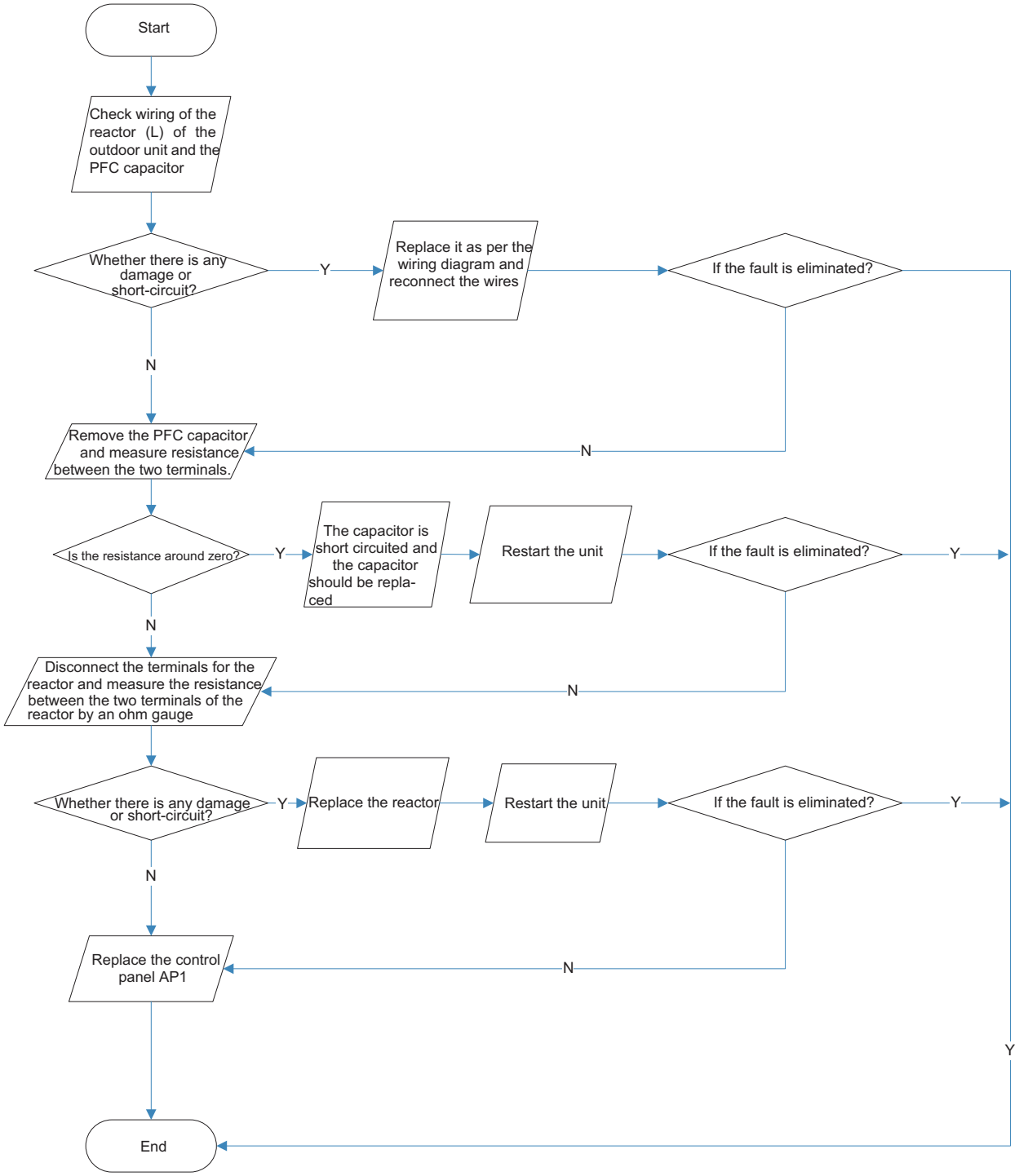
(7)Power factor correct or (PFC) fault (a fault of outdoor unit) (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

●Check if the reactor (L) of the outdoor unit and the PFC capacitor are broken

Fault diagnosis process:



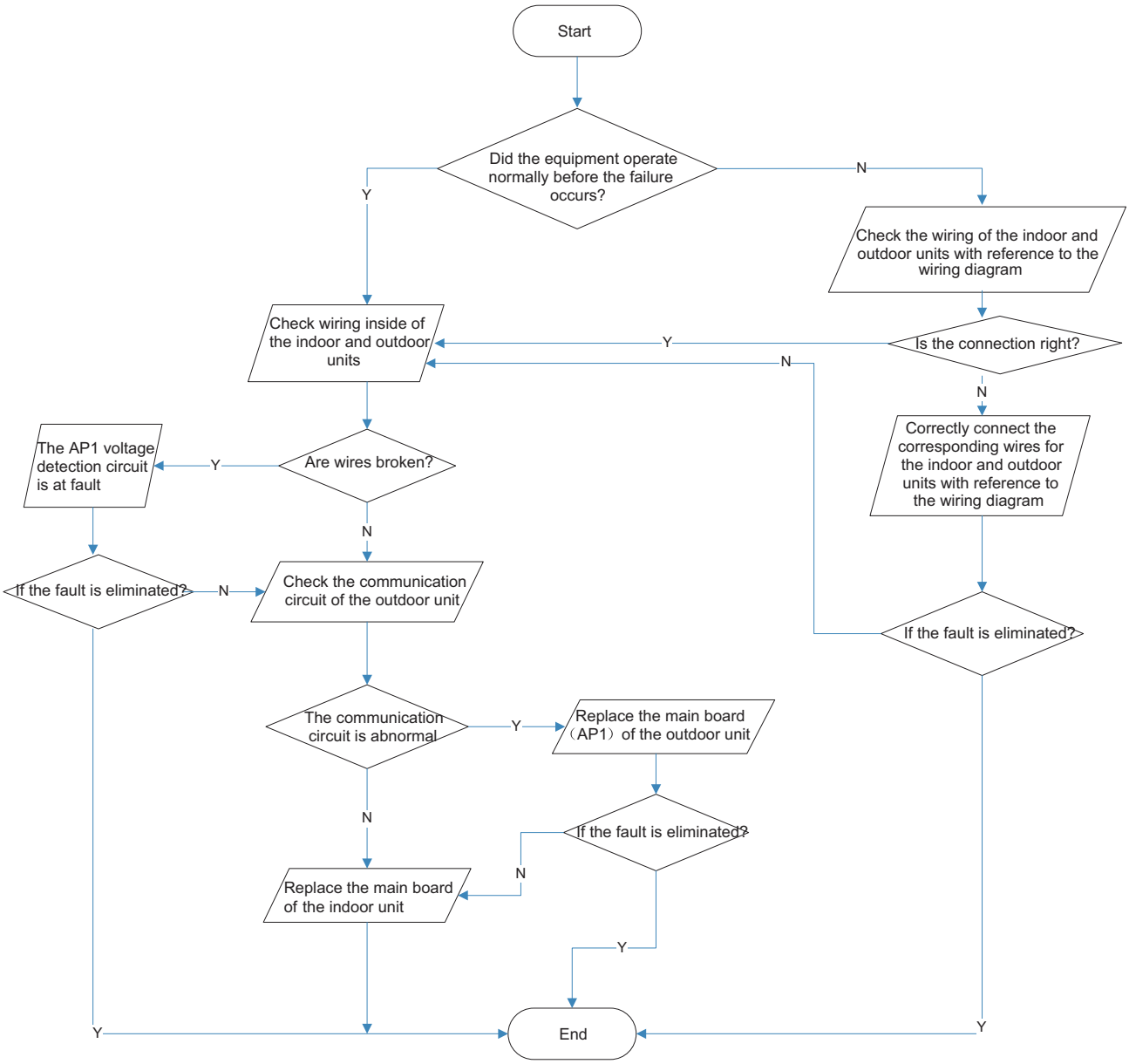
(8) Communication malfunction: (following AP1 for outdoor unit control board)

