



Service Manual

U-MATCH AIR CONDITIONERS SERVICE MANUAL

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PRODUCT

PRODUCT

1 MODELS LIST

1.1 Outdoor Unit

Model Name	Product Code	Power Supply (V, Ph, Hz)	Appearance
GUHN12NK3HO	CF021W2220	220-240V~ 50Hz	
GUHN18NK3HO	CF021W2090	220-240V~ 50Hz	
GUHN24NK3HO	CF021W2100	220-240V~ 50Hz	
GUHN30NK3HO	CF021W2110	220-240V~ 50Hz	
GUHN36NM3HO	CF021W2080	380-415V 3N~ 50Hz	
GUHN42NM3HO	CF021W2070	380-415V 3N~ 50Hz	
GUHN48NM3HO	CF021W2060	380-415V 3N 50Hz	
GUHN60NM3HO	CF021W2050	380-415V 3N~ 50Hz	

1.2 Indoor Unit

Type	Model Name	Product Code	Nominal Capacity Cooling/Heating (kW)	Power Supply (V, Ph, Hz)	Appearance
Duct Type	GFH12K3HI	CF022N1040	3.6/3.7	220-240V~ 50Hz	
	GFH12K3H1I	CF022N1030	3.6/3.7	220-240V~ 50Hz	
	GFH18K3HI	CF022N0830	5.0/5.4	220-240V~ 50Hz	
	GFH18K3H1I	CF022N0840	5.0/5.4	220-240V~ 50Hz	
	GFH24K3HI	CF022N0880	7.0/7.4	220-240V~ 50Hz	
	GFH24K3H1I	CF022N0870	7.0/7.4		
	GFH30K3HI	CF022N0850	8.3/8.8		
	GFH30K3H1I	CF022N0860	8.3/8.8	220-240V~ 50Hz	
	GFH36K3HI	CF022N0820	10.0/11.5		
	GFH36K3H1I	CF022N0810	10.0/11.5		
	GFH42K3HI	CF022N0790	12.0/13.5		
	GFH42K3H1I	CF022N0800	12.0/13.5	220-240V~ 50Hz	
	GFH48K3HI	CF022N0770	14.1/15.2		
	GFH48K3H1I	CF022N0780	14.1/15.2		
	GFH60K3HI	CF022N0750	16.0/18.0		
GFH60K3H1I	CF022N0760	16.0/18.0			
Cassette Type	GKH12K3HI	ET010N1230	3.55/3.7	220-240V~ 50Hz	
	GKH18K3HI	ET010N1090	5.0/5.4		
	GKH24K3HI	ET010N1110	7.0/7.6		
	GKH30K3HI	ET010N1100	8.5/9.0		
	GKH36K3HI	ET010N1080	10.0/11.5	220-240V~50Hz	
	GKH42K3HI	ET010N1070	12.0/13.5		
	GKH48K3HI	ET010N1060	14.1/15.0		
GKH60K3HI	ET010N1050	15.0/16.8			
Floor-ceiling Type	GTH12K3HI	ED020N1540	3.6/3.7	220-240V~50Hz	
	GTH18K3HI	ED020N1440	5.5/5.7	220-240V~50Hz	
	GTH24K3HI	ED020N1450	7.2/8.2		
	GTH30K3HI	ED020N1460	8.5/9.8		
	GTH36K3HI	ED020N1420	10.6/11.8		
	GTH42K3HI	ED020N1470	12.0/13.2	220-240V~50Hz	
	GTH48K3HI	ED020N1430	14.2/16.0		
	GTH60K3HI	ED020N1480	15.8/18.2		

Note:1 Ton =12000Btu/h = 3.517kW

NOTES:

The universal outdoor units means that the customer can choose any of three kind of indoor unit to match the outdoor unit without any change with it.

2 NOMENCLATURE

2.1 Outdoor Unit

G	U	H	N	18	N	K	3	H	O
1	2	3	4	5	6	7	8	9	10

NO.	Description	Options
1	Gree Electric Appliances Inc	Capital Letter :G
2	Unit Type	U=U-Match Outdoor Unit
3	Product Type	C=Cool Only H=Heat Pump without Aux Electric Heaters
4	Compressor Power Supply Type Code	N=Constant Frequency D=DC Inverter A=AC Inverter
5	Nominal Cooling Capacity	Nominal Cooling Capacity =Numberx1000Btu/h
6	Climate Type	N=Climate T1 Condition T= Climate T3 Condition
7	Power Supply Code	K= 220-240V~ 50Hz M=380-415V 3N~ 50Hz
8	Refrigerant	1 =R22; 2=R407C; 3=R410A
9	Design Code	Design Code: A, B, C, D..... Design Change Code=0 (default) 1,2,3.....
10	Unit Code	O=Outdoor unit

2.2 Indoor Unit

G	F	H	18	T	K	3	H	I
1	2	3	4	5	6	7	8	9

NO.	Description	Options
1	Gree Electric Appliances Inc	Capital Letter :G
2	Unit Type	F=Duct Type; K=Cassette Type; T= Floor-ceiling Type
3	Product Type	C=Cool Only H=Heat Pump without Aux Electric Heaters
4	Nominal Cooling Capacity	Nominal Cooling Capacity =Numberx1000Btu/h
5	Climate Type	Omit=Climate T1 Condition T= Climate T3 Condition
6	Power Supply Code	K= 220-240V~ 50Hz M=380-415V 3N~ 50Hz
7	Refrigerant	1 =R22; 2=R407C; 3=R410A
8	Design Code	Design Code: A, B, C, D..... Design Change Code=0 (default) 1,2,3.....
9	Unit Code	I=indoor unite

3 PRODUCT DATA

3.1 Product Data of Indoor Unit

3.1.1 Duct Type

Model	Indoor unit		GFH12K3HI	GFH12K3H1I
	Product Code		CF022N1040	CF022N1030
	Outdoor unit		GUHN12NK3HO	GUHN12NK3HO
	Product Code		CF021W2220	CF021W2220
Capacity	Cooling Capacity	kW	3.6	3.6
	Heating Capacity	kW	3.7	3.7
Power Input	Cooling	kW	1.35	1.35
	Heating	kW	1.3	1.3
EER / COP		W/W	2.67/2.85	2.67/2.85
Indoor Unit			GFH12K3HI	GFH12K3H1I
Power Supply		-	220-240V~ 50Hz	
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct
	Motor Output	kW	0.04×1	0.04×1
	Air Flow	m ³ /h	560	560
	Rated Ext. Static Pressure	Pa	25	25
	Ext. Static Pressure Range	Pa	0~30	0~30
Sound Pressure Level(SH/H/M/L)		dB(A)	37/34/30/26	37/34/30/26
Air Filter		-	Standard washable synthetic	
Drain		mm	Φ25×1.5	Φ26×3.0
Outline Dimensions (W×H×D)		mm	700×485×200	700×485×200
Net Weight		kg	18.5	19
Outdoor Unit			GUHN12NK3HO	GUHN12NK3HO
Power Supply		-	220-240V~ 50Hz	
Heat Exchange		-	Cross Fin Coil	
Fan	Drive	-	Axial-flow	
	Motor Output	kW	0.03×1	0.03×1
	Fan Motor Speed	rpm	850/510	850/510
Compressor	Type	-	Rotary	Rotary
	Power Input	W	1270	1270
Refrigerant	Control	-	Electronic Expansion Valve	
	Charge	kg	0.85	0.85
Outline Dimensions (W×H×D)		mm	848×320×540	848×320×540
Net Weight		kg	33.5	33.5
Piping Connections	Liquid	Inch	Φ1/4	Φ1/4
	Gas	Inch	Φ1/2	Φ1/2
	Max. Length	m	20	20
	Max. Height	m	15	15

Model	Indoor unit		GFH18K3HI	GFH18K3H1I	GFH24K3HI	GFH24K3H1I
	Product Code		CF022N0830	CF022N0840	CF022N0880	CF022N0870
	Outdoor unit		GUHN18NK3HO	GUHN18NK3HO	GUHN24NK3HO	GUHN24NK3HO
	Product Code		CF021W2090	CF021W2090	CF021W2100	CF021W2100
Capacity	Cooling Capacity	kW	5.0	5.0	7.0	7.0
	Heating Capacity	kW	5.4	5.4	7.4	7.4
Power Input	Cooling	kW	2.0	2.0	2.5	2.5
	Heating	kW	1.9	1.9	2.3	2.3
EER / COP		W/W	2.5/2.8	2.5/2.8	2.8/3.2	2.8/3.2
Indoor Unit			GFH18K3HI	GFH18K3H1I	GFH24K3HI	GFH24K3H1I
Power Supply		-	220-240V~ 50Hz			
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct	direct	Direct
	Motor Output	kW	0.06×1	0.06×1	0.09×1	0.09×1
	Air Flow	m ³ /h	720	720	1260	1260
	Rated Ext. Static Pressure	Pa	25	25	37	37
	Ext. Static Pressure Range	Pa	0~30	0~30	0~30	0~30
Sound Pressure Level(SH/H/M/L)		dB(A)	36/33/30/29	36/33/30/29	43/38/34/32	43/38/34/32
Air Filter		-	Standard washable synthetic			
Drain		mm	Φ30×1.5	Φ26×3.0	Φ20×1.2	Φ26×3.0
Outline Dimensions (W×H×D)		mm	1015×720×275	1015×720×275	1260×555×270	1260×555×270
Net Weight		kg	31	32	33	33
Outdoor Unit			GUHN18NK3HO	GUHN18NK3HO	GUHN24NK3HO	GUHN24NK3HO
Power Supply		-	220-240V~ 50Hz			
Heat Exchange		-	Cross Fin Coil			
Fan	Drive	-	Axial-flow			
	Motor Output	kW	0.085×1	0.085×1	0.085×1	0.085×1
	Fan Motor Speed	rpm	770/640	770/640	770/640	770/640
Compressor	Type	-	Rotary	Rotary	Rotary	Rotary
	Power Input	W	1930	1930	2460	2460
Refrigerant	Control	-	Electronic Expansion Valve			
	Charge	kg	1.3	1.3	1.5	1.5
Outline Dimensions (W×H×D)		mm	955×395×700	955×395×700	955×395×700	955×395×700
Net Weight		kg	53	53	61	61
Piping Connections	Liquid	Inch	Φ1/4	Φ1/4	Φ3/8	Φ3/8
	Gas	Inch	Φ1/2	Φ1/2	Φ5/8	Φ5/8
	Max. Length	m	25	25	30	30
	Max. Height	m	15	15	15	15

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Model	Indoor unit		GFH30K3HI	GFH30K3H1I	GFH36K3HI	GFH36K3H1I
	Product Code		CF022N0850	CF022N0860	CF022N0820	CF022N0810
	Outdoor unit		GUHN30NK3HO	GUHN30NK3HO	GUHN36NM3HO	GUHN36NM3HO
	Product Code		CF021W2110	CF021W2110	CF021W2080	CF021W2080
Capacity	Cooling Capacity	kW	8.3	8.3	10.0	10.0
	Heating Capacity	kW	8.8	8.8	11.5	11.5
Power Input	Cooling	kW	2.8	2.8	3.6	3.6
	Heating	kW	2.7	2.7	3.3	3.3
EER / COP		W/W	2.9/3.2	2.9/3.2	2.7/3.4	2.7/3.4
Indoor Unit			GFH30K3HI	GFH30K3H1I	GFH36K3HI	GFH36K3H1I
Power Supply		-	220-240V~ 50Hz			
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct	direct	Direct
	Motor Output	kW	0.15×1	0.15×1	0.20×1	0.20×1
	Air Flow	m ³ /h	1400	1400	2100	2100
	Rated Ext. Static Pressure	Pa	37	37	37	37
	Ext. Static Pressure Range	Pa	0~50	0~50	0~75	0~75
Sound Pressure Level(SH/H/M/L)		dB(A)	48/46/45/44	48/46/45/44	51/48/46/44	51/48/46/44
Air Filter		-	Standard washable synthetic			
Drain Piping		mm	Φ20×1.2	Φ26×3.0	Φ20×1.2	Φ26×3.0
Outline Dimensions (W×H×D)		mm	1260×555×270	1260×555×270	1230×790×290	1230×790×290
Net Weight		kg	34	35	46	47
Outdoor Unit			GUHN30NK3HO	GUHN30NK3HO	GUHN36NM3HO	GUHN36NM3HO
Power Supply		-	220-240V~ 50Hz		380-415V 3N~ 50Hz	
Heat Exchange		-	Cross Fin Coil			
Fan	Drive	-	Axial-flow			
	Motor Output	kW	0.100×1	0.100×1	0.100×1	0.100×1
	Fan Motor Speed	rpm	900/665	900/665	900/665	900/665
Compressor	Type	-	Rotary	Rotary	Rotary	Rotary
	Power Input	W	2760	2760	3320	3320
Refrigerant	Control	-	Electronic Expansion Valve			
	Charge	kg	1.8	1.8	2.2	2.2
Outline Dimensions (W×H×D)		mm	980×425×790	980×425×790	980×425×790	980×425×790
Net Weight		kg	69	69	69	69
Piping Connections	Liquid	Inch	Φ3/8	Φ3/8	Φ3/8	Φ3/8
	Gas	Inch	Φ5/8	Φ5/8	Φ3/4	Φ3/4
	Max. Length	m	30	30	30	30
	Max. Height	m	15	15	15	15

Model	Indoor unit		GFH42K3HI	GFH42K3H1I	GFH48K3HI	GFH48K3H1I
	Product Code		CF022N0790	CF022N0800	CF022N0770	CF022N0780
	Outdoor unit		GUHN42NM3HO	GUHN42NM3HO	GUHN48NM3HO	GUHN48NM3HO
	Product Code		CF021W2070	CF021W2070	CF021W2060	CF021W2060
Capacity	Cooling Capacity	kW	12.0	12.0	14.1	14.1
	Heating Capacity	kW	13.5	13.5	15.2	15.2
Power Input	Cooling	kW	4.4	4.4	5.0	5.0
	Heating	kW	4.1	4.1	4.7	4.7
EER / COP		W/W	2.7/3.3	2.7/3.3	2.8/3.2	2.8/3.2
Indoor Unit			GFH42K3HI	GFH42K3H1I	GFH48K3HI	GFH48K3H1I
Power Supply		-	220-240V~ 50Hz			
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct	direct	Direct
	Motor Output	kW	0.20×1	0.20×1	0.50×1	0.50×1
	Air Flow	m ³ /h	2100	2100	2300	2300
	Rated Ext. Static Pressure	Pa	37	37	50	50
	Ext. Static Pressure Range	Pa	0~75	0~75	0~100	0~100
Sound Pressure Level(SH/H/M/L)		dB(A)	51/48/46/44	51/48/46/44	53/52/50/50	53/52/50/50
Air Filter			Standard washable synthetic			
Drain Piping		mm	Φ20×1.2	Φ26×3.0	Φ20×1.2	Φ26×3.0
Outline Dimensions (W×H×D)		mm	1230×790×290	1230×790×290	1230×790×290	1230×790×290
Net Weight		kg	46	47	53	53
Outdoor Unit			GUHN42NM3HO	GUHN42NM3HO	GUHN48NM3HO	GUHN48NM3HO
Power Supply		-	380-415V 3N~ 50Hz			
Heat Exchange		-	Cross Fin Coil			
Fan	Drive	-	Axial-flow			
	Motor Output	kW	0.140×1	0.140×1	0.140×1	0.140×1
	Fan Motor Speed	rpm	830/630	830/630	830/630	830/630
Compressor	Type	-	Rotary	Rotary	Rotary	Rotary
	Power Input	W	4130	4130	4750	4750
Refrigerant	Control	-	Electronic Expansion Valve			
	Charge	kg	3.3	3.3	3.7	3.7
Outline Dimensions (W×H×D)		mm	1120×440×1100	1120×440×1100	1120×440×1100	1120×440×1100
Net Weight		kg	100	100	103	103
Piping Connections	Liquid	Inch	Φ1/2	Φ1/2	Φ1/2	Φ1/2
	Gas	Inch	Φ3/4	Φ3/4	Φ3/4	Φ3/4
	Max. Length	m	50	50	50	50
	Max. Height	m	30	30	30	30

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Model	Indoor unit		GFH60K3HI	GFH60K3H1I
	Product Code		CF022N0750	CF022N0760
	Outdoor unit		GUHN60NM3HO	GUHN60NM3HO
	Product Code		CF021W2050	CF021W2050
Capacity	Cooling Capacity	kW	16.0	16.0
	Heating Capacity	kW	18.0	18.0
Power Input	Cooling	kW	5.6	5.6
	Heating	kW	5.5	5.5
EER / COP		W/W	2.8/3.2	2.8/3.2
Indoor Unit			GFH60K3HI	GFH60K3H1I
Power Supply		-	220-240V~ 50Hz	
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	Direct
	Motor Output	kW	0.50×1	0.50×1
	Air Flow	m ³ /h	2500	2500
	Rated Ext. Static Pressure	Pa	50	50
	Ext. Static Pressure Range	Pa	0~100	0~100
Sound Pressure Level(SH/H/M/L)		dB(A)	56/52/49/49	56/52/49/49
Air Filter		-	Standard washable synthetic	
Drain Piping		mm	Φ30×1.5	Φ26×3.0
Outline Dimensions (W×H×D)		mm	1235×830×330	1235×830×330
Net Weight		kg	56	56
Outdoor Unit			GUHN60NM3HO	GUHN60NM3HO
Power Supply		-	380-415V 3N~ 50Hz	
Heat Exchange		-	Cross Fin Coil	
Fan	Drive	-	Axial-flow	
	Motor Output	kW	0.070×2	0.070×2
	Fan Motor Speed	rpm	880/500	880/500
Compressor	Type	-	Rotary	Rotary
	Power Input	W	5200	5200
Refrigerant	Control	-	Electronic Expansion Valve	
	Charge	kg	4.1	4.1
Outline Dimensions (W×H×D)		mm	980×410×1350	980×410×1350
Net Weight		kg	118	118
Piping Connections	Liquid	Inch	Φ1/2	Φ1/2
	Gas	Inch	Φ3/4	Φ3/4
	Max. Length	m	50	50
	Max. Height	m	30	30

3.1.2 Cassette Type

Model	Indoor unit		GKH12K3HI
	Product Code		ET010N1230
	Outdoor unit		GUHN12NK3HO
	Product Code		CF021W2220
Capacity	Cooling Capacity	kW	3.55
	Heating Capacity	kW	3.7
Power Input	Cooling	kW	1.32
	Heating	kW	1.2
EER / COP		W/W	2.69/3.08
Indoor Unit			GKH12K3HI
Power Supply			220-240V~ 50Hz
Heat Exchange		-	Cross Fin Coil
Fan	Drive	-	direct
	Motor Output	kW	0.25×1
	Air Flow	m ³ /h	560
Sound Pressure Level(SH/H/M/L)		dB(A)	42/40/38/35
Air Filter		-	Standard washable synthetic
Drain Piping		mm	Φ26×3.0
Outline Dimensions (W×H×D)		mm	665×595×240
Net Weight		kg	19.5
Outdoor Unit			GUHN12NK3HO
Power Supply		-	220-240V~ 50Hz
Heat Exchange		-	Cross Fin Coil
Fan	Drive	-	Axial-flow
	Motor Output	kW	0.03×1
	Fan Motor Speed	rpm	850/510
Compressor	Type	-	Rotary
	Power Input	W	1270
Refrigerant	Control	-	Electronic Expansion Valve
	Charge	kg	0.85
Outline Dimensions (W×H×D)		mm	848×320×540
Net Weight		kg	33.5
Piping Connections	Liquid	Inch	Φ1/4
	Gas	Inch	Φ1/2
	Max. Length	m	20
	Max. Height	m	15

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Model	Indoor unit		GKH18K3HI	GKH24K3HI	GKH30K3HI	GKH36K3HI
	Product Code		ET010N1090	ET010N1110	ET010N1100	ET010N1080
	Outdoor unit		GUHN18NK3HO	GUHN24NK3HO	GUHN30NK3HO	GUHN36NM3HO
	Product Code		CF021W2090	CF021W2100	CF021W2110	CF021W2080
Capacity	Cooling Capacity	kW	5.0	7.0	8.5	10.0
	Heating Capacity	kW	5.4	7.6	9.0	11.5
Power Input	Cooling	kW	2.0	2.5	2.7	3.5
	Heating	kW	1.9	2.3	2.6	3.3
EER / COP		W/W	2.5/2.8	2.8/3.3	3.1/3.4	2.8/3.4
Indoor Unit			GKH18K3HI	GKH24K3HI	GKH30K3HI	GKH36K3HI
Power Supply		-	220-240V~ 50Hz			
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct	direct	Direct
	Motor Output	kW	0.03×1	0.04×1	0.04×1	0.06×1
	Air Flow	m ³ /h	720	1450	1500	1650
Sound Pressure Level(SH/H/M/L)		dB(A)	50/49/47/46	49/48/47/46	51/50/49/48	52/47/46/43
Air Filter		-	Standard washable synthetic			
Drain Piping		mm	Φ26×3.0	Φ33×4.0	Φ33×4.0	Φ33×4.0
Outline Dimensions (W×H×D)		mm	665×595×240	840×840×240	840×840×240	840×840×320
Net Weight		kg	20	27	27	32
Outdoor Unit			GUHN18NK3HO	GUHN24NK3HO	GUHN30NK3HO	GUHN36NM3HO
Power Supply		-	220-240V~ 50Hz			380-415V 3N~ 50Hz
Heat Exchange		-	Cross Fin Coil			
Fan	Drive	-	Axial-flow			
	Motor Output	kW	0.085×1	0.085×1	0.100×1	0.100×1
	Fan Motor Speed	rpm	770/640	770/640	900/665	900/665
Compressor	Type	-	Rotary	Rotary	Rotary	Rotary
	Power Input	W	1930	2460	2760	3320
Refrigerant	Control	-	Electronic Expansion Valve			
	Charge	kg	1.3	1.5	1.8	2.2
Outline Dimensions (W×H×D)		mm	955×395×700	955×395×700	980×425×790	980×425×790
Net Weight		kg	53	61	69	69
Piping Connections	Liquid	Inch	Φ1/4	Φ3/8	Φ3/8	Φ3/8
	Gas	Inch	Φ1/2	Φ5/8	Φ5/8	Φ3/4
	Max. Length	m	25	25	30	30
	Max. Height	m	15	15	15	15

Model	Indoor unit		GKH42K3HI	GKH48K3HI	GKH60K3HI
	Product Code		ET010N1070	ET010N1060	ET010N1050
	Outdoor unit		GUHN42NM3HO	GUHN48NM3HO	GUHN60NM3HO
	Product Code		CF021W2070	CF021W2060	CF021W2050
Capacity	Cooling Capacity	kW	12.0	14.1	15.0
	Heating Capacity	kW	13.5	15.0	16.8
Power Input	Cooling	kW	4.2	4.8	5.3
	Heating	kW	4.0	4.9	5.2
EER / COP		W/W	2.8/3.3	2.9/3.0	2.8/3.2
Indoor Unit			GKH42K3HI	GKH48K3HI	GKH60K3HI
Power Supply		-	220-240V~50Hz		
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct	Direct
	Motor Output	kW	0.06×1	0.06×1	0.09×1
	Air Flow	m ³ /h	1650	1650	1800
Sound Pressure Level(SH/H/M/L)		dB(A)	52/47/46/43	52/47/46/43	53/51/49/47
Air Filter		-	Standard washable synthetic		
Drain Piping		mm	Φ33×4.0	Φ33×4.0	Φ32×2.0
Outline Dimensions (W×H×D)		mm	840×840×320	840×840×320	840×840×290
Net Weight		kg	32	33	37
Outdoor Unit			GUHN42NM3HO	GUHN48NM3HO	GUHN60NM3HO
Power Supply		-	380-415V 3N~ 50Hz		
Heat Exchange		-	Cross Fin Coil		
Fan	Drive	-	Axial-flow		
	Motor Output	kW	0.140×1	0.140×1	0.070×2
	Fan Motor Speed	rpm	830/630	830/630	880/500
Compressor	Type	-	Rotary	Rotary	Rotary
	Power Input	W	4130	4750	5200
Refrigerant	Control	-	Electronic Expansion Valve		
	Charge	kg	3.3	3.7	4.1
Outline Dimensions (W×H×D)		mm	1120×440×1100	1120×440×1100	980×410×1350
Net Weight		kg	100	103	118
Piping Connections	Liquid	Inch	Φ1/2	Φ1/2	Φ1/2
	Gas	Inch	Φ3/4	Φ3/4	Φ3/4
	Max. Length	m	50	50	50
	Max. Height	m	30	30	30

3.1.3 Floor ceiling Type

Model	Indoor unit		GTH12K3HI
	Product Code		ED020N1540
	Outdoor unit		GUHN12NK3HO
	Product Code		CF021W2220
Capacity	Cooling Capacity	kW	3.6
	Heating Capacity	kW	3.7
Power Input	Cooling	kW	1.35
	Heating	kW	1.30
EER / COP		W/W	2.67/2.85
Indoor Unit			GTH12K3HI
Power Supply		-	220-240V~ 50Hz
Heat Exchange		-	Cross Fin Coil
Fan	Drive	-	direct
	Motor Output	kW	0.15×1
	Air Flow	m ³ /h	700
Sound Pressure Level(SH/H/M/L)		dB(A)	39/34/30/23
Air Filter		-	Standard washable synthetic
Drain Piping		mm	Φ17×1.75
Outline Dimensions (W×H×D)		mm	870×665×235
Net Weight		kg	26
Outdoor Unit			GUHN12NK3HO
Power Supply		-	220-240V~ 50Hz
Heat Exchange		-	Cross Fin Coil
Fan	Drive	-	Axial-flow
	Motor Output	kW	0.30×1
	Fan Motor Speed	rpm	850/510
Compressor	Type	-	Rotary
	Power Input	W	1270
Refrigerant	Control	-	Electronic Expansion Valve
	Charge	kg	0.85
Outline Dimensions (W×H×D)		mm	848×320×540
Net Weight		kg	33.5
Piping Connections	Liquid	Inch	Φ1/4
	Gas	Inch	Φ1/2
	Max. Length	m	20
	Max. Height	m	15

Model	Indoor unit		GTH18K3HI	GTH24K3HI	GTH30K3HI	GTH36K3HI
	Product Code		ED020N1440	ED020N1450	ED020N1460	ED020N1420
	Outdoor unit		GUHN18NK3HO	GUHN24NK3HO	GUHN30NK3HO	GUHN36NM3HO
	Product Code		CF021W2090	CF021W2100	CF021W2110	CF021W2080
Capacity	Cooling Capacity	kW	5.5	7.2	8.5	10.6
	Heating Capacity	kW	5.7	8.2	9.8	11.8
Power Input	Cooling	kW	2.0	2.5	2.8	3.6
	Heating	kW	2.0	2.4	2.8	3.6
EER / COP		W/W	2.7/2.8	2.8/3.4	3.0/3.5	2.9/3.2
Indoor Unit			GTH18K3HI	GTH24K3HI	GTH30K3HI	GTH36K3HI
Power Supply		-	220-240V~ 50Hz			
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct	direct	direct
	Motor Output	kW	0.02×1	0.075×1	0.075×1	0.10×1
	Air Flow	m ³ /h	1000	1400	1500	1600
Sound Pressure Level(SH/H/M/L)		dB(A)	40/37/35/33	48/46/44/40	50/48/46/43	52/51/50/49
Air Filter		-	Standard washable synthetic			
Drain Piping		mm	Φ17×1.75			
Outline Dimensions (W×H×D)		mm	1200×665×235			
Net Weight		kg	31	32	32	36
Outdoor Unit			GUHN18NK3HO	GUHN24NK3HO	GUHN30NK3HO	GUHN36NM3HO
Power Supply		-	220-240V~ 50Hz			380-415V 3N~50Hz
Heat Exchange		-	Cross Fin Coil			
Fan	Drive	-	Axial-flow			
	Motor Output	kW	0.085×1	0.085×1	0.100×1	0.100×1
	Fan Motor Speed	rpm	770/640	770/640	900/665	900/665
Compressor	Type	-	Rotary	Rotary	Rotary	Rotary
	Power Input	W	1930	2460	2760	3320
Refrigerant	Control	-	Electronic Expansion Valve			
	Charge	kg	1.3	1.5	1.8	2.2
Outline Dimensions (W×H×D)		mm	955×395×700	955×395×700	980×425×790	980×425×790
Net Weight		kg	53	61	69	69
Piping Connections	Liquid	Inch	Φ1/4	Φ3/8	Φ3/8	Φ3/8
	Gas	Inch	Φ1/2	Φ5/8	Φ5/8	Φ3/4
	Max. Length	m	25	30	30	30
	Max. Height	m	15	15	15	15

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Model	Indoor unit		GTH42K3HI	GTH48K3HI	GTH60K3HI
	Product Code		ED020N1470	ED020N1430	ED020N1480
	Outdoor unit		GUHN42NM3HO	GUHN48NM3HO	GUHN60NM3HO
	Product Code		CF021W2070	CF021W2060	CF021W2050
Capacity	Cooling Capacity	kW	12.0	14.2	15.8
	Heating Capacity	kW	13.2	16.0	18.2
Power Input	Cooling	kW	4.3	5.0	5.50
	Heating	kW	4.1	4.7	5.45
EER / COP		W/W	2.8/3.2	2.8/3.4	2.8/3.3
Indoor Unit			GTH42K3HI	GTH48K3HI	GTH60K3HI
Power Supply		-	220-240V~50Hz		
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Fan	Drive	-	direct	direct	direct
	Motor Output	kW	0.1×1	0.26×1	0.26×1
	Air Flow	m ³ /h	1650	2400	2400
Sound Pressure Level(SH/H/M/L)		dB(A)	54/52/51/50	56/55/53/52	56/55/53/52
Air Filter		-	Standard washable synthetic		
Drain Piping		mm	Φ17×1.75		
Outline Dimensions (W×H×D)		mm	1200×665×235	1570×665×235	
Net Weight		kg	38	46	46
Outdoor Unit			GUHN42NM3HO	GUHN48NM3HO	GUHN60NM3HO
Power Supply		-	380-415V 3N~ 50Hz		
Heat Exchange		-	Cross Fin Coil		
Fan	Drive	-	Axial-flow		
	Motor Output	kW	0.140×1	0.140×1	0.070×2
	Fan Motor Speed	rpm	830/630	830/630	880/500
Compressor	Type	-	Rotary	Rotary	Rotary
	Power Input	W	4130	4750	5200
Refrigerant	Control	-	Electronic Expansion Valve		
	Charge	kg	3.3	3.7	4.1
Outline Dimensions (W×H×D)		mm	1120×440×1100	1120×440×1100	980×410×1350
Net Weight		kg	100	103	118
Piping Connections	Liquid	Inch	Φ1/2	Φ1/2	Φ1/2
	Gas	Inch	Φ3/4	Φ3/4	Φ3/4
	Max. Length	m	50	50	50
	Max. Height	m	30	30	30

Note: Nominal capacities are based on the follow conditions.

Mode		Indoor °C(°F)	Outdoor °C(°F)
Cooling		DB:27 (80.6)	DB:35(95)
		WB:19 (66.2)	WB:24(75.2)
Heating		DB:20 (68)	DB:7(44.6)
		WB:--(--)	WB:6 (42.8)
Piping Length	Duct type、 Cassette type、 Floor ceiling type	12-48k: 5m	
		60k: 7.5m	

The air volume is measured at the relevant standard external static pressure.

Noise is tested in the semianechoic room, so it should be slightly higher in the actual operation due to environmental change.

3.2 Operation Range

Mode	Range of Outdoor Temperature °C(°F)
Cooling	-15(5)-43(109.4)
Heating	-15(5)-24(75.2)

3.3 Electrical Data

3.3.1 Outdoor unit

Table 1-4-1 Electrical Data of Outdoor Unit

Model	Compressor			Fan Motor	Fuse/Breaker Capacity	Min. Power Supply Cord
	Power Supply	Qty.	RLA	FLA		
	V/Ph/Hz	-	A	A		
GUHN12NK3HO	220-240,1,50	1	5.94	<1	5/13	2.5
GUHN18NK3HO	220-240,1,50	1	8.4	<1	5/13	2.5
GUHN24NK3HO	220-240,1,50	1	11.3	<1	5/20	4.0
GUHN30NK3HO	220-240,1,50	1	12.7	<1	5/20	4.0
GUHN36NM3HO	380-415,3,50	1	6.9	<1	5/13	1.5
GUHN42NM3HO	380-415,3,50	1	7.2	<1	5/13	2.5
GUHN48NM3HO	380-415,3,50	1	8.7	<1	5/16	2.5
GUHN60NM3HO	380-415,3,50	1	9.3	<1	5/16	2.5

3.3.2 Indoor unit

Table 1-4-2 Electrical Data of Indoor Unit

Model	Power Supply	Fan Motor FLA	Fuse/Breaker Capacity	Min. Power Supply Cord
	V/Ph/Hz	A	A	mm ²
GFH12K3HI	220-240,1,50	<1	5/6	1.0
GFH12K3H1I	220-240,1,50	<1	5/6	1.0
GFH18K3HI	220-240,1,50	<1	5/6	1.0
GFH18K3H1I	220-240,1,50	<1	5/6	1.0
GFH24K3HI	220-240,1,50	<1	5/6	1.0
GFH24K3H1I	220-240,1,50	<1	5/6	1.0
GFH30K3HI	220-240,1,50	<1	5/6	1.0
GFH30K3H1I	220-240,1,50	<1	5/6	1.0
GFH36K3HI	220-240,1,50	<1	5/6	1.0
GFH36K3H1I	220-240,1,50	<1	5/6	1.0
GFH42K3HI	220-240,1,50	<1	5/6	1.0
GFH42K3H1I	220-240,1,50	<1	5/6	1.0
GFH48K3HI	220-240,1,50	<1	5/6	1.0
GFH48K3H1I	220-240,1,50	<1	5/6	1.0
GFH60K3HI	220-240,1,50	<1	5/6	1.0
GFH60K3H1I	220-240,1,50	<1	5/6	1.0
GKH12K3HI	220-240,1,50	<1	5/6	1.0
GKH18K3HI	220-240,1,50	<1	5/6	1.0
GKH24K3HI	220-240,1,50	<1	5/6	1.0
GKH30K3HI	220-240,1,50	<1	5/6	1.0
GKH36K3HI	220-240,1,50	<1	5/6	1.0
GKH42K3HI	220-240,1,50	<1	5/6	1.0
GKH48K3HI	220-240,1,50	<1	5/6	1.0
GKH60K3HI	220-240,1,50	<1	5/6	1.0
GTH12K3HI	220-240,1,50	<1	5/6	1.0
GTH18K3HI	220-240,1,50	<1	5/6	1.0
GTH24K3HI	220-240,1,50	<1	5/6	1.0
GTH30K3HI	220-240,1,50	<1	5/6	1.0
GTH36K3HI	220-240,1,50	<1	5/6	1.0
GTH42K3HI	220-240,1,50	<1	5/6	1.0
GTH48K3HI	220-240,1,50	<1	5/6	1.0
GTH60K3HI	220-240,1,50	<1	5/6	1.0

Notes:

RLA: Rated load amperes

LRA: Locked rotor amperes

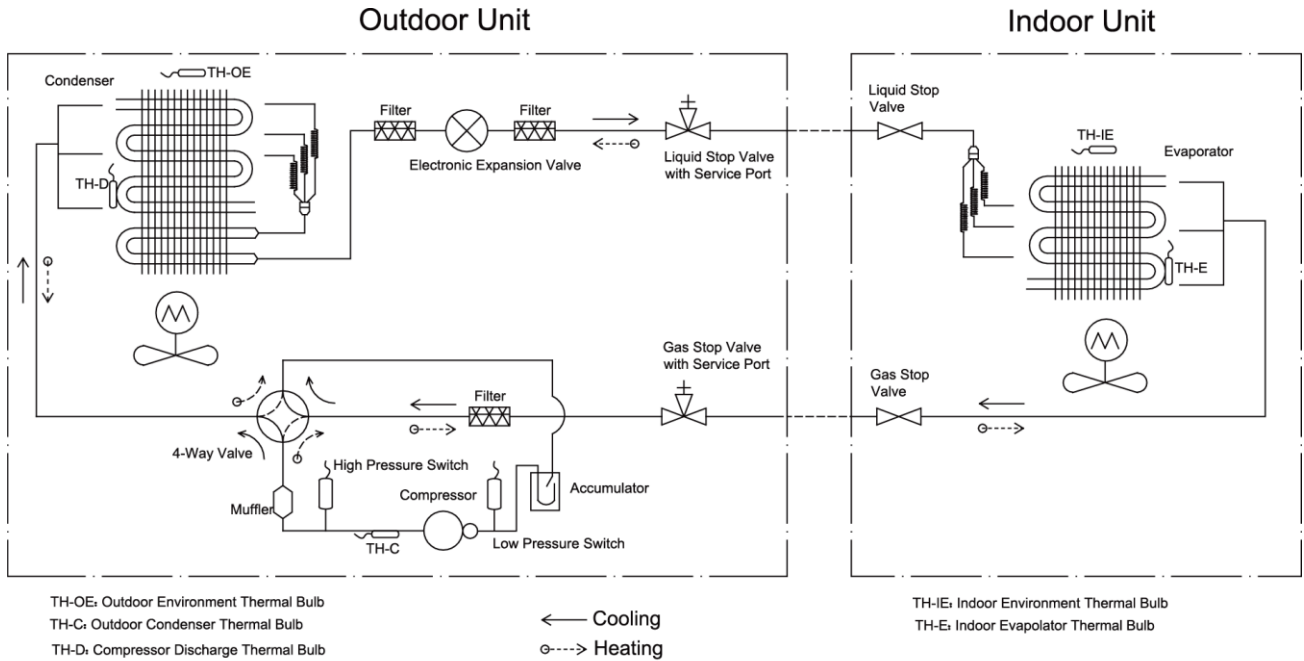
FLA: Full load current

- ① Install the disconnect device with a contact gap of at least 3mm in all poles nearby the units (Both indoor unit and outdoor unit).The appliance must be positioned so that the plug is accessible.
- ② The specifications of the breaker and power cable listed in the table above are determined based on the maximum power (maximum amps) of the unit.
- ③ The specifications of the power cable listed in the table above are applied to the conduit-guarded

multi-wire copper cable (like, YJV copper cable, consisting of PE insulated wires and a PVC cable jacket) used at 40°C and resistible to 90°C (see IEC 60364-5-52). If the working condition changes, they should be modified according to the related national standard.

- ④ The specifications of the breaker listed in the table above are applied to the breaker with the working temperature at 40°C. If the working condition changes, they should be modified according to the related national standard.

4 PIPING DIAGRAM



Note:

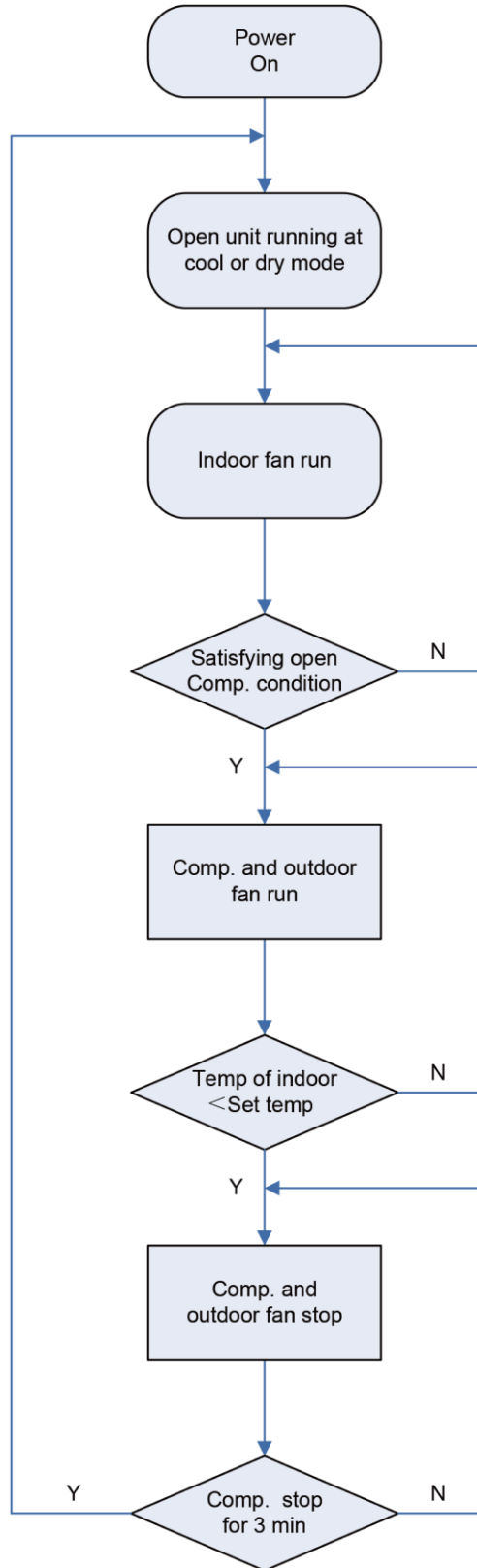
1. it is just a schematic diagram and some parts may differ from the real objects inside the unit.

CONTROL

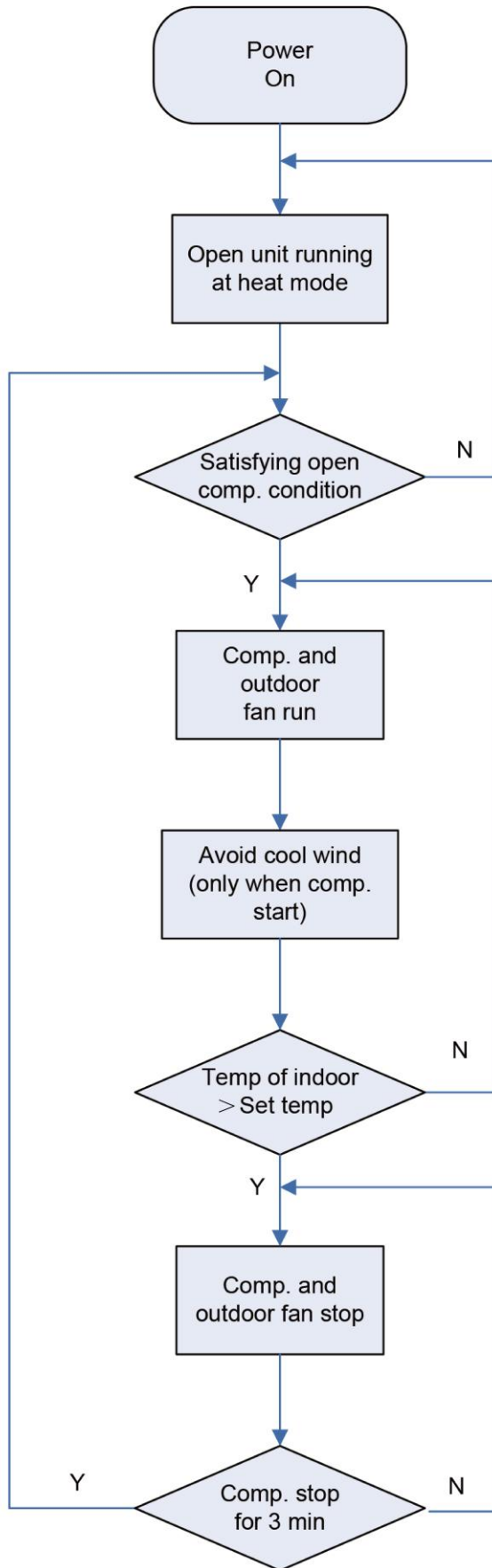
CONTROL

1 OPERATION FLOWCHART

1.1 Cooling/Dry Operation



1.2 Heating Operation



2 WIRELESS REMOTE CONTROLLER

2.1 Operation and Display View

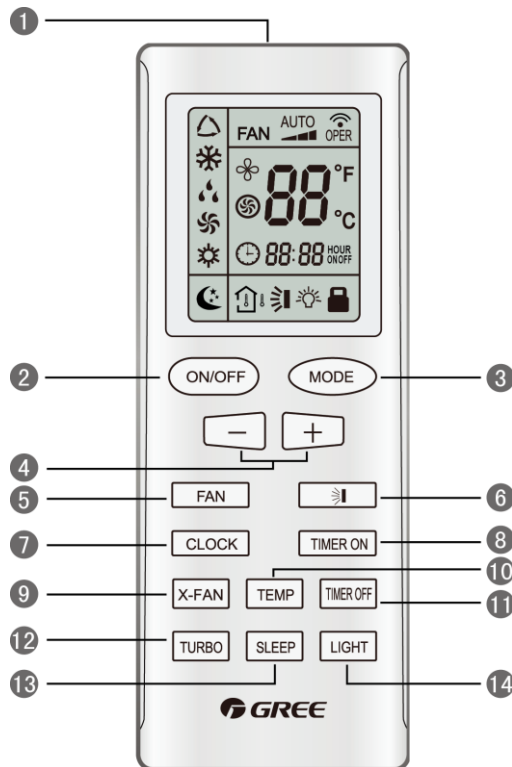
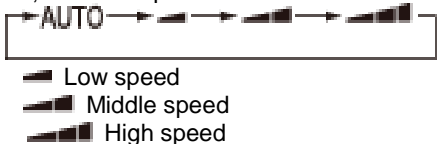

















Table 2-2-1 Operation instruction of wireless remote controller

No.	Name	Function Description
①	Signal transmitter	<ul style="list-style-type: none"> ● Signal transmitter
②	ON/OFF button	<ul style="list-style-type: none"> ● Press this button and the unit will be turned on; press it once more and the unit will be turned off. When turning off the unit, the Sleep function will be canceled, but the presetting time is still remained.
③	MODE button	<ul style="list-style-type: none"> ● By pressing this button, Auto, Cool, Dry, Fan, Heat mode can be selected circularly. Auto mode is default after power on. Under the Auto mode, the setting temperature will not be displayed; Under the Heat mode, the initial value is 28°C (82°F); under other modes, the initial value is 25°C (77°F). <p>△ AUTO; ❄️ COOL; 💧 DRY; 🌀 FAN; ☀️ HEAT (only for cooling and heating unit)</p>
④	- button	<ul style="list-style-type: none"> ● Preset temperature can be decreased by pressing this button. Pressing and holding this button for more than 2 seconds can make the temperature changed quickly until release this button and then transmit this order. The temperature adjustment is unavailable under the Auto mode, but the order can be sent by pressing this button. Centigrade setting range: 16-30; Fahrenheit scale setting range 61-86.
	+ button	<ul style="list-style-type: none"> ● Preset temperature can be increased by pressing this button. Pressing and holding this button for more than 2 seconds can make the temperature changed quickly until release the button and then transmit this order. The temperature adjustment is unavailable under the Auto mode, but the order can be sent by pressing this button. Centigrade setting range: 16-30; Fahrenheit scale setting range 61-86.

<p>5</p>	<p>FAN button</p>	<ul style="list-style-type: none"> ● By pressing this button, Auto, Low, Middle, High speed can be circularly selected. After power on, Auto fan speed is default. ●  ■ Low speed ■ Middle speed ■ High speed <p>Note: Under the DRY mode, the fan will be kept running at the low speed and the fan speed isn't adjustable.</p>
<p>6</p>	<p>SWING UP/DOWN button</p>	<ul style="list-style-type: none"> ● Press this button to set up the swing angle, which circularly changes as below:  ● When the guide louver starts to swing up and down, if SWING functions are canceled, the air guide louver will stop and remains at the current position. ●  Indicates the guide louver swings up and down among those five directions. (Simplified SWING function applicable for some Fan Coil Units: When the wireless remote controller is energized initially with the unit under the OFF status, it should be set by pressing the + button and the SWING button simultaneously, with the symbol  blinking twice. Then, after the unit is turned on, this function can be activated by pressing the SWING button, with the displayed symbol  indicating swing function is on and without this displayed symbol indicating swing function is off.)
<p>7</p>	<p>CLOCK button</p>	<ul style="list-style-type: none"> ● By pressing this button, the clock is allowed to be set, with  blinking, and then press the +/- button to adjust the clock within 5 seconds. If the +/- button is pressed down constantly for more than 2 seconds, the clock setting will be increased or decreased 10 minutes every 0.5 seconds. After that, another press on the CLOCK button accepts the setting. 12:00 is the default, when the wireless remote controller is energized.
<p>8</p>	<p>TIMER ON button</p>	<ul style="list-style-type: none"> ● When TIMER ON is activated, ON will blink while the symbol  will disappear. Within 5 seconds it is allowed to set the ON time by pressing the +/- button. Each press will make the time increase or decrease one minute. Besides, the time can also be set by pressing the +/- button constantly. That is, in the early 2.5 seconds, the time will increase/decrease quickly per single minute, and in the late 2.5, the time will increase/decrease per ten minutes. After the desired time value is set, press TIENE ON again to conform the setting within five seconds. After that, another press on TIMER ON will cancel the setting. Prior to this setting, the clock shall be set to the actual time.
<p>9</p>	<p>X-FAN button</p>	<ul style="list-style-type: none"> ● Pressing this button can activate or deactivate the X-FAN function. In Cool or Dry mode, by pressing this button, if  is displayed, it indicates the X-FAN function is activated. By repressing this button, if  disappears, it indicates the X-FAN function is deactivated. After energization, X-FAN OFF is defaulted. If the unit is turned off, X-FAN can be deactivated but can't be activated.
<p>10</p>	<p>TEMP button</p>	<ul style="list-style-type: none"> ● By pressing this button it is allowed to select displaying the indoor setting temperature or the indoor ambient temperature. ● Indoor setting temperature is default after the indoor unit is energized initially. ● By pressing the TEMP button, when the temperature symbol  is displayed, the indoor displayer will show the indoor setting temperature; when  is displayed, it will show the indoor ambient temperature; when  is invalidation, If current displays indoor ambient temperature, if received the other remote control signal, it will display presetting temperature, 5s later, will back to display the ambient temperature. (This function is applicable to partial of models)
<p>11</p>	<p>TIMER OFF button</p>	<ul style="list-style-type: none"> ● By pressing this button it is available to go to the TIMER OFF setting state with the same setting method as that of the TIMER ON, in which case the OFF symbol blinks.

12	TURBO button	<ul style="list-style-type: none"> In the Cool or Heat mode, pressing this button can activate or deactivate the TURBO function. When the TURBO function is activated, its symbol  will be displayed; when the running mode or the fan speed is changed, this function will be canceled automatically. (This function is applicable to partial of models).
13	SLEEP button	<ul style="list-style-type: none"> By pressing this button, Sleep On and Sleep Off can be selected. After powered on, Sleep Off is defaulted. Once the unit is turned off, the Sleep function is canceled. When Sleep is set to on, the symbol of SLEEP  will display. Under the Fan and Auto modes, this function is not available.
14	LIGHT button	<ul style="list-style-type: none"> Press this button to select LIGHT on or off in the displayer. When the LIGHT is set to on, the icon  will be displayed and the indicating light in the displayer will be on. When the LIGHT is set to off, the icon  will be disappeared and the indicating light in the displayer will be off.

3 WIRED CONTROLLER

3.1 Display View



Figure 2-3-1 Appearance of wired controller

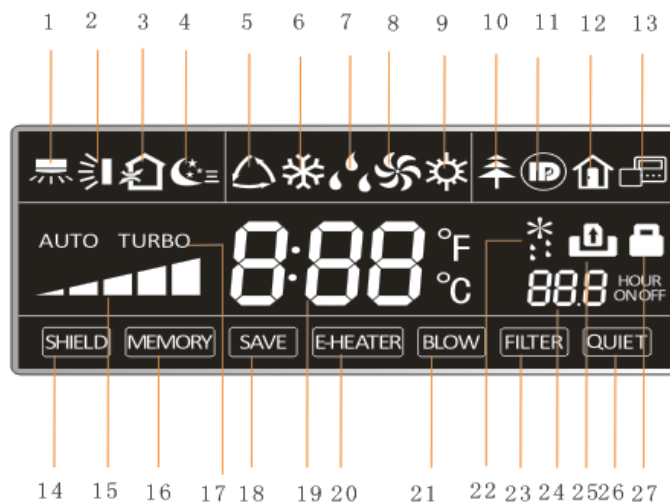


Figure 2-3-2 LCD display of wired controller

Table 2-3-1 Instruction to LCD Display

No.	Icons	Introduction
1		Left and right swing function
2		Up and down swing function
3		Air exchange function
4		Sleep function
5		Auto mode
6		COOL mode
7		DRY mode
8		FAN mode
9		HEAT mode
10		Health function
11		I-Demand function
12		Vacation function
13		Status display of master and slave wired controller
14		Shield function The button operation, temperature setting, "On/Off" operation, "Mode" setting, and "Save" setting are disabled.
15		Fan speed
16		Memory function The unit will resume the original setting state after power recovery.
17		Turbo function
18		Energy-saving function
19		Ambient/setting temperature
20		Electric heater
21		Blow function
22		Defrosting function
23		Filter cleaning
24		Timer Setting
25		Keycard control / Detected status sensed by human body
26		Quiet function
27		Lock function

3.2 Operation View

3.2.1 Silk Screen of Buttons

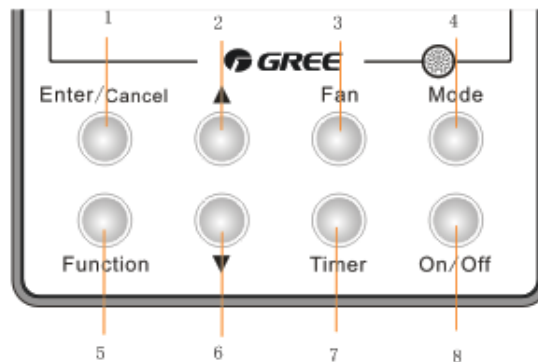


Figure 2-3-3 Silk screen of buttons

3.3.2 Instruction to Function of Buttons

Table 2-3-2 Instruction to buttons of wired controller

No.	Description	Functions
1	Enter/Cancel	<ul style="list-style-type: none"> ● Function selection and canceling; ● Press it for 5s to view the ambient temperature; press Mode button to select viewing outdoor ambient temperature or indoor ambient temperature.
2	▲	<ul style="list-style-type: none"> ● Running temperature setting range of indoor unit: 16-30°C; ● Timer setting range: 0.5-24hr; ● Setting of air function level; ● Setting of energy-saving temperature; ● Setting of cleaning class.
6	▼	
3	Fan	Setting of high/medium high/medium/medium low/low/auto fan speed.
4	Mode	Setting of auto/cooling/heating/fan/dry mode of indoor unit.
5	Function	Switch over among these functions of swing/air/sleep/health/I-Demand/out/turbo/save/e-heater/X-fan/clean/quiet.
7	Timer	Timer setting.
8	On/Off	Turn on/off indoor unit.
4 Mode and 2 ▲	Memory function	Press Mode and ▲ buttons at the same time for 5s under off state of the unit to enter/cancel memory function (If memory function is set, indoor unit will resume original setting state after power failure and then power recovery. If not, indoor unit is defaulted to be off after power recovery. Ex-factory setting of memory function is on).
2 ▲ and 6 ▼	Lock	Upon startup of the unit without malfunction or under off state of the unit, press ▲ and ▼ buttons at the same time for 5s to enter lock state. In this case, any other buttons won't respond when pressing. Repress ▲ and ▼ buttons for 5s to quit lock state.
4 Mode and 5 Function	Enquiry and setting of address of wired controller	Under off state of the unit, press Mode and Function buttons at the same time for 5s to set the address. (More details please refer to project debugging)
5 Function and 7 Timer	Setting of project parameters (More details please refer to the Notes)	Under off state of the unit, press Function and Timer buttons at the same time for 5s to go to the debugging menu. Press Mode button to adjust the setting items and press ▲ or ▼ buttons to set the actual value.
4 Mode and 6 ▼	Switch between Fahrenheit and Centigrade	Under off state of the unit, press Mode and ▼ buttons at the same time for 5s to switch between Fahrenheit and Centigrade.
5 Function and 6 ▼	Viewing historical malfunction	Continuously press Function and ▼ buttons for 5s to view historical malfunction. Then press ▲ and ▼ buttons to adjust displayed contents. The timer displaying position displays the sequence of malfunction and the detailed error code. The 5 th displayed malfunction is the last malfunction.

1 Enter/Cancel and 4 Mode	Setting of master and slave wired controller	Under off state of the unit, press Enter/Cancel and Mode buttons at the same time for 5s to set master and slave wired controller. Press ▲ or ▼ button to adjust. (More details please refer to project debugging)
---------------------------	--	--

Notes:

The following functions can be set through Function and Timer buttons: setting of ambient temperature sensor, selecting three speeds in high speed and three speeds in low speed of indoor fan motor, display setting of freeze protection error code, setting of cold air prevention and hot air hot prevention function, setting of refrigerant-lacking protection function, selecting of blowing residual heat of indoor unit, selecting of compressor electric heater mode, selecting of low-power consumption mode, selecting door control function, selecting human sensitive function, long-distance monitoring, temperature compensation value at the air return port.

3.2.3 Setting of Wired Controller's Address

3.2.3.1 Enquiry and Setting of Wired Controller's Address

Under off state of the unit, press Function and Mode buttons at the same time for 5s to enter setting interface of wired controller's address. In this case, LCD displays address number. Then press▲ or ▼ button to adjust address and then press Enter/Cancel button to confirm. The address setting is related to the setting of Debugging Function 4.9.10. When the selection in 4.9.10 is 00, address of centralized controller is to be set and the address setting range is 01~16; when the selection in 4.9.10 is 01, address of long-distance monitor is to be set and the address setting range is 01~255.

