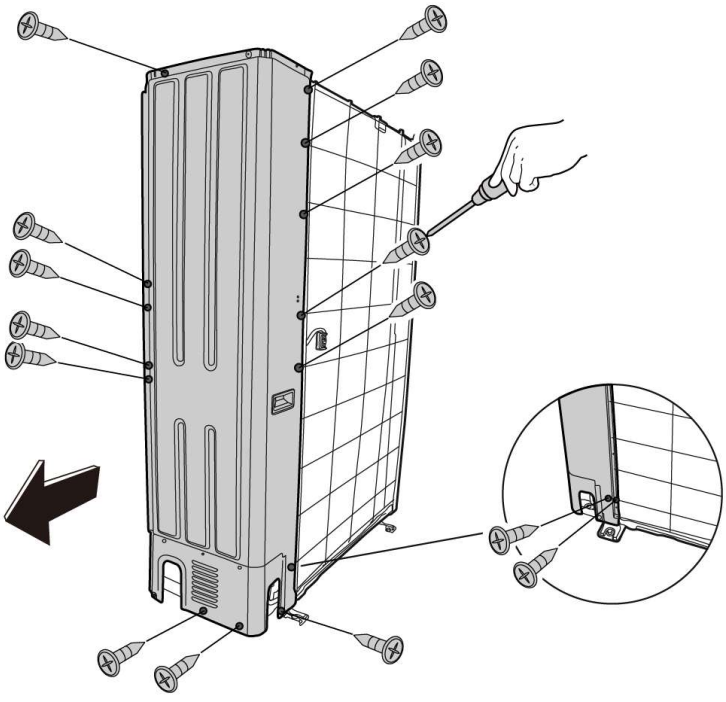
Procedure	Illustration
6) Remove the screws of the front panel and then remove the front panel (7 screws) (see CJ_E30_005).	 CJ_E30_005
7) Remove the screws of the right panel and then remove the right panel (10 screws) (see CJ_E30_006).	 CJ_E30_006

Note: This section is for reference only. Actual unit appearance may vary.

7. E30-COLMO

Procedure	Illustration
1) Turn off the air conditioner and the power breaker. 2) Remove the screws of the top cover and then remove the top cover (4 screws). Two of the screws is located underneath the big handle (see CJ_E30_COLMO_001).	 CJ_E30_COLMO_001
3) Remove the screws of the front right panel and then remove the front right panel (2 screws) (see CJ_E30_COLMO_002).	 CJ_E30_COLMO_002

Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
4) Remove the screws of the front panel and then remove the front panel (7 screws) (see CJ_E30_COLMO_003).	 CJ_E30_COLMO_003
5) Remove the screws of the right panel &rear net and then remove the right panel &rear net. (15 screws) (see CJ_E30_COLMO_004).	 CJ_E30_COLMO_004

Note: This section is for reference only. Actual unit appearance may vary.

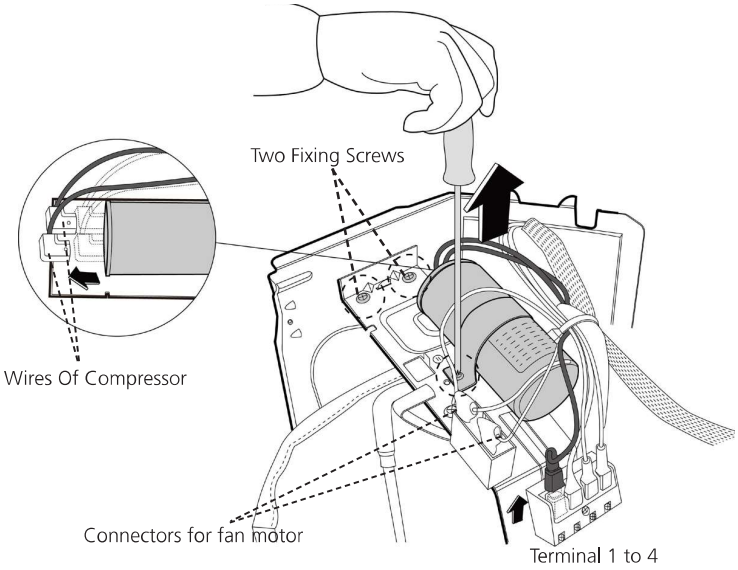
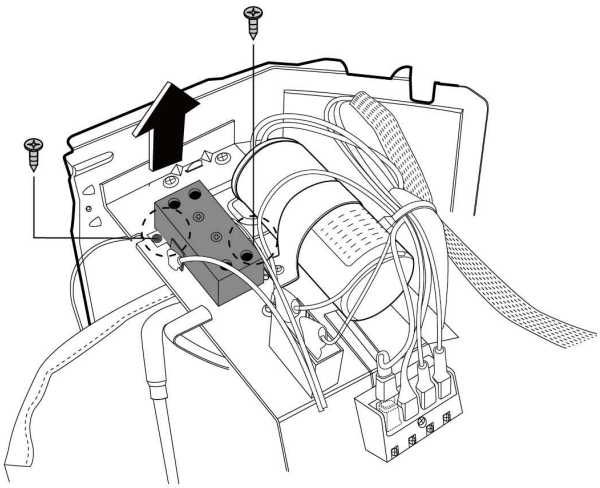
2.2 Electrical parts

WARNING: Antistatic gloves must be worn when you disassemble the electronic box.

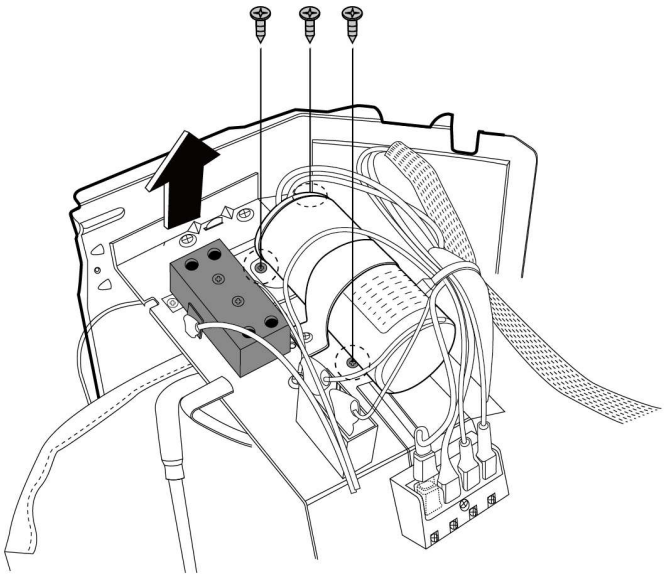
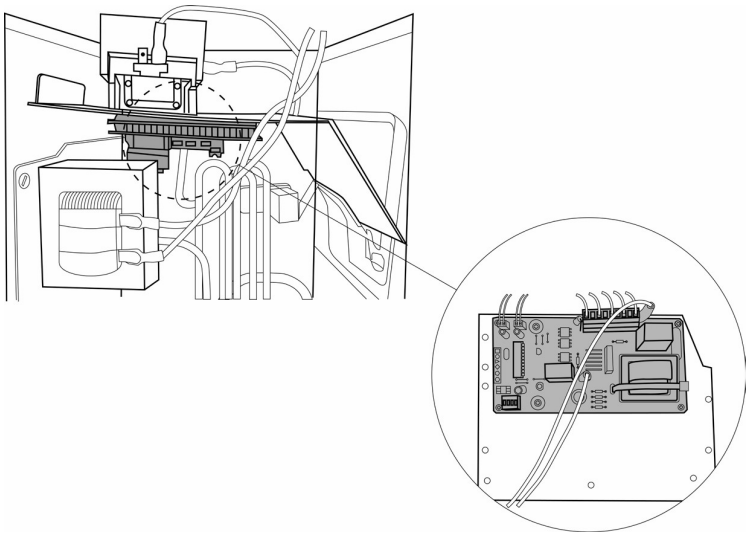
Note: Remove the air outlet grille(refer to 3.1 Panel Plate) before disassembling electrical parts.

i) PCB for ON-OFF Models

1. PCB board 1

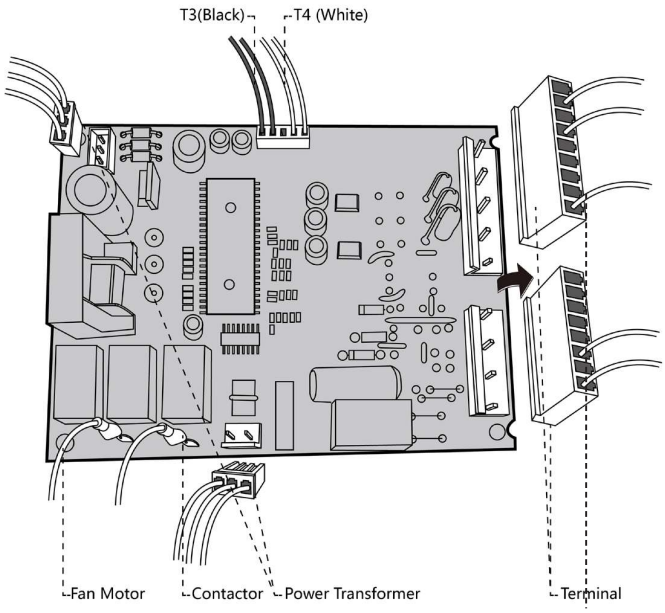
Procedure	Illustration
1) Remove the two screws fixed the electronic control board (see CJ_ODU_PCB_001). 2) Disconnect the connectors for fan motor. (Blue wire, yellow wire, red wire, brown wire and black wire. The blue wire and red wire are on the capacitor. The black wire connects with terminal 4.) (see CJ_ODU_PCB_001) 3) Disconnect the wires connected to the compressor. (Black wire connects with terminal 1,blue wire and red wire connect with the compressor capacitor) (see CJ_ODU_PCB_001) 4) Disconnect the wires connected to 4-way valve.(Blue wires on terminal 2&3) (see CJ_ODU_PCB_001) 5) Remove the fixing screw of the compressor capacitor, then pull it out (see CJ_ODU_PCB_001) 6) Remove the electrical parts (see CJ_ODU_PCB_001) 7) For models with AC conductor, remove 2 screws of it showed in the figure.	 **CJ_ODU_PCB_001-01**  **CJ_ODU_PCB_001-02**

Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
8) For models with subzero refrigeration control board, remove 3 screws of it showed in the figure.	 CJ_ODU_PCB_001-03
9) The subzero refrigeration control board is in the back of the medal sheet.	 CJ_ODU_PCB_001-04

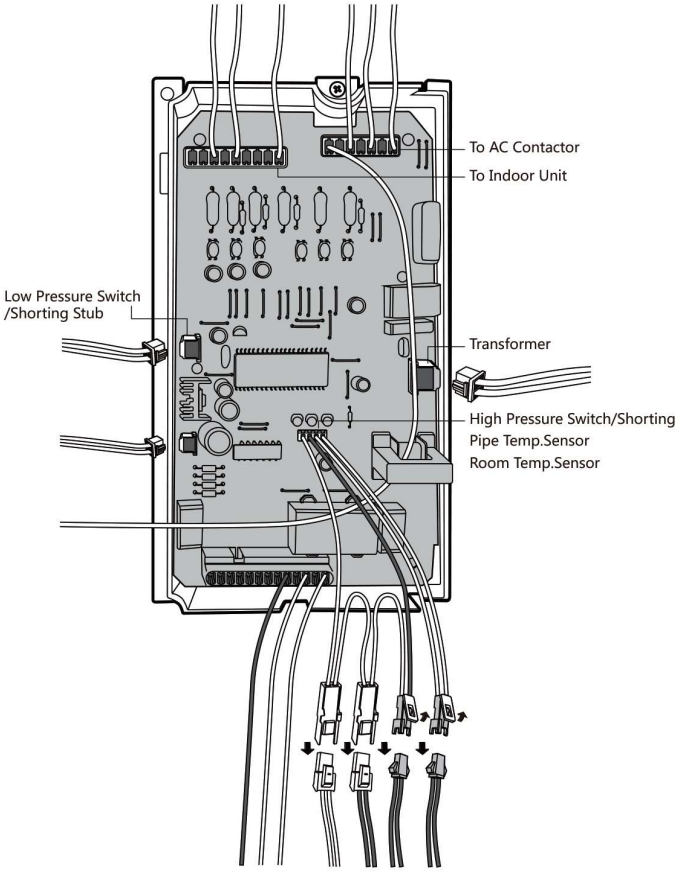
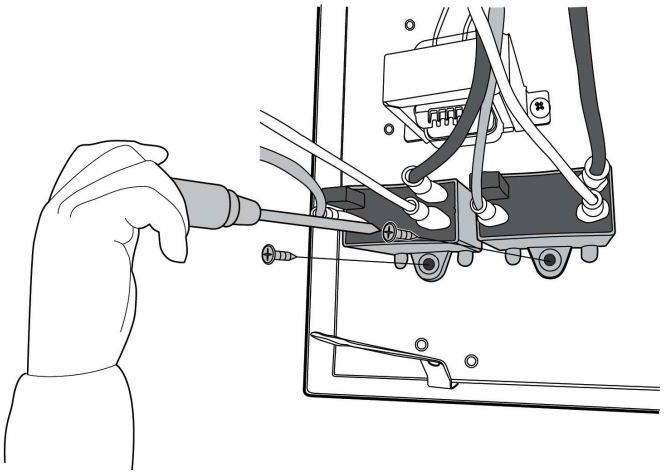
Note: This section is for reference only. Actual unit appearance may vary.