Mainly detect:

●Is there any damage for the indoor unit mainboard communication circuit? Is communication circuit damaged?

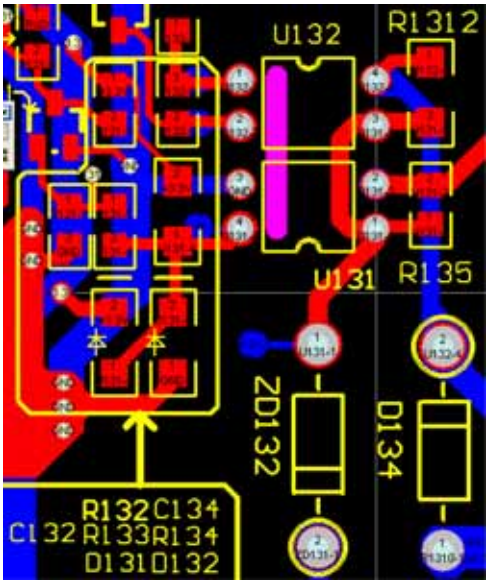
●Detect the indoor and outdoor units connection wire and indoor and outdoor units inside wiring is connect well or not, if is there any damage?

Fault diagnosis process:

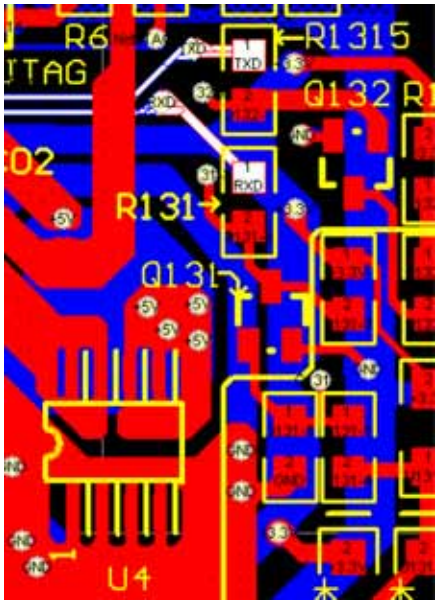


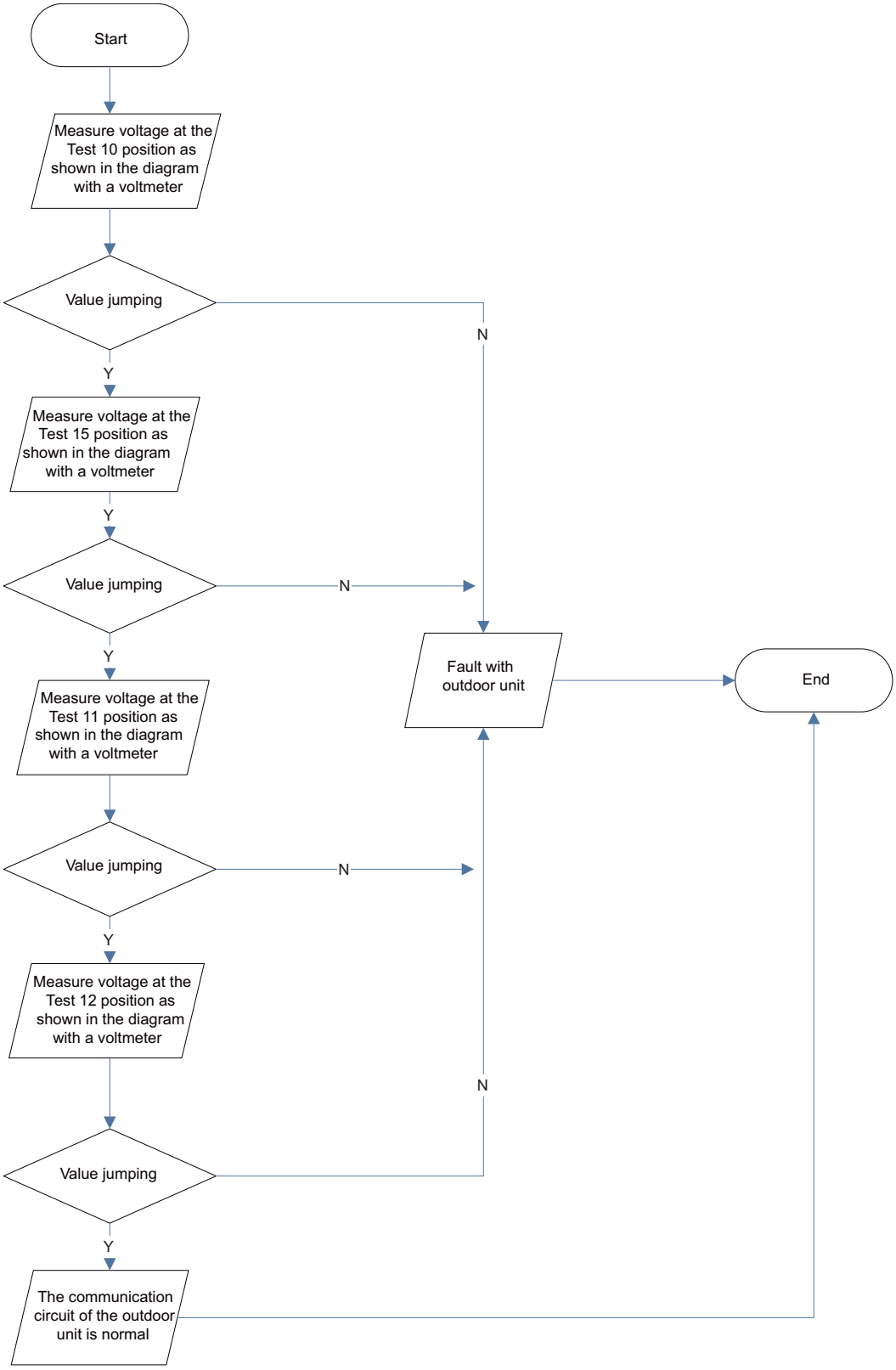
(9) Flow chart for outdoor communitcation circuit detecting:

(1) Test the voltage between N point of wiring board and communication cable with universal meter. The voltage shall be variable. Otherwise, it might be malfunction of mainboard of indoor unit, or malfunction of mainboard of outdoor unit, or wrong wire connection of indoor and outdoor unit. Please ensure that there is no malfunction of mainboard of indoor unit, or wrong wire connection of indoor and outdoor unit. After removing the malfunction of indoor unit, remove the malfunction of outdoor unit.
(2) Test the voltage of pin 1 and pin 2 of U132 with universal meter (voltage of both sides of R135). The voltage should be variable. (Test 10) Test the voltage of pin 3 and pin 4 of U132 with universal meter (voltage of both sides of R1312). The voltage should be variable. (Test 15) Otherwise, there is malfunction of mainboard of outdoor unit.



(3) Test the voltage of pin 3 and pin 4 of U131 with universal meter (voltage of both sides of R134). The voltage should be variable. (test 11) Test the voltage of pin 1 and pin 2 of U132 with universal meter (voltage of both sides of C134). The voltage should be variable. (test 12) Otherwise, there is malfunction of mainboard of outdoor unit.
(4) Test the voltage between pin 1 of R135 (white) and pin 1 of U4. The voltage should be variable. Test voltage between pin1 of R131 (white) and pin 1 of U4 with universal meter. The voltage should be variable. Otherwise, there is malfunction of mainboard of outdoor unit.




Start
Measure voltage at the Test 10 position as shown in the diagram with a voltmeter
Value jumping
N
Y
Measure voltage at the Test 15 position as shown in the diagram with a voltmeter
Y
Value jumping
N
Y
Measure voltage at the Test 11 position as shown in the diagram with a voltmeter
Value jumping
N
Y
Measure voltage at the Test 12 position as shown in the diagram with a voltmeter
N
Value jumping
Y
The communication circuit of the outdoor unit is normal
Fault with outdoor unit
End

Appendix

Appendix 1: Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(15K)									
Temp.（℃）	Resistance(kΩ)		Temp.（℃）	Resistance(kΩ)		Temp.（℃）	Resistance(kΩ)		Temp.（℃）	Resistance(kΩ)
-19	138.1		20	18.75		59	3.848		98	1.071
-18	128.6		21	17.93		60	3.711		99	1.039
-17	121.6		22	17.14		61	3.579		100	1.009
-16	115		23	16.39		62	3.454		101	0.98
-15	108.7		24	15.68		63	3.333		102	0.952
-14	102.9		25	15		64	3.217		103	0.925
-13	97.4		26	14.36		65	3.105		104	0.898
-12	92.22		27	13.74		66	2.998		105	0.873
-11	87.35		28	13.16		67	2.896		106	0.848
-10	82.75		29	12.6		68	2.797		107	0.825
-9	78.43		30	12.07		69	2.702		108	0.802
-8	74.35		31	11.57		70	2.611		109	0.779
-7	70.5		32	11.09		71	2.523		110	0.758
-6	66.88		33	10.63		72	2.439		111	0.737
-5	63.46		34	10.2		73	2.358		112	0.717
-4	60.23		35	9.779		74	2.28		113	0.697
-3	57.18		36	9.382		75	2.206		114	0.678
-2	54.31		37	9.003		76	2.133		115	0.66
-1	51.59		38	8.642		77	2.064		116	0.642
0	49.02		39	8.297		78	1.997		117	0.625
1	46.6		40	7.967		79	1.933		118	0.608
2	44.31		41	7.653		80	1.871		119	0.592
3	42.14		42	7.352		81	1.811		120	0.577
4	40.09		43	7.065		82	1.754		121	0.561
5	38.15		44	6.791		83	1.699		122	0.547
6	36.32		45	6.529		84	1.645		123	0.532
7	34.58		46	6.278		85	1.594		124	0.519
8	32.94		47	6.038		86	1.544		125	0.505
9	31.38		48	5.809		87	1.497		126	0.492
10	29.9		49	5.589		88	1.451		127	0.48
11	28.51		50	5.379		89	1.408		128	0.467
12	27.18		51	5.197		90	1.363		129	0.456
13	25.92		52	4.986		91	1.322		130	0.444
14	24.73		53	4.802		92	1.282		131	0.433
15	23.6		54	4.625		93	1.244		132	0.422
16	22.53		55	4.456		94	1.207		133	0.412
17	21.51		56	4.294		95	1.171		134	0.401
18	20.54		57	4.139		96	1.136		135	0.391
19	19.63		58	3.99		97	1.103		136	0.382