Enquiry and setting of wired controller's address is shown as Figure 2-3-4 below:

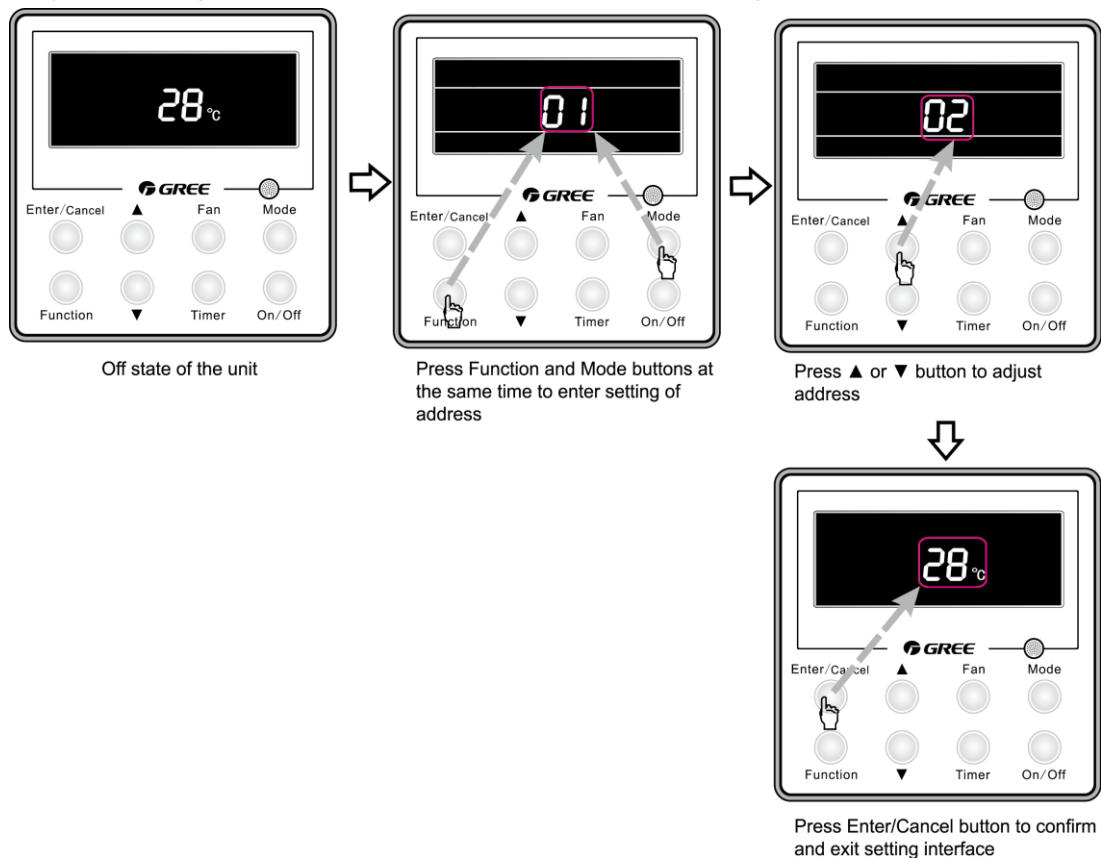



Figure 2-3-4 Enquiry and setting of wired controller's address

3.2.3.2 Setting of Master/Slave Wired Controller's Address

Under off status of the unit, press Enter/Cancel and Mode buttons at the same time for 5s to go to the enquiry and setting interface of master/slave wired controller. In this case, LCD displays wired controller's address (01 for master wired controller and 02 for slave wired controller). Press ▲ or ▼ button to adjust address of master/slave wired controller and then press Enter/Cancel button to confirm. If slave wired controller is set, the icon  will be displayed.

Note: If there is only one wired controller, it only can be set as the master; if there are two wired controllers, one should be the master and the other should be the slave.

Setting of master/slave wired controller's address is shown as Figure 2-3-5 below:

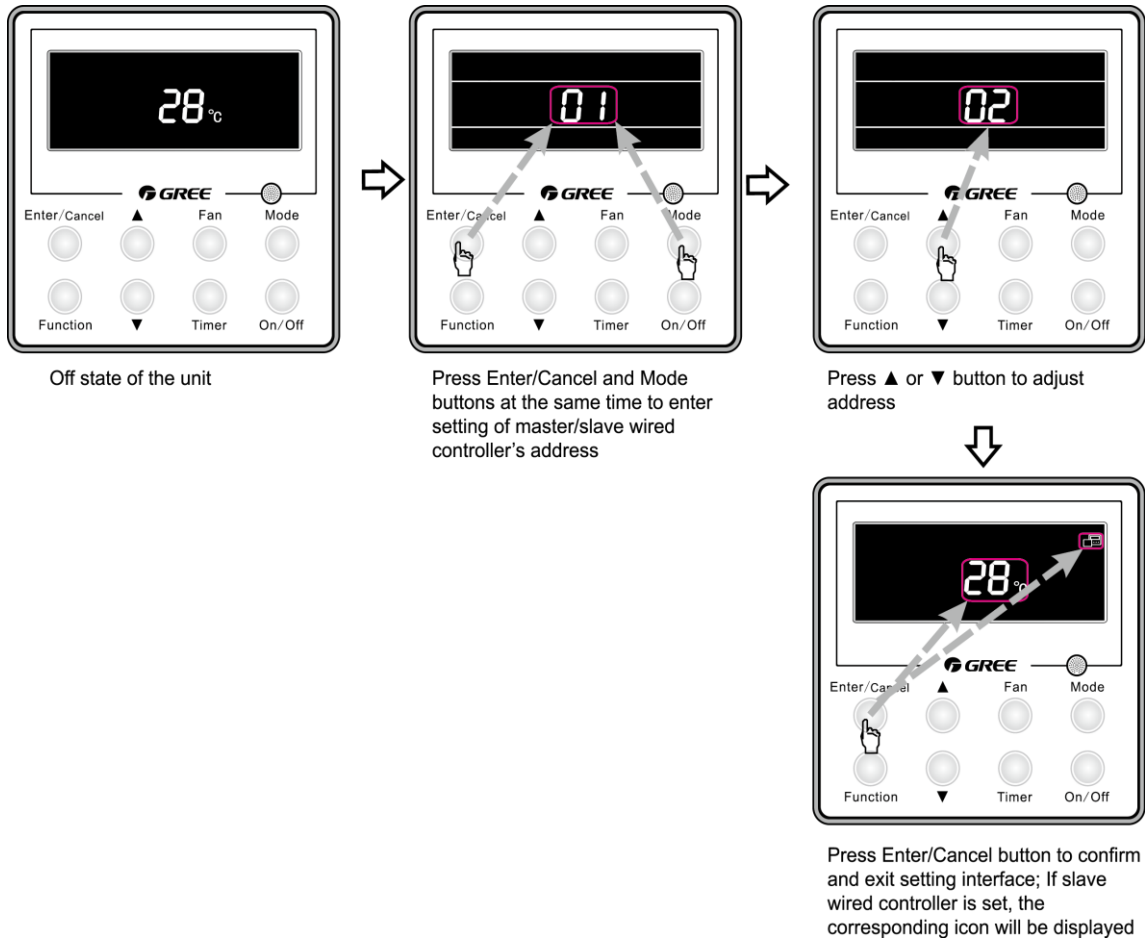



Figure 2-3-5 Enquiry and setting of master/slave wired controller's address


4 OPERATION INSTRUCTION OF SPECIAL FUNCTIONS

4.1 Door Control Function

Door control function can be selected (More details please refer to Debugging Function).

When door control function is selected, the wired controller will work when the room card is inserted and stop working when the room card is not inserted. When the door control function senses the room card is not inserted, the wired controller will display  icon.

Note:

- (1) In long-distance monitoring or centralized control, no matter the room card is inserted or not, the ON/OFF of unit can be controlled. If long-distance monitoring or centralized control information is received when the room card is not inserted,  icon is cleared. When the card is reinserted, door control function is judged to be turned on. If long-distance monitoring or centralized control information is received when the room card is inserted, it will keep the original status.
- (2) The unit can not be controlled by buttons when the card is not inserted.

5 INSTALLATION OF WIRED CONTROLLER

5.1 Standard Accessories

Table 2-5-1 Standard Accessories of Wired Controller

Description	Quantity	Note
Socket base box installed in the wall	1	No.1 in Figure 2-5-1
Base plate of wired controller	1	No.2 in Figure 2-5-1
Screw M4×25	2	No.3 in Figure 2-5-1
Panel of wired controller	1	No.4 in Figure 2-5-1

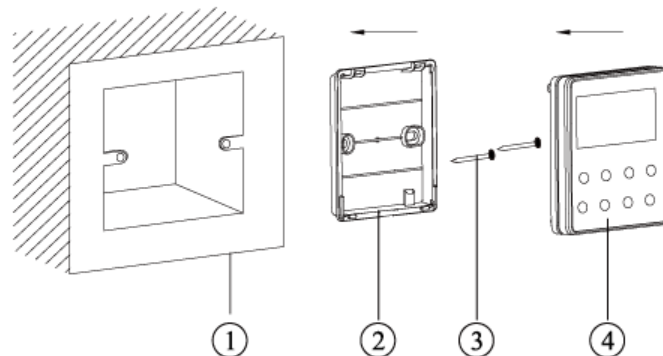


Figure 2-5-1

5.2 Installation Position and Requirement

- (1) Prohibit installing the wired controller at the misty place or the place with direct sunlight.
- (2) Prohibit installing the wired controller at the place near high temperature objects or water-splashing places.
- (3) Prohibit installing the wired controller at the place where faces forward to the window, to avoid interference of another remote controller from neighborhood.
- (4) Cut off the power of heavy current wire in the installation hole of the wall. All power should be cut

off during installation.

(5) In order to avoid abnormal operation due to electromagnetic interference, etc., pay attention to the following notes during connecting wires:

- 1) Make sure the tie-in interface of communication wire is correct, otherwise it may lead to communication malfunction.
- 2) The signal wires and communication wires of wired controller should be separated from power cord and connection wire between indoor unit and outdoor unit.
- 3) If the air conditioner is installed at the strong electromagnetic interference place, signal wire and communication wire of wired controller must use shielding twisted wire.

5.3 Installation of Wired Controller

Firstly, the selection and connection way of wired controller's signal wire are as below:

- (1) Choose suitable signal wire: 2-core signal wire (wire diameter $\geq 0.75\text{mm}$, wire length $< 30\text{m}$ and the recommended length is 8m).
- (2) Make sure the power of indoor unit is cut off; fix the signal wire of wired controller on the wiring board for wired controller of indoor unit with screws; make sure the signal wire is solid.

Then, the detailed installation procedures of wired controller are as shown in Figure 2-5-2:

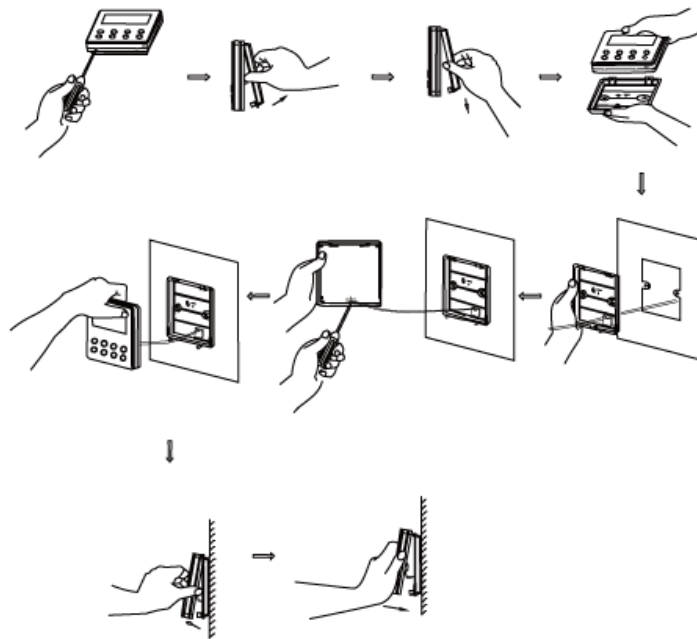


Figure 2-5-2 Installation of wired controller

Brief instructions of installation procedure:

- a) Pull out the 2-core signal wire in the installation hole of the wall and then let this wire go through the hole at the back of wired controller's base plate.
- b) Fix the base plate and installation hole of the wall together with screw M4×25.
- c) Fix the above mentioned 2-core signal wire on the copper insert X1 and X2 with the equipped screws of wired controller.
- d) Fasten the wired controller's panel with its base plate together.

5.4 Removal of Wired Controller

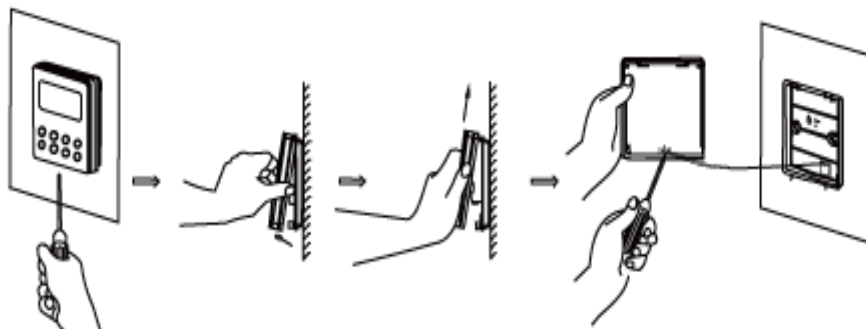


Figure 2-5-3 Removal of wired controller

6 TROUBLESHOOTING

6.1 Display of Error Code

Table 2-6-1 Error Code List

Number	Error code	Error	Remarks
1	E1	Compressor high pressure protection	Except 12K
2	E2	Indoor anti-freeze protection	
3	E3	Compressor low pressure protection, refrigerant lack protection and refrigerant collecting mode	Except 12K
4	E4	Compressor high discharge temperature protection	
5	E6	Communication error	
6	E9	Full water protection	
7	F0	Indoor ambient temperature sensor error	
8	F1	Evaporator temperature sensor error	
9	F2	Condenser temperature sensor error	
10	F3	Outdoor ambient temperature sensor error	
11	F4	Discharge temperature sensor error	
12	F5	Temperature sensor error of wired controller	
13	H3	Compressor overload protection	
14	H4	Overloading	
15	U7	4-way valve direction changing protection	
16	C4	Outdoor unit capacity code error	
17	C5	Indoor unit capacity code error	
18	CC	Long-distance monitor or centralized controller has set the shielding function.	

When there is a malfunction during operation, error will be displayed on the temperature displaying zone of LCD. When several malfunctions occur at the same time, these error codes will be displayed circularly.

When there is a malfunction, please turn off the unit and ask the professional for maintenance.

For example, E1 means high pressure protection during operation.



Figure 2-6-1

7 CENTRALIZED CONTROLLER

7.1 Smart Zone Controller

7.1.1 Function

The smart zone controller can directly control up to 16 sets of indoor units in a control network and is available to check the running status of any unit through the LCD, including running mode, timer, fan speed, centralized control and shielding setting etc.

7.1.2 Outline Drawing of Press Buttons



Figure 2-7-1

7.1.3 Functions of Press Buttons

Table 2-7-1 Functions of Press Buttons

No.	Name	Function Description
1	Mode	It is used for the switchover among different modes.
2	Fan	It is used to set the fan speed, high, medium, low or auto.
3	On/Off	It is used to set the on/off status of the indoor unit.
4	▲	1. Under the single/centralized control status: It is used to set the running temperature of the indoor unit with max.30°C anmin.16°C; 2. Under the timing setting status: It is used to set the timing period with max.24 hours and min.0 hour; 3. Under the clock setting status: it is used to set the hour (max.:23, min.: 0) and minute (max.:59, min.: 0) of the clock.
5	▼	
6	Mon 1/9	It is used for the switchover between unit 1 and unit 9; Under the timing or clock setting status, it indicates Monday.
7	Tue 2/10	It is used for the switchover between unit 2 and unit 10; Under the timing or clock setting status, it indicates Tuesday.
8	Wed 3/11	It is used for the switchover between unit 3 and unit 11; Under the timing or clock setting status, it indicates Wednesday.
9	Thu 4/12	It is used for the switchover between unit 4and unit 12; Under the timing or clock setting status, it indicates Thursday.
10	Fri 5/13	It is used for the switchover between unit 5and unit 13; Under the timing or clock setting status, it indicates Friday.
11	Sat 6/14	It is used for the switchover between unit 6 and unit 14; Under the timing or clock setting status, it indicates Saturday.
12	Sun 7/15	It is used for the switchover between unit 7 and unit 15; Under the timing or clock setting status, it indicates Sunday.
13	8/16	It is used for the switchover between unit 8 and unit 16.
14	Timer/Time	It is used to set the timing or on/off time of the selected indoor unit as well as to set the clock of the system.
15	Central	It is used for the switchover between single and centralized control modes.
16	Shield	It is used to deactivate some or all functions of a single or a group the indoor unit(s).
17	All on/off	It is used to start/stop all indoor units.

7.1.4 LCD of the Controller

7.1.4.1 Outline Drawing of the LCD

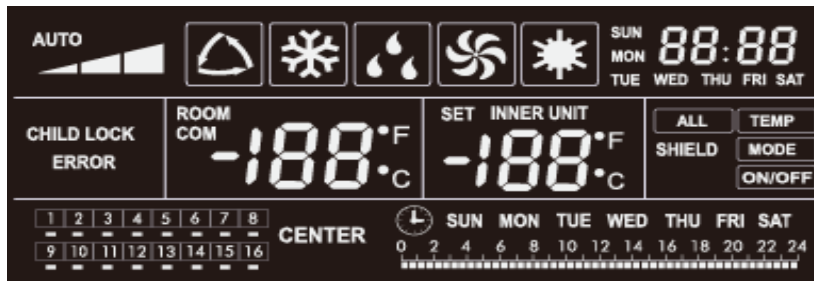


Figure 2-7-2

7.1.4.2 Introduction to Symbols on the LCD



Figure 2-7-3

Table 2-7-2 Introduction to the Symbols on the LCD

No.	Name	Description
1	Fan speed	It displays the fan speed of the indoor unit, high, medium, low and auto.
2	Running mode	It displays the running mode of the indoor unit, auto, cool, dry, fan and heat.
3	System clock	It displays the current time (hour and minute) in 24-hour time system and also the week day.
4	Shield	It displays the shield status, "ALL", "TEMP", "MODE" and "On/Off".
5	Weekly timer	It displays the timing period (unit: 0.5 hour) which will circulate every week.
6	Set temperature Indoor unit code	It displays the set temperature, indoor unit code (01-16), and symbols of Celsius and Fahrenheit scale.
7	Control mode	It displays "CENTER" under the centralized control mode and no display under the single control mode.
8	Ambient temperature Serial port	It displays the ambient temperature, serial port as well as symbols of Celsius and Fahrenheit scale.
9	Indoor unit code On/off status	Numbers indicate the indoor unit codes which will be displayed when the corresponding indoor unit is online; "" indicates the on/off status of the indoor unit, its flashing for "on" or else for "off"
10	Error Child lock	It displays the error codes when some error(s) arises and also "CHILD LOCK" when this function is activated.

7.1.4.3 Network Topology

Network Connection of the Smart Zone Controller

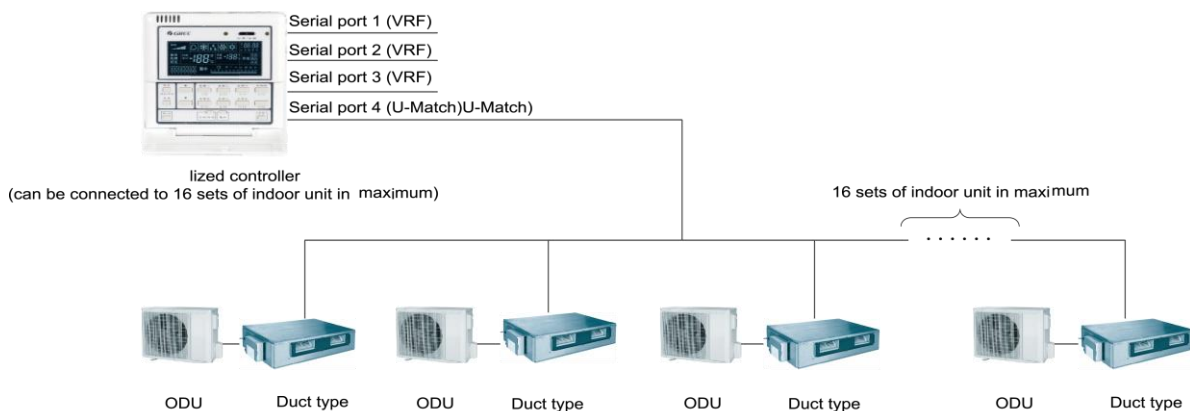


Figure 2-7-4

7.1.4.4 Dimensions

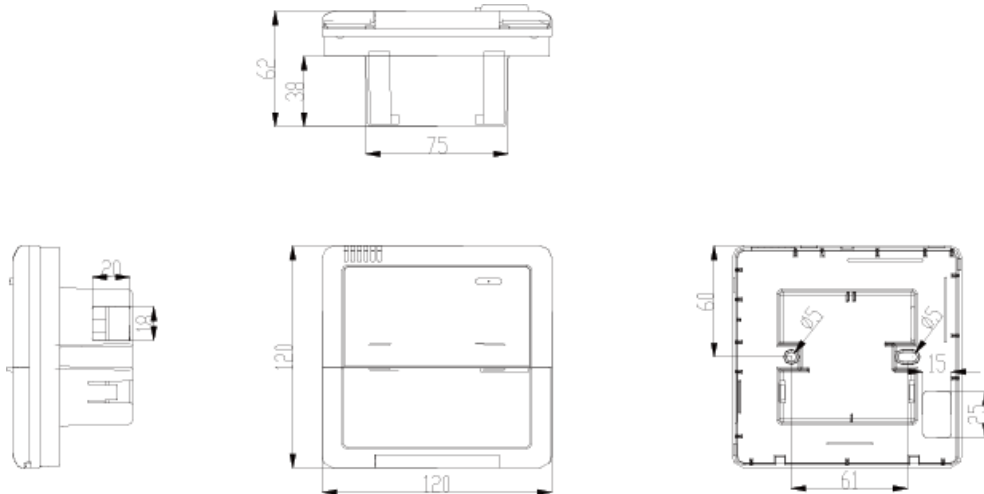


Figure 2-7-5

7.2 Additional Special Functions

7.2.1 Door control function

Door control function is available for this series. In order to achieve this function, please select the door control accessories from Gree.

(1) Interface instructions

- 1) The interface printing is DOOR-C and the type is B2B-XH-B. The wires of door control accessories must be connected to this interface;
- 2) Electrical characteristic: none;
- 3) Working principle: when the card is inserted, this interface is short-circuited; when the card is not inserted, this interface is cut off;

Connect the door control detection port of indoor mainboard with the interface of door control board (CN1 in the following Figure); connect the door control signal to the door control signal input port (X1 and X2 in the following Figure). X1 is AC 220V signal input and X2 is DC +5V to 24V. You can only choose X1 or X2. Definition of interface is as shown in Figure below:

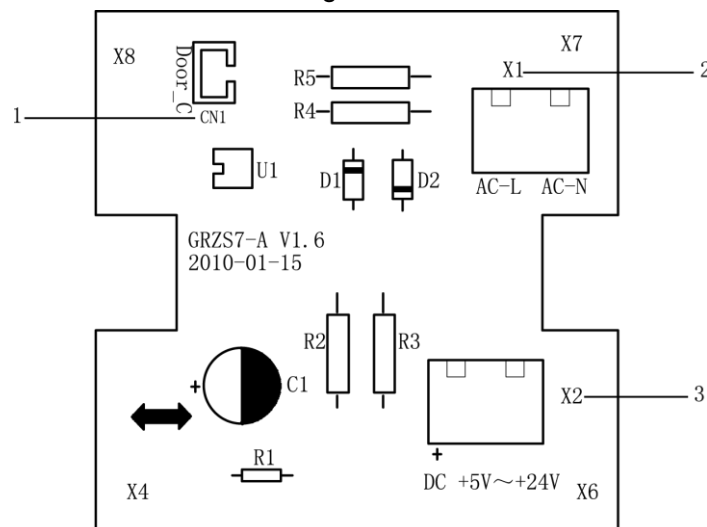



Figure 2-7-6 Illustration of door control port

Table 2-7-3 Door control wiring port

No.	Terminal name	Terminal instruction
1	CN1	CN1 wiring terminal and door control interface of indoor mainboard.
2	X1(AC-L, AC-N)	X1(AC-L, AC-N) wiring terminal, connected to door control input signal, rated voltage 220V.
3	X2	X2 wiring terminal, connected to door control input signal.

(2) Function instructions:

In order to achieve this function, set it through wired controller and refer to the following operation method. It is defaulted that this function is not activated; if this function is set and door control accessories are connected, the unit will control the ON/OFF of unit according to the card state detected by door control detection board. When the card is not connected, the unit will turn to standby state. If the unit is with wired controller,  icon will be displayed on the wired controller.

If the unit is without wired controller, there will be no display. The unit will control the ON/OFF of unit according to the detected information.

(3) Setting method:

Under off state of the unit, press Function and Timer buttons at the same time for 5s to go to the debugging menu. Press Mode button to adjust to "08" in temperature displaying zone. Timer zone displays setting state and press ▲ or ▼ button to adjust. There are 2 selections:

- 1) Without door control function (LCD displays 00).
- 2) With door control function (LCD displays 01).

Choose the second selection and then press Enter/Cancel button to save and exit setting. Now, door control function is activated. The unit will memorize this setting status. The setting value will be memorized after power failure. The detailed setting is as shown in the Figure below:

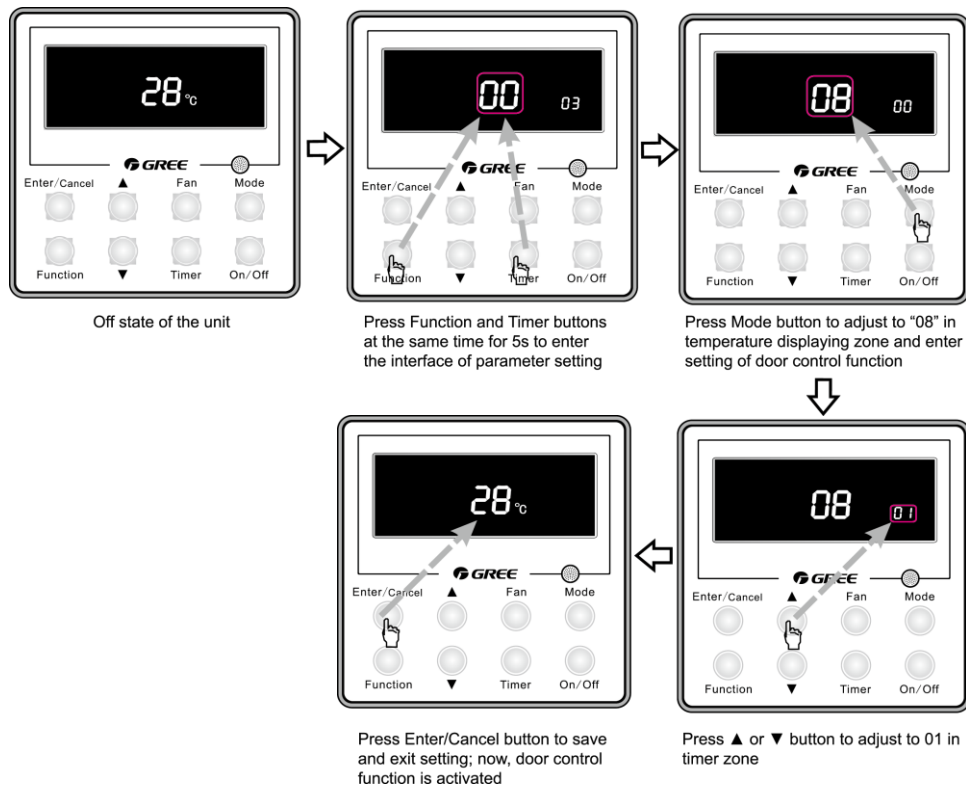


Figure 2-7-7

7.2.2 MODBUS interface

The indoor unit of this series has MODBUS interface. If the user needs to connect the unit to the management system of the building, please enquire Gree for the MODBUS protocol.

Choose one of the connection ways

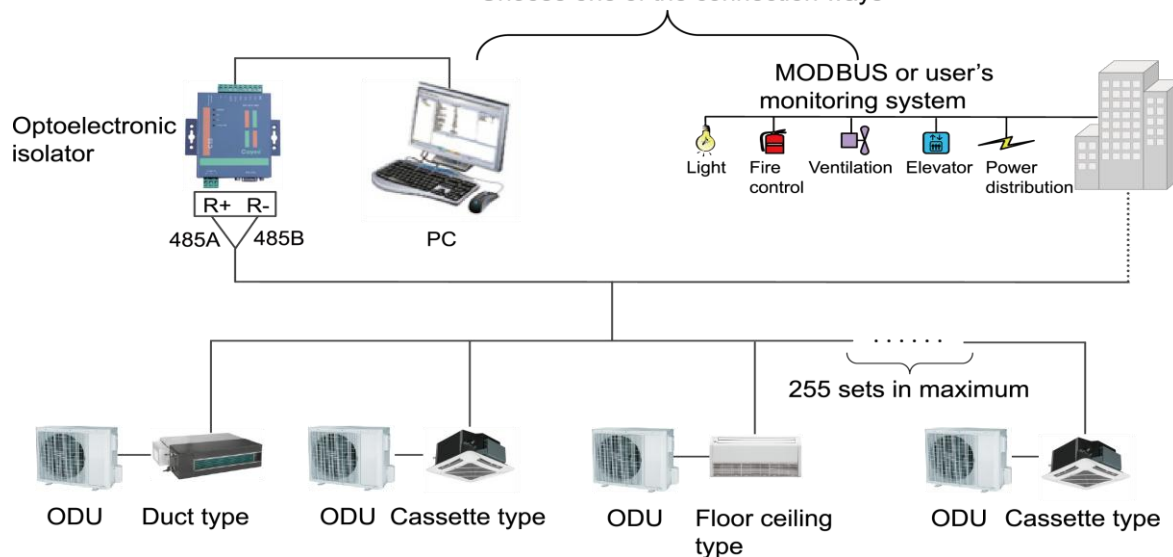


Figure 2-7-8

(1) Interface instruction:

- 1) The printing is COM-BMS1 and the interface type is B4B-XH-K3;
- 2) Electrical characteristic: baud rate: 9600bps; standard: RS485;
- 3) Working principle:

The indoor mainboard can send out the unit operation state through this interface and receive logical control information to realize control and monitor of the unit.

(2) Function instructions:

In order to achieve this function, set the address mode and address through wired controller. Please refer to Point 3 for the setting method. You must set the address mode into long-distance control address mode.

The address mode is defaulted to be connecting to centralized controller mode and the defaulted address is 1.

(3) Setting method:

Firstly, set the address mode of wired controller into centralized controller address mode. The setting method is:

Under off state of the unit, press Function and Timer buttons at the same time for 5s to go to the debugging menu. Press Mode button to adjust to "10" in temperature displaying zone. Timer zone displays setting state and press ▲ or ▼ button to adjust. There are 2 selections:

- 1) Centralized controller address mode (LCD displays 00)
- 2) Long-distance control address mode (LCD displays 01)

Choose the second selection and then press Enter/Cancel button to save and exit setting. Now, the address of wired controller is set to match the address of long-distance control. The unit will memorize this setting status. The setting value will be memorized after power failure. The detailed setting is as shown in the Figure below:

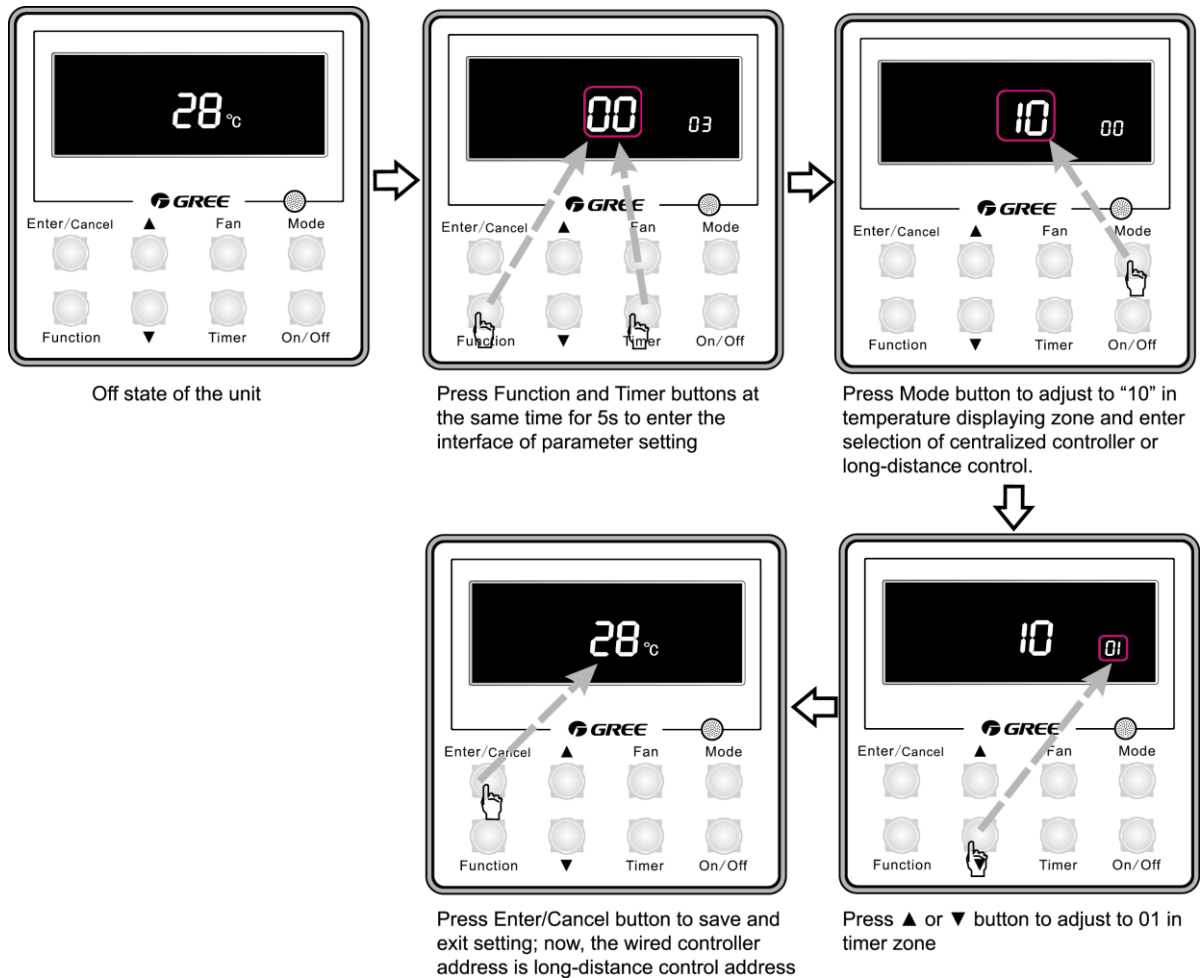


Figure 2-7-9

Address setting of each unit: when the address mode is set to be long-distance control address mode. The address setting value range is 01~255. The setting method is:

Under off state of the unit, press Function and Mode buttons at the same time for 5s to enter setting interface of wired controller address. LCD displays address sequence. Press ▲ or ▼ button to adjust the address sequence and then press Enter/Cancel button to confirm. The setting value will be memorized after power failure. The detailed setting is as shown in the Figure below:

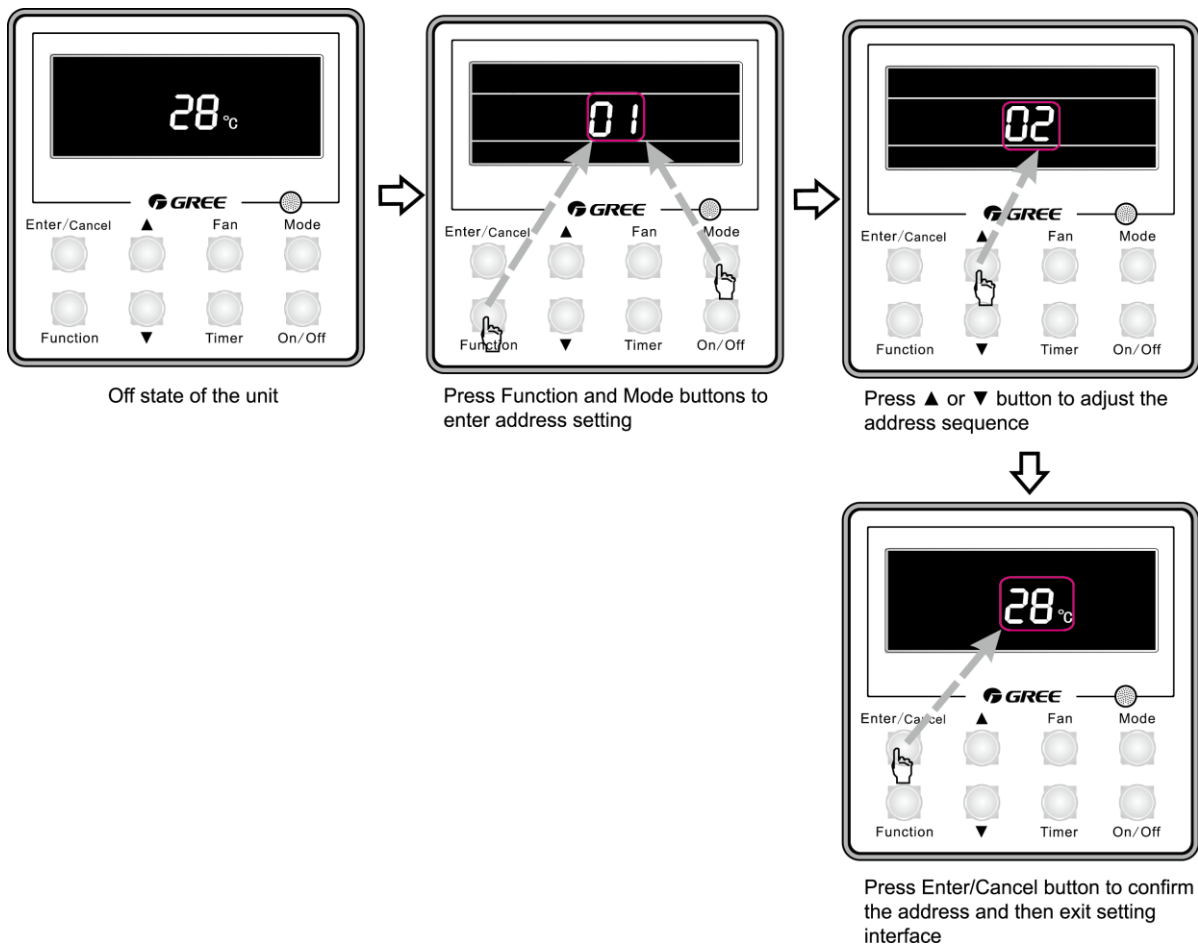


Figure 2-7-10

Note:

- ① In order to realize the MODBUS interface function, the address mode of the unit must be set into long-distance control address mode; you can not set it into centralized control address mode, otherwise, this function can not be realized;
- ② The unit can not be connected to MODBUS and centralized controller at the same time; only one of them can be selected;
- ③ 255 sets of unit in maximum can be connected in the same network; the unit addresses in the same network must be different, otherwise, the unit control will be affected;
- ④ Perform wiring when the unit power is cut off.

INSTALLATION

INSTALLATION

1 INDOOR UNIT INSTALLATION

1.1 Installation of Duct Type

1.1.1 Before Installation

After receiving the machine, please check for any transport damage. If finding any surface or internal damage, please immediately report to the transport company or equipment company in writing.

After receiving the machine, please check the unit and accessories in reference to the packing list. Ensure that the model is correct and the machine is in good condition. Please also check if the specification and quantity of accessory parts are correct.

Determine the correct handling route and methods, thus to avoid damaging the unit or causing possible hazard. For the sake of protection and safety, it is suggested to move the unit with the packaging box. Even though it is not permitted to do like this under special occasions, do not remove the packaging box, thus to avoid loosening or falling during handling.

Confirm if the installing foundation is solid. When this unit is to be installed on the metal section of the building, make sure that the electrical insulation must comply with applicable standards.

Ensure that the place of installation is far from the area where the inflammable or explosive substances are stored, thus to avoid possible explosion or fire due to leakage.

1.1.2 Installation Site

Ensure the top hanging piece has strong strength to withstand the weight of the unit.

The drainage pipe has convenient flow of water.

There is no obstacle blocking the return air inlet and exhaust outlet, so as to ensure sound air circulation.

The installation spaces required by the drawing must be ensured, so as to provide enough space for the service and maintenance.

The installation site must be far away from heat source, leakage of inflammable gas or smoke.

The indoor unit is of ceiling mount (indoor unit is hidden inside the ceiling).

The indoor and outdoor units, the power cable and the connecting electrical lines must be at least 1 meter from any TV set or radio. This is to avoid image interference or noise of the TV set or radio. (Even if the distance is 1 meter, noise can also exist if there is strong electric wave.)

1.1.3 Caution for Installation

Generally, the unit is installed indoor on ceiling. For ceiling mounting, ensure that the hangers on ceiling have adequate strength to support the weight of the unit.

To meet the noise and vibration requirements, the unit shall be installed by using rubber pad (thickness $\geq 20\text{mm}$) and rubber connector.

Insert a M10 expansion bolt into the hole. Drive a nail into the bolt. Refer to the profile dimensions drawing of the indoor unit for the distance between the holes. Refer to Figure 3-1-1 for the installation of the expansion bolt.

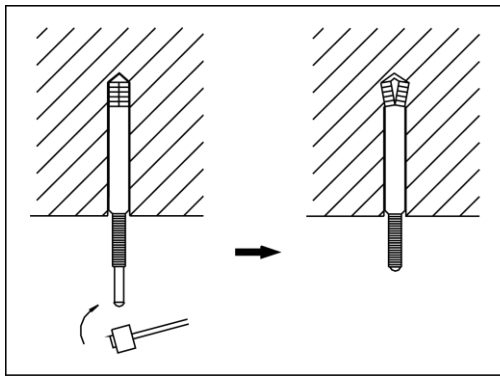


Figure 3-1-1

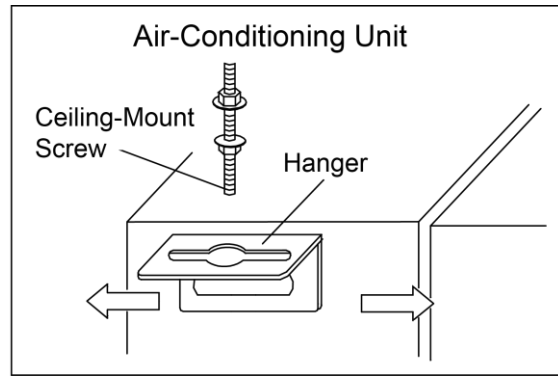


Figure 3-1-2

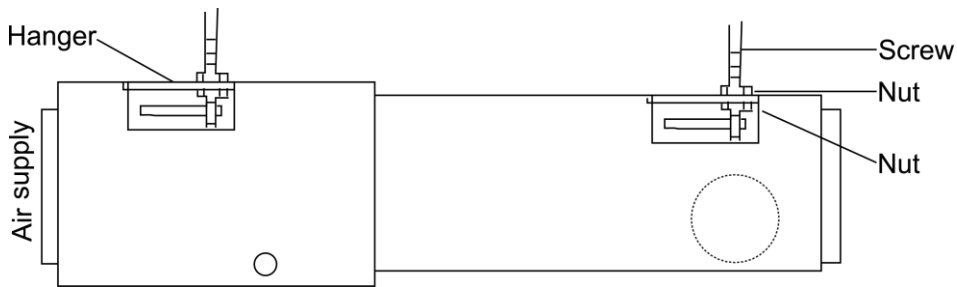


Figure 3-1-3

Install the hanger onto the indoor unit as Figure 3-1-2 and Figure 3-1-3 shows.

Install the indoor unit at the ceiling as Figure Figure 3-1-4 shows.

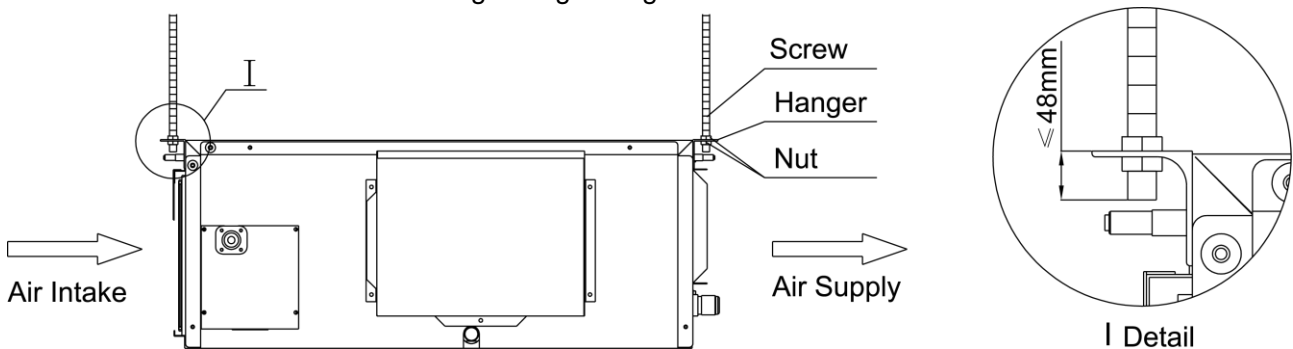


Figure 3-1-4

Precautions for unfavorable installation:

The preparation of all pipes (connecting pipes and drainage pipes) and cables (connecting lines of wire controller, indoor unit and outdoor unit) must be ready before the installation, so as to achieve smooth installation.

Drill an opening on the ceiling. Maybe it is required to support the ceiling to ensure the evenness of it and avoid the vibration of it. Consult with the user or a construction company for details.

In case the strength of ceiling is not enough, use angle iron sections to set up a beam support. Place the unit at the beam and fix it.

Level inspection of the indoor unit.

After the indoor unit is installed, it is required to check the level of the whole unit. The unit must be placed horizontally, but the condensate pipe shall be installed obliquely, so as to facilitate the drainage of condensate.

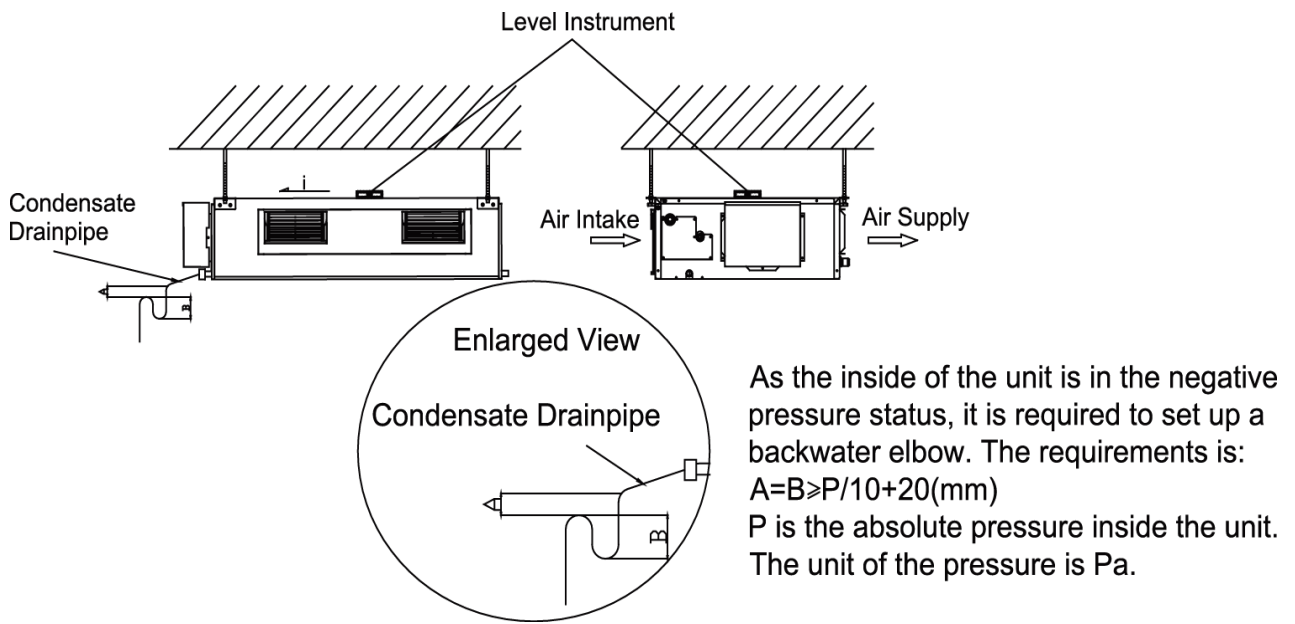


Figure 3-1-5

1.1.4 Dimension Data

For the units: 12K

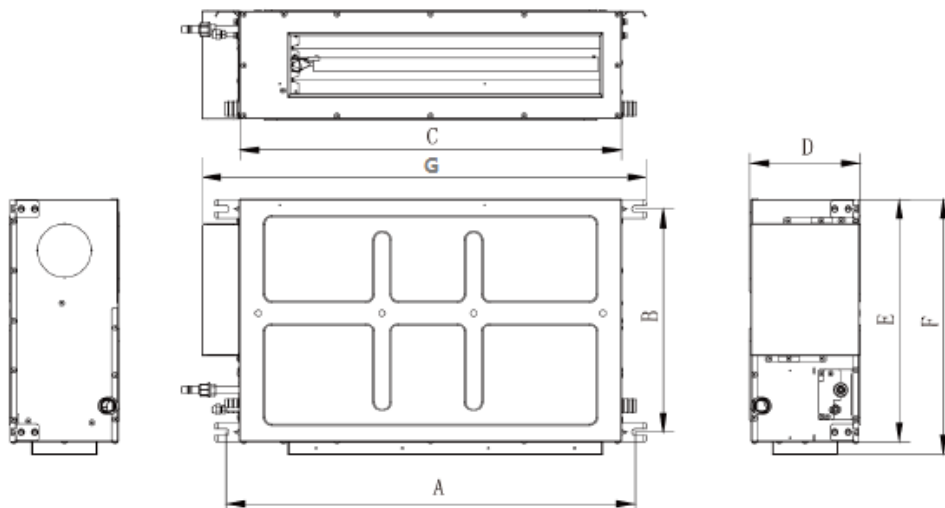


Figure 3-1-6

Table 3-1-1

Item	A	B	C	D	E	F	G
Model							
GFH12K3HI GFH12K3H1I	760	415	700	200	460	485	824

For the units: 18K

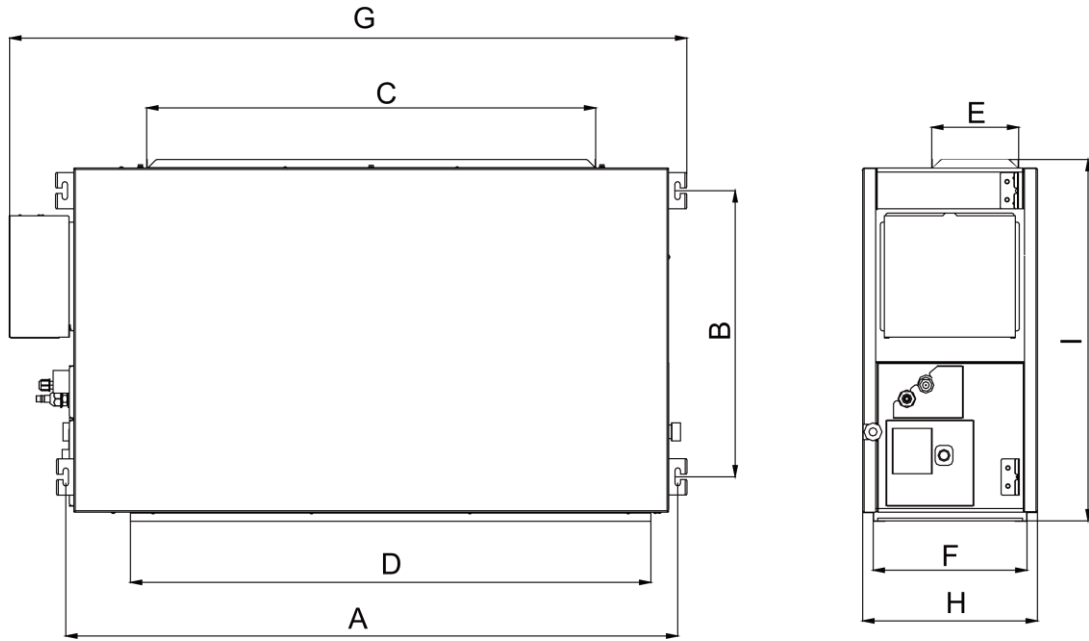


Figure 3-1-6

For the units: 24~60K

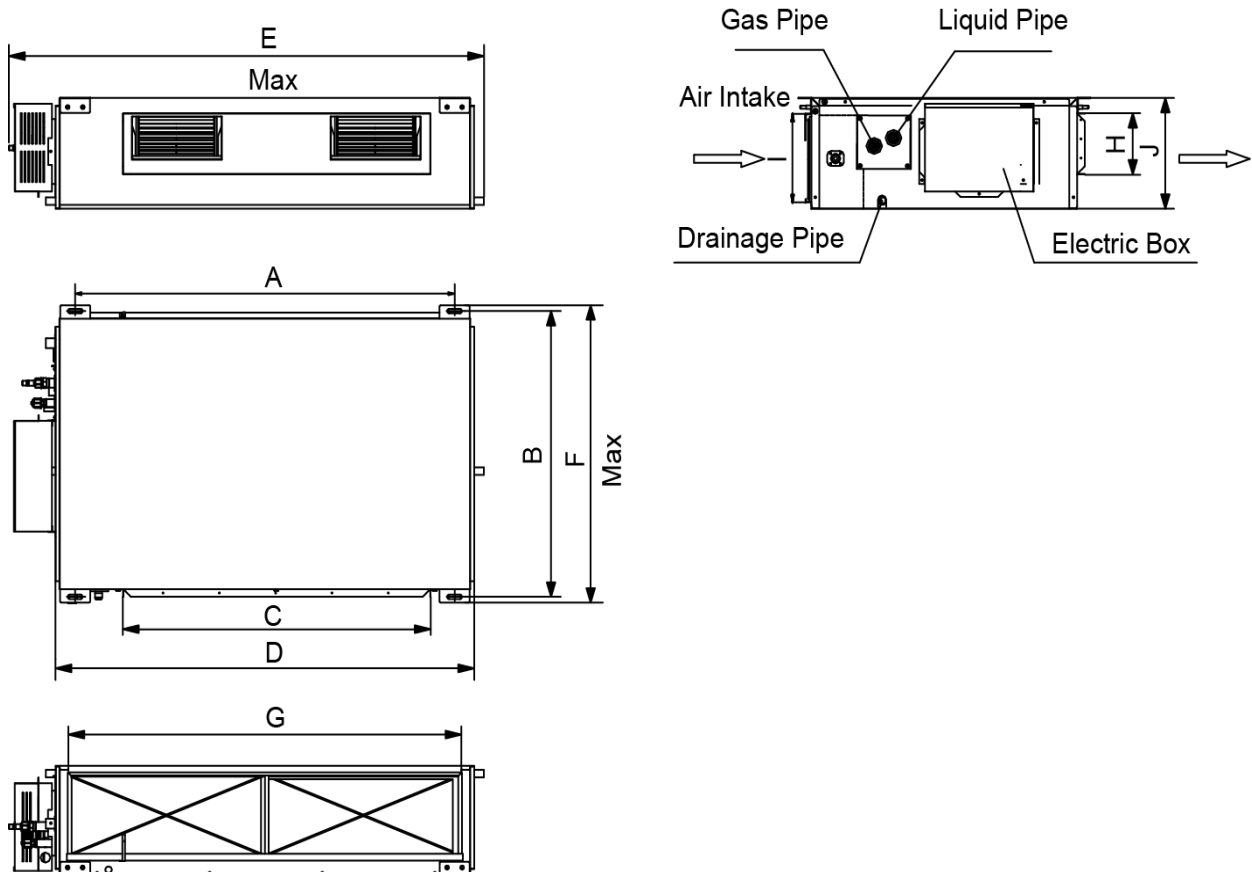


Figure 3-1-7

Table 3-1-1

Item Model	A	B	C	D	E	F	G	H	I	J
GFH18K3HI GFH18K3H1I	940	430	740	738	206	125	1015	275	720	-
GFH24K3HI GFH24K3H1I	1101	515	820	1159	1260	555	1002	160	235	270
GFH30K3HI GFH30K3H1I										
GFH36K3HI GFH36K3H1I	1011	748	820	1115	1230	790	979	160	231	290
GFH42K3HI GFH42K3H1I										
GFH48K3HI GFH48K3H1I										
GFH60K3HI GFH60K3H1I	1011	788	820	1115	1235	830	979	160	256	330

Table 3-1-2 Installation Accessories List for Duct-type Indoor Unit

Name & Shape	QTY	Notes
Installation and Operating Instructions	1	
Insulation materials for gas pipe	1	Used for gas pipe connector on indoor unit
Insulation materials for liquid pipe	1	Used for liquid pipe connector on indoor unit
Insulation materials for drainage pipe	2	Used for wrapping the condensate pipe and rubber plug.
Nut M8 with gasket	8	Use for fixing the hanger hook
	4	4 sets, used for ceiling mounting of the indoor unit
Nut and spring gasket	4	
Hook	4	Used for ceiling mounting of the indoor unit
Strap	4 or 8 pcs	4 pcs for 18KBtu/h unit and 8 pcs for others
Wired controller	1	
Remote controller	1	
Battery	2	
Flexible pipe	0.2 or 4 pcs	0 pc for 18 KBtu/h unit; 2 pcs for 22.5,27KBtu/h unit; and 4 pcs for 36-45KBtu/h unit
Power cord	1 – 2 pcs	2 pcs for36-45 KBtu/h unit and 1 pc for others
Connection wire		

1.1.5 Installation Clearance Data

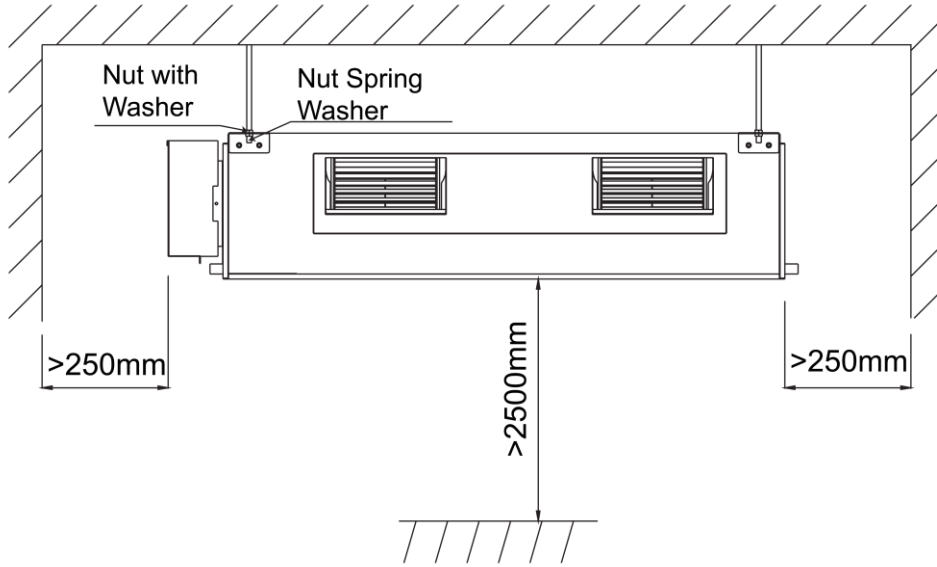


Figure 3-1-8

Warning: The height of installation for the indoor unit should be 2.5m above.

1.1.6 Drain Piping Work

Installation of Drainage Pipeline:

CAUTION!

Install the drain hose in accordance with the instructions in this installation manual and keep the area warm enough to prevent condensation. Problems with the piping may lead to water leaks.

- (1) Install the drain hose with downward gradient (1/50 to 1/100) and no risers or traps are used for the hose. (Figure 3-1-8)
- (2) Be sure there is no crack or leak on the drain hose to avoid the formation of air pocket. (Figure 3-1-8)
- (3) When the hose is long, install supporters. (Figure 3-1-9)
- (4) Always use the drain hose which has been insulated properly.