2. PCB board 2

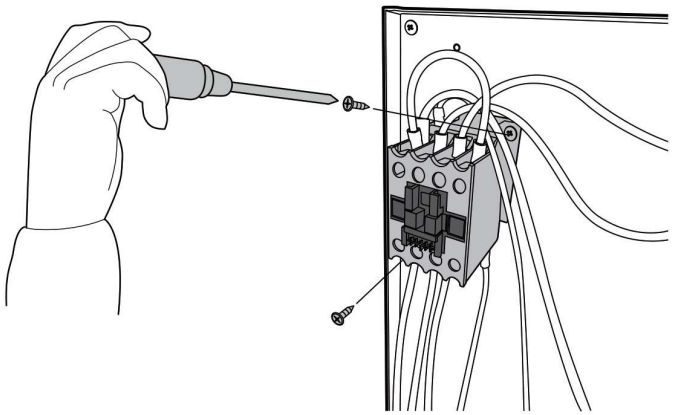
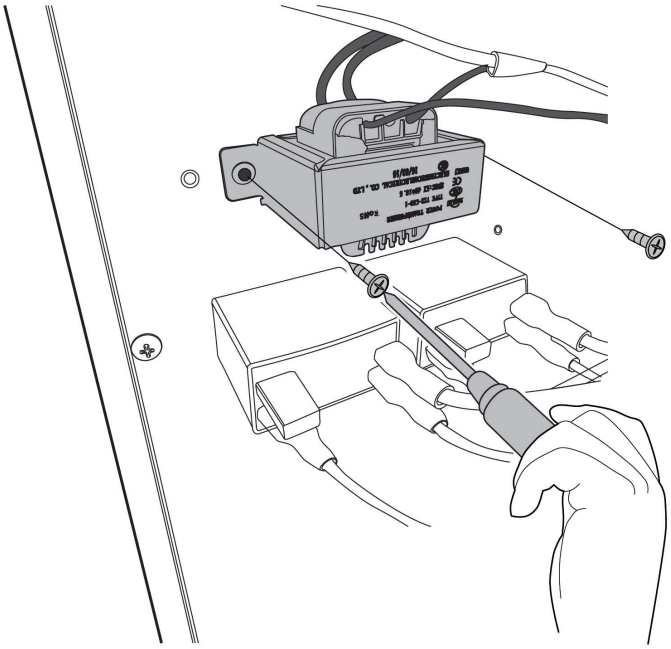
Procedure	Illustration
1) Disconnect the power transformer (see CJ_ODU_010) 2) Disconnect the wires connected to terminals. (see CJ_ODU_010) 3) Disconnect the wires connected to contactor. (see CJ_ODU_010) 4) Disconnect the wires connected to T3/T4 sensor. (see CJ_ODU_010)	 CJ_ODU_PCB_002-1

Note: This section is for reference only. Actual unit appearance may vary.

3. PCB board 3

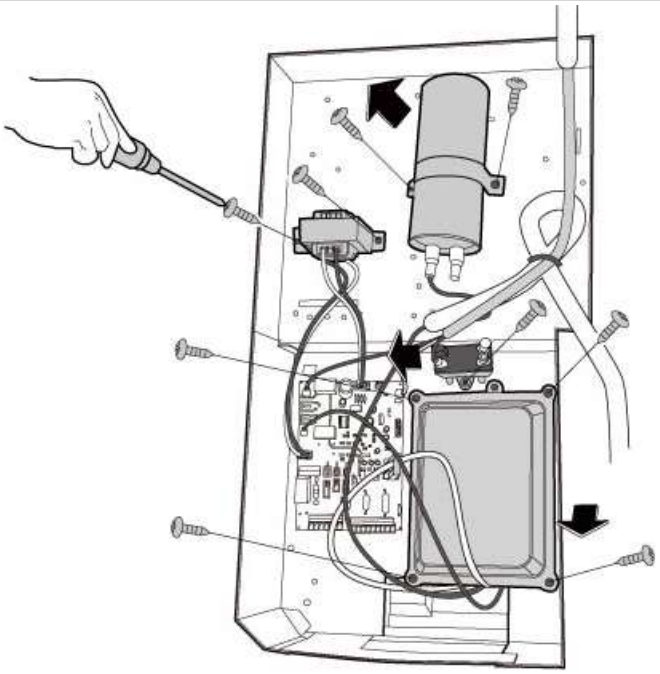
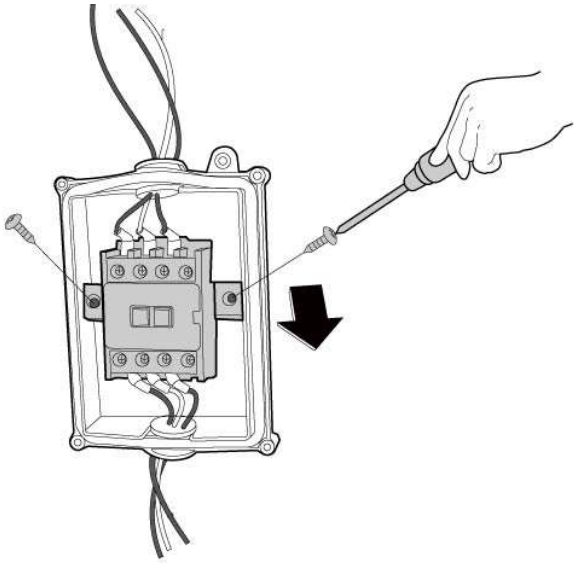
Procedure	Illustration
1) Disconnect the wires connected to the transformer. (see CJ_ODU_PCB_003-1) 2) Disconnect the wires connected to high/low pressure switch. (see CJ_ODU_PCB_003-1 3) Disconnect the wires connected to indoor unit. (see CJ_ODU_PCB_003-1) 4) Disconnect the wires connected to AC contactor. (see CJ_ODU_PCB_003-1)	 CJ_ODU_PCB_003-1
5) Remove the screws of the capacitor and then remove it (1 screw for each capacitor). (see CJ_ODU_PCB_003-2)	 CJ_ODU_PCB_003-2

Note: This section is for reference only. Actual unit appearance may vary.

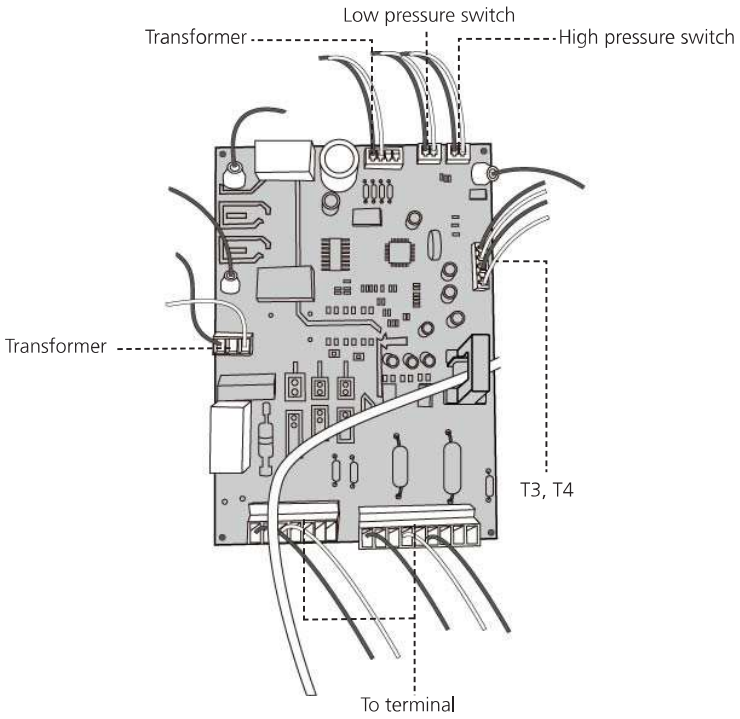
Procedure	Illustration
6) Remove the 1 screw of the AC contactor and then remove it. (see CJ_ODU_PCB_003-3)	 CJ_ODU_PCB_003-3
7) Remove 2 screws of the transformer and then remove it. (see CJ_ODU_PCB_003-4)	 CJ_ODU_PCB_003-4

Note: This section is for reference only. Actual unit appearance may vary.

4. PCB board 14

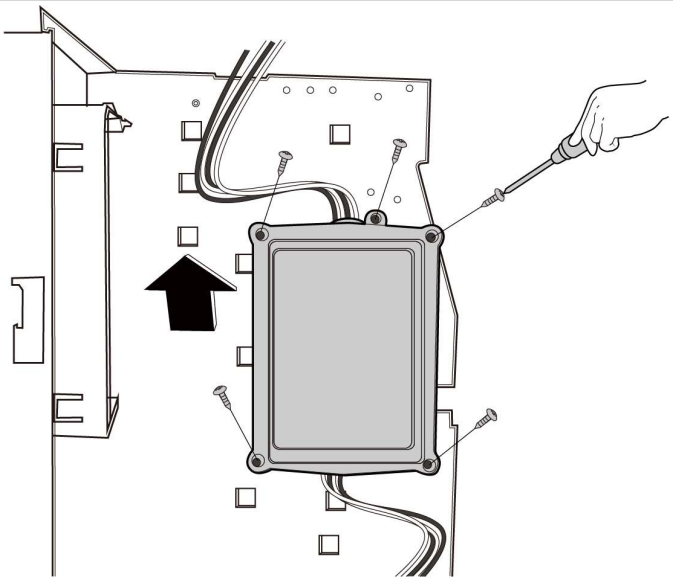
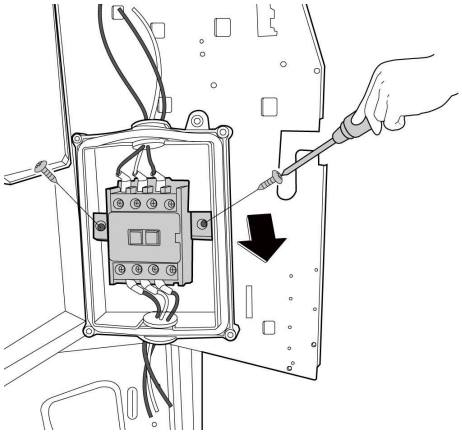
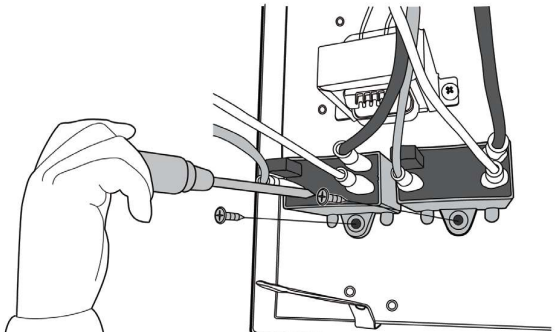
Procedure	Illustration
1) Remove the fixing screw of the compressor capacitor, then pull it out (see CJ_ODU_PCB_014-1) 2) Remove 2 screws of the transformer and then remove it. (see CJ_ODU_PCB_014-1) 3) Remove the fixing screw of the fan motor capacitor, then remove it. (see CJ_ODU_PCB_014-1) 4) Remove the 4 screws of the electronic installing box and then remove it. (see CJ_ODU_PCB_014-1) (for some models) 5) Remove the 2 screws of the AC contactor and then remove it. (see CJ_ODU_PCB_014-2)	 CJ_ODU_PCB_014-1  CJ_ODU_PCB_014-2

Note: This section is for reference only. Actual unit appearance may vary.

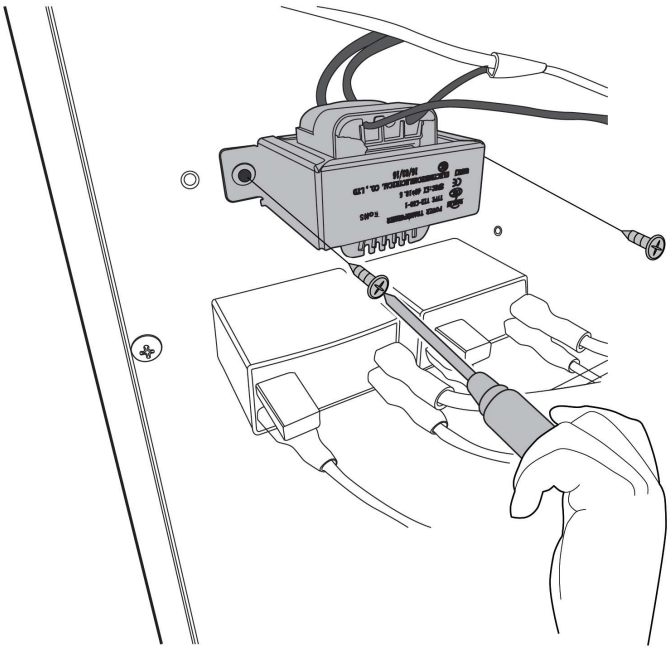
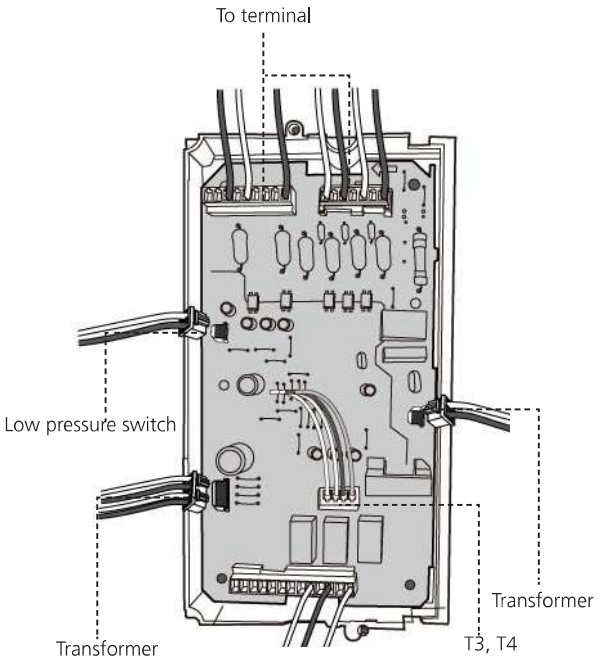
Procedure	Illustration
6) Disconnect the power transformer (see CJ_ODU_014-3) 7) Disconnect the wires connected to terminals. (see CJ_ODU_014-3) 8) Disconnect the wires connected to contactor. (see CJ_ODU_014-3) 9) Disconnect the wires connected to T3/T4 sensor. (see CJ_ODU_014-3)	 **CJ_ODU_PCB_014-3**

Note: This section is for reference only. Actual unit appearance may vary.