Appendix 2: Resistance Table of Outdoor and Indoor Tube Temperature Sensors(20K)									
Temp. （℃）	Resistance(kΩ)		Temp. （℃）	Resistance(kΩ)		Temp. （℃）	Resistance(kΩ)		Temp. （℃）	Resistance(kΩ)
-19	181.4		20	25.01		59	5.13		98	1.427
-18	171.4		21	23.9		60	4.948		99	1.386
-17	162.1		22	22.85		61	4.773		100	1.346
-16	153.3		23	21.85		62	4.605		101	1.307
-15	145		24	20.9		63	4.443		102	1.269
-14	137.2		25	20		64	4.289		103	1.233
-13	129.9		26	19.14		65	4.14		104	1.198
-12	123		27	18.13		66	3.998		105	1.164
-11	116.5		28	17.55		67	3.861		106	1.131
-10	110.3		29	16.8		68	3.729		107	1.099
-9	104.6		30	16.1		69	3.603		108	1.069
-8	99.13		31	15.43		70	3.481		109	1.039
-7	94		32	14.79		71	3.364		110	1.01
-6	89.17		33	14.18		72	3.252		111	0.983
-5	84.61		34	13.59		73	3.144		112	0.956
-4	80.31		35	13.04		74	3.04		113	0.93
-3	76.24		36	12.51		75	2.94		114	0.904
-2	72.41		37	12		76	2.844		115	0.88
-1	68.79		38	11.52		77	2.752		116	0.856
0	65.37		39	11.06		78	2.663		117	0.833
1	62.13		40	10.62		79	2.577		118	0.811
2	59.08		41	10.2		80	2.495		119	0.77
3	56.19		42	9.803		81	2.415		120	0.769
4	53.46		43	9.42		82	2.339		121	0.746
5	50.87		44	9.054		83	2.265		122	0.729
6	48.42		45	8.705		84	2.194		123	0.71
7	46.11		46	8.37		85	2.125		124	0.692
8	43.92		47	8.051		86	2.059		125	0.674
9	41.84		48	7.745		87	1.996		126	0.658
10	39.87		49	7.453		88	1.934		127	0.64
11	38.01		50	7.173		89	1.875		128	0.623
12	36.24		51	6.905		90	1.818		129	0.607
13	34.57		52	6.648		91	1.736		130	0.592
14	32.98		53	6.403		92	1.71		131	0.577
15	31.47		54	6.167		93	1.658		132	0.563
16	30.04		55	5.942		94	1.609		133	0.549
17	28.68		56	5.726		95	1.561		134	0.535
18	27.39		57	5.519		96	1.515		135	0.521
19	26.17		58	5.32		97	1.47		136	0.509

Appendix 3: Resistance Table of Outdoor Discharge Temperature Sensor(50K)									
Temp. （℃）	Resistance(kΩ)		Temp.（℃）	Resistance(kΩ)		Temp.（℃）	Resistance(kΩ)		Temp.（℃）	Resistance(kΩ)
-29	853.5		10	98		49	18.34		88	4.754
-28	799.8		11	93.42		50	17.65		89	4.609
-27	750		12	89.07		51	16.99		90	4.469
-26	703.8		13	84.95		52	16.36		91	4.334
-25	660.8		14	81.05		53	15.75		92	4.204
-24	620.8		15	77.35		54	15.17		93	4.079
-23	580.6		16	73.83		55	14.62		94	3.958
-22	548.9		17	70.5		56	14.09		95	3.841
-21	516.6		18	67.34		57	13.58		96	3.728
-20	486.5		19	64.33		58	13.09		97	3.619
-19	458.3		20	61.48		59	12.62		98	3.514
-18	432		21	58.77		60	12.17		99	3.413
-17	407.4		22	56.19		61	11.74		100	3.315
-16	384.5		23	53.74		62	11.32		101	3.22
-15	362.9		24	51.41		63	10.93		102	3.129
-14	342.8		25	49.19		64	10.54		103	3.04
-13	323.9		26	47.08		65	10.18		104	2.955
-12	306.2		27	45.07		66	9.827		105	2.872
-11	289.6		28	43.16		67	9.489		106	2.792
-10	274		29	41.34		68	9.165		107	2.715
-9	259.3		30	39.61		69	8.854		108	2.64
-8	245.6		31	37.96		70	8.555		109	2.568
-7	232.6		32	36.38		71	8.268		110	2.498
-6	220.5		33	34.88		72	7.991		111	2.431
-5	209		34	33.45		73	7.726		112	2.365
-4	198.3		35	32.09		74	7.47		113	2.302
-3	199.1		36	30.79		75	7.224		114	2.241
-2	178.5		37	29.54		76	6.998		115	2.182
-1	169.5		38	28.36		77	6.761		116	2.124
0	161		39	27.23		78	6.542		117	2.069
1	153		40	26.15		79	6.331		118	2.015
2	145.4		41	25.11		80	6.129		119	1.963
3	138.3		42	24.13		81	5.933		120	1.912
4	131.5		43	23.19		82	5.746		121	1.863
5	125.1		44	22.29		83	5.565		122	1.816
6	119.1		45	21.43		84	5.39		123	1.77
7	113.4		46	20.6		85	5.222		124	1.725
8	108		47	19.81		86	5.06		125	1.682
9	102.8		48	19.06		87	4.904		126	1.64