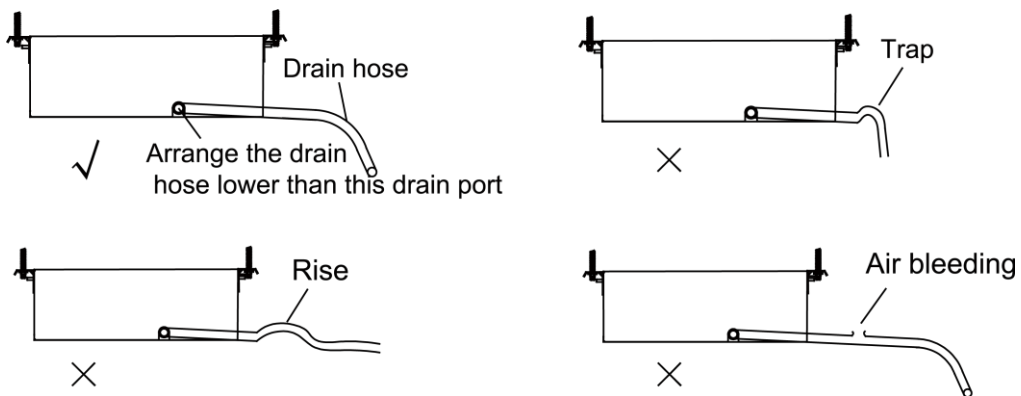


Figure 3-1-9

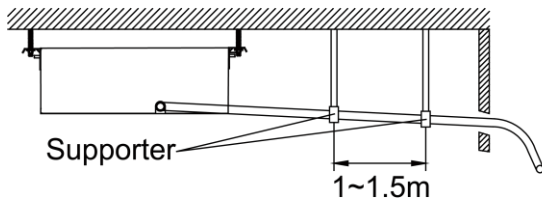


Figure 3-1-10

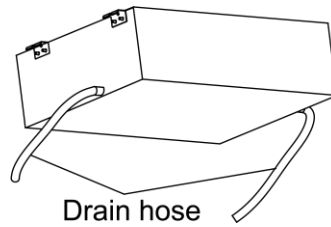


Figure 3-1-11

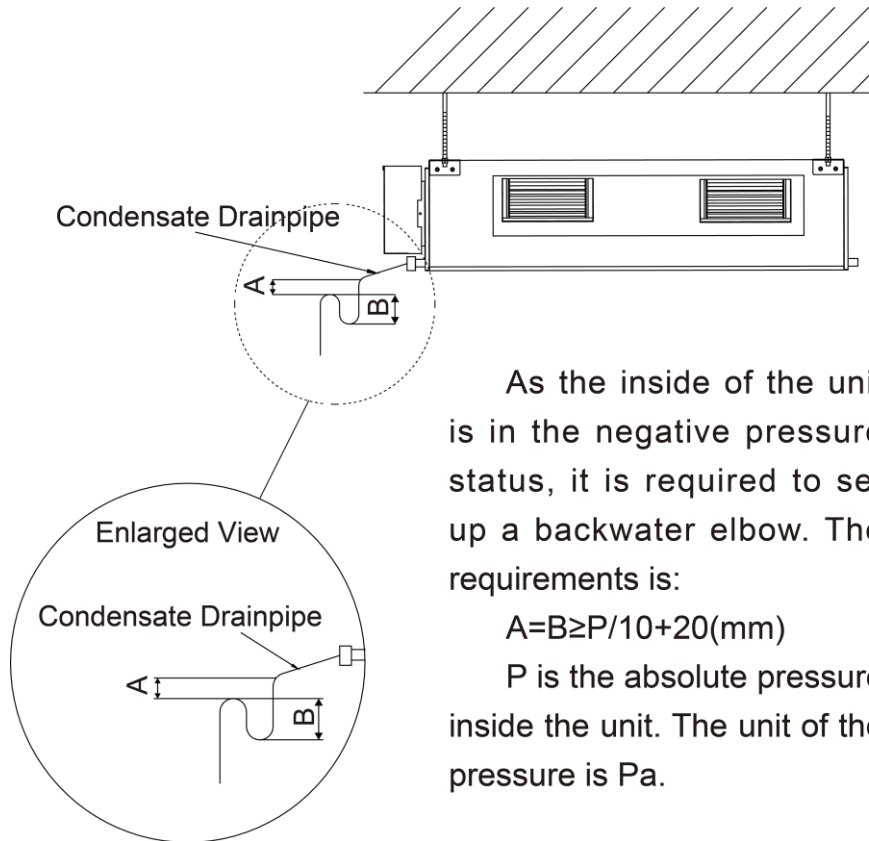


Figure 3-1-12

(5) Use a suitable drain hose, and see Table 3-2-4 for its size.

(6) There is a drain port on both the left and right sides. Select the drain port to match the local conditions. (Figure 3-1-11)

(7) When the unit is shipped from the factory, the drain port is defaulted to be the one on the left side (electric box side); the port on right side has been plugged.

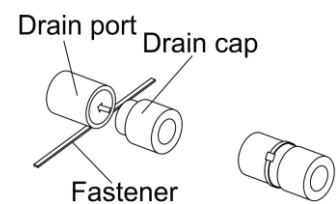


Figure 3-1-13

(8) When using the drain port on the right side of the unit, reinstall the drain cap to the left side drain port. (Figure 3-1-13)

CAUTION!
<p>Always check that the drain cap is installed to the unused drain port and is fastened with the nylon fastener. If the drain cap is not installed, or is not sufficiently fastened by the nylon fastener, water may drip during the cooling operation.</p>

(9) Be sure to insulate where the drain port and the drain hose is connected. (Figure 3-1-14)

(10) The unused drain port also should be insulated properly. (Figure 3-1-15)

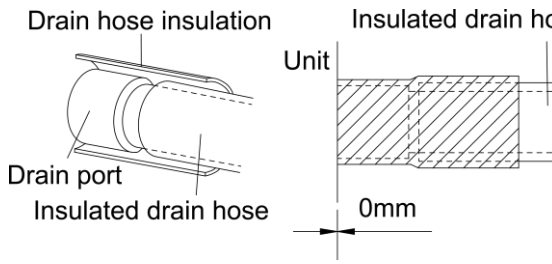


Figure 3-1-14

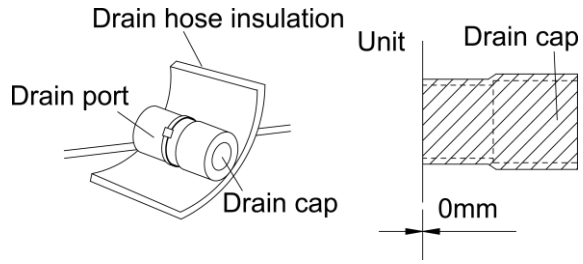


Figure 3-1-15

(11) There is adhesive on one side of the insulation so that after removing the protective paper over it the insulation can be directly attached to the drain hose.

(12) Considerations for the unit with the condensate pump:

- 1) For the unit with the condensate pump, only one drain port at the side close to the electric box is prepared and only through it the drain hose can be connected.
- 2) See table 3 for the size of the drain port of the unit with the condensate pump, which is different from that of the unit without the condensate pump.
- 3) For the unit with the condensate pump, two drain ports at the bottom are defaulted to be factory plugged with drain caps. After the installation of the drain hose, these two drain ports also need to be insulated properly with the same way aforementioned.
- 4) The drain hose for the unit with the condensate pump should be arranged as shown in the figure below.

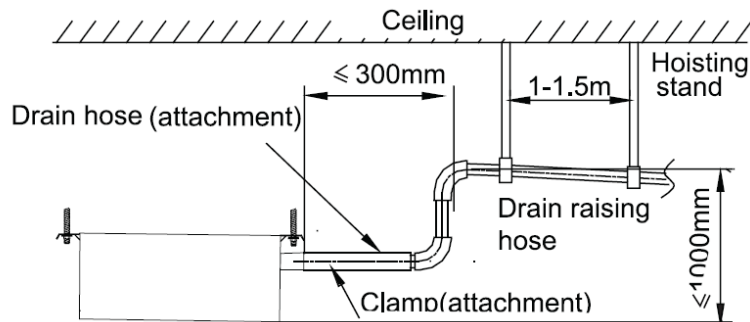


Figure 3-1-16

a) The vertical height of the drain hose should be 75mm or less so that it is unnecessary for the drain port to withstand additional force.

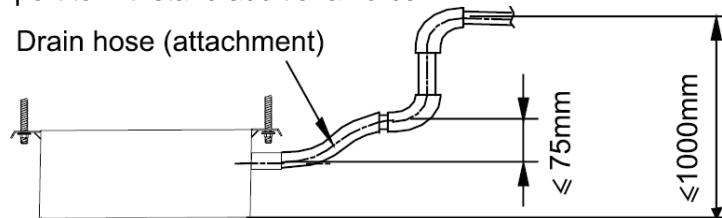


Figure 3-1-17

b) When multiple drain hoses are used, their installation should be performed as shown in the figure below.

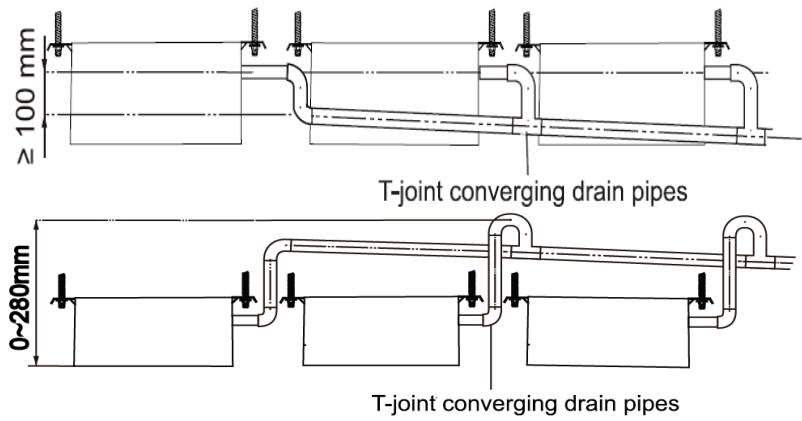


Figure 3-1-18

1.1.7 Installation of air duct

Dimensions of the Supply Air Outlet/Return Air Inlet

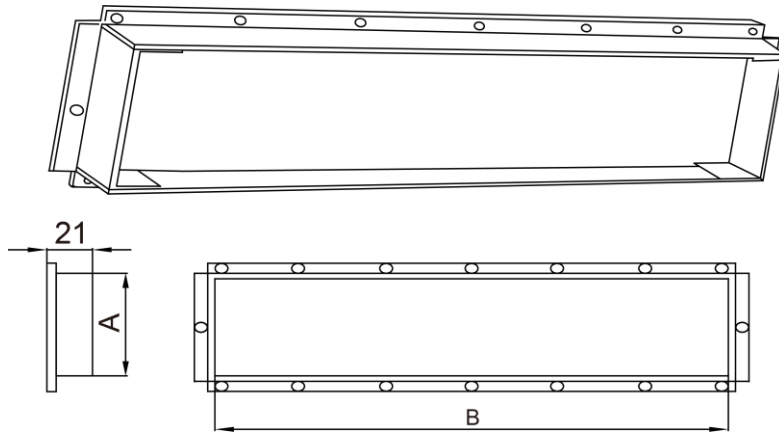


Figure 3-1-19 Supply Air Outlet



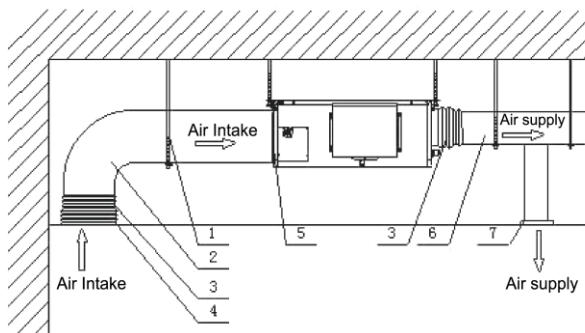
Figure 3-1-20 Return Air Inlet

Table 3-1-3

Model \ Item	Supply Air Outlet		Return Air Inlet	
	A	B	C	D
GFH12K3HI GFH12K3H1I	122	585	700	200
GFH18K3HI GFH18K3H1I	123	736	710	166
GFH24K3HI GFH24K3H1I	158	818	994	195
GFH30K3HI GFH30K3H1I	158	818	994	195
GFH36K3HI GFH36K3H1I	158	818	1000	206
GFH42K3HI GFH42K3H1I	158	818	1000	206
GFH48K3HI GFH48K3H1I	158	818	1000	206
GFH60K3HI GFH60K3H1I	190	850	940	286

1.1.8 Installation of the Supply Air Duct

(1) Installation of the Rectangular Duct.



No.	Name	No.	Name
1	Hanger	5	Filter
2	Air Intake Pipe	6	Main Air Supply Pipe
3	Canvas Air Pipe	7	Air Supply Outlet
4	Air Intake		

Figure 3-1-21



CAUTION!

- ①. The maximum length of the duct means the maximum length of the supply air duct plus the maximum length of the return air duct.
- ②. The duct is rectangular and connected with the air inlet/outlet of the indoor unit. Among all supply air outlets, at least one should be kept open.

(2) The default installation location of the rectangular flange is at the back and the return air cover plate is at the bottom, as shown in Figure 3-1-22.

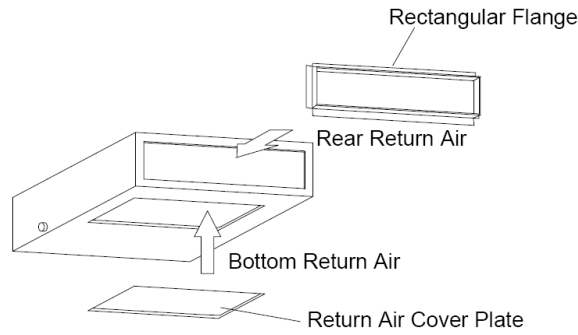


Figure 3-1-22

- (3) If the bottom return air is desired, just change the place of the rectangular flange and the return air cover plate.
- (4) Connect one end of the return air duct to the return air outlet of the unit by rivets and the other to the return air louver. For the sake of the convenience to freely adjust the height, a cutting of canvas duct will be helpful, which can be reinforced and folded by 8# iron wire
- (5) More noise is likely to be produced in the bottom return air mode than the backward return air mode, so it is suggested to install a silencer and a static pressure box to minimize the noise.
- (6) The installation method can be chosen with considering the conditions of the building and maintenance etc., as shown in Figure 3-1-23.

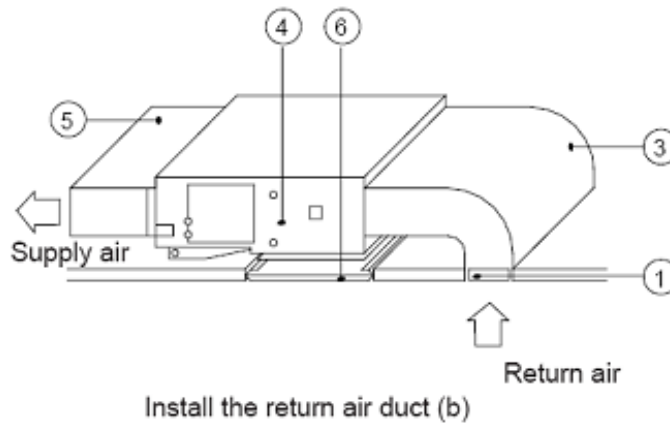


Figure 3-1-23

Table 3-1-4 Installation of the return air duct

No.	Name	No.	Name
1	Return Air Inlet (with filter)	4	Indoor unit
2	Canvas Duct	5	Supply Air Duct
3	Return Air Duct	6	Grille

1.2 Installation of Cassette Type

1.2.1 Before Installation

After receiving the machine, please check for any transport damage. If finding any surface or internal damage, please immediately report to the transport company or equipment company in writing.

After receiving the machine, please check the unit and accessories in reference to the packing list. Ensure that the model is correct and the machine is in good condition. Please also check if the

specification and quantity of accessory parts are correct.

Determine the correct handling route and methods, thus to avoid damaging the unit or causing possible hazard. For the sake of protection and safety, it is suggested to move the unit with the packaging box. Even though it is not permitted to do like this under special occasions, do not remove the packaging box, thus to avoid loosening or falling during handling.

Confirm if the installing foundation is solid. When this unit is to be installed on the metal section of the building, make sure that the electrical insulation must comply with applicable standards.

Ensure that the place of installation is far from the area where the inflammable or explosive substances are stored, thus to avoid possible explosion or fire due to leakage.

1.2.2 Installation Site

Select an installation site where the following conditions are fulfilled and that meets your customer's approval.

- (1) Obstruct should be put away from the intake or outlet vent of the indoor unit so that the airflow can be blown through all the room.
- (2) Make sure that the installation meets the requirement of the schematic diagram of installation spaces.
- (3) Select the place where can stand 4 times of the weight of the indoor unit and would not increase the operating noise and vibration.
- (4) The horizontality of the installation place should be guaranteed.
- (5) Select the place where is easy to drain out the condensate water, and connect with outdoor unit.
- (6) Make sure that there are enough space for care and maintenance, and the height fall between the indoor unit and ground is above 1800mm.
- (7) When installing the suspension bolt, check if the installation place can stand 4 times of the weight of the unit. If not, reinforce it before installation.

Note: There will be large amount of greasy dirt accumulated on the fan, heat exchanger and water pump located in the dinning room and kitchen, which would reduce the capacity of the heater exchanger, lead to leakage and abnormal operation of the water pump.

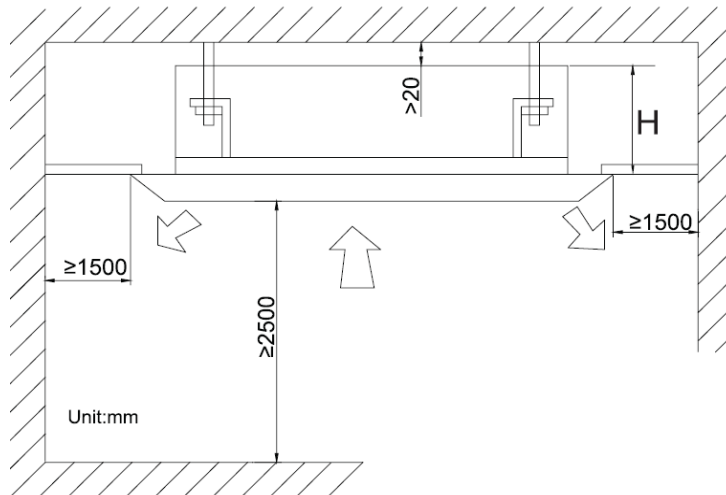


Figure 3-1-24

Table 3-1-6

Models	H(mm)
GKH12K3HI	240
GKH18K3HI	240
GKH24K3HI GKH30K3HI	240
GKH36K3HI GKH42K3HI GKH48K3HI	320
GKH60K3HI	290

1.2.3 Installing the Main Body Unit

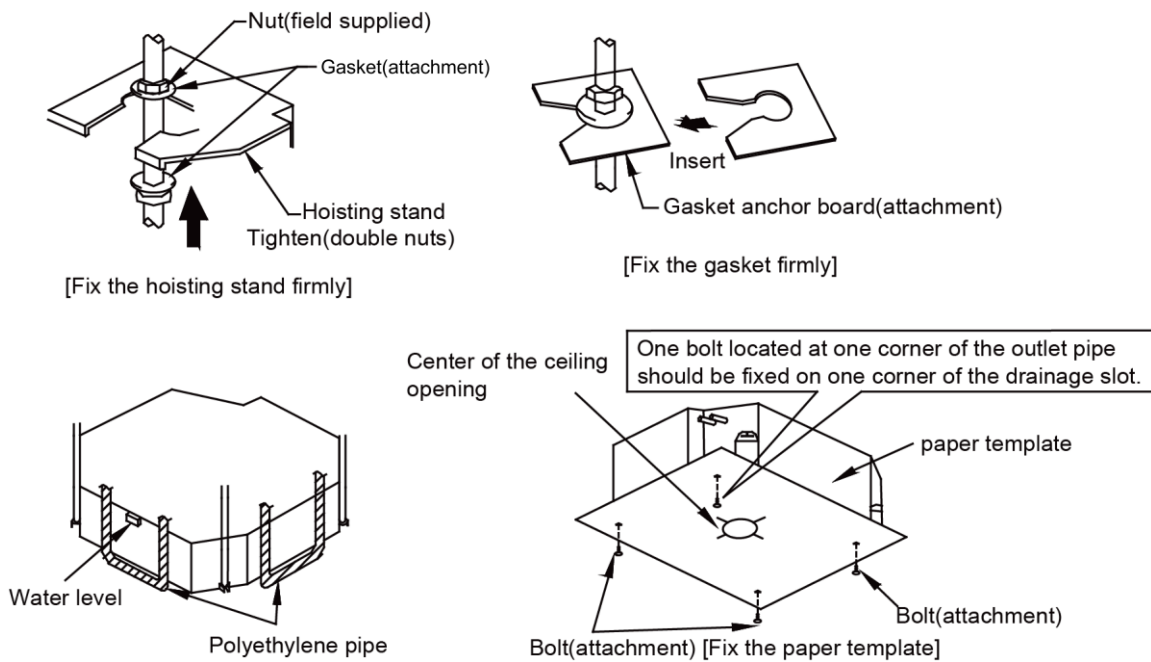


Figure 3-1-25

- (1) Install the hoisting stand on the hoisting screw by using nuts and gaskets at both the upper and lower sides of the hoisting stand. To prevent the gasket from breaking off, a gasket anchor board can be helpful.
- (2) Install the paper template on the unit, and fix the drain pipe at the outlet vent.
- (3) Adjust the unit to the best position.
- (4) Check if the unit is installed horizontally at four directions. If not, the water pump and the float switch would function improperly and even lead to water leakage.
- (5) Remove the gasket anchor board and tighten the nut remained.
- (6). Remove the paper template.

1.2.4 Installing the Suspension Bolts

- (1) Using the installation template, drill holes for bolts (four holes). (Figure 3-1-26)
- (2) Install the bolts to the ceiling at a place strong enough to hang the unit. Mark the bolt positions from the installation template. With a concrete drill, drill for 12.7 mm (1/2") diameter holes. (Figure 3-1-27)

(3) Insert the anchor bolts into the drilled holes, and drive the pins completely into the anchor bolts with a hammer. (Figure 3-1-28)

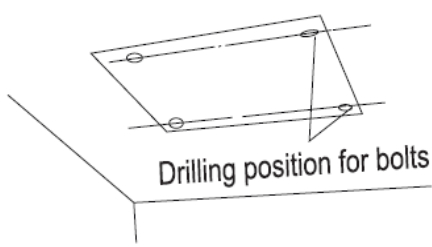


Figure 3-1-26

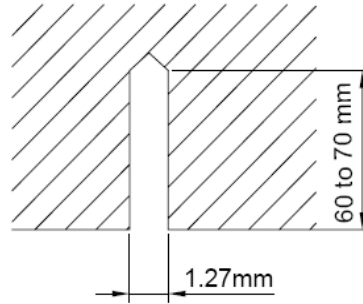


Figure 3-1-27

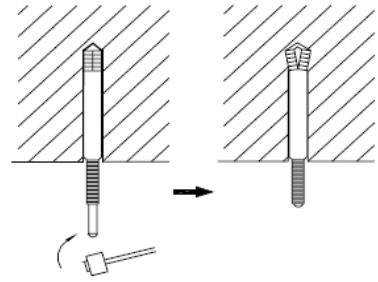


Figure 3-1-28

1.2.5 Leveling

The water level test must be done after installing the indoor unit to make the unit is horizontal, as shown below.

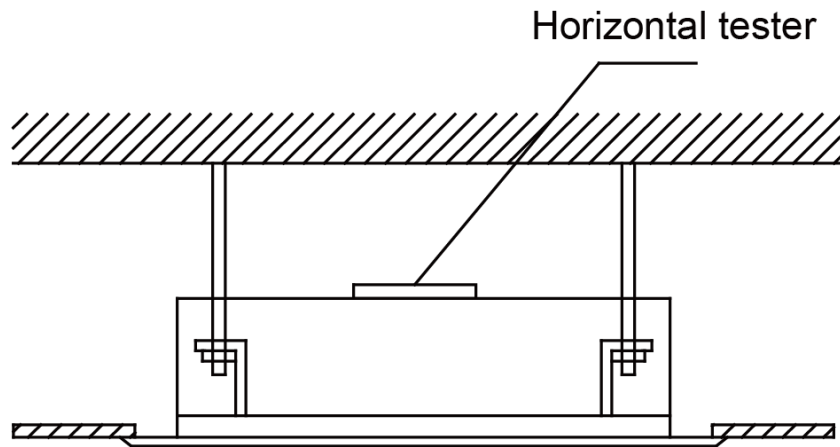
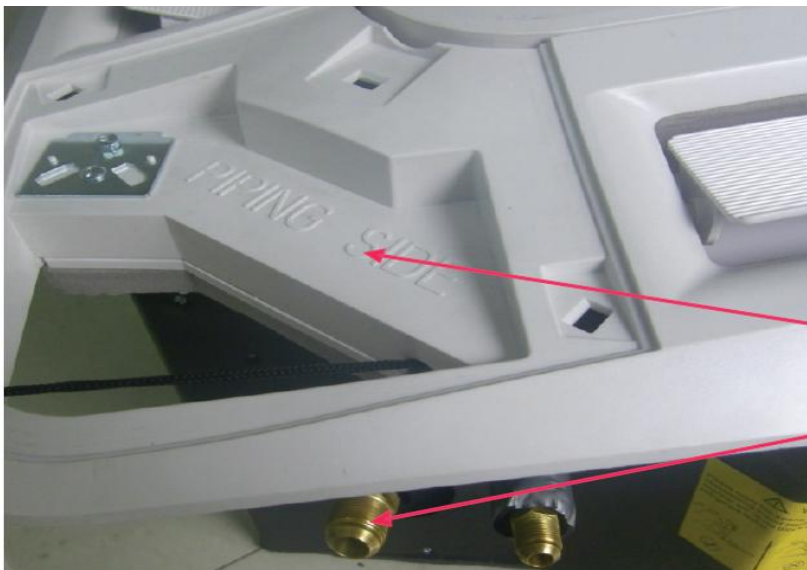


Figure 3-1-29

1.2.6 The Panel Installation

(1) See the figure below for the relationship of the front panel and the connecting pipe.



The connecting pipe should be located corresponding to the marking.

Figure 3-1-30

- (2) Place the panel at the unit, and latch the hooks beside and opposite the swing flap motor.
- (3) Latch other two hooks.
- (4) Tighten four hexagonal screws under the latches about 15mm.
- (5) Adjust the panel along the direction indicated by the arrow as shown in Figure 3-1-31.
- (6) Tighten the screws until the thickness of the sealing material between the panel and the indoor unit reduces to 5-8mm.

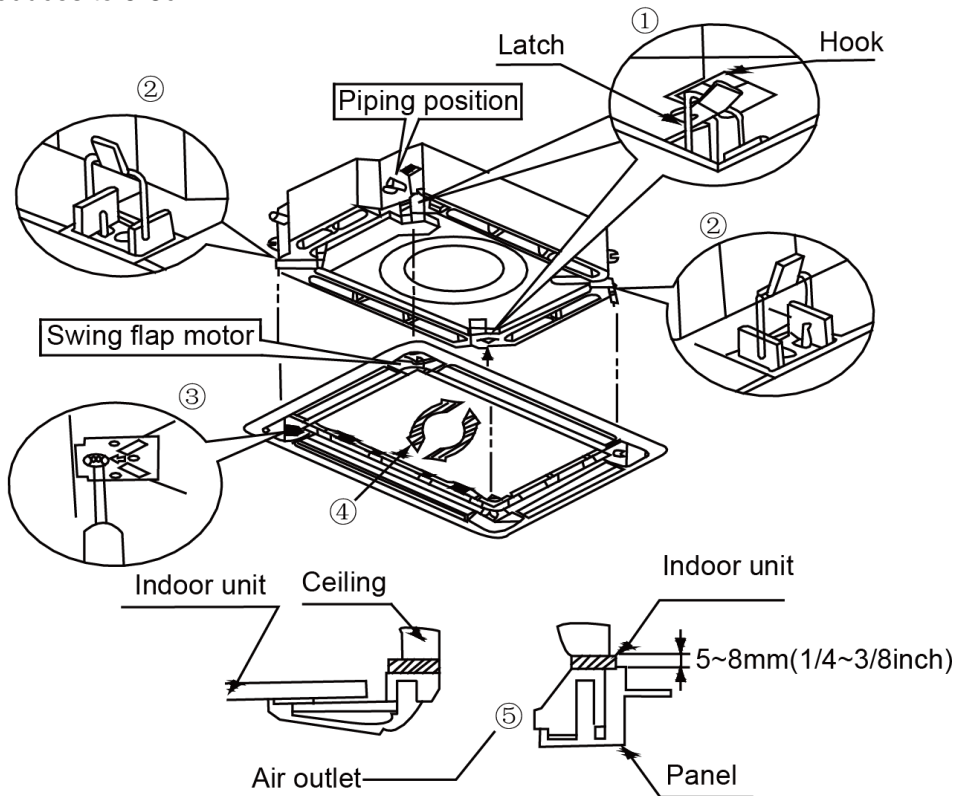


Figure 3-1-31

- (7) Improper screwing of the screws may cause the troubles shown in Figure 3-1-32.

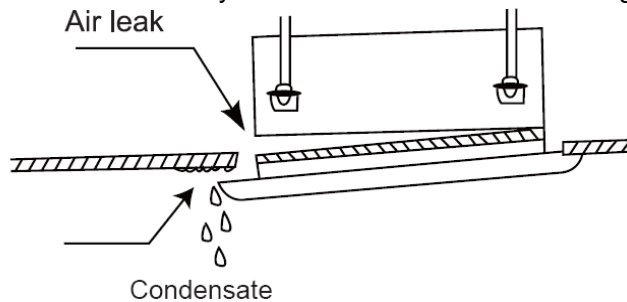


Figure 3-1-32

- (8) If gap still exists between ceiling and decoration panel after tightening the screws, readjust the height of the indoor unit. (Figure 3-1-33)

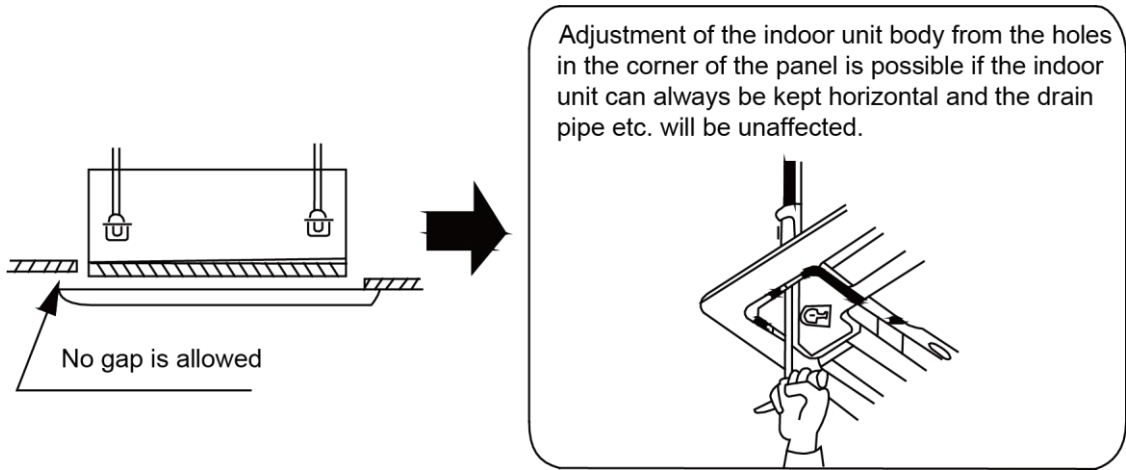


Figure 3-1-33

(9) Wire the swing flap motor as shown in Figure 3-1-34.

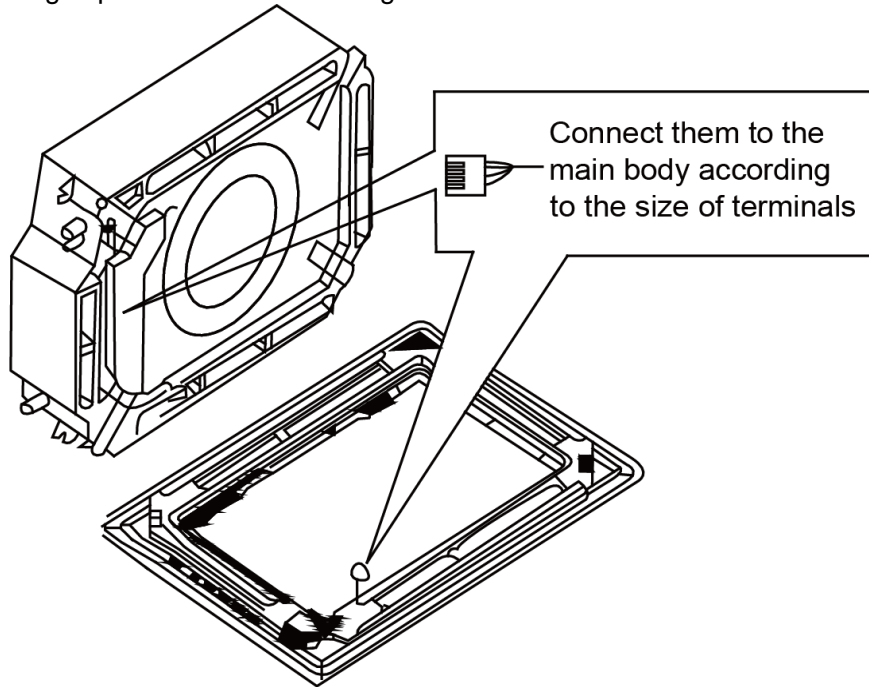


Figure 3-1-34

1.2.7 Dimension Data

For the units: 18k

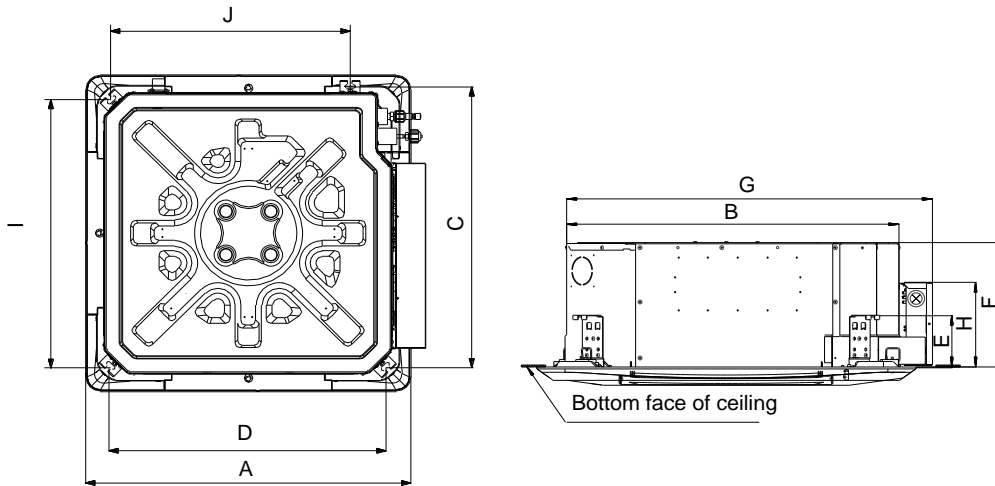


Figure 3-1-35
Table 3-1-7

Item / Model	A	B	C	D	E	F	G	H	I	J
GKH12K3HI	670	595	599	562	135	240	665	234	562	491
GKH18K3HI	670	595	599	562	135	240	665	234	562	491

For the units: 24~60K

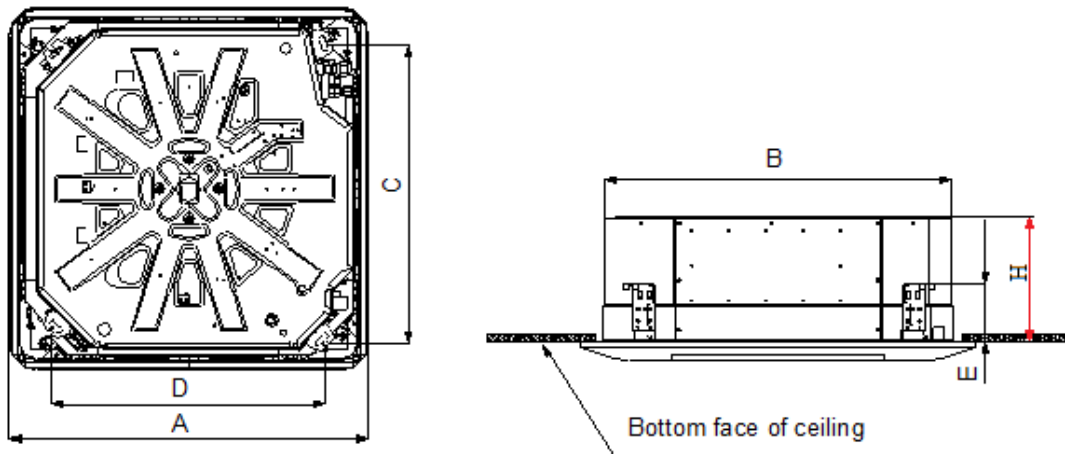


Figure 3-1-36

Table 3-1-8

Item / Model	A	B	C	D	E	H
GKH24K3HI	950	840	784	728	155	240
GKH30K3HI						
GKH36K3HI	950	840	740	732	155	320
GKH42K3HI						
GKH48K3HI						
GKH60K3HI	950	840	775	700	155	290

1.2.8 Installation of Drain Piping

- (1) Keep piping as short as possible and slope it downwards at a gradient of at least 1/100 so that air may not remain trapped inside the pipe.
- (2) Keep pipe size equal to or greater than that of the connecting pipe.
- (3) Install the drain piping as shown and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.

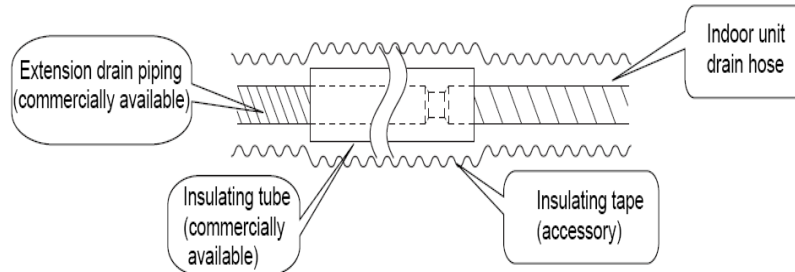


Figure 3-1-37

1.2.9 Installing the Drain Pipes

- (1) Insert the drain pipe to the drain outlet of the unit and then tighten the clamp securely with tape.
- (2) Connect the extension drain pipe to the drain pipe and then tighten the clamp with tape.

<p>Insulate the pipe clamp and the drain hose using heat insulation sponge.</p> <ul style="list-style-type: none"> ①. Metal clamp ②. Drain hose (accessory) ③. Grey tape (accessory) 	<p>During the installation, distance from soft drain pipe to the gasket is $15\pm 3\text{mm}$ when the bolt is tightened. It is not allowed to apply PVC or other related glue in the joints of two ends of drain pipe.</p> <ul style="list-style-type: none"> ①. Metal clamp (accessory) ②. Insulation sponge (accessory)

- (3) When unifying multiple drain pipes, install the pipes as Figure 3-1-38. Select converging drain pipes whose gauge is suitable for the operating capacity of the unit. (take the cassette type unit for example)

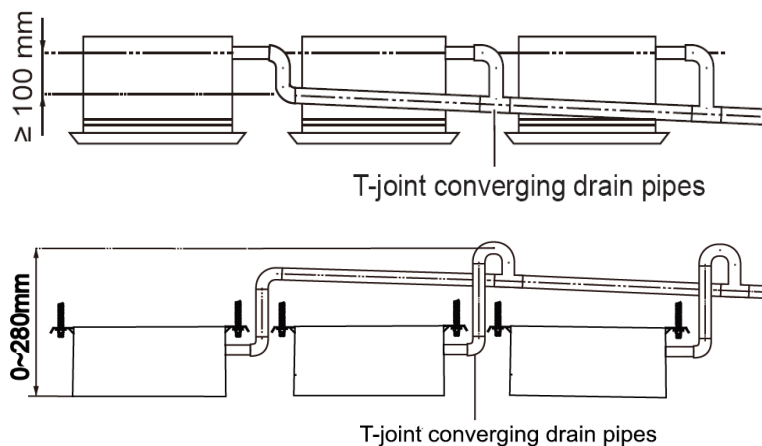


Figure 3-1-38

- (4) When the drain hose cannot keep a sufficient gradient, it is necessary to fit a riser pipe (field supplied) to it.

(5) If the air flow of indoor unit is high, this might cause negative pressure and result in return suction of outdoor air. Therefore, U-type water trap shall be designed on the drainage side of each indoor unit. (Figure 3-1-39)

(6) Install one water trap for each unit.

(7) Installation of water trap shall consider easy cleaning in the future.

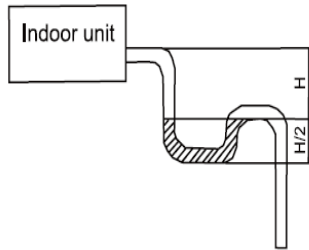


Figure 3-1-39

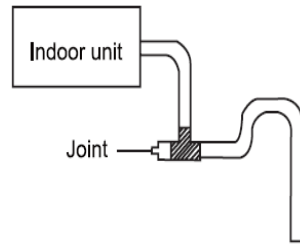


Figure 3-1-40

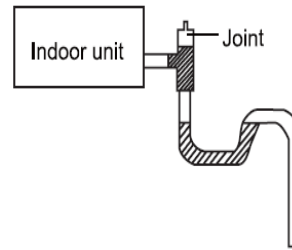


Figure 3-1-41

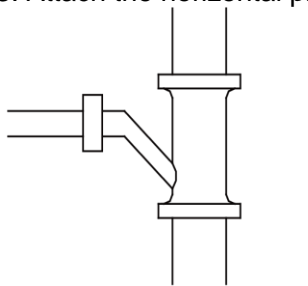
(8) Connection of drainage branch pipe to the standpipe or horizontal pipe of drainage main pipe

The horizontal pipe cannot be connected to the vertical pipe at a same height. It can be connected in a manner as shown below:

NO.1: Attach the 3-way connection of the drainage pipe joint as shown in Figure 3-1-42.

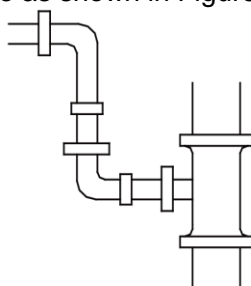
NO.2: Attach the drain elbow as shown in Figure 3-1-43.

NO.3: Attach the horizontal pipe as shown in Figure 3-1-44.



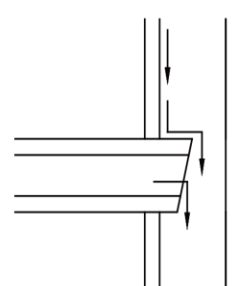
3-way connection of drainage pipe joint

Figure 3-1-42



Connection of drain elbow

Figure 3-1-43



Connection of horizontal pipe

Figure 3-1-44

1.2.10 Precautions When Doing Riser Piping Work

(1) Make sure that heat insulation work is executed on the following 2 spots to prevent any possible water leakage due to dew condensation.

- 1) Connect the drain hose to the drain lift pipe, and insulate them.
- 2) Connect the drain hose to the drain outlet on the indoor unit, and tighten it with the clamp.

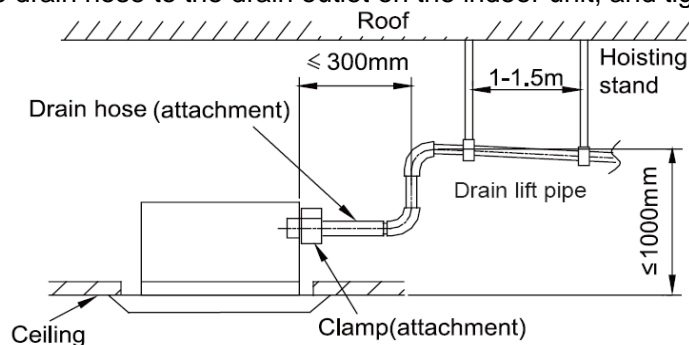


Figure 3-1-45

- (2) Make sure the lift pipe is at most 280 mm.
- (3) Stand the lift pipe vertically, and make sure it is not further than 300 mm from the base of the drain outlet.
- (4) Secure a downward gradient of 1/100 or more for the drain pipe. To accomplish this, mount supporting brackets at an interval of 1-1.5m.

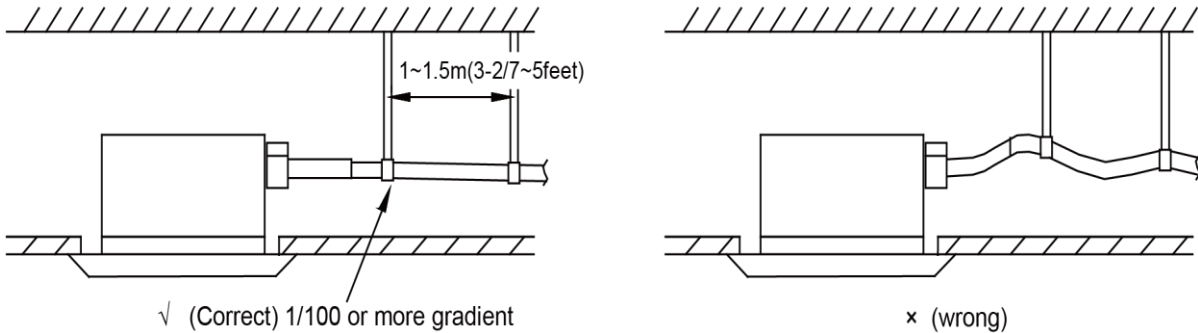


Figure 3-1-46

- (5) The incline of attached drain hose should be 75 mm or less so that the drain outlet does not have to withstand additional force.

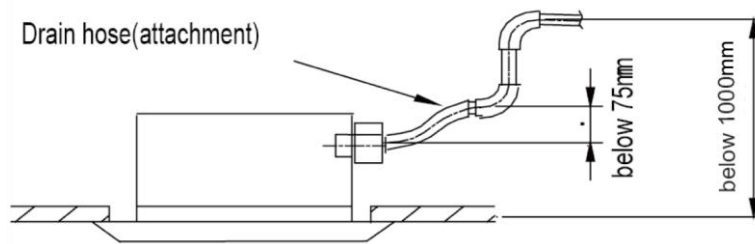


Figure 3-1-47

1.2.11 Testing of Drain Piping

After piping work is finished, check if drainage flows smoothly. Shown in the Figure 3-1-48, Add approximately 1liter of water slowly into the drain pan and check drainage flow during COOL running.

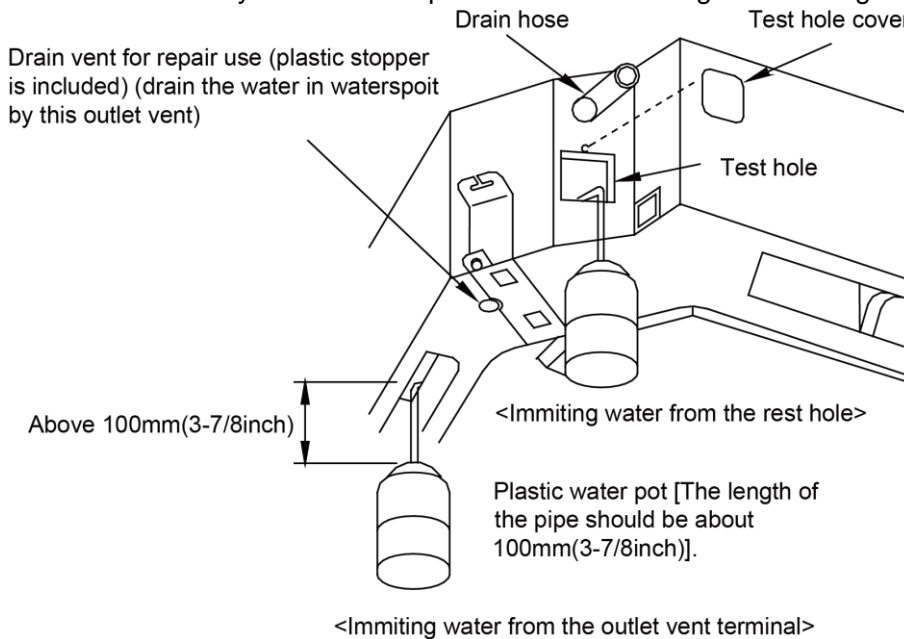


Figure 3-1-48

1.3 Installation of Floor Ceiling Type

1.3.1 Before Installation

After receiving the machine, please check for any transport damage. If finding any surface or internal damage, please immediately report to the transport company or equipment company in writing.

After receiving the machine, please check the unit and accessories in reference to the packing list. Ensure that the model is correct and the machine is in good condition. Please also check if the specification and quantity of accessory parts are correct.

Determine the correct handling route and methods, thus to avoid damaging the unit or causing possible hazard. For the sake of protection and safety, it is suggested to move the unit with the packaging box. Even though it is not permitted to do like this under special occasions, do not remove the packaging box, thus to avoid loosening or falling during handling.

Confirm if the installing foundation is solid. When this unit is to be installed on the metal section of the building, make sure that the electrical insulation must comply with applicable standards.

Ensure that the place of installation is far from the area where the inflammable or explosive substances are stored, thus to avoid possible explosion or fire due to leakage.

1.3.2 Installation Site

- (1) Install the unit at a place where is strong enough to withstand the weight of the unit.
- (2) The air inlet and outlet of the unit should never be clogged so that the airflow can reach every corner of the room.
- (3) Leave service space around the unit as required in Figure 3-1-49.

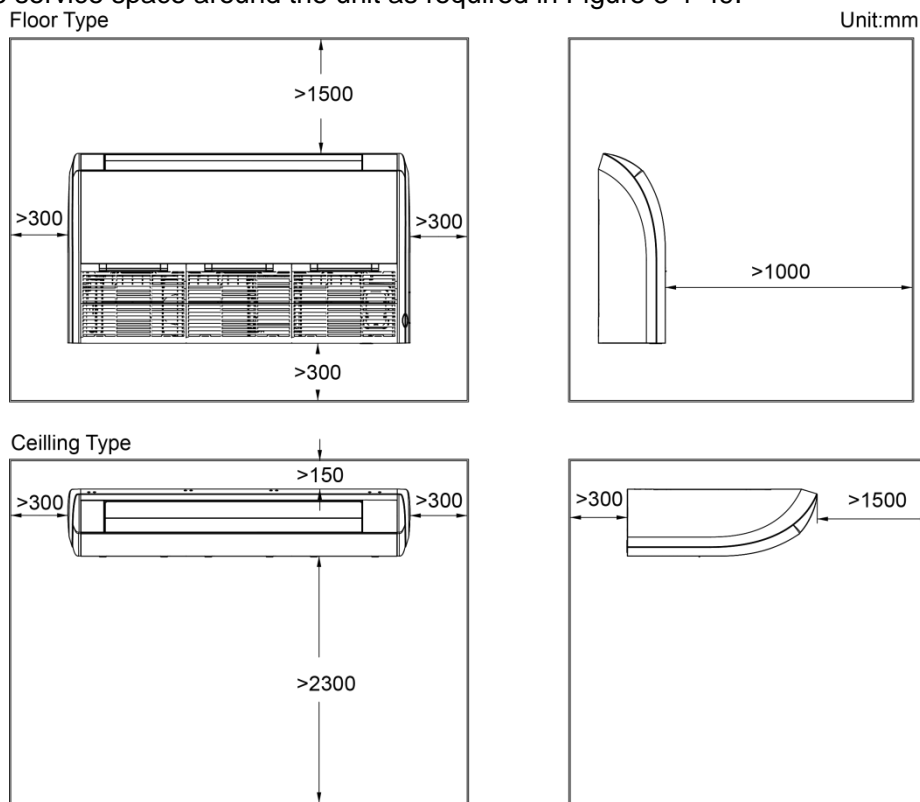


Figure 3-1-49

- (4) Install the unit where the drain pipe can be easily installed.
- (5) The space from the unit to the ceiling should be kept as much as possible so as for more

convenient service.

1.3.3 Indoor Unit Installation

- (1) Determine the location of the hanger through the paper template, and then remove the paper template.

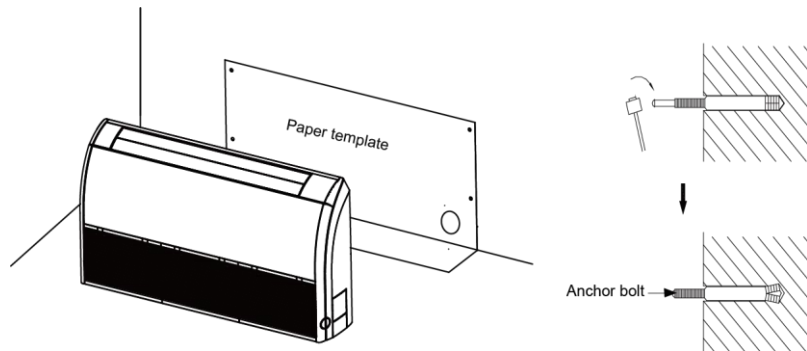


Figure 3-1-50

- (2) Insert the anchor bolts into the drilled holes, and drive the pins completely into the anchor bolts with a hammer.
- (3) Remove the right and left side panels.
- (4) Put the hanger bolt into the clasp of the indoor unit and tighten screws on the hanger to prevent the indoor unit from moving.
- (5) Adjust the height of the unit to make the drain pipe slant slightly downward so that the drainage will become much smoother.

◆ Floor type

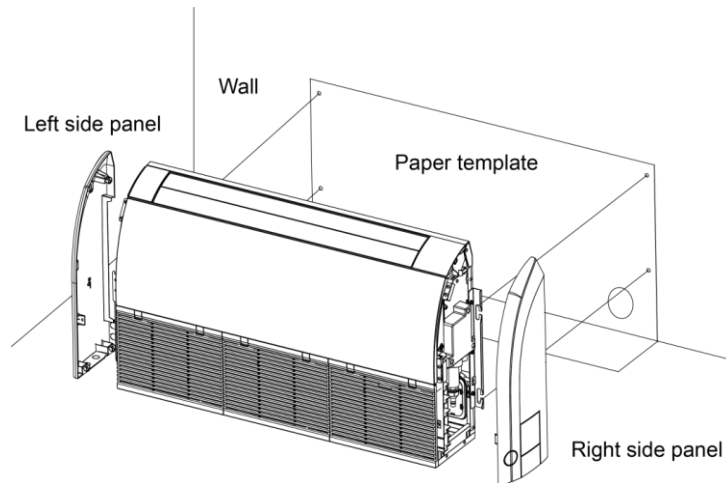


Figure 3-1-51

◆ Ceiling type

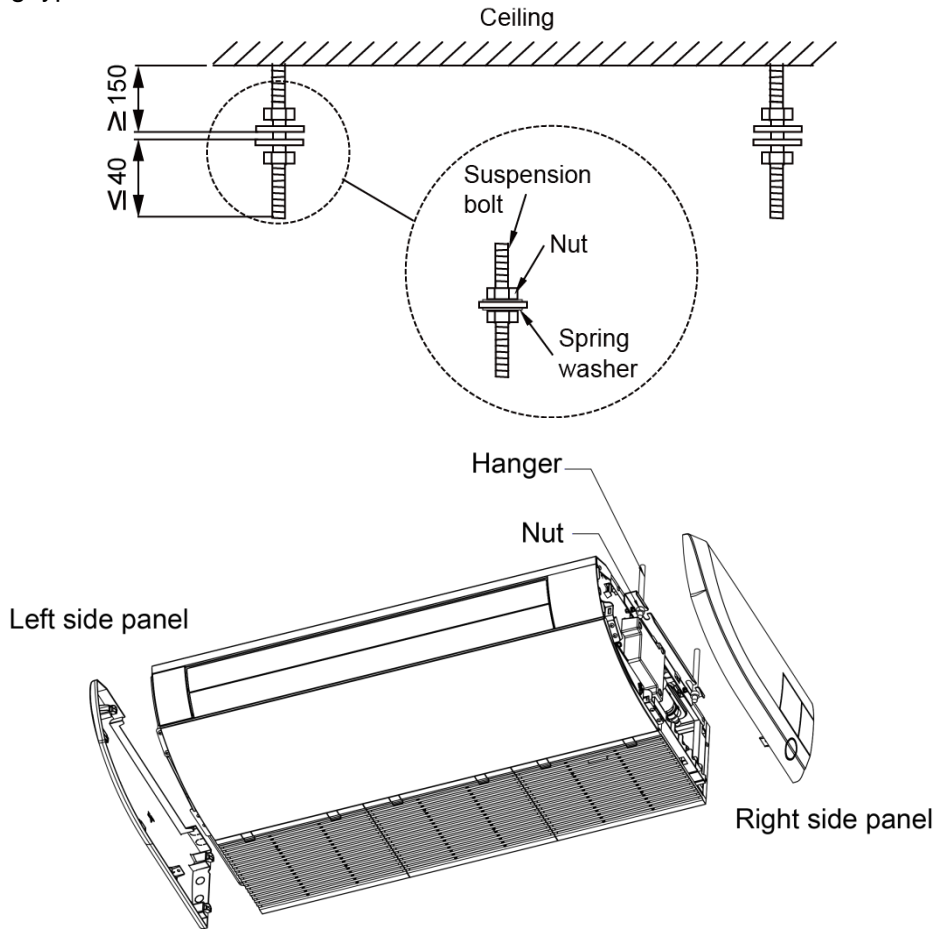


Figure 3-1-52

(6) Reinstall and tighten the right and left side panel.

1.3.4 Leveling

The water level test must be done after installing the indoor unit to make the unit is horizontal, as shown below.