5. PCB board 15

Procedure	Illustration
1) Remove the 5 screws of the electronic installing box and then remove it. (see CJ_ODU_PCB_015-1)(for some models)	 CJ_ODU_PCB_015-1
2) Remove the 2 screws of the AC contactor and then remove it. (see CJ_ODU_PCB_015-2)	 CJ_ODU_PCB_015-2
3) Remove the screws of the capacitor and then remove it (1 screw for each capacitor). (see CJ_ODU_PCB_015-3)	 CJ_ODU_PCB_015-3

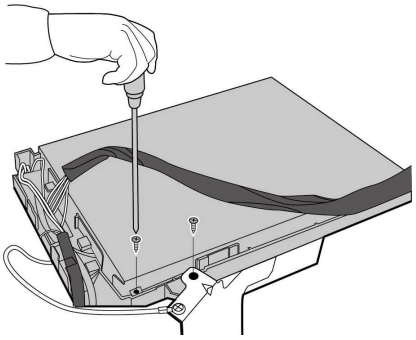
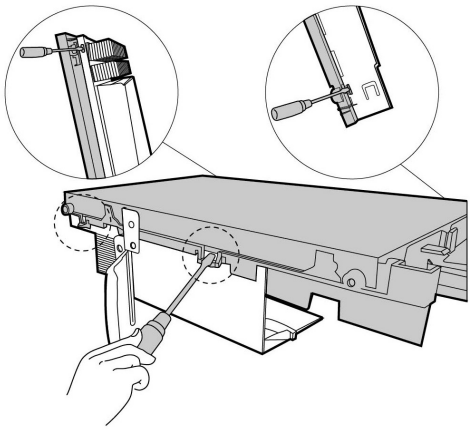
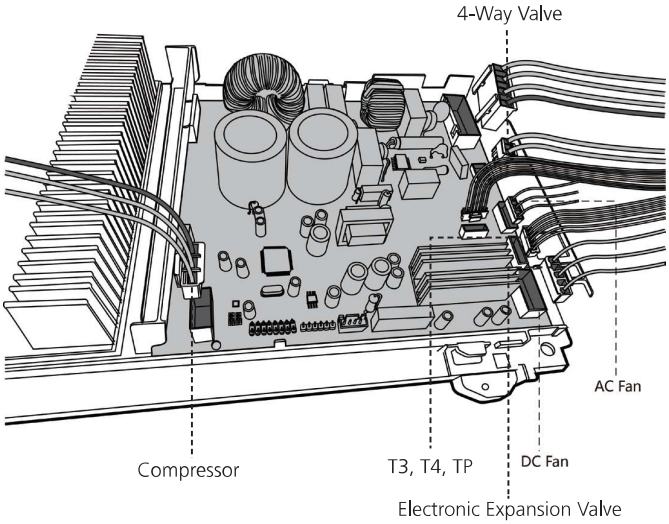
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
4) Remove 2 screws of the transformer and then remove it. (see CJ_ODU_PCB_015-4)	 CJ_ODU_PCB_015-4
5) Disconnect the wires connected to the transformer. (see CJ_ODU_PCB_015-5) 6) Disconnect the wires connected to high/low pressure switch. (see CJ_ODU_PCB_015-5) 7) Disconnect the wires connected to T3/T4 sensor. (see CJ_ODU_PCB_015-5) 8) Disconnect the wires connected to terminal. (see CJ_ODU_PCB_015-5)	 CJ_ODU_PCB_015-5

Note: This section is for reference only. Actual unit appearance may vary.

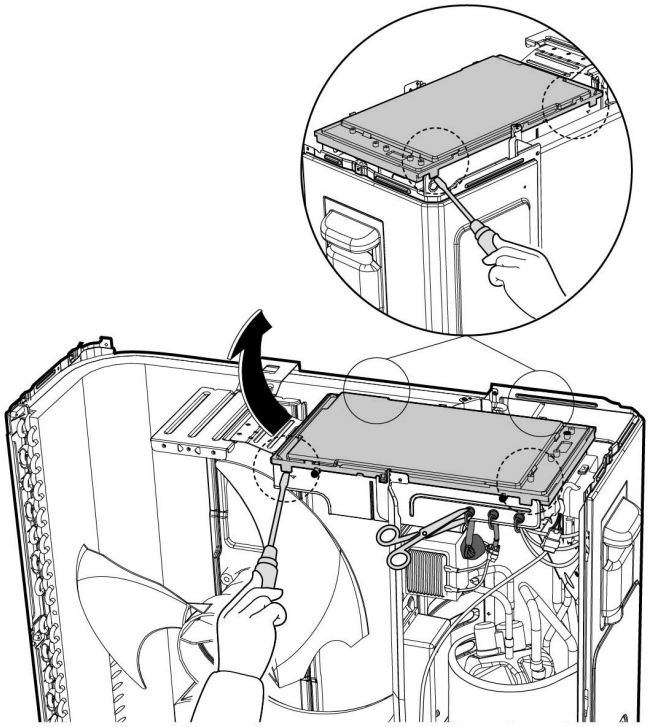
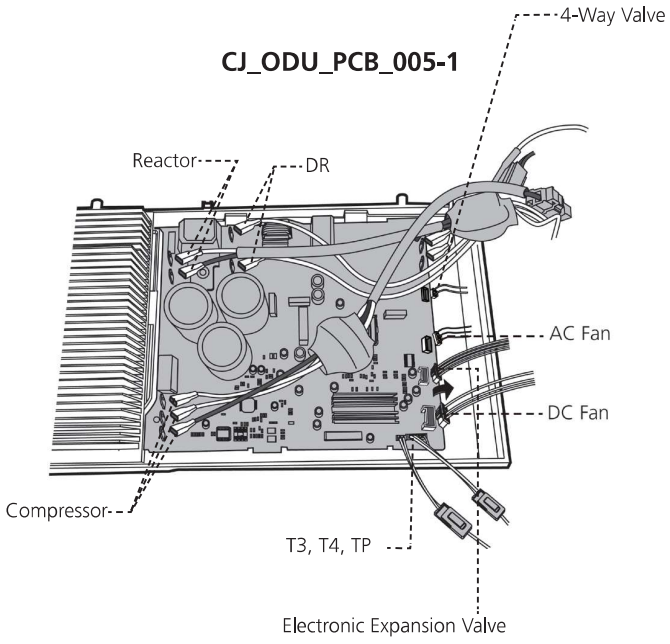
ii) PCB for Inverter Models

6. PCB board 4

Procedure	Illustration
1) Remove the screws of the top cover. (2 screws) (see CJ_ODU_PCB_004-1).	 CJ_ODU_PCB_004-1
2) Unfix the hooks and then open the electronic control box cover (4 hooks) (see CJ_ODU_PCB_004-2).	 CJ_ODU_PCB_004-2
3) Disconnect the connector for fan motor from the electronic control board (see CJ_ODU_PCB_004-3). 4) Remove the connector for the compressor (see CJ_ODU_PCB_004-3). 5) Pull out the two blue wires connected with the four way valve (CJ_ODU_PCB_004-3). 6) Pull out connectors of the condenser coil temp. sensor(T3),outdoor ambient temp. sensor(T4) and discharge temp. sensor(TP) (CJ_ODU_PCB_004-3). 7) Disconnect the electronic expansion valve wire (CJ_ODU_PCB_004-3). 8) Then remove the electronic control board.	 CJ_ODU_PCB_004-3

Note: This section is for reference only. Actual unit appearance may vary.

7. PCB board 5

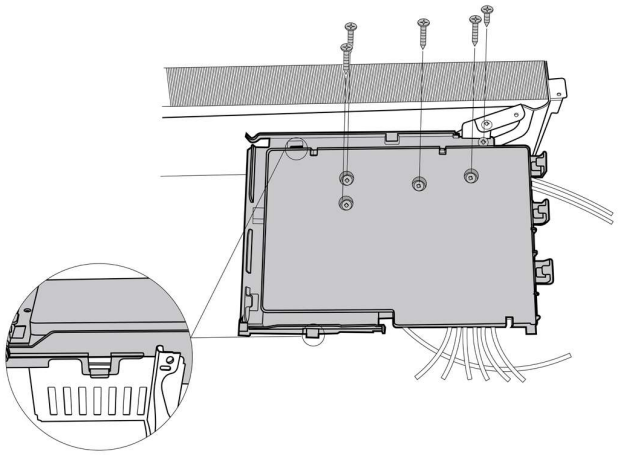
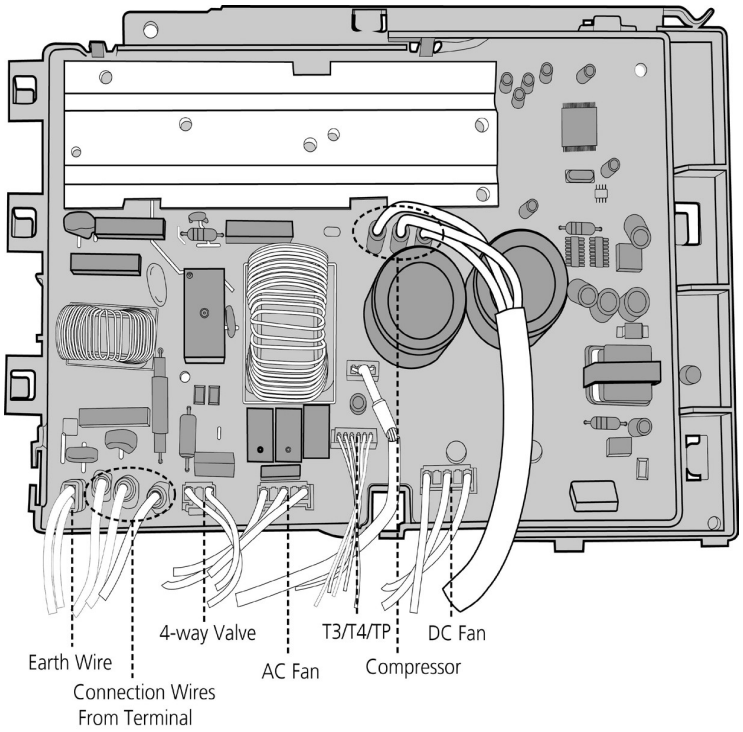
Procedure	Illustration
1) Unfix the hooks and then open the electronic control box cover (4 hooks) (see CJ_ODU_PCB_005-1).	
2) Disconnect the connector for fan motor from the electronic control board (see CJ_ODU_PCB_005-2). 3) Remove the connector for the compressor (see CJ_ODU_PCB_005-2). 4) Pull out the two blue wires connected with the four way valve (see CJ_ODU_PCB_005-2). 5) Pull out connectors of the condenser coil temp. sensor(T3),outdoor ambient temp. sensor(T4) and discharge temp. sensor(TP) (see CJ_ODU_PCB_005-2). 6) Disconnect the electronic expansion valve wire (see Fig CJ_ODU_PCB_005-2). 7) Then remove the electronic control board.	

CJ_ODU_PCB_005-1

CJ_ODU_PCB_005-2

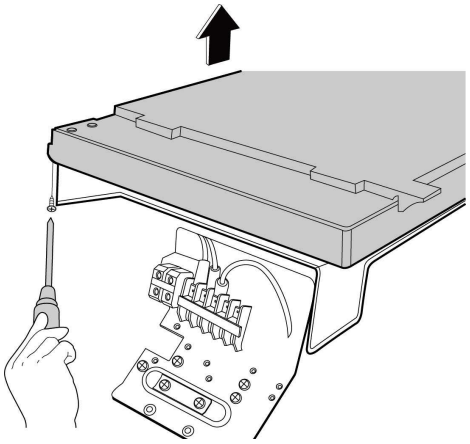
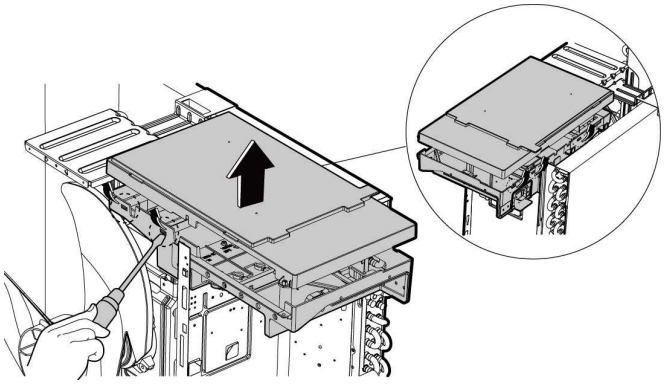
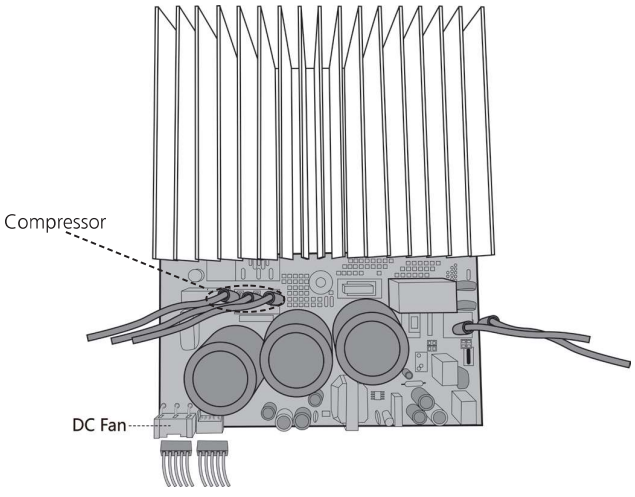
Note: This section is for reference only. Actual unit appearance may vary.