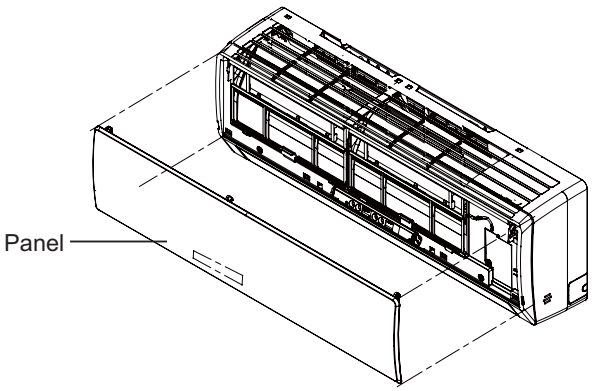
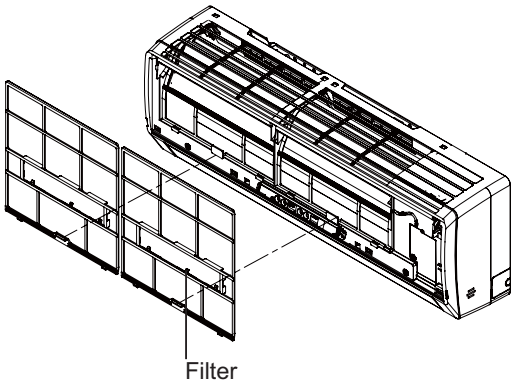
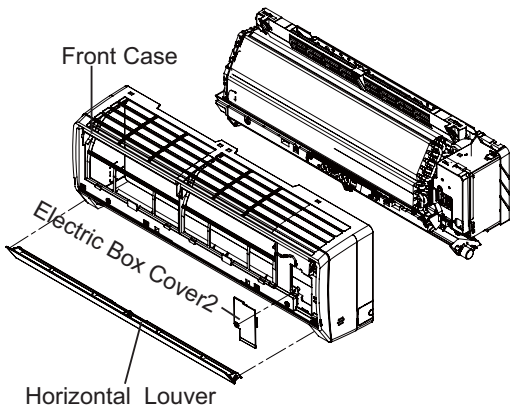
Note: The information above is for reference only.

10. Removal Procedure

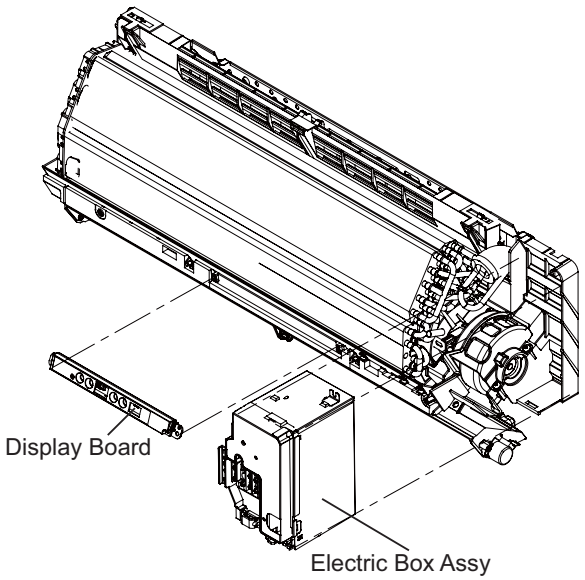
10.1 Removal Procedure of Indoor Unit

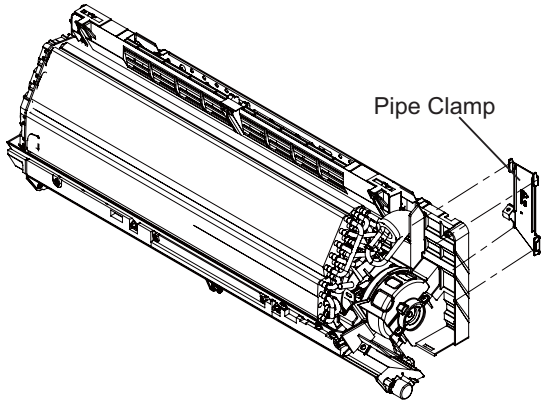
Warning **Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.**

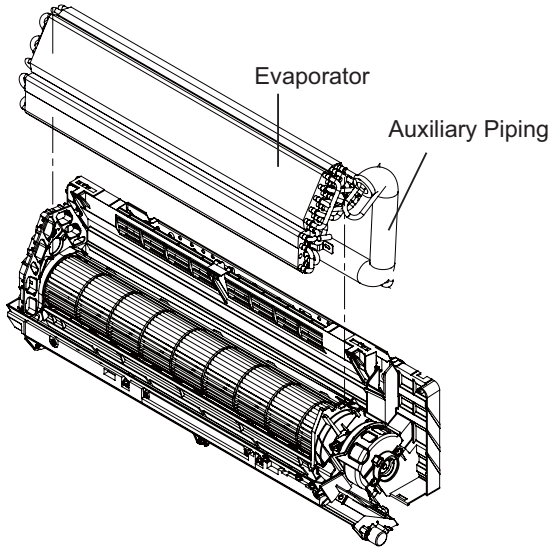
NOTE:Take A3 front panel for example.

Step	Procedure	
1.Remove panel		
	Open the front panel.Push the rotor shaft on both sides of the panel to make it separate from the groove .Remove the panel.	
2.Remove filter		
	Loosen the clasp of the filter.Push the filter inward and then draw it upward to remove it.	
3.Remove horizontal louver and front case		
	Remove axial sleeve of horizontal louver. Bend the louver outwards and then remove the louver. Loosen the screws of the electric box cover2 with screwdriver.Remove the electric box cover2. Open the screw cap on the front case. Remove the screws fixing the front case. Loosen the six clasps of the front case. Remove the front case.	

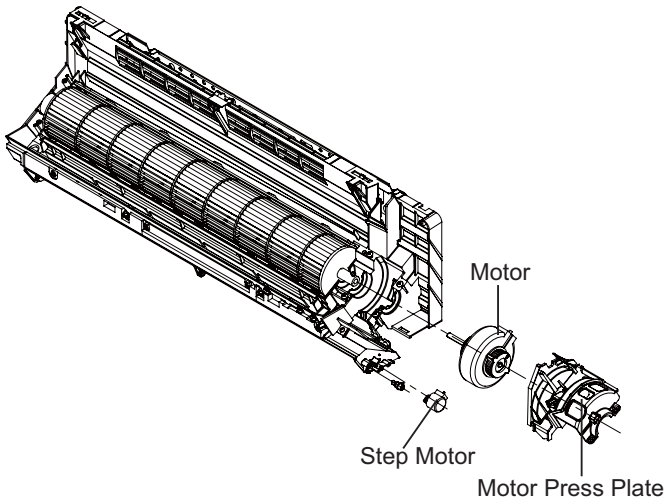
Step	Procedure
4.Remove electric box assy	
	Remove the screws of the electric box assy.Remove the screws at the joint of the earthing wire and evaporator.Loosen the clasp at the joint of the electric box cover and the electric box.Remove the 2 screws of the display.Remove the electric box assy.
5.Remove evaporator	
1	Remove the screws of the press plate of connecting pipe.Remove press plate of connecting pipe.
2	Remove the 3 screws at the joint of the evaporator and rear case.Adjust slightly the pipe on the evaporator.Remove the evaporator.