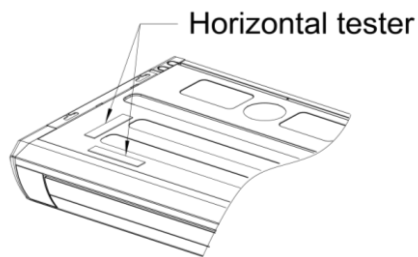


Figure 3-1-53

1.3.5 Dimension Data

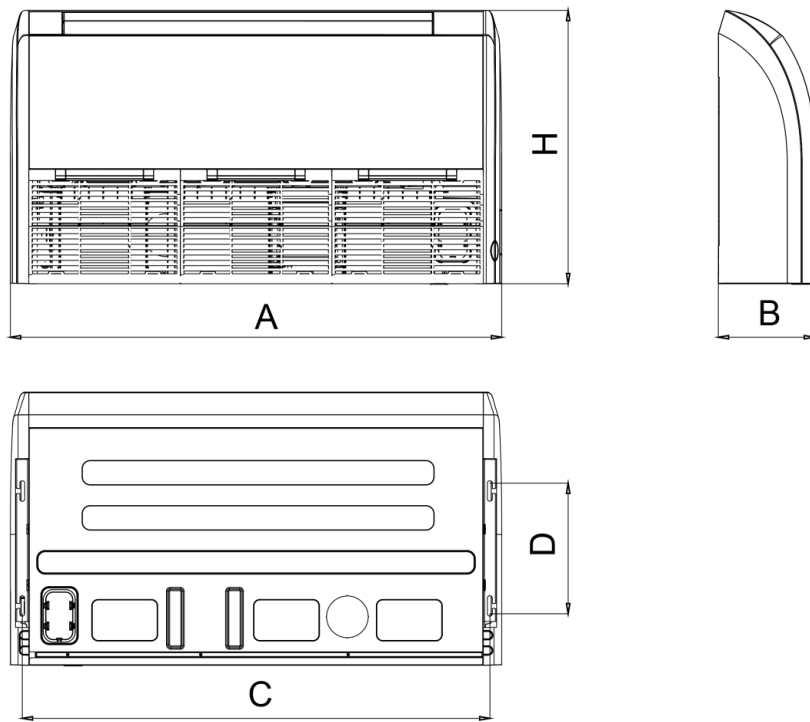


Figure 3-1-54
Table 3-1-9

Unit: mm

Model	A	B	C	D	H
GTH12K3HI	870	235	812	318	665
GTH18K3HI	1200	235	1142	318	665
GTH24K3HI					
GTH30K3HI					
GTH36K3HI					
GTH42K3HI	1570	235	1512	318	665
GTH48K3HI					
GTH60K3HI					

1.3.6 Drain Piping Work

1.3.6.1 Precautions When Doing the Piping Work

- (1) Keep piping as short as possible and slope it downwards at a gradient of at least 1/100 so that air may not remain trapped inside the pipe.
- (2) Keep pipe size equal to or greater than that of the connecting pipe.
- (3) Install the drain piping as shown and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.

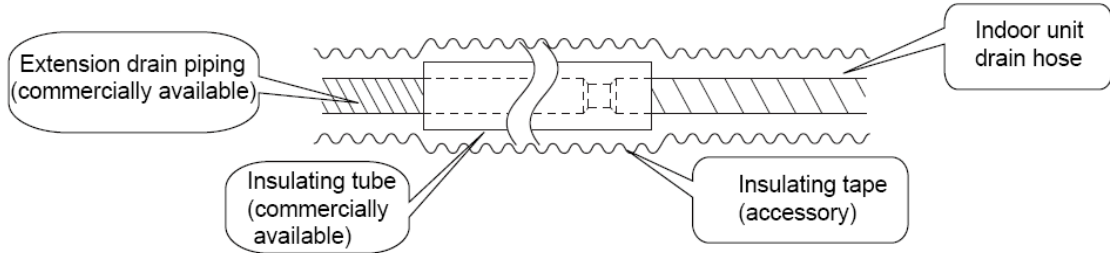


Figure 3-1-55

- (4) Connect the drain hose. (Figure 3-1-56)

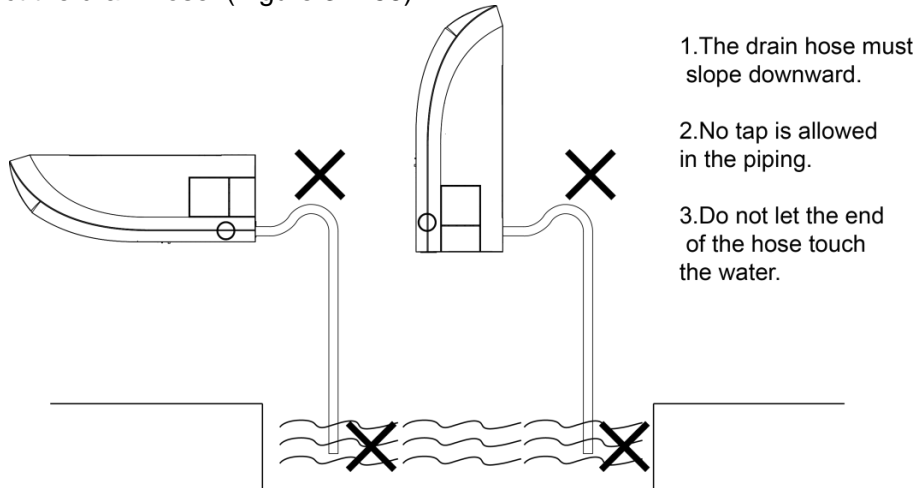


Figure 3-1-56

1.3.6.2 Installing the Drain Pipes

- (1) For determining the position of the drain hose, perform the following procedures.
- (2) Insert the drain pipe to the drain outlet of the unit and then tighten the clamp securely with tape. (Figure 3-1-57)
- (3) Connect the extension drain pipe to the drain pipe and then tighten the clamp with tape.

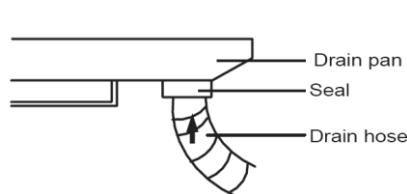


Figure 3-1-57

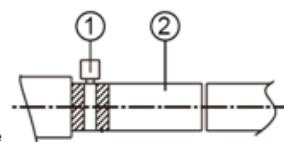


Figure 3-1-58

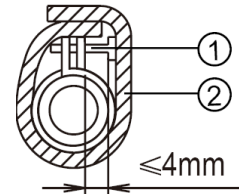


Figure 3-1-59

Tighten the clamp until the screw head is less than 4 mm from the hose. (Figure 3-1-58)

①- Metal clamp ②- Drain hose.

Insulate the pipe clamp and the drain hose using heat insulation sponge. (Figure 3-1-59)

①- Metal clamp ②- Insulation sponge.

(4) When drain hose requires extension, obtain an extension hose commercially available.

(5) After connecting the local drain hose, tape the slits of the heat insulation tube.

(6) Connect the drain hose to the local drain pipe. Position the inter connecting wire in the same direction as the piping.

1.3.6.3 Connecting the Drain Hose

(1) Connect the extension auxiliary pipe to the local piping.

(2) Prepare the local piping at the connection point for the drain pipe, as shown in the installation drawings.

Note: Be sure to place the drain hose as shown in the diagram below, in a downward sloping direction.

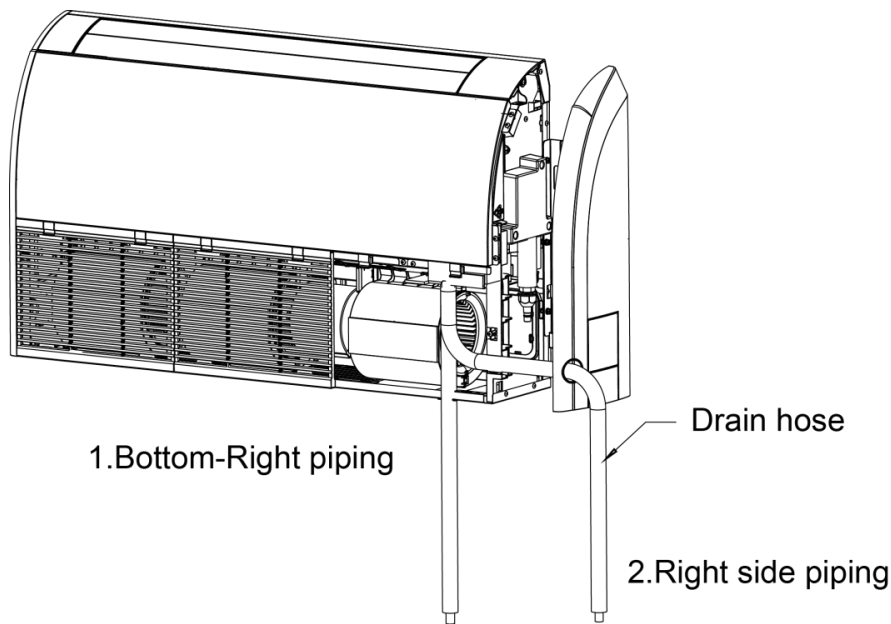


Figure 3-1-60

1.2.6.4 Testing of Drain Piping

(1) After piping work is finished, check if drainage flows smoothly.

(2) As shown in the figure, pour water into the drain pan from the right side to check that water flows smoothly from the drain hose.

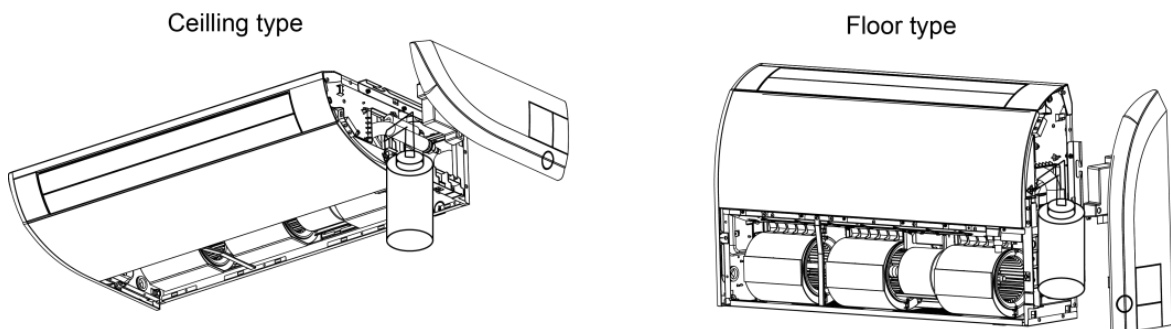


Figure 3-1-61

2 OUTDOOR UNIT INSTALLATION

2.1 Before Installation

After receiving the machine, please check for any transport damage. If finding any surface or internal damage, please immediately report to the transport company or equipment company in writing.


After receiving the machine, please check the unit and accessories in reference to the packing list. Ensure that the model is correct and the machine is in good condition. Please also check if the specification and quantity of accessory parts are correct.

Determine the correct handling route and methods, thus to avoid damaging the unit or causing possible hazard. For the sake of protection and safety, it is suggested to move the unit with the packaging box. Even though it is not permitted to do like this under special occasions, do not remove the packaging box, thus to avoid loosening or falling during handling.

Confirm if the installing foundation is solid. When this unit is to be installed on the metal section of the building, make sure that the electrical insulation must comply with applicable standards.

Ensure that the place of installation is far from the area where the inflammable or explosive substances are stored, thus to avoid possible explosion or fire due to leakage.

2.2 Installation Site

 WARNING
①. Install the unit where it will not be tilted by more than 5°.
②. During installation, if the outdoor unit has to be exposed to strong wind, it must be fixed securely.

If possible, do not install the unit where it will be exposed to direct sunlight. (If necessary, install a blind that does not interfere with the air flow.)

- (1) Install the outdoor unit in a place where it will be free from being dirty or getting wet by rain as much as possible.
- (2) Install the outdoor unit where it is convenient to connect with the indoor unit.
- (3) Install the outdoor unit where the condensate water can be drained out freely during heating operation.
- (4) Do not place animals and plants in the path of the warm air.
- (5) Take the air conditioner weight into account and select a place where noise and vibration are small.
- (6) Install the outdoor unit where is capable of withstanding the weight of the unit and generates as less noise and vibration as possible.
- (7) Provide the space shown in Figure 3-2-1, so that the air flow is not blocked. Also for efficient operation, leave three of four directions of peripheral constructions open.

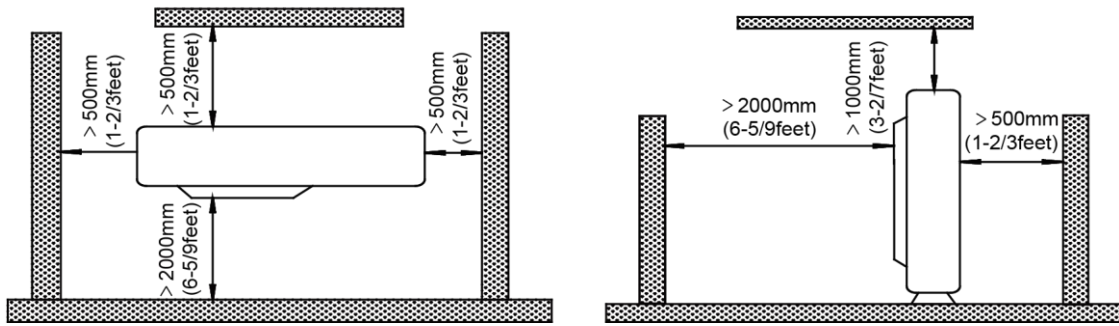


Figure 3-2-1

2.3 Caution for Installation

The outdoor unit shall be so installed that the air discharged out of the outdoor unit will not flow back and that enough space shall be maintained around the machine for repair;

The installing position shall be in good ventilation, so that the machine can breathe and exhaust enough air. Ensure that there is no obstruction at the inlet and outlet of the machine. If any, please remove the obstructions blocking the air inlet and outlet.

If the outdoor unit is installed on concrete or solid ground, it shall be fixed by using M10 bolts and nuts. And ensure that the machine is kept vertical and horizontal.

The outdoor unit must be lifted by using the designated lift hole. During lifting, take care to protect the air conditioner and avoid knocking the metal parts, thus to prevent rusting in the future.

To meet the noise and vibration requirements, the outdoor unit shall be installed by using rubber damping pad or spring damper.

To install the drainage pipe, please insert the drainage joint to the drainage hole on the outdoor chassis and connect a drainage pipe on the drainage joint. (The installing height of outdoor unit shall be at least 5cm if drainage joint is to be used).

To insert the pipe through the wall, the wall-cross tube must be installed.

The installing dimension shall comply with the installation requirements in these instructions. The outdoor unit must be fixed at the installing position.

The installation shall be done by specialist technicians.

2.4 Dimension Data

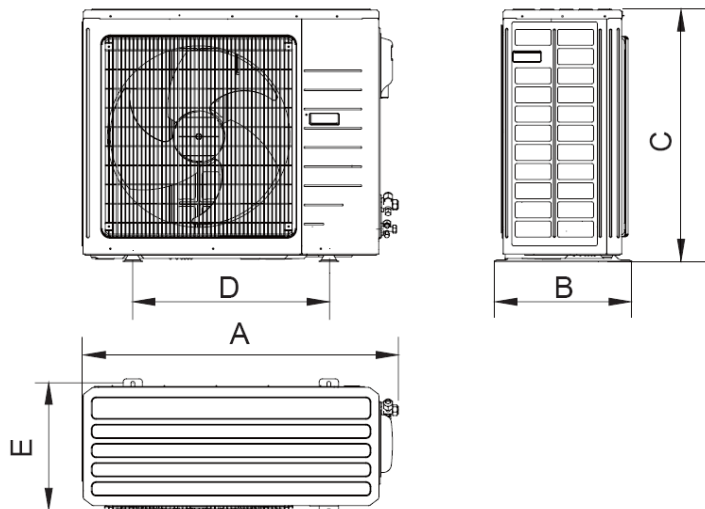


Figure 3-2-2

Table 3-2-1

Unit: mm

Model \ Item	A	B	C	D	E
GUHN12NK3HO	848	320	540	540	286
GUHN18NK3HO	955	395	700	560	360
GUHN24NK3HO					
GUHN30NK3HO	980	425	790	610	395
GUHN36NM3HO					
GUHN42NM3HO	1120	440	1100	631	400
GUHN48NM3HO	1120	440	1100	631	400
GUHN60NM3HO	980	410	1350	572	376

3 REFRIGERATION PIPING WORK

3.1 Refrigeration Piping Work Procedures and Caution in Connecting

3.1.1 Flare Processing

- (1) Cut the connection pipe with the pipe cutter and remove the burrs.
- (2) Hold the pipe downward to prevent cuttings from entering the pipe.
- (3) Remove the flare nuts at the stop valve of the outdoor unit and inside the accessory bag of the indoor unit, then insert them to the connection pipe, after that, flare the connection pipe with a flaring tool.
- (4) Check if the flare part is spread evenly and there are no cracks (see Figure 3-2-3).

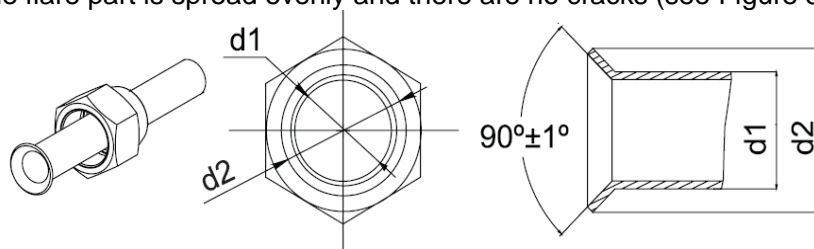


Figure 3-2-3

3.1.2 Bending Pipes

- (1) The pipes are shaped by your hands. Be careful not to collapse them.

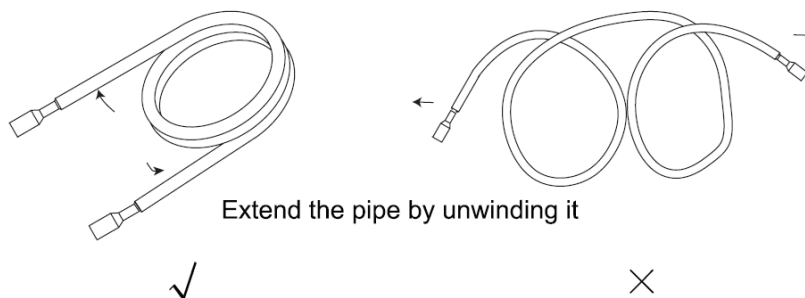


Figure 3-2-4

- (2) Do not bend the pipes in an angle more than 90°.
- (3) When pipes are repeatedly bent or stretched, the material will harden, making it difficult to bend or stretch them any more. Do not bend or stretch the pipes more than three times.
- (4) When bending the pipe, do not bend it as is. The pipe will be collapsed. In this case, cut the heat insulating pipe with a sharp cutter as shown in Figure 3-2-5, and bend it after exposing the pipe. After bending the pipe as you want, be sure to put the heat insulating pipe back on the pipe, and secure it with tape.

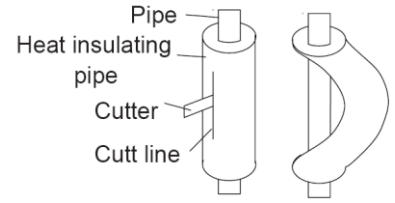


Figure 3-2-5

CAUTION!

- ①. To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 150 mm or over.
- ②. If the pipe is bent repeatedly at the same place, it will break.

3.1.3 Connecting the Pipe at the Indoor Unit Side

Detach the caps and plugs from the pipes.

CAUTION!

- ①. Be sure to apply the pipe against the port on the indoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.
- ②. Do not remove the flare nut until the connection pipe is to be connected so as to prevent dust and impurities from coming into the pipe system.

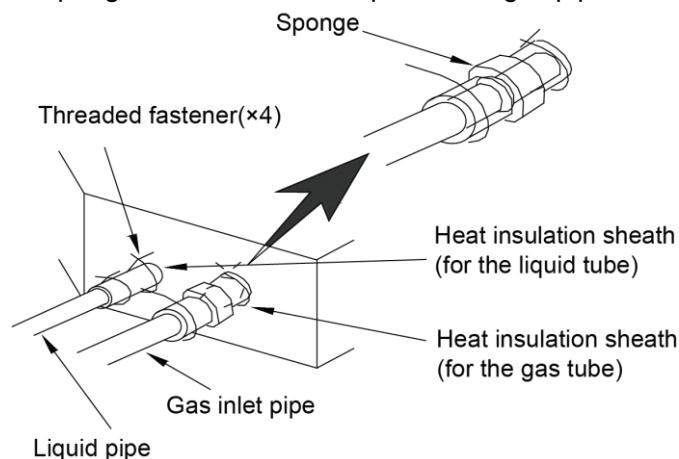
When connecting the pipe to the unit or removing it from the unit, please do use both the spanner and the torque wrench. (Figure 3-2-6)

When connecting, smear both inside and outside of the flare nut with refrigeration oil, screw it hand tight and then tighten it with the spanner.

Refer to Table 10 to check if the wrench has been tightened properly (too tight would mangle the nut and lead to leakage).

Examine the connection pipe to see if it leaks, then take the treatment of heat insulation, as shown in the Figure 3-2-6.

Use the medium-sized sponge to insulate the coupler of the gas pipe.



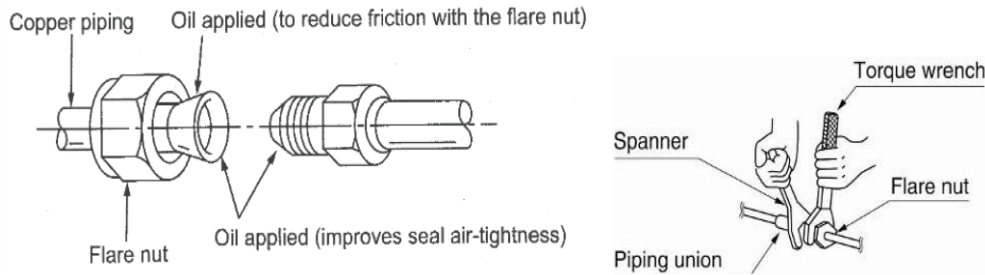


Figure 3-2-6

Table 3-2-2 Flare nut tightening torque

Pipe Diameter	Tightening Torque
1/4" (Inch)	15-30 (N·m)
3/8" (Inch)	35-40 (N·m)
1/2" (Inch)	45-50 (N·m)
5/8" (Inch)	60-65 (N·m)
3/4" (Inch)	70-75 (N·m)
7/8" (Inch)	80-85 (N·m)



CAUTION!

Be sure to connect the gas pipe after connecting the liquid pipe completely.

3.1.4 Connecting the Pipe at the Outdoor Side Unit

Tighten the flare nut of the connection pipe at the outdoor unit valve connector. The tightening method is the same as that as at the indoor side.

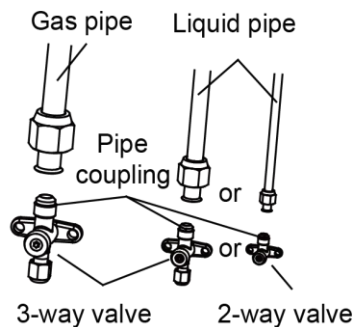


Figure 3-2-2

3.1.5 Checking the Pipe Connections for Gas Leaking

For both indoor and outdoor unit side, check the joints for gas leaking by the use of a gas leakage detector without fail when the pipes are connected.

3.1.6 Heat Insulation on the Pipe Joints (Indoor Side Only)

Stick coupler heat insulation (large and small) to the place where connecting pipes.

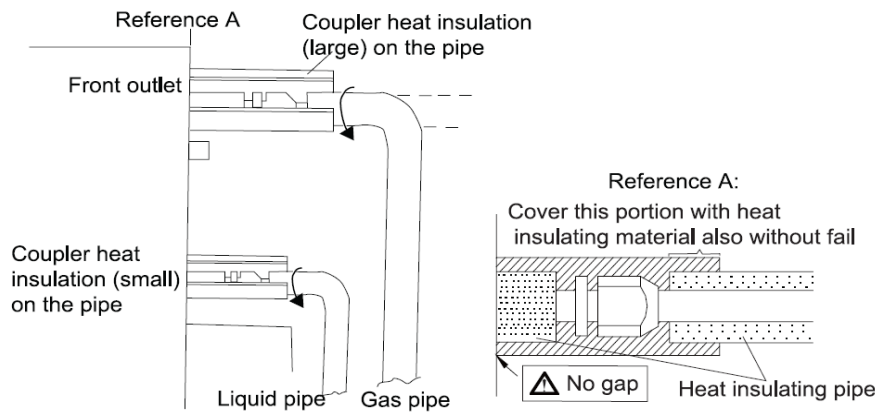


Figure 3-2-3

3.1.7 Vacuum and Gas Leakage Inspection



Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation! There is no extra refrigerant in the outdoor unit for air purging!

3.1.7.1 Vacuum

- (1) Remove the caps of the liquid valve, gas valve and also the service port.
- (2) Connect the hose at the low pressure side of the manifold valve assembly to the service port of the unit's gas valve, and meanwhile the gas and liquid valves should be kept closed in case of refrigerant leak.
- (3) Connect the hose used for evacuation to the vacuum pump.
- (4) Open the switch at the lower pressure side of the manifold valve assembly and start the vacuum pump. Meanwhile, the switch at the high pressure side of the manifold valve assembly should be kept closed, otherwise evacuation would fail.
- (5) The evacuation duration depends on the unit's capacity, generally, 20 minutes for the 18k units, 30 minutes for the 24/30/36k units, 45 minutes for the 42/48/60k units. And verify if the pressure gauge at the low pressure side of the manifold valve assembly reads -1.0Mp (-75cmHg), if not, it indicates there is leak somewhere. Then, close the switch fully and then stop the vacuum pump.
- (6) Wait for some time to see if the system pressure can remain unchanged, 5 minutes for the 18K~24k units, 10 minutes for the units more than 36K~60k. During this time, the reading of the pressure gauge at the low pressure side can not be larger than 0.005Mp (0.38cmHg).
- (7) Slightly open the liquid valve and let some refrigerant go to the connection pipe to balance the pressure inside and outside of the connection pipe, so that air will not come into the connection pipe when removing the hose. Note that the gas and liquid valve can be opened fully only after the manifold valve assembly is removed.
- (8) Place back the caps of the liquid valve, gas valve and also the service port.

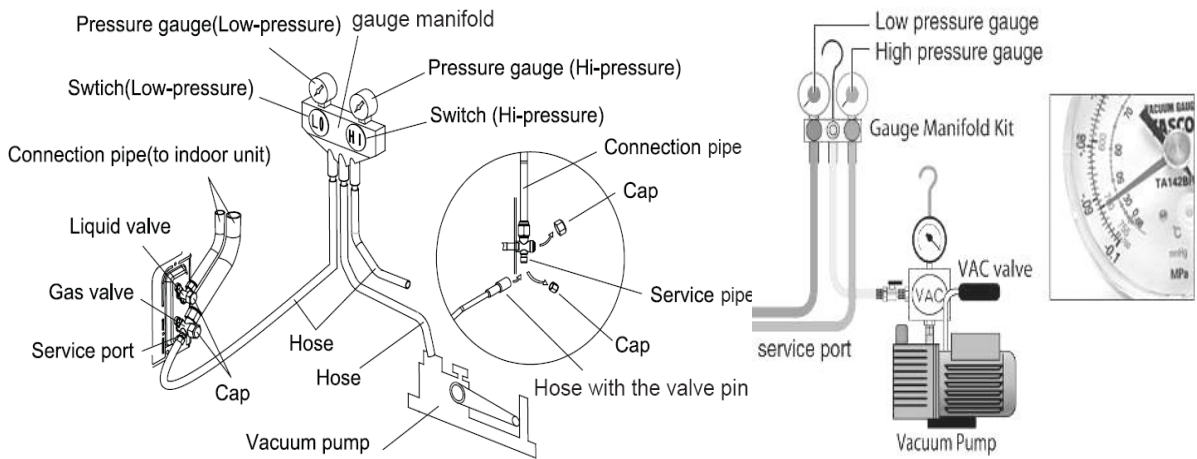


Figure 3-2-4

Note: For the large-sized unit, it has the service port for both the gas valve and the liquid valve. During evacuation, it is available to connect two hoses of the manifold valve assembly to two service ports to quicken the evacuating speed.

3.1.7.2 Additional Charge

Refrigerant suitable for a piping length of 5m is charged in the 12~48k outdoor unit at the factory, and for 60k outdoor unit refrigerant is charged for a piping length of 7.5m.

When the piping of 12~48k unit is longer than 7.0m or the piping of 60k unit is longer than 9.5m, additional charging is necessary.

For the additional amount, see Table 3-2-3.

Table 3-2-3

Units	Item	Standard Pipe Length	Unnecessary Charge Pipe Length	Additional Refrigerant Amount for Extra Pipe
12k		5.0m	≤7.0m	10 g/m
18k		5.0m	≤7.0m	18 g/m
24~36k		5.0m	≤7.0m	54 g/m
42~48k		5.0m	≤7.0m	90 g/m
60k		7.5m	≤9.5m	90 g/m

When the height difference between the indoor unit and outdoor unit is larger than 10 meters, an oil bend should be employed for every 6 meters.

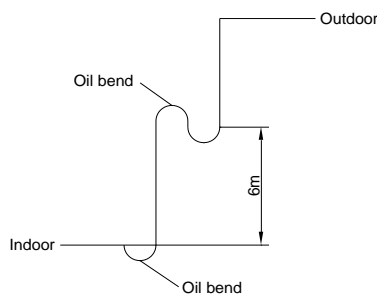


Figure 3-2-5

3.2 Specification of Connection Pipe

Table 3-2-4

Item Model	Size of Fitting Pipe(Inch)		Max. Pipe Length (m)	Max. Height Difference between Indoor Unit and Outdoor Unit (m)	Outdoor unit Drainage pipe(Outer Diameter x wall thickness) (mm)
	Liquid	Gas			
GUHN12NK3HO	1/4	1/2	20	15	Φ16X2.0
GUHN18NK3HO	1/4	1/2	25	15	Φ16X2.0
GUHN24NK3HO	3/8	5/8	30	15	Φ16X2.0
GUHN30NK3HO	3/8	5/8	30	15	Φ16X2.0
GUHN36NM3HO	3/8	3/4	30	15	Φ16X2.0
GUHN42NM3HO	1/2	3/4	50	30	Φ16X2.0
GUHN48NM3HO	1/2	3/4	50	30	Φ16X2.0
GUHN60NM3HO	1/2	3/4	50	30	Φ16X2.0

The connection pipe should be insulated with proper water-proof insulating material.

The pipe wall thickness shall be 0.5-1.0 mm and the pipe wall shall be able to withstand the pressure of 6.0 MPa. The longer the connecting pipe, the lower the cooling and heating effect performs.

4 ELECTRIC WIRING WORK

4.1 Wiring Precautions



WARNING

- ①. Before obtaining access to terminals, all supply circuits must be disconnected.
- ②. The rated voltage of the unit is as shown as Table 1-4-1 and Table 1-4-2
- ③. Before turning on, verify that the voltage is within the 185~264V range (for single phrase unit) or 342~456V range (for three-phrase unit).
- ④. Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.
- ⑤. Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner.
- ⑥. The special branch circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3 mm between the contacts of each pole.
- ⑦. Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.
- ⑧. Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.



WARNING

- ①. The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.
- ②. When the voltage is low and the air conditioner is difficult to start, contact the power company to raise the voltage.

4.2 Electrical Wiring

(1) For solid core wiring (Figure 3-2-6)

- 1) Cut the wire end with a wire cutter or wire-cutting pliers, and then strip the insulation about 25 mm (15/16").
- 2) Using a screwdriver, remove the terminal screw(s) on the terminal board.
- 3) Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
- 4) Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.

(2) For strand wiring (Figure 3-2-6)

- 1) Cut the wire end with a wire cutter or wire-cutting pliers, and then strip the insulation about 10 mm (3/8").
- 2) Using a screwdriver, remove the terminal screw (s) on the terminal board.
- 3) Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end.
- 4) Position the round terminal wire, and replace and tighten the terminal screw with a screwdriver. (Figure 3-2-7)

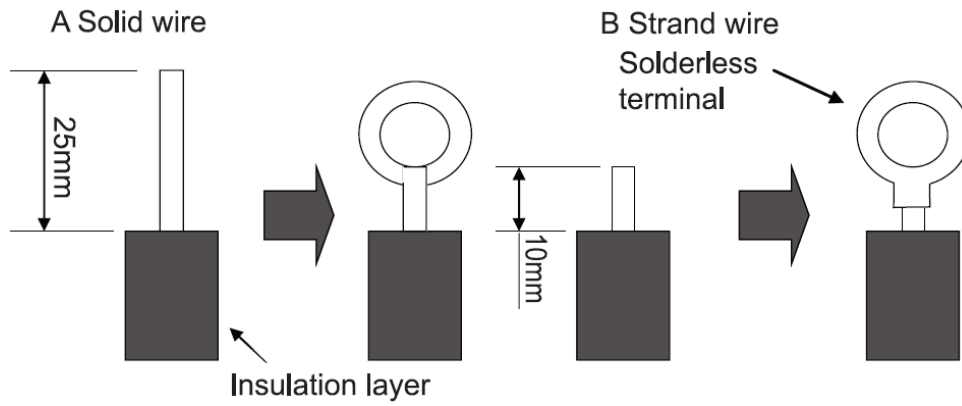


Figure 3-2-6

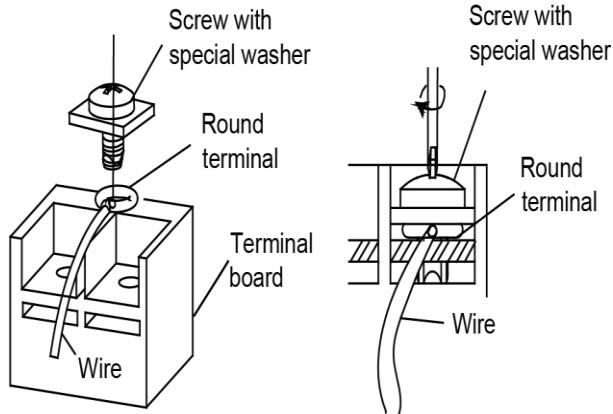


Figure 3-2-7

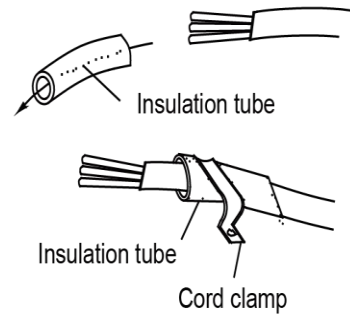


Figure 3-2-8

(3) How to fix connection cord and power cord by cord clamp

After passing the connection cord and power cord through the insulation tube, fasten it with the cord clamp. (Figure 3-2-8)

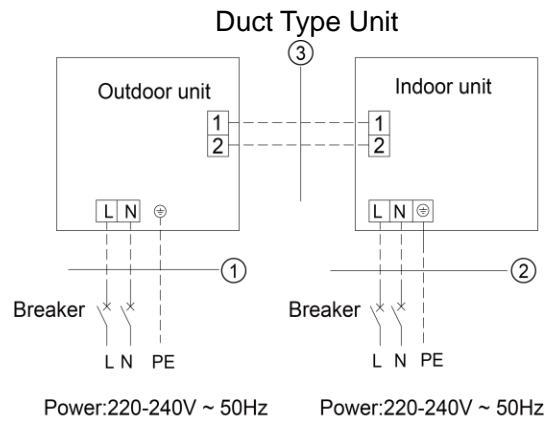


WARNING

①. Before starting work, check that power is not being supplied to the indoor unit and outdoor unit.
②. Match the terminal block numbers and connection cord colors with those of the indoor unit side.
③. Erroneous wiring may cause burning of the electric parts.
④. Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.
⑤. Always fasten the outside covering of the connection cord with cord clamps. (If the insulator is not clamped, electric leakage may occur.)
⑥. Always connect the ground wire.

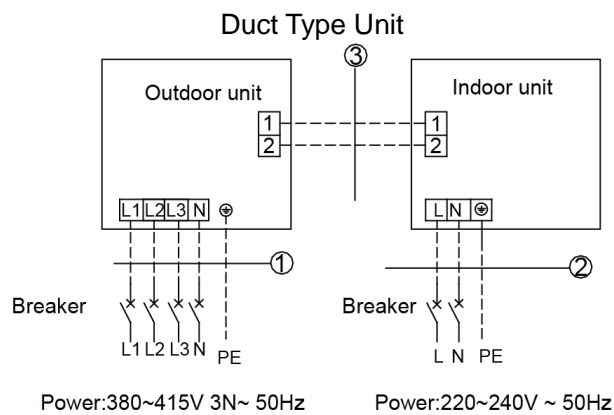
(4) Electric wiring between the indoor and outdoor units

Single-phase units (12~30k)



GUHN12NK3HO + GFH12K3HI/GFH12K3H1 GUHN18NK3HO + GFH18K3HI/GFH18K3H1 ①. Power cord 3x2.5 mm ² (H07RN-F) ②. Power cord 3x1.0 mm ² (H05VV-F) ③. Communication Cords 2x0.75 mm ² (H05VV-F)
GUHN24NK3HO + GFH24K3HI/GFH24K3H1 GUHN30NK3HO + GFH30K3HI/GFH30K3H1 ①. Power cord 3x4.0 mm ² (H07RN-F) ②. Power cord 3x1.0 mm ² (H05VV-F) ③. Communication Cords 2x0.75 mm ² (H05VV-F)

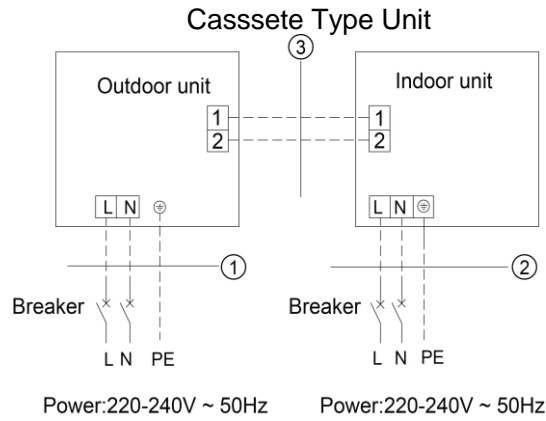
Three -phase units (36~60k)



GUHN36NM3HO + GFH36K3HI/GFH36K3H1 ①. Power cord 5x1.5 mm ² (H07RN-F) ②. Power cord 3x1.0 mm ² (H05VV-F) ③. Communication Cords 2x0.75 mm ² (H05VV-F)
GUHN42NM3HO + GFH42K3HI/GFH42K3H1 GUHN48NM3HO + GFH48K3HI/GFH48K3H1 GUHN60NM3HO + GFH60K3HI/GFH60K3H1 ①. Power cord 5x2.5 mm ² (H07RN-F) ②. Power cord 3x1.0 mm ² (H05VV-F) ③. Communication Cords 2x0.75 mm ² (H05VV-F)

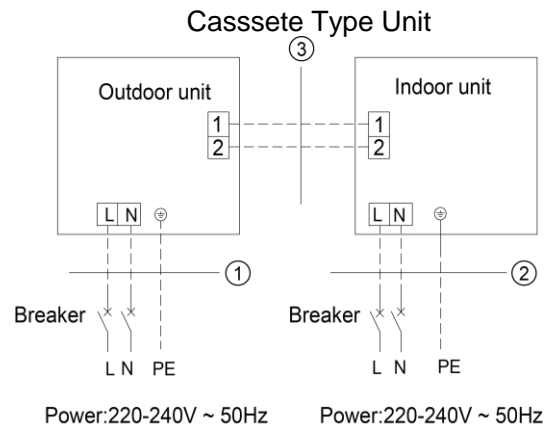
Figure 3-2-9

Single-phase units 12~18k



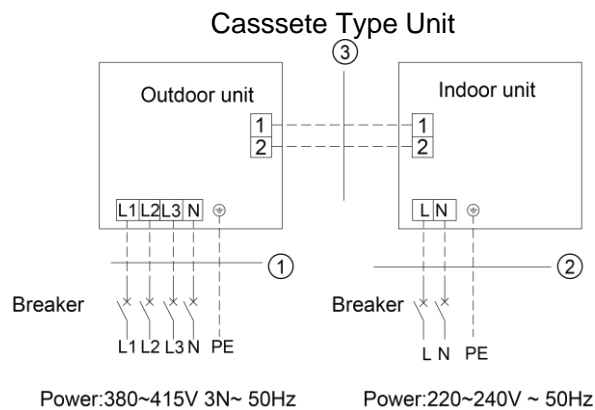
- GUHN12NK3HO + GKH12K3HI
 GUHN18NK3HO + GKH18K3HI
 ①. Power cord 3x2.5 mm² (H07RN-F)
 ②. Power cord 3x1.0 mm² (H05VV-F)
 ③. Communication Cords 2x0.75 mm² (H05VV-F)

Single-phase units (24~30k)



- GUHN24NK3HO + GKH24K3HI
 GUHN30NK3HO + GKH30K3HI
 ①. Power cord 3x4.0 mm² (H07RN-F)
 ②. Power cord 3x1.0 mm² (H05VV-F)
 ③. Communication Cords 2x0.75 mm² (H05VV-F)

Three -phase units (36~60k)

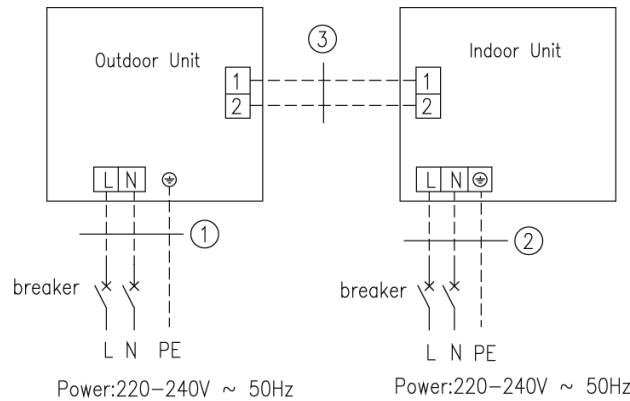


<p>GUHN36NM3HO + + GKH36K3HI</p> <p>①. Power cord 5x1.5 mm² (H07RN-F)</p> <p>②. Power cord 3x1.0 mm² (H05VV-F)</p> <p>③. Communication Cords 2x0.75 mm² (H05VV-F)</p>
<p>GUHN42NM3HO + GKH42K3HI</p> <p>GUHN48NM3HO + GKH48K3HI</p> <p>GUHN60NM3HO + GKH60K3HI</p> <p>①. Power cord 5x2.5 mm² (H07RN-F)</p> <p>②. Power cord 3x1.0 mm² (H05VV-F)</p> <p>③. Communication Cords 2x0.75 mm² (H05VV-F)</p>

Figure 3-2-10

Single-phase units (12~30k)

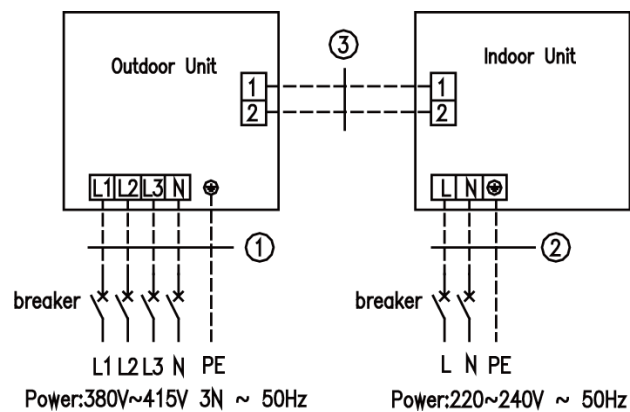
Floor Ceiling Type Unit



<p>GUHN12NK3HO+GTH12K3HI</p> <p>GUHN18NK3HO+GTH18K3HI</p> <p>①. Power cord 3x2.5mm²(H07RN-F)</p> <p>②. Power cord 3x1.0mm²(H05RN-F)</p> <p>③. Communication Cords 2x0.75mm²(H05RN-F)</p>
<p>GUHN24NK3HO+GTH24K3HI</p> <p>GUHN30NK3HO+GTH30K3HI</p> <p>①. Power cord 3x4.0mm²(H07RN-F)</p> <p>②. Power cord 3x1.0mm² (H05RN-F)</p> <p>③. Communication Cords 2x0.75mm² (H05RN-F)</p>

Three-phase units (36~60k)

Floor Ceiling Type Unit



GUHN36NM3HO+GTH36K3HI ①. Power cord 5×1.5mm ² (H07RN-F) ②. Power cord 3×1.0mm ² (H05RN-F) ③. Communication Cords 2×0.75mm ² (H05RN-F)
GUHN42NM3HO+GTH42K3HI GUHN48NM3HO+GTH48K3HI GUHN60NM3HO+GTH60K3HI ①. Power cord 5×2.5mm ² (H07RN-F) ②. Power cord 3×1.0mm ² (H05RN-F) ③. Communication Cords 2×0.75mm ² (H05RN-F)

Figure 3-2-11

(5) Electric wiring of indoor unit side

Remove the electric box cover from the electric box sub-assy and then connect the wire.

Duct Type Unit:

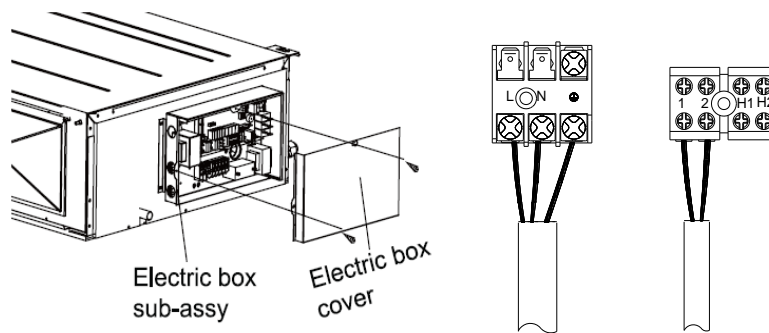


Figure 3-2-12

Cassette Type Unit:

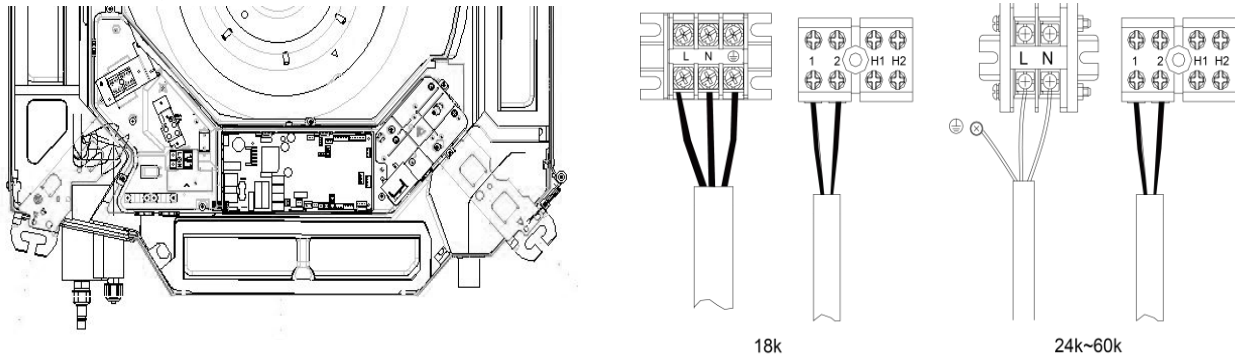


Figure 3-2-13

Floor Ceiling Type Unit:

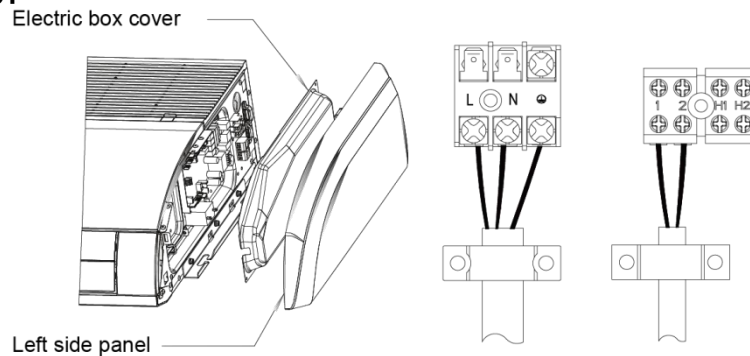


Figure 3-2-14



- ①. The power cord and the wire of the fresh air valve are high-voltage, while the communication cord and connection wire of the wired controller are low-voltage. They should run separately against electromagnetic interference.
- ②. The high-voltage and low-voltage lines should pass through the rubber rings at different electric box covers.
- ③. Do not bundle the connection wire of the wired controller and the communication cord together, or arrange them in parallel, otherwise improper operation would occur.
- ④. The high-voltage and low-voltage lines should be fixed separately and securely, with internal big clamps for the former and small clamps for the latter.
- ⑤. Tighten the indoor/outdoor connection cord and power cord respectively on the terminal boards with screws. Faulty connection may cause a fire.
- ⑥. If the indoor unit connection cord (to the outdoor unit) and power supply are wired incorrectly, the air conditioner may be damaged.
- ⑦. Connect the indoor unit connection cord properly based on the corresponding marks as shown in Figure 3-2-9.
- ⑧. Ground both the indoor and outdoor units by attaching a ground wire.
- ⑨. Unit shall be grounded in compliance with the applicable local and national codes.

(6) Electric wiring of outdoor unit side

Note: When connecting the power supply cord, make sure that the phase of the power supply matches with the exact terminal board. If not, the compressor will rotate reversely and run improperly.

Remove the big handle (12k~36k) /front board (42k~60k) of the outdoor unit and insert the end of the communication cord and the power cable into the terminal board.

Single phase:

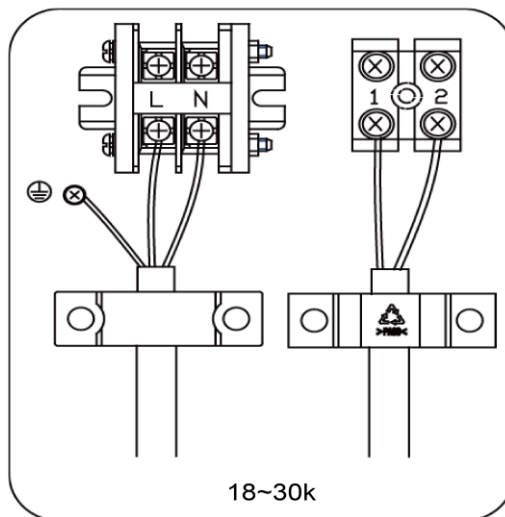


Figure 3-2-13

Three-phase:

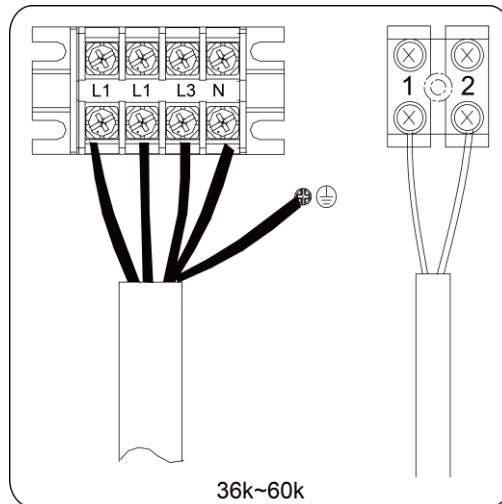


Figure 3-2-14

MAINTENANCE

MAINTENANCE

1 TROUBLE TABLE

1.1 Main Control Malfunction

Table 1 Fault Display on Indoor Wired Controller

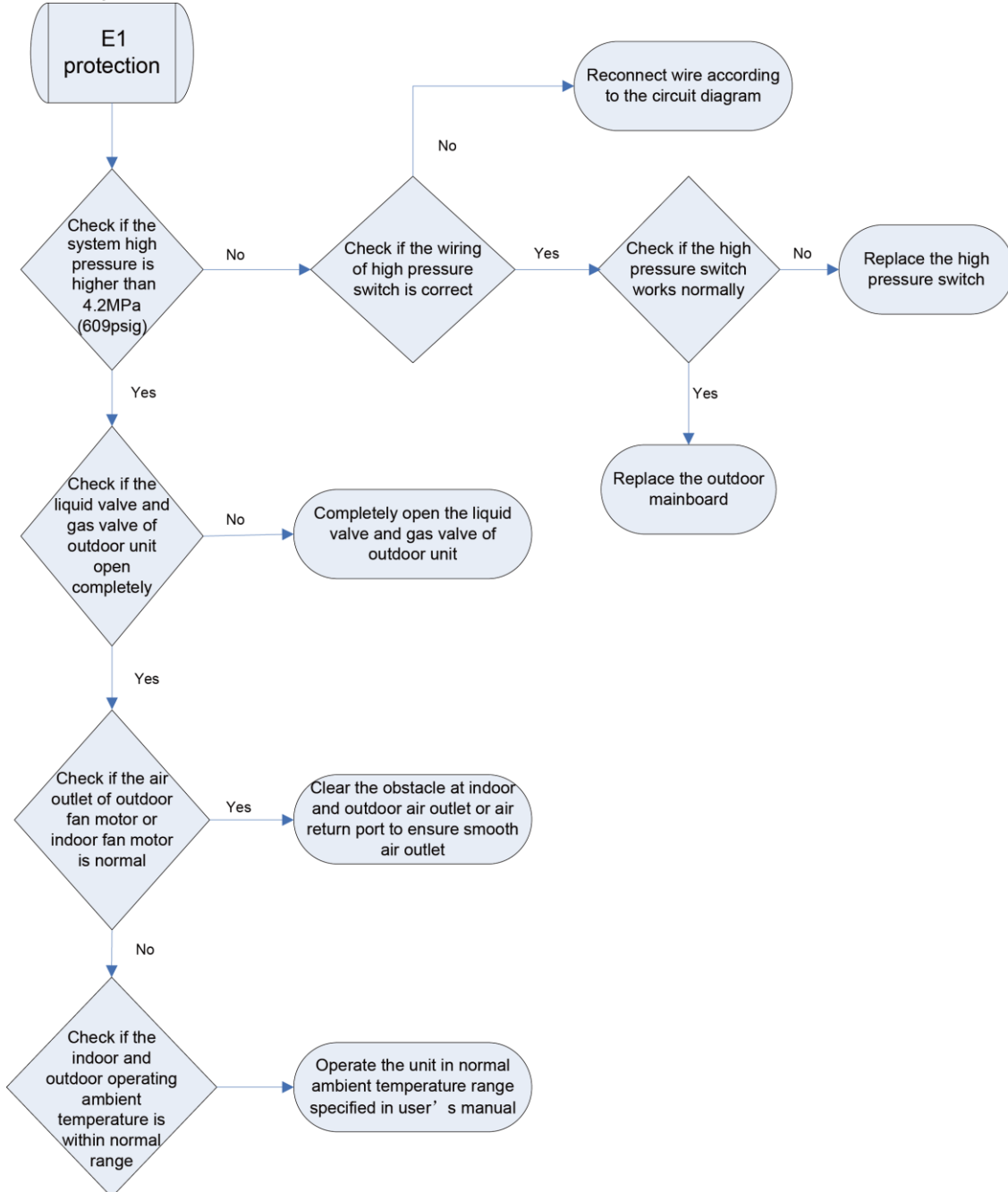
No.	Error code	Malfunction name	Origin of malfunction signal	Control description
1	E1	High pressure protection	High pressure switch	When outdoor unit detects the high pressure switch is cut off for 3s successively, high pressure protection will occur. All the loads (except the 4-way valve in heating mode) will be switched off. In this case, all the buttons and remote control signals except ON/OFF button will be disabled and cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection.
2	E2	Freeze protection	Indoor evaporator temperature sensor	If detecting that the evaporator temperature is lower than protective temp. Value after the unit has been running for a period of time under cooling or dry mode, the unit will report this fault, in which case the compressor and outdoor fan motor will be stopped. The unit will not run until evaporator temperature is higher than the protective temp. value and the compressor is stopped for 3min.
3	E3	Low pressure protection	Low pressure switch	If it is detected within 30s successively that the low-pressure switch is cut off under ON or standby state, the unit will report low pressure protection. If the fault occurs successively 3 times within 30min, the unit cannot be recovered automatically.
		Refrigerant lacking protection	-	If the unit reports system refrigerant lacking within 10min after turning on the unit, the unit will stop operation. If the fault occurs successively 3 times, the unit cannot be recovered automatically.
		Refrigerant recycling mode	-	If enter refrigerant recycling mode through special operation, E3 will be displayed. After exiting refrigerant recycling mode, the code will disappear.
4	E4	Compressor high discharge temperature protection	Compressor discharge temperature is high	If outdoor unit detects that the discharge temperature is higher than protective temp. Value, the unit will report high discharge temperature protection. If the protection occurs over 6 times, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection.
6	E6	Communication malfunction	Communication between indoor and outdoor mainboard	If the outdoor unit does not receive data from indoor unit, communication malfunction will be reported. If there is communication abnormality between display board and indoor unit, communication malfunction will be reported too. If not powering on the outdoor unit, communication malfunction will be reported. (As for the 3 phase Power supply model, if the wrong connection, would be caused communication error.)
9	E9	Full water protection	Water level switch	If cut-off of water level switch is detected for 8s successively once energized, the system will enter full water protection. In this case, switch off the unit and then switch it on to eliminate this malfunction.
10	F0	Malfunction of indoor ambient temperature sensor at air return port	Indoor ambient temperature sensor	If the indoor ambient temperature sensor is detected of open circuit or short circuit for 5s successively, indoor ambient temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If indoor ambient temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally.
11	F1	Malfunction of evaporator temperature sensor	Evaporator temperature sensor	If the indoor evaporator temperature sensor is detected of open circuit or short circuit for 5s successively, evaporator temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If evaporator temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally.
12	F2	Malfunction of condenser temperature sensor	Condenser temperature sensor	If the outdoor condenser temperature sensor is detected of open circuit or short circuit for 5s successively, condenser temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If condenser temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally.

No.	Error code	Malfunction name	Origin of malfunction signal	Control description
13	F3	Malfunction of outdoor ambient temperature sensor	Outdoor ambient temperature sensor	If the outdoor ambient temperature sensor is detected of open circuit or short circuit for 5s successively, outdoor ambient temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If outdoor ambient temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally.
14	F4	Malfunction of discharge temperature sensor	Discharge temperature sensor	If the outdoor discharge temperature sensor is detected of open circuit or short circuit for 5s successively after the compressor has been operating for 3min, outdoor discharge temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears.
15	F5	Malfunction wired controller temperature sensor	Wired controller	If the wired controller detects open circuit or short circuit of its temperature sensor for 5s successively, wired controller temperature sensor malfunction will be reported.
20	H3	Compressor overload protection	Compressor overload switch	If it is detected within 3s successively that the overload switch is cut off under ON or standby state, the unit will report overload protection. If the fault occurs successively 3 times, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection.
21	H4	Overload protection	Evaporator temperature, condenser temperature	If outdoor unit detects that the tube temperature is higher than protective temp. Value, the unit will report overload protection. The unit will not restart operation until tube temperature is lower than the protective temp. Value and the compressor is stopped for 3min. If the protection occurs over 6 times, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection.
22	CC	Long-distance monitor or centralized controller has set the shielding function	long-distance monitor or centralized controller	When the unit is connected to long-distance monitor or centralized controller, shielding function (including ON/OFF setting for shielding function, temperature setting for shielding function, SE setting for shielding function or all lock setting) can be set through long-distance monitor or centralized controller. When all lock is set, "cc" code will be always displayed on the indoor unit. When setting other shielding function, "CC" code will be displayed for 1s after receiving the remote control signal. This is the normal function for the unit. After cancel shielding function through long-distance monitor or centralized controller, this code will disappear automatically.