8. PCB board 6

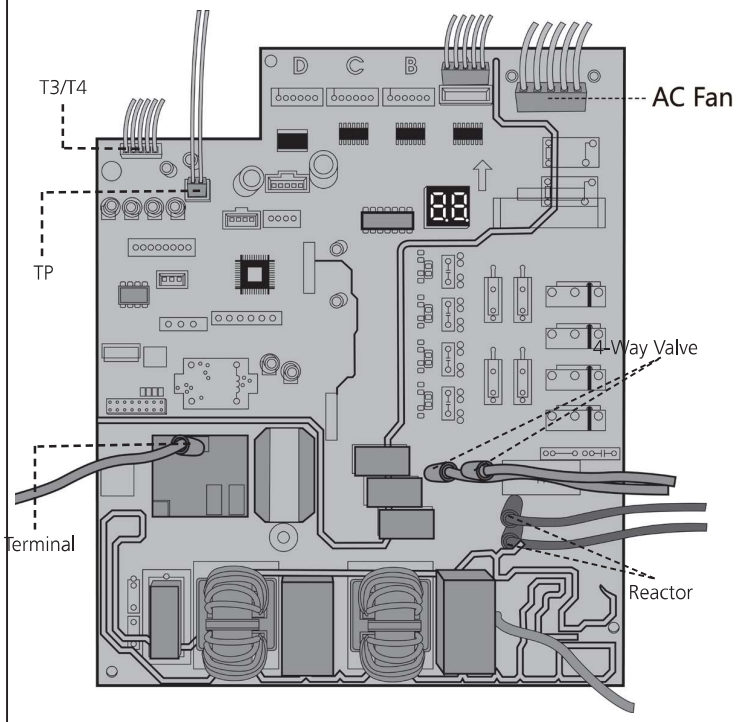
Procedure	Illustration
1) Remove the screws and unfix the hooks, then open the electronic control box cover (5 screws and 2 hooks)(see CJ_ODU_PCB_006-1).	 CJ_ODU_PCB_006-1
2) Disconnect the connector for fan motor from the electronic control board (see CJ_ODU_PCB_006-2). 3) Remove the connector for the compressor (see CJ_ODU_PCB_006-2). 4) Pull out the two blue wires connected with the four way valve (see CJ_ODU_PCB_006-2). 5) Pull out connectors of the condenser coil temp. sensor(T3),outdoor ambient temp. sensor(T4) and discharge temp. sensor(TP) (see CJ_ODU_PCB_006-2). 6) Disconnect the electronic expansion valve wire (see Fig CJ_ODU_PCB_006-2). 7) Remove the connector for the DR and reactor (see Fig CJ_ODU_PCB_006-2). 8) Then remove the electronic control board.	 CJ_ODU_PCB_006-2

Note: This section is for reference only. Actual unit appearance may vary.

9. PCB board 7

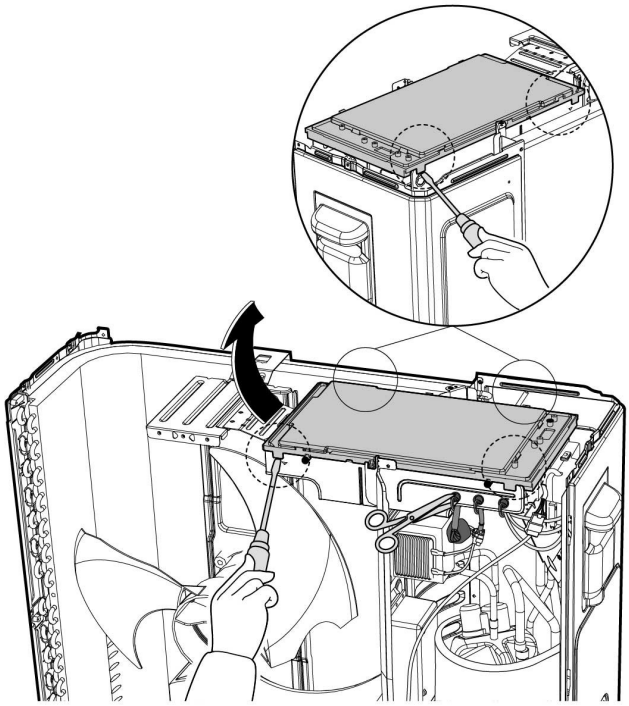
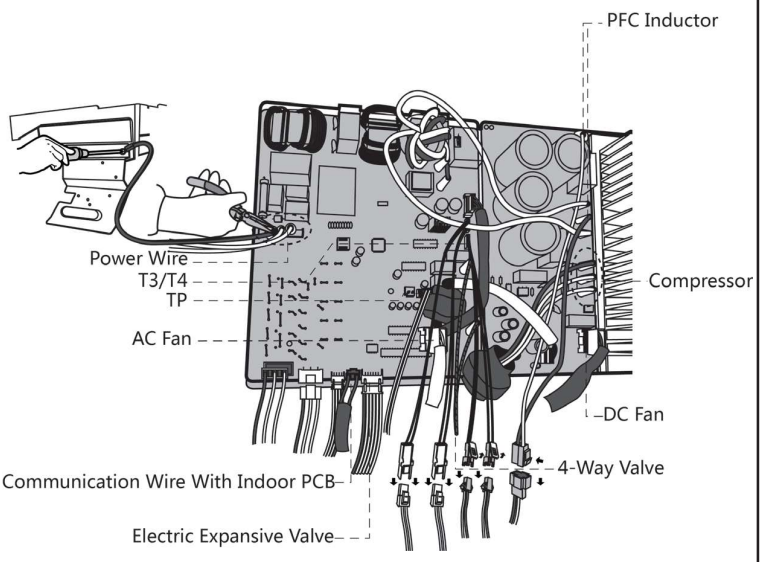
Procedure	Illustration
1) Remove the screws of the top cover. (1 screws) (see CJ_ODU_PCB_007-1).	 CJ_ODU_PCB_007-1
2) Unfix the hooks and then open the electronic control box cover (5 hooks) (see CJ_ODU_PCB_007-2).	 CJ_ODU_PCB_007-2
3) Disconnect the connector for fan motor from the IPM board (see CJ_ODU_PCB_007-3). 4) Remove the connector for the compressor (see CJ_ODU_PCB_007-3).	 CJ_ODU_PCB_007-3

Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
5) Pull out the wire connected with the terminal. (see CJ_ODU_PCB_007-4). 6) Pull out connectors of the condenser coil temp. sensor(T3),outdoor ambient temp. sensor(T4) and discharge temp. sensor(TP) (see CJ_ODU_PCB_007-4). 7) Disconnect the electronic expansion valve wire (see Fig CJ_ODU_PCB_007-4). 8) Remove the connector for 4-way valve. (see Fig CJ_ODU_PCB_007-4). 9) Remove the connector for the reactor (see Fig CJ_ODU_PCB_007-4). 10)Then remove the electronic control box (see Fig CJ_ODU_PCB_007-4).	 **CJ_ODU_PCB_007-4**

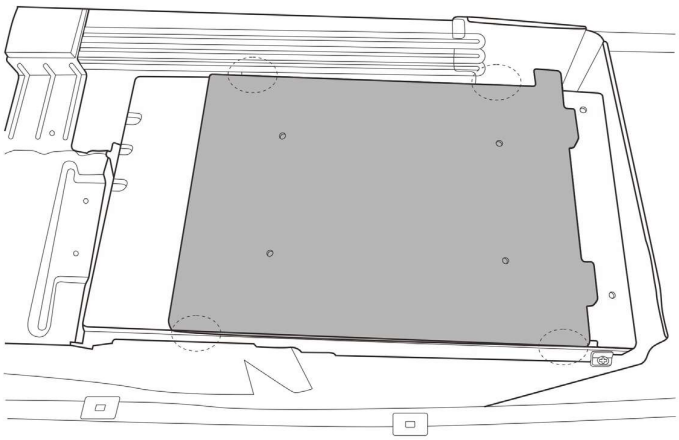
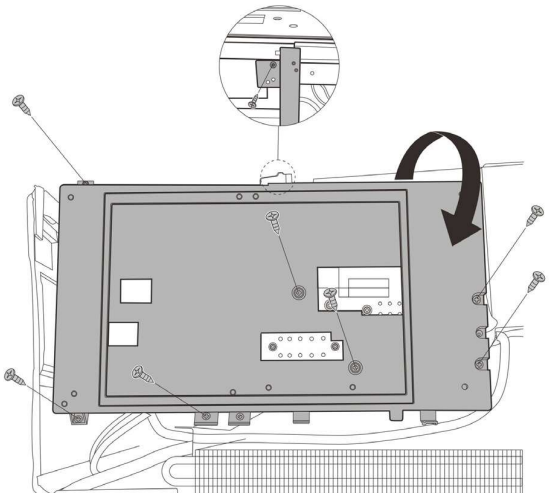
Note: This section is for reference only. Actual unit appearance may vary.

10. PCB board 8

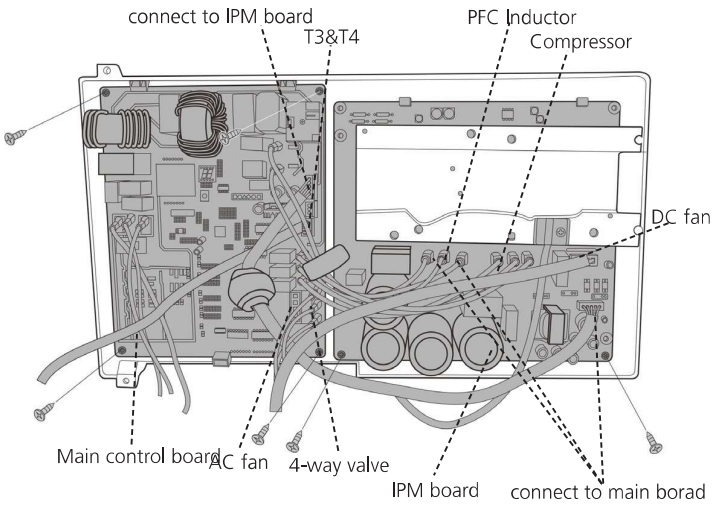
Procedure	Illustration
1) Unfix the hooks and then open the electronic control box cover (4 hooks) (see CJ_ODU_PCB_008-1). 2) Disconnect the connector for outdoor DC fan from the electronic control board (see CJ_ODU_PCB_008-2). 3) Remove the connector for the compressor (see CJ_ODU_PCB_008-2). 4) Pull out the two blue wires connected with the four way valve (see CJ_ODU_PCB_008-2). 5) Pull out connectors of the condenser coil temp. sensor(T3),outdoor ambient temp. sensor(T4) and discharge temp. sensor(TP) (see CJ_ODU_PCB_008-2). 6) Disconnect the electronic expansion valve wire (see Fig CJ_ODU_PCB_008-2). 7) Disconnect the communication wire indoor PCB (see Fig CJ_ODU_PCB_008-2). 8) Disconnect the PFC inductor (see Fig CJ_ODU_PCB_008-2). 9) Then remove the electronic control box (see CJ_ODU_PCB_008-2).	 CJ_ODU_PCB_008-1  CJ_ODU_PCB_008-2

Note: This section is for reference only. Actual unit appearance may vary.

11. PCB board 9

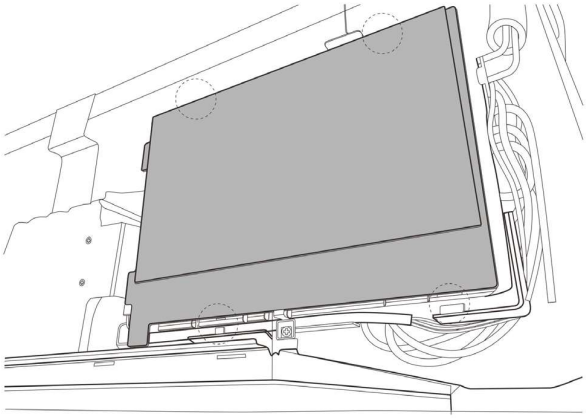
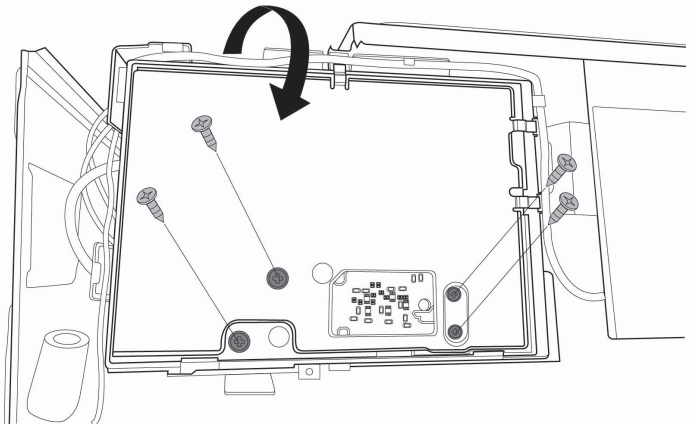
Procedure	Illustration
1) Unfix the hooks and then open the electronic control box cover (4 hooks) (see CJ_ODU_PCB_009-1).	 CJ_ODU_PCB_009-1
2) Remove 8 screws on the electronic control board and then turn over the electronic control board (see CJ_ODU_PCB_009-2).	 CJ_ODU_PCB_009-2

Note: This section is for reference only. Actual unit appearance may vary.

