TOSOT

SERVICE MANUAL

MODELS:

TM30H4O

TM36H4O

TM42H3O

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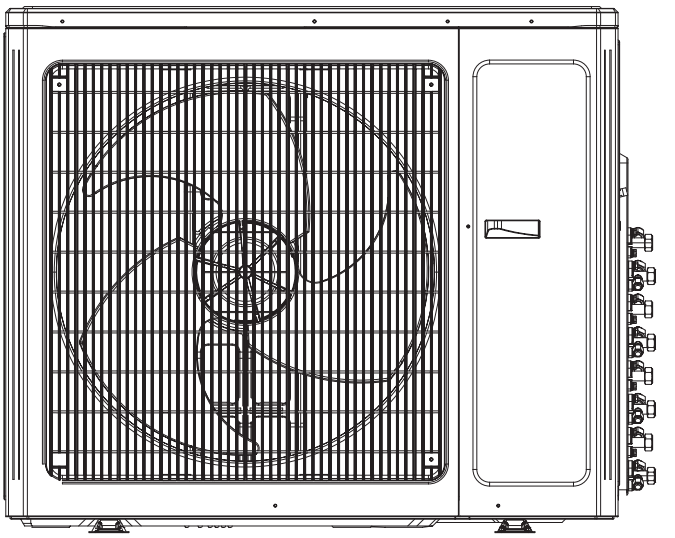
Part Ⅰ : Technical Information

1. Summary

Outdoor Unit

TM30H4O



TM36H4O
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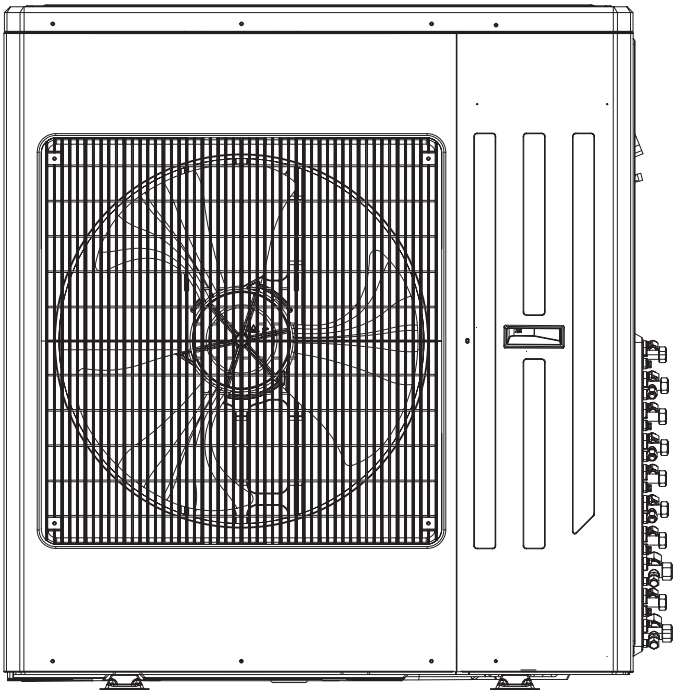


2. Specifications

2.1 Specification Sheet

Model			GWHD(30)ND3EO GWHD(30)ND3FO	TM30H4O
Product Code			CN860W0160 CN860W0280	CB228W07900
Power supply	Rated Voltage	V~	208/230	208/230
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling capacity		Btu/h	27000	28500
Heating capacity		Btu/h	31000	30000
Cooling Power Input		W	2420	2280
Heating Power Input		W	2470	2350
Cooling Current Input		A	10.5	9.91
Heating Current Input		A	10.7	10.22
Rated Power Input		W	2800	3800
Rated Current		A	30	16.86
EER		(Btu/h)/W	11.16	12.50
COP		(Btu/h)/W	12.55	12.76
SEER			21.00	21.00
HSPF			10.20	10.50
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.LTD	ZHUHAI LANDA COMPRESSOR CO.LTD
	Compressor Model		QXAS-D32zX090A	QXAS-D32zX090A
	Compressor Refrigerant Oil Type		RB68EP	RB68EP
	Compressor Type		Inverter Rotary	Inverter Rotary
	L.R.A	A	30	30
	Compressor Rated Load Amp (RLA)	A	13.9	13.9
	Compressor Power Input	W	4150	4150
	Compressor Thermal Protector		1NT11L—6233	1NT11L—6233
	Throttling Method		Electron expansion valve	Electron expansion valve
	Cooling Operation Ambient Temperature Range	°F	0~118	0~118
	Heating Operation Ambient Temperature Range	°F	-4~86	-4~86
	Condenser Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	inch	Φ5/16	Φ5/16
	Rows-Fin Gap(mm)	inch	2-1/16	2-1/16
	Coil length (l) X height (H) X coil width (L)	inch	27 7/16X29 7/16X12 13/64	27 7/16X29 7/16X12 13/64
	Fan Motor Speed (rpm) (H/M/L)	rpm	630	630
	Output of Fan Motor	W	60	60
	Fan Motor RLA	A	/	/
	Fan Motor Capacitor	μF	/	/
	Air Flow Volume of Outdoor Unit	CFM	2330	2330
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter	inch	Φ21.6-4.7	Φ21.6-4.7
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	550	550
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	240	240
	Dimension (WXHXD)	inch	38 27/64X31 7/64X17 21/64	38 27/64X31 7/64X17 21/64
	Dimension of Package (LXWXH)	inch	42 1/2X19X33	42 1/2X19X33
	Dimension of Package(LXWXH)	inch	42 43/64X19 13/64X33 43/64	42 43/64X19 13/64X33 43/64
	Net Weight	lb	145.5	145.5
	Gross Weight	lb	154.4	154.4
	efrigerant Charge		R410A	R410A
	Refrigerant Charge	oz	98.8	98.8

Outdoor Unit	Cross-sectional Area of Power Cable Conductor	sq in	0.0062	0.0062
	Recommended Power Cable(Core)	N	3	3
	Connection Pipe Connection Method	-	Flare Connection	Flare Connection
	Not Additional Gas Connection Pipe Length	ft	131.2	131.2
	Connection Pipe Gas Additional Charge	oz/ft.	0.2	0.2
	Outer Diameter of Liquid Pipe1(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Liquid Pipe2(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Liquid Pipe3(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Liquid Pipe4(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Gas Pipe1(GREE Allocation) (Metric)	inch	3/8	3/8
	Outer Diameter of Gas Pipe2(GREE Allocation) (Metric)	inch	3/8	3/8
	Outer Diameter of Gas Pipe3(GREE Allocation) (Metric)	inch	3/8	3/8
	Outer Diameter of Gas Pipe4(GREE Allocation) (Metric)	inch	3/8	3/8
	Connection Pipe Max. Height Distance(indoor and indoor)	ft	24.6	24.6
	Connection Pipe Max. Height Distance(indoor and outdoor and indoor up)	ft	49.2	49.2
	Connection Pipe Max. Height Distance(indoor and outdoor and outdoor up)	ft	49.2	49.2
	Max. equivalent connection pipe length(outdoor to last indoor)	ft	82.0	82.0
	Connection Pipe Max. Length Distance(total lenght)	ft	229.7	229.7

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

Model			TM36H4O	TM42H3O
Product Code			CN860W0170 CN860W0171 CN860W0300 CB228W08000	CN860W0180 CN860W0290
Power supply	Rated Voltage	V~	208/230	208/230
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling capacity		Btu/h	34000	36000
Heating capacity		Btu/h	42500	43000
Cooling Power Input		W	2800	3740
Heating Power Input		W	3350	3650
Cooling Current Input		A	12.5	16.5
Heating Current Input		A	15	16
Rated Power Input		W	3800	4000
Rated Current		A	30	30
EER		(Btu/h)/W	12.14	9.63
COP		(Btu/h)/W	12.69	11.78
SEER			21.00	21.00
HSPF			10.20	10.20
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.LTD	ZHUHAI LANDA COMPRESSOR CO.LTD
	Compressor Model		QXAS-D32zX090A	QXAS-D32zX090A
	Compressor Refrigerant Oil Type		RB68EP	
	Compressor Type		Inverter Rotary	Inverter Rotary
	L.R.A	A	30	30
	Compressor Rated Load Amp (RLA)	A	15.6	17.8
	Compressor Power Input	W	4150	4150
	Compressor Thermal Protector		1NT11L—6233	1NT11L—6233
	Throttling Method		Electron expansion valve	Electron expansion valve
	Cooling Operation Ambient Temperature Range	°F	0~118	0~118
	Heating Operation Ambient Temperature Range	°F	-4~86	-4~86
	Condenser Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	inch	Φ5/16	Φ5/16
	Rows-Fin Gap(mm)	inch	2-1/16	2-1/16
	Coil length (l) X height (H) X coil width (L)	inch	27 7/16X29 7/16X12 13/64	27 7/16X29 7/16X12 13/64
	Fan Motor Speed (rpm) (H/M/L)	rpm	850	850
	Output of Fan Motor	W	140	140
	Fan Motor RLA	A	/	/
	Fan Motor Capacitor	μF	/	/
	Air Flow Volume of Outdoor Unit	CFM	4531	4531
	Fan Type-Piece		Axial-flow	Axial-flow
	Fan Diameter	inch	Φ22.4—5.98	Φ22.4—5.98
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	550	550
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	240	240
	Dimension (W/H/D)	inch	42 1/2X43 27/64X17 21/64	42 1/2X43 27/64X17 21/64
	Dimension of Package (L/W/H)	inch	46X18 57/64X43 57/64	46X18 57/64X43 57/64
	Dimension of Package(L/W/H)	inch	46 1/6X19X44 1/2	46 1/6X19X44 1/2
	Net Weight	lb	198.5	198.5
	Gross Weight	lb	216.1	216.1
	efrigerant Charge		R410A	R410A
	Refrigerant Charge	oz	128.8	128.8

Outdoor Unit	Cross-sectional Area of Power Cable Conductor	sq in	0.0062	0.0062
	Recommended Power Cable(Core)	N	3	3
	Connection Pipe Connection Method	-	Flare Connection	Flare Connection
	Not Additional Gas Connection Pipe Length	ft	131.2	131.2
	Connection Pipe Gas Additional Charge	oz/ft.	0.2	0.2
	Outer Diameter of Liquid Pipe1(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Liquid Pipe2(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Liquid Pipe3(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Liquid Pipe4(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Liquid Pipe4(GREE Allocation) (Metric)	inch	1/4	1/4
	Outer Diameter of Gas Pipe1(GREE Allocation) (Metric)	inch	3/8	3/8
	Outer Diameter of Gas Pipe2(GREE Allocation) (Metric)	inch	3/8	3/8
	Outer Diameter of Gas Pipe3(GREE Allocation) (Metric)	inch	3/8	3/8
	Outer Diameter of Gas Pipe4(GREE Allocation) (Metric)	inch	3/8	3/8
	Outer Diameter of Gas Pipe4(GREE Allocation) (Metric)	inch	3/8	3/8
	Connection Pipe Max. Height Distance(indoor and indoor)	ft	24.6	24.6
	Connection Pipe Max. Height Distance(indoor and outdoor and indoor up)	ft	49.2	49.2
	Connection Pipe Max. Height Distance(indoor and outdoor and outdoor up)	ft	49.2	49.2
	Max. equivalent connection pipe length(outdoor to last indoor)	ft	82.0	82.0
	Connection Pipe Max. Length Distance(total lenght)	ft	246.1	246.1

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

Model			GWHD(42)ND3HO
Product Code			CB228W08300
Power supply	Rated Voltage	V~	208/230
	Rated Frequency	Hz	60
	Phases		1
Cooling capacity		Btu/h	40000
Heating capacity		Btu/h	45000
Cooling Power Input		W	3810
Heating Power Input		W	3650
Cooling Current Input		A	16.5
Heating Current Input		A	16
Rated Power Input		W	4000
Rated Current		A	/
EER		(Btu/h)/W	10.50
COP		(Btu/h)/W	12.33
SEER			21.00
HSPF			10.20
Outdoor Unit	Compressor Trademark		ZHUHAI LANDA COMPRESSOR CO.LTD
	Compressor Model		QXAS-D32zX090A
	Compressor Refrigerant Oil Type		FV50S
	Compressor Type		Inverter Rotary
	L.R.A	A	/
	Compressor Rated Load Amp (RLA)	A	17.8
	Compressor Power Input	W	4150
	Compressor Thermal Protector		1NT11L—6233
	Throttling Method		Electron expansion valve
	Cooling Operation Ambient Temperature Range	°F	0~118
	Heating Operation Ambient Temperature Range	°F	-4~86
	Condenser Material		Aluminum Fin-copper Tube
	Condenser Pipe Diameter	inch	Φ5/16
	Rows-Fin Gap(mm)	inch	2-1/16
	Coil length (l) X height (H) X coil width (L)	inch	27 7/16X29 7/16X12 13/64
	Fan Motor Speed (rpm) (H/M/L)	rpm	880
	Output of Fan Motor	W	170
	Fan Motor RLA	A	0.82
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	CFM	4531
	Fan Type-Piece		Axial-flow
	Fan Diameter	inch	Φ22.4—5.98
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	550
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	240
	Dimension (W/H/D)	inch	42 1/2X43 27/64X17 21/64
	Dimension of Package (L/W/H)	inch	46X18 57/64X43 57/64
	Dimension of Package(L/W/H)	inch	46 1/6X19X44 1/2
	Net Weight	lb	198.5
	Gross Weight	lb	216.1
	efrigerant Charge		R410A
	Refrigerant Charge	oz	128.8

Outdoor Unit	Cross-sectional Area of Power Cable Conductor	sq in	0.0062
	Recommended Power Cable(Core)	N	3
	Connection Pipe Connection Method	-	Flare Connection
	Not Additional Gas Connection Pipe Length	ft	131.2
	Connection Pipe Gas Additional Charge	oz/ft.	0.2
	Outer Diameter of Liquid Pipe1(GREE Allocation) (Metric)	inch	1/4
	Outer Diameter of Liquid Pipe2(GREE Allocation) (Metric)	inch	1/4
	Outer Diameter of Liquid Pipe3(GREE Allocation) (Metric)	inch	1/4
	Outer Diameter of Liquid Pipe4(GREE Allocation) (Metric)	inch	1/4
	Outer Diameter of Liquid Pipe4(GREE Allocation) (Metric)	inch	1/4
	Outer Diameter of Gas Pipe1(GREE Allocation) (Metric)	inch	3/8
	Outer Diameter of Gas Pipe2(GREE Allocation) (Metric)	inch	3/8
	Outer Diameter of Gas Pipe3(GREE Allocation) (Metric)	inch	3/8
	Outer Diameter of Gas Pipe4(GREE Allocation) (Metric)	inch	3/8
	Outer Diameter of Gas Pipe4(GREE Allocation) (Metric)	inch	3/8
	Connection Pipe Max. Height Distance(indoor and indoor)	ft	24.6
	Connection Pipe Max. Height Distance(indoor and outdoor and indoor up)	ft	49.2
	Connection Pipe Max. Height Distance(indoor and outdoor and outdoor up)	ft	49.2
	Max. equivalent connection pipe length(outdoor to last indoor)	ft	82.0
	Connection Pipe Max. Length Distance(total lenght)	ft	246.1

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

2.2 Cooling Capacity Tables

Cooling

ROOM	MODEL:30K		OUTDOOR TEMPERATURE DRY				
INDOOR TEMPERATURE	CONNECTIVE INDOOR UNIT: GWH09TB-D3DNA1A/I×2 GWH12TB-D3DNA1A/I×1	20°C 68°F	25°C 77°F	30°C 86°F	35°C 95°F	40°C 104°F	45°C 113°F
21°C(70°F) D 15°C(59°F) W	Total capacity(W)	7186	8391	9044	8474	6697	5228
	Sensitive capacity(W)	6194	6818	7084	6779	6127	5175
	Total power input(W)	1736	2108	2826	3099	2566	2172
	Sensitive capacity(W)/ Total capacity(W)%	85.3	81.2	78.3	79.9	91	98.9
24°C(75°F) D 17°C(63°F) W	Total capacity(W)	8074	9106	9696	9149	7195	5631
	Sensitive capacity(W)	6950	7474	7659	7414	6703	5585
	Total power input(W)	1760	2111	2853	3121	2583	2207
	Sensitive capacity(W)/ Total capacity(W)%	85.65	82	78.9	81	93.1	99.1
27°C(80°F) D 19°C(67°F) W	Total capacity(W)	8884	9921	10310	9863	7635	7543
	Sensitive capacity(W)	7533	8027	9587	7665	7169	7359
	Total power input(W)	2009	2365	2905	3206	2773	2835
	Sensitive capacity(W)/ Total capacity(W)%	84.55	80.9	92.9	76.9	93.8	97.5
32°C(90°F) D 23°C(73°F) W	Total capacity(W)	9152	10953	11606	10847	8300	6389
	Sensitive capacity(W)	8558	8374	8584	8359	7377	6268
	Total power input(W)	2025	2402	2955	3267	2668	2244
	Sensitive capacity(W)/ Total capacity(W)%	93.5	76.4	80.9	77	88.8	98

Heatling

ROOM	MODEL：30K	OUTDOOR TEMPERATURE DRY					
INDOOR TEMPERATURE	CONNECTIVE INDOOR UNIT: GWH09TB-D3DNA1A/I×2 GWH12TB-D3DNA1A/I×1	-13.88°C(7°F)D -15°C(5°F)W	-8.33°C(17°F)D -9.44°C(15°F)W	-2.22°C(28°F)D -3.89°C(25°F)W	3.33°C(38°F)D 1.67°C(35°F)W	8.33°C(47°F) D 6.11°C(43°F)W	13.89°C(57°F) D 12.7°C(55°F) W
15°C(59°F) D 10°C(50°F) W	Total capacity(W)	6560	6580	8050	10880	11300	11800
	Sensitive capacity(W)	6560	6580	8050	10880	11300	11800
	Total power input(W)	2820	2150	2750	2850	2950	2480
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100
18°C(64°F) D 12°C(54°F) W	Total capacity(W)	6400	6530	8200	9000	11050	11600
	Sensitive capacity(W)	6400	6530	8200	9000	11050	11600
	Total power input(W)	2950	2280	2980	2950	3100	2630
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100
21°C(70°F) D 15°C(59°F) W	Total capacity(W)	6450	6450	7900	8850	10750	11450
	Sensitive capacity(W)	6450	6450	7900	8850	10750	11450
	Total power input(W)	3100	2400	3080	3100	3220	2750
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100
24°C(75°F) D 17°C(63°F) W	Total capacity(W)	6400	6380	7950	8550	10650	11080
	Sensitive capacity(W)	6400	6380	7950	8550	10650	11080
	Total power input(W)	3150	2500	3130	3200	3400	2930
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100

Cooling

ROOM	MODEL:36K		OUTDOOR TEMPERATURE DRY				
INDOOR TEMPERATURE	CONNECTIVE INDOOR UNIT: GWH09TB-D3DNA1A/I×4	20°C 68°F	25°C 77°F	30°C 86°F	35°C 95°F	40°C 104°F	45°C 113°F
21°C(70°F) D 15°C(59°F) W	Total capacity(W)	9560	10300	10400	9430	8045	6900
	Sensitive capacity(W)	8662	8880	8900	8435	7750	6800
	Total power input(W)	2010	2450	3120	3300	3075	2765
	Sensitive capacity(W)/ Total capacity(W)%	90.6	86.2	85.6	89.4	96.3	98.6
24°C(75°F) D 17°C(63°F) W	Total capacity(W)	9795	11500	11265	10500	8820	7515
	Sensitive capacity(W)	8805	9205	9485	9160	8365	7305
	Total power input(W)	1995	2435	3125	3400	3085	2790
	Sensitive capacity(W)/ Total capacity(W)%	89.9	80.0	84.2	87.2	94.8	97.2
27°C(80°F) D 19°C(67°F) W	Total capacity(W)	10135	11370	11425	10575	9025	7900
	Sensitive capacity(W)	9300	9610	9675	9355	8750	7555
	Total power input(W)	2010	2440	3160	3335	3115	2800
	Sensitive capacity(W)/ Total capacity(W)%	91.8	84.5	84.7	88.5	97.0	95.6
32°C(90°F) D 23°C(73°F) W	Total capacity(W)	12170	13200	13250	12020	10390	8700
	Sensitive capacity(W)	9875	10220	10155	10045	9575	8450
	Total power input(W)	2025	2430	3185	3405	3145	2825
	Sensitive capacity(W)/ Total capacity(W)%	81.1	77.4	76.6	83.6	92.2	97.1

Heatling

ROOM	MODEL:36K	OUTDOOR TEMPERATURE DRY					
INDOOR TEMPERATURE	CONNECTIVE INDOOR UNIT: GWH09TB-D3DNA1A/I×4	-13.88°C(7°F)D -15°C(5°F)W	-8.33°C(17°F)D -9.44°C(15°F)W	-2.22°C(28°F)D -3.89°C(25°F)W	3.33°C(38°F)D 1.67°C(35°F)W	8.33°C(47°F) D 6.11°C(43°F)W	13.89°C(57°F) D 12.7°C(55°F) W
15°C(59°F) D 10°C(50°F) W	Total capacity(W)	7480	8880	9720	12050	11400	12000
	Sensitive capacity(W)	7480	8880	9720	12050	11400	12000
	Total power input(W)	3450	3200	2960	3280	2370	2000
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100
18°C(64°F) D 12°C(54°F) W	Total capacity(W)	7680	8750	9540	11700	11250	11800
	Sensitive capacity(W)	7680	8750	9540	11700	11250	11800
	Total power input(W)	3440	3360	3100	3300	2520	2140
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100
21°C(70°F) D 15°C(59°F) W	Total capacity(W)	8275	8720	9500	11500	11000	11500
	Sensitive capacity(W)	8275	8720	9500	11500	11000	11500
	Total power input(W)	3690	3490	3240	3580	2660	2250
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100
24°C(75°F) D 17°C(63°F) W	Total capacity(W)	8460	8800	9360	10690	10580	11300
	Sensitive capacity(W)	8460	8800	9360	10690	10580	11300
	Total power input(W)	3785	3600	3410	3580	2780	2420
	Sensitive capacity(W)/ Total capacity(W)%	100	100	100	100	100	100