2 FLOW CHART OF TROUBLESHOOTING

2.1 Troubleshooting Flow Chart of Main Control Malfunction

◆ E1 High Pressure Protection



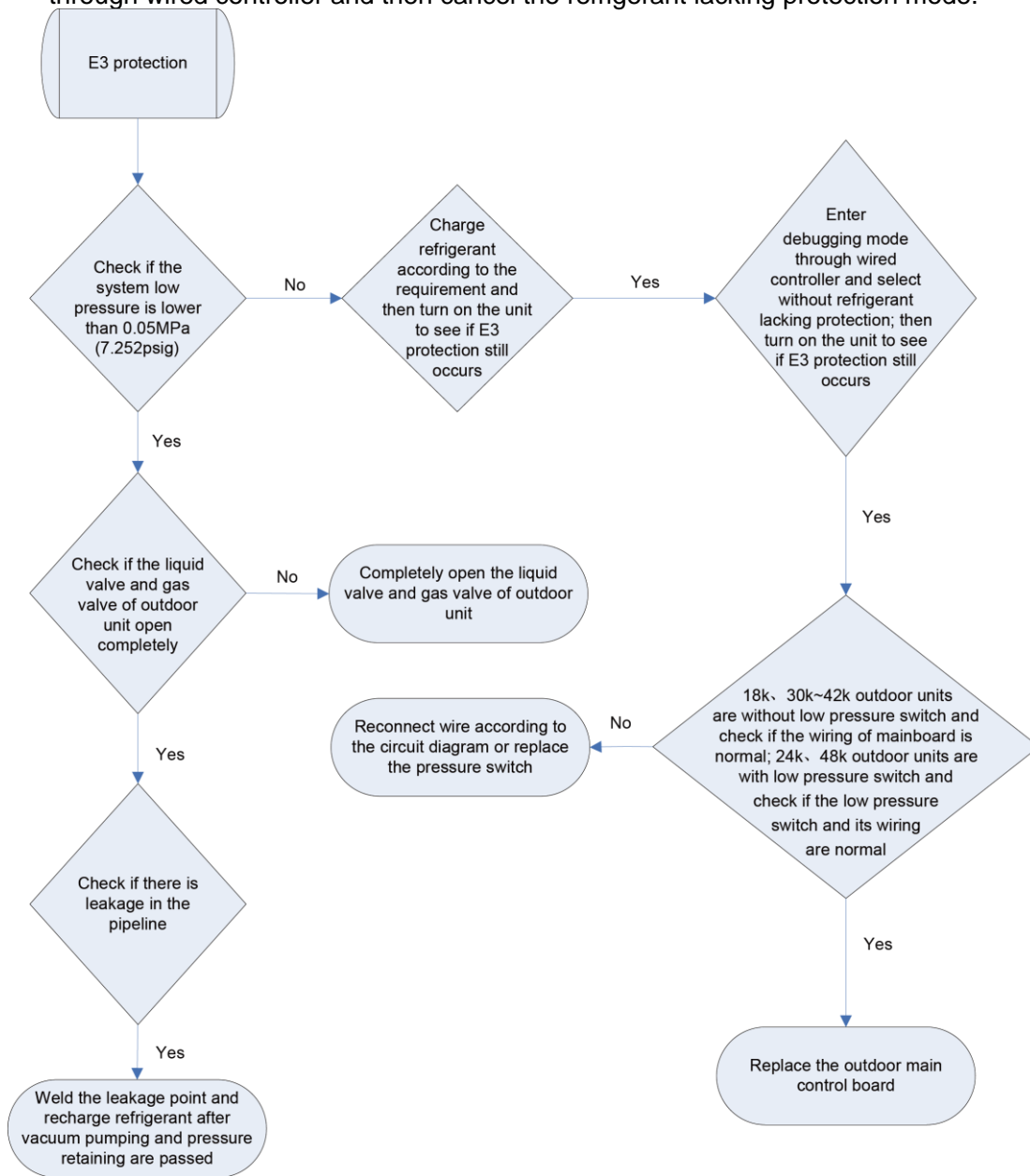
◆ E2 Freeze Protection

Freeze protection is normal protection but not abnormal malfunction. If freeze protection occurs frequently during operation, please check if the indoor filter is with filth blockage or if the indoor air outlet is abnormal. The user is required to clean the filter, check the air outlet and air return pipe periodically to ensure smooth air return and air outlet.

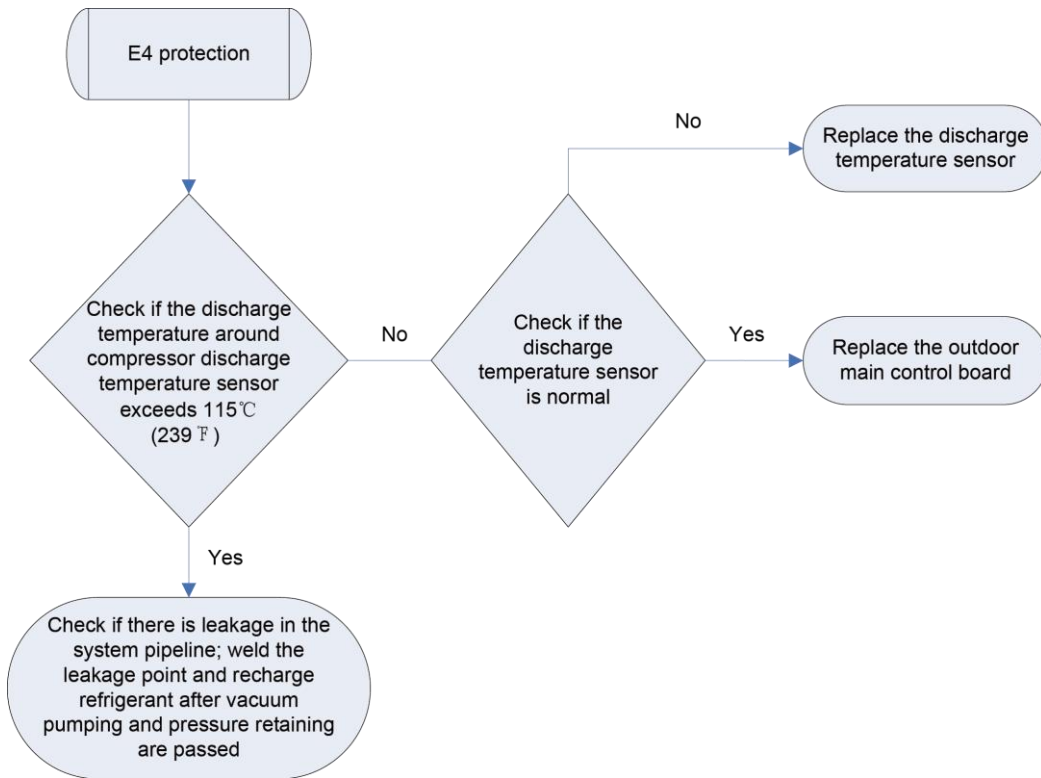
◆ E3 stands for three statuses:

- (1) Low pressure protection (48k/60k);
- (2) Refrigerant lacking protection;
- (3) Refrigerant recycling mode;

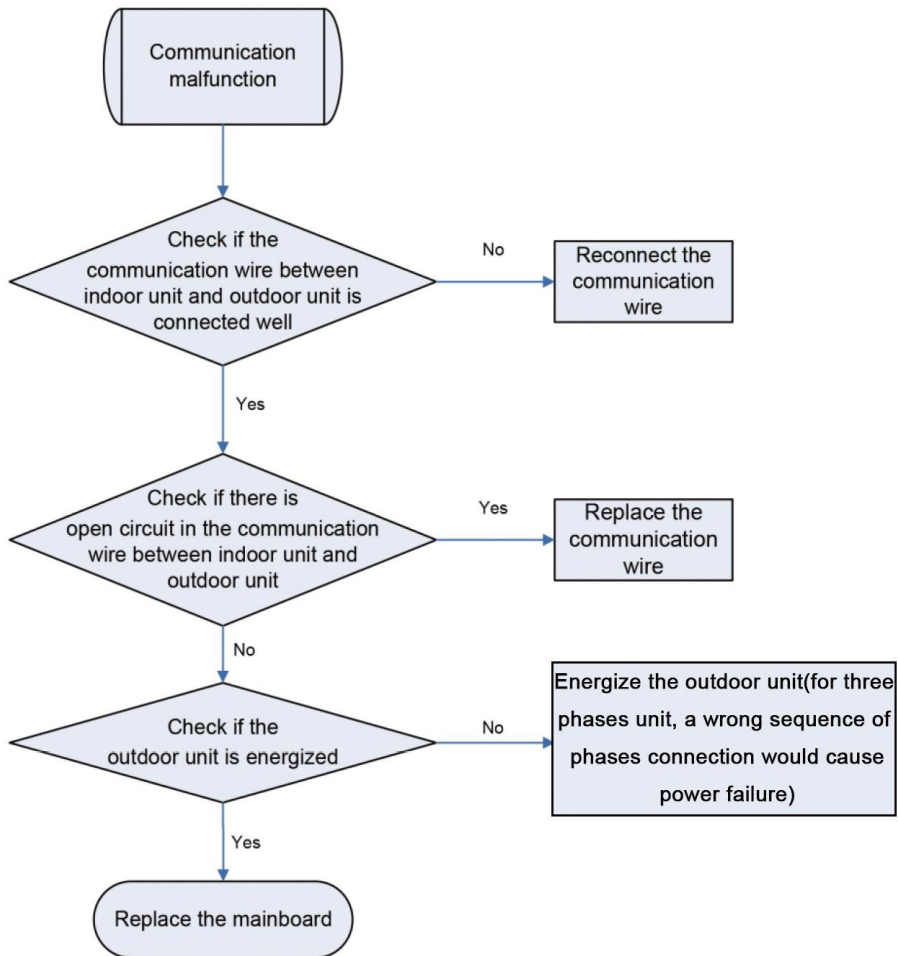
- ① If enter refrigerant recycling mode through special operation, the displayed E3 is not an error code. It will be eliminated when exiting refrigerant recycling mode.
- ② If you do not want to have refrigerant lacking protection, you can enter the debugging mode through wired controller and then cancel the refrigerant lacking protection mode.



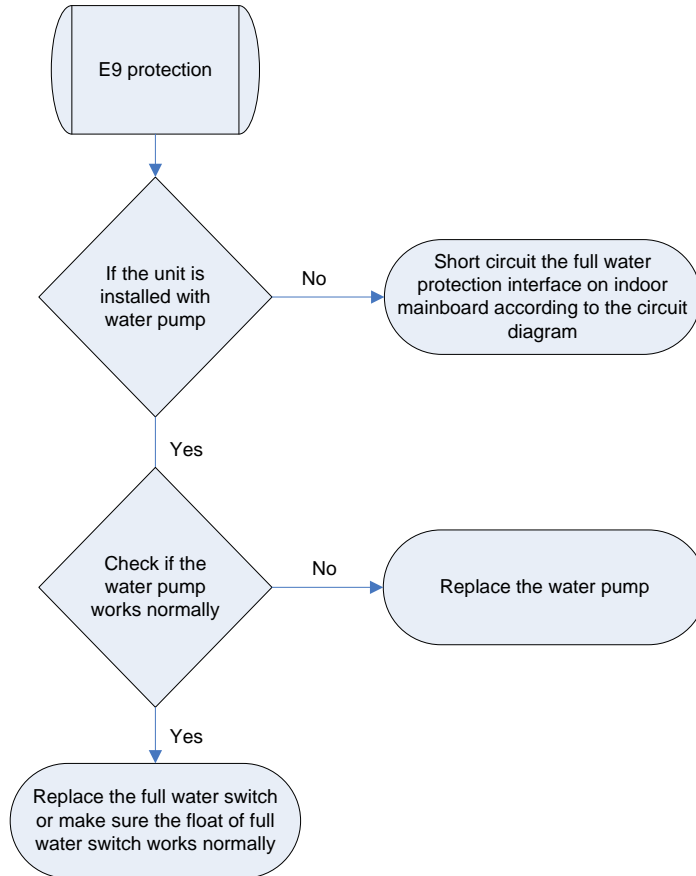
◆ E4 Discharge Protection



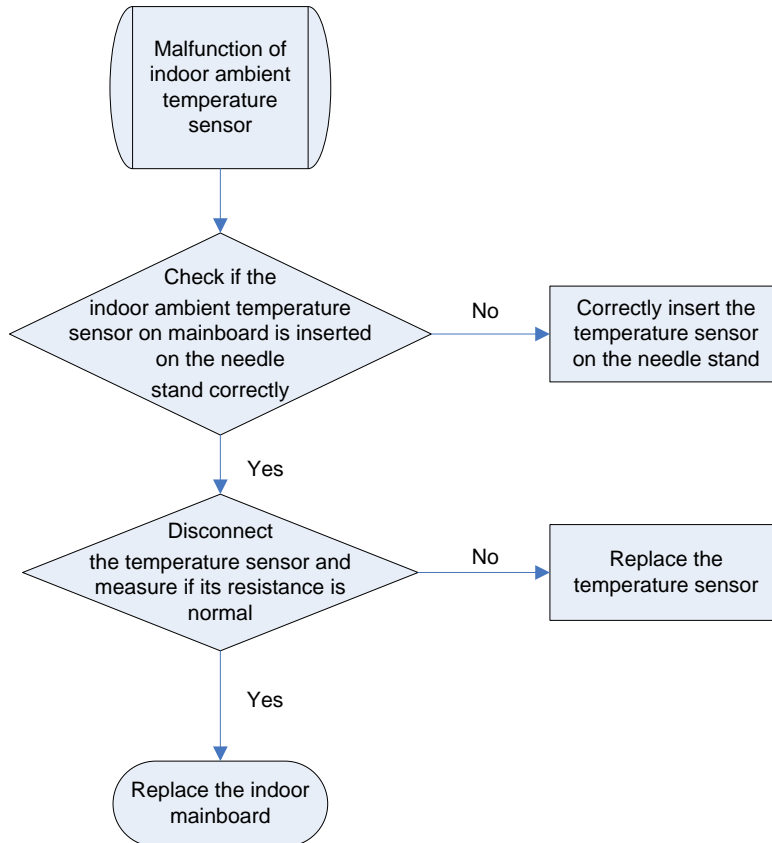
◆ E6 Communication Malfunction



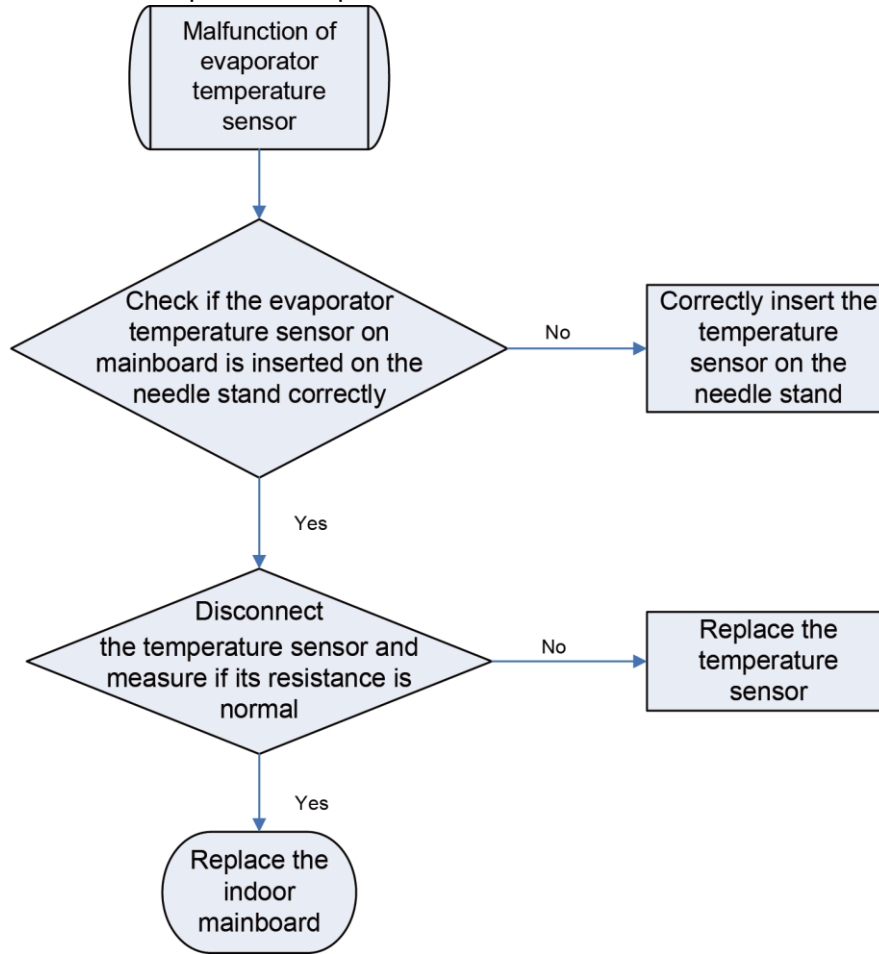
◆ E9 Full Water Protection



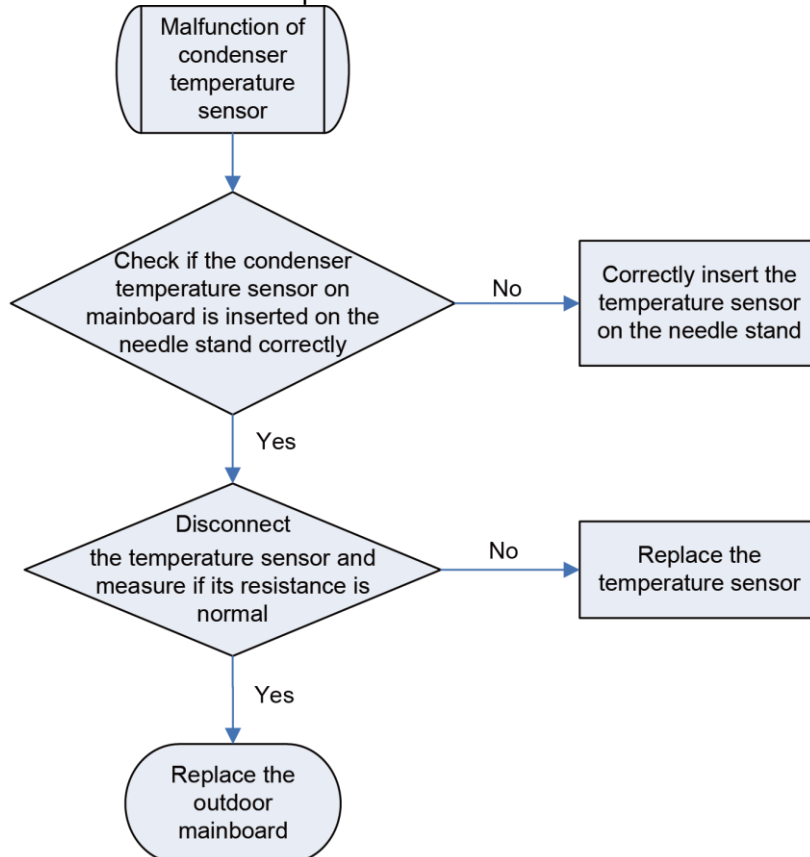
◆ F0 Malfunction of Indoor Ambient Temperature Sensor



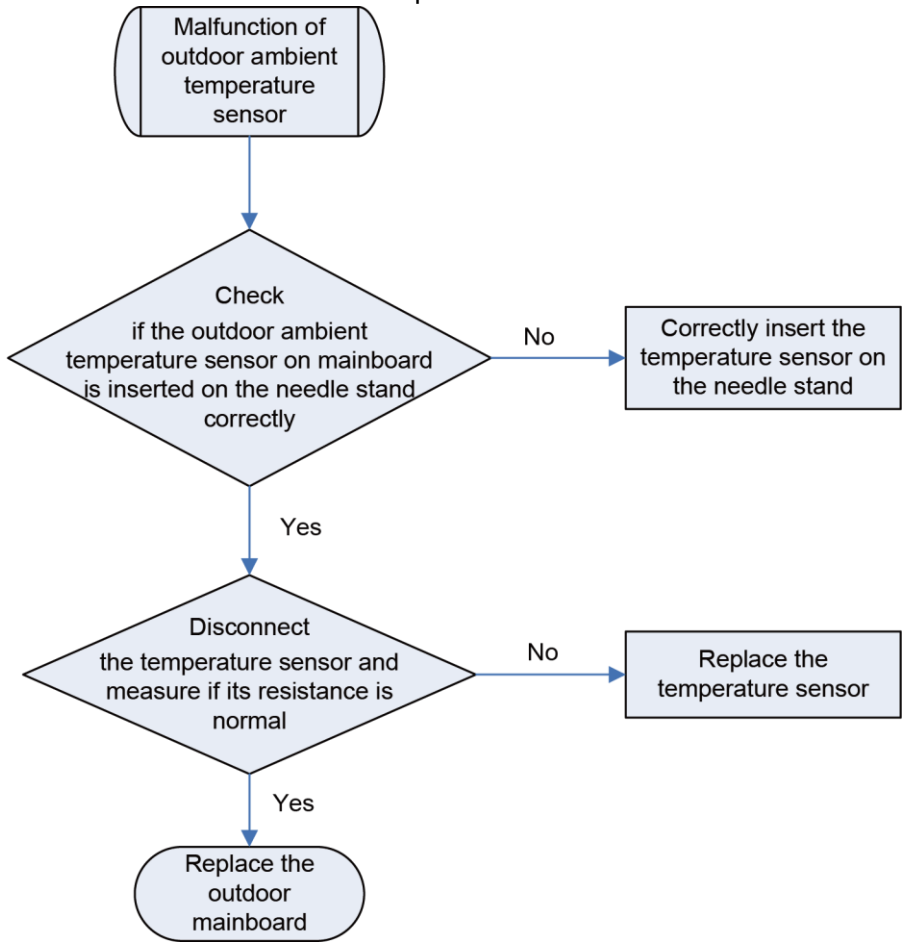
◆ F1 Malfunction of Evaporator Temperature Sensor



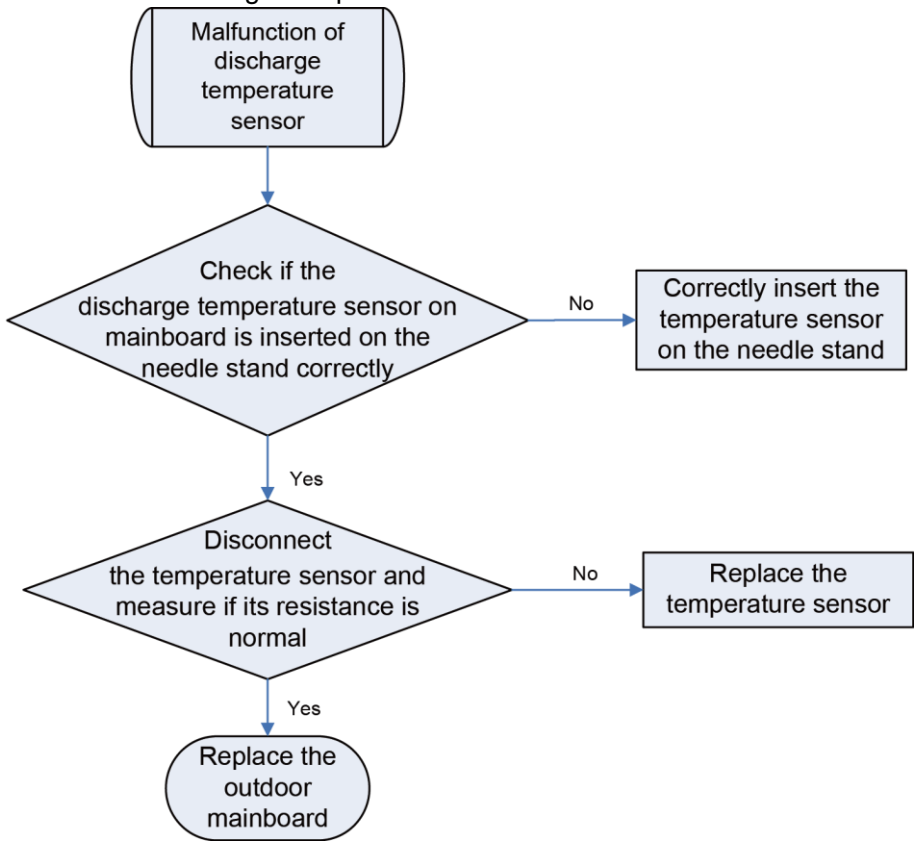
◆ F2 Malfunction of Condenser Temperature Sensor



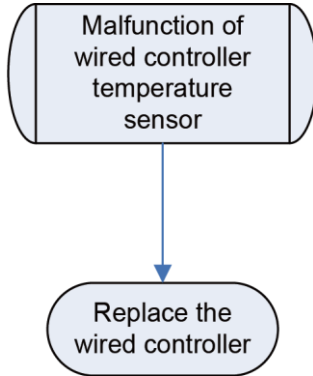
◆ F3 Malfunction of Outdoor Ambient Temperature Sensor



◆ F4 Malfunction of Discharge Temperature Sensor



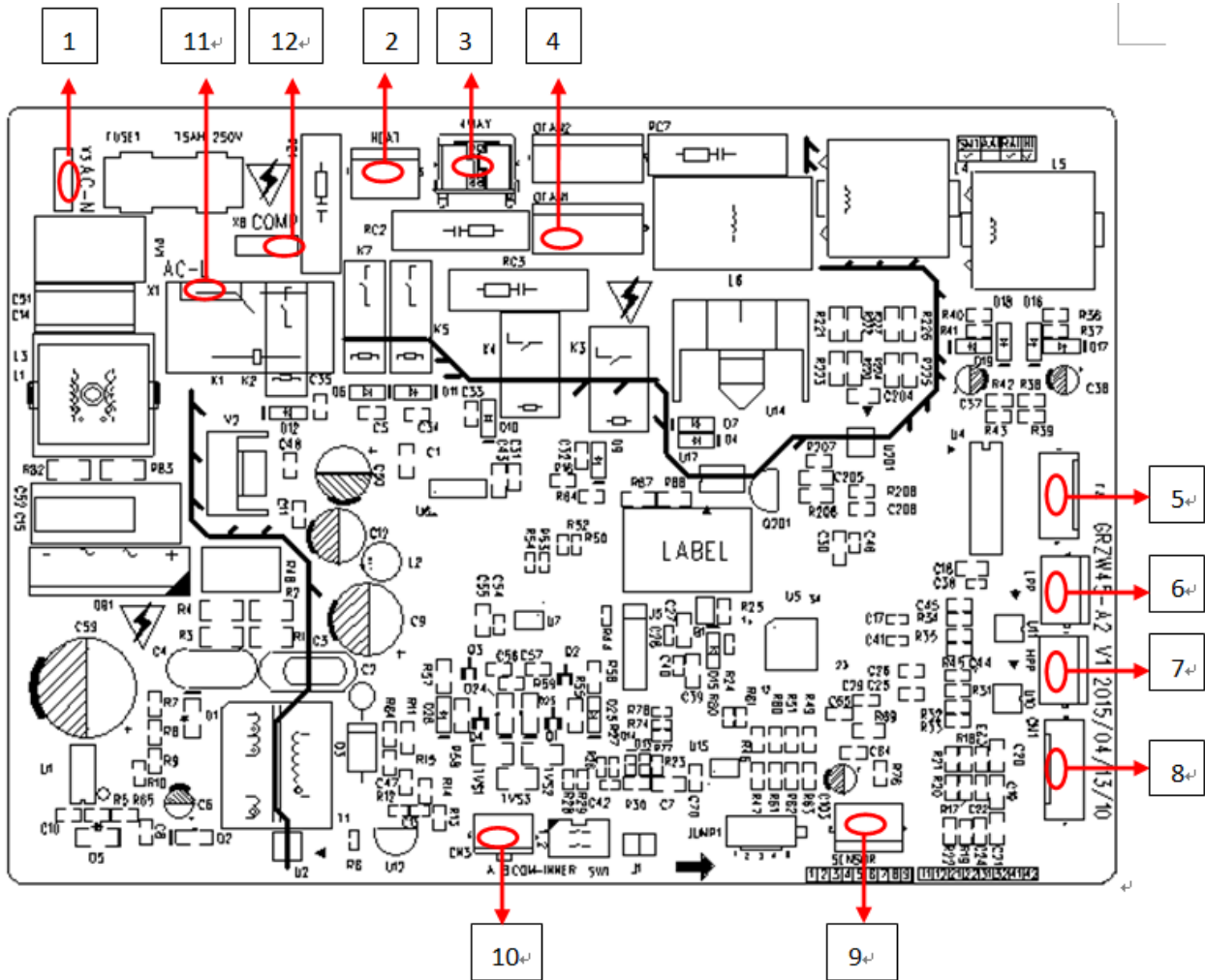
◆ F5 Malfunction of Wired Controller Temperature Sensor



2.2 Interface

GUHN12NK3HO/GUHN18NK3HO/GUHN24NK3HO/GUHN30NK3HO

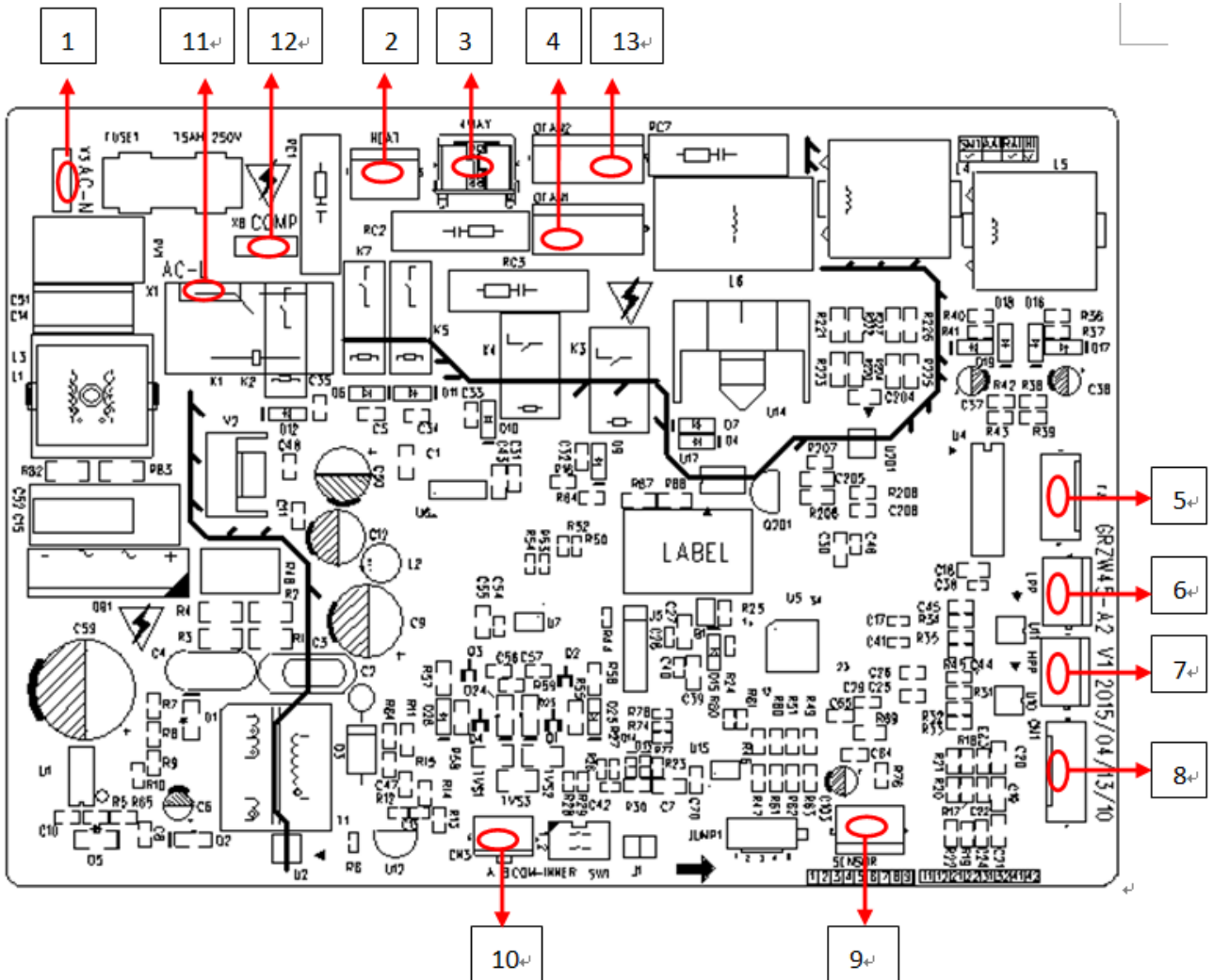
Main Control Board



NO.	SILK-SCREEN	INTERFACE	INTERFACE INSTRUCTION
1	AC-N	Neutral wire input	Neutral wire input
2	HEAT	Compressor electrical heater	Compressor electric heating belt
3	4WAY	4-way valve	4-way valve
4	OFAN1	AC fan motor	AC fan motor
5	FA	Electronic expansion valve line 1 to 4-pin: Drive impulse output;5-pin: +12V;	Interface of electronic expansion valve: 1 to 4-pin: Drive impulse output; 5-pin: +12V;
6	LPP	Low pressure switch for system protection (obligate)	Interface of low pressure protection
7	HPP	High pressure switch for systemprotection(obligate)	Interface of high pressure protection
8	CN1	1&2 pin: Tube sensor 3&4 pin: Ambient temperature 5&6 pin: Air discharge	1&2 pin: Case temperature sensor 3&4 pin: Ambient temperature sensor 5&6 pin: Discharge temperature sensor
9	SENSOR	High pressure switch for fan speed adjustment	Pressure protection switch for fan speed adjustment
10	COM-INNER	Communication interface	Communication interface
11	AC-L	Live wire input	Live wire input
12	COMP	Compressor C	Compressor C

GUHN36NM3HO/GUHN42NM3HO/GUHN48NM3HO/GUHN60NM3HO

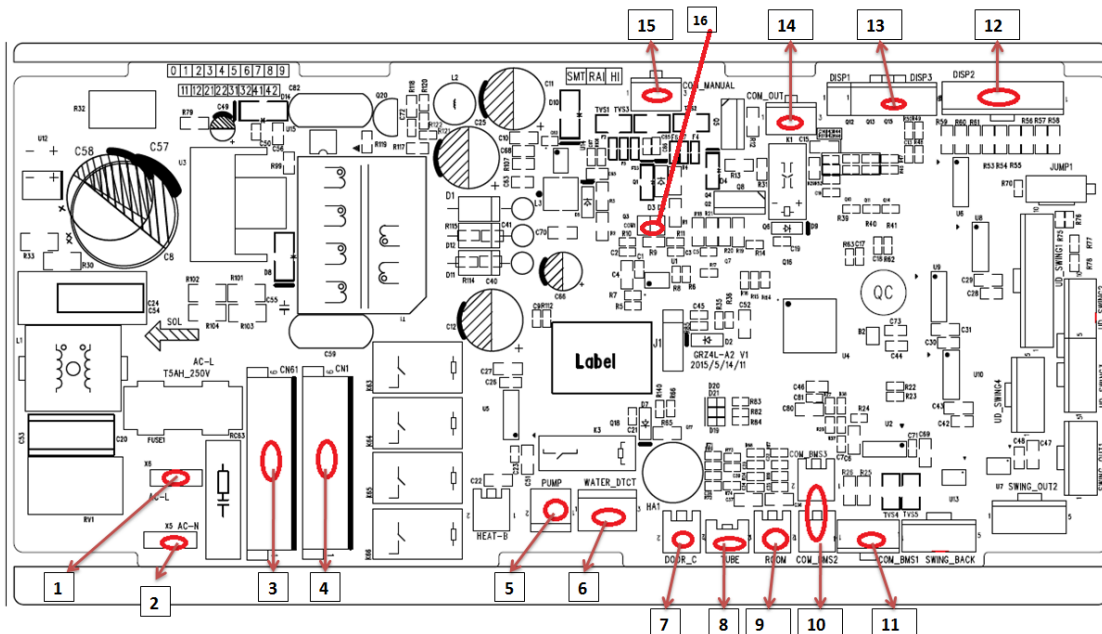
Main Control Board



NO.	SILK-SCREEN	INTERFACE	INTERFACE INSTRUCTION
1	AC-N	Neutral wire input	Neutral wire input
2	HEAT	Compressor electrical heater	Compressor electric heating belt
3	4WAY	4-way valve	4-way valve
4	OFAN1	AC fan motor 1	AC fan motor 1
5	FA	Electronic expansion valve line 1 to 4-pin: Drive impulse output;5-pin: +12V;	Interface of electronic expansion valve: 1 to 4-pin: Drive impulse output; 5-pin: +12V;
6	LPP	Low pressure switch for system protection (obligate)	Interface of low pressure protection
7	HPP	High pressure switch for systemprotection(obligate)	Interface of high pressure protection
8	CN1	1&2 pin: Tube sensor 3&4 pin: Ambient temperature 5&6 pin: Air discharge	1&2 pin: Case temperature sensor 3&4 pin: Ambient temperature sensor 5&6 pin: Discharge temperature sensor
9	SENSOR	High pressure switch for fan speed adjustment	Pressure protection switch for fan speed adjustment
10	COM-INNER	Communication interface	Communication interface
11	AC-L	Live wire input	Live wire input
12	COMP	Compressor AC Contactor	Compressor AC Contactor
13	OFAN2	AC fan motor 2	AC fan motor 2

GFH12K3HI/GFH12K3H1I/GFH18K3HI/GFH18K3H1I/GFH24K3HI/GFH24K3H1I/GFH30K3HI/
GFH30K3H1I/ GFH36K3HI/GFH36K3H1I/GFH42K3HI/GFH42K3H1I/GFH48K3HI/ GFH48K3H1I/
GFH60K3HI/ GFH60K3H1I

Main Control Board



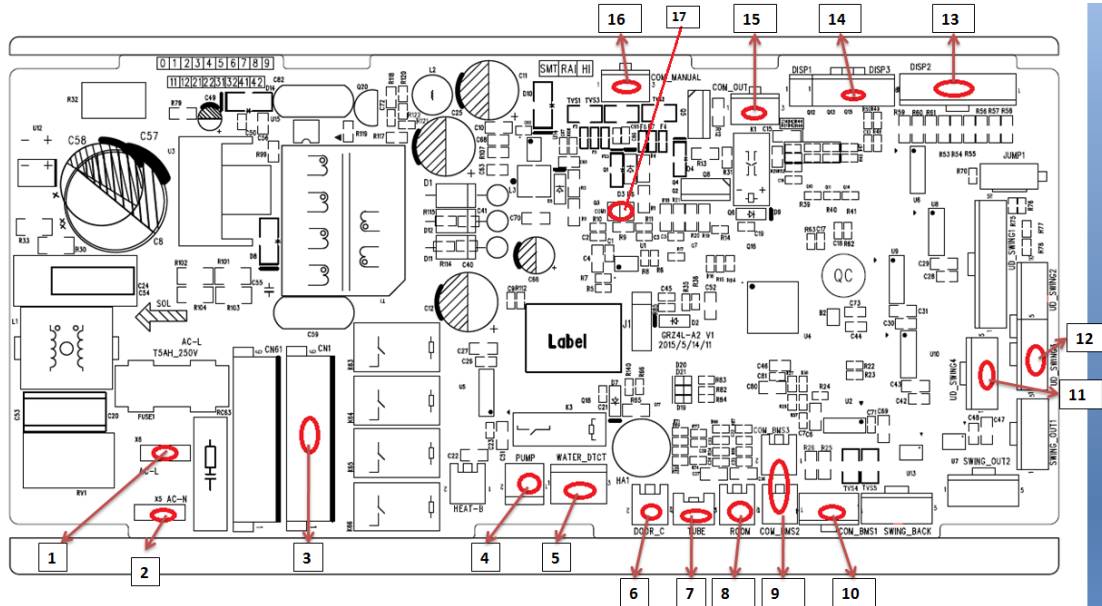
NO.	SILK-SCREEN	INTERFACE	NO.	SILK-SCREEN	INTERFACE
1	AC-L	Power live wire	2	AC-N	Power neutral wire
3	CN61	Interface of fan motor 1	4	CN1	Interface of fan motor 2
5	PUMP	Water pump interface	6	WATER_DCDT	Full water detection
7	DOOR_C	Door control	8	TUBE	Evaporator temperature sensor

9	ROOM	Ambient temperature sensor	10	COM_BMS2	Communication port of centralized controller
11	COM_BMS1	MOUDBUS interface	12	DISP2	Interface of light board 2
13	DISP1	Interface of light board 1	14	COM_OUT	Interface of outdoor unit
15	COM_MANUAL	Interface of wired controller	16	COM1	Interface of monitor

GKH12K3HI/GKH18K3HI/GKH24K3HI/GKH30K3HI/GKH36K3HI/GKH42K3HI/GKH48K3HI/GKH60

K3HI

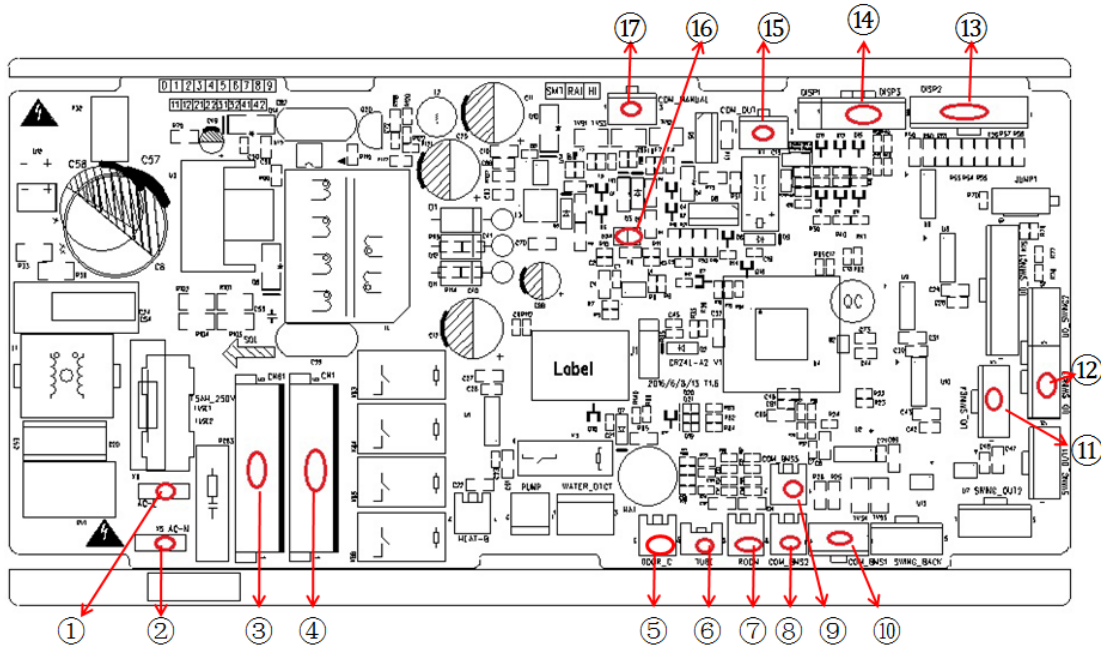
Main Control Board



NO.	SILK-SCREEN	INTERFACE	NO.	SILK-SCREEN	INTERFACE
1	AC-L	Power live wire	2	AC-N	Power neutral wire
3	CN1	Interface of fan motor	4	PUMP	Water pump interface
5	WATER_DCDT	Full water detection	6	DOOR_C	Door control
7	TUBE	Evaporator temperature sensor	8	ROOM	Ambient temperature sensor
9	COM_BMS2	Communication port of centralized controller	10	COM_BMS1	MOUDBUS interface
11	UD_SWING4	Swing motor 1	12	UD_SWING3	Swing motor 2
13	DISP2	Interface of light board 1	14	DISP3	Interface of light board 2
15	COM_OUT	Interface of outdoor unit	16	COM_MANUAL	Interface of wired controller
17	COM1	Interface of monitor			

GTH12K3HI/GTH18K3HI/GTH24K3HI/GTH30K3HI/GTH36K3HI/GTH42K3HI/GTH48K3HI/GTH60K3HI

Main Control Board



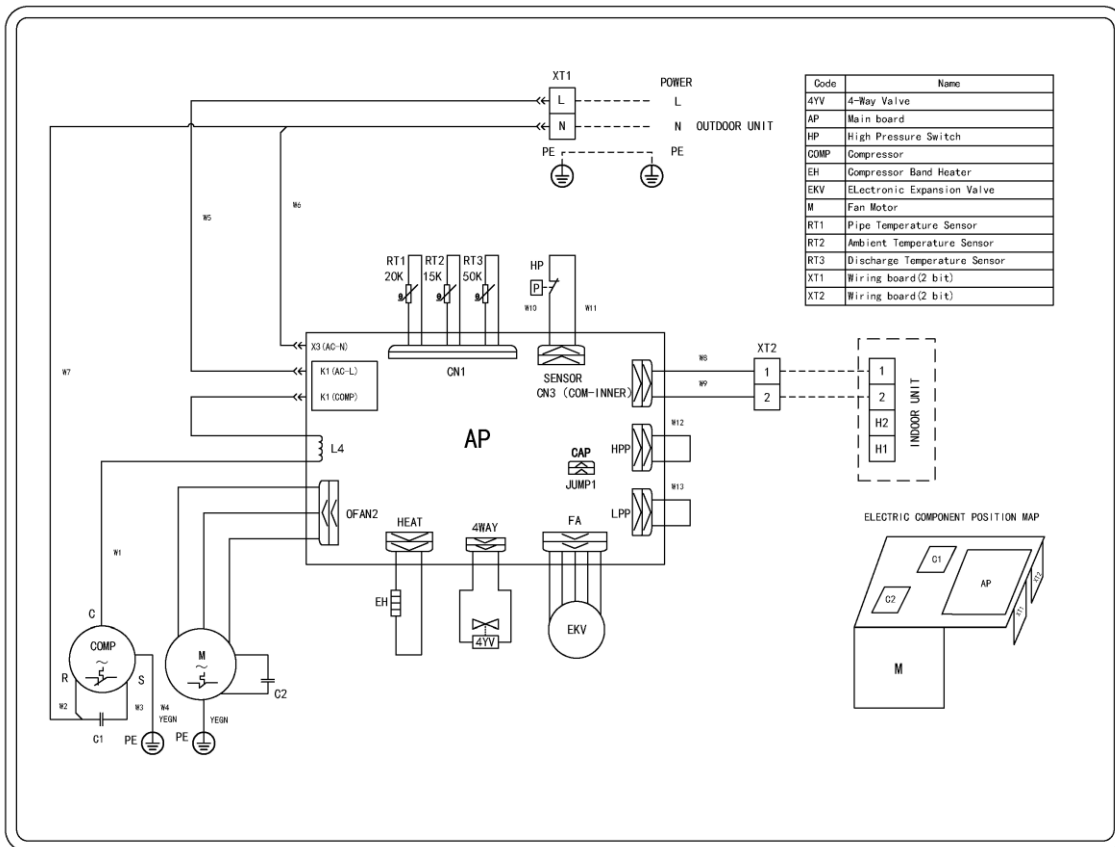
NO.	SILK-SCREEN	INTERFACE	NO.	SILK-SCREEN	INTERFACE
1	AC-L	Power live wire	2	AC-N	Power neutral wire
3	CN61	Interface of fan motor 1	4	CN1	Interface of fan motor 2
5	DOOR_C	Door control	6	TUBE	Evaporator temperature sensor
7	ROOM	Ambient temperature sensor	8	COM_BMS2	Communication port of centralized controller 2
9	COM_BMS1	Communication port of centralized controller 1	10	COM_BMS1	MOUDBUS interface
11	UN_SWING4	Swing motor 1	12	UN_SWING3	Swing motor 2
13	DISP2	Interface of light board 2	14	DISP1	Interface of light board 1
15	COM_OUT	Interface of outdoor unit	16	COM_MANUAL	Interface of wired controller
17	COM1	Interface of monitor			

3 WIRING DIADRAM

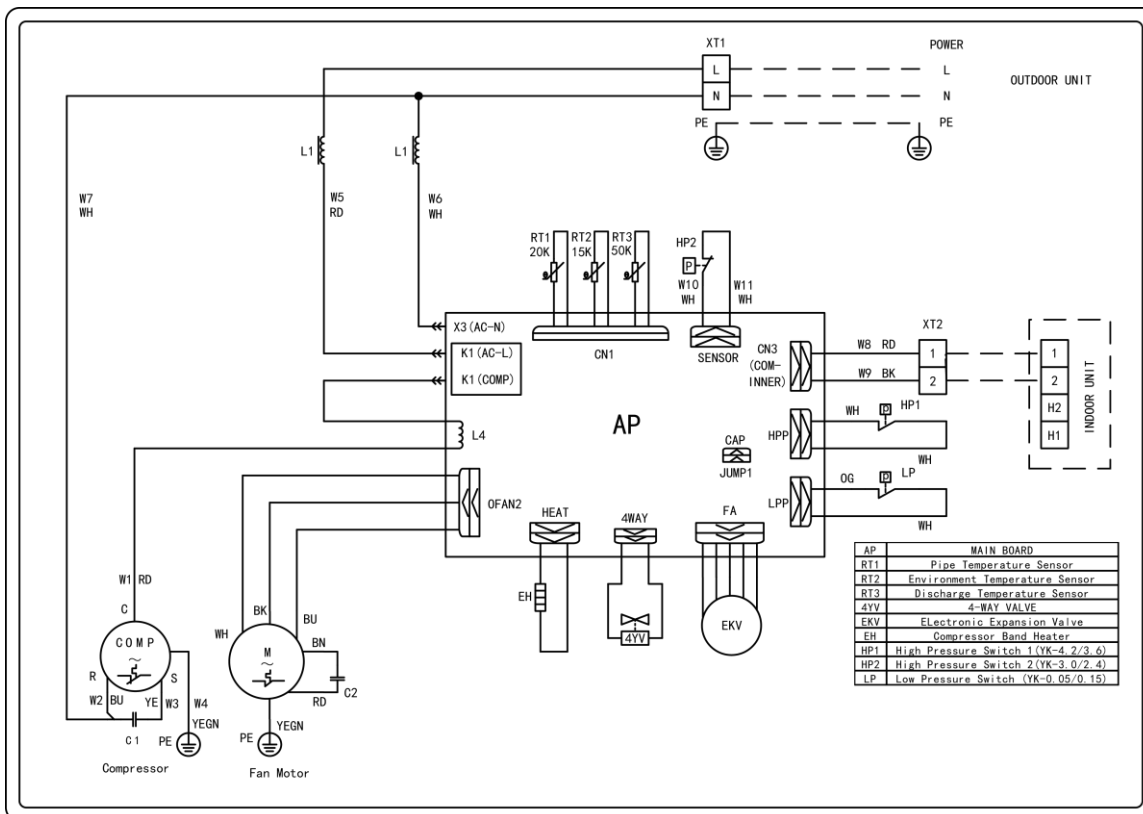
3.1 Outdoor unit

The actual wiring should always refer to the wiring diagram of the unit.

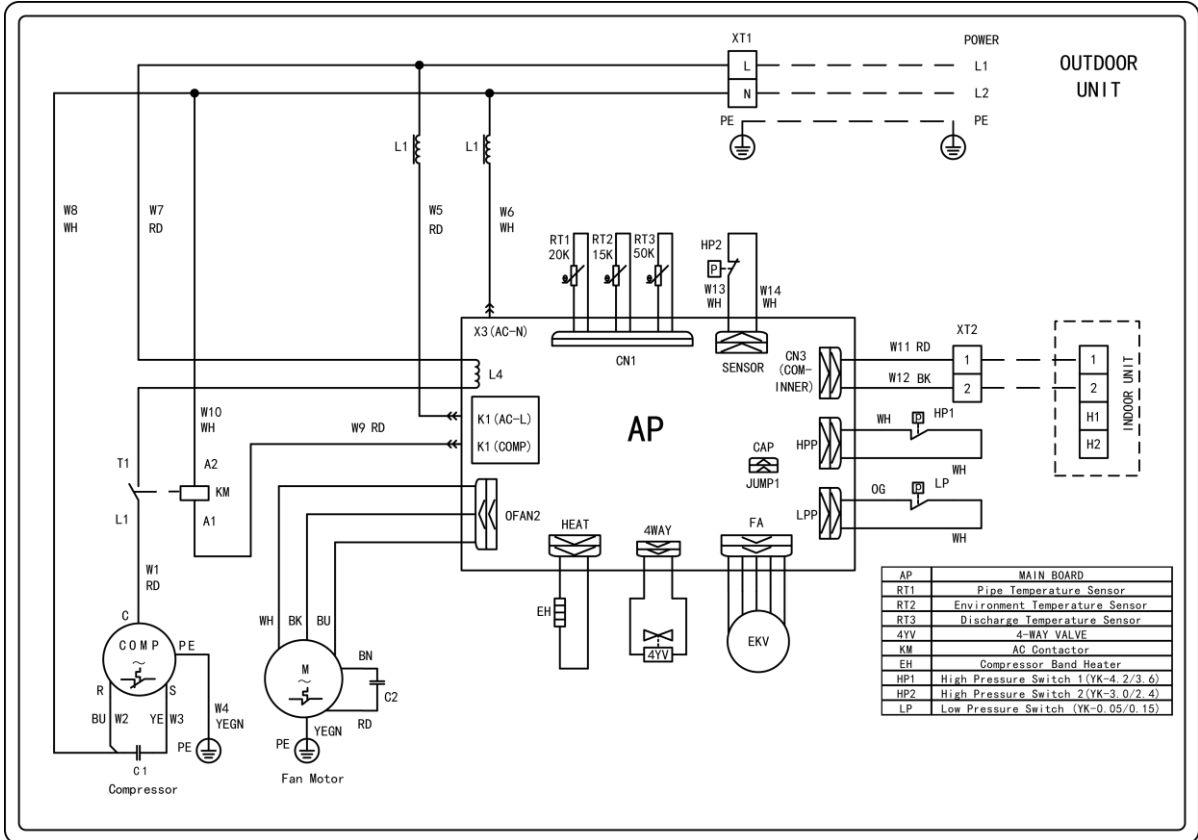
Model: GUHN12NK3HO



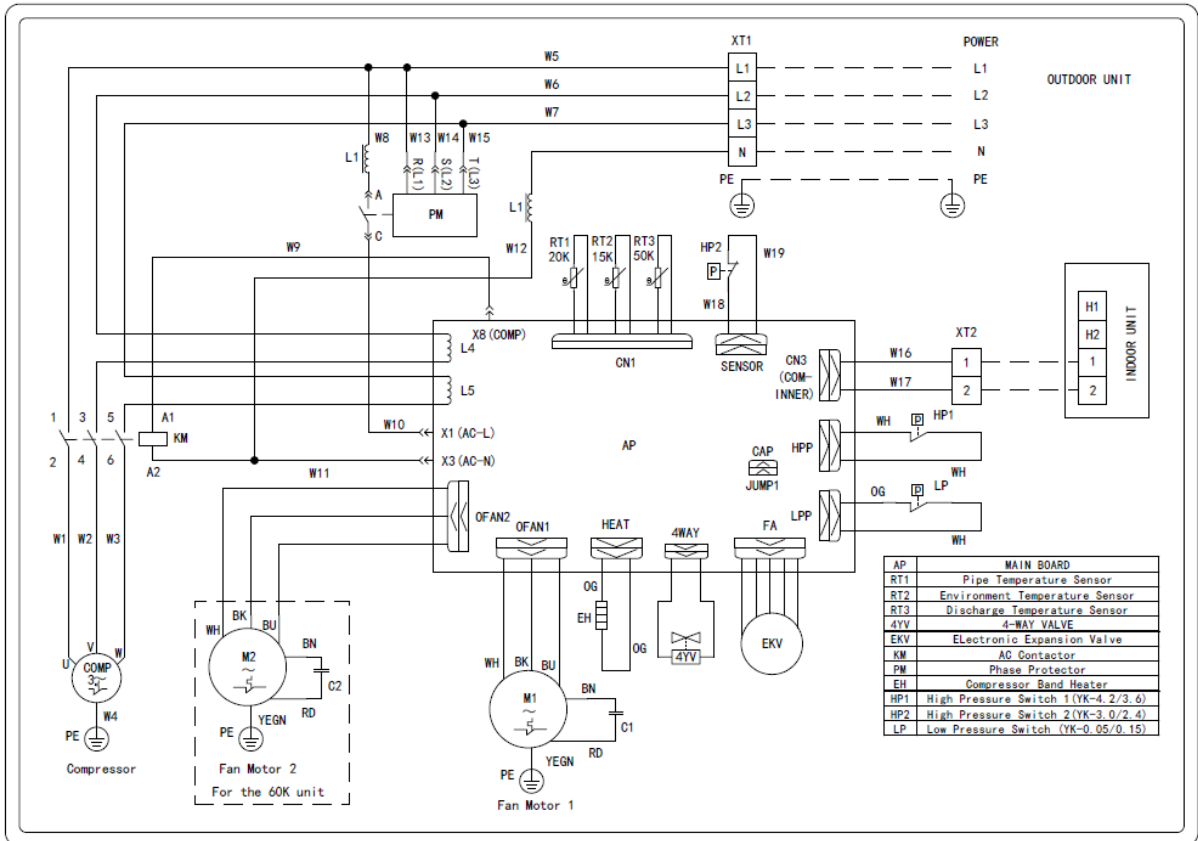
Model: GUHN18NK3HO



Model: GUHN24NK3HO, GUHN30NK3HO



Model: GUHN36NM3HO, GUHN42NM3HO, GUHN48NM3HO, GUHN60NM3HO

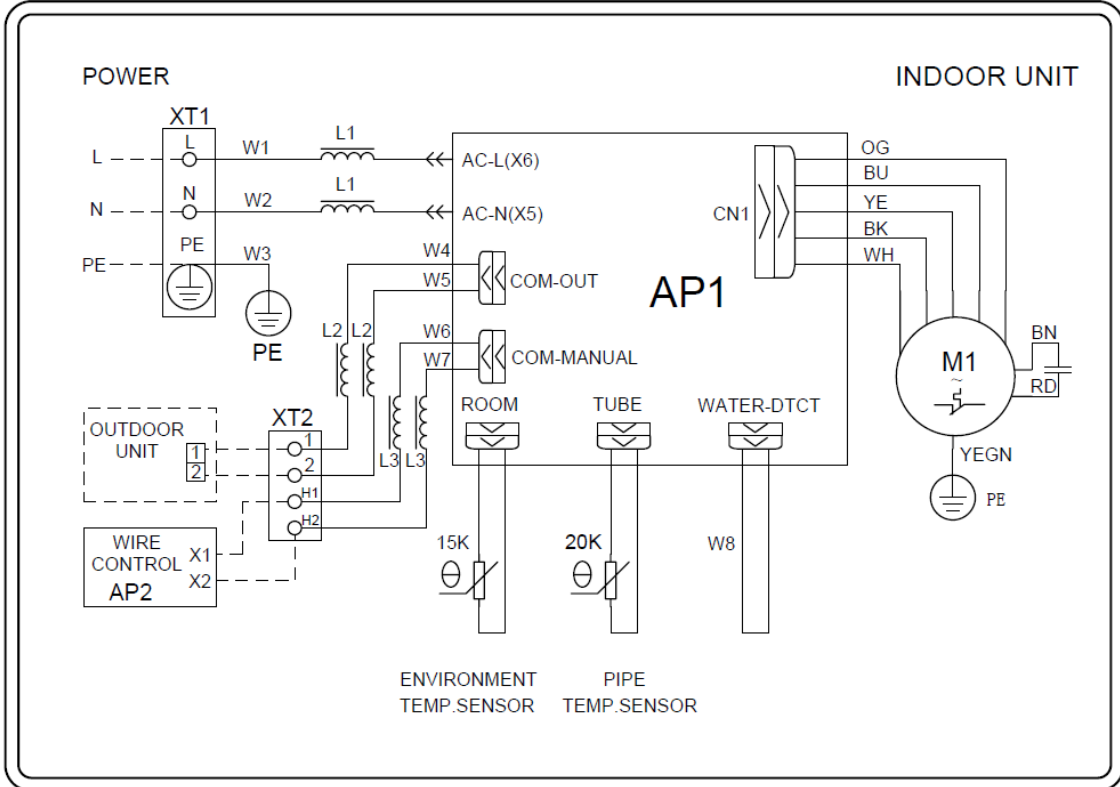


3.2 Indoor unit

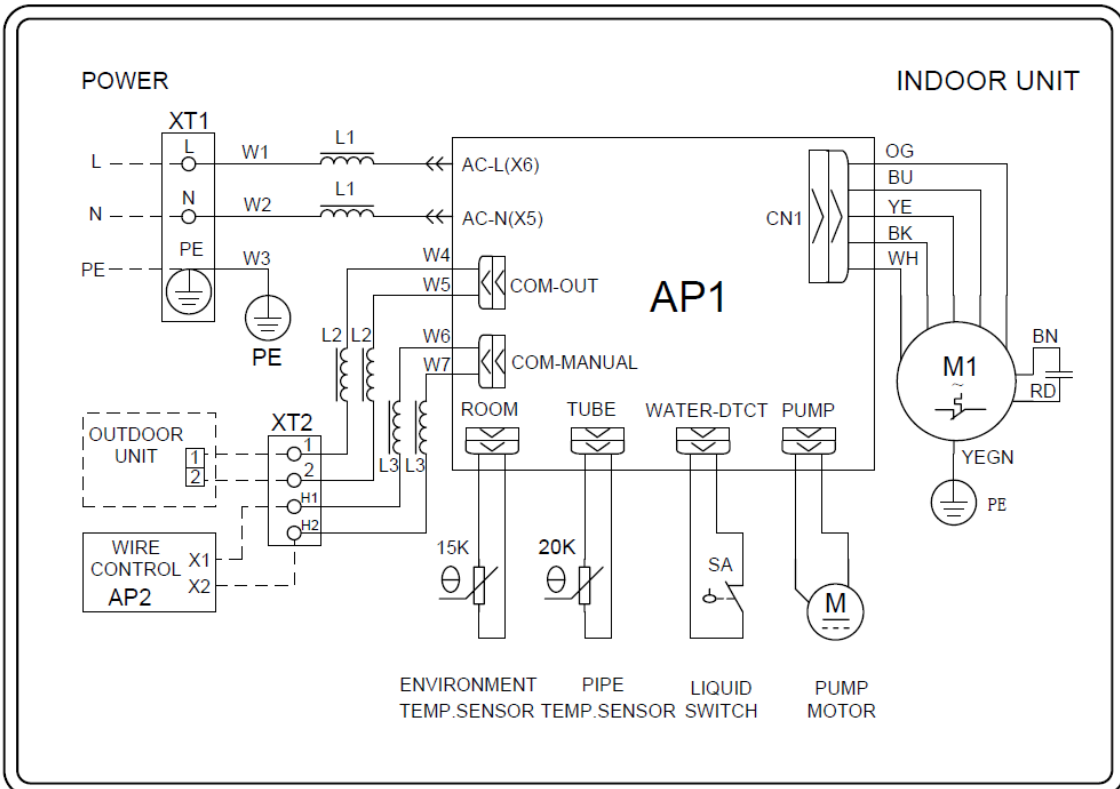
The actual wiring should always refer to the wiring diagram of the unit.