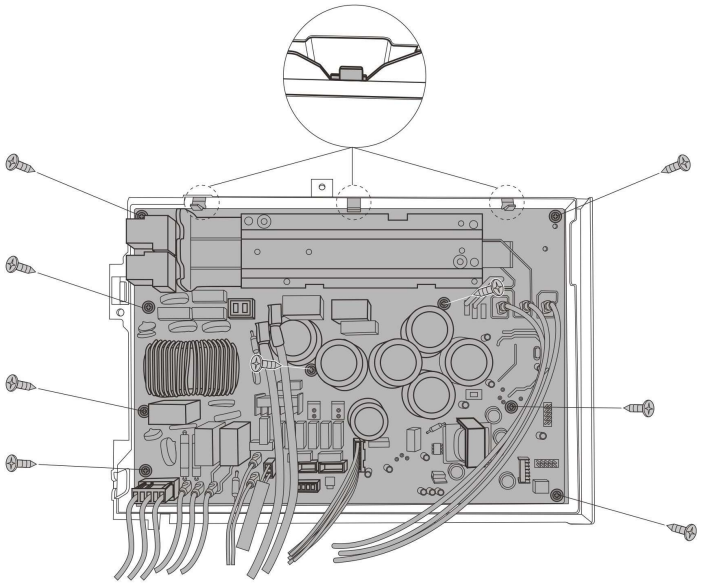
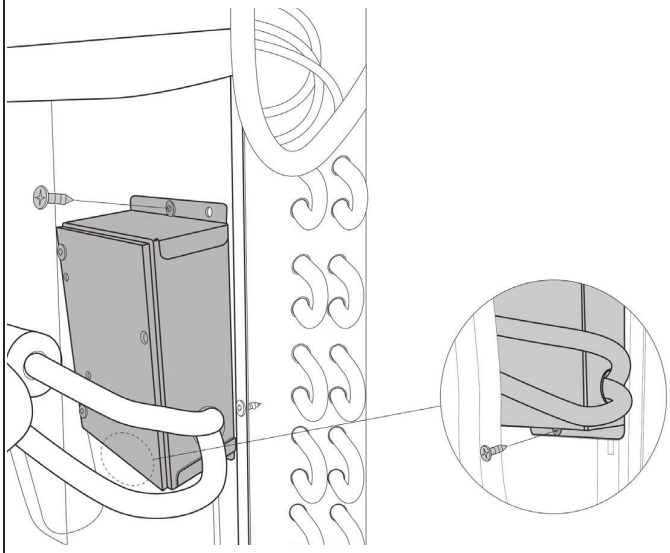
Procedure	Illustration
3) Pull out the two blue wires connected with the four way valve. (see CJ_ODU_PCB_009-3)(for heat pump models) 4) Pull out connectors of the condenser coil temp. sensor(T3),outdoor ambient temp. sensor(T4) and discharge temp. sensor(TP). (see CJ_ODU_PCB_009-3) 5) Disconnect the electronic expansion valve wire. (see Fig CJ_ODU_ PCB_009-3)(for some models) 6) Remove four screws and unfix the 3 hooks and then remove the main control board. (see CJ_ODU_ PCB_009-3) 7) Disconnect the connector for outdoor DC fan from the IPM board. (see CJ_ODU_PCB_009-3)(for some models) 8) Remove the connector for the compressor. (see CJ_ODU_PCB_009-3) 9) Remove the connector for the PFC Inductor. (see CJ_ODU_PCB_009-3) 10)Pull out 3 connectors between IPM board and main control board.(see CJ_ODU_PCB_009-3) 11)Remove two screws and unfix the 4 hooks and then remove the IPM board. (see CJ_ODU_PCB_009-3)	 **CJ_ODU_PCB_009-3**

Note: This section is for reference only. Actual unit appearance may vary.

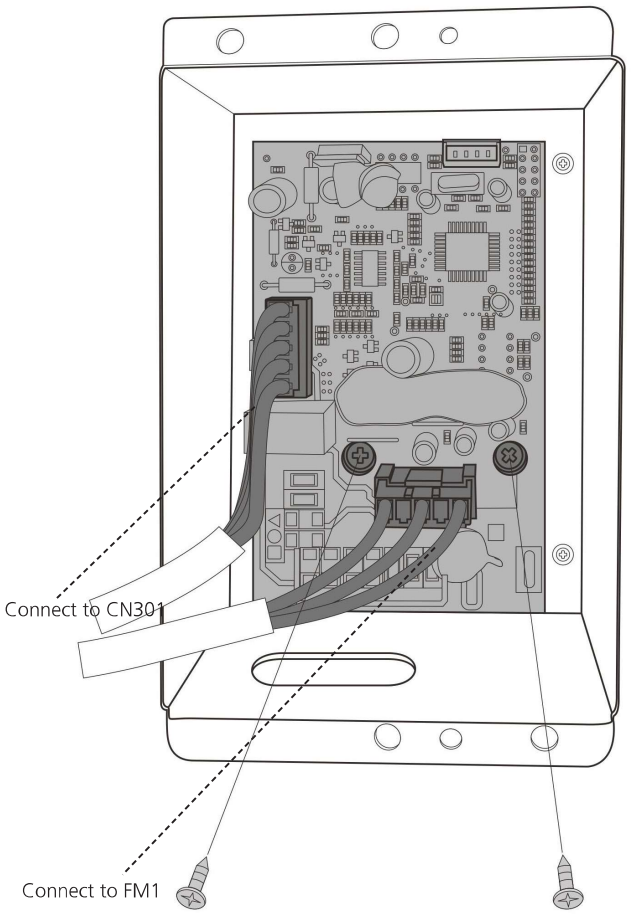
12. PCB board 10

Procedure	Illustration
1) Unfix the hooks and then open the electronic control box cover (4 hooks) (see CJ_ODU_PCB_010-1).	 CJ_ODU_PCB_010-1
2) Remove 4 screws on the electronic control board and then turn over the electronic control board (see CJ_ODU_PCB_010-2).	 CJ_ODU_PCB_010-2

Note: This section is for reference only. Actual unit appearance may vary.

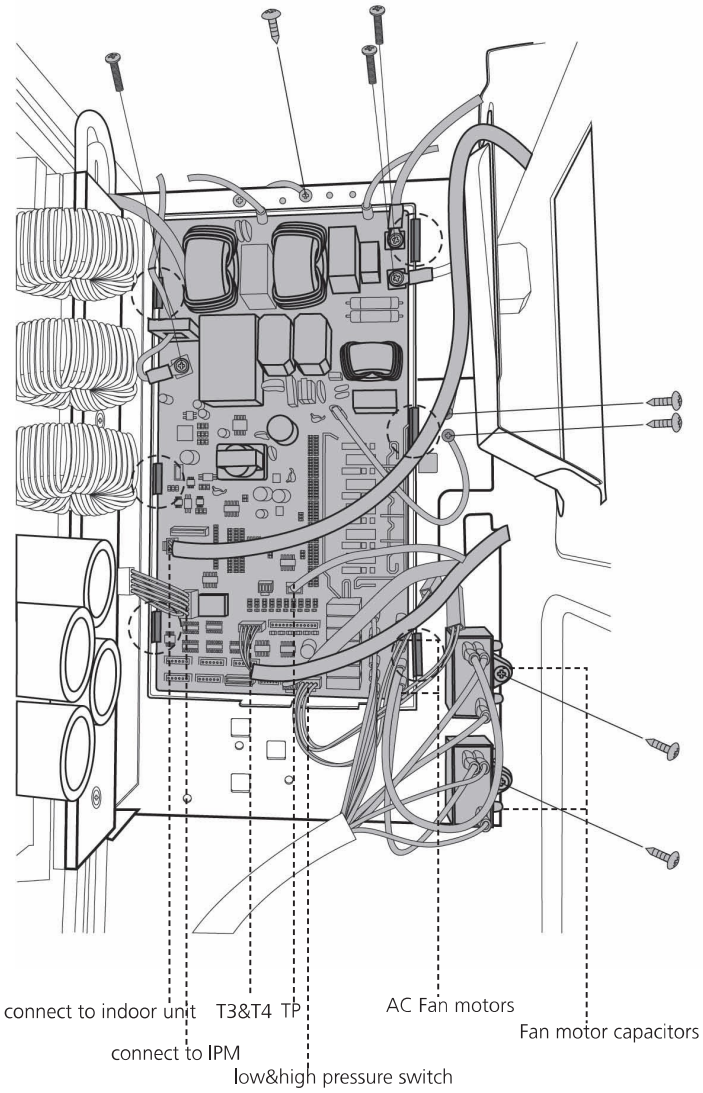
Procedure	Illustration
3) Pull out the connectors (see CJ_ ODU_PCB_010-3). 4) Remove the 9 screws and unfix the 3 hooks and then remove the electronic control board(see CJ_ ODU_PCB_010-3). 5) Remove two screws and then remove the electronic control box subassembly on partition board assembly. (see CJ_ODU_PCB_010-4).	 CJ_ODU_PCB_010-3  CJ_ODU_PCB_010-4

Note: This section is for reference only. Actual unit appearance may vary.

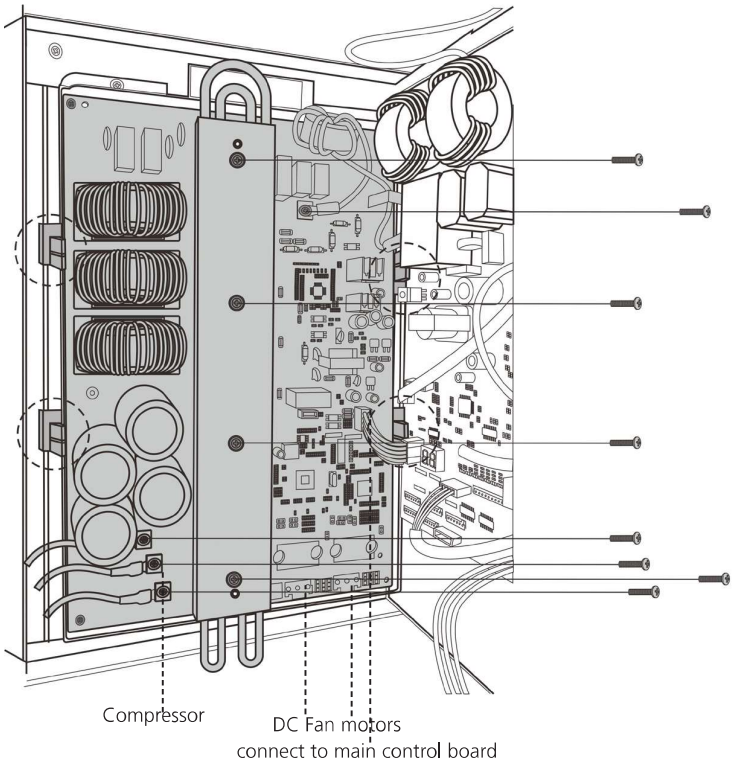
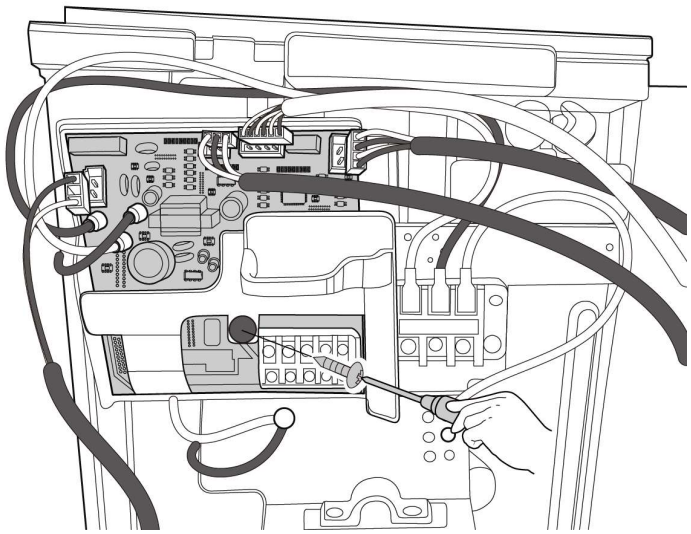
Procedure	Illustration
6) Remove two screws and two connectors and then remove the inverter control board (see CJ_ODU_PCB_010-5).	 CJ_ODU_PCB_010-5

Note: This section is for reference only. Actual unit appearance may vary.

13. PCB board 11

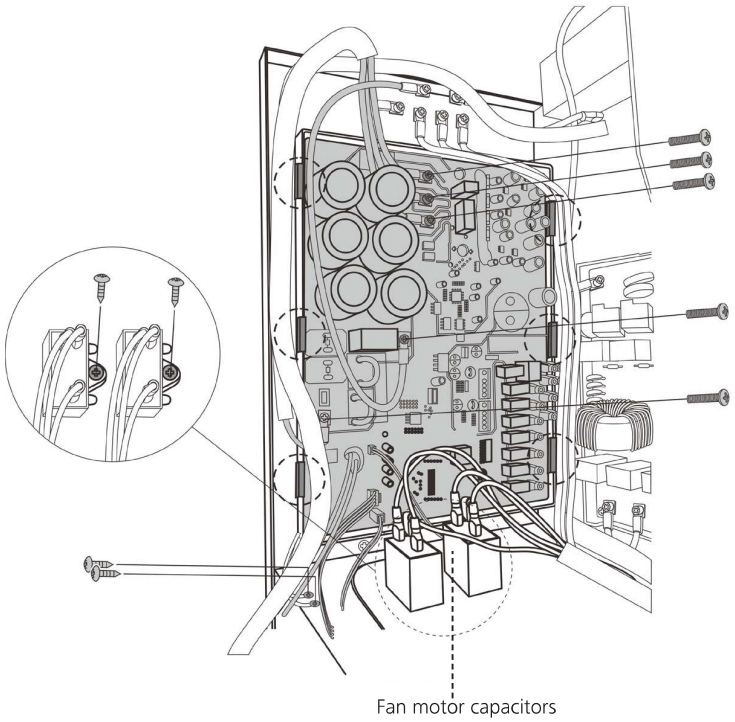
Procedure	Illustration
1) Remove 2 screws to disconnect the power supply wires. (see CJ_ODU_PCB_011-1) 2) Remove 3 screws to disconnect ground wires. (see CJ_ODU_PCB_011-1) 3) Disconnect the wires connected to main control board. (see CJ_ODU_PCB_011-1) 4) Disconnect the wires between main control board and IPM module board. (see CJ_ODU_PCB_011-1) 5) Remove the 4 screws and unfix the 6 hooks and then remove the main control board.(see CJ_ODU_PCB_011-1) 6) Remove 1 screw to remove the fan motor capacitor(1 screw for each capacitor).(see CJ_ODU_PCB_011-1).	 **CJ_ODU_PCB_011-1**

Note: This section is for reference only. Actual unit appearance may vary.