Cooling

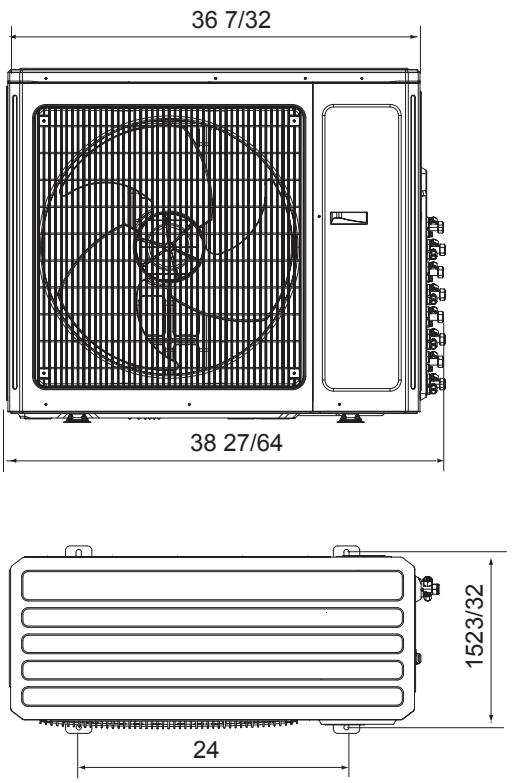
ROOM	MODEL:42K		OUTDOOR TEMPERATURE DRY				
INDOOR TEMPERATURE	CONNECTIVE INDOOR UNIT: GWH09TB-D3DNA1A/I×2 GWH12TB-D3DNA1A/I×2	20°C 68°F	25°C 77°F	30°C 86°F	35°C 95°F	40°C 104°F	45°C 113°F
21°C(70°F) D 15°C(59°F) W	Total capacity(W)	9675	10320	10700	9900	8640	6800
	Sensitive capacity(W)	8720	8550	8510	8600	8000	6590
	Total power input(W)	1980	2480	3650	3635	3600	2750
	Sensitive capacity(W)/ Total capacity(W)%	90.1	82.8	79.5	86.9	92.6	96.9
24°C(75°F) D 17°C(63°F) W	Total capacity(W)	9840	11130	11295	10730	9915	7555
	Sensitive capacity(W)	8615	9075	9155	9320	9065	7200
	Total power input(W)	1990	2685	3555	3485	3645	2775
	Sensitive capacity(W)/ Total capacity(W)%	87.6	81.5	81.1	86.9	91.4	95.3
27°C(80°F) D 19°C(67°F) W	Total capacity(W)	10990	12130	12700	11960	10250	8400
	Sensitive capacity(W)	9415	9830	10000	9900	9550	7820
	Total power input(W)	2000	2820	3600	3590	3670	2800
	Sensitive capacity(W)/ Total capacity(W)%	85.7	81.0	78.7	82.8	93.2	93.1
32°C(90°F) D 23°C(73°F) W	Total capacity(W)	13150	14010	14235	12135	11100	8750
	Sensitive capacity(W)	10005	10100	10355	9910	9590	8215
	Total power input(W)	2210	2515	3280	3555	3735	2830
	Sensitive capacity(W)/ Total capacity(W)%	76.1	72.1	72.7	81.7	86.4	93.9

Heatling

ROOM	MODEL:42K	OUTDOOR TEMPERATURE DRY					
INDOOR TEMPERATURE	CONNECTIVE INDOOR UNIT: GWH09TB-D3DNA1A/I×2 GWH12TB-D3DNA1A/I×2	-13.88°C(7°F)D -15°C(5°F)W	-8.33°C(17°F)D -9.44°C(15°F)W	-2.22°C(28°F)D -3.89°C(25°F)W	3.33°C(38°F)D 1.67°C(35°F)W	8.33°C(47°F) D 6.11°C(43°F)W	13.89°C(57°F) D 12.7°C(55°F) W
15°C(59°F) D 10°C(50°F) W	Total capacity(W)	7990	9122	9249	12680	11470	11800
	Sensitive capacity(W)	7990	9122	9249	12680	11470	11800
	Total power input(W)	3580	3380	3320	3580	2380	2020
	Sensitive capacity(W)/ Total capacity(W)%	100.0	100.0	100.0	100.0	100.0	100.0
18°C(64°F) D 12°C(54°F) W	Total capacity(W)	8100	9080	9400	12700	11250	11700
	Sensitive capacity(W)	8100	9080	9400	12700	11250	11700
	Total power input(W)	3550	3400	3300	3625	2530	2150
	Sensitive capacity(W)/ Total capacity(W)%	100.0	100.0	100.0	100.0	100.0	100.0
21°C(70°F) D 15°C(59°F) W	Total capacity(W)	8328	9053	9345	12200	11000	11420
	Sensitive capacity(W)	8328	9053	9345	12200	11000	11420
	Total power input(W)	3660	3570	3400	3760	2650	2300
	Sensitive capacity(W)/ Total capacity(W)%	100.0	100.0	100.0	100.0	100.0	100.0
24°C(75°F) D 17°C(63°F) W	Total capacity(W)	8230	8960	8750	12100	10820	11400
	Sensitive capacity(W)	8230	8960	8750	12100	10820	11400
	Total power input(W)	3760	3690	3400	3910	2820	2420
	Sensitive capacity(W)/ Total capacity(W)%	100.0	100.0	100.0	100.0	100.0	100.0

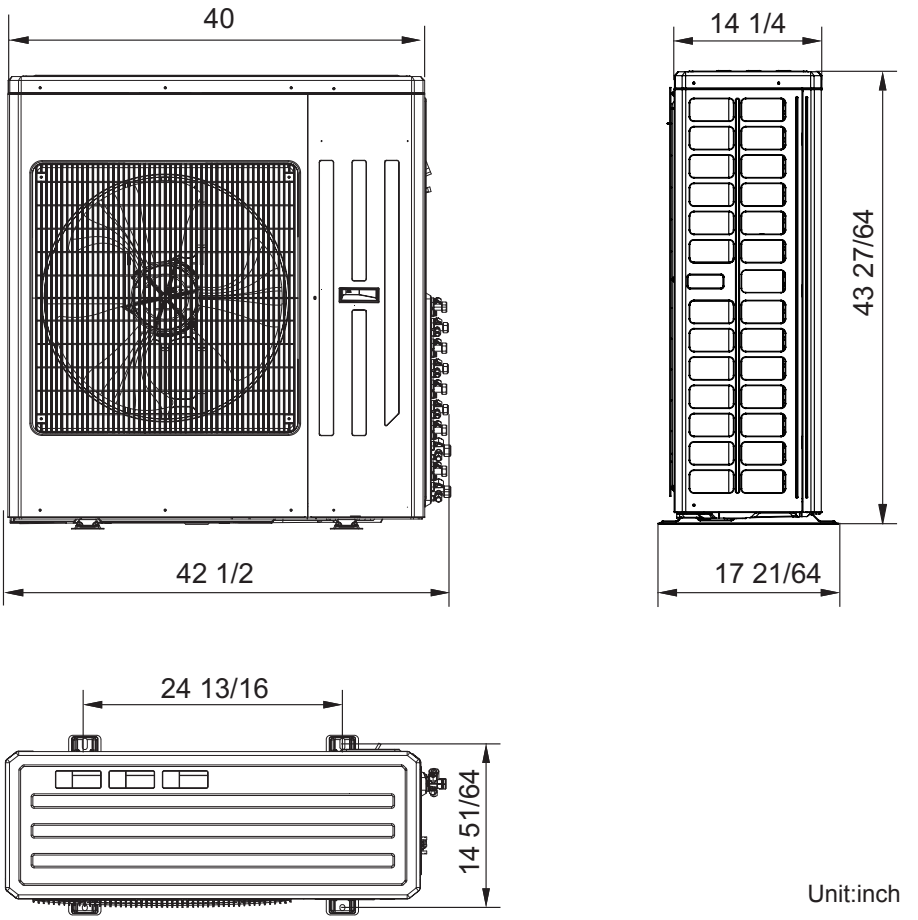
3. Outline Dimension Diagram

TM30H4O



Unit:inch

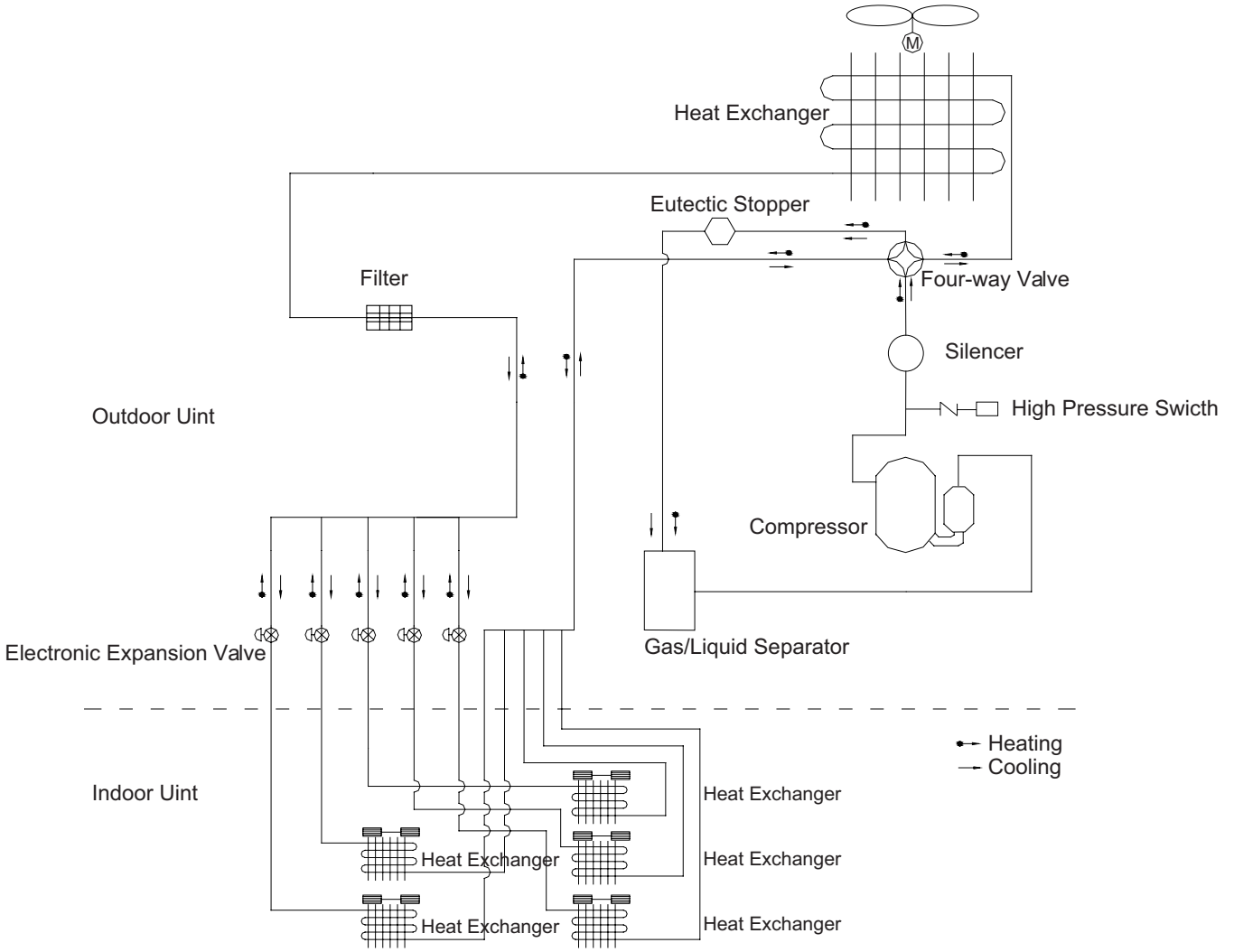
TM42H3O TM36H4O



Unit:inch

4. Refrigerant System Diagram

Schematic Diagram of Free Match Series Inverter Heat Pump System



Schematic Diagram of Free Match Series Inverter Heat Pump System

The outdoor and indoor units start to work once the power is switched on. During the cooling operation, the low temperature, low pressure refrigerant gas from the heat exchanger of each indoor unit gets together and then is taken into the compressor to be compressed into high temperature, high pressure gas, which will soon go to the heat exchanger of the outdoor unit to exchange heat with the outdoor air and then is turned into refrigerant liquid. After passing through the throttling device, the temperature and pressure of the refrigerant liquid will further decrease and then go the main valve. After that, it will be divided and go to the heat exchanger of each indoor unit to exchange heat with the air which needs to be conditioned. Consequently, the refrigerant liquid become low temperature, low pressure refrigerant gas again. Such a refrigeration cycle goes round and round to achieve the desired refrigeration purpose. During the heating operation, the four-way valve is involved to make the refrigeration cycle run reversely. The refrigerant radiates heat in the heat exchanger of the indoor unit (so do the electric heating devices) and absorb heat in the heat exchanger of the outdoor unit for a heat pump heating cycle so as to achieve the desired heating purpose.

5. Electrical Part

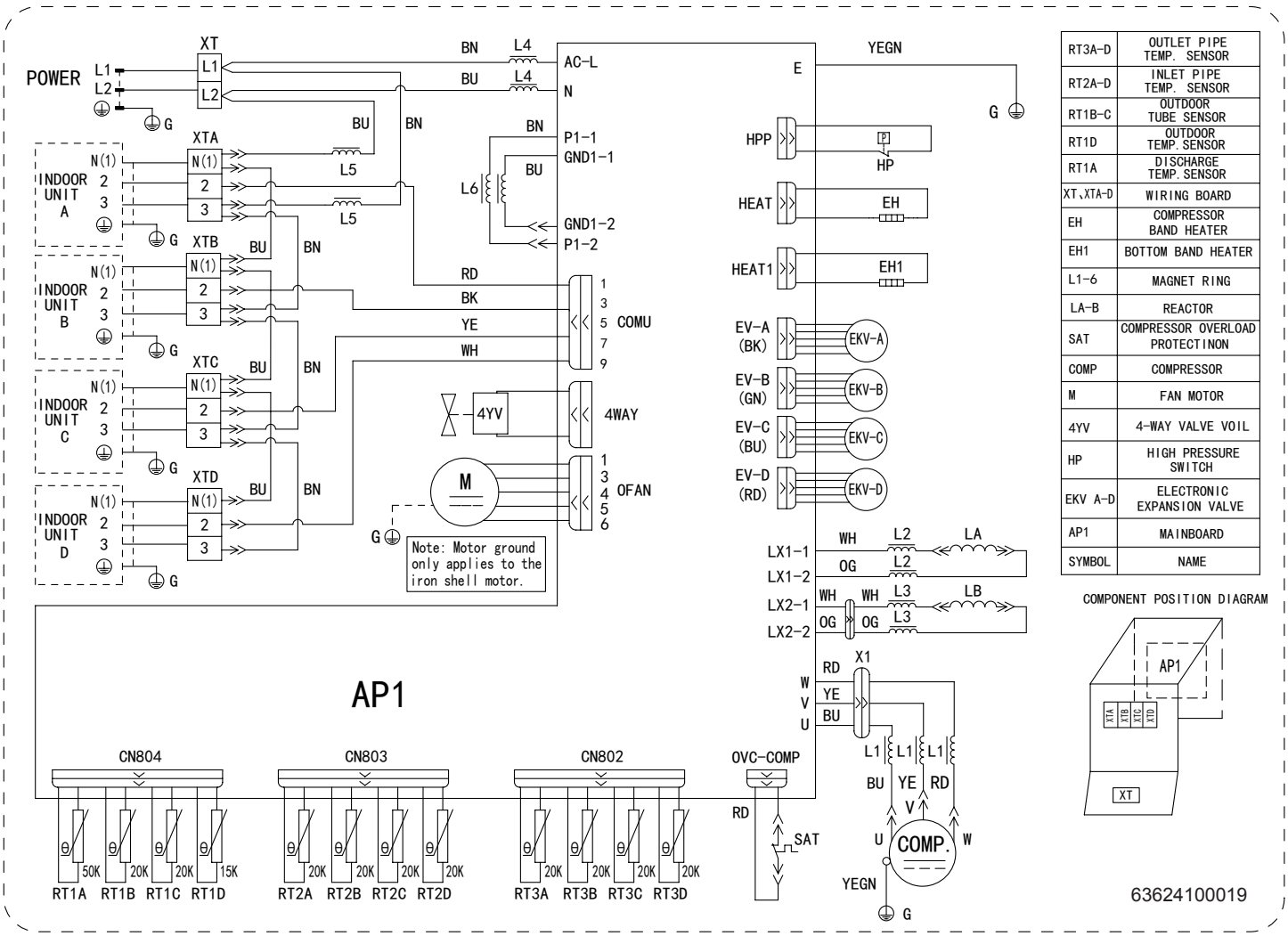
5.1 Wiring Diagram

●Instruction

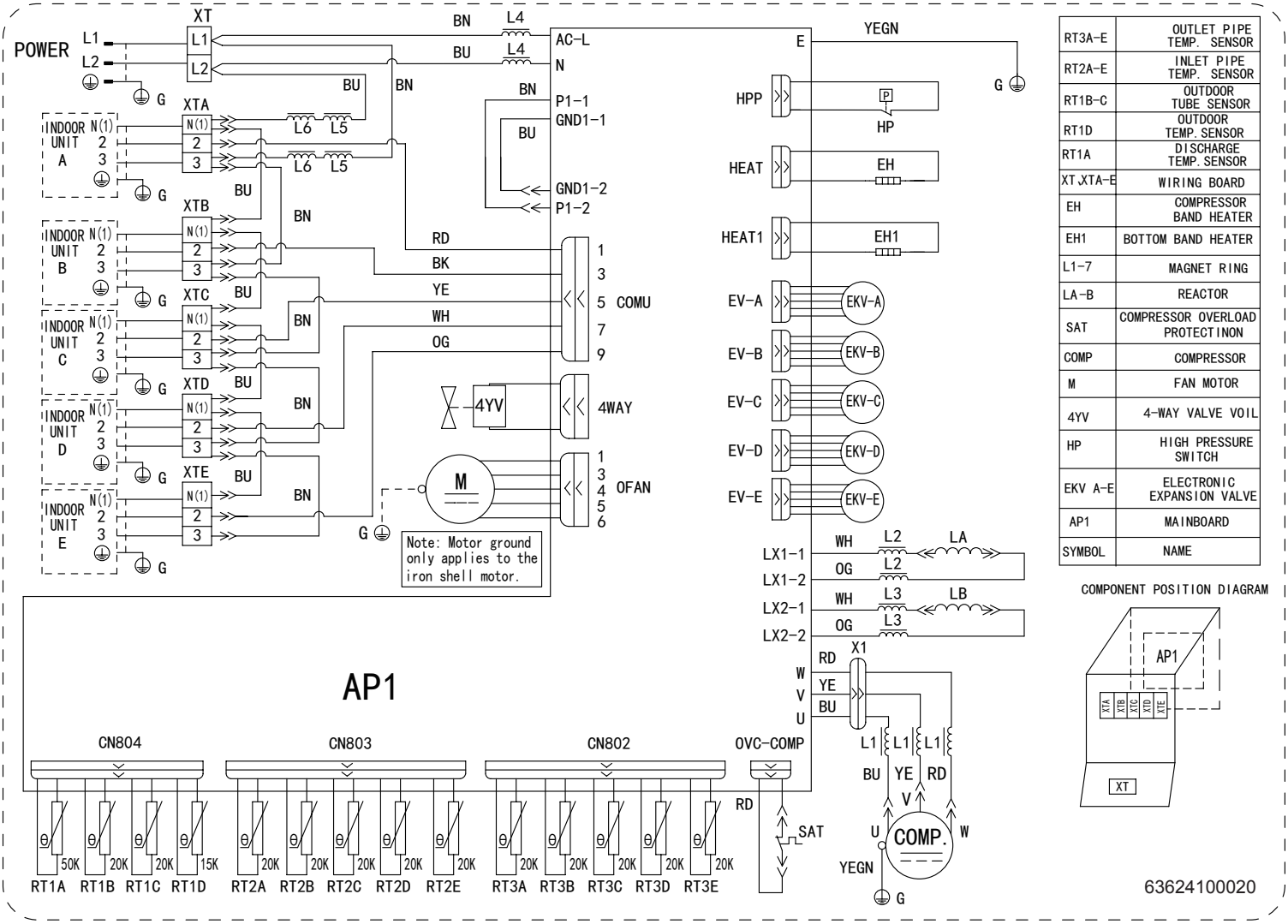
Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	GREEN	COMP	Compressor
YE	Yellow	BN	Brown	⏚	Grouding wire
RD	Red	BU	Blue		
YEGN	Yellow/Green	BK	Black		
VT	Violet	OG	Orange		

● Outdoor Unit

GWHD(30)ND3EO GWHD(30)ND3FO TM30H4O



GWHD(36)ND3EO GWHD(36)ND3FO TM42H3O GWHD(42)ND3FO TM36H4O GWHD(42)ND3HO



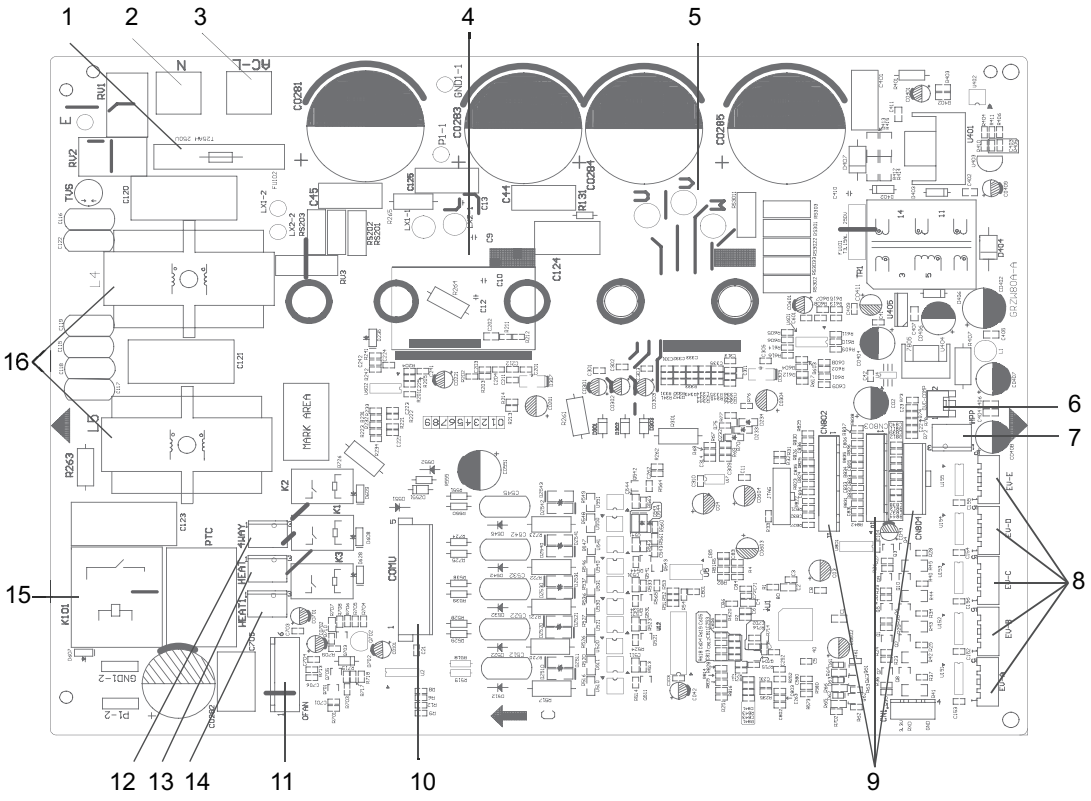
RT3A-E	OUTLET PIPE TEMP. SENSOR
RT2A-E	INLET PIPE TEMP. SENSOR
RT1B-C	OUTDOOR TUBE SENSOR
RT1D	OUTDOOR TEMP. SENSOR
RT1A	DISCHARGE TEMP. SENSOR
XT、XTA-E	WIRING BOARD
EH	COMPRESSOR BAND HEATER
EH1	BOTTOM BAND HEATER
L1-7	MAGNET RING
LA-B	REACTOR
SAT	COMPRESSOR OVERLOAD PROTECTINON
COMP	COMPRESSOR
M	FAN MOTOR
4YV	4-WAY VALVE VOIL
HP	HIGH PRESSURE SWITCH
EKV A-E	ELECTRONIC EXPANSION VALVE
AP1	MAINBOARD
SYMBOL	NAME