3.2.1 Duct Type

- ◆ Model: GFH12K3HI, GFH18K3HI, GFH24K3HI, GFH30K3HI, GFH36K3HI, GFH42K3HI, GFH48K3HI, GFH60K3HI

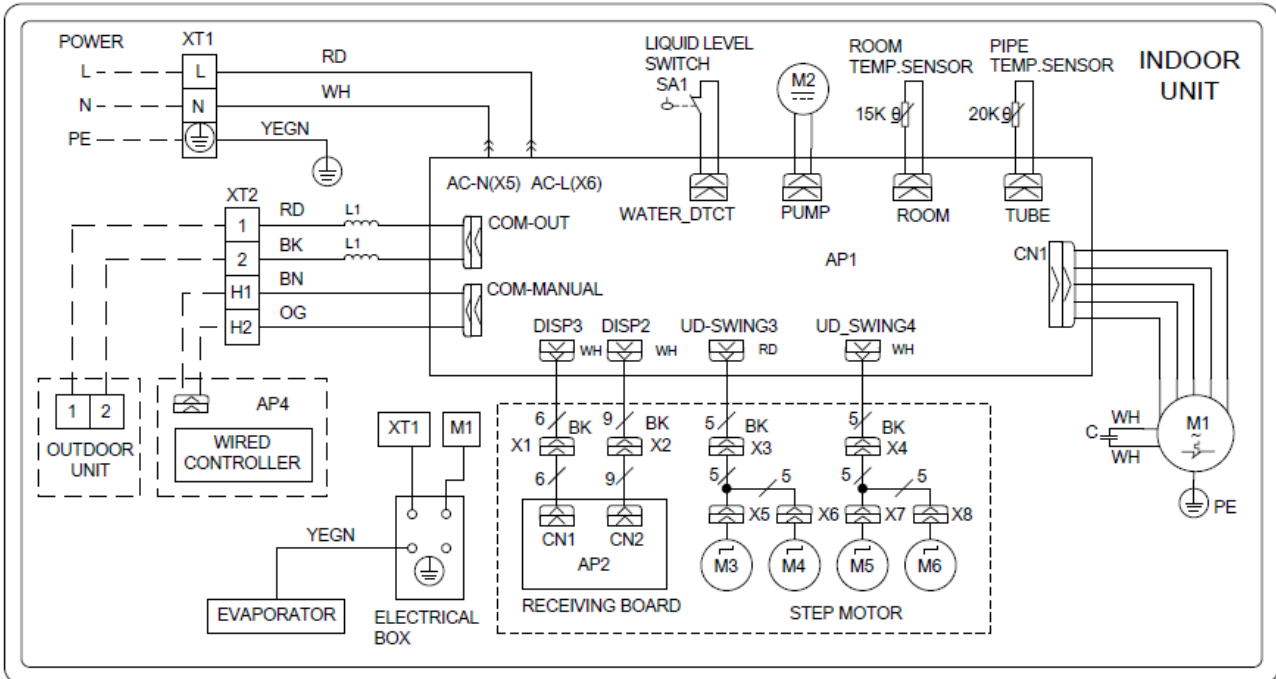


- ◆ Model: GFH12K3H1I, GFH18K3H1I, GFH24K3H1I, GFH30K3H1I, GFH36K3H1I, GFH42K3H1I, GFH48K3H1I, GFH60K3H1I

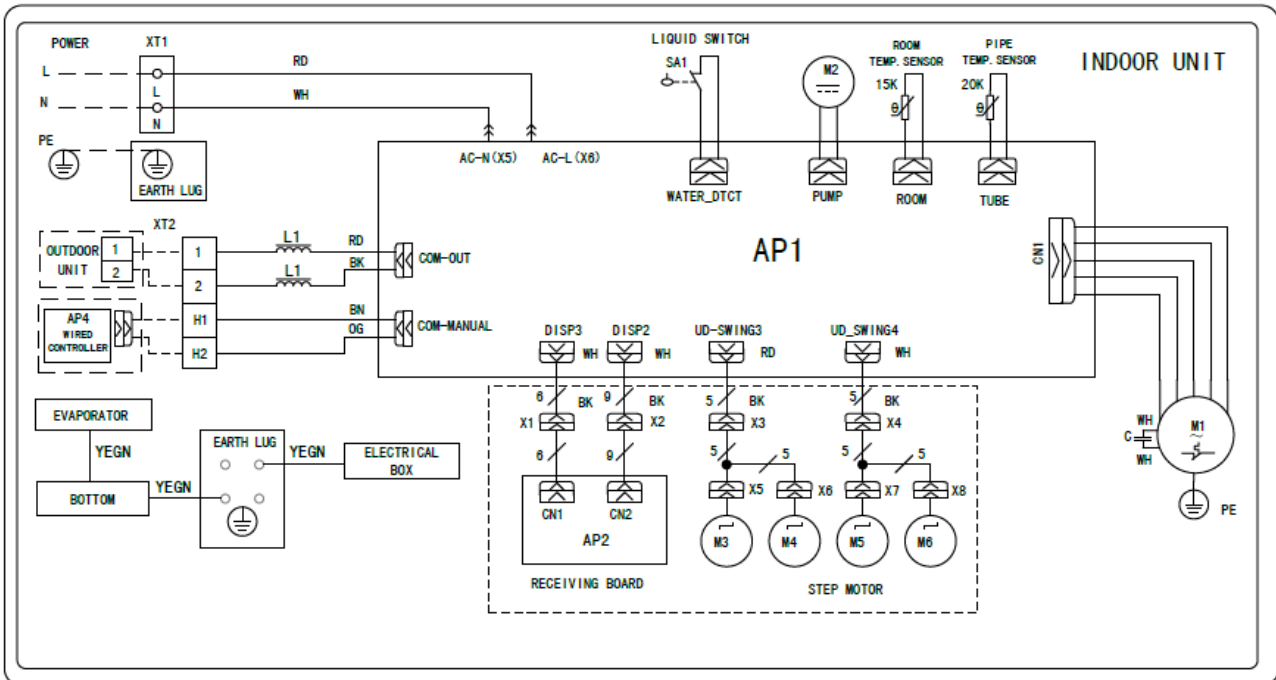


3.2.2 Cassette Type

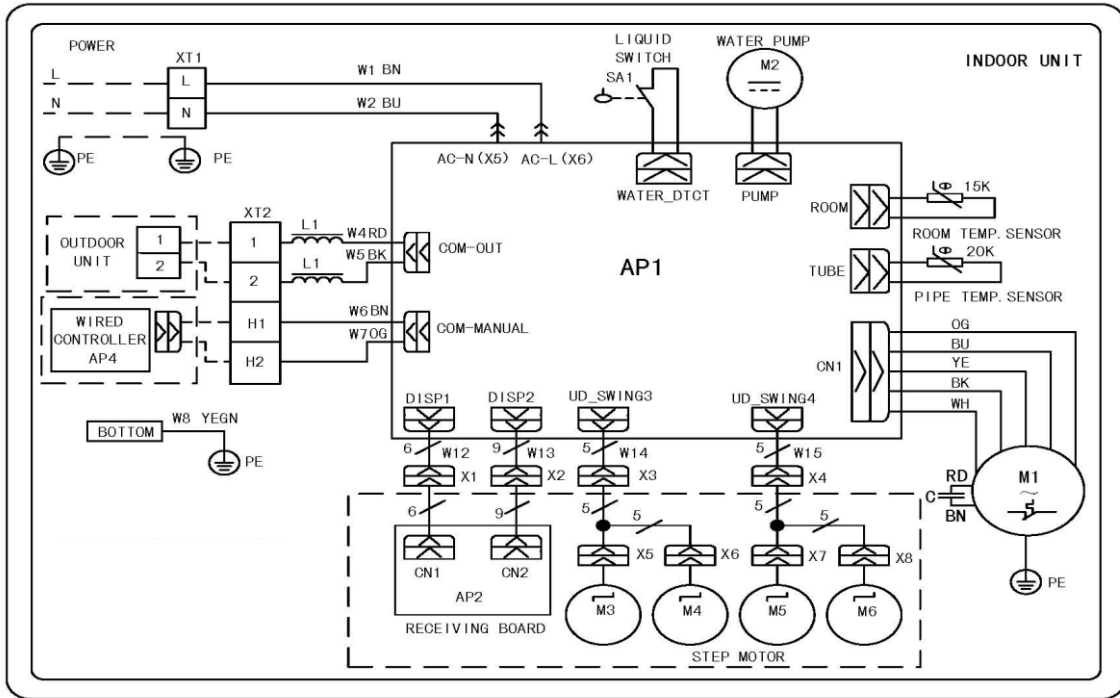
◆ Model: GKH12K3HI, GKH18K3HI



◆ Model: GKH24K3HI, GKH30K3HI, GKH36K3HI, GKH42K3HI, GKH48K3HI

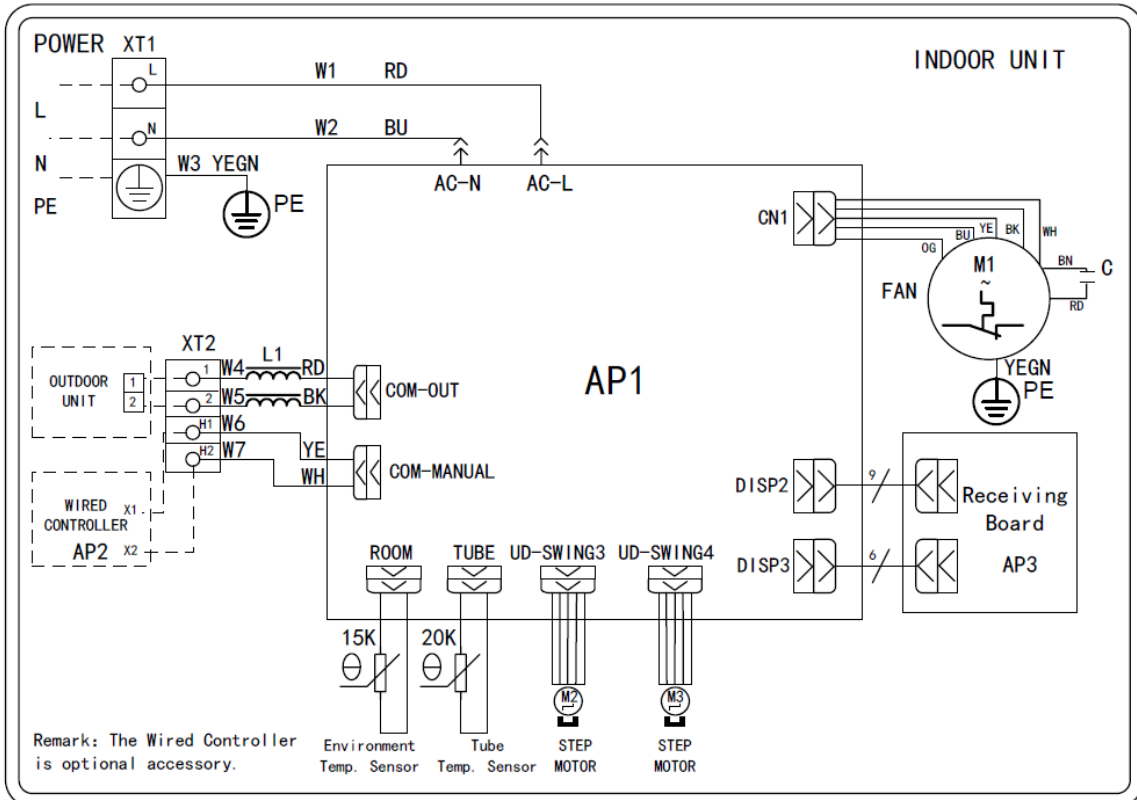


◆ Model: GKH60K3HI



3.2.3 Floor Ceiling Type

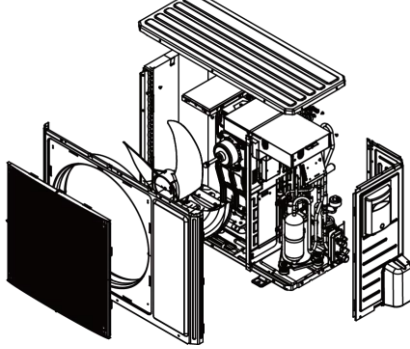
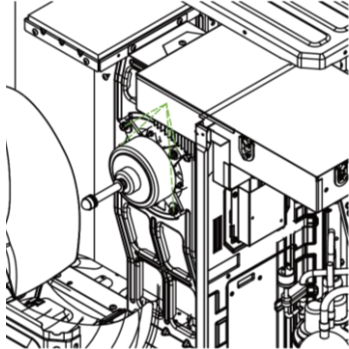
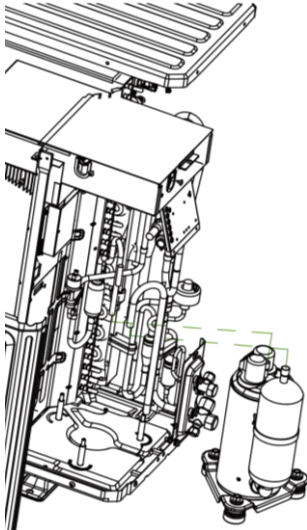
◆ Model: GTH12K3HI, GTH18K3HI, GTH24K3HI, GTH30K3HI, GTH36K3HI, GTH42K3HI, GTH48K3HI, GTH60K3HI

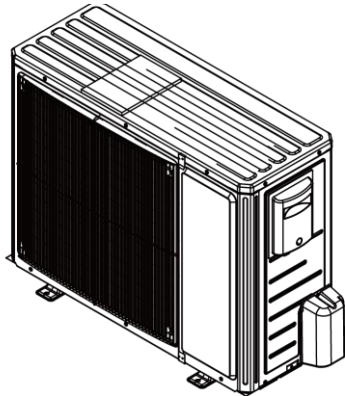


4. DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

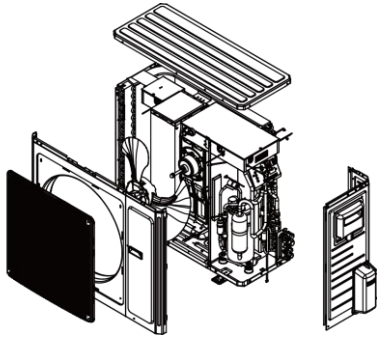
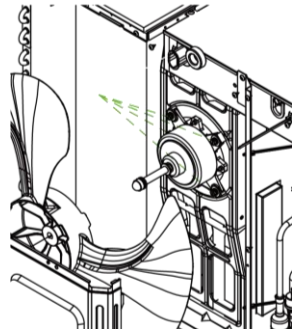
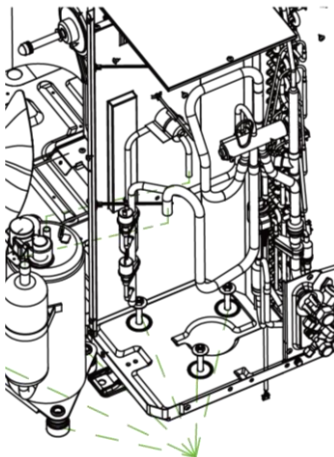
4.1 Outdoor Unit

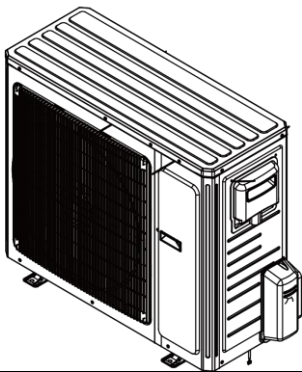
◆ 12/18/24k

Disassembly and Assembly of external casing		
Remark :		
Step	Illustration	Handling Instruction
1. Remove external casing		<ol style="list-style-type: none"> 1. Remove the top cover and handle; 2. Remove the grille, outer case and right side plate.
2. Remove motor		<ol style="list-style-type: none"> 1. Remove the blade nut and then remove the blade; 2. Remove the motor from motor support.
3. Remove compressor		<ol style="list-style-type: none"> 1. Discharge the refrigerant inside the pipeline and recycle the refrigerant during discharging; 2. Unsolder the 4-way valve assy from compressor; 3. Remove the nut fixing compressor; 4. Take away the compressor from chassis.

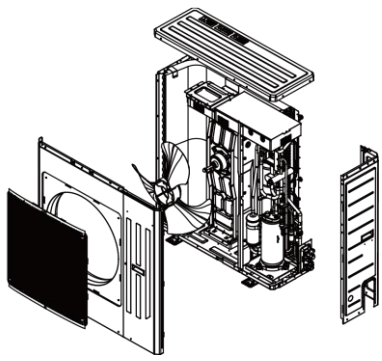
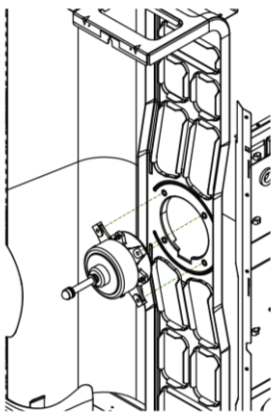
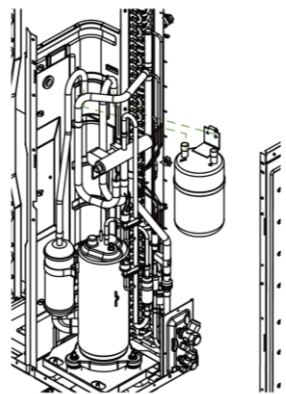
<p>4. Assemble unit</p>		<p>Assemble the unit in the reverse procedures of disassembly.</p>
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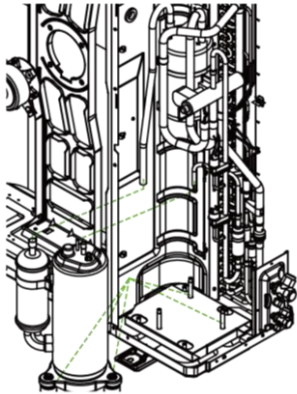
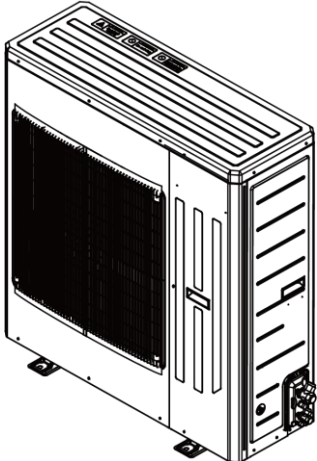
◆ 30k/36k

Disassembly and Assembly of external casing		
Remark :		
Step	Illustration	Handling Instruction
<p>1. Remove external casing</p>		<p>1. Remove the top cover and handle; 2. Remove the grille, outer case, front side plate and right side plate.</p>
<p>2. Remove motor</p>		<p>1. Remove the blade nut and then remove the blade; 2. Remove the motor from motor support.</p>
<p>3. Remove compressor</p>		<p>1. Discharge the refrigerant inside the pipeline and recycle the refrigerant during discharging; 2. Unsolder the 4-way valve assy from compressor; 3. Remove the nut fixing compressor; 4. Take away the compressor from chassis.</p>

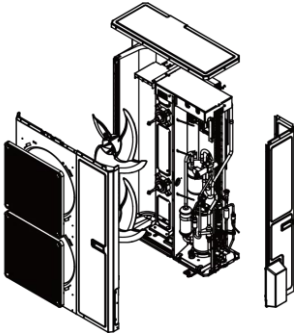
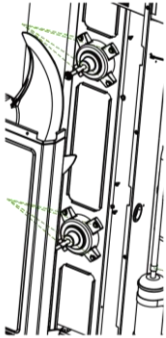
<p>4. Assemble unit</p>		<p>Assemble the unit in the reverse procedures of disassembly.</p>
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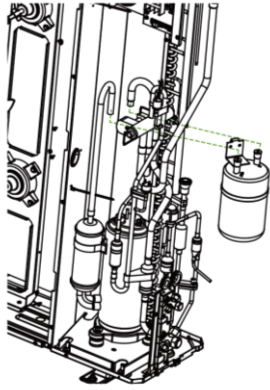
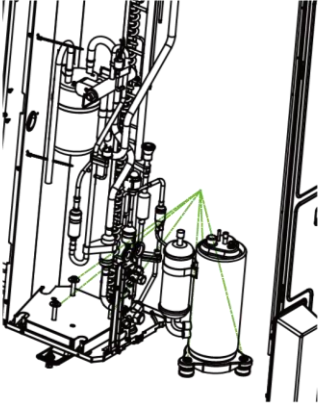

◆ 42k/48k

Disassembly and Assembly of external casing		
Remark :		
Step	Illustration	Handling Instruction
<p>1. Remove external casing</p>		<p>1. Remove the top cover and handle; 2. Remove the grille, outer case and right side plate.</p>
<p>2. Remove motor</p>		<p>1. Remove the blade nut and then remove the blade; 2. Remove the motor from motor support.</p>
<p>3. Remove gas liquid separator</p>		<p>1. Discharge the refrigerant inside the pipeline and recycle the refrigerant during discharging; 2. Unsolder the 4-way valve assy from gas liquid separator; 3. Remove the gas liquid separator.</p>

<p>4. Remove compressor</p>		<ol style="list-style-type: none"> 1. Discharge the refrigerant inside the pipeline and recycle the refrigerant during discharging; 2. Unsolder the 4-way valve assy from compressor; 3. Remove the nut fixing compressor; 4. Take away the compressor from chassis.
<p>5. Assemble unit</p>		<p>Assemble the unit in the reverse procedures of disassembly.</p>

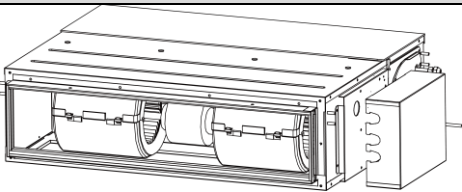
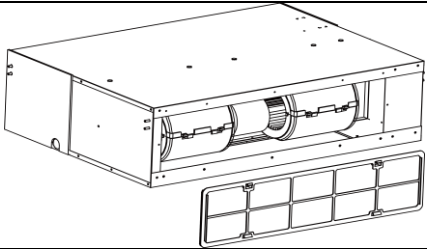
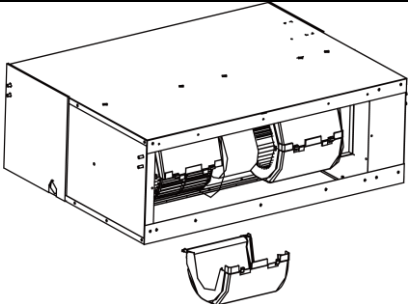
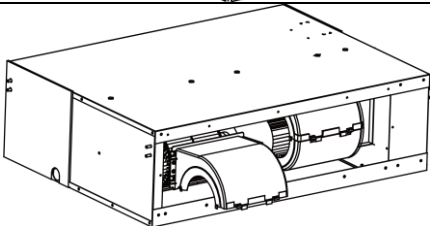
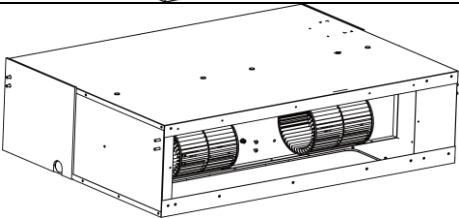
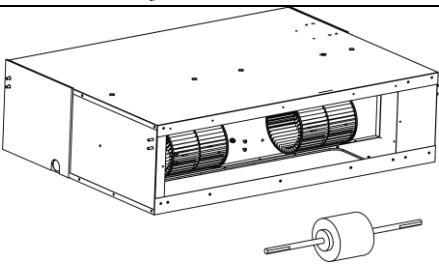
◆ 60k:

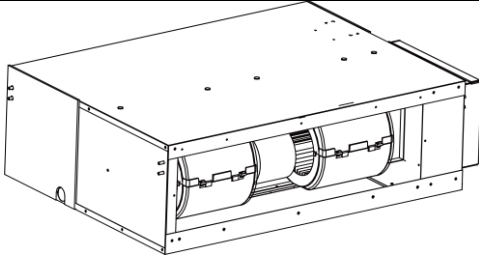
Disassembly and Assembly of external casing		
Remark :		
Step	Illustration	Handling Instruction
<p>1. Remove external casing</p>		<ol style="list-style-type: none"> 1. Remove the top cover and handle; 2. Remove the grille, outer case and right side plate.
<p>2. Remove motor</p>		<ol style="list-style-type: none"> 1. Remove the blade nut and then remove the blade; 2. Remove the motor from motor support.

<p>3. Remove gas liquid separator.</p>		<ol style="list-style-type: none"> 1. Discharge the refrigerant inside the pipeline and recycle the refrigerant during discharging; 2. Unsolder the 4-way valve assy from gas liquid separator; 3. Remove the gas liquid separator.
<p>4. Remove compressor</p>		<ol style="list-style-type: none"> 1. Discharge the refrigerant inside the pipeline and recycle the refrigerant during discharging; 2. Unsolder the 4-way valve assy from compressor; 3. Remove the nut fixing compressor; 4. Take away the compressor from chassis.
<p>5. Assemble unit</p>		<p>Assemble the unit in the reverse procedures of disassembly.</p>

4.2 Indoor Unit

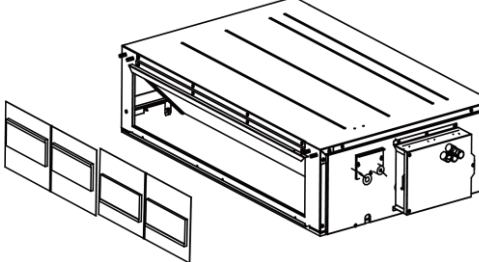
4.2.1 Duct type

Removal and Assembly of Fan Motor		
Remarks: Before removing the fan, make sure to cut off the power firstly.		
Step	Illustration	Handling Instruction
1. Unplug the motor cables		Cut off the power supply of indoor unit. Use screwdriver to remove the electric box cover and unplug the motor cables in electric box.
2. Remove the filter sub-assembly and air inlet cover board		Remove the filter sub-assembly from the air inlet frame and use screwdriver to remove the air inlet cover board.
3. Remove the screws on fan sub-assembly.		Remove the screws on fan sub-assembly.
4. Overturn the propeller housing		Rotate the propeller housing to the air inlet according to arrow direction.
5. Loosen the fan and motor.		Use inner hexagonal spanner to loosen the screws on fan and remove the clamp fixing the motor.
6. Replace the motor		Firstly, disengage the motor from motor support. Then, sequentially disengage the fan sub-assembly from the motor shaft. Remove the motor from the air inlet and replace with new motor. In which, for the motor with automatic motor support, the motor support shall be removed in advance and then changed to the unit.

<p>7. Assemble the unit in reverse to the disassembly procedures</p>		<p>Assemble the unit in reverse to the disassembly procedures and energize it for testing.</p>
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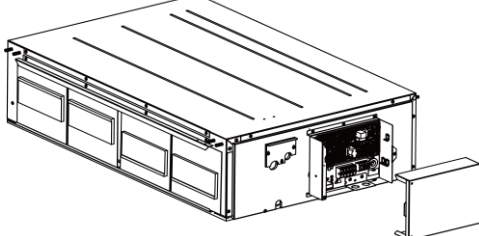
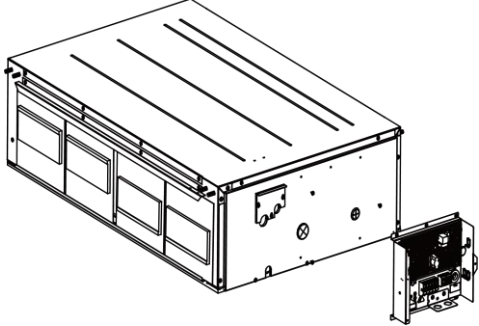
Disassembly of filter screen for return air.

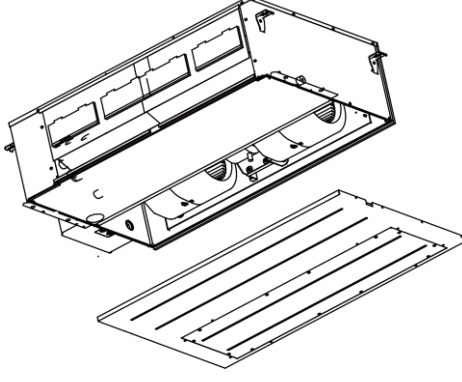
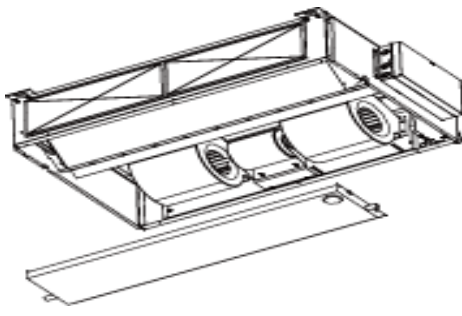
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly. Do not put filter screen near the high temperature heat source.

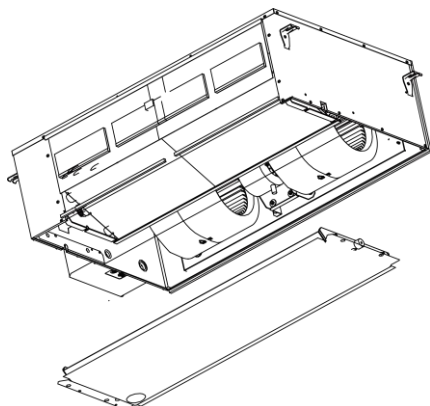
Step	Illustration	Handling Instruction
<p>1. Disassembly of filter screen for return air</p>		<p>Compress the filter screen for return air down on the guide slot sponge, and remove according to the direction shown by the arrow. There are 2 filter screens for return air.</p>

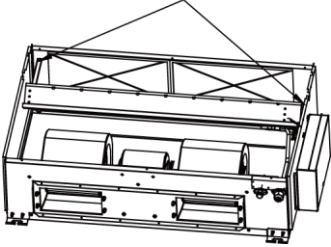
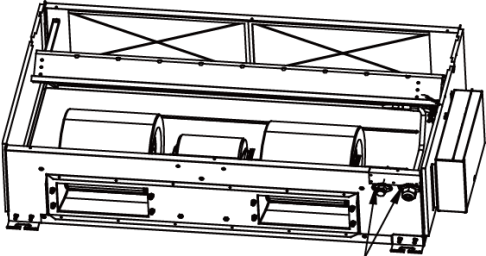
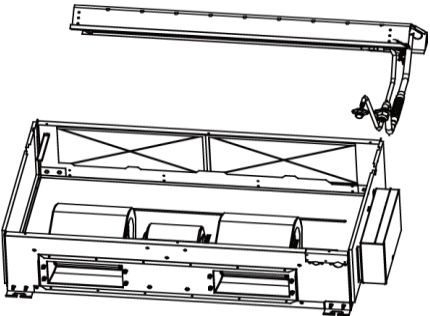
Disassembly of electrical parts box cover panel and electrical parts box

Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly, especially the electrical components. Do not dampen or hit them

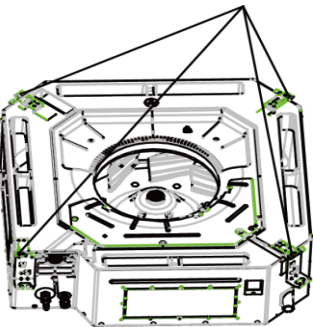
Step	Illustration	Handling Instruction
<p>1. Disassembly of electric box cover</p>		<p>Disassemble the screw according to the position shown in the circle and the box and remove the electric box in the direction of the arrow.</p>
<p>2. Disassembly of electric parts box</p>		<p>Disassemble the fastening screw and remove the electrical parts box. (As is shown in the graph, there are 2 fastening screws in the circle and the screws in the direction of arrow shall be disassembled too.)</p>

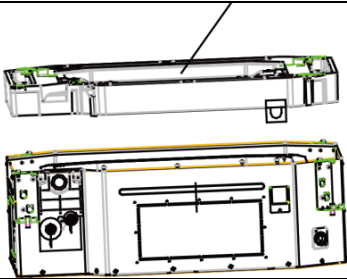
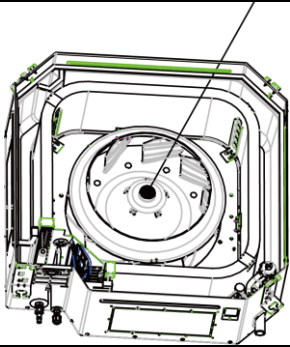
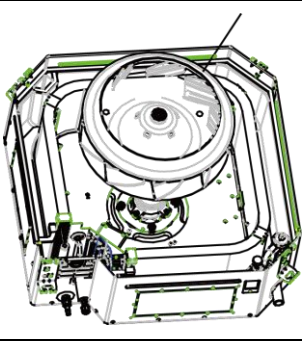
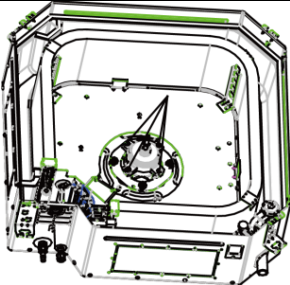
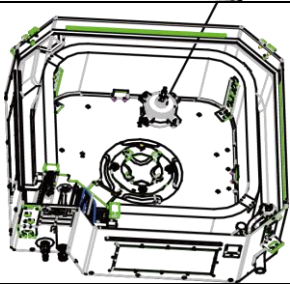
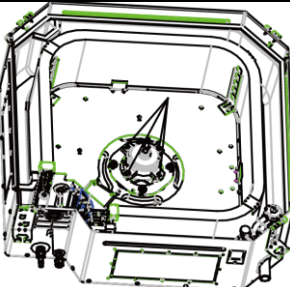
Disassembly of water-containing plate		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Disassembly of cover plate		Disassemble the fastening screws on the cover plate and remove the cover plate. (As is shown in the graph, circle represents 6 fastening screws under the cover plate and the box represents two fastening screws on water-containing plate symmetrically arranged both on left and right.)
2. Disassembly of water-containing plate		Disassemble the fastening screws on the water-containing plate, pull upward and remove the water-containing plate. Disassembled water-containing plate is shown in the graph.

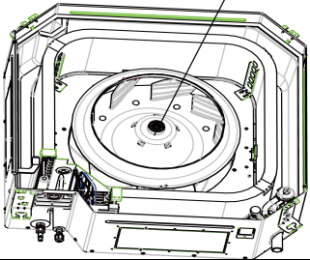
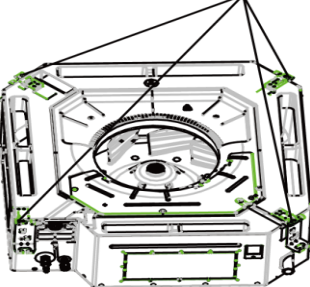
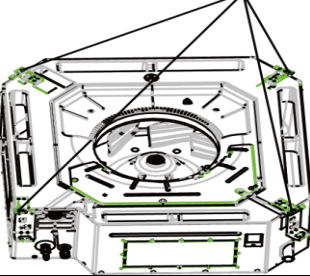
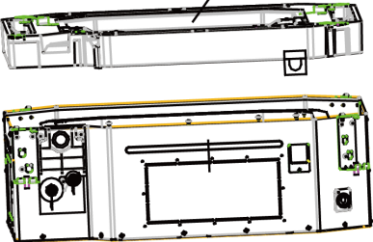
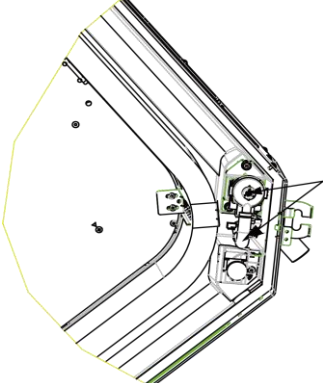
Disassembly of fan and motor		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
Disassembly of fan motor		Disassemble the fixing screws on the fan components. (As is shown in Graph 10, circle represents 6 screws.) Disassemble the fastening screws on the fan and motor. Remove the fan. (As is shown in Graph 11, box represents screws.)

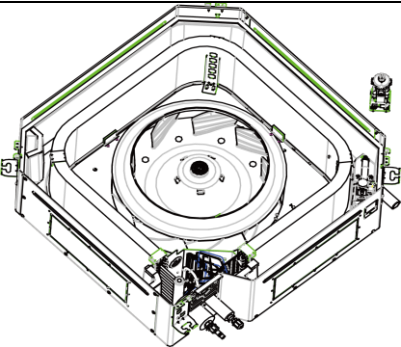
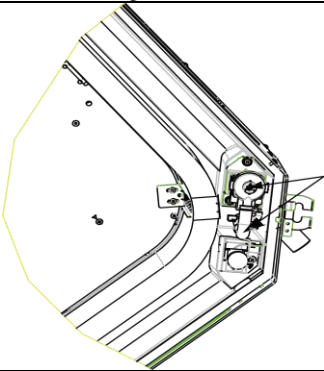
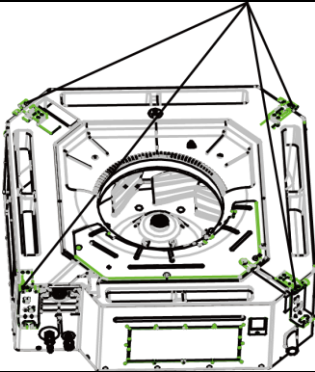
Disassembly of evaporator		
Remark: Make sure that the power supply is cut off and protect the copper tube and aluminum fin. If the time for disassembly shall be long, put the copper tube under pressurized condition.		
Step	Illustration	Handling Instruction
1. Disassembly of fixing screws on the side panels of evaporator	<p>Disassemble of fixing screws on the side panels of evaporator</p> 	Disassemble the fastening screw connecting left and right side panels on the evaporator and the upper cover plate. (As is shown in the arrows direction in Graph.)
2. Disassemble fastening screws connecting evaporator valve seal-plate and joint flange	 <p>Disassemble fastening screws connecting evaporator valve seal-plate and join flange</p>	Disassemble the fastening screws on the valve seal-plate and remove the valve seal-plate. Disassemble the fastening screws on the evaporators joint flange. (As is shown in the graph, box represents fastening screws on seal-plates while circle the fastening screws on joining flange.
3. Removal of evaporator		Remove the evaporator. Removed evaporator is shown in the graph.

4.2.2 Cassette-type Unit

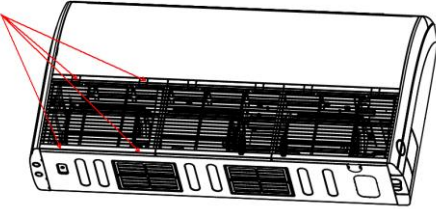
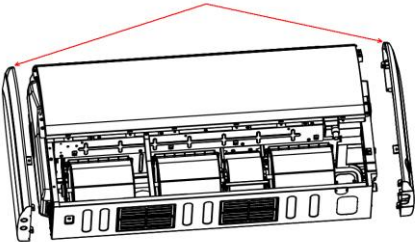
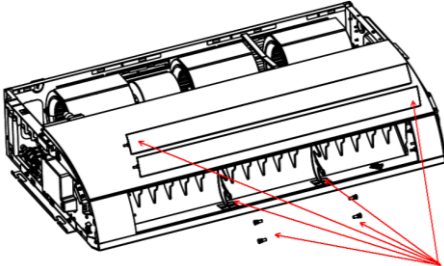
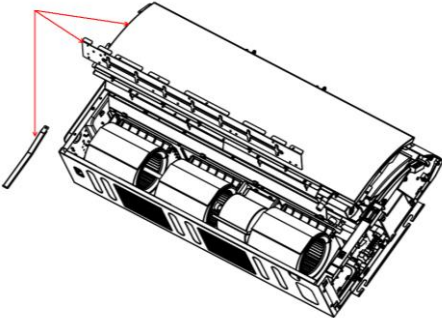
Removal and Assembly of Fan Motor		
Step	Illustration	Handling Instruction
1. Loosen the screws fixing the water tray		Use screwdriver to loosen the screws fixing the water tray

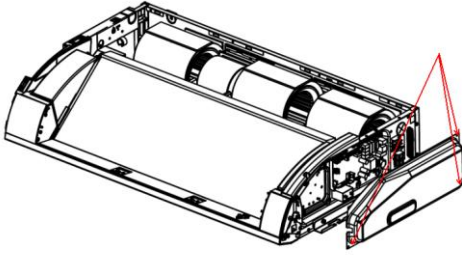
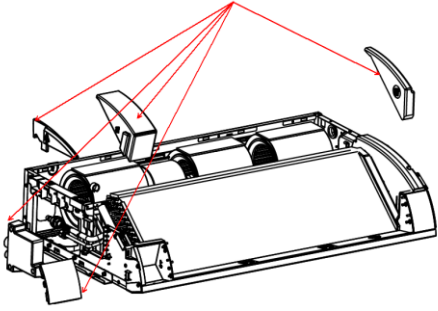
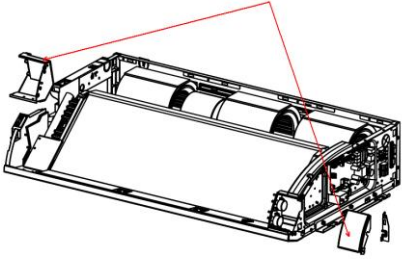
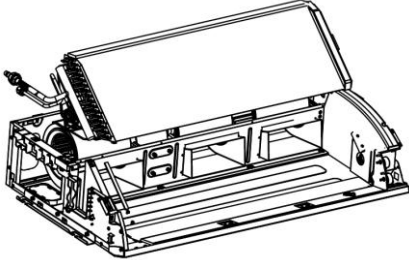
<p>2. Remove the water tray</p>		<p>Remove the water tray</p>
<p>3. Loosen the bolts fixing the fan</p>		<p>Use spanner to loosen the bolts fixing the fan.</p>
<p>4. Remove the fan</p>		<p>Remove the fan</p>
<p>5. Loosen the screws fixing the motor</p>		<p>Use screwdriver to loosen the screws fixing the motor</p>
<p>6. Remove the motor and replace it</p>		<p>Remove the motor and replace it</p>
<p>7. Tighten the screws fixing the motor</p>		<p>Use screwdriver to tighten the screws fixing the motor.</p>

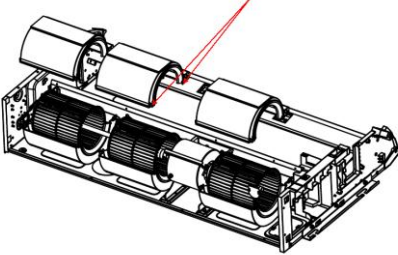
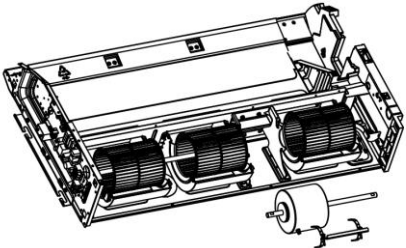
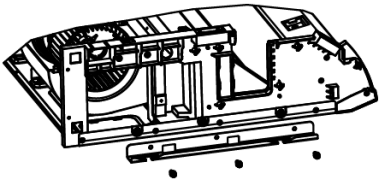
<p>8. Mount the fan and tighten the fixing bolts</p>		<p>Mount the fan and use spanner to tighten the bolts fixing the fan.</p>
<p>9. Mount the water tray and tighten the screws</p>		<p>Use screwdriver to loosen the screws fixing the water tray</p>
<p>Removal and Installation of Drainage Pump</p>		
<p>Step</p>	<p>Illustration</p>	<p>Handling Instruction</p>
<p>1. Loosen the screws fixing the water tray</p>		<p>Use screwdriver to loosen the screws fixing the water tray</p>
<p>2. Remove the water tray</p>		<p>Remove the water pump and replace it.</p>
<p>3. Pull out the water outlet pipe and loosen the screws fixing the water pump.</p>		<p>Pull out the water outlet pipe and use screwdriver to loosen the screws fixing the water pump.</p>

<p>4. Take out the pump and replace it</p>		<p>Take out the pump and replace it</p>
<p>5. Connect the drainage pipe and tighten the screws fixing the water pump.</p>		<p>Connect the drainage pipe and use screwdriver to tighten the screws fixing the water pump.</p>
<p>6. Mount the water tray and tighten the screws</p>		<p>Use screwdriver to loosen the screws fixing the water tray</p>

4.2.3 Floor ceiling type Unit

Disassembly of panel grating module		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly. Do not put filter screen near the high temperature heat source.		
Step	Illustration	Handling Instruction
Disassembly of sub-assy of front grill		<ul style="list-style-type: none"> ●Unscrew the 2 clasps of the upper grill and the 2 screws of the clasps. ●Open the grill, disassemble the 2 down clasps to remove the grill.
Disassembly of right and left finishing plates		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly. Do not scratch the outer parts.		
Step	Illustration	Handling Instruction
Disassembly of right and left finishing plates		<ul style="list-style-type: none"> ●Disassemble the screws as shown in the graph with screwdriver and then push upward to remove the right and left finishing plates.(As is shown in the graph, arrow represents the position of screws.)
Disassembly of panel parts		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly. Do not scratch the outer parts.		
Step	Illustration	Handling Instruction
1.Disassembly of sub-assy of air deflecting plate		<ul style="list-style-type: none"> ●Remove the air deflecting plates from the air deflecting plate support assembly.
2.Disassembly of panel parts		<ul style="list-style-type: none"> ●Unscrew the sides' screws on the cover to remove the cover.

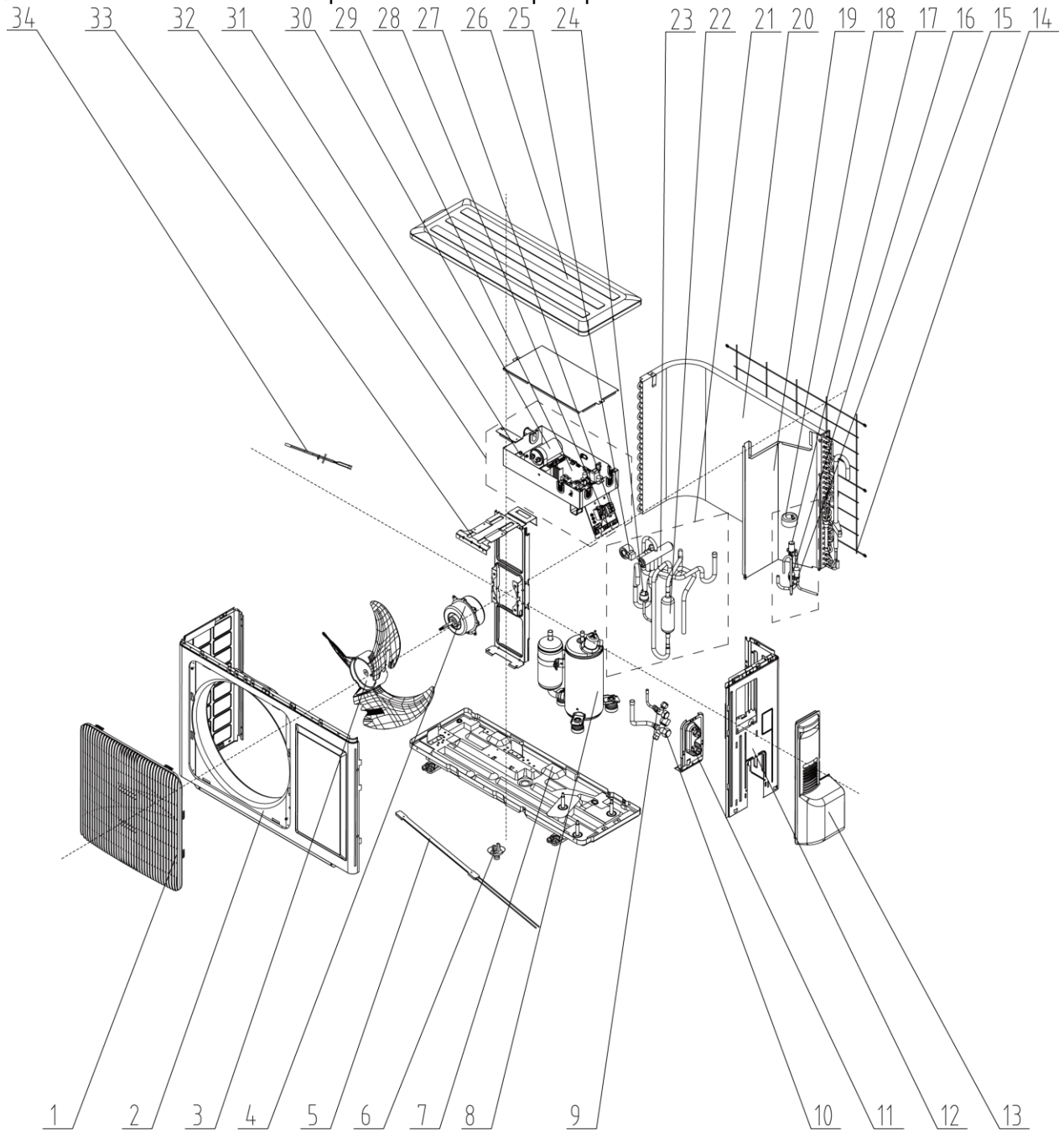
Disassembly of sub-assy of electric box		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly, especially the components inside the box in case of water and hit.		
Step	Illustration	Handling Instruction
Disassembly of electric box cover		<ul style="list-style-type: none"> Disassemble 3 screws as shown by the arrow in the graph on left and remove the electric box cover.
Disassemble of foam and cover		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Disassemble of foam		<ul style="list-style-type: none"> Remove the foam
2. Disassemble of cover		<ul style="list-style-type: none"> Unscrew the screws on the cover to remove the cover.
Disassembly of evaporator components		
Remark: Make sure that the power supply is cut off and protect the copper tube and aluminum fin. If the time for disassembly shall be long, seal the copper tube.		
Step	Illustration	Handling Instruction
Disassembly of evaporator components		<ul style="list-style-type: none"> Unscrew the screws of evaporator to remove the evaporator.

Disassembly of fan and motor components		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly, especially the fastening screws for fans.		
Step	Illustration	Handling Instruction
1. Disassembly of front and back scroll cases		<ul style="list-style-type: none"> ● Press the buckle at the joints of front and back scroll cases with hands and pull upward to remove the front scroll case. Then remove the screws on the back scroll case. Lift the buckle of back scroll case with hands and remove it. (As is shown in the graph, circle represents 2 screws on left and right.)
2. Disassembly of motor		<ul style="list-style-type: none"> ● Loosen the 2 screws of the motor attaching clamp, remove the motor attaching clamp and motor attaching clamp subassembly to remove the motor.
Disassembly of right and left fixing plates		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
Disassembly of right and left fixing plates		<ul style="list-style-type: none"> ● Disassemble the bolts on right and left fixing plates with tools. (As is shown by the arrow in the graph.)