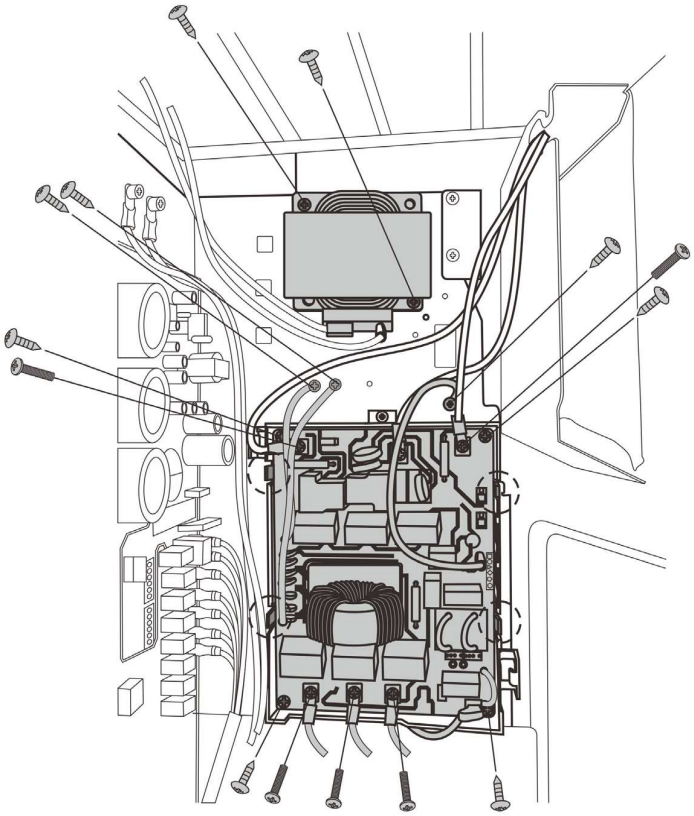
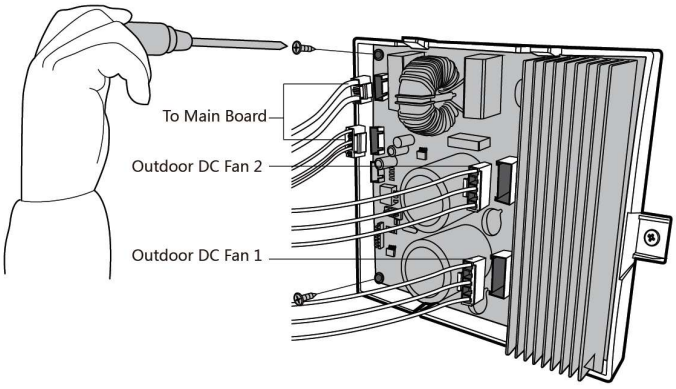
Procedure	Illustration
1) Remove 2 screws to disconnect the power supply wires. (see CJ_ODU_PCB_011-2) 2) Remove 3 screws to disconnect the wires connected to the compressor. (see CJ_ODU_PCB_011-2) 3) Remove 3 screws to remove the radiator.(see CJ_ODU_PCB_011-2) 4) Disconnect the wires between IPM module board and main control board. (see CJ_ODU_PCB_011-2) 5) Remove the 4 screws and unfix the 4 hooks and then remove the IPM moduel board.(see CJ_ODU_PCB_011-2)	 **CJ_ODU_PCB_011-2**
6) Remove the 1 screw and disconnect the wires and then remove the 24V board.(see CJ_ODU_PCB_011-3)(for some models)	 **CJ_ODU_PCB_011-3(for some models)**

Note: This section is for reference only. Actual unit appearance may vary.

14. PCB board 12

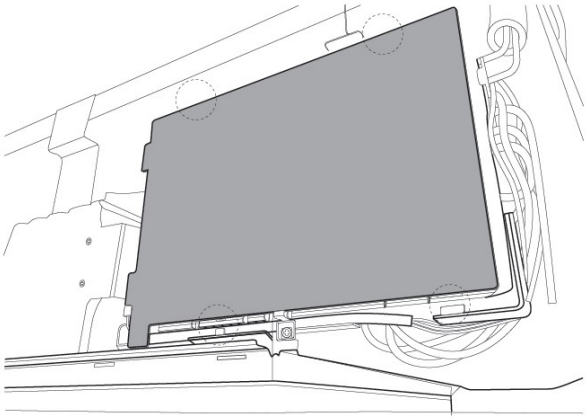
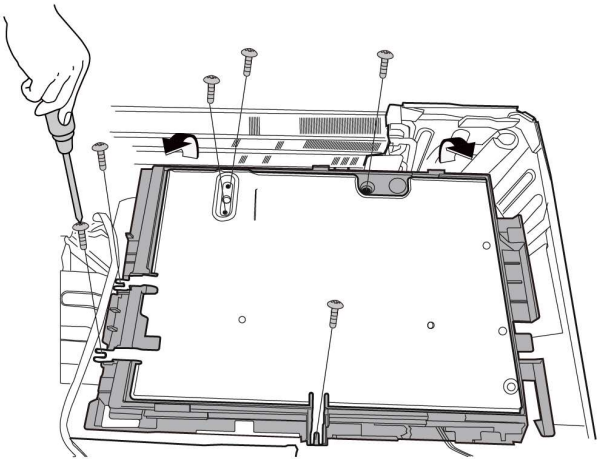
Procedure	Illustration
1) Remove 3 screws to disconnect the wires connected to the compressor. (see CJ_ODU_PCB_012-1) 2) Remove 2 screws to disconnect the power supply wires. (see CJ_ODU_PCB_012-1) 3) Disconnect the wires connected to main control board. (see CJ_ODU_PCB_012-1) 4) Remove the 4 screws and unfix the 6 hooks and then remove the main control board.(see CJ_ODU_PCB_012-1) 5) Remove the screw of the fan capacitor and then remove it (1 screw for each capacitor). (see CJ_ODU_PCB_012-1)	 **CJ_ODU_PCB_012-1**

Note: This section is for reference only. Actual unit appearance may vary.

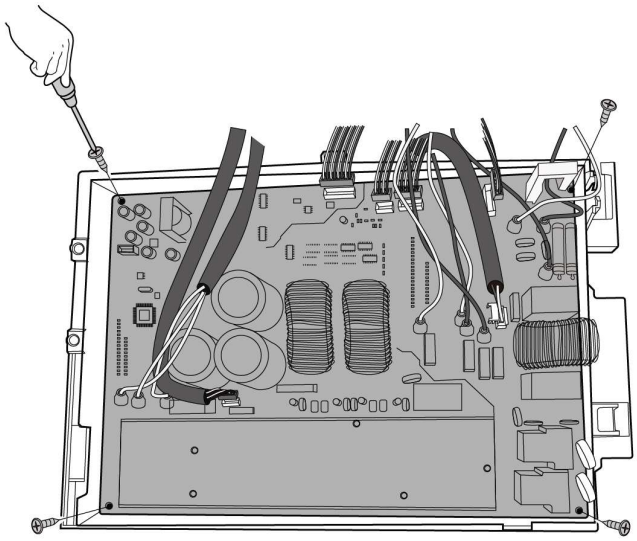
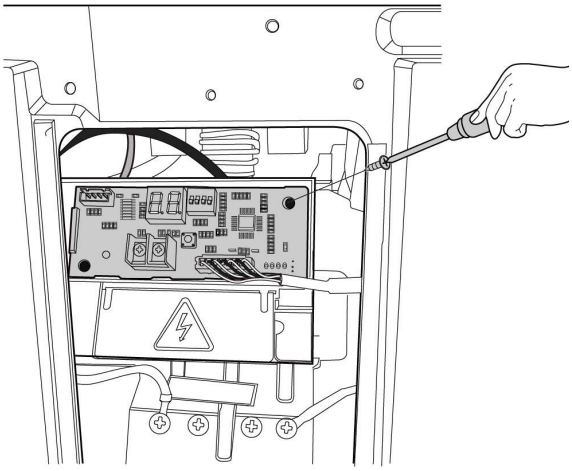
Procedure	Illustration
6) Remove 3 screws to disconnect the power supply wires. (see CJ_ODU_PCB_012-1) 7) Remove 3 screws to disconnect ground wires. (see CJ_ODU_PCB_012-1) 8) Disconnect the wires connected to main control board. (see CJ_ODU_PCB_012-2) 9) Remove the 4 screws and unfix the 4 hooks and then remove the filter board.(see CJ_ODU_PCB_012-2) 10)Remove the 2 screws of the reactor and then remove it . (see CJ_ODU_PCB_012-2)	 **CJ_ODU_PCB_012-2**
11)Disconnect the wires connected to main control board. (see CJ_ODU_PCB_012-3)(for some models) 12)Remove the 2 screws and then remove the DC motor driver board. (see CJ_ODU_PCB_012-3)(for some models)	 **CJ_ODU_PCB_012-3** **(for some models)**

Note: This section is for reference only. Actual unit appearance may vary.

15. PCB board 13

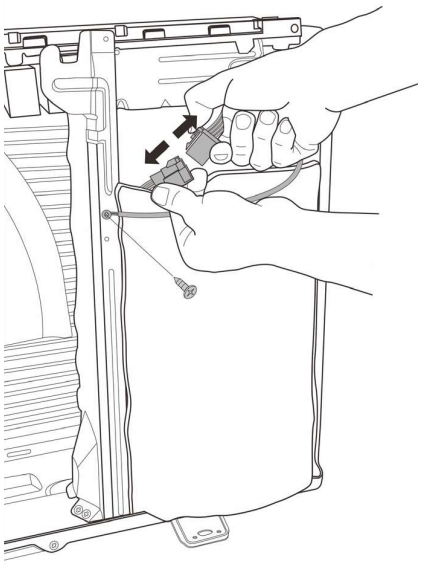
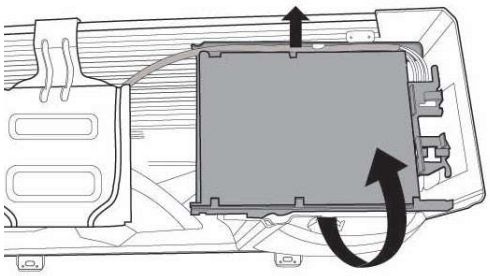
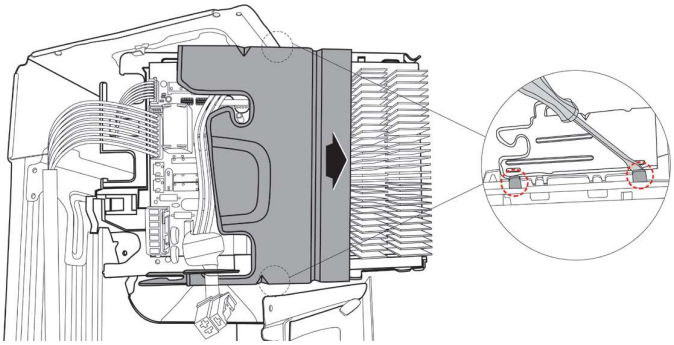
Procedure	Illustration
1) Unfix the hooks and then open the electronic control box cover (4 hooks) (see CJ_ODU_PCB_013-1).	 CJ_ODU_PCB_013-1
2) Remove 6 screws on the electronic control board and then turn over the electronic control board (see CJ_ODU_PCB_013-2).	 CJ_ODU_PCB_013-2

Note: This section is for reference only. Actual unit appearance may vary.

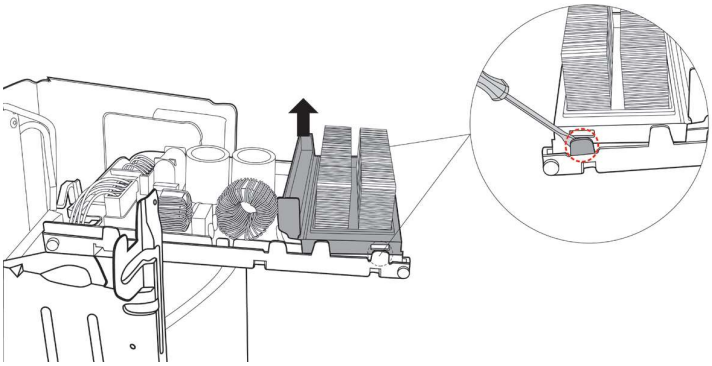
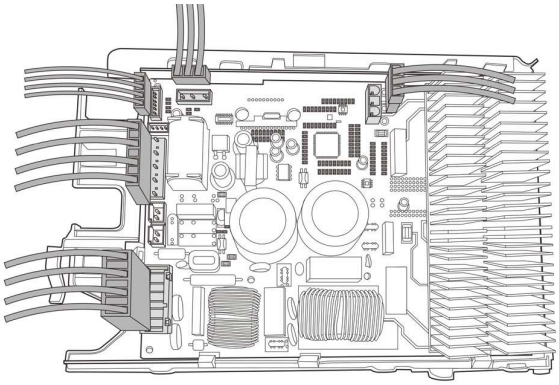
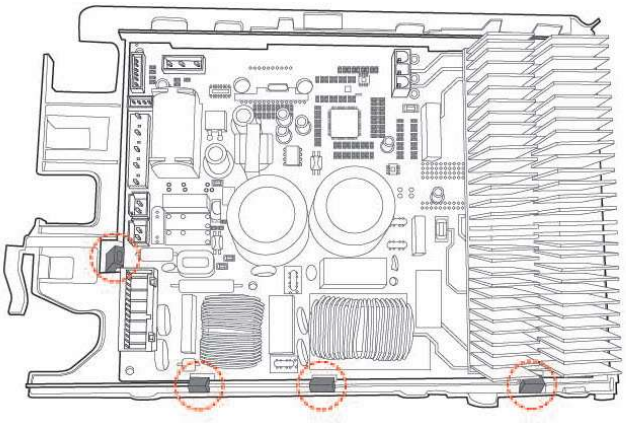
Procedure	Illustration
3) Pull out the connectors (see CJ_ ODU_PCB_013-3). 4) Remove the 4 screws and then remove the electronic control board(see CJ_ODU_PCB_013-3).	 **CJ_ODU_PCB_013-3**
5) Pull out the connector, remove one screw and then remove the key board subassembly on terminal board. (see CJ_ODU_PCB_013-4) (for some units).	 **CJ_ODU_PCB_013-4**

Note: This section is for reference only. Actual unit appearance may vary.