COMPONENT POSITION DIAGRAM

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

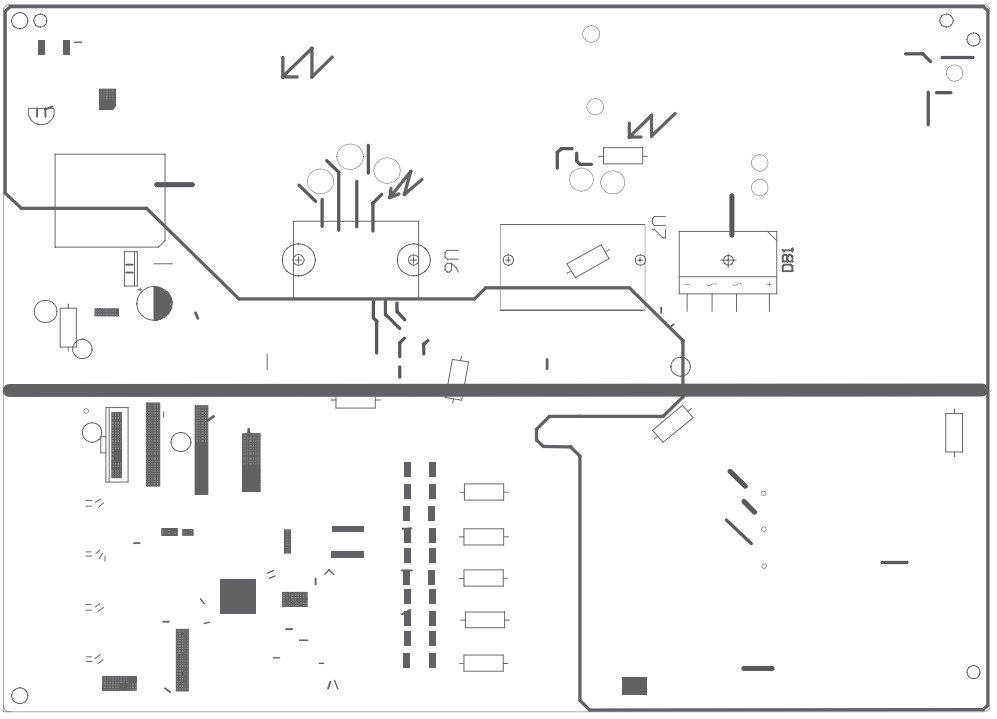
5.2 PCB Printed Diagram

● TOP VIEW



1	T25AH 250V: Fuse
2	N: terminals of neureal wire
3	AC-L: terminals of line wire
4	PFC electrocircuit
5	U/V/W: terminals of compressor
6	OVC-COMP: terminals of overload protector
7	HPP: terminals of high pressure switch
8	EVA-EVE: terminals of EXV(electronic expansion valve)
9	CN802-CN803: terminals of temperature sensor
10	COMU: terminals of communication
11	OFAN: terminals of fan
12	4WAY: terminals of 4-way valve
13	HEAT: terminals of compressor band heater
14	HEAT1: terminals of bottom band heater
15	K101: Main relay
16	L4-L5: choke

● BOTTOM VIEW



6. Function and Control

1.Function Control

1) Cooling mode

a. Turning on the unit for cooling operation, and if any one of the indoor units satisfy the cooling operation condition, the system will start for cooling operation; and the electronic expansion valve, the outdoor fan and the compressor start operation.

b. When some of the indoor units satisfy the stop-condition while some indoor units does not satisfy the stop-condition, the compressor does not stop, the compressor adjust the frequency according to demand. For the indoor unit with stop-condition satisfies, the corresponding electronic expansion valve will be closed.

c. Change Cooling mode to heating mode

When change the unit to heating mode from cooling mode, the whole system will stop first. Then the system will restart in heating mode after the compressor stops.

d. 4-way valve

In this mode, the 4-way valve is closed.

e. Outdoor fan control in cooling mode

The outdoor fan starts before 5s of the starting of compressor. The outdoor fan will run in high speed after starting and then it will run in set speed.

2) Dry mode (dehumidification mode)

This mode is the same as cooling mode;

3) Heating mode

a. Turning on the unit for heating operation, If any one of the indoor unit satisfy the heating condition, the system will start to run in heating mode

b. If all the indoor units satisfy the stop-condition, the compressor stops and the outdoor fan stops after 1min;

c. If only part of the indoor units satisfy the stop-condition, the compressor decrease the frequency immediately and operates according to demand.

d. Change Heating mode to cooling mode or dehumidification mode, the whole system will stop first, then restart under the required mode.

e. Defrosting function

When the defrosting condition is satisfied, the 4-way valve reverses the direction, the outdoor fan stop. After the 4-way valve reverses the direction, the frequency of compressor rises, and the unit will start defrosting under cooling cycle.

f. Oil-return control in heating mode

a)If the whole system runs in low frequency for a long time, the system will run a oil-return operation in high frequency, the oil-return operation will runs for 60 second.

4) Fan mode

Only indoor fan run. Compressor, outdoor fan and 4-way valve are closed .

2.Protection Function

1) Mode conflict protection of indoor units

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

a. The system mode is determined by the first turning on indoor unit except indoor unit is in fan mode. Cooling mode (dry mode) is in conflict with heating mode.

b. If the first turning on unit is fan mode, and the second turning on unit is cooling or heating mode, then the system will run in cooling or heating mode.

2) Overload protection

If the tube temperature at the high pressure side is higher than normal, the compressor frequency is restricted or decreased to normal operation frequency.

3) High exhaust temperature protection

If the exhaust temperature is higher than protection value, the compressor stops running.

If the exhaust temperature protection continuously appears for 6 times, the compressor can't resume running. In this case, only by cutting off the power and then reenergize that the compressor can restart. If the running duration of the compressor is longer than 10min, the protection times will be cleared to zero time.

4) Communication malfunction

Detection of the quantity of installed indoor units: after 3min of energizing, if the outdoor unit does not receive the communication data of certain indoor unit, the outdoor unit will judge that indoor unit is not installed. If the outdoor unit receives the communication data of that indoor unit later, the communication malfunction will be cleared.

5) System high-pressure protection

a. When the high-pressure switch detects the system pressure higher than limit ,then the high-pressure switch cuts off, the system will stop to run.

b. If high-pressure protection is detected for one time, only by cutting off the power and then reenergize that the compressor can restart.

6) Compressor overload protection

No matter the compressor is on or off, when the compressor overload switch is detected activated, the system will stop and indoor unit will display H3. If the compressor overload protection appears for more than 6 times, in this case, only by cutting off the power and then reenergize that the compressor can restart. If the running duration of the compressor is longer than 30min, the protection times will be cleared to zero.

7) Antifreeze protection

Under cooling and dry mode, 6minutes after the compressor is started:

When it is detected for 10 minutes successively that Tevap. Is less than -2^{0}C(varying with indoor unit), the antifreeze protection will be activated, in which case the outdoor unit will immediately shut off the indoor electronic expansion valve and the capacity will be set to "0".

If Tevap. exceed 10^{O}C and the compressor has remained at OFF for at least 3minutes, the compressor will resume its original operation state.

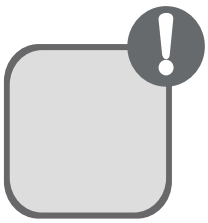
Part Ⅱ : Installation and Maintenance

7. Safety Precautions

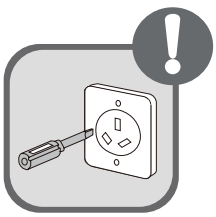
Forbidden Items! It indicates that improper operation might lead to human casualty or sever injury.

Items need to be followed. It indicates that improper operation might lead to personal injury or property damage.

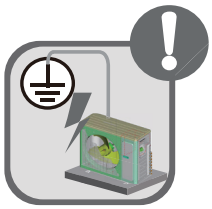
Follow this instruction to complete the installation work.
Please carefully read this manual before unit startup and service.



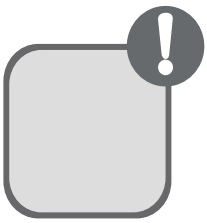
Installation should be conducted by dealer or qualified personnel. Please do not attempt to install the unit by yourself. Improper handling may result in water leakage, electric shock or fire disaster etc.



Before installation,please check if the power supply is in accordance with the requirements specified on the nameplate.And also take care of the power safety.



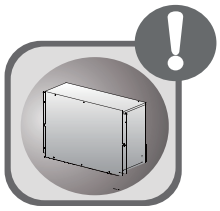
Make sure the unit can be earthed properly and soundly after plugging into the socket so as to avoid electric shock. Please do not connect the groundwire to gas pipe, water pipe, lightning rod or telephone line.



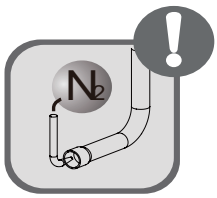
Be sure to use the excluxive accessory and part to prevent the water leakage,electric shock and fire accidents.

If refrigerant leakage happens during installation, please ventilate immediately.Poisonous gas will emerge if the refrigerant gas meets fire.

Wire size of power cord should be large enough The damaged power cord and connection wire should be replaced by exclusive cable.

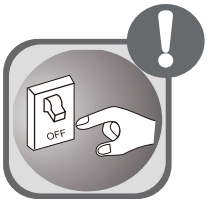


After connecting the power cord, please fix the electric box cover properly in order to avoid accident.



Never fail to comply with the nitrigen charge requirements. Charge nitrogen when welding pipes.

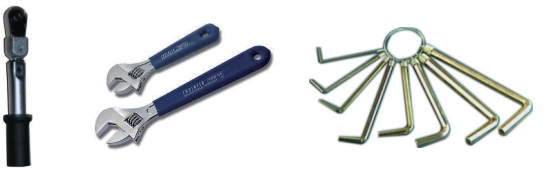
Never short-circuit or cancel the pressure switch to prevent unit damage.



Please firstly connect the wired controller before energization,otherwise wired controller can not be used.

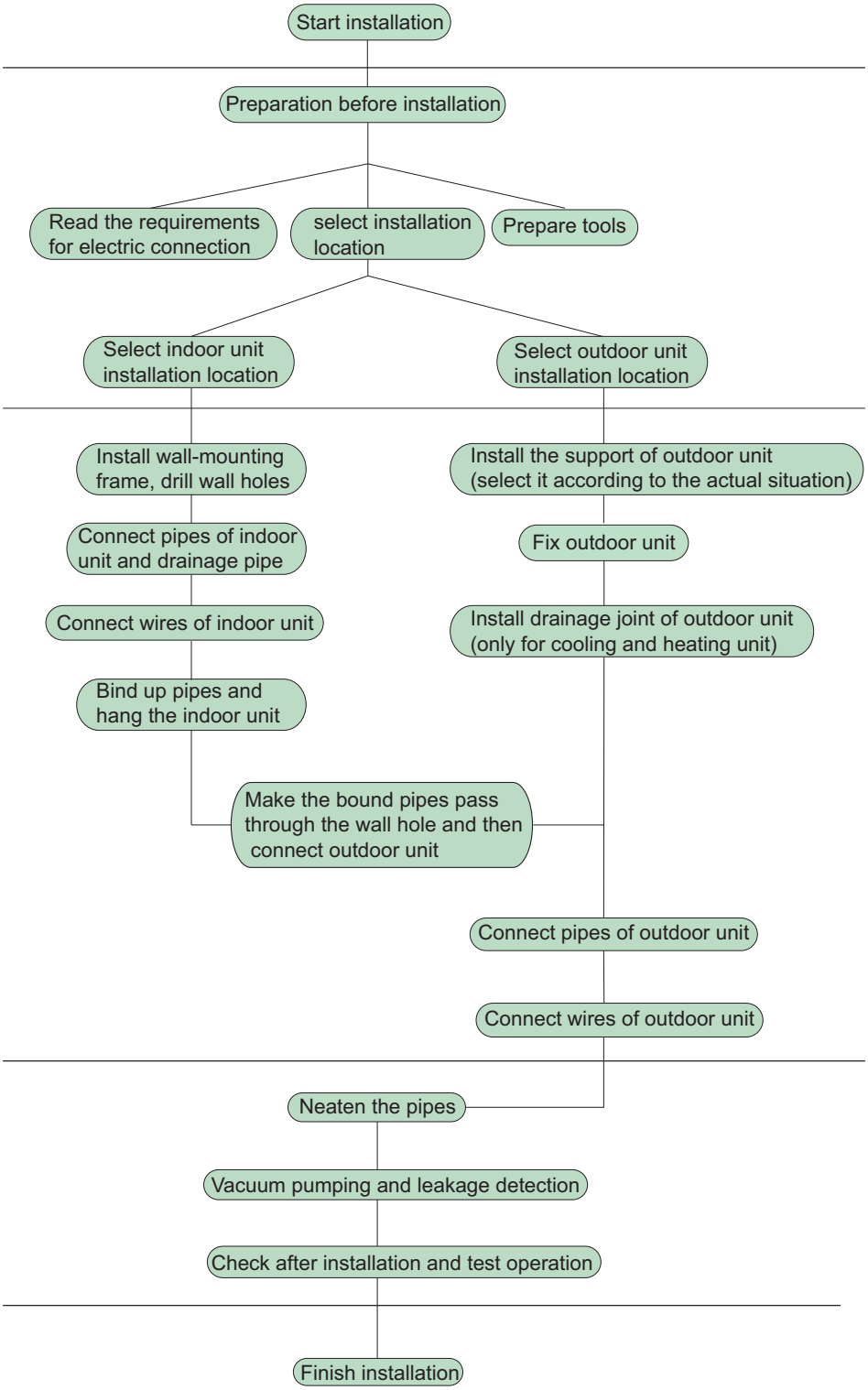
Before using the unit, please. check if the piping and wiring are correct to avoid water leakage, refrigerant leakage,electric shock, or fire etc.

Main Tools for Installation and Maintenance

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

8. Installation Manual

Installation procedures

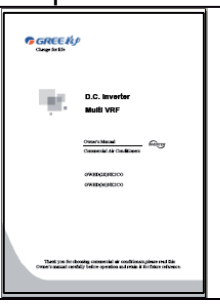
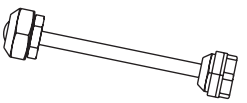


Note: this flow is only for reference; please find the more detailed installation steps in this section.

8.1 Preparation before Installation

8.1.1 Standard parts

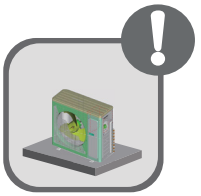
Please use the following standard parts supplied by GREE.

Pars of Outdoor Unit				
Nanber	name	picture	Quantity	Remark
1	Owner's manual		1	
2	Tube connector subassy		30K:8;36K:8;42K:9	

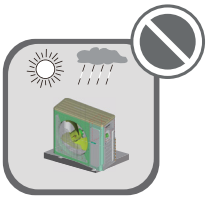
8.1.2 Selecting installation site

Forbidden Items! It indicates that improper operation might lead to human casualty or sever injury.

Items need to be followed. It indicates that improper operation might lead to personal injury or property damage.



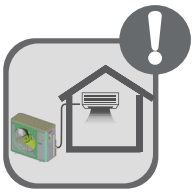
Install the unit at a place where is adequa to withstand the weight of the unit and make sure the unit would not shake or fall off.



Never expose the unit under direct sunshine and rainful. install the unit at a place where is against dust, typhoon and earthquake.

Try to keep the unit away from combustible, inflammable and corrosive gas or exhaust gas.

Leave some space for heat exchanging and servicing so as to guarantee unit normal operation.



Keep the indoor and outdoor units close to each other as much units close to each other as much the pipe length and bends.

Never allow children to approach to the unit and take measures to prevent children touching the unit.

When the outdoor unit is totally surrounded by walls, the installation space of the unit should be as required in Fig.1.

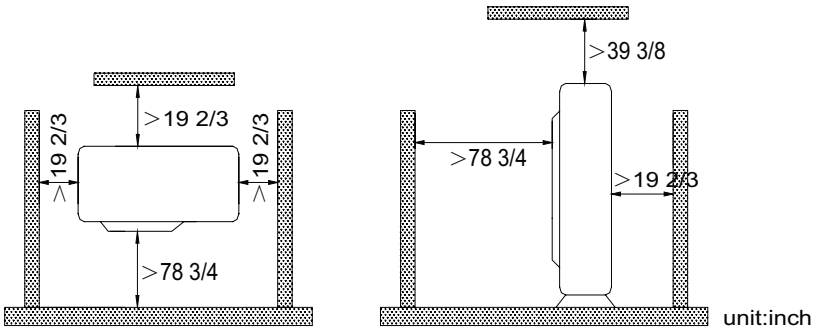


Fig.1

8.1.3 Piping Connection

The maximum pipe length is shown in the following table. When the distance between units (piping length) is out of the range listed below, normal run of the unit can not be guaranteed.

Model	Connecting Pipe (inch)		Max. Pipe length(ft)	Max. Height Difference between Indoor Unit and Outdoor Unit (ft)
	Liquid	Gas		
GWHD(30)ND3EO	Φ 1/4	Φ 3/8	229.6	When the outdoor unit is above maximum height difference between indoor and outdoor units is up to 49.2ft; When the indoor unit is above,maximum height difference between indoor and outdoor units is up to 49.2ft.
GWHD(36)ND3EO	Φ 1/4	Φ 3/8	246.1	
TM42H3OO	Φ 1/4	Φ 3/8	246.1	

Note:

① **Use water-proof insulating pipe.**

② **Wall thickness of pipe: 0.5-1.0 mm;bearing pressure: 3.0MPa**

③ **The longer the connection pipe is, the more cooling and heating capacity will decrease.**

8.2 Installation Instruction

8.2.1 Outline and dimension of the outdoor unit

30K

Outline dimension andMounting holes

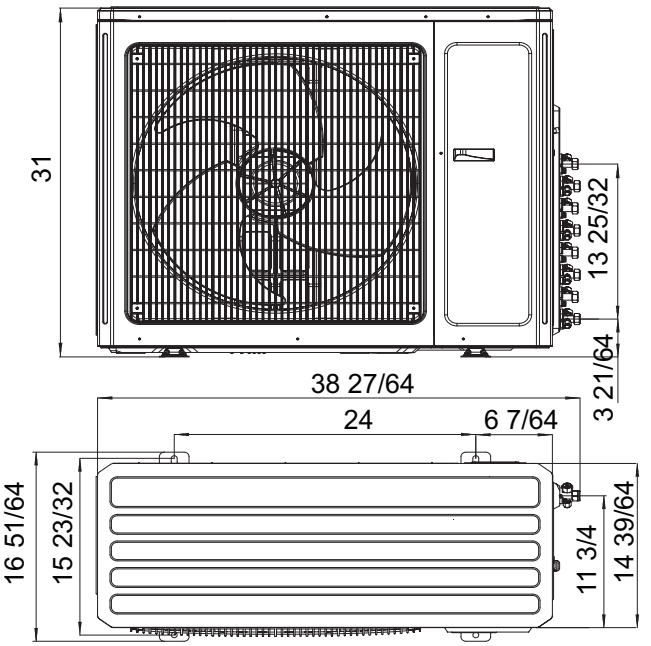


Fig.2

36/42K

Outline dimension andMounting holes

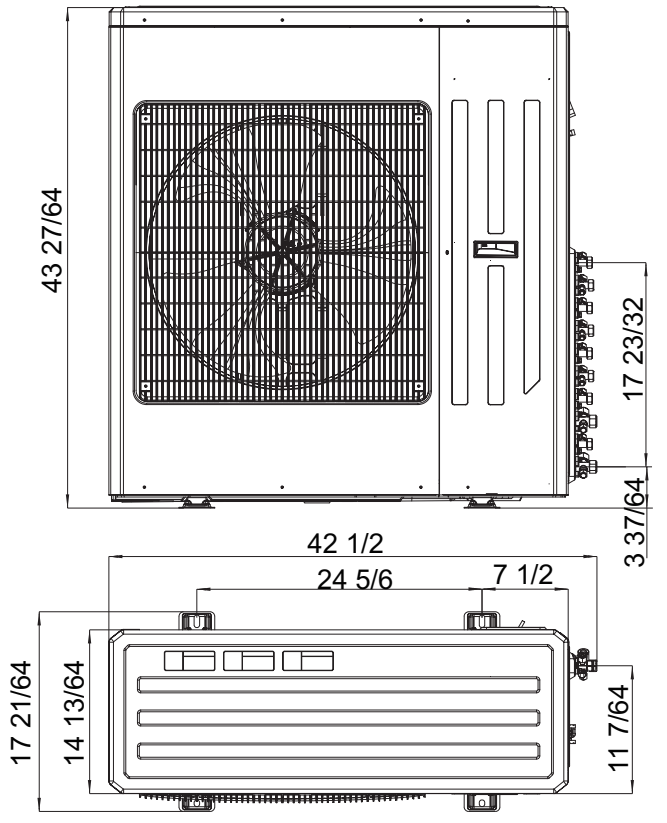


Fig.3

8.2.2 Installation of the Connection Pipe

Connecting piping for indoor unit and outdoor unit are in manifold mode. (As shown below).