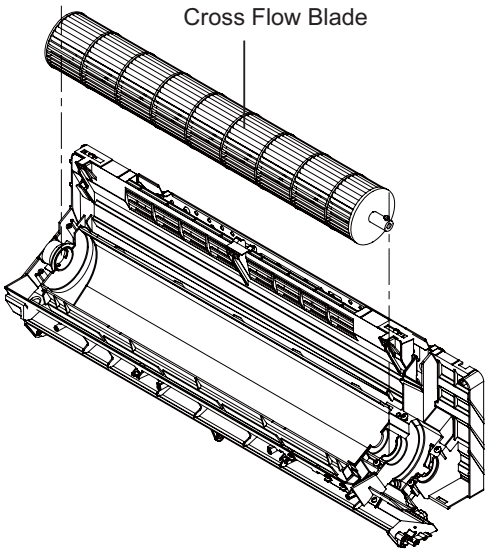






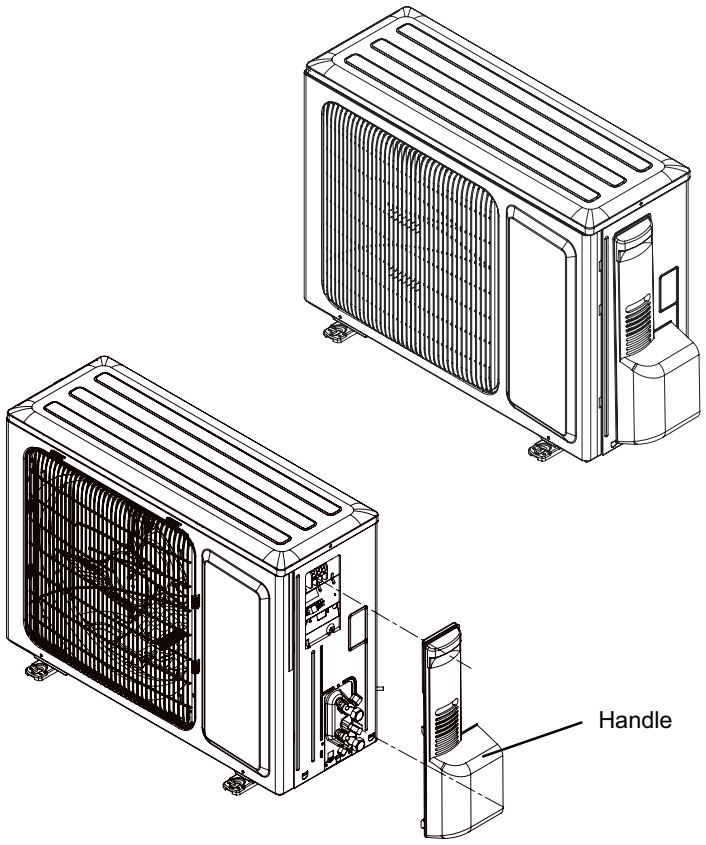
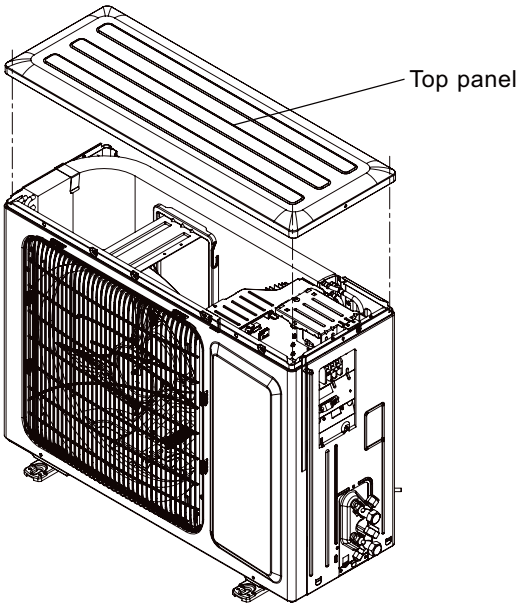
Step	Procedure
6.Remove motor and axial flow blade	
1	Remove screws of step motor and then remove the motor. Remove the screw of the motor press plate and then remove the press plate. Remove the screws at the joint of the cross flow blade and the motor. Take down the motor.
2	Remove the cross flow blade.