5 EXPLODED VIEWS AND SPARE PART LIST

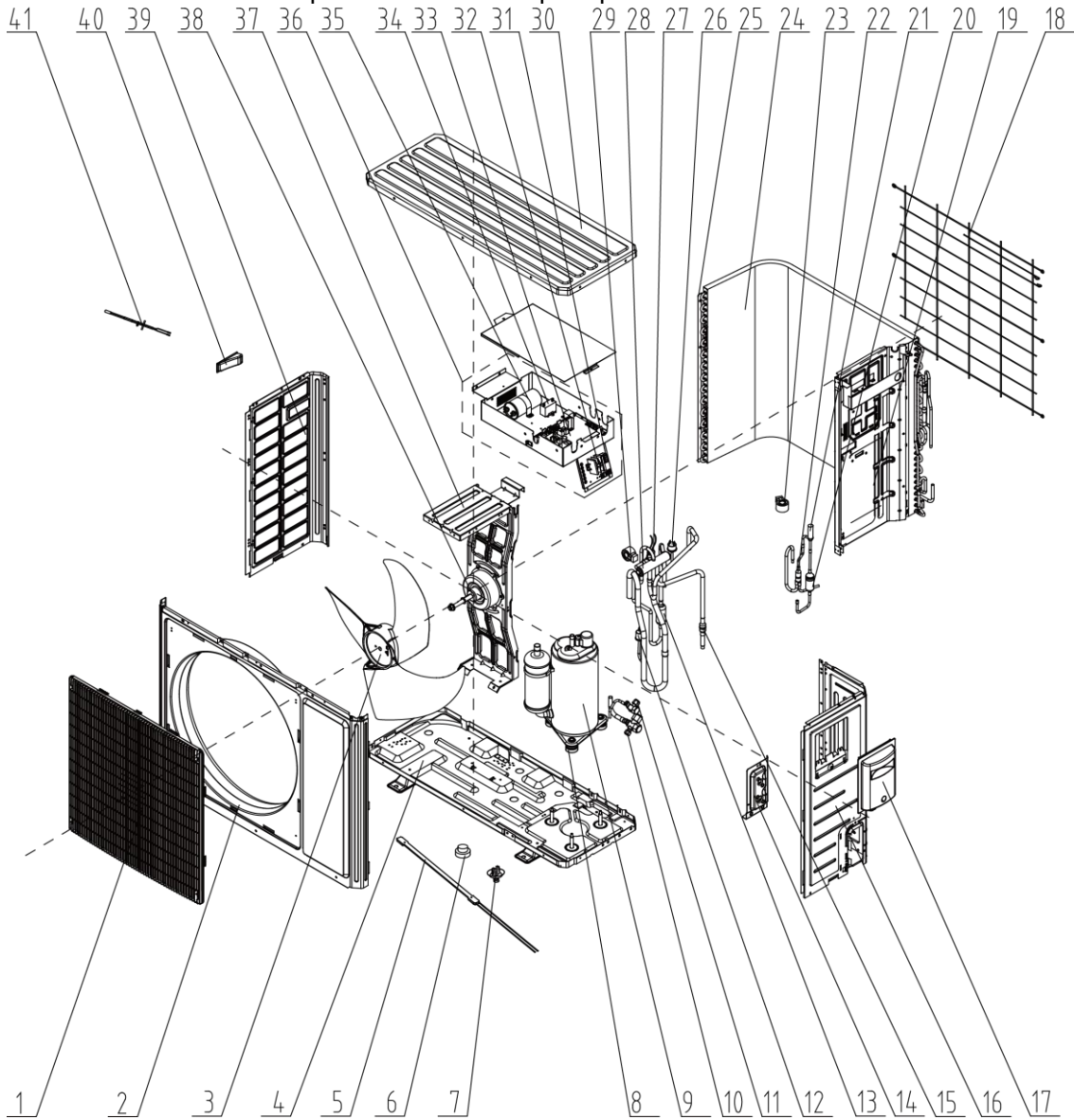
5.1 Outdoor Unit

◆ Model: GUHN12NK3HO Exploded Views and spare parts list:



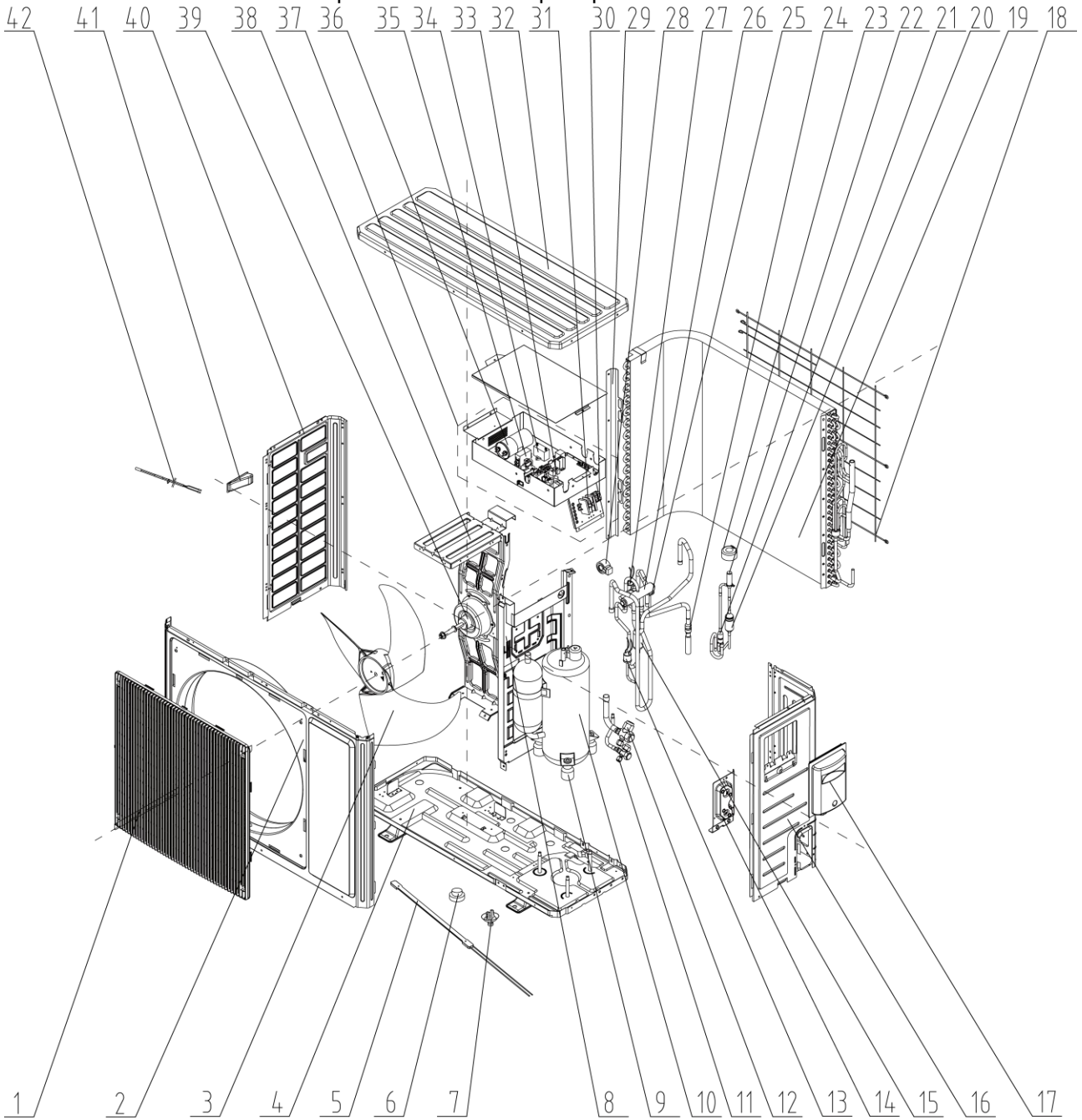
NO.	Name of Part	GUHN12NK3HO	
		Product Code	CF021W2220
		Part Code	Quantity
1	Front Grill	'22413433	1
2	Front Panel	'0153303204P	1
3	Axial Flow Fan	'10333004	1
4	Fan Motor	'1501306742	1
5	Electric Heater(Compressor)	'7651873215	1
6	Drainage Joint	'06123401	1
7	Chassis Sub-Assy	'01700000192P	1
8	Compressor and Fittings	'009001000186	1
9	Valve	'07100003	1
10	Valve	'07100006	1
11	Valve Support	'01713041	1
12	Right Side Plate Sub-Assy	'0130317801	1
13	Big Handle	'262334332	1
14	Rear Grill	'01473057	1
15	Strainer	'07225088	1
16	Strainer	'0721304401	1
17	Electronic Expansion Valve	'43042800063	1
18	Electric Expand Valve Fitting	'4300034401	1
19	Clapboard	'012051000188	1
20	Condenser Assy	'011002000547	1
21	4-Way Valve Assy	'030152000313	1
22	Silencer	'07245005	1
23	4-Way Valve	'430004032	1
24	Pressure Protect Switch	'46020003	1
25	Magnet Coil	'4300040047	1
26	Top Cover Plate	'0125344311P	1
27	Terminal Board	'420101852	1
28	Terminal Board	'420001000001	1
29	Main Board	'30224000084	1
30	Capacitor	'3300008109	1
31	Capacitor	'3301074710	1
32	Electric Box Assy	'100002002351	1
33	Motor Support	'0170310302	1
34	Temperature Sensor	'3900028020G	1

◆ Model: GUHN18NK3HO Exploded Views and spare parts list:



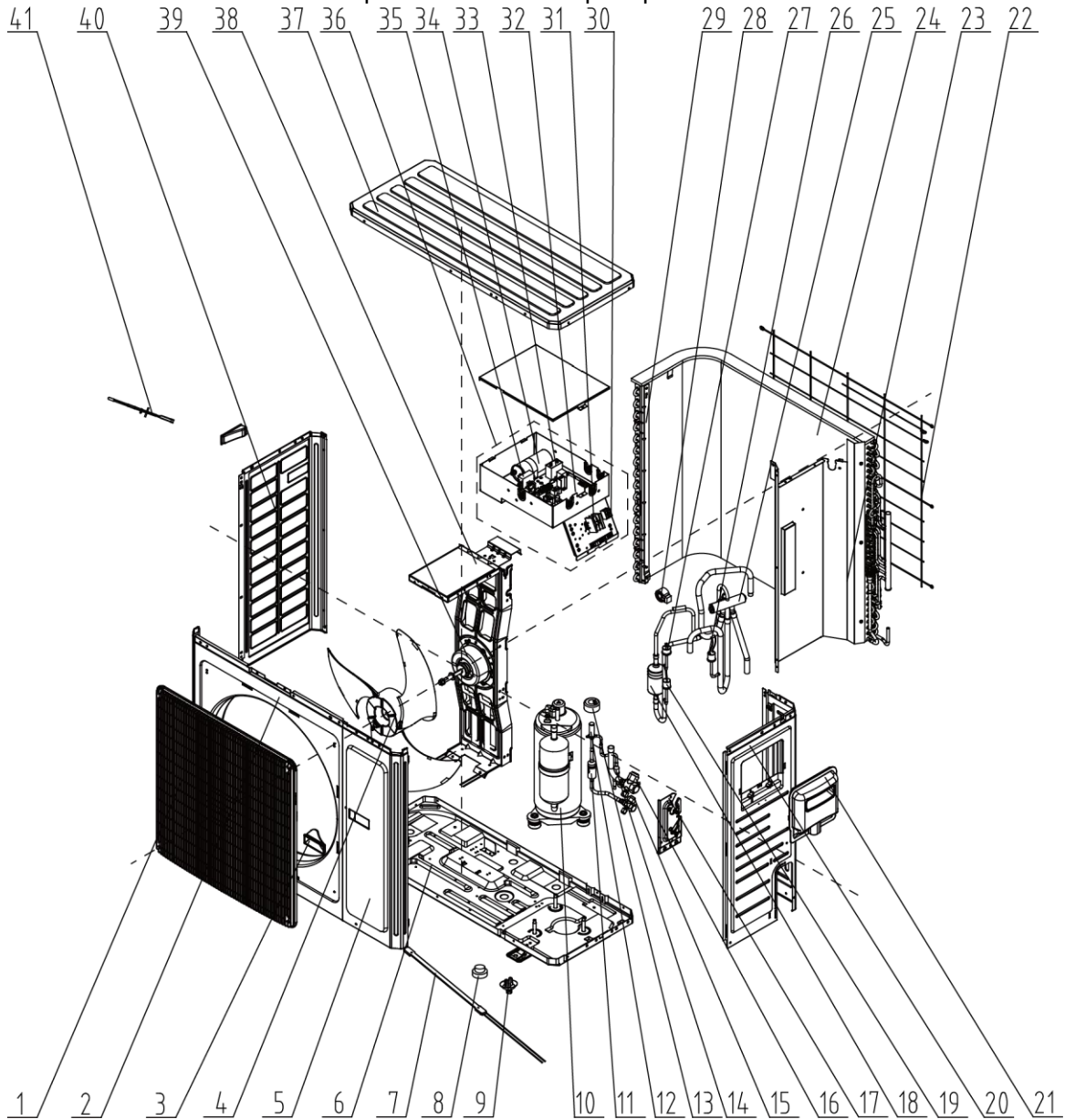
NO.	Name of Part	GUHN18NK3HO		GUHN24NK3HO	
		Product Code	CF021W2090	Product Code	CF021W2100
		Part Code	Quantity	Part Code	Quantity
1	Front Grill	'22415010	1	'22415010	1
2	Front Panel	'01535013P	1	'01535013P	1
3	Axial Flow Fan	'10335008	1	'10335008	1
4	Chassis Sub-Assy	'01195200081P	1	'01195200082P	1
5	Electrical Heater(Compressor)	'765152128	1	'765152128	1
6	Drainage Hole Cap	'06813401	3	'06813401	3
7	Drainage Connector	'06123401	1	'06123401	1
8	Compressor Gasket	'76711065	3	'76710313	3
9	Compressor and Fittings	'00103872	1	'00103354	1
10	Cut off Valve	'071302392	1	'07133157	1
11	Cut off Valve	'07130239	1	'071302391	1
12	Pressure Switch	'4602001539	1	'4602001539	1
13	Silencer	'7245007	1	'7245007	1
14	Valve Support Assy	'01715010P	1	'01713098P	1
15	Strainer	'07212121	1	'07212121	1
16	Right Side Plate	'0130509402P	1	'0130509402P	1
17	Handle	'2623525404	1	'2623525404	1
18	Rear Grill	'01473043	1	'01473043	1
19	Clapboard Sub-Assy	'01245200032	1	'01245200032	1
20	Strainer	'07220019	1	'07220019	1
21	Electronic Expansion Valve	'07133978	1	'07133909	1
22	Bifurcate Strainer	'07213043	1	'07213043	1
23	Electric Expand Valve Fitting	'4300876704	1	'4300876704	1
24	Condenser Assy	'01125200310	1	'01125200311	1
25	Condenser Support Plate	'0117313201	1	'01795010	1
26	Preessure Protect Switch	'46020003	1	'46020003	1
27	Preessure Protect Switch	'4602000913	1	'4602000902	1
28	4-Way Valve	'430004032	1	'430004032	1
29	Magnet Coil	'4300040045	1	'4300040045	1
30	Coping	'01255005P	1	'01255005P	1
31	Terminal Board	'420111451	1	'420111451	1
32	Terminal Board	'420101852	1	'420101852	1
33	Main Board	'30224000084	1	'30224000084	1
34	Capacitor	'3301074706	1	'3301074706	1
35	Capacitor	'3300008105	1	'3300008104	1
36	Electric Box Assy	'01395200597	1	'01395200598	1
37	Motor Support	'01705125	1	'01705020	1
38	Fan Motor	'1501506313	1	'1501506313	1
39	Left Side Plate	'01305093P	1	'01305093P	1
40	Left Handle	'26235401	1	'26235401	1
41	Tempeperature	'3900028020G	1	'3900028020G	1

◆ Model: GUHN24NK3HO Exploded Views and spare parts list:



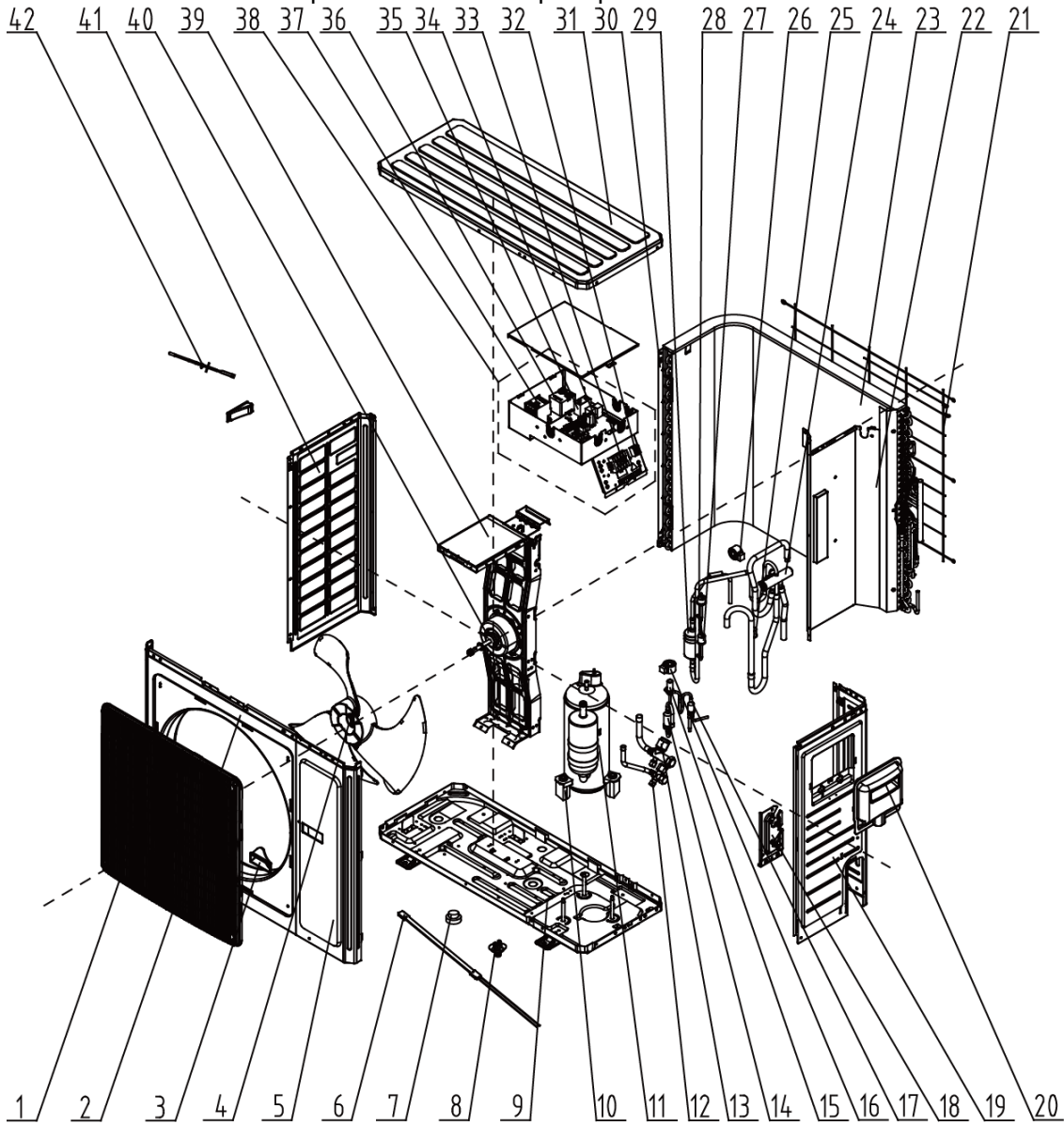
NO.	Name of Part	GUHN24NK3HO	
		Product Code	CF021W2100
		Part Code	Quantity
1	Front Grill	'22415010	1
2	Front Panel	'01535013P	1
3	Axial Flow Fan	'10335008	1
4	Chassis Sub-Assy	'01195200082P	1
5	Electrical Heater(Compressor)	'765152128	1
6	Drainage Hole Cap	'06813401	3
7	Drainage Connector	'06123401	1
8	Clapboard Sub-Assy	'01245200032	1
9	Compressor Gasket	'76710313	3
10	Compressor and Fittings	'00103354	1
11	Cut off Valve	'071302391	1
12	Cut off Valve	'07133157	1
13	Pressure Switch	'4602001539	1
14	Valve Support Sub-Assy	'01713098P	1
15	Silencer	'07245007	1
16	Right Side Plate	'0130509402P	1
17	Handle	'2623525404	1
18	Rear Grill	'01473043	1
19	Condenser Assy	'01125200311	1
20	Strainer	'07220019	1
21	Bifurcate Strainer	'07213043	1
22	Electronic Expansion Valve	'07133909	1
23	Electric Expand Valve Fitting	'4300876704	1
24	Strainer	'07212121	1
25	Pressure Protect Switch	'46020003	1
26	4-Way Valve	'430004032	1
27	Pressure Protect Switch	'4602000902	1
28	Magnet Coil	'4300040045	1
29	Supporting Board(Condenser)	'01795010	1
30	Terminal Board	'420101852	1
31	Terminal Board	'420111451	1
32	Coping	'01255005P	1
33	Main Board	'30224000084	1
34	Capacitor CBB61S	'3301074706	1
35	AC Contactor	'44010245	1
36	Capacitor CBB65	'3300008104	1
37	Electric Box Assy	'01395200598	1
38	Motor Support Sub-Assy	'01705020	1
39	Fan Motor	'1501506313	1
40	Left Side Plate	'01305093P	1
41	Left Handle	'26235401	1
42	Temperature Sensor	'3900028020G	1

◆ Model: GUHN30NK3HO Exploded Views and spare parts list:



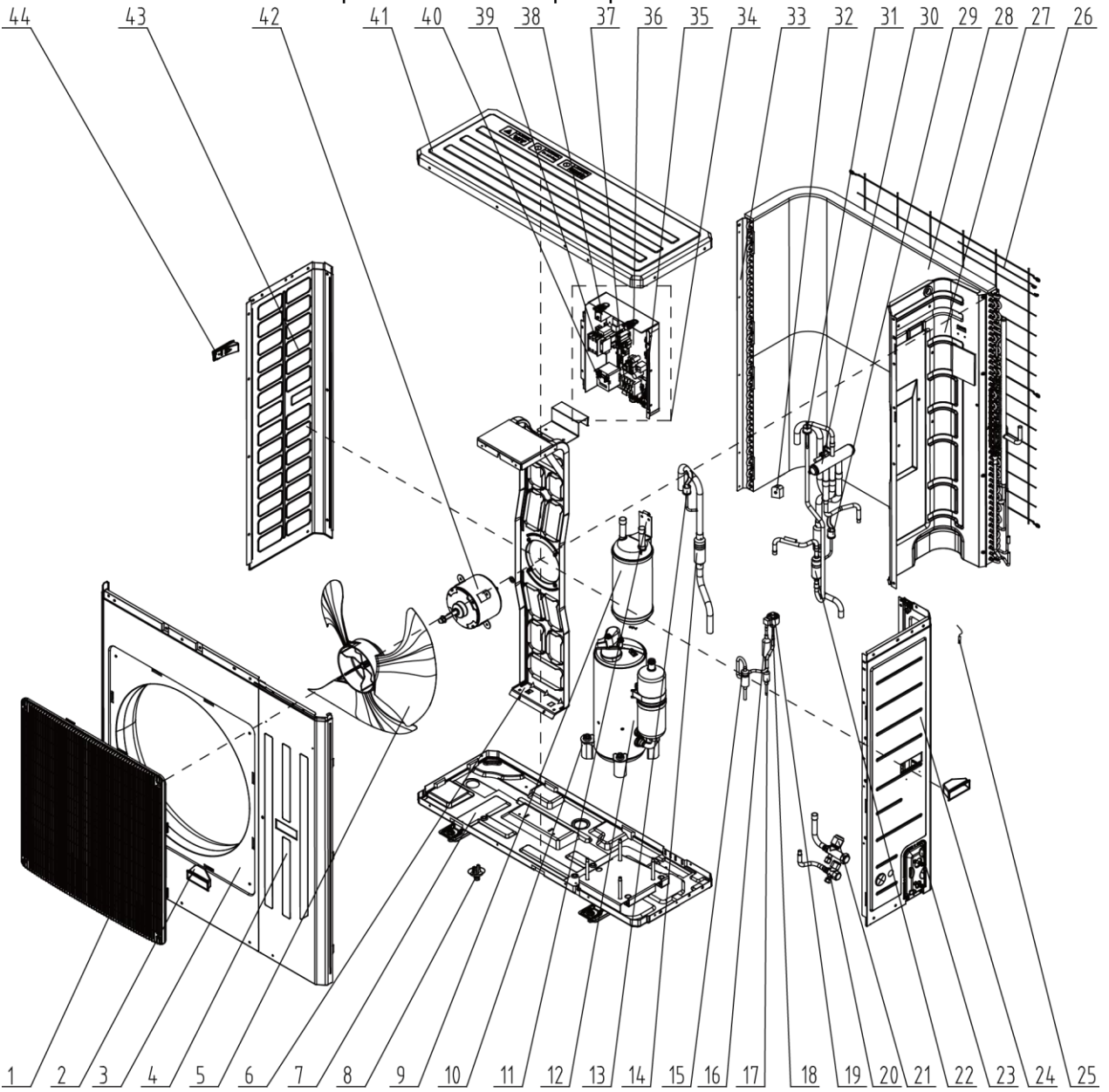
NO.	Name of Part	GUHN30NK3HO	
		Product Code	CF021W2110
		Part Code	Quantity
1	Front Grill	'22415011	1
2	Cabinet	'01435004P	1
3	Left Handle	'26235401	2
4	Axial Flow Fan	'10335014	1
5	Front Side Plate	'01305086P	1
6	Chassis Sub-Assy	'0119523602P	1
7	Electrical Heater(Compressor)	'765152128	1
8	Drainage Hole Cap	'06813401	3
9	Drainage Connector	'06123401	1
10	Compressor and Fittings	'00205200018	1
11	Strainer	'0741410000601	1
12	Electronic Expansion Valve	'07133909	1
13	Electric Expand Valve Fitting	'4300876704	1
14	Furcate Strainer	'07213043	1
15	Cut off Valve	'071302391	1
16	Cut off Valve	'07133157	1
17	Valve Support Sub-Assy	'01715020P	1
18	Silencer	'07245008	1
19	Preessure Protect Switch	'4602000902	1
20	Right Side Plate Sub-Assy	'01315464P	1
21	Big Handle	'2623500101	1
22	Rear Grill	'01475013	1
23	Clapboard Sub-Assy	'01245200027	1
24	Condenser Assy	'01125200308	1
25	4-Way Valve	'4300008201	1
26	Preessure Switch	'4602001539	1
27	Preessure Protect Switch	'46020003	1
28	Magnet Coil	'4300040045	1
29	Condenser Support Plate	'01175092	1
30	Terminal Board	'420101852	1
31	Terminal Board	'420111451	1
32	Main Board	'30224000084	1
33	Capacitor	'3301074708	1
34	Capacitor	'3300008107	1
35	AC Contactor	'44010245	1
36	Electric Box Assy	'01395200593	1
37	Top Cover Sub-Assy	'01255007	1
38	Motor Support Sub-Assy	'01805410	1
39	Fan Motor	'1501506215	1
40	Left Side Plate	'01305043P	1
41	Tempeeratue Sensor	'3900028020G	1

◆ Model: GUHN36NM3HO Exploded Views and spare parts list:



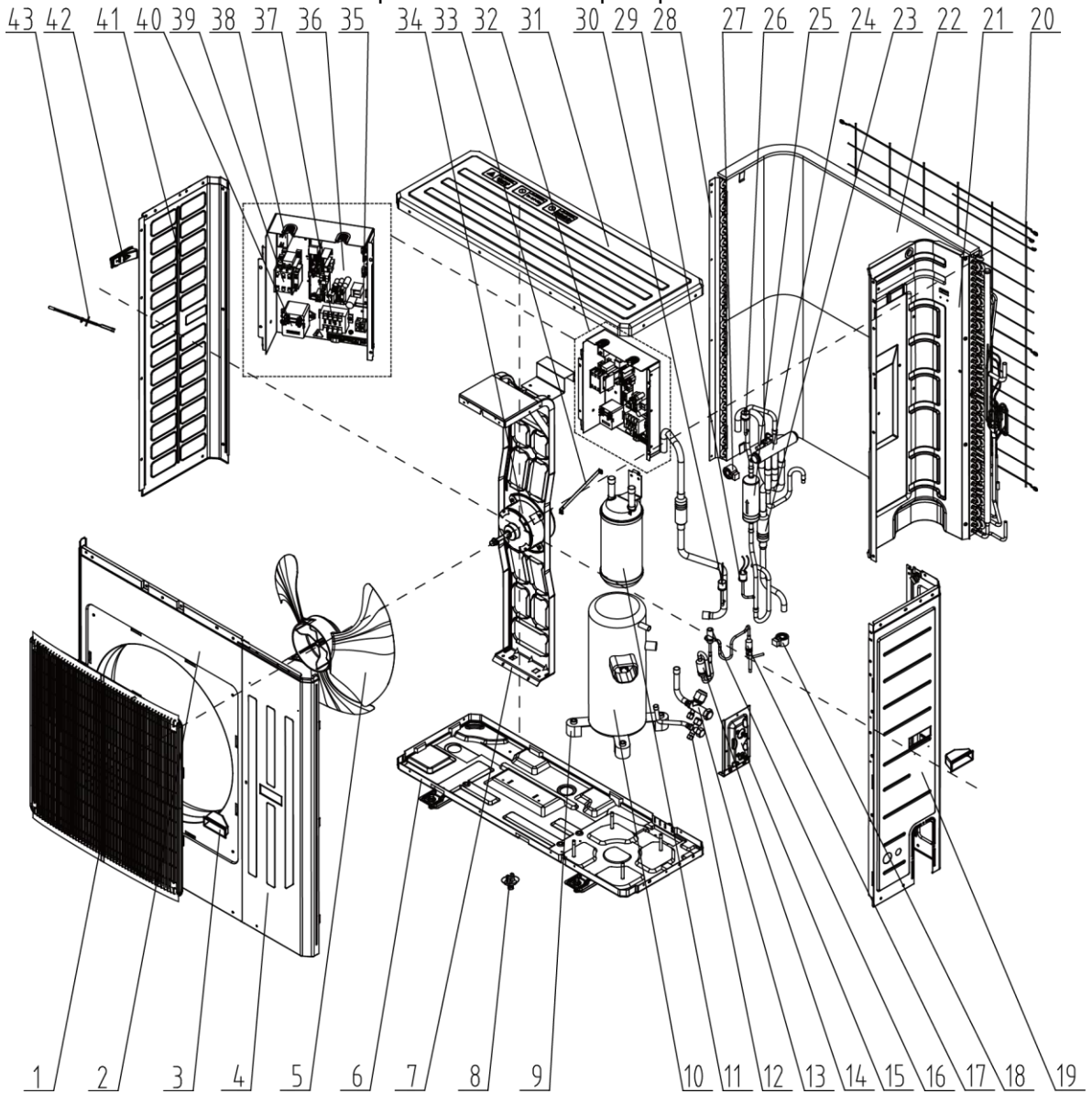
NO.	Name of Part	GUHN36NM3HO	
		Product Code	CF021W2080
		Part Code	Quantity
1	Front Grill	22415011	1
2	Cabinet	'01435004P	1
3	Left Handle	'26235401	2
4	Axial Flow Fan	'10335014	1
5	Front Side Plate	'01305086P	1
6	Electrical Heater(Compressor)	'765152128	1
7	Drainage hole Cap	'06813401	3
8	Drainage Connector	'06123401	1
9	Chassis Sub-Assy	'0119523601P	1
10	Compressor Gasket	'76812206	3
11	Compressor and Fittings	'00205200019	1
12	Cut off Valve	'0710307901	1
13	Cut off Valve	'07135058	1
14	Strainer	'0741410000601	1
15	Electronic Expansion Valve	'43005017	1
16	Electric Expand Valve Fitting	'4300034401	1
17	Strainer	'07225088	1
18	Valve Support Sub-Assy	'01715020P	1
19	Right Side Plate Sub-Assy	0131520006901P	1
20	Big Handle	'2623500101	1
21	Rear Grill	'01475013	1
22	Clapboard Sub-Assy	01245200027	1
23	Condenser Assy	'01125200307	1
24	4-way Valve	'4300008201	1
25	Pressure Switch	'4602001539	1
26	Magnet Coil	'4300040045	1
27	Pressure Protect Switch	'46020003	1
28	Pressure Protect Switch	'4602000902	1
29	Silencer	'07245008	1
30	Condenser Support Plate	'01175092	1
31	Top Cover Sub-Assy	'01255007	1
32	Terminal Board	'420101852	1
33	Terminal Board	'42011043	1
34	Main Board	'30224000083	1
35	Capacitor	'3301074708	1
36	Anti-phase Protector	46020052	1
37	AC Contactor	'44010287	1
38	Electric Box Assy	'01395200589	1
39	Motor Support Sub-Assy	'01805410	1
40	Fan Motor	'1501506215	1
41	Left Side Plate	'01305043P	1
42	Temperature Sensor	'3900028020G	1

◆ Model: GUHN42NM3HO Exploded Views and spare parts list:



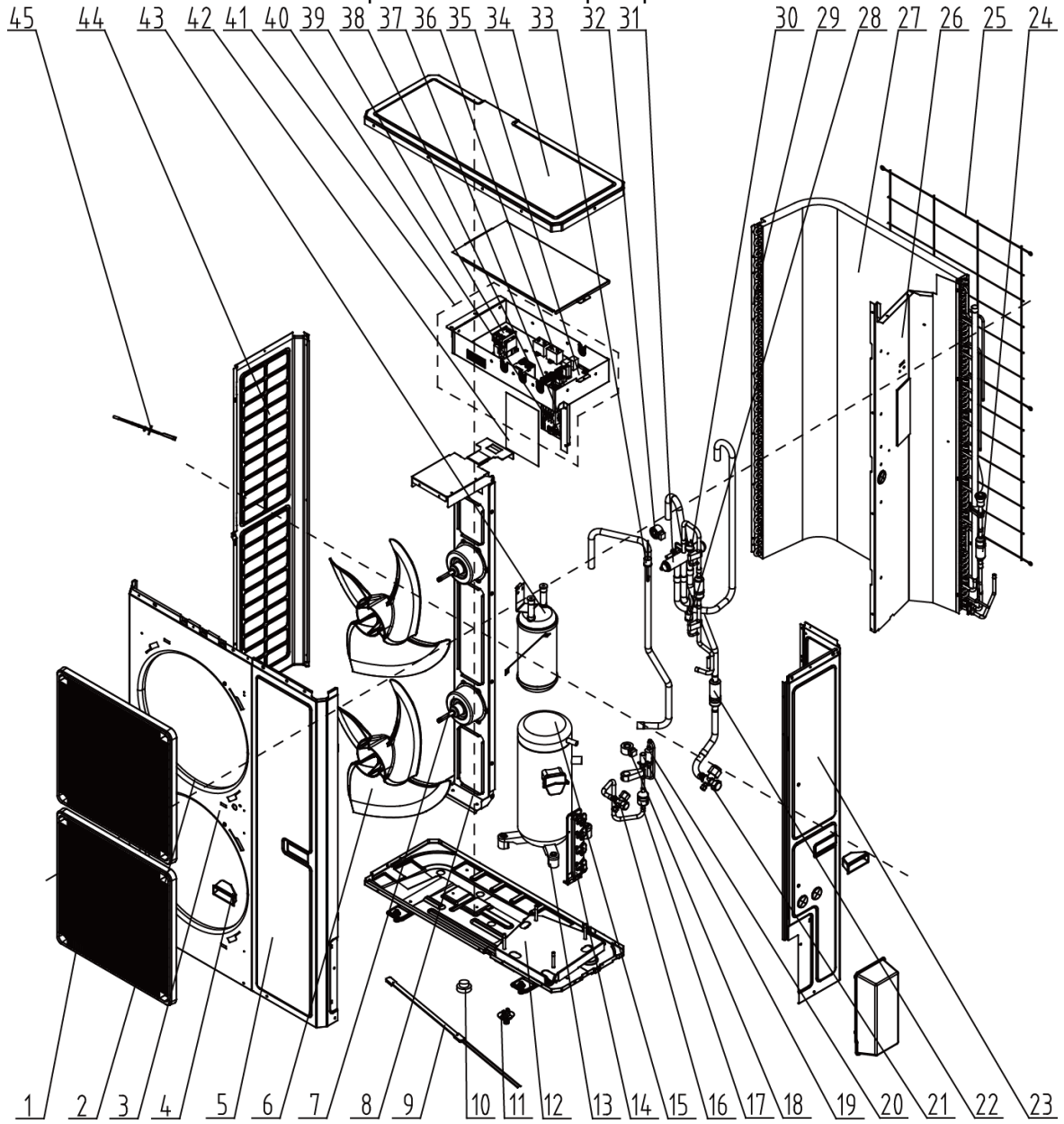
NO.	Name of Part	GUHN42NM3HO	
		Product Code	CF021W2070
		Part Code	Quantity
1	Front Grill	'26905200121	1
2	Handle	'26235253	2
3	Cabinet	'01435007P	1
4	Front Side Plate Sub-Assy	'01315414	1
5	Axial Flow Fan	'10335010	1
6	Motor Support Sub-Assy	'01805470	1
7	Chassis Sub-Assy	'01195200078P	1
8	Drainage Joint	'26113009	1
9	Gas-liquid Swparator Sub-Assy	'0722501801	1
10	Compressor Gasket	'76812206	4
11	Wire Clamp	'02145008	1
12	Compressor and Fittings	'00209400001	1
13	Preesure Switch	'4602001539	1
14	Strainer	'07210037	2
15	Strainer	'0741410000601	1
16	Silencer	'07245012	1
17	Strainer	'07213050	1
18	Electric Expand Valve Fitting	'43000344	1
19	Electronic Expansion Vlave	'43005017	1
20	Cut off Valve	'071302392	1
21	Cut off Valve	'07135058	1
22	Silencer	'07245011	1
23	Valve Support Sub-Assy	'01715257P	1
24	Right Side Plate Sub-Assy	'01315200076P	1
25	Tempeeratue Sensor	'3900028027G	1
26	Rear Grill	'01475012	1
27	Clapboard Sub-Assy	'01235069	1
28	Condenser Assy	'01125373	1
29	Preesure Protect Switch	'4602000902	1
30	4-Way Valve	'43000338	1
31	Pressure Protect Switch	'46020003	1
32	Magnet Coil	'4300040045	1
33	Condenser Support Plate	'01895309	1
34	Electric Box Assy	'01395200588	1
35	Terminal Board	'420101852	1
36	Main Board	'30224000083	1
37	Terminal Board	'42011043	1
38	Capacitor	'3301074708	1
39	AC Contactor	'44010226	1
40	Anti-phase Protector	'46020052	1
41	Top Cover	'0125500901P	1
42	Fan Motor	'1501330802	1
43	Left Side Plate	'01305064P	1
44	Handle	'26233053	1

◆ Model: GUHN48NM3HO Exploded Views and spare parts list:



NO.	Name of Part	GUHN48NM3HO	
		Product Code	CF021W2060
		Part Code	Quantity
1	Front Grill	'26905200121	1
2	Cabinet	'01435007P	1
3	Handle	'26235253	2
4	Front Side Plate Sub-Assy	'01315414	1
5	Axial Flow Fan	'10335010	1
6	Chassis Sub-Assy	'01205139P	1
7	Motor Support Sub-Assy	'01285200072	1
8	Drainage Joint	'26113009	1
9	Compressor Gasket	'76710209	4
10	Compressor and Fittings	'00205200005	1
11	Gas-liquid Separator Sub-Assy	'0722501801	1
12	Cut off Valve	'07103079	1
13	Cut off Valve	'07135058	1
14	Strainer	'0741410000601	1
15	Valve Support Sub-Assy	'01715257P	1
16	Electronic Expansion Valve	'43005017	1
17	Strainer	'07225088	1
18	Electric Expand Valve Fitting	'43000344	1
19	Right Side Plate Sub-Assy	'01315200076P	1
20	Rear Grill	'01475012	1
21	Clapboard Sub-Assy	'01235069	1
22	Condenser Assy	01125200305	1
23	Strainer	'07210037	2
24	4-way Valve	'43000338	1
25	Silencer	'07245434	1
26	Pressure Protect Switch	'46020003	1
27	Magnet Coil	'4300040045	1
28	Condenser Support Plate	'01895309	1
29	Pressure Protect Switch	'4602000902	1
30	Pressure Switch	'4602001539	1
31	Top Cover	'0125500901P	1
32	Electric Box Assy	'01395200588	1
33	Wire Clamp	'02145008	1
34	Fan Motor	'1501330802	1
35	Terminal Board	'420101852	1
36	Main Board	'30224000083	1
37	Terminal Board	'42011043	1
38	Capacitor	'3301074708	1
39	AC Contactor	'44010226	1
40	Anti-phase Protector	'46020052	1
41	Left Side Plate	'01305064P	1
42	Handle	'26233053	1
43	Temperature Sensor	'3900028027G	1

◆ Model: GUHN60NM3HO Exploded Views and spare parts list:

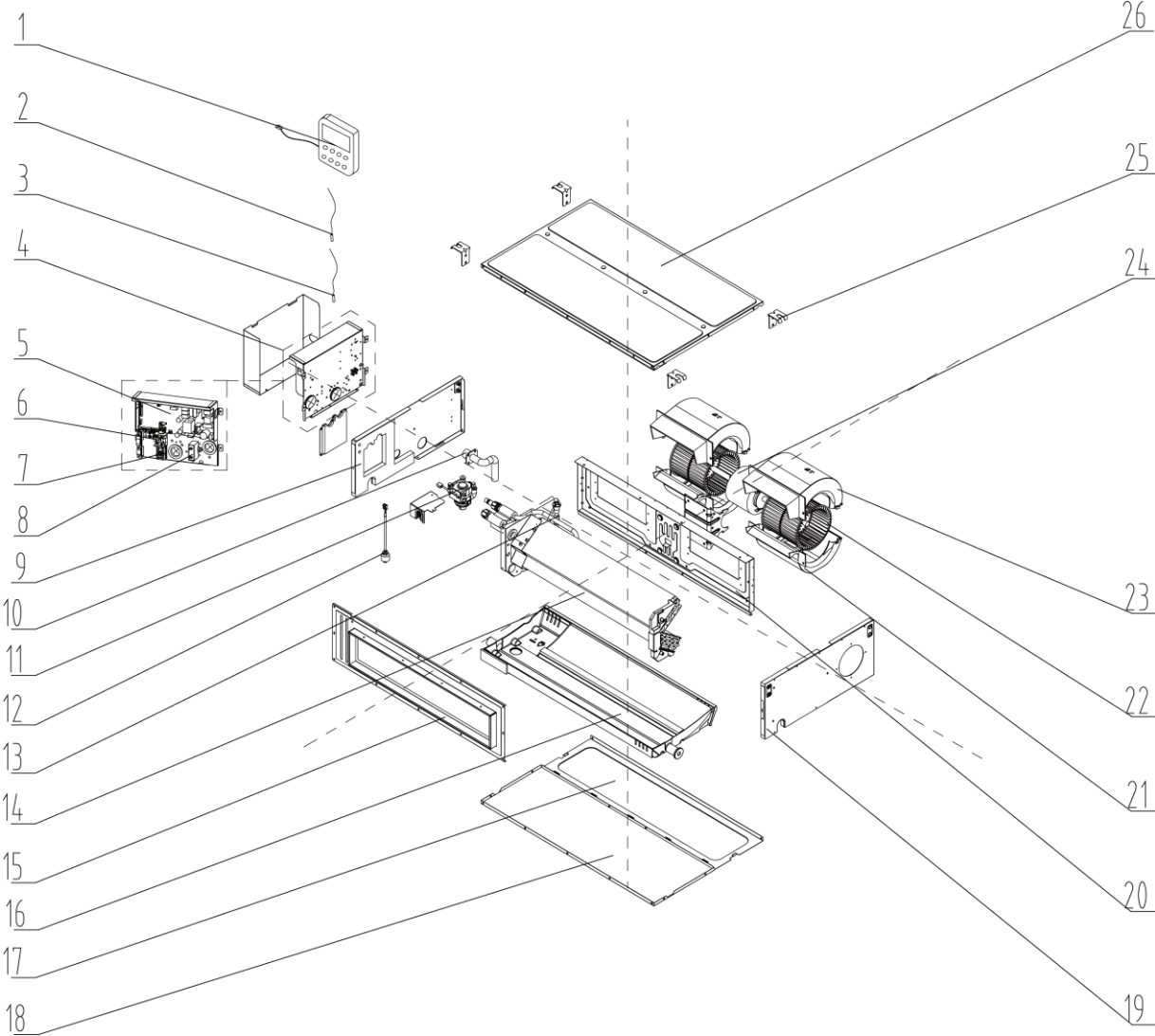


NO.	Name of Part	GUHN60NM3HO	
		Product Code	CF021W2050
		Part Code	Quantity
1	Front Grill	'01575200002	2
2	Diversion Circle	'10474100001	2
3	Cabinet Assy	'01514100006	1
4	Handle	'26235253	2
5	Front Side Plate	'01314100021P	1
6	Axial Flow Fan	'1043410000301	2
7	Fan Motor	'1501506714	2
8	Motor Support Sub-Assy	'01804100024	1
9	Electrical Heater(Compressor)	'7651540407	1
10	Drainage Hole Cap	'06813401	3
11	Drainage Connector	'06813401	1
12	Chassis Assy	'01195200079	1
13	Compressor Gasket	'76710209	4
14	Valve Support Sub-Assy	'01805200204P	1
15	Compressor and Fittings	'00105066	1
16	Cut off Valve	'071302392	1
17	Strainer	'07415210	1
18	Electric Expand Valve Fitting	'43000344	1
19	Electronic Expansion Valve	'43005017	1
20	Strainer	'0741410000601	1
21	Cut-off Valve	'07130212	1
22	Bidirection Strainer	'07210044	1
23	Rear Side Plate Sub-Assy	'01315200088P	1
24	Silencer	'07245012	2
25	Rear Grill	'01574100004	1
26	Clapboard	'01245200028	1
27	Condenser Assy	'01125200194	1
28	Pressure Protect Switch	'4602000902	1
29	Support Plate(Condenser)	'01894100026	1
30	Pressure Protect Switch	'46020003	1
31	4-way Valve	'43000338	1
32	Magnet Coil	'4300040029	1
33	Pressure switch	'4602001539	1
34	Coping	'01264100008P	1
35	Main Board	'30224000083	1
36	Capacitor	'3301074707	2
37	Terminal Board	'420101852	1
38	Anti-phase Protector	'46020052	1
39	AC Contactor	'44010226	1
40	Terminal Board	'42011043	1
41	Electric Box Assy	'01395200574	1
42	Insulated Board (Cover of Electric Box)	'20113003	1
43	Gas-liquid Separator Sub-Assy	'0722501801	1
44	Left Side Plate	'01314100013P	1
45	Temperature Sensor	'3900028025G	1

5.2 Indoor Unit

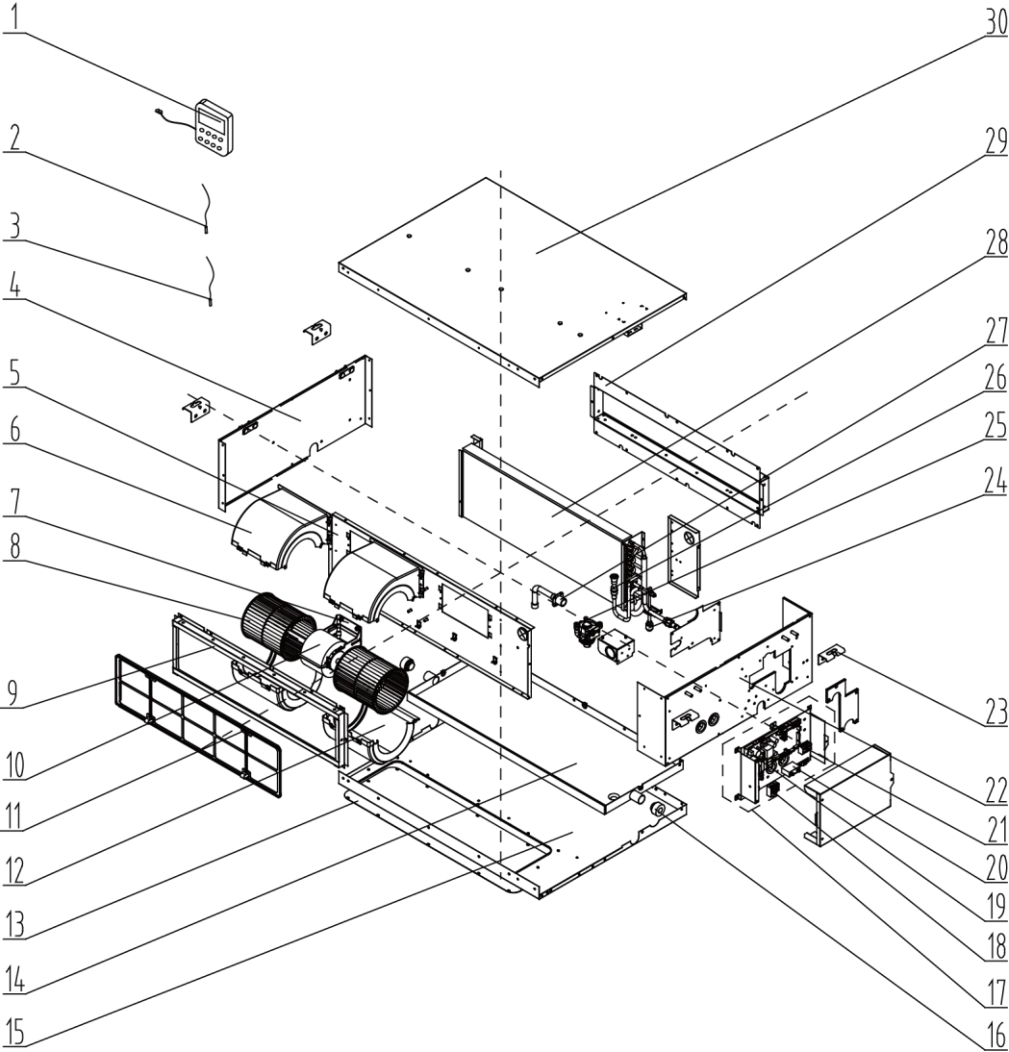
5.2.1 Duct Type

◆ Model: GFH12K3H1I exploded view and spare parts list



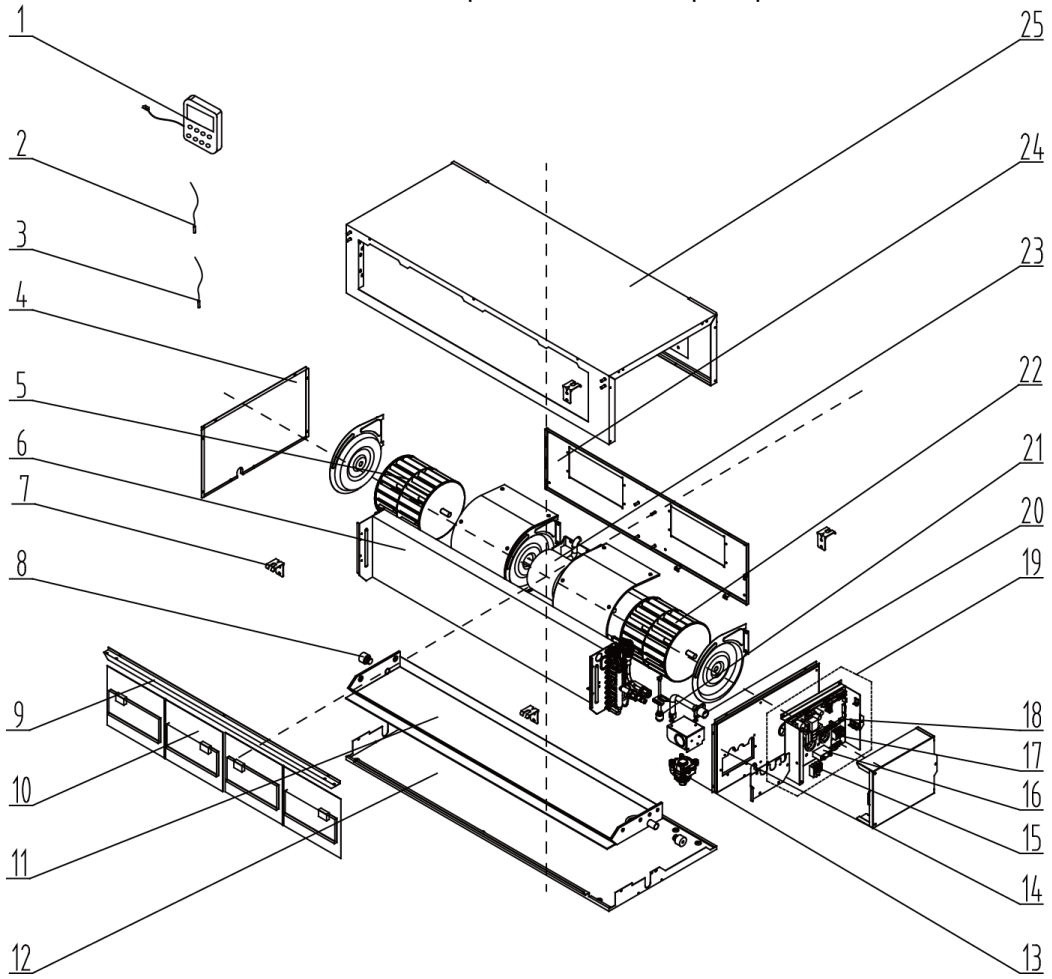
NO.	Name of Part	GFH12K3H1I	
		Product Code	CF022N1030
		Part Code	Quantity
1	Display Board	'30294000007	1
2	Temperature Sensor	'390000456	1
3	Temperature Sensor	'390000596	1
4	Electric Box Assy	'100002002135	1
5	Main Board	'30224000085	1
6	Terminal Board	'420111106	1
7	Terminal Board	'4201025301	1
8	Capacitor	'3301074704	1
9	Left Side Plate Assy	'01315200051	1
10	Pump Drainpipe	'200070000007	1
11	Water Pump(DC)	'43138000058	1
12	Liquid Level Switch	'4501270303	1
13	Strainer	'0721200102	1
14	Evaporator Assy	'011001000396	1
15	Air Outlet Frame Assy	'01375200007	1
16	Water Tray Assy	'01285200020	1
17	Cover Plate(Air return)	'01265200057	1
18	Bottom Cover Plate Assy	'01265200065	1
19	Right Side Plate Assy	'01315200053	1
20	Blower Mounting Plate Sub-Assy	'01325200034	1
21	Propeller Housing(Lower)	'26905200019	2
22	Centrifugal Fan	'10425200003	2
23	Propeller Housing(Upper)	'26905200018	2
24	Fan Motor	'1570520104	1
25	Hook	'02112446	4
26	Top Cover Board Assy	'01265200066	1

◆ Model: GFH18K3H1I exploded view and spare parts list



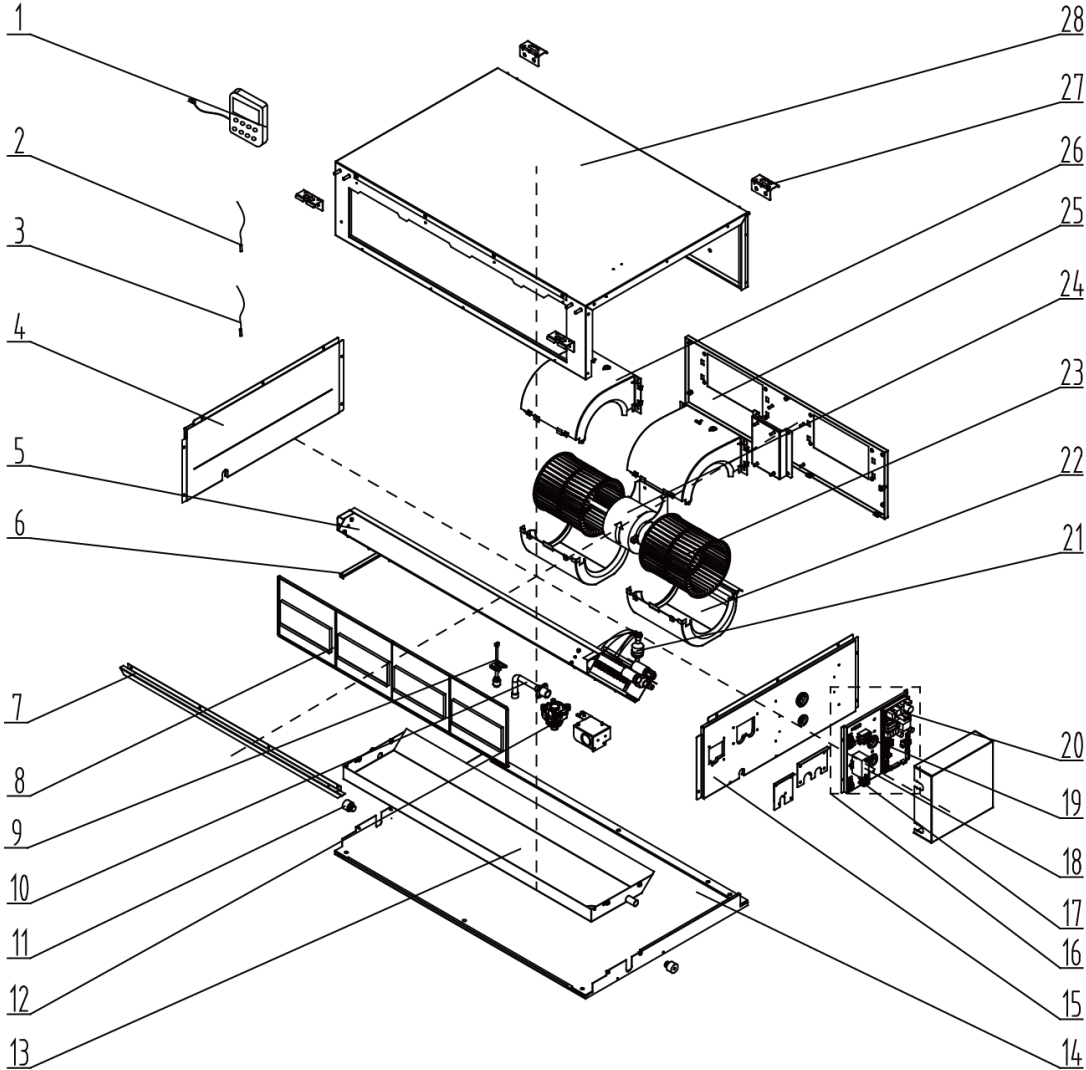
NO.	Name of Part	GFH18K3H1I	
		Product Code	CF022N0840
		Part Code	Quantity
1	Display Board	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1
3	Temperature Sensor	'390001921	1
4	Right Side Plate Sub-Assy	'01308670	1
5	Fan Motor Mounting Plate Sub-Assy	'01339058	1
6	Front Volute Casing	'22202030	2
7	Motor Support Sub-Assy	'01709056	2
8	Centrifugal Fan	'10319051	2
9	Side Plate Sub- Assy of Return Air Frame	'02225234	1
10	Fan Motor	'1570521802	1
11	Filter Sub-Assy	'11725202	1
12	Rear Volute Casing	'22202029	2
13	Cover Of Air-In	'01258650	1
14	Water Tray Assy	'01284166	1
15	Bottom Cover Plate	'01265409	1
16	Choke Plug of Water Pipe	'76712454	2
17	Electric Box Assy	'01399400159	1
18	Terminal Board	'42010259	1
19	Main Board	'30224000085	1
20	Capacitor	'3301074704	1
21	Terminal Board	'4201025301	1
22	Left Side Plate Sub-Assy	'01319400055	1
23	Hook	'02118504	4
24	Water Level Switch	'45020216	1
25	Water Pump	'43138000058	1
26	Strainer	'07212121	1
27	Pump Drainpipe	'26905200146	1
28	Evaporator Assy	'01025394	1
29	Return Air Frame Sub-Assy	'01498641	1
30	Top Cover Board Sub-Assy	'01259064	1

◆ Model: GFH24K3H1I/GFH30K3H1I exploded view and spare parts list



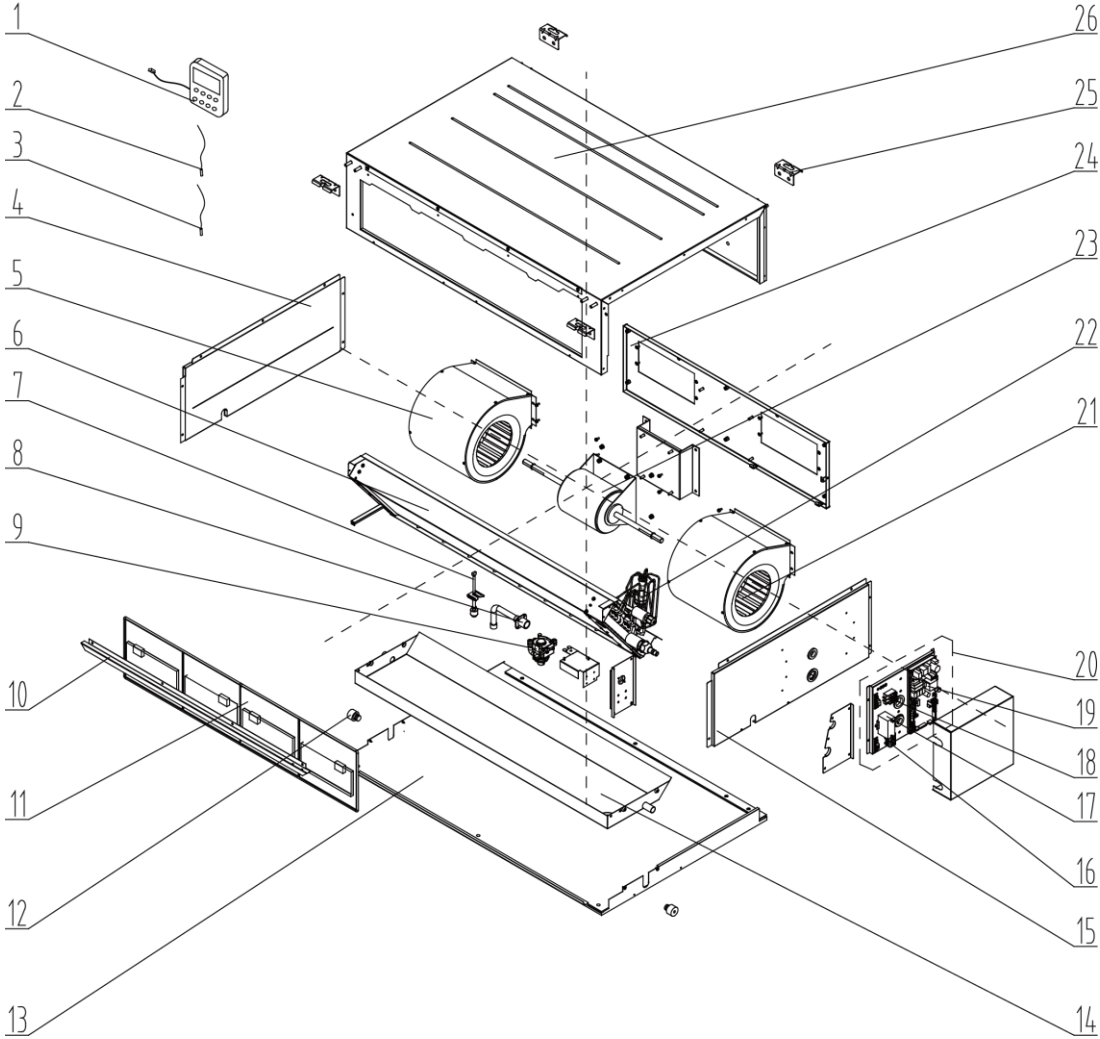
NO.	Name of Part	GFH24K3H1I		GFH30K3H1I	
		Product Code	CF022N0870	Product Code	CF022N0860
		Part Code	Quantity	Part Code	Quantity
1	Display Board	'30294000007	1	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1	'3900012123	1
3	Temperature Sensor	'390001921	1	'390001921	1
4	Left Side Plate Assy	'01314155	1	'01314155	1
5	Blower(Left)	'15012454	1	'15012454	1
6	Evaporator Assy	'01025200177	1	'01025200177	1
7	Hook	'02112446	4	'02112446	4
8	Choke Plug of Drain Pipe	'76712455	2	'76712455	2
9	filter guide groove Sub-Assy	'02285301	1	'02285301	1
10	Filter Sub-Assy	'11125303	2	'11125303	2
11	Water Tray Assy	'81211150020	1	'81211150020	1
12	Lower Cover Plate Sub-Assy	'01265304	1	'01265304	1
13	Water Pump	'43138000058	1	'43138000058	1
14	Right Side Plate Sub-Assy	'01315200234	1	'01315200234	1
15	Terminal Board	'42010259	1	'42010259	1
16	Capacitor	'3301074719	1	'3301074719	1
17	Terminal Board	'4201025301	1	'4201025301	1
18	Main Board	'30224000085	1	'30224000085	1
19	Electric Box Assy	'01395200596	1	'01395200596	1
20	Pump Drainpipe	'2690520014601	1	'2690520014601	1
21	Water Level Switch	'45020216	1	'45020216	1
22	Blower(Right)	'15012458	1	'15012458	1
23	Fan Motor	'15705304	1	'15705304	1
24	Blower Mounting Plate Assy	'01325301	1	'01325301	1
25	Top Cover Board Assy	'01265226	1	'01265226	1