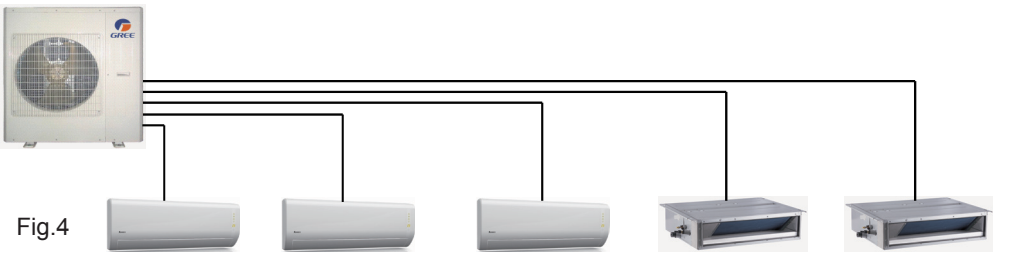


Fig.4

1) Piping between the Indoor and Outdoor Units

● If the liquid and gas stop valves which have the sign of A , B, C, D or E have not been connected to the indoor units, please turn off the screw cap with the spanner airproof.

● Refer to Fig.7 for the moments of torque for tightening screws.

● Let the flare end of the copper pipe point at the screw and then tighten the screw by hand.

● After that, tighten the screw by the torque wrench unit it clatters (as shown in Fig.5).

● The bending degree of the pipe can not be too small; otherwise it will crack. And please use a pipe tube bender to bend the pipe.

● Wrap the exposed refrigerant pipe and the joints by sponge and then tighten them with the plastic tape.

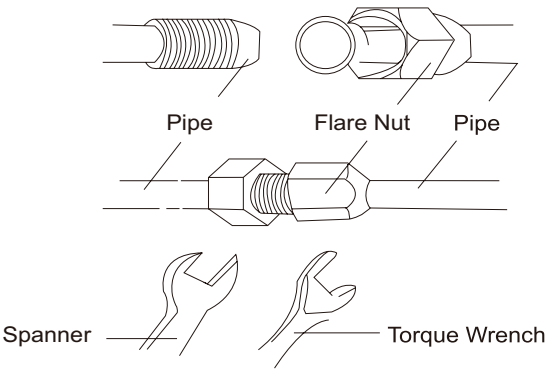


Fig.5

Pipe diameter(inch)	Thickness of copper tube	Tightening torque(ft·lbf)
Φ1/4	≥0.0315	11.10~4.75
Φ3/8	≥0.0315	20.12~29.50
Φ1/2	≥0.0315	33.19~40.56
Φ5/8	≥0.0394	44.24~47.94

CAUTION!

① . During the connection of the indoor unit and the refrigerant pipe, never pull any joints of the indoor unit by force; otherwise the capillary pipe or other pipe may crack, which then would result in leakage.

② . The refrigerant pipe should be supported by brackets, that is, don't let the unit withstand the weight of it.

③ . If the piping connection size of outdoor unit does not match the piping connection size of indoor unit, use the piping connection dimension of indoor unit. And use different-diameter joints which is installing on the place of the piping connection to connect the indoor unit.

CAUTION!

● For the Free Match system, each pipe should be labeled to tell which system it belongs to avoid mistaken inaccurate piping.

2) Allowable pipe length and drop height among indoor and outdoor units

If the total refrigerant pipe length (liquid pipe) is smaller than that listed in the table below, no additional refrigerant will be charged.

Model	30K	36K	42K
Total Liquid Pipe Lenght (a+b+c+d+e)	131.2ft	131.2ft	131.2ft

Allowable Length and Height Fall of the Refrigerant Pipe

		Allowable Value		Fitting pipe
		30K	36/42K	
Total length(actual length) of fitting pipe		229.6ft	246.1ft	$L_1+L_2+\ldots+L_M(M \leq 5)$
length of farthest fitting pipe(ft)		82ft	82ft	L_X（X=1，2，3，4,5）
Height difference between outdoor unit and indoor unit	Outdoor unit at upper	49.2ft	49.2ft	H1
	Outdoor unit at lower	49.2ft	49.2ft	H3
Height difference between indoor units(ft)		24.6ft	24.6ft	H2

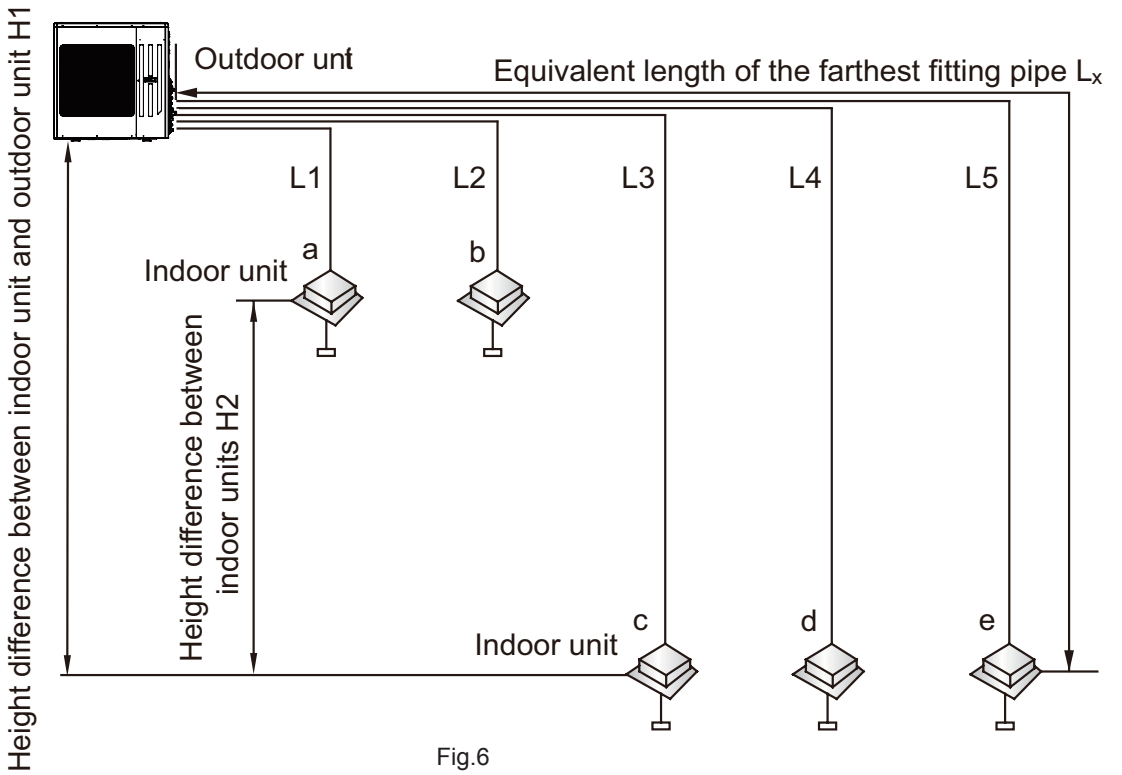


Fig.6

3) Installation of the Protection Layer of the Refrigerant Pipe

a. The refrigerant pipe should be insulated by the insulating material and plastic tape in order to prevent condensation and water leakage.

b. The joints of the indoor unit should be wrapped with the insulating material and no gap is allowed on the joint of the indoor unit, as shown in Fig.9.

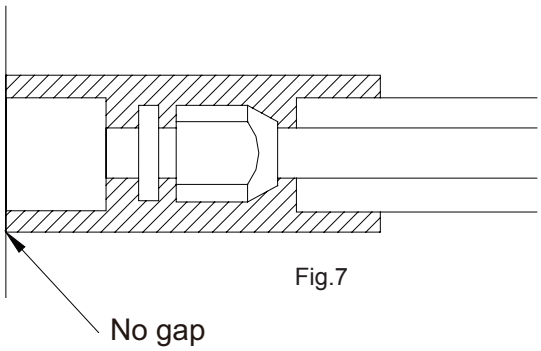


Fig.7

⚠ CAUTION!

After the pipe is protected well enough, never bend it to form a small angle; otherwise it would crack or break.

4)Wrap the Pipe with Tape:

a. Bundle the refrigerant pipe and electric wire together with tape, and separate them from the drain pipe to prevent the condensate water overflowing.

b. Wrap the pipe from the bottom of the outdoor unit to the top of the pipe where it enters the wall. During the wrapping, the later circle should cover half of the former one.

c. Fix the wrapped pipe on the wall with clamps.

⚠ CAUTION!

① . Do not wrap the pipe too tightly; otherwise the insulation effect would be weakened. Additionally, make sure the drain hose is separated from the pipe.

② .After that, fill the hole on the wall with sealing material to prevent wind and rain coming into the room.

(4) Support and protection for pipeline

Support should be made for hanging connection pipe. Distance between each support can not be over 1m.

8.2.3 Air Purging and Refrigerant Charge

Air purging

1)The refrigerant has been charged into the outdoor unit before shipment, while additional refrigerant still need be charged into the refrigerant pipe during the field installation.

2)Check if the liquid valve and the gas valve of the outdoor unit are closed fully.

3)As shown in the following figure (Fig.10), expel the gas inside the indoor unit and refrigerant pipe out by the vacuum pump.

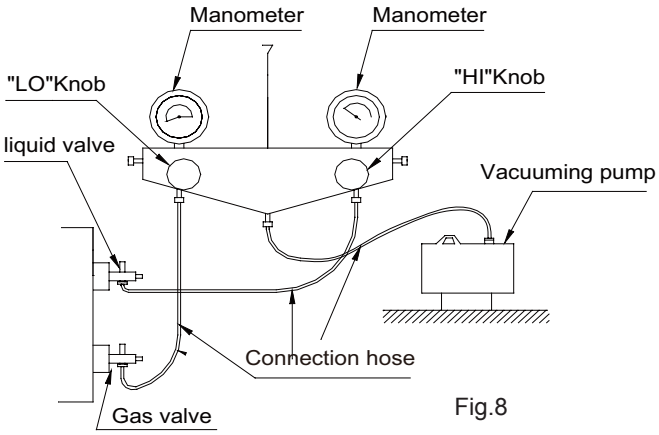


Fig.8

4)When the compressor is not running, charge the R410A refrigerant into the refrigerant pipe from the liquid valve of the outdoor unit (do not do it from the gas valve).

Additional refrigerant charging

1)Refrigerant Charge in the Outdoor Unit before Shipment

Notes:

a. Outdoor unit has been charged refrigerant before delivery. The refrigerant charge is not included those charged additionally in the

indoor unit and the refrigerant pipe.

b. The amount of the additional refrigerant charge is dependent on the diameter and length of the liquid refrigerant pipe which is decided by the actual yield installation requirement.

c. Record the additional refrigerant charge for future maintenance.

2)Calculation of the Additional Refrigerant Charge

Additional Refrigerant Charge=（ΣLength of Liquid Pipeφ9.52×54+ΣLength of Liquid Pipeφ6.35×22)-880

The biggest additional refrigerant charge value is 800g. It means that if the calculated value exceed 800g, the additional refrigerant charge takes 800g, while the calculated value less than 800g, the additional refrigerant charge takes the calculated value.

8.2.4 Electric Wiring

1) Wiring precautions

● The installation must be done in accordance with the national wiring regulations.

● Only the power cord with the rated voltage and exclusive circuit for the air conditioning can be used.

● Do not pull the power cord by force.

● The electric installation should be carried out by the technician as instructed by the loc al laws, regulations and also this manual.

● The diameter of the power cord should be large enough and once it is damaged it must be replaced by the dedicated one.

● The earthing should be reliable and the earth wire should be connected to the dedicated device of the building by the technician. Besides, the air switch coupled with the leakage current protection switch must be equipped, which is of enough capacity and of both magnetic and thermal tripping functions in case of the short circuit and overload.

Models	Power Supply	Capacity of the air Switch(A)	Recommended Cord(piecesx sectional area)
30K	208/230V~60Hz	30	AWG 12
36K	208/230V~60Hz	35	AWG 12
42K	208/230V~60Hz	40	AWG 12

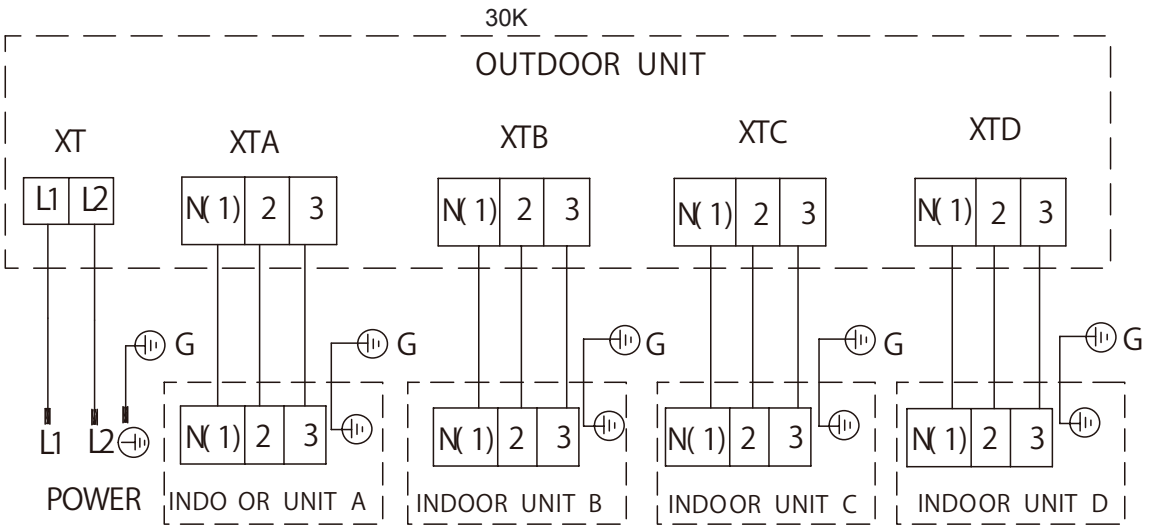


Fig.9

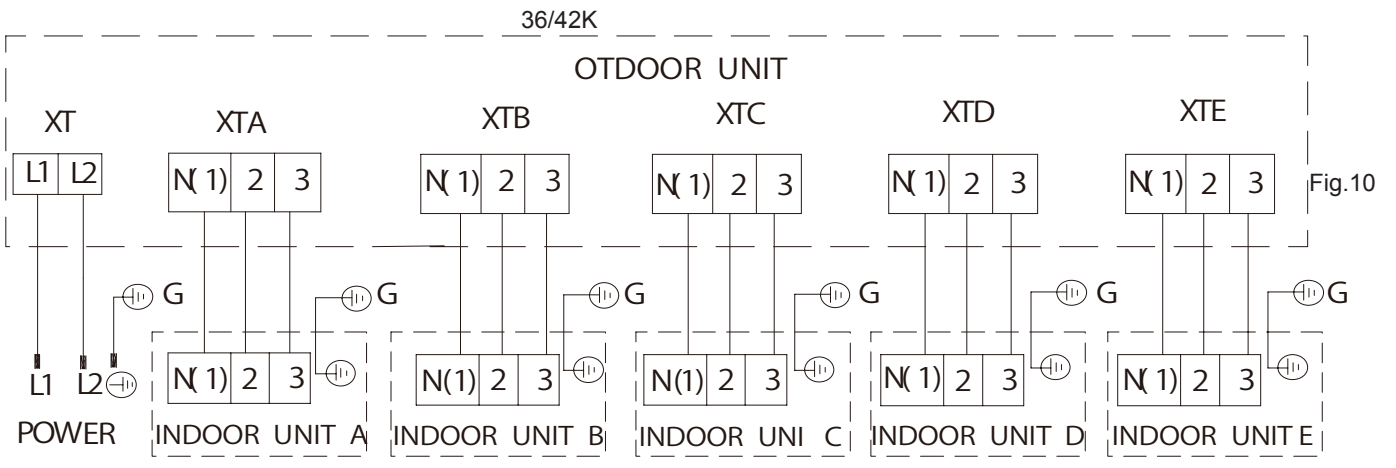


Fig.10

2) Earthing Requirements

● The air conditioner is classified into the Class I appliances, so its earthing must be reliable.

● The yellow-green line of the air conditioner is the earth line and can not be used for other purpose, cut off or fixed by the tapping screw; otherwise it would cause the hazard of electric shock.

● The reliable earth terminal should be provided and the earth wire can not be connected to any of the following places.

① Running water pipe; ② Coal gas pipe; ③ Sewage pipe; ④ Other places where the professional personnel think unreliable.

3) Electrical Cable Connection

Cautions!

① . The mistake connecting line will result in malfunction. After the electrical wiring working, ensure the wire between the connection place and the fixed place has a certain freedom degree.

② . The connection piping and connection line of each indoor unit should connect well according to the instruction.

③ . The electric installation should be carried out by the technician as instructed by the local laws, regulations and also this manual.

④ . The installation location should be dry, and can't be expose in direct sunlight or strong breeze.

⑤ . Have to install a breaker in the circuit that can shut off the main power supply of the system. Besides, the air switch coupled with the leakage current protection switch must be equipped.

4) Wiring of the Power Cord

a. Open the side plate.

b. Connect the power card to the terminals “L1”, “L2” and also the earthing bolt, and then connect the wiring terminals “N(1),2,3” of the indoor unit to those of the outdoor unit correspondingly.

c. Fix the power cord with wire clips.

d. Let the power cord go through the rubber ring.

9. Troubleshooting

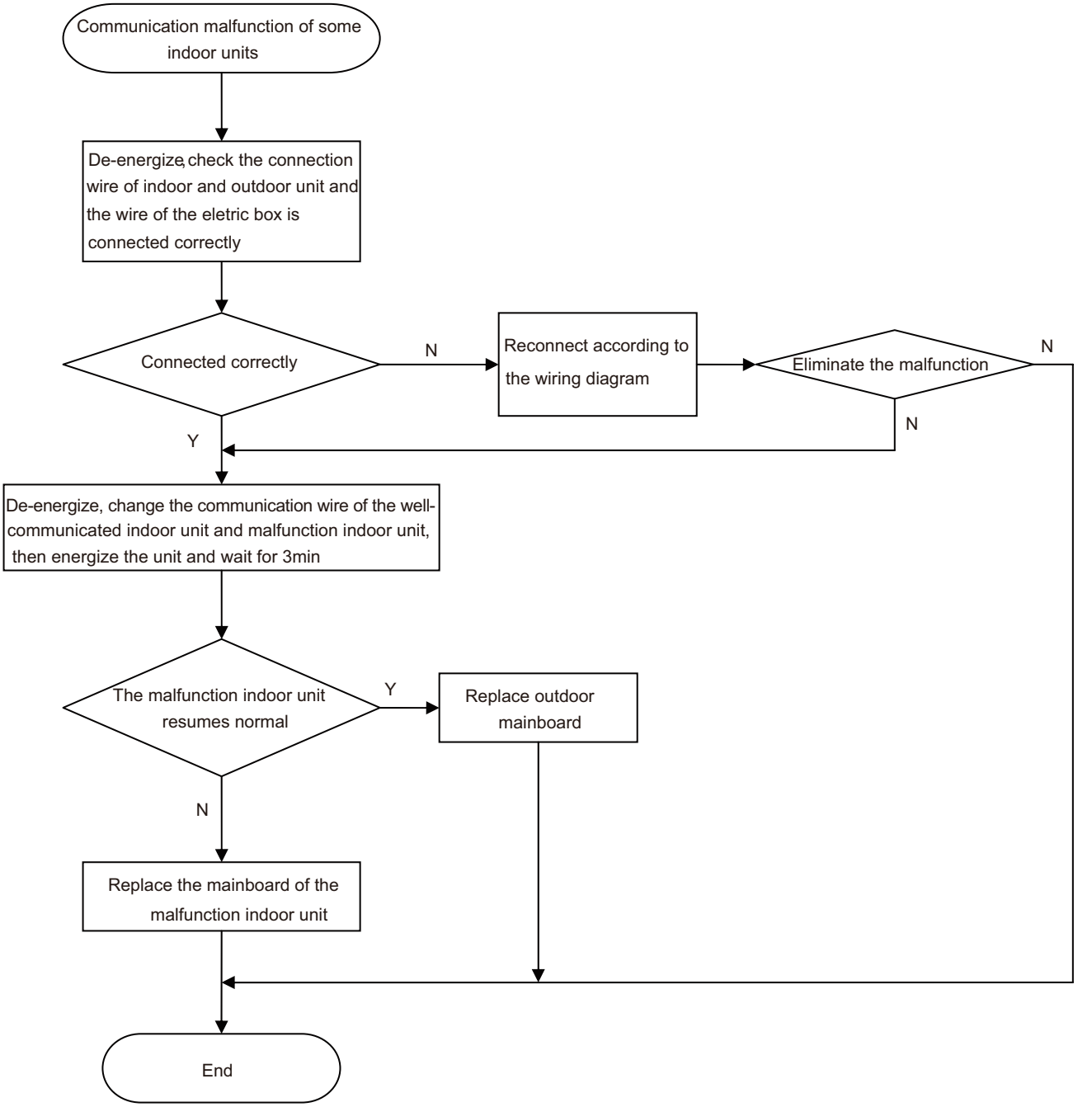
9.1 Malfunction Indicator

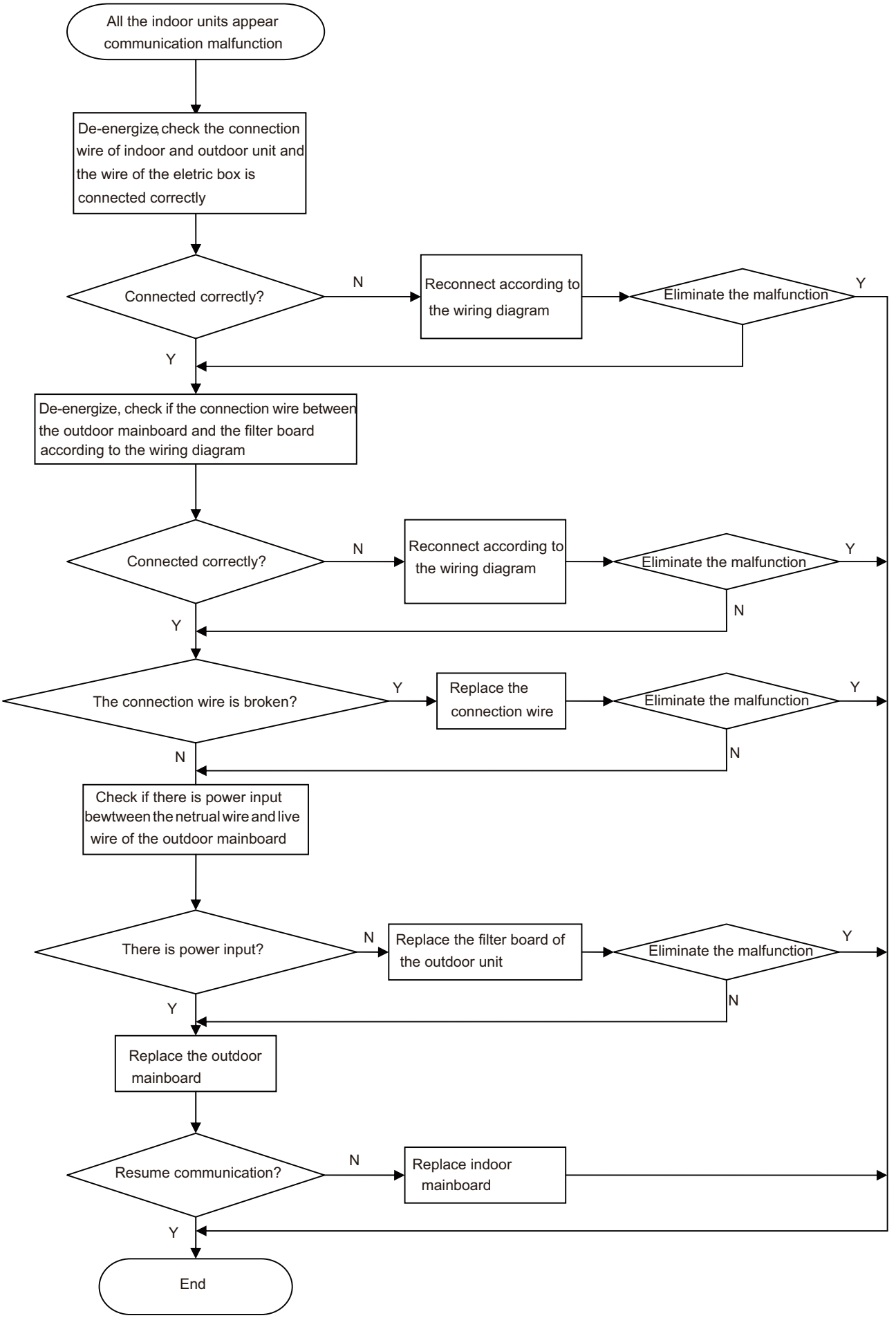
▲ The error code will be displayed on the wired controller and the main board of the outdoor unit The meaning of each error.