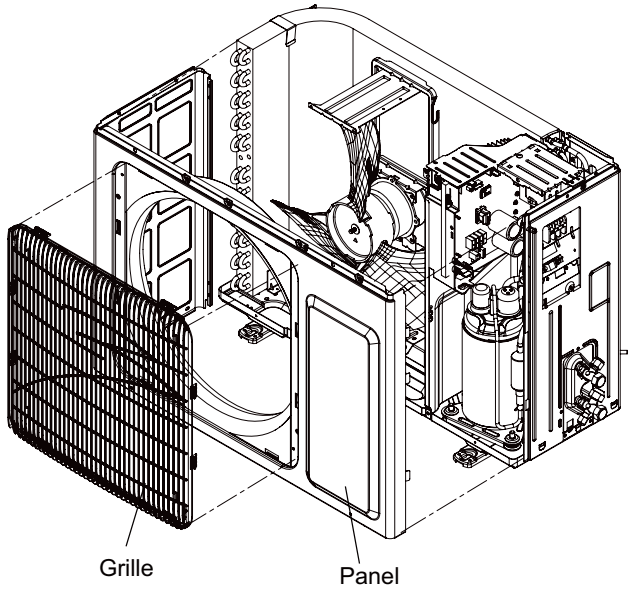
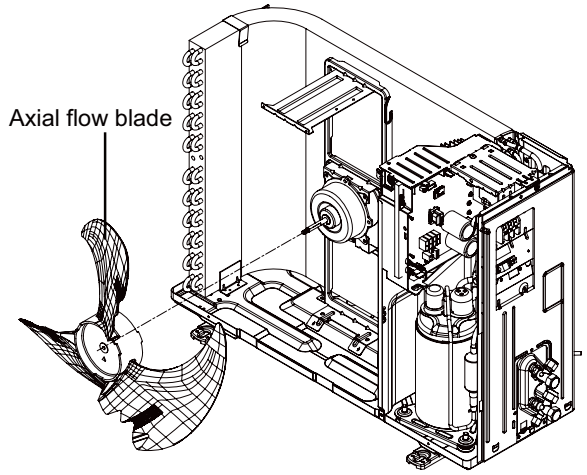
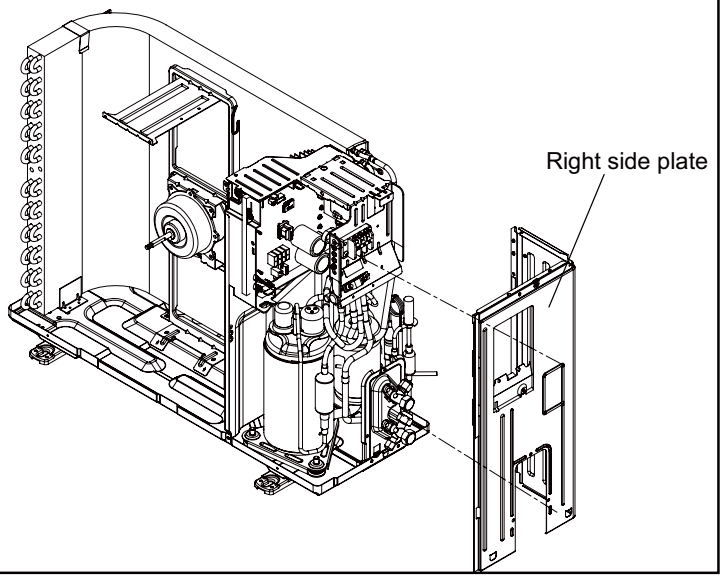




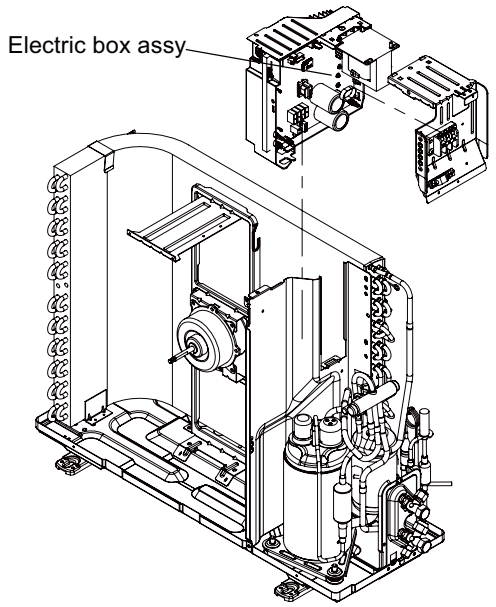
10.2 Removal Procedure of Outdoor Unit

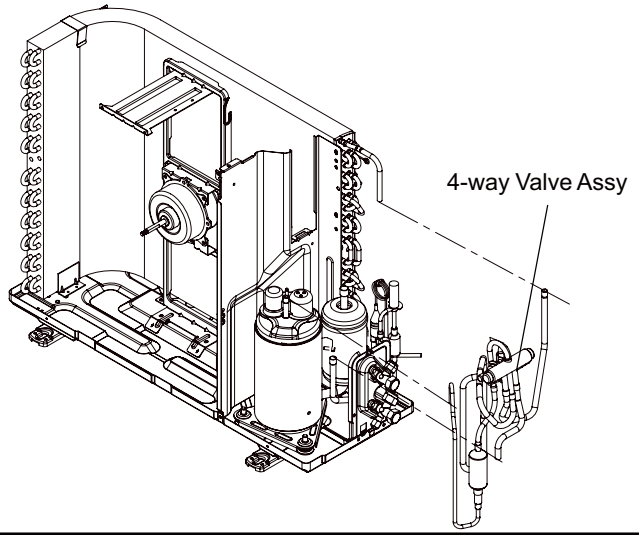
Warning **Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.**

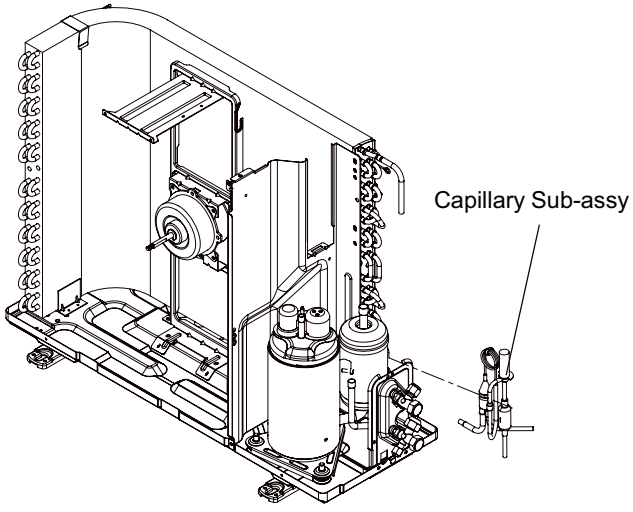
Steps	Procedure
1.Remove big handle	
1	Before disassembly.
2	Remove the connection screw fixing the big handle and then remove the handle.
2. Remove top cover	
	Remove connection screws connecting the top cover plate with the front panel and the right side plate, and then remove the top panel.