16. PCB board 16

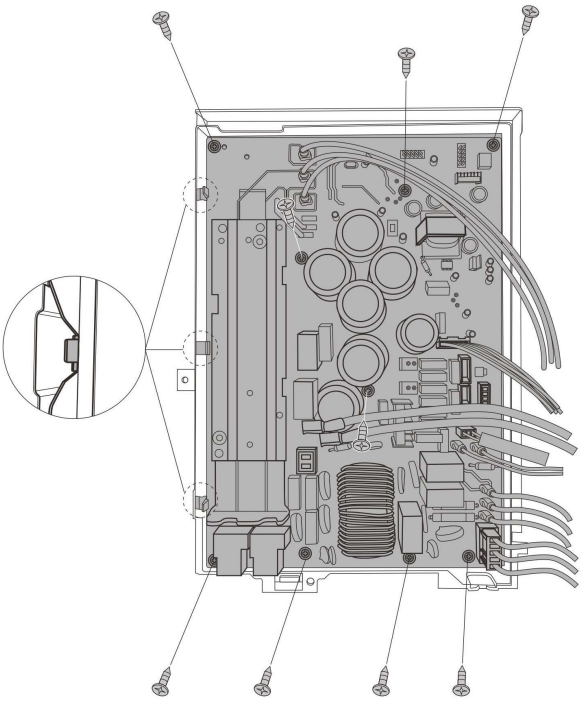
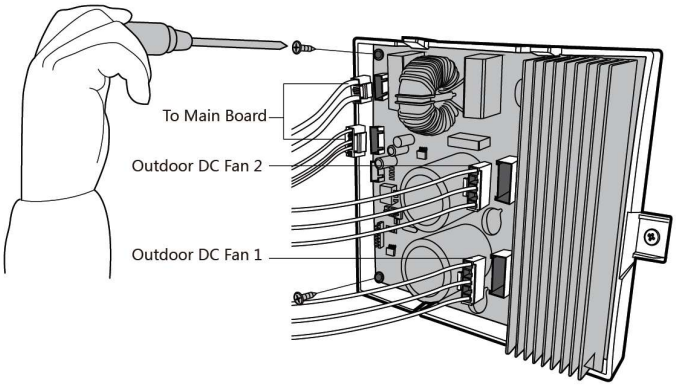
Procedure	Illustration
1) Disconnect the connector for compressor and release the ground wire(1 screw). (see CJ_ODU_PCB_016-1).	 CJ_ODU_PCB_016-1
2) Pull out the wires from electrical supporting plate and turn over the electronic control assembly. (see CJ_ODU_PCB_016-2).	 CJ_ODU_PCB_016-2
3) Remove the electronic installing box subassembly (4 hooks) (see CJ_ODU_PCB_016-3).	 CJ_ODU_PCB_016-3

Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
4) Remove the fixing board (2 hooks) (see CJ_ODU_PCB_016-4).	 CJ_ODU_PCB_016-4
5) Disconnect the connectors from the electronic control board (see CJ_ODU_PCB_016-5).	 CJ_ODU_PCB_016-5
6) Then remove the electronic control board (4 hooks).(see CJ_ODU_ PCB_016-6).	 CJ_ODU_PCB_016-6

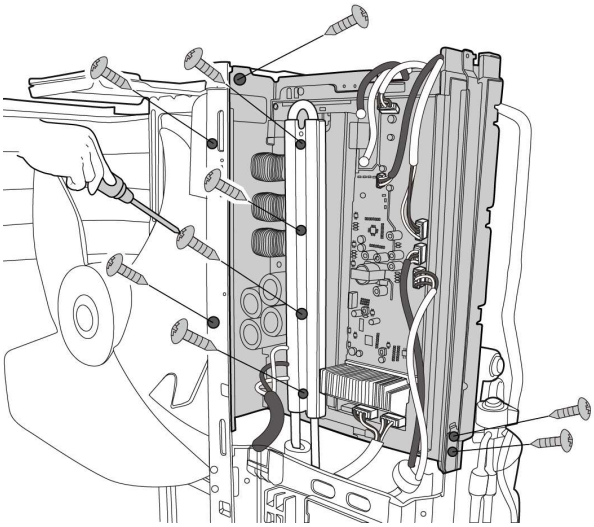
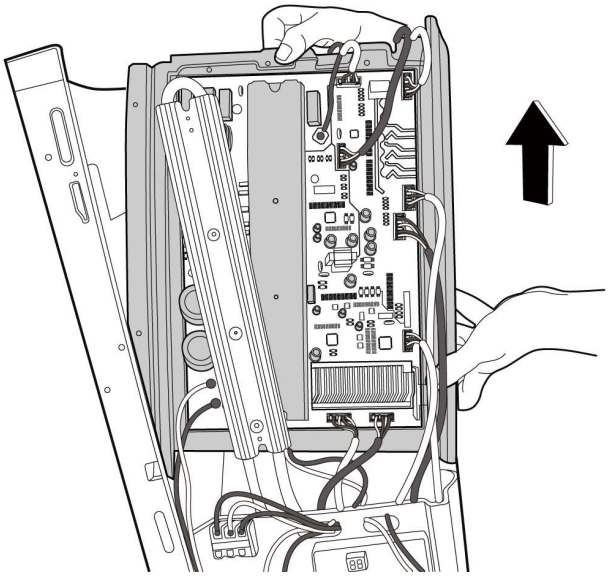
Note: This section is for reference only. Actual unit appearance may vary.

17. PCB board 17

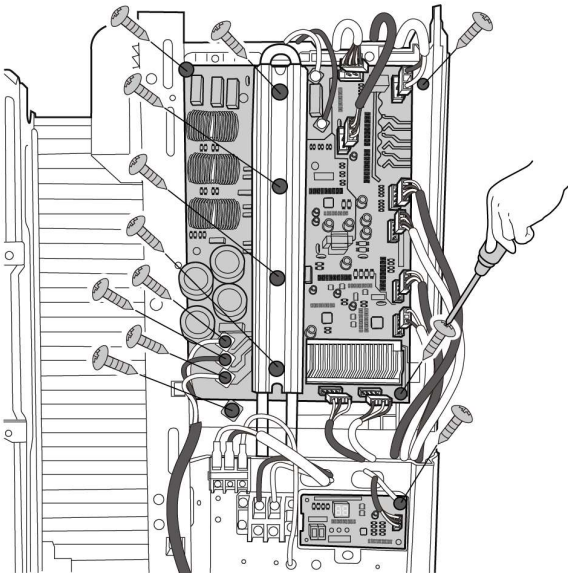
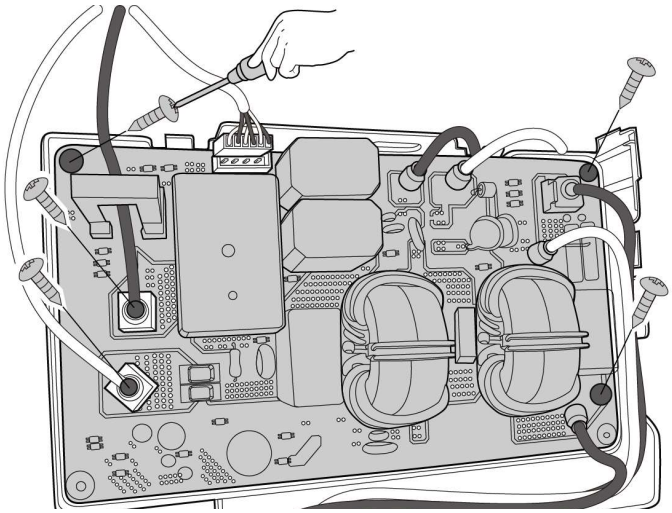
Procedure	Illustration
1) Pull out the connectors (see CJ_ ODU_PCB_017-1). 2) Remove the 9 screws and unfix the 3 hooks and then remove the electronic control board(see CJ_ ODU_PCB_017-2).	 **CJ_ODU_PCB_017-1**
3) Disconnect the wires connected to main control board. (see CJ_ODU_ PCB_017-2)(for some models) 4) Remove the 2 screws and then remove the DC motor driver board. (see CJ_ODU_PCB_017-2)(for some models)	 **CJ_ODU_PCB_017-2 (for some models)**

Note: This section is for reference only. Actual unit appearance may vary.

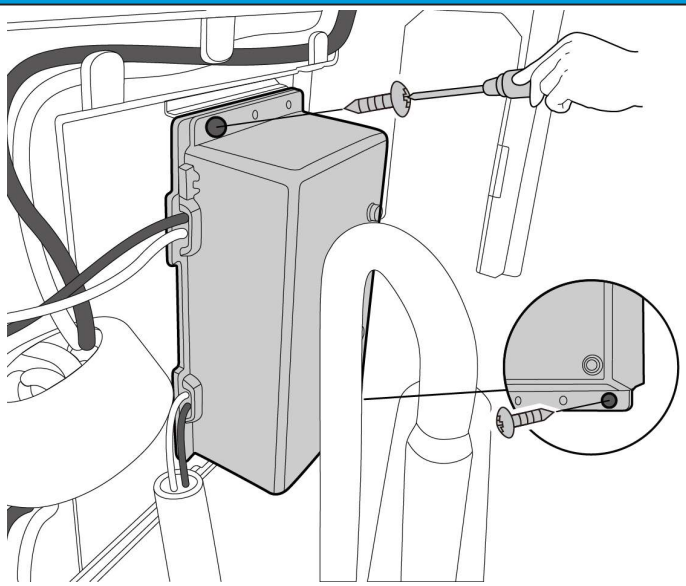
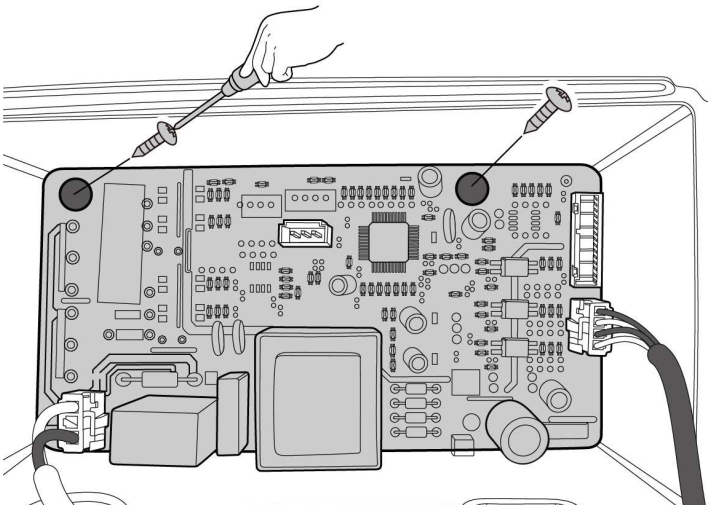
13. PCB board 18

Procedure	Illustration
1) Remove 4 screws unfix the radiator. (see CJ_ODU_PCB_018-1) 2) Remove 3 screws unfix the electronic control box assembly and partition board. (see CJ_ODU_PCB_018-1) 3) Remove 2 screws unfix the electronic control box assembly and terminal board subassembly. (see CJ_ODU_PCB_018-1)	 CJ_ODU_PCB_018-1
4) Move upward and slowly remove the electronic control box assembly. (CJ_ODU_PCB_018-2) (If you want to repair the electrical control box components, perform the steps 1 to 4;If you want to repair the main control board assembly, perform steps 5 to 7 below.)	 CJ_ODU_PCB_018-2

Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
5) Disconnect the wires connected to main control board. (see CJ_ODU_PCB_018-3) 6) Remove the 4 screws and then remove the main control board.(see CJ_ODU_PCB_018-3) 7) Remove 1 screw to remove the key board .(see CJ_ODU_PCB_018-3). 8) Disconnect the wires between filter board and main control board. (see CJ_ODU_PCB_018-4) 9) Remove the 3 screws and then remove the filter board.(see CJ_ODU_PCB_018-4) (Filter board is on the back of the electronic control box assembly)	 **CJ_ODU_PCB_018-3**  **CJ_ODU_PCB_018-4**

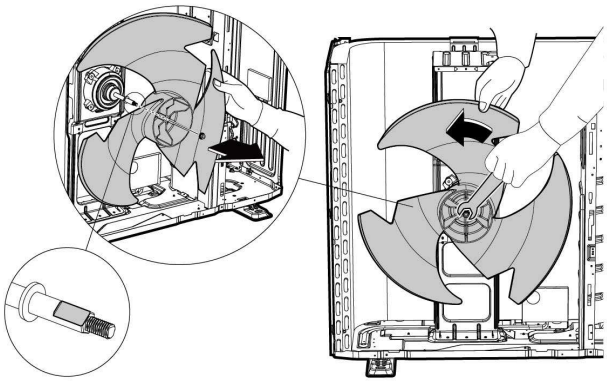
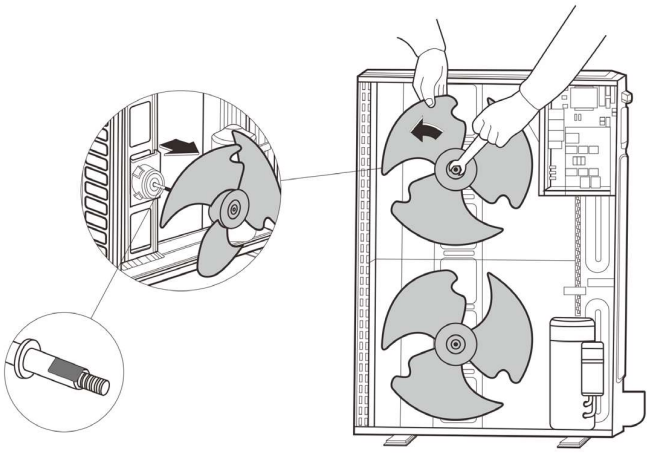
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
10)Remove the 2 screws and then remove the DR module box subassembly.(see CJ_ODU_PCB_018-5)(DR module box subassembly is on the back of the electronic control box assembly)	 CJ_ODU_PCB_018-5
11)Remove the 2 screws and then remove the DR module board.(see CJ_ODU_PCB_018-6)	 CJ_ODU_PCB_018-6

Note: This section is for reference only. Actual unit appearance may vary.