Name of malfunction	The indicator display			Indoor display
	Yellow light	Red light	Green light	
Compressor runs	Flash once			
Defrost	Flash twice			H1
Anti-freezing protection	Flash 3 times			E2
IPM protection	Flash 4 times			H5
AC over-current protection	Flash 5 times			E5
Over-burden protection	Flash 6 times			H4
Compressor exhaust high temperature protection	Flash 7 times			E4
Compressor overload protection	Flash 8 times			H3
Power protection	Flash 9 times			L9
EEPROM reads and write protection	Flash 11 times			
Low PN voltage protection	Flash 12 times			PL
Over voltage protection for PN	Flash 13 times			PH
PFC protection	Flash 14 times			HC
PFC module temperature protection	Flash 15 times			oE
Low pressure protection	Flash 17 times			E3
High pressure protection	Flash 18 times			E1
Limit/decline frequency(electric current)		Flash 1 times		
Frequency limit（exhaust)		Flash 2 times		
Frequency limit(Over-burden)		Flash 3 times		
Outdoor ambient sensor malfunction		Flash 6 times		F3
Outdoor tube sensor malfunction		Flash 5 times		F4
Exhaust sensor malfunction		Flash 7 times		F5
Attain the temperature of switch on		Flash 8 times		
Frequency limit(power)		Flash 13 times		
Outdoor fan malfunction		Flash 14 times		
Frequency limit(PFC module temperature)		Flash 15 times		
PFC module sensor malfunction		Flash 16 times		oE
Liquid pipe temperature sensor malfunction of A		Flash 17 times		
Gas pipe temperature sensor malfunction of A		Flash 18 times		
Liquid pipe temperature sensor malfunction of B		Flash 19 times		
Gas pipe temperature sensor malfunction of B		Flash 20 times		
Liquid pipe temperature sensor malfunction of C		Flash 21 times		
Gas pipe temperature sensor malfunction of C		Flash 22 times		
Liquid pipe temperature sensor malfunction of D		Flash 23 times		
Gas pipe temperature sensor malfunction of D		Flash 24 times		
Liquid pipe temperature sensor malfunction of E		Flash 25 times		
Gas pipe temperature				
sensor malfunction of E		Flash 26 times		
Exit of the condenser tube sensor malfunction		Flash 27 times		
Correspondence is normal			Flash 7 times(n=indoor unit number)	
Communication failure between indoor unit and outdoor unit			Often bright	
（indoor unit all Communication failure)				
Indoor ambient sensor malfunction				F1
Indoor evaporate sensor malfunction				F2
Mode conflict				E7
Accept fluorine mode				Fo
Jumper cap malfunction protection				C5

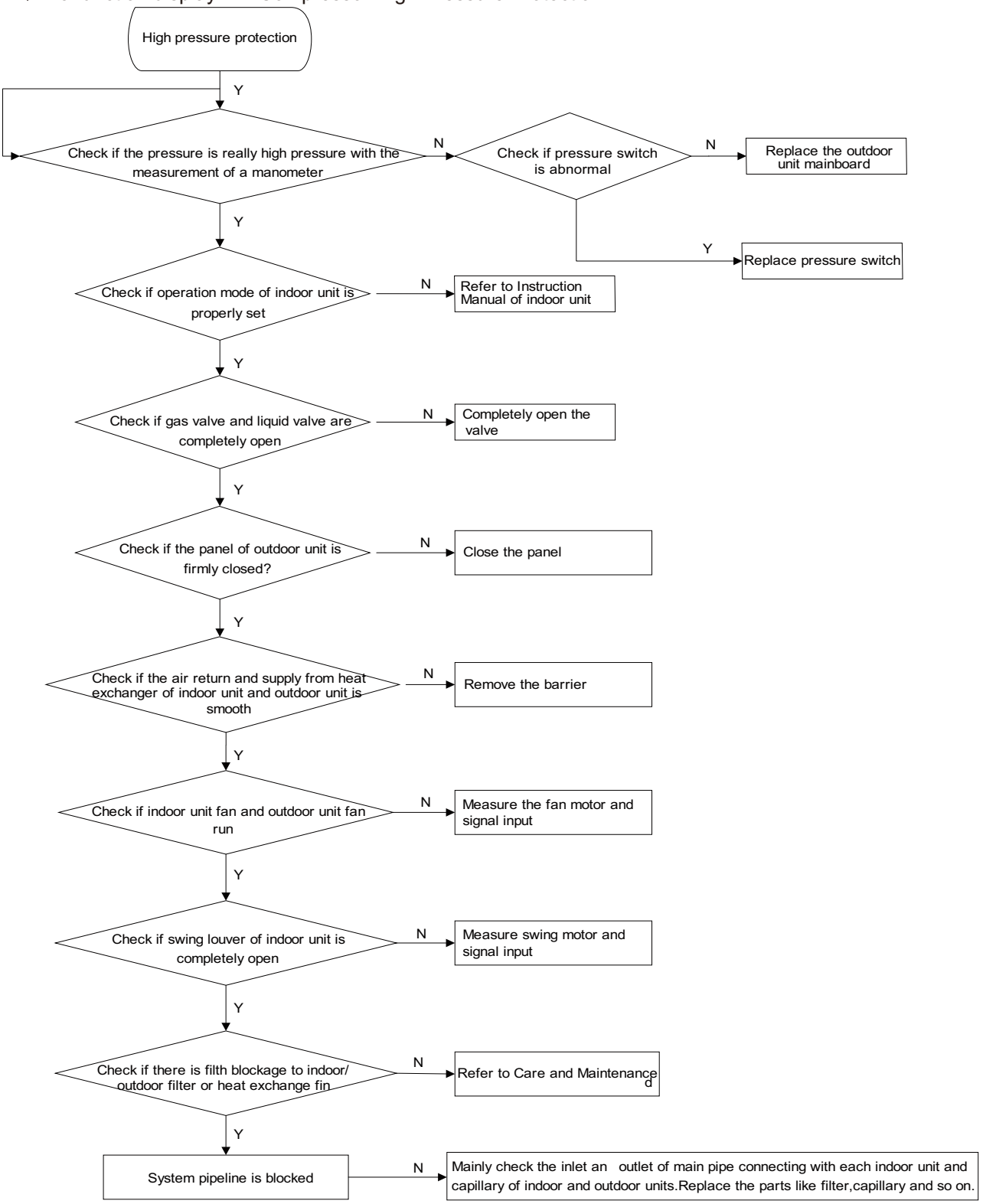
9.2 Malfunction Checking and Elimination

◆ **Malfunction display: E6 Communication malfunction**

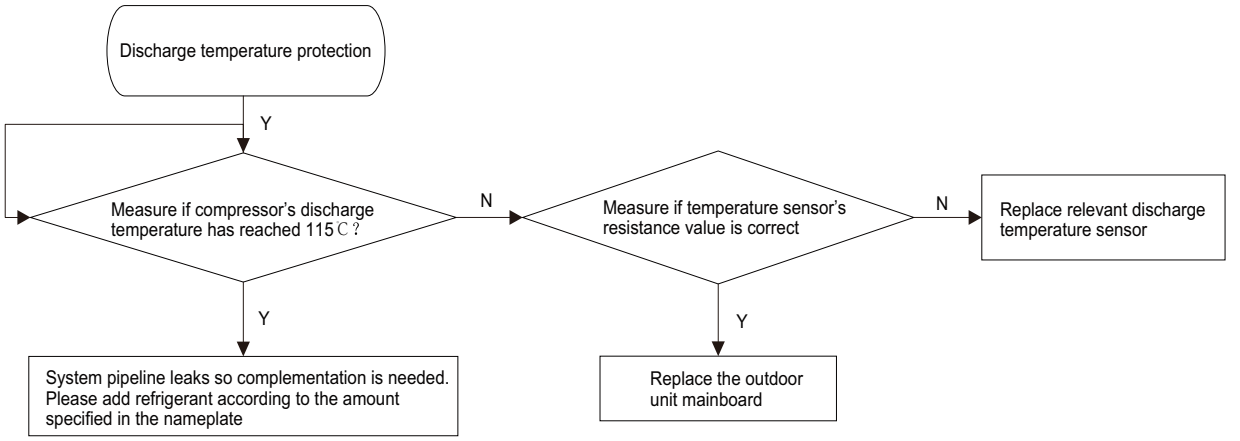



All the indoor units appear communication malfunction
De-energize, check the connection wire of indoor and outdoor unit and the wire of the eletric box is connected correctly
Connected correctly?
N
Reconnect according to the wiring diagram
Eliminate the malfunction
Y
Y
De-energize, check if the connection wire between the outdoor mainboard and the filter board according to the wiring diagram
Connected correctly?
N
Reconnect according to the wiring diagram
Eliminate the malfunction
Y
N
Y
The connection wire is broken?
Y
Replace the connection wire
Eliminate the malfunction
Y
N
N
Check if there is power input bewtween the netrual wire and live wire of the outdoor mainboard
There is power input?
N
Replace the filter board of the outdoor unit
Eliminate the malfunction
Y
N
Y
Replace the outdoor mainboard
Resume communication?
N
Replace indoor mainboard
Y
End

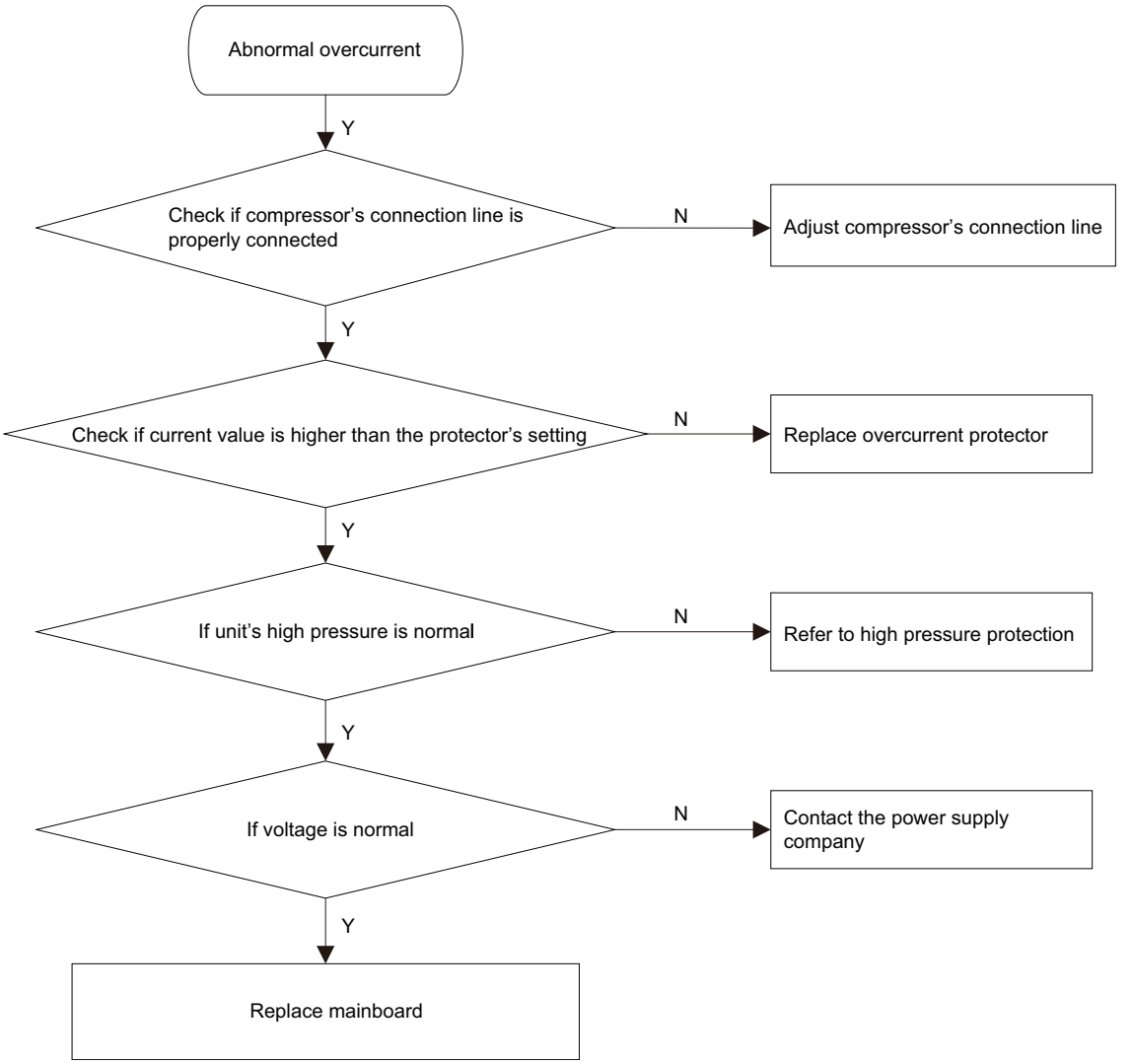
◆ Malfunction display: E1 Compressor High Pressure Protection



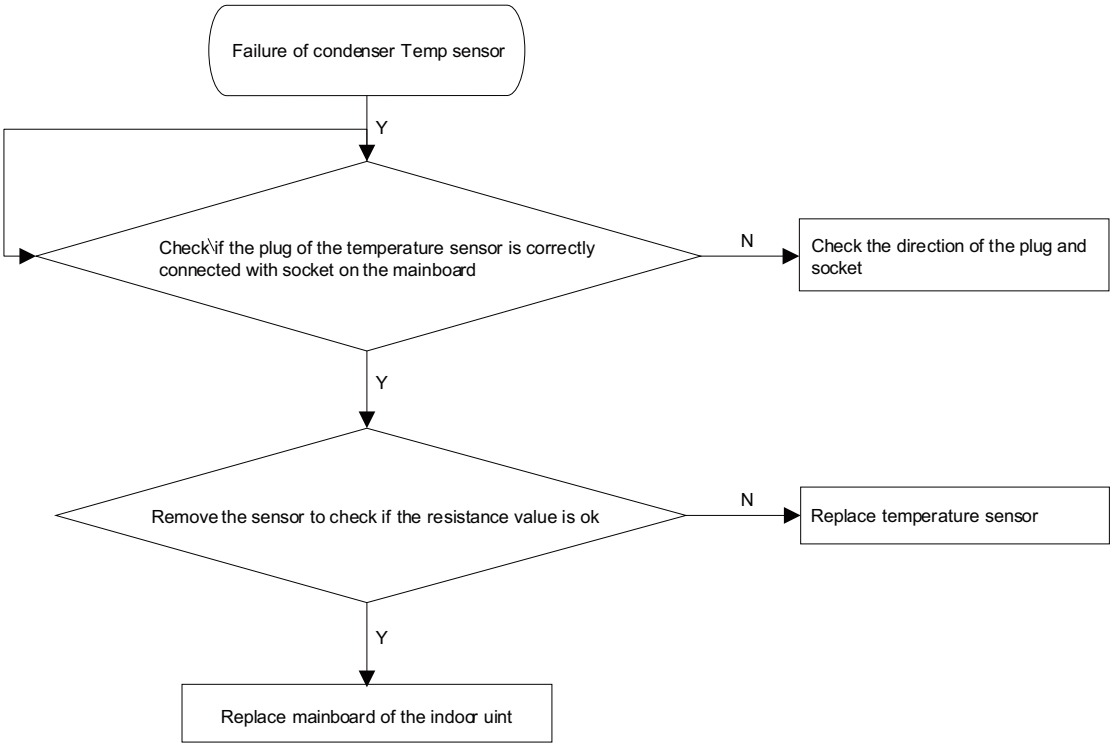
◆ Malfunction display: E4 Compressor Exhaust High Temperature Protection



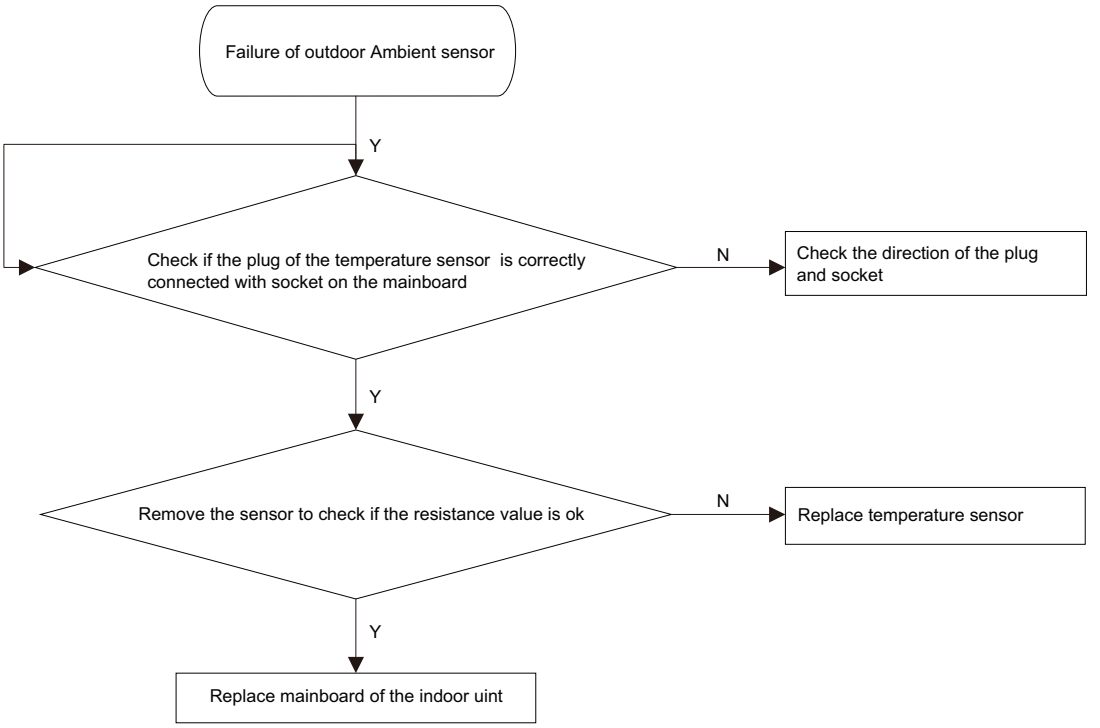
◆ Malfunction display: E5 Compressor Overheat



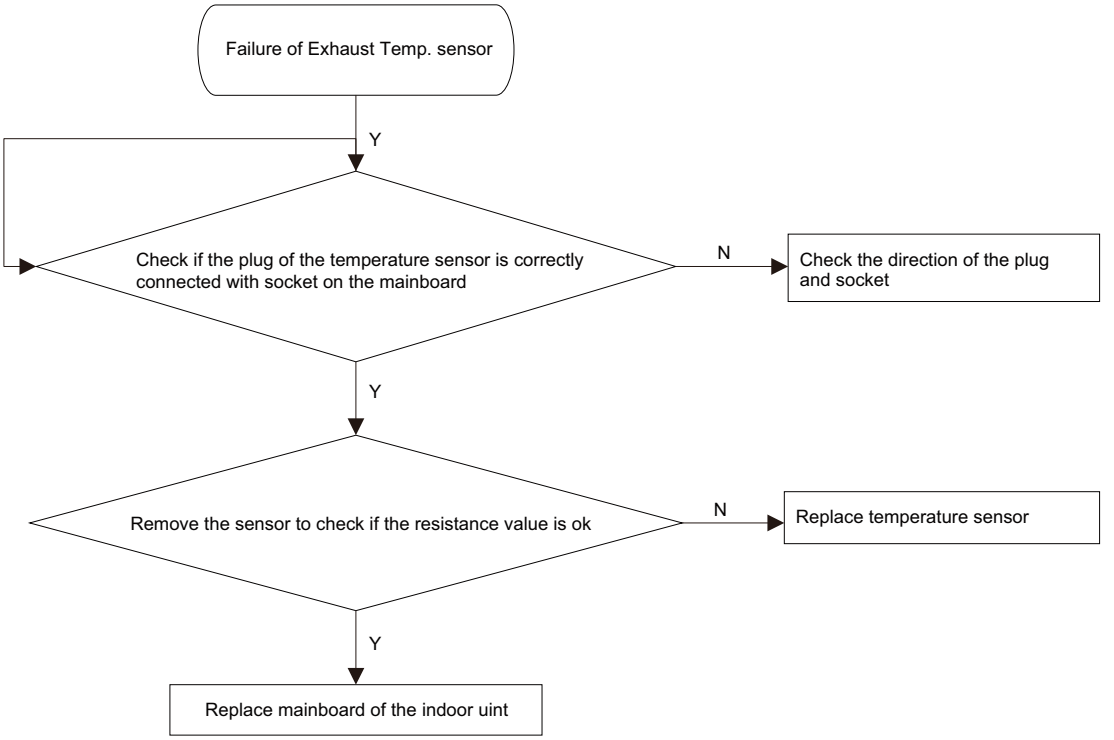
◆ Malfunction display: F2 Failure of Evaporator Temp. Sensor