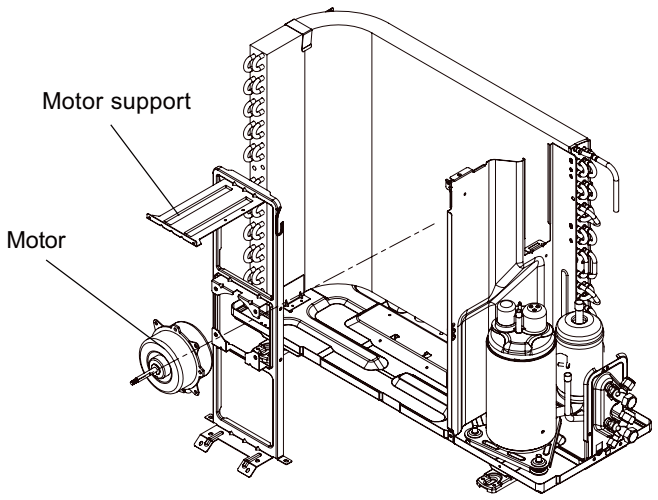
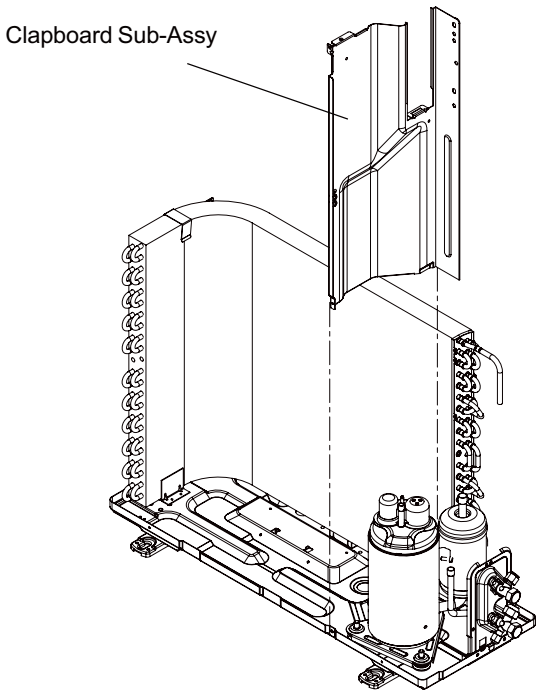
Steps	Procedure
3.Remove grille and front panel	
Remove connection screws between the front grille and the front panel. Then remove the front grille. Remove connection screws connecting the front panel with the chassis and the motor support, and then remove the front panel.	
4.Remove axial flow blade	
Remove the nut fixing the blade and then remove the axial flow blade.	
5.Remove right side plate	
Remove connection screws connecting the right side plate with the valve support and the electric box. Then remove the right side plate.	

Steps	Procedure
6.Remove electric box assy	Remove the 2 screws fixing the cover of electric box. Lift to remove the cover. Loosen the wire and disconnect the terminal. Lift to remove the electric box assy.
7.Remove 4-way valve assy	Unscrew the fastening nut of the 4-way Valve Assy coil and remove the coil. Wrap the 4-way Valve Assy with wet cotton and unsolder the 4 weld spots connecting the 4-way Valve Assy to take it out.(Note: Refrigerant should be discharged firstly.) Welding process should be as quickly as possible and keep wrapping cotton wet all the time. Be sure not to burn out the lead-out wire of compressor.
8.Remove capillary sub-assy	Unsolder weld point of capillary Sub-assy, valve and outlet pipe of condensator. Then remove the capillary Sub-assy. Do not block the capillary when unsoldering it. (Note: before unsoldering,discharge refrigerants completely)

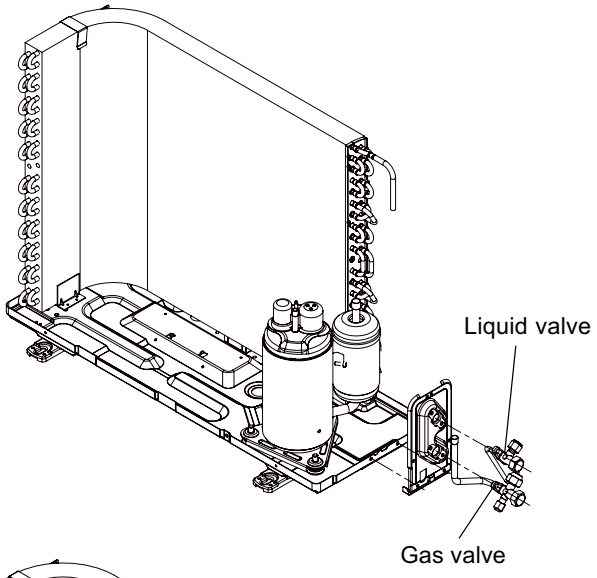


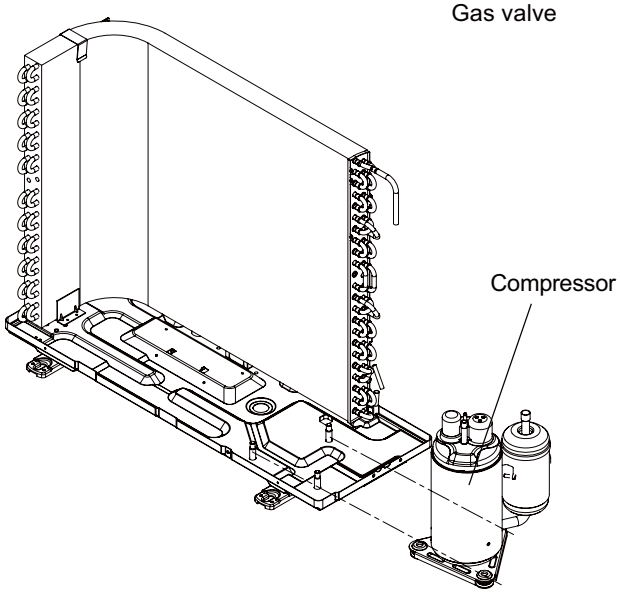




Steps	Procedure
9.Remove motor and motor support	
	Remove the 4 tapping screws fixing the motor. Pull out the lead-out wire and remove the motor. Remove the 2 tapping screws fixing the motor support. Lift motor support to remove it.
	
10.Remove clapboard sub-assy	
	Loosen the screws of the Clapboard Sub-Assy . The Clapboard Sub-Assy has a hook on the lower side. Lift and pull the Clapboard Sub-Assy to remove.
	

Steps	Procedure
11.Remove Compressor	
1	Remove the 2 screws fixing the gas valve. Unsolder the welding spot connecting gas valve and air return pipe and remove the gas valve. (Note: it is necessary to warp the gas valve when unsoldering the welding spot.) Remove the 2 screws fixing liquid valve. Unsolder the welding spot connecting liquid valve and remove the liquid valve.
2	Remove the 3 footing screws of the compressor and remove the compressor.





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