2.3 Fan Assembly

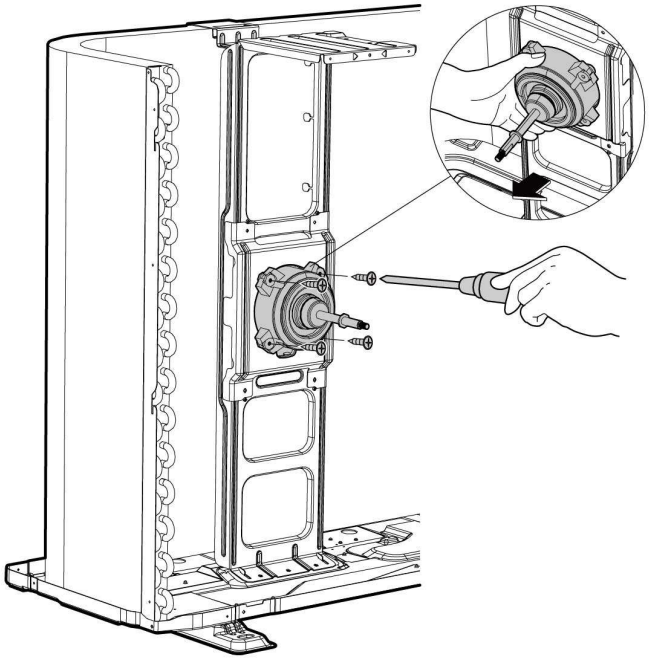
Note: Remove the panel plate (refer to 3.1 Panel Plate) before disassembling fan.

Procedure	Illustration
1) Remove the nut securing the fan with a spanner (see CJ_ODU_FAN_001-1&2). 2) Remove the fan.	 **CJ_ODU_FAN_001-1**  **CJ_ODU_FAN_001-2**

Note: This section is for reference only. Actual unit appearance may vary.

2.4 Fan Motor

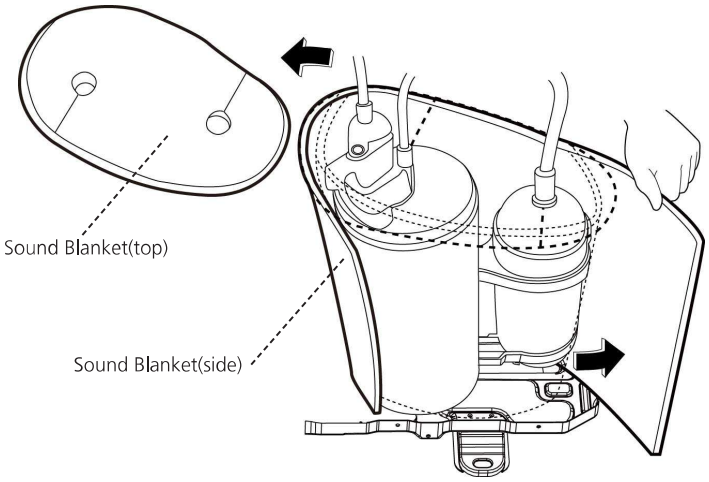
Note: Remove the panel plate and the connection of fan motor on PCB (refer to 3.1 Panel Plate and 3.2 Electrical parts) before disassembling fan motor.

Procedure	Illustration
3) Remove the fixing screws of the fan motor (4 screws) (see CJ_ODU_MOTOR_001). 4) Remove the fan motor.	 CJ_ODU_MOTOR_001

Note: This section is for reference only. Actual unit appearance may vary.

2.5 Sound blanket

Note: Remove the panel plate (refer to 3.1 Panel plate) before disassembling sound blanket.

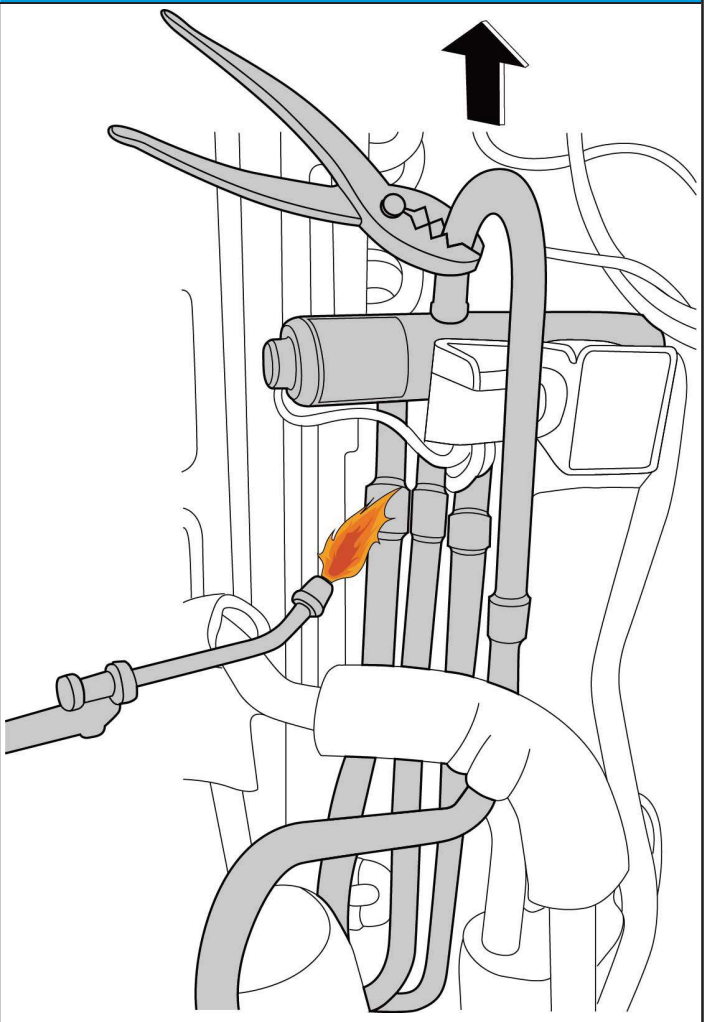
Procedure	Illustration
1) Remove the sound blanket (side and top) (see CJ_ODU_BLANKET_001).	 CJ_ODU_BLANKET_001

Note: This section is for reference only. Actual unit appearance may vary.

2.6 Four-way valve (for heat pump models)

WARNING: Evacuate the system and confirm that there is no refrigerant left in the system before removing the four-way valve and the compressor. (For R32 & R290, you should evacuate the system with the vacuum pump; flush the system with nitrogen; then repeat the two steps before heating up the brazed parts. The operations above should be implemented by professionals.)

Note: Remove the panel plate, connection of four-way valve on PCB (refer to 3.1 Panel plate and 3.2 Electrical parts) before disassembling sound blanket.

Procedure	Illustration
1) Heat up the brazed parts and then detach the the four-way valve and the pipe (see CJ_ODU_VALVE_001). 2) Remove the four-way valve assembly with pliers.	

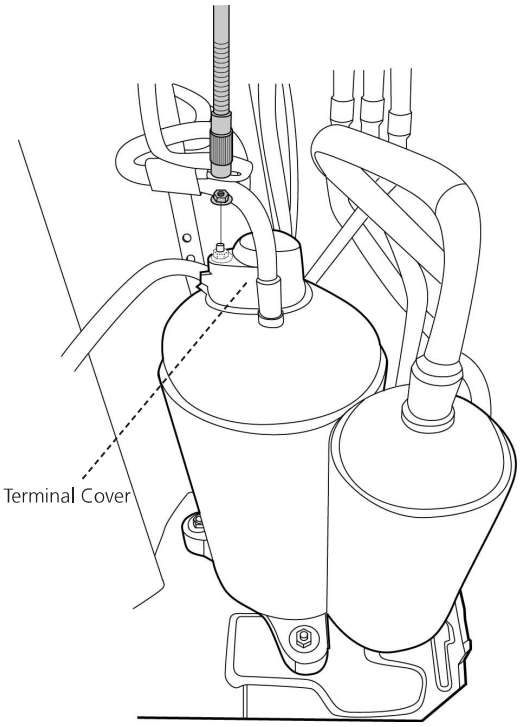
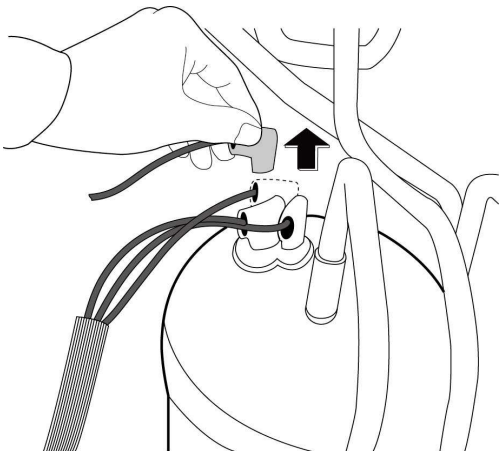
CJ_ODU_VALVE_001

Note: This section is for reference only. Actual unit appearance may vary.

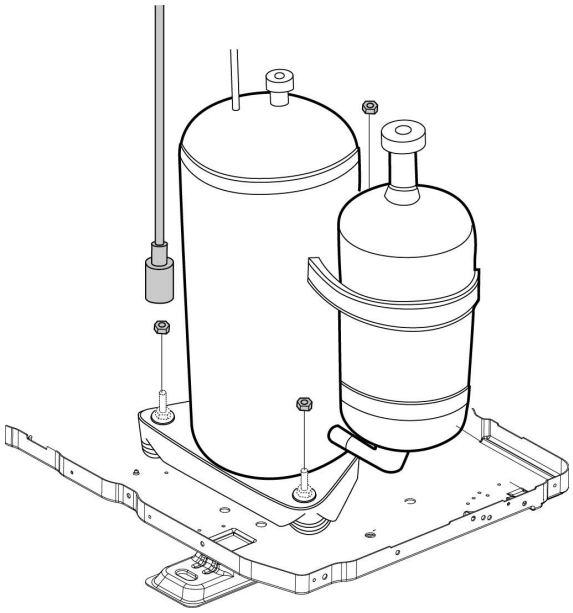
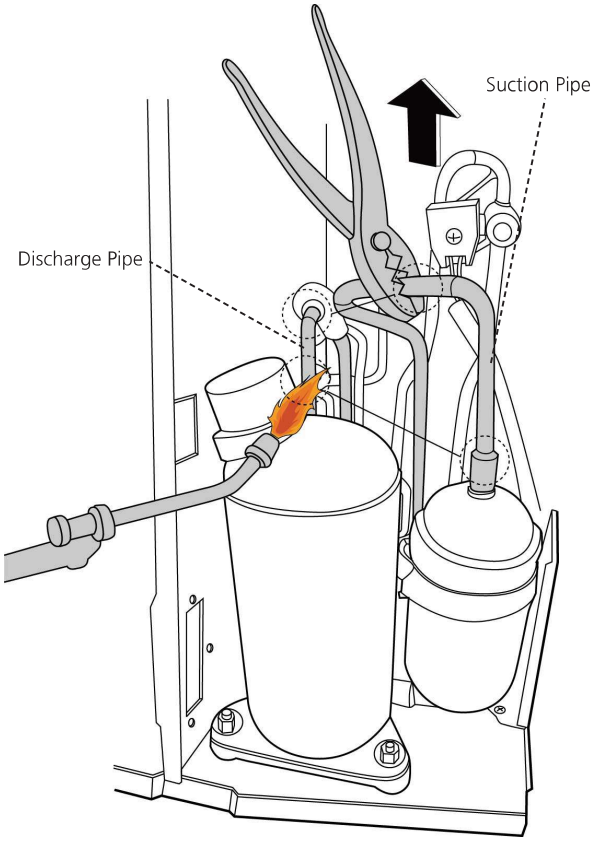
2.7 Compressor

WARNING: Evacuate the system and confirm that there is no refrigerant left in the system before removing the four-way valve and the compressor. (For R32 & R290, you should evacuate the system with the vacuum pump; flush the system with nitrogen; then repeat the two steps before heating up the brazed parts. The operations above should be implemented by professionals.)

Note: Remove the panel plate, connection of compressor on PCB (refer to 3.1 Panel plate and 3.2 Electrical parts) before disassembling sound blanket.

Procedure	Illustration
1) Remove the flange nut of terminal cover and remove the terminal cover (see CJ_ODU_COMP_001).	 CJ_ODU_COMP_001
2) Disconnect the connectors (see CJ_ODU_COMP_002).	 CJ_ODU_COMP_002

Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
3) Remove the hex nuts and washers securing the compressor, located on the bottom plate (see CJ_ODU_COMP_003).	 CJ_ODU_COMP_003
4) Heat up the brazed parts and then remove the the discharge pipe and the suction pipe (see CJ_ODU_COMP_004). 5) Lift the compressor from the base pan assembly with pliers.	 CJ_ODU_COMP_004

Note: This section is for reference only. Actual unit appearance may vary.