◆ Malfunction display: F3 Failure of Outdoor Ambient Sensor



◆ Malfunction display: F5 Failure of Exhaust Temp. Sensor



9.3 Maintenance Method for Normal Malfunction

1. Air Conditioner Can't be Started Up

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

2. Poor Cooling (Heating) for Air Conditioner

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

3. Horizontal Louver Can't Swing

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

4. ODU Fan Motor Can't Operate

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

5. Compressor Can't Operate

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

6. Air Conditioner is Leaking

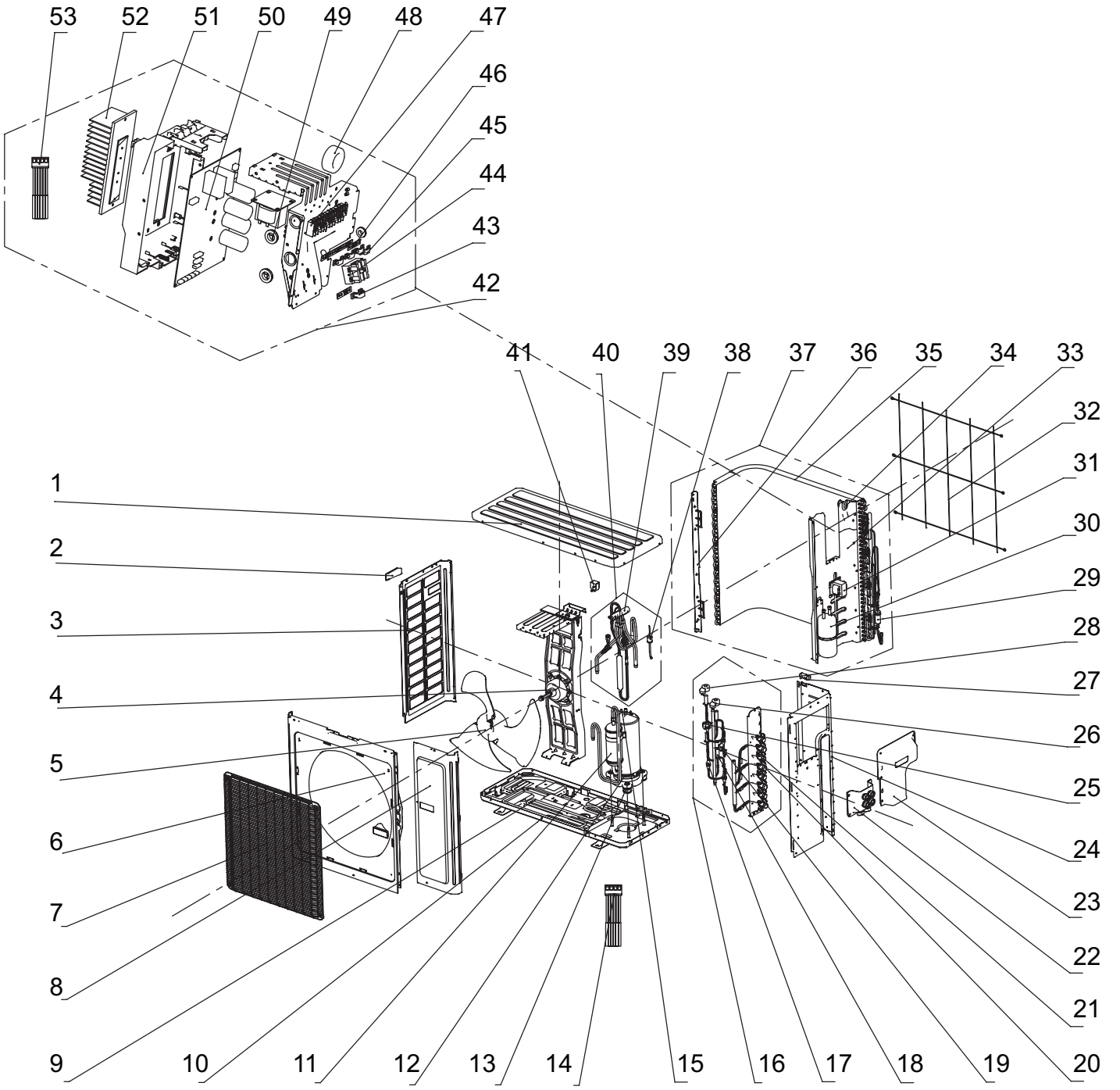
Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe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

7. Abnormal Sound and Vibration

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

10. Exploded View and Parts List

GWHD(30)ND3EO GWHD(30)ND3FO TM30H4O

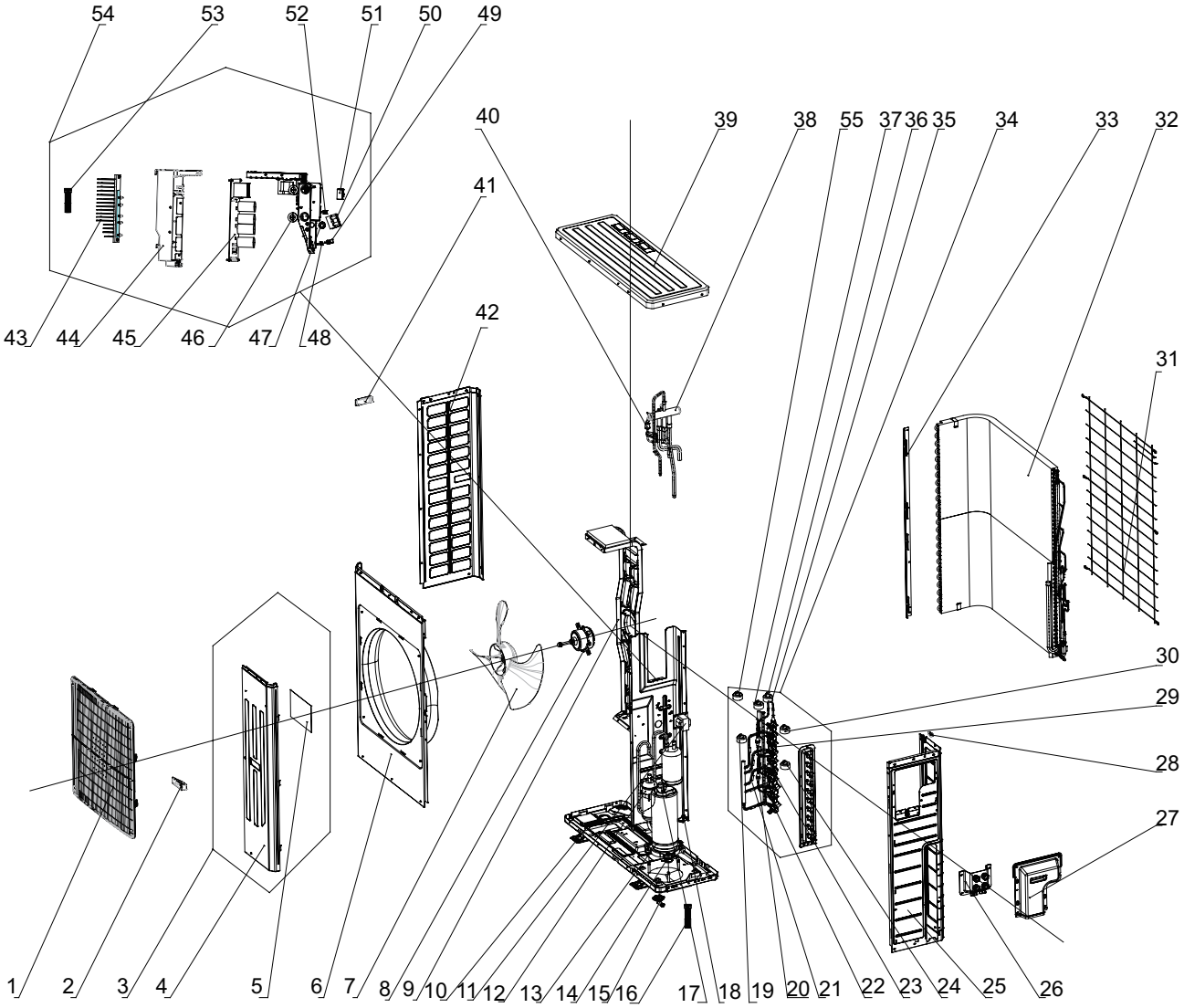


The component picture is only for reference; please refer to the actual product.

NO.	Description	Part Code			Qty
		GWHD(30)ND3EO	GWHD(30)ND3FO	TM30H4O	
	Product code	CN860W0160	CN860W0280	CB228W07900	
1	Coping	01255006P	01255006P	01255006P	1
2	Left Handle	26235401	26235401	26235401	1
3	Left Side Plate	01305043P	01305043P	01305043P	1
4	Fan Motor	15702802	15702802	15702802	1
5	Axial Flow Fan	10335014	10335014	10335014	1
6	Cabinet	0143500401P	0143500401P	0143500401P	1
7	Front Grill	01473050	01473050	01473050	1
8	Front Side Plate	01305086P	01305086P	01305086P	1
9	Electrical Heater	765100047	765100047	765100047	1
10	Chassis Sub-assy	01284100112P	01284100112P	01284100112P	1
11	Compressor	00205200003	00205200003	00205200003	1
12	Electric Heater(Compressor)	7651873215	7651873215	7651873215	1
13	Compressor Gasket	76713066	76713066	76713066	1
14	Sensor Sub-assy	39008000017G	39008000017G	39008000017G	3
15	Compressor Overload Protector(External)	00180030	00180030	00180030	1
16	Valve Support Assy	07133775	030163000003	030163000003	1
17	Strainer A	07210022	07210022	07210022	1
18	Electronic Expansion Valve	07130369	07334447	07334447	2
19	Electric Expand Valve Fitting	4300876717	4304413222	4304413222	1
20	Cut off Valve	07130239	07130239	07130239	1
21	Cut off Valve	071302391	07130239	07130239	1
22	Wiring Cover Sub-assy	01264100034	01264100034	01264100034	1
23	Handle Assy	02204100008	02204100008	02204100008	1
24	Right Side Plate	0131410000901P	0131410000901P	0131410000901P	1
25	Electric Expand Valve Fitting	4300876718	4304413234	4304413234	1
26	Electric Expand Valve Fitting	4300876719	4304413235	4304413235	1
27	Wiring Clamp	26115004	26115004	26115004	1
28	Electric Expand Valve Fitting	4300876720	4304413237	4304413237	1
29	Bidirection Strainer	07220016	07220016	07220016	1
30	Gas-liquid Separator Assy	07225017	07225017	07225017	1
31	Reactor	43130186	43130186	43130186	1
32	Rear Grill	01574100003	01574100003	01574100003	1
33	Clapboard	01244100003	01244100003	01244100003	1
34	Cable Cross Loop	76512008	76512008	76512008	1
35	Condenser Assy	01124100118	01124100118	01124100118	1
36	Condenser Support Plate	01175092	01175092	01175092	1
37	Condenser Assy	01124100118	01124100118	01124100118	1
38	Pressure Protect Switch	4602000902	4602000902	4602000902	1
39	4-way Valve	4300008201	4300008201	4300008201	1
40	4-Way Valve Assy	04045200071	04045200071	04045200071	1
41	Magnet Coil	4300040072	4300040072	4300040072	1
42	Electric Box Assy	01395200378	01395200378	01395200378	1
43	Wire Clamp	71010003	71010003	71010003	1
44	Terminal Board	420111041	420111041	420111041	1
45	Wire Clamp	71010003	71010003	71010003	1
46	Insulation Gasket	70410006	70410006	70410006	2
47	Terminal Board	42018094	420111041	420111041	4
48	Magnetic Ring	49010109	49010109	49010109	1
49	Cable Cross Loop	76512008	76512008	76512008	5
50	Main Board	30228000026	30228000026	30228000026	5
51	Electric Box	26904100013	26904100013	26904100013	5
52	Radiator	49010252	49010252	49010252	5
53	Sensor Sub-assy	39004100005G	39004100005G	39004100005G	1

Above data is subject to change without notice.

GWHD(36)ND3EO GWHD(30)ND3FO TM42H3O GWHD(42)ND3FO GWHD(42)ND3HO



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

NO.	Description	Part Code			Qty
		GWHD(36)ND3EO		GWHD(36)ND3FO	
	Product code	CN860W0170	CN860W0171	CN860W0300	
1	Front Grill	01574106	01574106	01574106	1
2	Handle Assy	02204100008	02204100008	02204100008	1
3	Front Side Plate Sub-Assy	01305508	01305508	01305508	1
4	Front Side Plate	01305065P	01305065P	01305065P	1
5	Insulated Board (Cover of Electric Box)	20113003	20113003	20113003	1
6	Cabinet	01435007P	01435007P	01435007P	1
7	Axial Flow Fan	10335010	10335014	10335010	1
8	Fan Motor	1570280201	1570280201	1570280201	1
9	Motor Support Assy	01805200256	01805200256	01805200256	1
10	Electrical Heater	765100047	765100047	765100047	1
11	Reactor	43130186	43130186	43130186	1
12	Compressor	00205200003	00205200003	00205200003	1
13	Electrical Heater(Compressor)	7651873209	7651873215	7651873209	1
14	Compressor Gasket	76713066	76713066	76713066	3
15	Drainage Joint	26113009	26113009	26113009	1
16	Sensor Sub-assy	39004100006G	39004100006G	39004100006G	1
17	Compressor Overload Protector(External)	00180030	00180030	00180030	1
18	Bolt	70210051	70210053	70210053	2
19	Electric Expand Valve Fitting	4300876704	4304413208	4304413208	1
20	Strainer A	07210022	07210022	07210022	1
21	Bidirection Strainer	07220016	07220016	07220016	1
22	Cut off Valve	07130239	07130239	07130239	1
23	Cut off Valve	071302391	071302391	071302391	1
24	Electric Expand Valve Fitting	4300876704	4304413208	4304413208	1
25	Right Side Plate	0131410002701P	0131410002701P	0131410002701P	1
26	Wiring Cover Sub-assy	01264100034	01264100034	01264100034	1
27	Handle Assy	02204100008	02204100008	02204100008	1
28	Wiring Clamp	26115004	26115004	26115004	1
29	Cut off Valve	07130239	07130239	07130239	1
30	Electric Expand Valve Fitting	4300876717	4304413208	4304413208	1
31	Rear Grill	01574100007	01574100007	01574100007	1
32	Condenser Assy	01124100116	01163780	01163780	1
33	Condenser support plate	01895309	01895309	01895309	1
34	Valve Support Assy	07133814	030163000003	030163000008	1
35	Electric Expand Valve Fitting	4300876718	4304413208	4304413208	1
36	Electronic Expansion Valve	07130369	07334447	07334447	1
37	Electric Expand Valve Fitting	4300876719	4304413208	4304413208	1
38	4-way Valve	43000338	43000338	43000338	1
39	Top Cover	0125500901P	0125500901P	0125500901P	1
40	Pressure Protect Switch	4602000902	4602000902	4602000902	1
41	Left Handle	26235401	26235401	26235401	1
42	Left Side Plate	01305064P	01305043P	01305064P	1
43	Radiator	49010252	49010252	49010252	1
44	Electric Box	26904100013	26904100013	26904100013	1
45	Main Board	30228000027	30228000027	30228000027	1
46	Cable Cross Loop	76510021	76510021	76510021	2
47	Magnetic Ring	49010109	49010109	49010109	4
48	Insulation Gasket	70410006	70410006	70410006	1
49	Wire Clamp	71010003	71010003	71010003	5
50	Terminal Board	420111041	420111041	420111041	5
51	Terminal Board	42018094	42018094	42018094	5
52	Wire Clamp	71010005	71010005	71010005	1
53	Sensor Sub-assy	39004100006G	39004100007G	39004100007G	1
54	Electric Box Assy	01395200376	01395200378	01395200376	1
55	Electric Expand Valve Fitting	4300876720	4304413208	4304413208	1

Above data is subject to change without notice.

NO.	Description	Part Code			Qty
		TM36H4O	GWHD(42)ND3FO	TM42H3O	
	Product code	CB228W08000	CN860W0290	CN860W0180	
1	Front Grill	01574106	01574106	01574106	1
2	Handle Assy	02204100008	02204100008	02204100008	1
3	Front Side Plate Sub-Assy	01305508	01305508	01305508	1
4	Front Side Plate	01305065P	01305065P	01305065P	1
5	Insulated Board (Cover of Electric Box)	20113003	20113003	20113003	1
6	Cabinet	01435007P	01435007P	01435007P	1
7	Axial Flow Fan	10335010	10335010	10335010	1
8	Fan Motor	1570280201	1570280201	1570280201	1
9	Motor Support Assy	01805200256	01805200256	01805200256	1
10	Electrical Heater	765100047	765100047	765100047	1
11	Reactor	43130186	43130186	43130186	1
12	Compressor	00205200003	00205200003	00205200003	1
13	Electrical Heater(Compressor)	7651873209	7651873209	7651873209	1
14	Compressor Gasket	76713066	76713066	76713066	3
15	Drainage Joint	26113009	26113009	26113009	1
16	Sensor Sub-assy	39004100006G	39004100006G	39004100006G	1
17	Compressor Overload Protector(External)	00180030	00180030	00180030	1
18	Bolt	70210051	70210051	70210051	2
19	Electric Expand Valve Fitting	4300876704	4304413222	4304413222	1
20	Strainer A	07210022	07210022	07210022	1
21	Bidirection Strainer	07220016	07220016	07220016	1
22	Cut off Valve	07130239	07130239	07130239	1
23	Cut off Valve	071302391	071302391	071302391	1
24	Electric Expand Valve Fitting	4300876704	4304413234	4304413234	1
25	Right Side Plate	0131410002701P	0131410002701P	0131410002701P	1
26	Wiring Cover Sub-assy	01264100034	01264100034	01264100034	1
27	Handle Assy	02204100008	02204100008	02204100008	1
28	Wiring Clamp	26115004	26115004	26115004	1
29	Cut off Valve	07130239	071302391	071302391	1
30	Electric Expand Valve Fitting	4300876717	4304413235	4304413235	1
31	Rear Grill	01574100007	01574100007	01574100007	1
32	Condenser Assy	01124100116	01124100116	01124100116	1
33	Condenser support plate	01895309	01895309	01895309	1
34	Valve Support Assy	07133814	07133241	07133814	1
35	Electric Expand Valve Fitting	4300876718	4304413237	4304413237	1
36	Electronic Expansion Valve	07130369	07130239	07130369	1
37	Electric Expand Valve Fitting	4300876719	4304413238	4304413238	1
38	4-way Valve	43000338	43000338	43000338	1
39	Top Cover	0125500901P	0125500901P	0125500901P	1
40	Pressure Protect Switch	4602000902	4602000902	4602000902	1
41	Left Handle	26235401	26235401	26235401	1
42	Left Side Plate	01305064P	01305064P	01305064P	1
43	Radiator	49010252	49010252	49010252	1
44	Electric Box	26904100013	26904100013	26904100013	1
45	Main Board	30228000027	30228000025	30228000025	1
46	Cable Cross Loop	76510021	76510021	76510021	2
47	Magnetic Ring	49010109	49010109	49010109	4
48	Insulation Gasket	70410006	70410006	70410006	1
49	Wire Clamp	71010003	71010003	71010003	5
50	Terminal Board	420111041	420111041	420111041	5
51	Terminal Board	42018094	42018094	42018094	5
52	Wire Clamp	71010005	71010005	71010005	1
53	Sensor Sub-assy	39004100006G	39004100006G	39004100006G	1
54	Electric Box Assy	01395200376	01395200377	01395200377	1
55	Electric Expand Valve Fitting	4300876720	4300876720	4300876720	1

Above data is subject to change without notice.

NO.	Description	Part Code	Qty
		GWHD(42)ND3HO	
	Product code	CB228W08300	
1	Front Grill	01574106	1
2	Handle Assy	02204100008	1
3	Front Side Plate Sub-Assy	01305508	1
4	Front Side Plate	01305065P	1
5	Insulated Board (Cover of Electric Box)	20113003	1
6	Cabinet	01435007P	1
7	Axial Flow Fan	10335010	1
8	Fan Motor	1570280201	1
9	Motor Support Assy	01805200256	1
10	Electrical Heater	765100047	1
11	Reactor	43130186	1
12	Compressor	00205200003	1
13	Electrical Heater(Compressor)	7651873209	1
14	Compressor Gasket	76713066	3
15	Drainage Joint	26113009	1
16	Sensor Sub-assy	39004100006G	1
17	Compressor Overload Protector(External)	00180030	1
18	Bolt	70210051	2
19	Electric Expand Valve Fitting	4304413222	1
20	Strainer A	07210022	1
21	Bidirection Strainer	07220016	1
22	Cut off Valve	07130239	1
23	Cut off Valve	071302391	1
24	Electric Expand Valve Fitting	4304413234	1
25	Right Side Plate	0131410002701P	1
26	Wiring Cover Sub-assy	01264100034	1
27	Handle Assy	02204100008	1
28	Wiring Clamp	26115004	1
29	Cut off Valve	071302391	1
30	Electric Expand Valve Fitting	4304413235	1
31	Rear Grill	01574100007	1
32	Condenser Assy	01124100116	1
33	Condenser support plate	01895309	1
34	Valve Support Assy	07133814	1
35	Electric Expand Valve Fitting	4304413237	1
36	Electronic Expansion Valve	07130369	1
37	Electric Expand Valve Fitting	4304413238	1
38	4-way Valve	43000338	1
39	Top Cover	0125500901P	1
40	Pressure Protect Switch	4602000902	1
41	Left Handle	26235401	1
42	Left Side Plate	01305064P	1
43	Radiator	49010252	1
44	Electric Box	26904100013	1
45	Main Board	30228000025	1
46	Cable Cross Loop	76510021	2
47	Magnetic Ring	49010109	4
48	Insulation Gasket	70410006	1
49	Wire Clamp	71010003	5
50	Terminal Board	420111041	5
51	Terminal Board	42018094	5
52	Wire Clamp	71010005	1
53	Sensor Sub-assy	39004100006G	1
54	Electric Box Assy	01395200377	1
55	Electric Expand Valve Fitting	4300876720	1

Above data is subject to change without notice.

11. Removal Procedure

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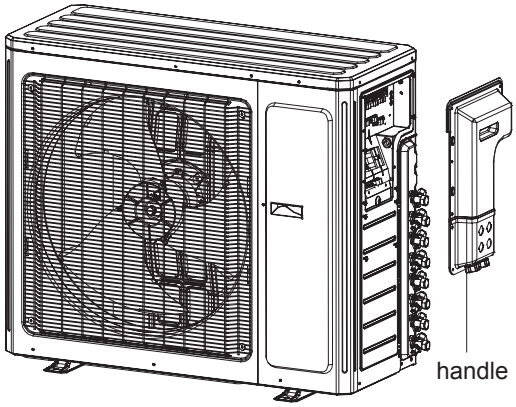
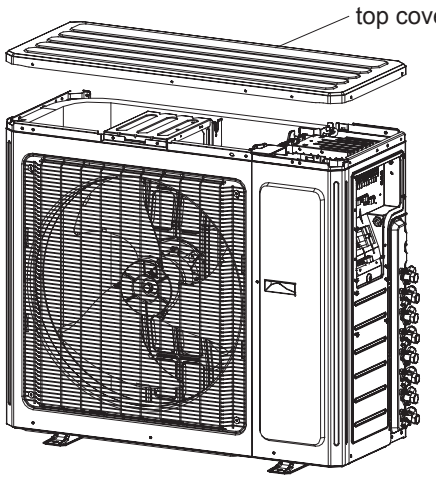
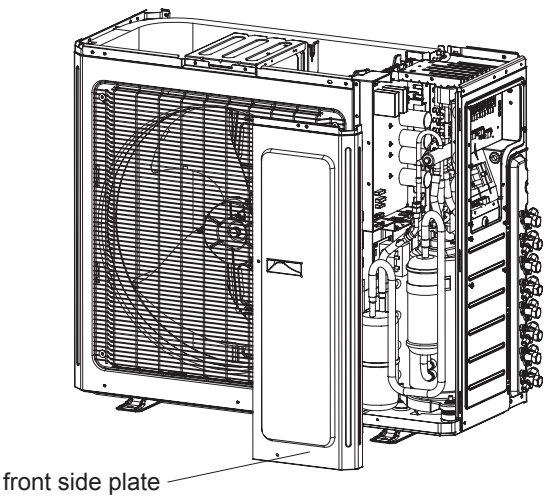
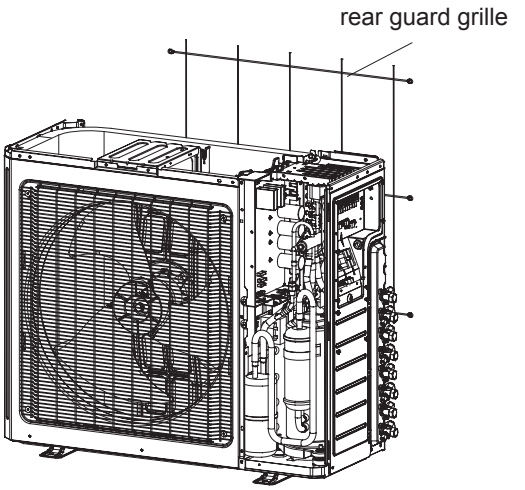
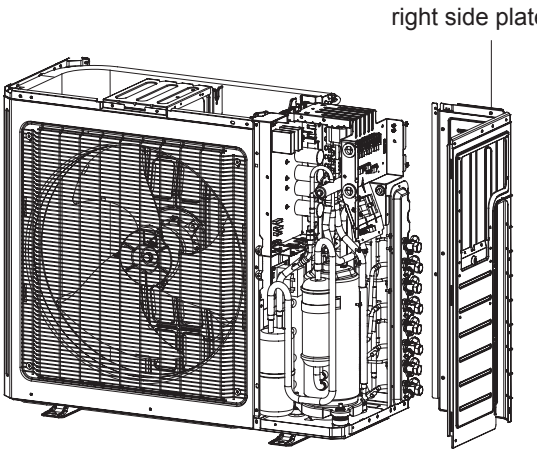
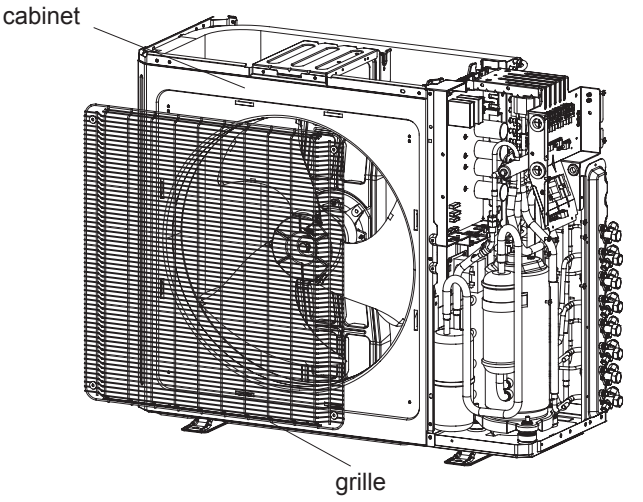
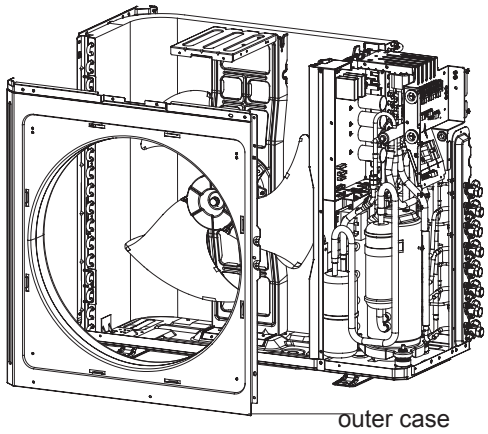
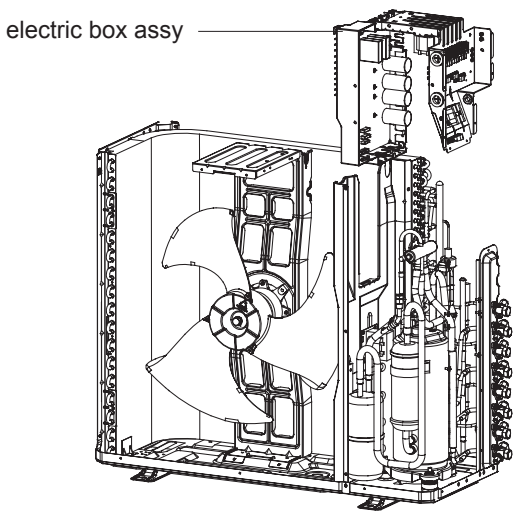
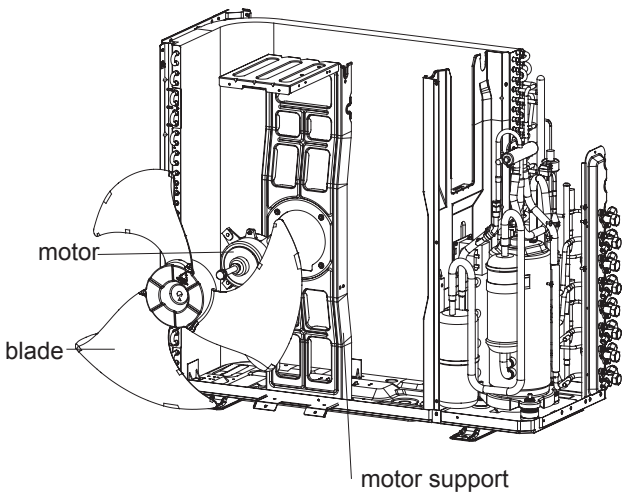
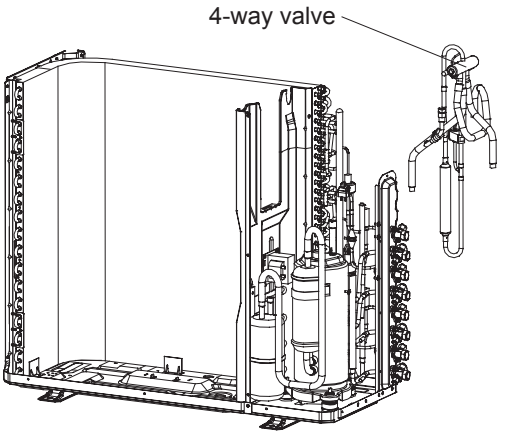
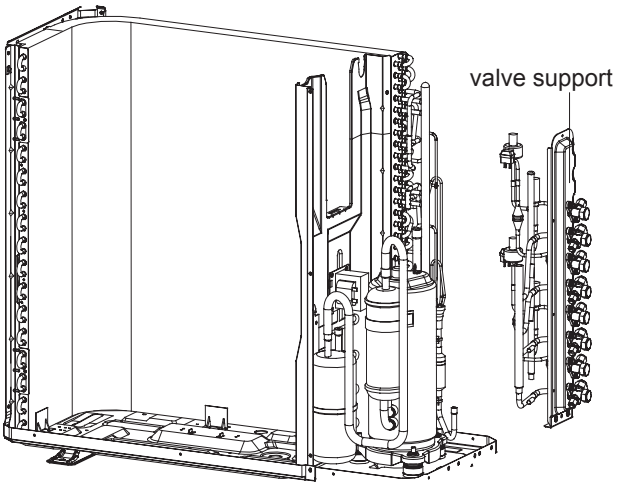
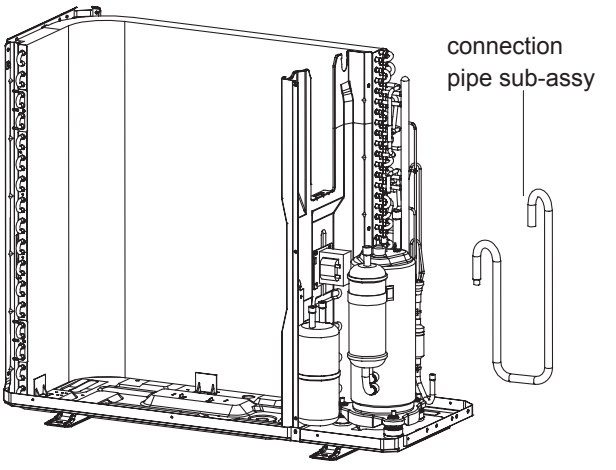
⚠ Warning: Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.

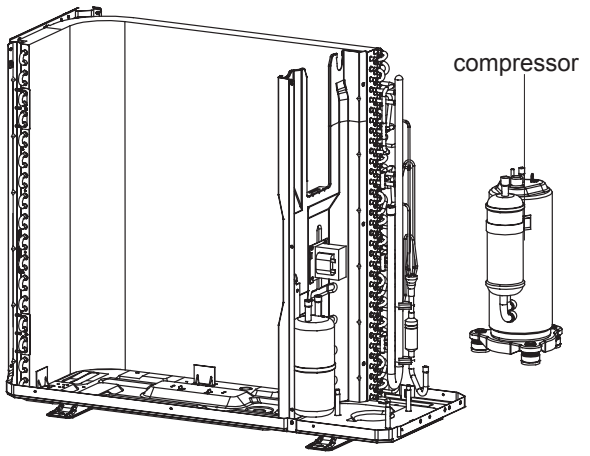
Steps	Procedure	
1. Remove the handle		
	Remove the screws connicting the handle with right side plate and then remove the handle.	
2. Remove top cover		
	Remove the screws connecting the top cover with outer case, right side plate and left side plate; lift the top cover upwards to remove it.	
3.Remove front side plate		
	Remove the screws connecting the front side plate with chassis and middle isolation sheet,and then remove the front side plate	

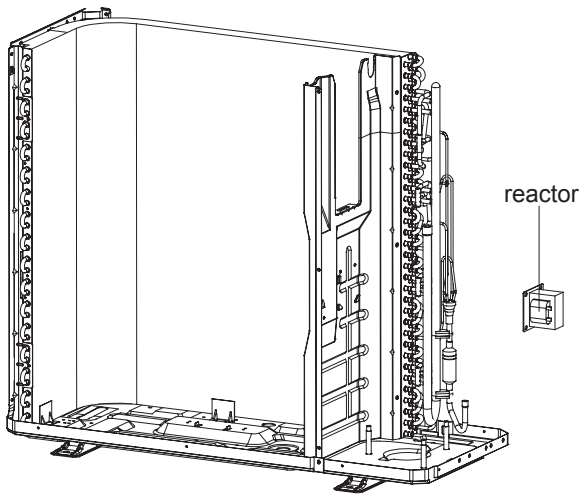
Steps	Procedure
4.Remove rear guard grille	
Remove the 6 screws connecting the grille with right side plate and left side plate, and then remove the rear guard grille.	
5.Remove right side plate	
Remove the screws connecting the right side plate with electric box assy, valve support, chassis and condenser side plate, and then remove the right side plate.	
6.Remove grille and cabinet	
Remove the 4 screws connecting the grille and outer case, and then remove the panel grille.	

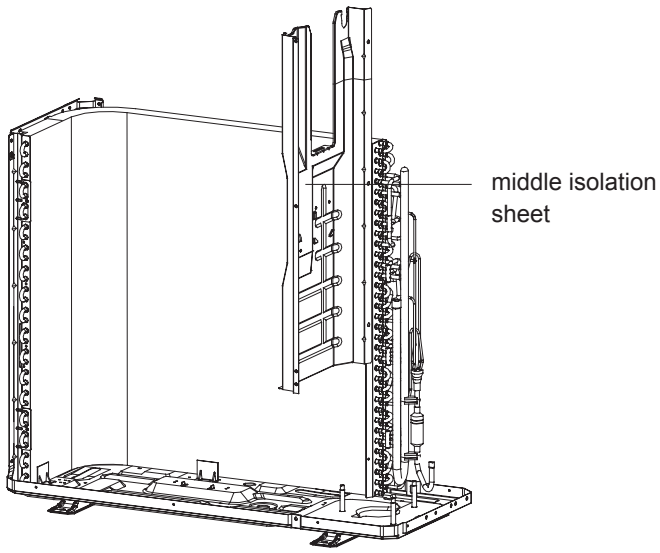
Steps	Procedure
7. Remove outer case	
Remove screws connecting outer case and motor support, middle isolation sheet and chassis, pull the outer case upwards slightly, loosen clasps between outer case and right side plate, left side plate, and then remove the outer case.	
8. Remove electric box assy	
1.Remove the grounding wire screw on the electric box assy and then remove the grounding wire. 2.Disconnect the wiring terminals of reactor, compressor, high and low pressure switch, compressor overload protector, temperature sensor, outdoor fan motor and 4-way valve. (See fig 2) Note: keep pressing the circlip when disconnecting the wiring terminal of reactor; keep pressing the retainer when disconnecting other wiring terminals. 3.Remove the wire inside the wiring groove.	
9. Remove blade, motor, motor support, reactor	
1.Remove nuts fixing axial flow blade with wrench, and then remove the axial flow blade. 2.Remove 2 screws connecting motor support and chassis, loosen damper block and then remove the motor support. 3.Remove 4 screws fixing motor,and then remove the motor 4.Remove 4 screws fixing reactor sub-assy and motor support, and then remove the reactor sub-assy.	

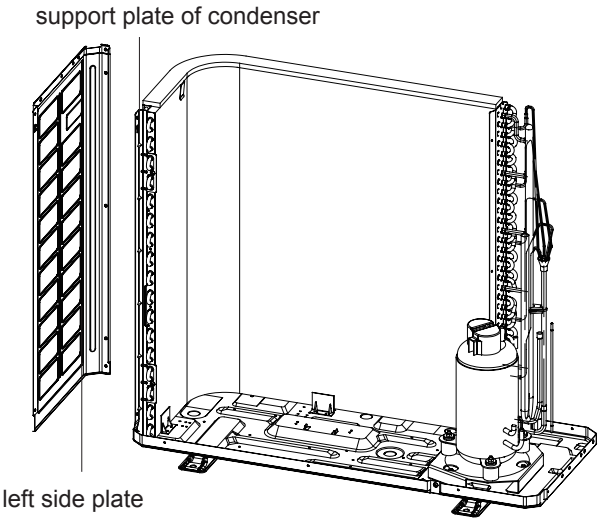
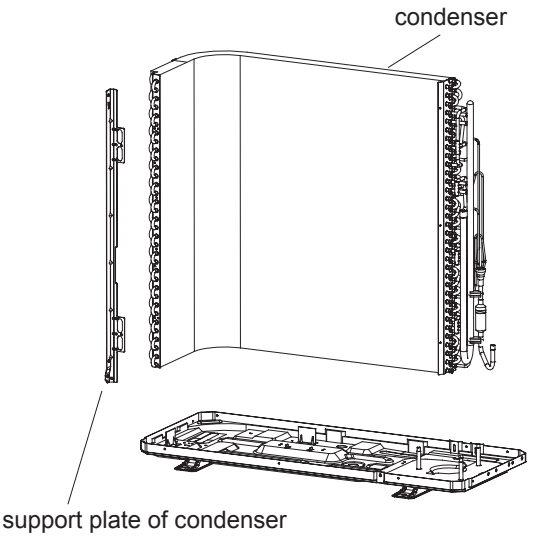
Steps	Procedure
10 Remove 4-way valve	
	Unsolder the spot weld between 4-way valve and vapour liquid separator, compressor cut-off valve sub-assy and condenser, and then remove the 4-way valve. Note: When unsoldering the spot weld, wrap the 4-way valve with wet cloth completely to avoid damage to valve due to high temperature.
	
11. Remove valve support	
	Unsolder all spot welds connected with valve support and then remove the valve support. Note:When unsoldering the spot weld, wrap the gas valve and liquid valve with wet cloth completely to avoid damage to valve due to high temperature.
	
12. Remove connection pipe sub-assy	
	Remove all spot welds connected with connection pipe, and then remove the connection pipe sub-assy.
	

Steps	Procedure
13. Remove compressor	
	Remove the 3 foot nuts fixing compressor and then lift the compressor upwards to remove the compressor and damping cushion. Note: Keep the ports of discharge pipe and suction pipe from foreign objects.
14. Remove the reactor	
	Remove 4 screws fixing reactor sub-assy and motor support, and then remove the reactor sub-assy.
1 5. Remove middle isolation sheet	
	Remove screws connecting middle isolation sheet and support plate of condenser, chassis, and then remove the middle isolation sheet.







Steps	Procedure
16.Remove left side plate	
Remove screws connecting left side plate and support plate of condenser, chassis, and then remove the left side plate.	
17. Remove condenser	
Remove 5 screws connecting condenser and chassis, and then remove the condenser. Remove 2 screws connecting support plate of condenser and condenser, and then remove the support plate of condenser.	

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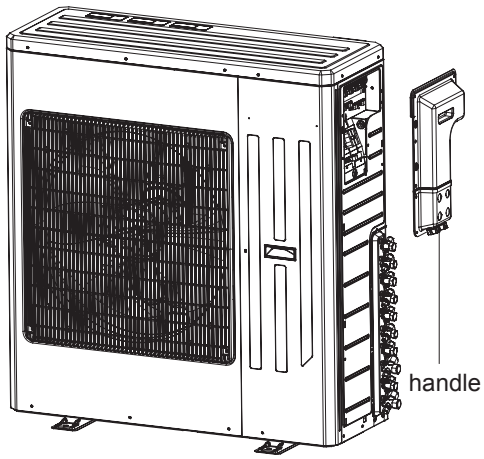
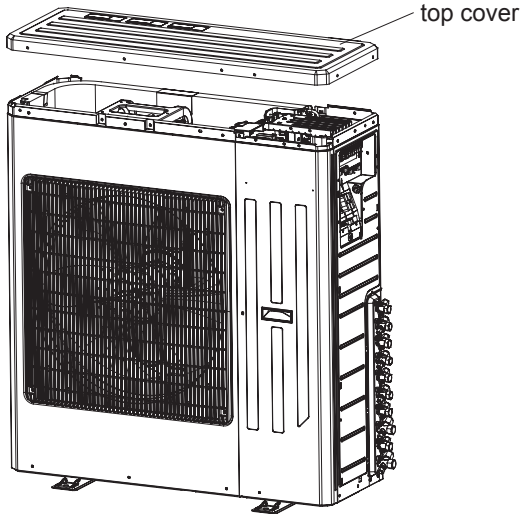
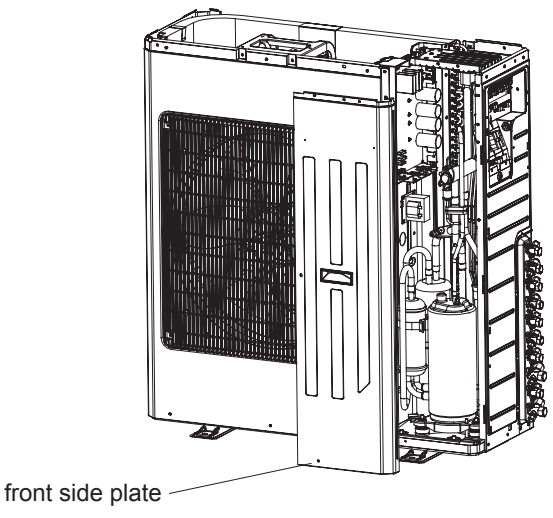
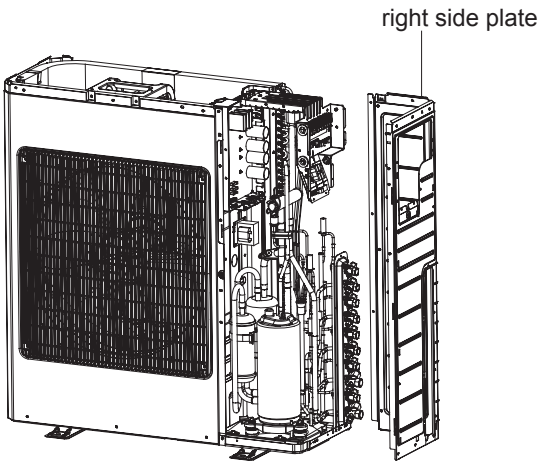
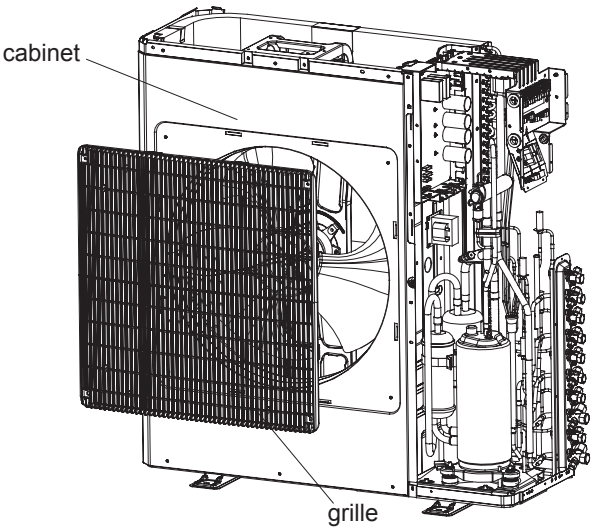
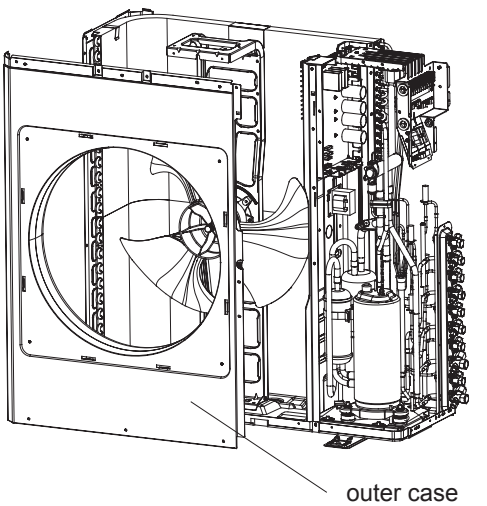
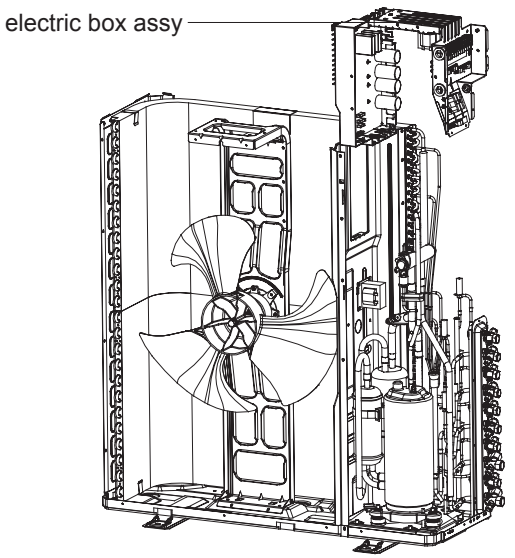
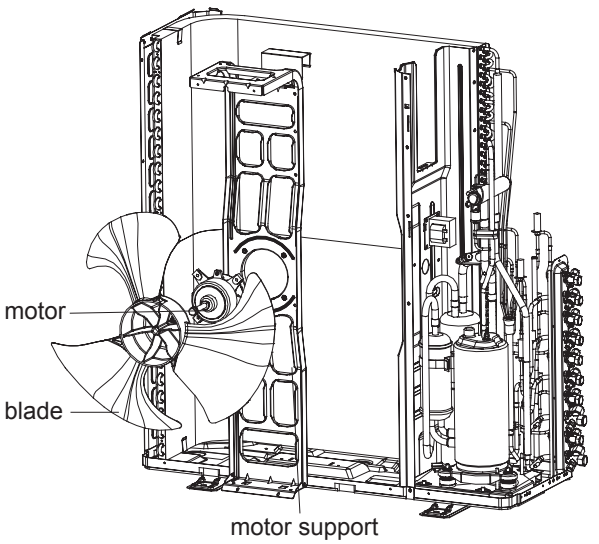
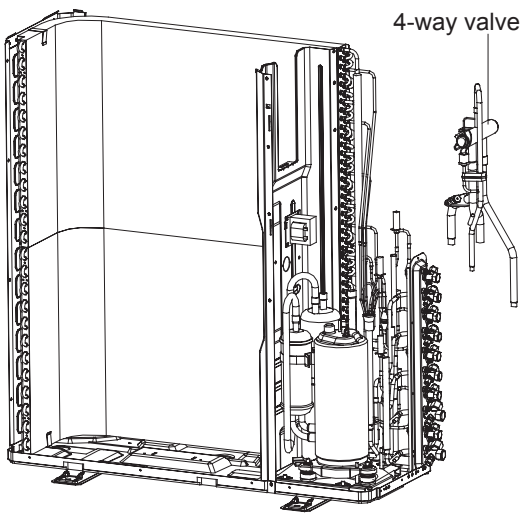
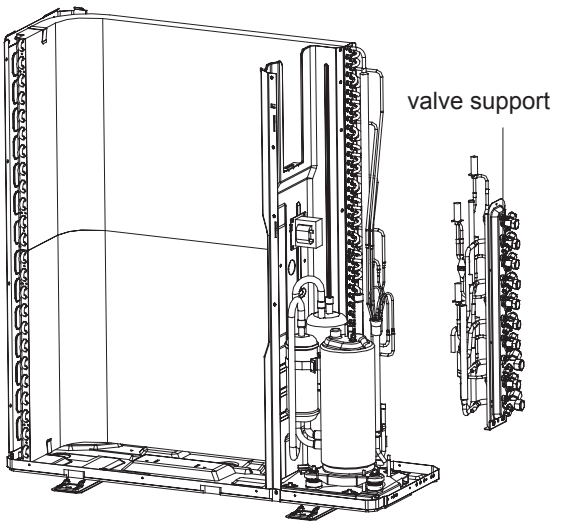
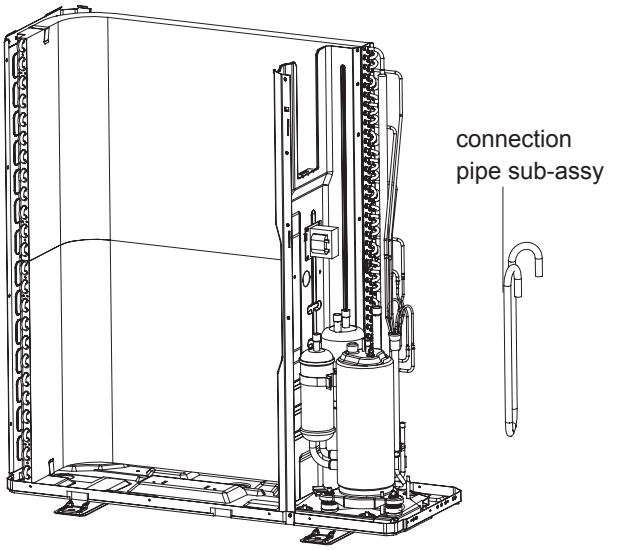
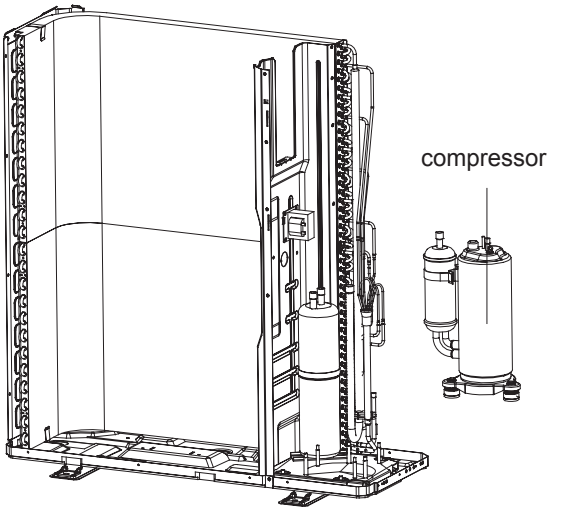
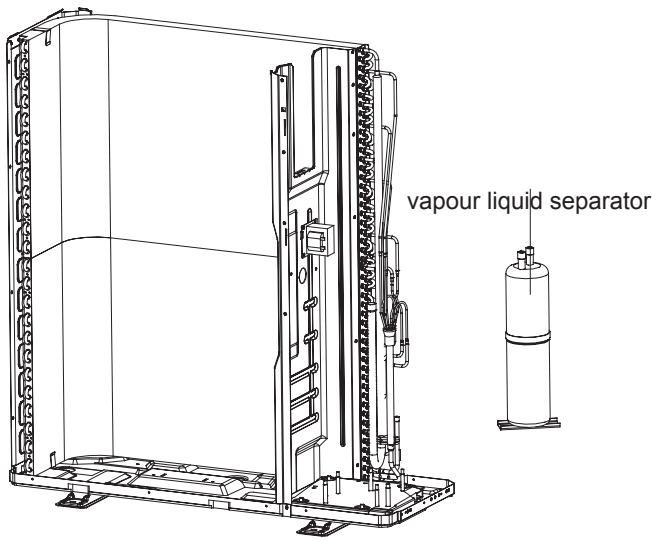
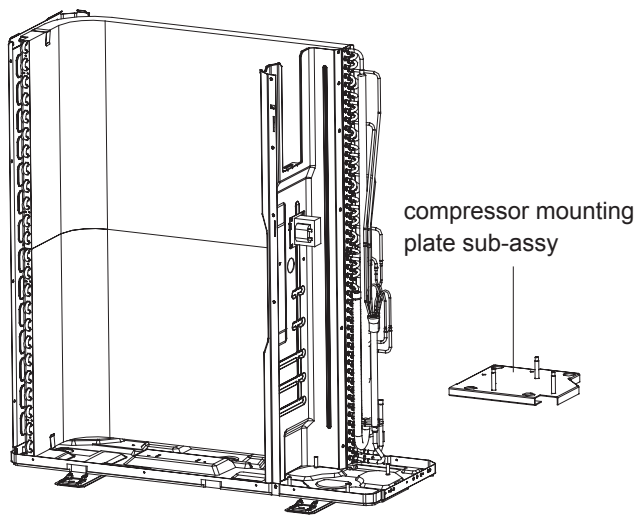
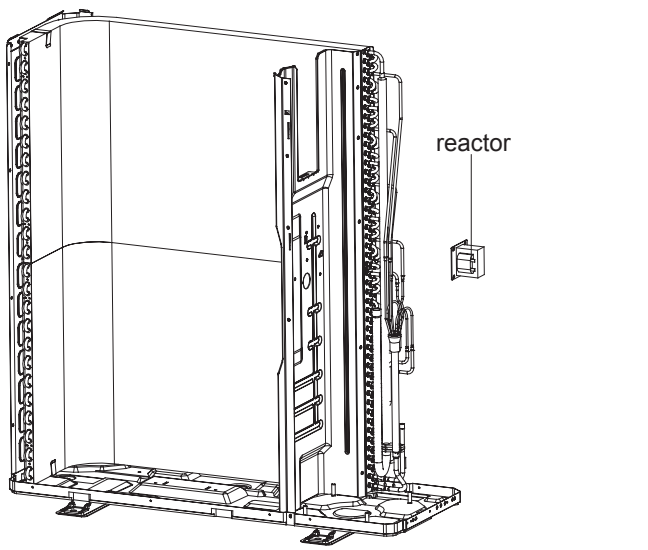
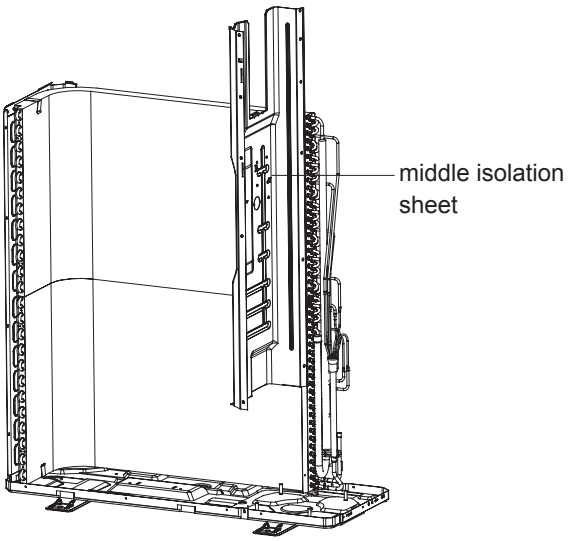
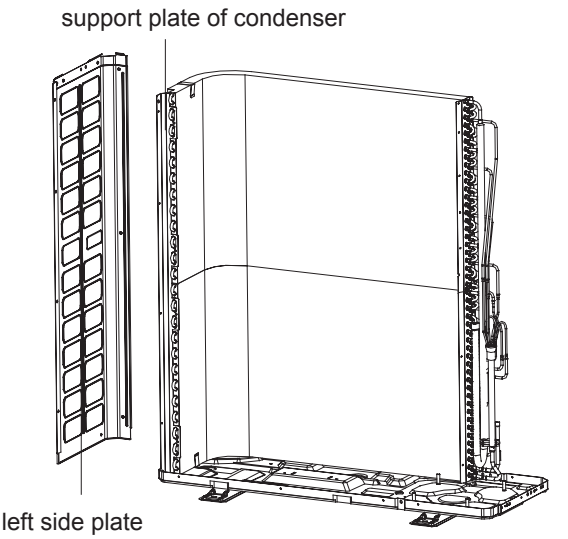
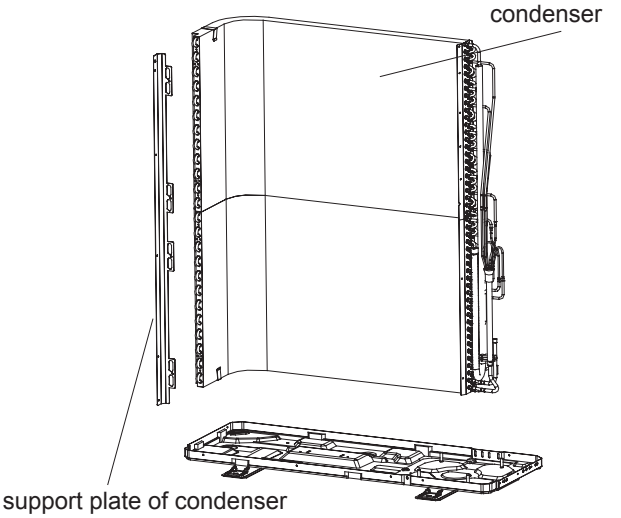
Steps	Procedure	
1. Remove the handle		
	Remove the screws connicting the handle with right side plate and then remove the handle.	
2. Remove top cover		
	Remove the screws connecting the top cover with outer case, right side plate and left side plate; lift the top cover upwards to remove it.	
3.Remove front side plate		
	Remove the screws connecting the front side plate with chassis and middle isolation sheet,and then remove the front side plate	

Steps	Procedure
5.Remove right side plate	
Remove the screws connecting the right side plate with electric box assy, valve support, chassis and condenser side plate, and then remove the right side plate.	
6.Remove grille and cabinet	
Remove the 4 screws connecting the grille and outer case, and then remove the panel grille.	
7. Remove outer case	
Remove screws connecting outer case and motor support, middle isolation sheet and chassis, pull the outer case upwards slightly, loosen clasps between outer case and right side plate, left side plate, and then remove the outer case.	

Steps	Procedure
8. Remove electric box assy	
1.Remove the grounding wire screw on the electric box assy and then remove the grounding wire. 2.Disconnect the wiring terminals of reactor, compressor, high and low pressure switch, compressor overload protector, temperature sensor, outdoor fan motor and 4-way valve. (See fig 2) Note: keep pressing the circlip when disconnecting the wiring terminal of reactor; keep pressing the retainer when disconnecting other wiring terminals. 3.Remove the wire inside the wiring groove.	
9. Remove blade, motor, motor support, reactor	
1.Remove nuts fixing axial flow blade with wrench, and then remove the axial flow blade. 2.Remove 2 screws connecting motor support and chassis, loosen damper block and then remove the motor support. 3.Remove 4 screws fixing motor,and then remove the motor 4.Remove 4 screws fixing reactor sub-assy and motor support, and then remove the reactor sub-assy.	
10 Remove 4-way valve	
Unsolder the spot weld between 4-way valve and vapour liquid separator, compressor cut-off valve sub-assy and condenser, and then remove the 4-way valve. Note: When unsoldering the spot weld, wrap the 4-way valve with wet cloth completely to avoid damage to valve due to high temperature.	

Steps	Procedure
11. Remove valve support	
	Unsolder all spot welds connected with valve support and then remove the valve support. Note:When unsoldering the spot weld, wrap the gas valve and liquid valve with wet cloth completely to avoid damage to valve due to high temperature.
	
12. Remove connection pipe sub-assy	
	Remove all spot welds connected with connection pipe, and then remove the connection pipe sub-assy.
	
13. Remove compressor	
	Remove the 3 foot nuts fixing compressor and then lift the compressor upwards to remove the compressor and damping cushion. Note: Keep the ports of discharge pipe and suction pipe from foreign objects.
	

Steps	Procedure
14.Remove vapour liquid separator	
Unsolder spot welds connected with vapour liquid separator, remove 2 foot nuts fixing vapour liquid separator and compressor mounting plate sub-assy, and then remove the vapour liquid separator.	
15.Remove compressor mounting plate sub-assy	
Remove the 4 foot nuts fixing compressor mounting plate sub-assy and chassis, to remove the compressor mounting plate sub-assy.	
16. Remove the reactor	
4.Remove 4 screws fixing reactor sub-assy and motor support, and then remove the reactor sub-assy.	

Steps	Procedure
17. Remove middle isolation sheet	
	Remove screws connecting middle isolation sheet and support plate of condenser, chassis, and then remove the middle isolation sheet.
	
18.Remove left side plate	
	Remove screws connecting left side plate and support plate of condenser, chassis, and then remove the left side plate.
	
19. Remove condenser	
	Remove 5 screws connecting condenser and chassis, and then remove the condenser. Remove 2 screws connecting support plate of condenser and condenser, and then remove the support plate of condenser.
	

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree: Tf=Tcx1.8+32

Set temperature

Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)		Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)		Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)
61	60.8	16		69/70	69.8	21		78/79	78.8	26
62/63	62.6	17		71/72	71.6	22		80/81	80.6	27
64/65	64.4	18		73/74	73.4	23		82/83	82.4	28
66/67	66.2	19		75/76	75.2	24		84/85	84.2	29
68	68	20		77	77	25		86	86	30

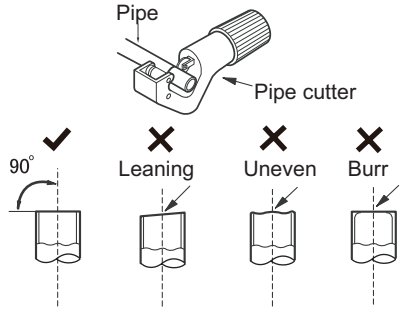
Ambient temperature

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

Appendix 2: Pipe Expanding Method

⚠ **Note:**

Improper pipe expanding is the main cause of refrigerant leakage.Please expand the pipe according to the following steps:

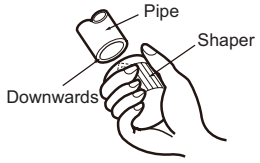


A:Cut the pip

- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.

B:Remove the burrs

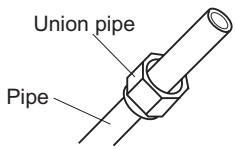
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



C:Put on suitable insulating pipe

D:Put on the union nut

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



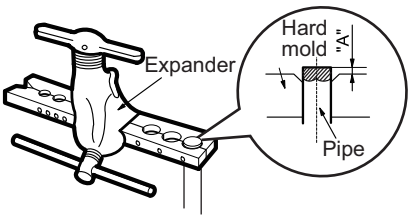
E:Expand the port

- Expand the port with expander.

⚠ **Note:**

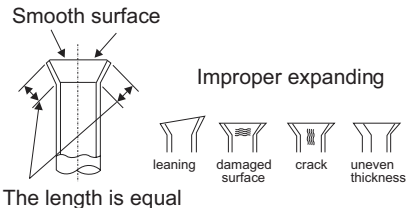
● "A" is different according to the diameter, please refer to the sheet below:

Outer diameter(inch)	A(inch)	
	Max	Min
Φ0.23 - 0.25 (1/4")	0.051	0.028
Φ9.52 (3/8”)	0.063	0.039
Φ0.37 - 0.5 (1/2”)	0.071	0.039
Φ0.63 (5/8”)	0.095	0.087



F:Inspection

● Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.



Appendix 3: List of Resistance for Temperature Sensor

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

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

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

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

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

Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)
-29	853.5		10	98		49	18.34		88	4.75
-28	799.8		11	93.42		50	17.65		89	4.61
-27	750		12	89.07		51	16.99		90	4.47
-26	703.8		13	84.95		52	16.36		91	4.33
-25	660.8		14	81.05		53	15.75		92	4.20
-24	620.8		15	77.35		54	15.17		93	4.08
-23	580.6		16	73.83		55	14.62		94	3.96
-22	548.9		17	70.5		56	14.09		95	3.84
-21	516.6		18	67.34		57	13.58		96	3.73
-20	486.5		19	64.33		58	13.09		97	3.62
-19	458.3		20	61.48		59	12.62		98	3.51
-18	432		21	58.77		60	12.17		99	3.41
-17	407.4		22	56.19		61	11.74		100	3.32
-16	384.5		23	53.74		62	11.32		101	3.22
-15	362.9		24	51.41		63	10.93		102	3.13
-14	342.8		25	49.19		64	10.54		103	3.04
-13	323.9		26	47.08		65	10.18		104	2.96
-12	306.2		27	45.07		66	9.83		105	2.87
-11	289.6		28	43.16		67	9.49		106	2.79
-10	274		29	41.34		68	9.17		107	2.72
-9	259.3		30	39.61		69	8.85		108	2.64
-8	245.6		31	37.96		70	8.56		109	2.57
-7	232.6		32	36.38		71	8.27		110	2.50
-6	220.5		33	34.88		72	7.99		111	2.43
-5	209		34	33.45		73	7.73		112	2.37
-4	198.3		35	32.09		74	7.47		113	2.30
-3	199.1		36	30.79		75	7.22		114	2.24
-2	178.5		37	29.54		76	7.00		115	2.18
-1	169.5		38	28.36		77	6.76		116	2.12
0	161		39	27.23		78	6.54		117	2.07
1	153		40	26.15		79	6.33		118	2.02
2	145.4		41	25.11		80	6.13		119	1.96
3	138.3		42	24.13		81	5.93		120	1.91
4	131.5		43	23.19		82	5.75		121	1.86
5	125.1		44	22.29		83	5.57		122	1.82
6	119.1		45	21.43		84	5.39		123	1.77
7	113.4		46	20.6		85	5.22		124	1.73
8	108		47	19.81		86	5.06		125	1.68
9	102.8		48	19.06		87	4.90		126	1.64

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