◆ Model: GFH36K3H1I/GFH42K3H1I exploded view and spare parts list



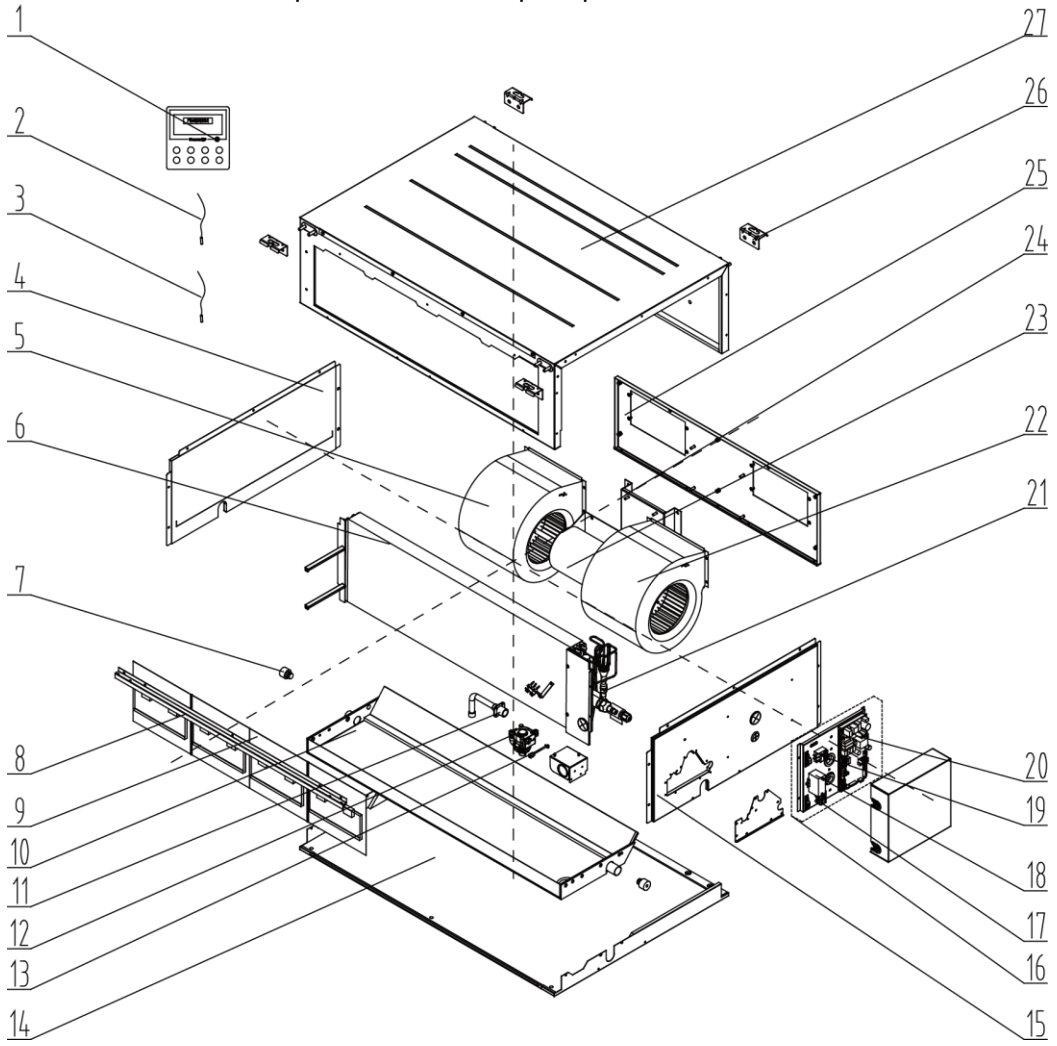
NO.	Name of Part	GFH36K3H1I		GFH42K3H1I	
		Product Code	CF022N0810	Product Code	CF022N0800
		Part Code	Quantity	Part Code	Quantity
1	Display Board	'30294000007	1	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1	'3900012123	1
3	Temperature Sensor	'390001921G	1	'390001921G	1
4	Left Side Plate Assy	'01315306	1	'01315306	1
5	Evaporator Assy	` 01025200171	1	` 01025200171	1
6	Supporting Board of Evaporator	'018953022	1	'018953022	1
7	Air Intake Side Board	'01375301	1	'01375301	1
8	Filter Sub-Assy	'111253031	2	'111253031	2
9	Water Level Switch	'45020216	1	'45020216	1
10	Pump Drainpipe	2690520014601	1	2690520014601	1
11	Choke Plug of Drain Pipe	'76712455	2	'76712455	2
12	Water Pump	'43138000058	1	'43138000058	1
13	Water Tray Assy	'01285323	1	'01285323	1
14	Lower Cover Plate Sub-Assy	'15265301	1	'15265301	1
15	Right Side Plate Sub-Assy	` 01315200223	1	` 01315200223	1
16	Electric Box Assy	'01395200590	1	'01395200590	1
17	Terminal Board	'4201025301	1	'4201025301	1
18	Capacitor	'3301074709	1	'3301074709	1
19	Terminal Board	'42010259	1	'42010259	1
20	Main Board	'30224000085	1	'30224000085	1
21	Strainer	'07415210	1	'07415210	1
22	Propeller Housing(Lower)	'26904100052	2	'26904100052	2
23	Centrifugal Fan	'10424100001	2	'10424100001	2
24	Fan Motor	'1570520901	1	'1570520901	1
25	Blower Mounting Plate Sub-Assy	'01325200099	1	'01325200099	1
26	Propeller Housing(Upper)	'26904100051	2	'26904100051	2
27	Hook	'02112466	4	'02112466	4
28	Top Cover Board Assy	'01265200086	1	'01265200086	1

◆ Model: GFH48K3H1I exploded view and spare parts list



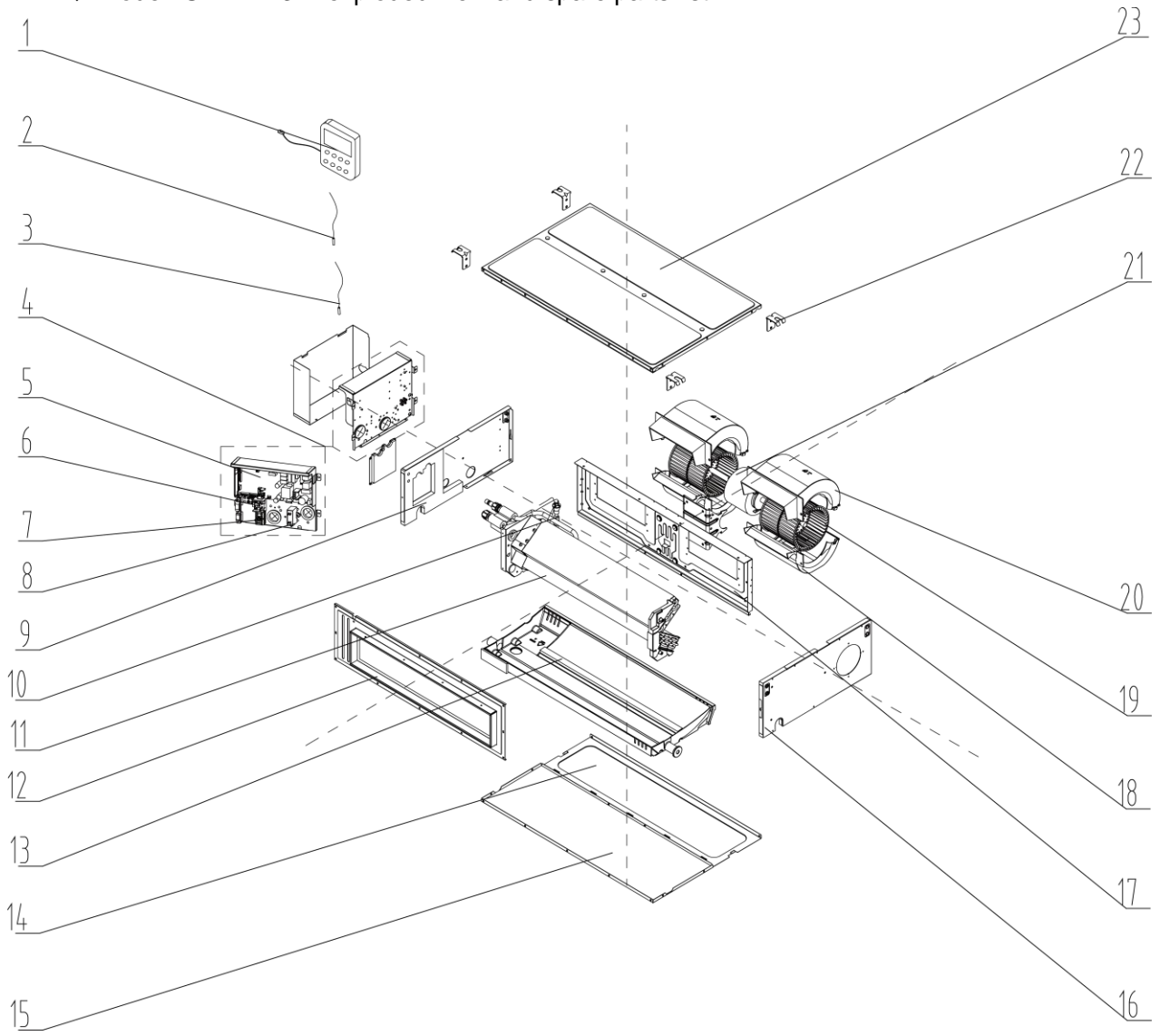
NO.	Name of Part	GFH48K3H1I	
		Product Code	CF022N0780
		Part Code	Quantity
1	Display Board	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1
3	Temperature Sensor	'390001921	1
4	Left Side Plate Assy	'01315306	1
5	Blower(Left)	'15018603	1
6	Evaporator Assy	'01025200172	1
7	Water Level Switch	'45020216	1
8	Pump Drainpipe	'2690520014601	1
9	Water Pump	'43138000058	1
10	Air Intake Side Board	'01375301	1
11	Filter Sub-Assy	'111253031	2
12	Choke Plug of Drain Pipe	'76712455	2
13	Lower Cover Plate Sub-Assy	'15265301	1
14	Water Tray Assy	'01285323	1
15	Right Side Plate Assy	'0131520022701	1
16	Terminal Board	'4201025301	1
17	Capacitor	'33010734	1
18	Terminal Board	'42010259	1
19	Main Board	'30224000085	1
20	Electric Box Assy	'01395200579	1
21	Blower(Right)	'15018604	1
22	Strainer	'07415210	1
23	Fan Motor	'15705305	1
24	Fan Motor Mounting Plate Sub-Assy	'01325220	1
25	Hook	'02112466	4
26	Top Cover Board Assy	'01265200086	1

◆ Model: GFH60K3H1I exploded view and spare parts list



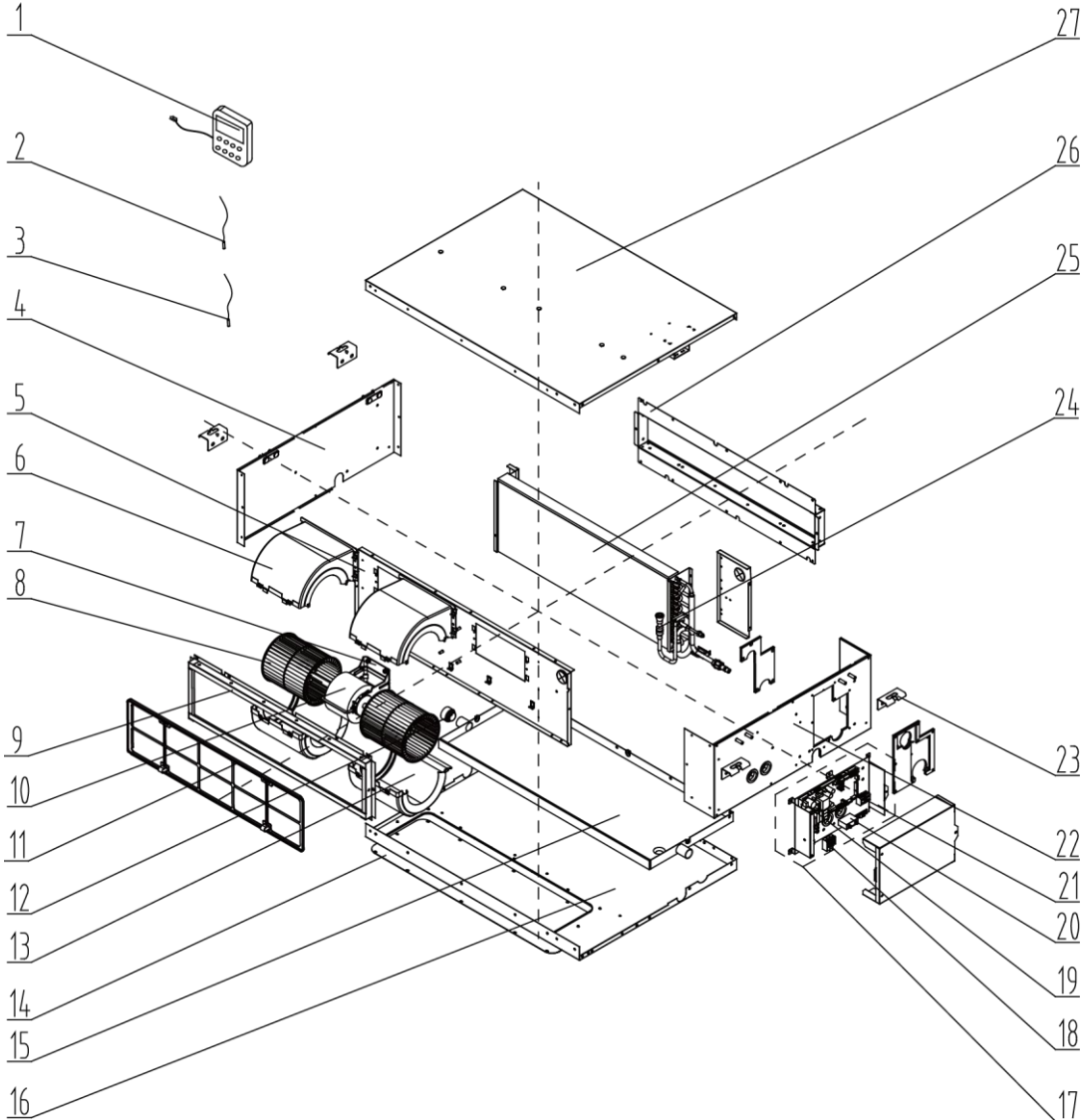
NO.	Name of Part	GFH60K3H1I	
		Product Code	CF022N0760
		Part Code	Quantity
1	Display Board	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1
3	Temperature Sensor	'390001921	1
4	Left Side Plate Assy	'01309108	1
5	Blower(Left)	'15019065	1
6	Evaporator Assy	'01025200175	1
7	Choke Plug of Water Pipe	'76712454	2
8	Filter Guide Groove	'01729166	1
9	Filter Sub-Assy	'111253032	2
10	Water Tray Assy	'01279114	1
11	Pump Drainpipe	'2690520014601	1
12	Water Pump	'43138000058	1
13	Water Level Switch	'45020216	1
14	Bottom Cover Plate Assy	'01259114	1
15	Ritht Side Plate Assy	'01315200221	1
16	Electric Box Assy	'01395200579	1
17	Terminal Board	'4201025301	1
18	Capacitor	'33010734	1
19	Terminal Board	'42010259	1
20	Main Board	'30224000085	1
21	Strainer	'07212121	1
22	Blower(Right)	'15019066	1
23	Fan Motor	'15705305	1
24	Motor Support Sub-Assy	'01709070	1
25	Fan Motor Mounting Plate Sub-Assy	'01339110	1
26	Hook	'02112466	4
27	Top Cover Plate Assy	'01265200174	1

◆ Model: GFH12K3HI exploded view and spare parts list



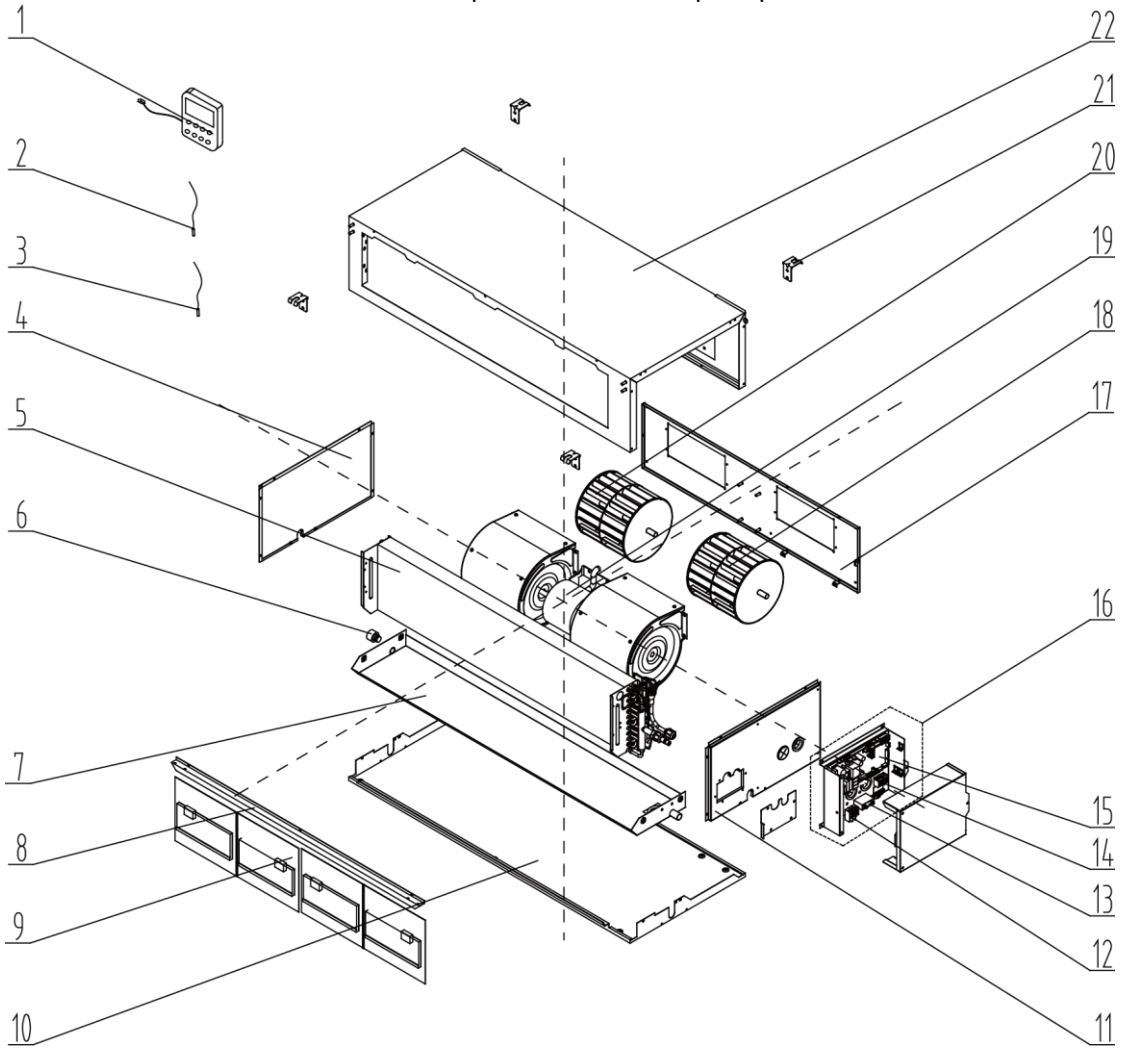
NO.	Name of Part	GFH12K3HI	
		Product Code	CF022N1040
		Part Code	Quantity
1	Display Board	'30294000007	1
2	Temperature Sensor	'390000456	1
3	Temperature Sensor	'390000596	1
4	Electric Box Assy	'100002002135	1
5	Main Board	'30224000085	1
6	Terminal Board	'42011106	1
7	Terminal Board	'4201025301	1
8	Capacitor	'3301074704	1
9	Left Side Plate Assy	'01315200051	1
10	Strainer	'0721200102	1
11	Evaporator Assy	'011001000396	1
12	Air Outlet Frame Assy	'01375200007	1
13	Water Tray Assy	'01285200020	1
14	Cover Plate(Air return)	'01265200057	1
15	Bottom Cover Plate Assy	'01265200065	1
16	Right Side Plate Assy	'01315200053	1
17	Blower Mounting Plate Sub-Assy	'01325200034	1
18	Propeller Housing(Lower)	'26905200019	2
19	Centrifugal Fan	'10425200003	2
20	Propeller Housing(Upper)	'26905200018	2
21	Fan Motor	'1570520104	1
22	Hook	'02112446	4
23	Top Cover Board Assy	'01265200066	1

◆ Model: GFH18K3HI exploded view and spare parts list



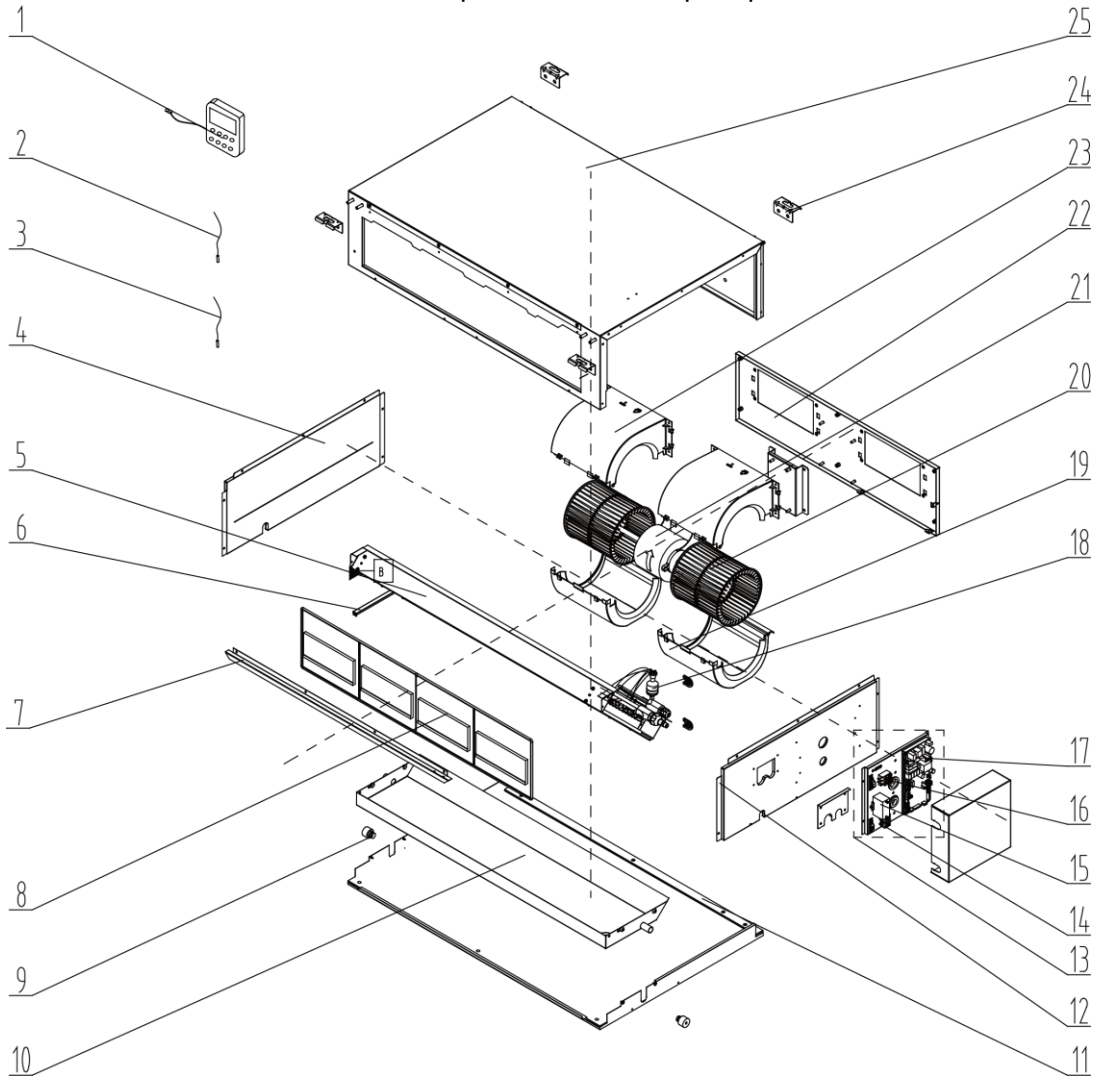
NO.	Name of Part	GFH18K3HI	
		Product Code	CF022N0830
		Part Code	Quantity
1	Display Board	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1
3	Temperature Sensor	'390001921	1
4	Right Side Plate Sub-Assy	'01308670	1
5	Fan Motor Mounting Plate Sub-Assy	'01339058	1
6	Front Volute Casing	'22202030	2
7	Motor Support Sub-Assy	'01709056	2
8	Centrifugal Fan	'10319051	2
9	Side Plate Sub- Assy of Return Air Frame	'02225234	1
10	Fan Motor	'1570521802	1
11	Filter Sub-Assy	'11725202	1
12	Choke Plug of Water Pipe	'76712454	1
13	Rear Volute Casing	'22202029	2
14	Cover Of Air-In	'01258650	1
15	Water Tray Sub-Assy	'01278633	1
16	Bottom Cover Plate	'01265409	2
17	Electric Box Assy	'01399400159	1
18	Terminal Board	'42010259	1
19	Main Board	'30224000085	1
20	Capacitor	'3301074704	1
21	Terminal Board	'4201025301	1
22	Left Side Plate Sub-Assy	01319400060	1
23	Hook	'02118504	4
24	Strainer	'07212121	1
25	Evaporator Assy	'01025394	1
26	Return Air Frame Sub-Assy	'01498641	1
27	Top Cover Board Sub-Assy	'01259064	1

◆ Model: GFH24K3HI/GFH30K3HI exploded view and spare parts list



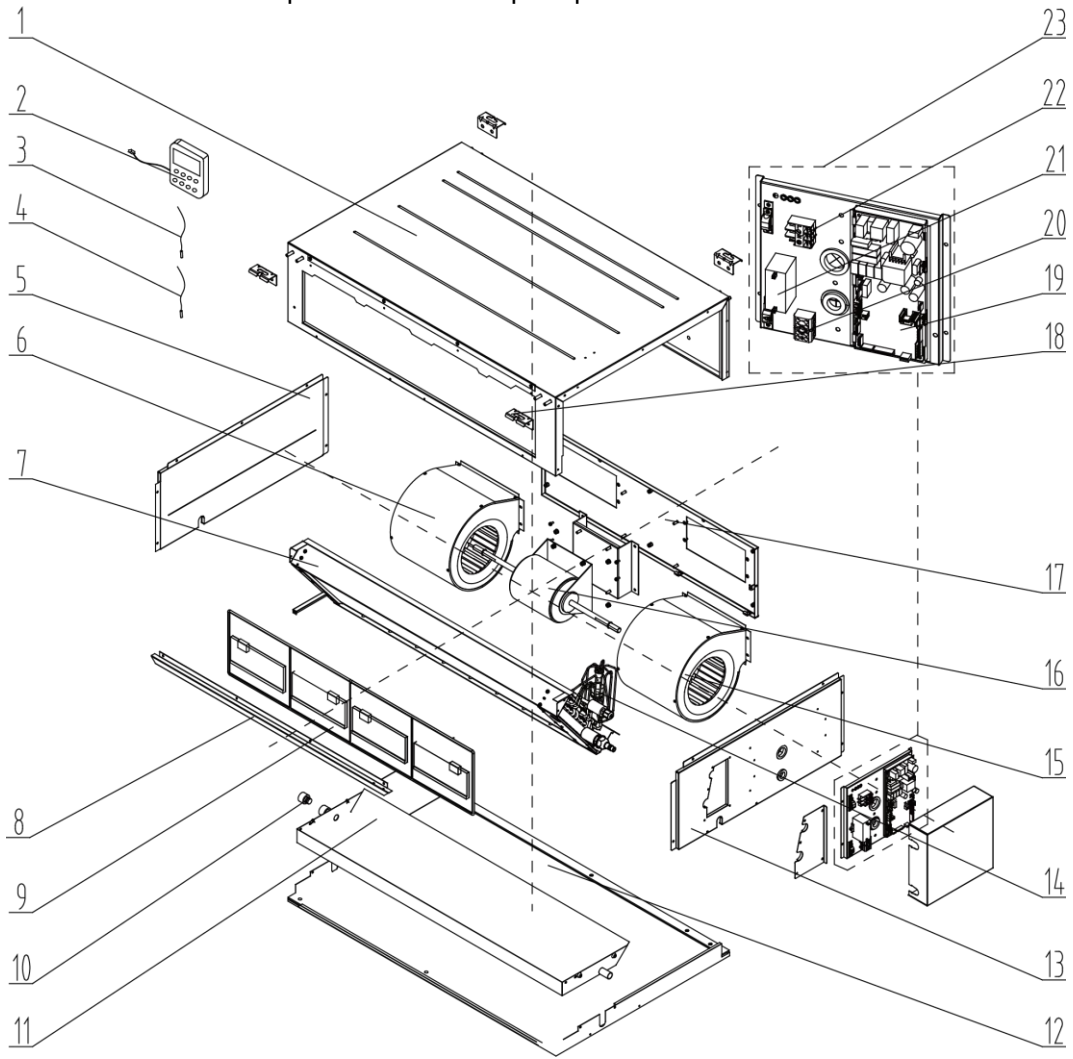
NO.	Name of Part	GFH24K3HI		GFH30K3HI	
		Product Code	CF022N0880	Product Code	CF022N0850
		Part Code	Quantity	Part Code	Quantity
1	Display Board	'30294000007	1	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1	'3900012123	1
3	Temperature Sensor	'390001921	1	'390001921	1
4	Left Side Plate Assy	'01314155	1	'01314155	1
5	Evaporator Assy	'01025200177	1	'01025200177	1
6	Choke Plug of Drain Pipe	'76712455	1	'76712455	1
7	Water Tray Assy	'81211150020	1	'81211150020	1
8	Filter Guide Groove Sub-Assy	'02285301	1	'02285301	1
9	Filter Sub-Assy	'11125303	2	'11125303	2
10	Lower Cover Plate Sub-Assy	'01265304	1	'01265304	1
11	Right Side Plate Sub-Assy	'0131520023401	1	'0131520023401	1
12	Terminal Board	'42010259	1	'42010259	1
13	Capacitor	'3301074719	1	'3301074719	1
14	Terminal Board	'4201025301	1	'4201025301	1
15	Main Board	'30224000085	1	'30224000085	1
16	Electric Box Assy	'01395200596	1	'01395200596	1
17	Blower Mounting Plate Assy	'01325301	1	'01325301	1
18	Blower(Right)	'15012458	1	'15012458	1
19	Fan Motor	'15705304	1	'15705304	1
20	Blower(Left)	'15012454	1	'15012454	1
21	Hook	'02112446	4	'02112446	4
22	Top Cover Board Assy	'01265226	1	'01265226	1

◆ Model: GFH36K3HI/GFH42K3HI exploded view and spare parts list



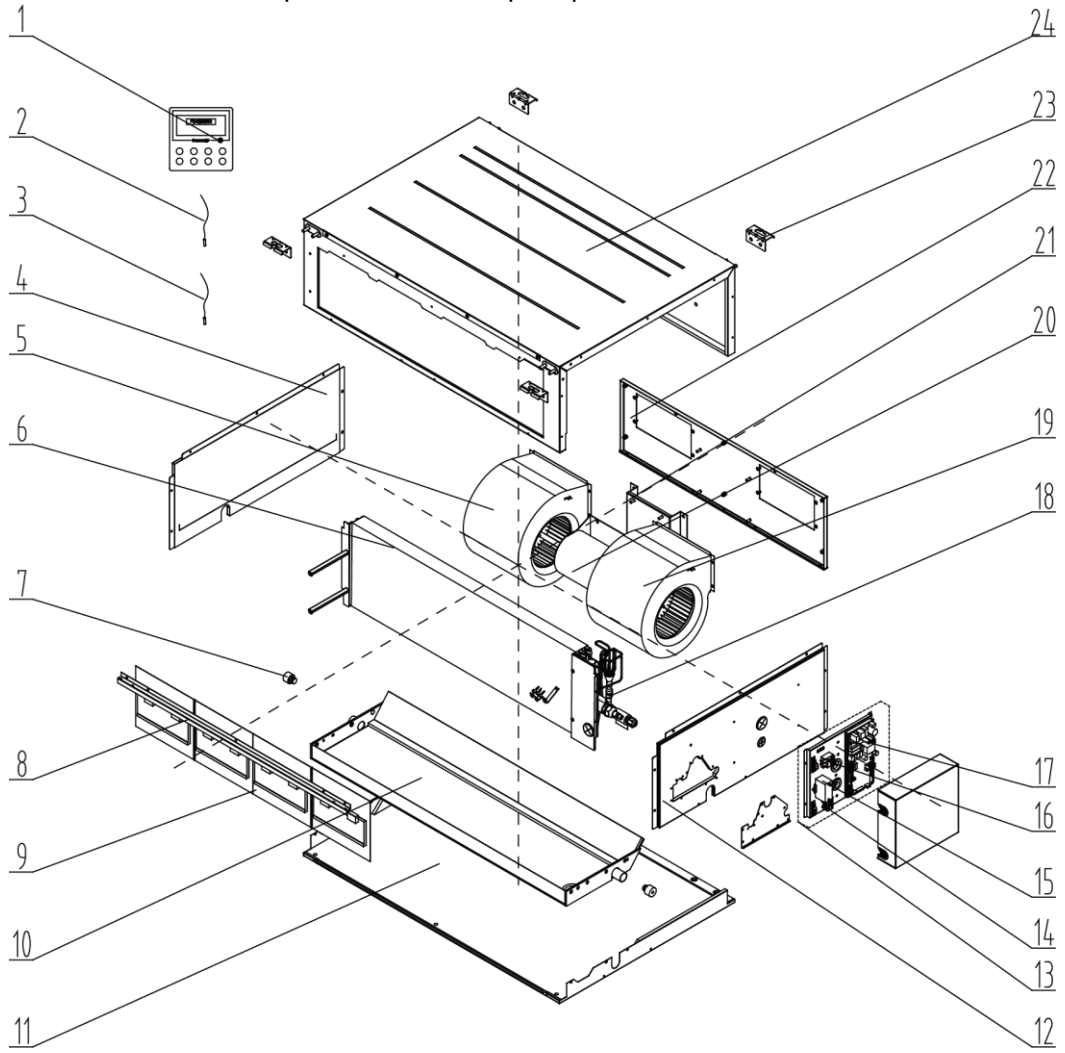
NO.	Name of Part	GFH36K3HI		GFH42K3HI	
		Product Code	CF022N0820	Product Code	CF022N0790
		Part Code	Quantity	Part Code	Quantity
1	Display Board	'30294000007	1	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1	'3900012123	1
3	Temperature Sensor	'390001921G	1	'390001921G	1
4	Left Side Plate Assy	'01315306	1	'01315306	1
5	Evaporator Assy	'01025200171	1	'01025200171	1
6	Supporting Board of Evaporator	'018953022	1	'018953022	1
7	Air Intake Side Board	'01375301	1	'01375301	1
8	Filter Sub-Assy	'111253031	2	'111253031	2
9	Choke Plug of Drain Pipe	'76712455	1	'76712455	1
10	Water Tray Assy	'01285323	1	'01285323	1
11	Lower Cover Plate Sub-Assy	'15265301	1	'15265301	1
12	Right Side Plate Sub-Assy	0131520022301	1	131520022301	1
13	Electric Box Assy	'01395200590	1	'01395200590	1
14	Terminal Board	'4201025301	1	'4201025301	1
15	Capacitor	'3301074709	1	'3301074709	1
16	Terminal Board	'42010259	1	'42010259	1
17	Main Board	'30224000085	1	'30224000085	1
18	Strainer	'07415210	1	'07415210	1
19	Propeller Housing(Lower)	'26904100052	2	'26904100052	2
20	Centrifugal Fan	'10424100001	2	'10424100001	2
21	Fan Motor	'1570520901	1	'1570520901	1
22	Blower Mounting Plate Sub-Assy	'01325200099	1	'01325200099	1
23	Propeller Housing(Upper)	'26904100051	2	'26904100051	2
24	Hook	'02112466	4	'02112466	4
25	Top Cover Board Assy	'01265200086	1	'01265200086	1

◆ Model: GFH48K3HI exploded view and spare parts list



NO.	Name of Part	GFH48K3HI	
		Product Code	CF022N0770
		Part Code	Quantity
1	Top Cover Board Assy	'01265200086	1
2	Display Board	'30294000007	1
3	Ambient Temperature Sensor	'3900012123	1
4	Temperature Sensor	'390001921	1
5	Left Side Plate Assy	'01315306	1
6	Blower(Left)	'15018603	1
7	Evaporator Assy	'01025200172	1
8	Air Intake Side Board	'01375301	1
9	Filter Sub-Assy	'111253031	2
10	Choke Plug of Drain Pipe	'76712455	1
11	Water Tray Assy	'01285323	1
12	Lower Cover Plate Sub-Assy	'15265301	1
13	Right Side Plate Assy	'01315200227	1
14	Strainer	'07415210	1
15	Blower(Right)	'15018604	1
16	Fan Motor	'15705305	1
17	Fan Motor Mounting Plate Sub-Assy	'01325220	1
18	Hook	'02112466	4
19	Main Board	'30224000085	1
20	Terminal Board	'4201025301	1
21	Capacitor	'33010734	1
22	Terminal Board	'42010259	1
23	Electric Box Assy	'01395200579	1

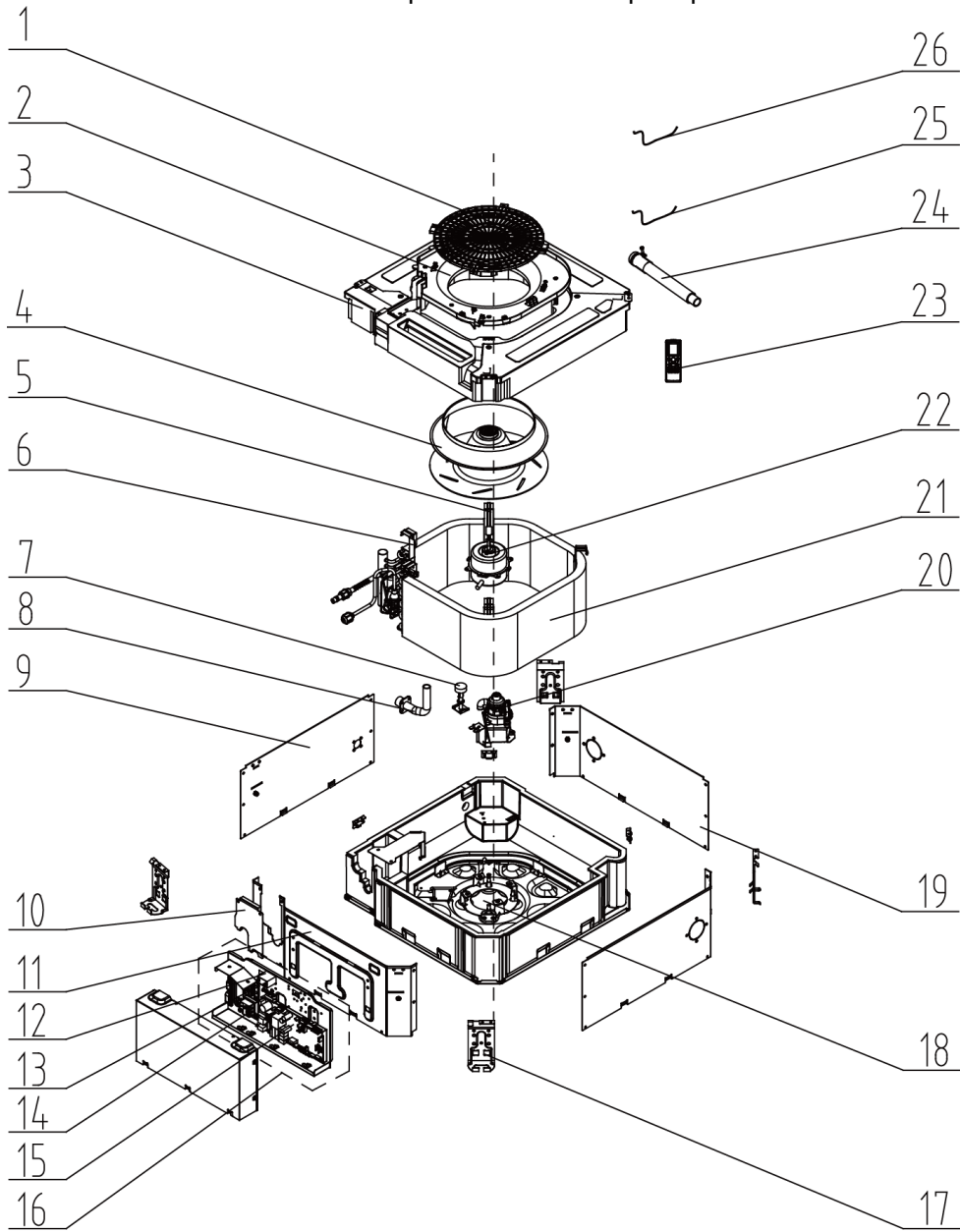
◆ Model: GFH60K3HI exploded view and spare parts list



NO.	Name of Part	GFH60K3H1I	
		Product Code	CF022N0750
		Part Code	Quantity
1	Display Board	'30294000007	1
2	Ambient Temperature Sensor	'3900012123	1
3	Temperature Sensor	'390001921	1
4	Left Side Plate Assy	'01309108	1
5	Blower(Left)	'15019065	1
6	Evaporator Assy	'01025200175	1
7	Choke Plug of Water Pipe	'76712454	1
8	Filter Guide Groove	'01729166	1
9	Filter Sub-Assy	'111253032	2
10	Water Tray Assy	'01279114	1
11	Bottom Cover Plate Assy	'01259114	1
12	Riht Side Plate Assy	'0131520022101	1
13	Electric Box Assy	'01395200579	1
14	Terminal Board	'4201025301	1
15	Capacitor	'33010734	1
16	Terminal Board	'42010259	1
17	Main Board	'30224000085	1
18	Strainer	'07212121	1
19	Blower(Right)	'15019066	1
20	Fan Motor	'15705305	1
21	Motor Support Sub-Assy	'01709070	1
22	Fan Motor Mounting Plate Sub-Assy	'01339110	1
23	Hook	'02112466	4
24	Top Cover Plate Assy	'01265200174	1

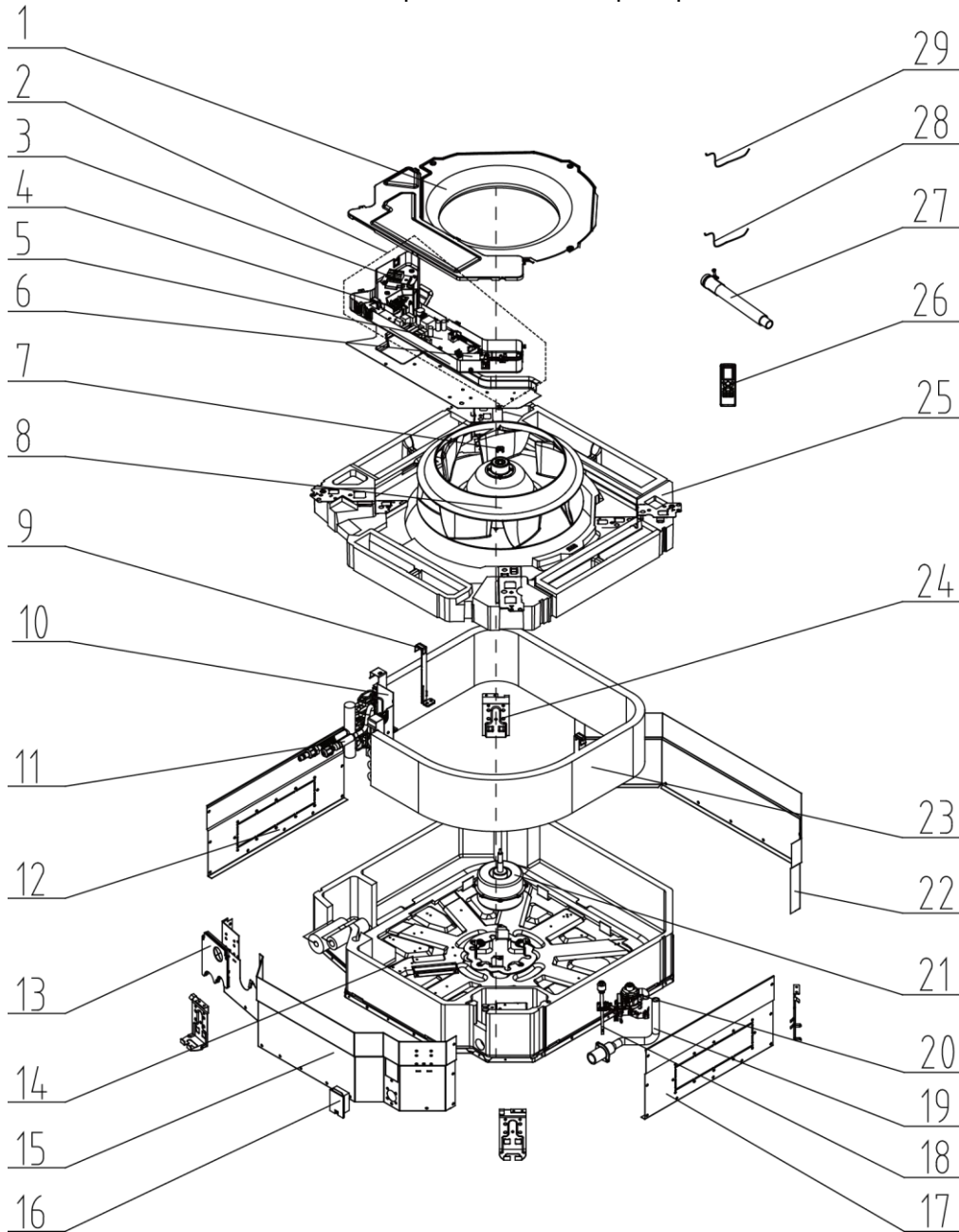
5.2.2 Cassette Type

◆ Model: GKH12K3HI/ GKH18K3HI exploded view and spare parts list.



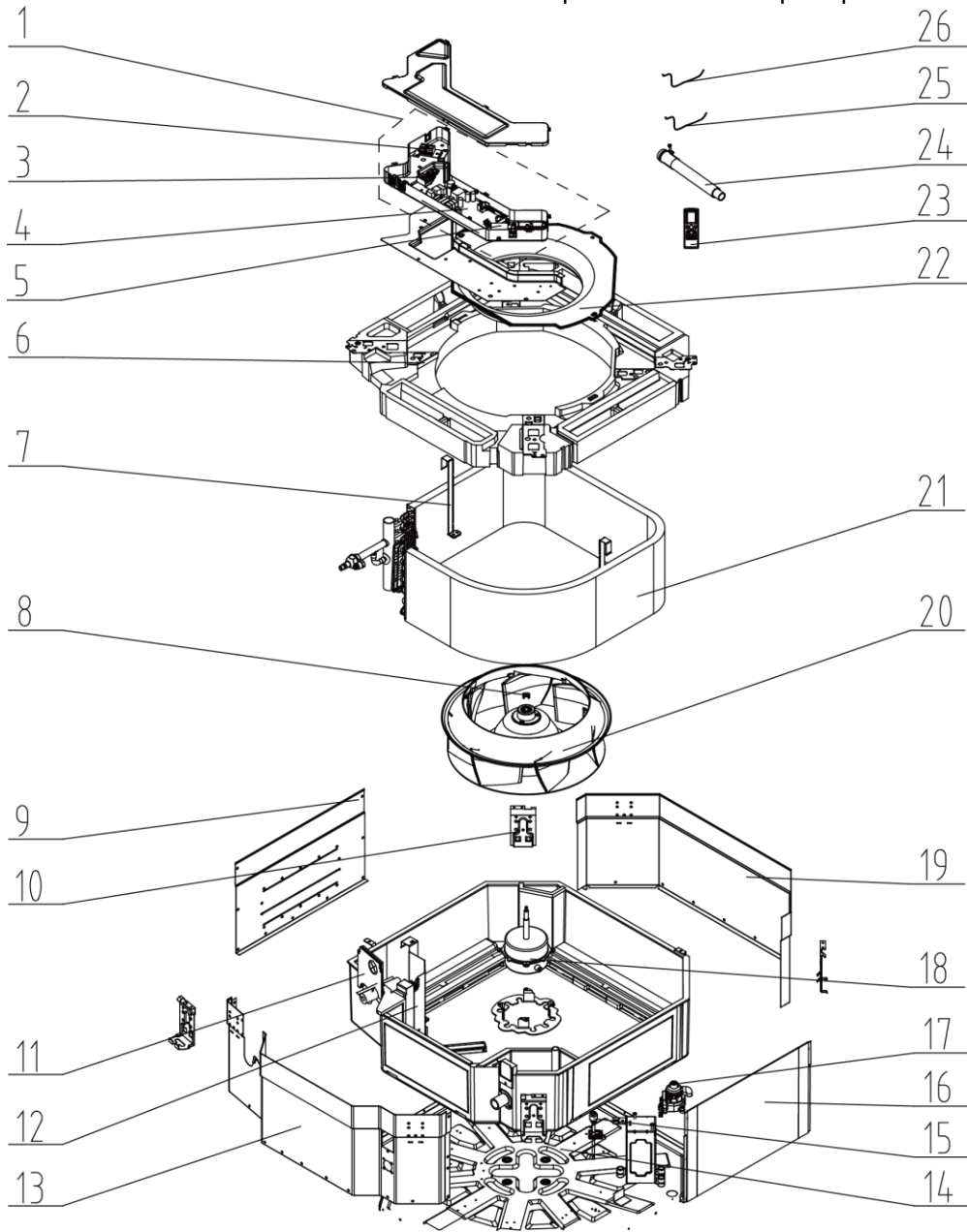
NO.	Name of Part	GKH12K3HI		GKH18K3HI	
		Product Code	ET010N1230	Product Code	ET010N1090
		Part Code	Quantity	Part Code	Quantity
1	Rear Grill	'26909400007	1	'26909400007	1
2	Diversion Circle	'10479400001	1	'10479400001	1
3	Water Tray Assy	'01289400004	1	'01289400004	1
4	Centrifugal Fan	'10429400001	1	'10429400001	1
5	Supporter(Evaporator)	'01809400007	3	'01809400007	3
6	Baffle Plate Sub-Assy	01359400002	1	01359400002	1
7	Liquid Level Switch	'450102013	1	'450102013	1
8	Pump Drainpipe	` 26909400069	1	` 26909400069	1
9	Left Side Plate Sub-Assy	'01319400012	1	'01319400012	1
10	Press Plate (Outlet Pipe)	'01349400004	1	'01349400004	1
11	Front Side Plate Sub-Assy	'01319400014	1	'01319400014	1
12	Capacitor	'3301074702	1	'3301074710	1
13	Terminal Board	'4201025301	1	'4201025301	1
14	Terminal Board	'42010259	1	'42010259	1
15	Main Board	'30224000086	1	'30224000086	1
16	Electric Box Assy	'100002003075	1	'01399400157	1
17	Body Installing Support	'01332705	4	'01332705	4
18	Base Plate Assy	'02229400007	1	'02229400007	1
19	Right Side Plate Sub-Assy	'01319400013	2	'01319400013	2
20	Water Pump	'4313800005801	1	'4313800005801	1
21	Evaporator Assy	'01029400013	1	'01029400013	1
22	Fan Motor	'150101000126	1	'1570411405	1
23	Remote Controller	'30510516	1	'30510516	1
24	Drain Hose Sub-Assy	'007008000001	1	'007008000001	1
25	Tube Sensor	'3900012128	1	'3900012128	1
26	Room Sensor	'39000191	3	'39000191	3

◆ Model: GKH24K3HI/GKH30K3HI exploded view and spare parts list.



NO.	Name of Part	GKH24K3HI		GKH30K3HI	
		Product Code	ET010N1110	Product Code	ET010N1100
		Part Code	Quantity	Part Code	Quantity
1	Diversion Circle	'10372701	1	'10372701	1
2	Electric Box Assy	'01399400146	1	'01399400146	1
3	Terminal Board	'4201025301	1	'4201025301	1
4	Terminal Board	'4201115404	1	'4201115404	1
5	Main Board	'30224000086	1	'30224000086	1
6	Capacitor	'3301074706	1	'3301074706	1
7	Fan Fixer	'10312701	1	'10312701	1
8	Centrifugal Fan	'10312705	1	'10312705	1
9	Evaporator Support Assy	'01072703	2	'01072703	2
10	Connected Board Assy of Evaporator	'01074042	1	'01074042	1
11	Strainer	'07212403	1	'07212403	1
12	Left Side Plate Assy	'01302715	1	'01302715	1
13	Tube Exit Plate Assy	'01382715	1	'01382715	1
14	Base Plate Assy	'01222701	1	'01222701	1
15	Front Side Plate Assy	'01302718	1	'01302718	1
16	Pump Cover Board Assy	'01252713	1	'01252713	1
17	Right Side Plate Assy	'01302716	1	'01302716	1
18	Water Level Switch	'45020216	1	'45020216	1
19	Pump Drainpipe	'26909400068	1	'26909400068	1
20	Water Pump	'43138000058	1	'43138000058	1
21	Fan Motor	'1570940401	1	'1570940401	1
22	Rear Side Plate Assy	'01302714	1	'01302714	1
23	Evaporator Assy	'01055200051	1	'01055200051	1
24	Body Installing Plate	'01332701	4	'01332701	4
25	Water Tray Assy	'20182701	1	'20182701	1
26	Remote Controller	'30510516	1	'30510516	1
27	Temperature Sensor	'390001921	1	'390001921	1
28	Drain Hose Sub-Assy	'05232702	1	'05232702	1
29	Room Sensor	'390001911	1	'390001911	1

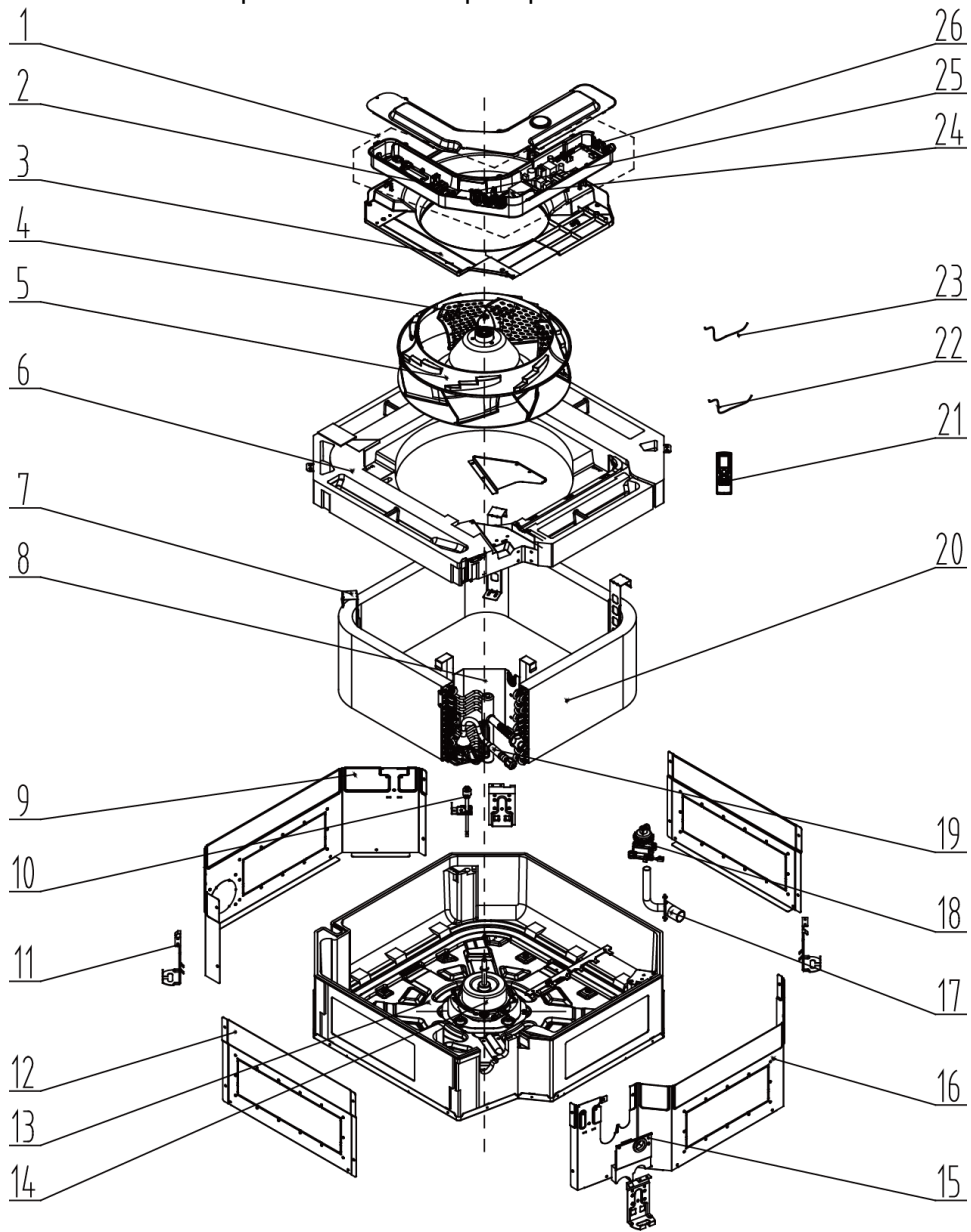
◆ Model: GKH36K3HI/GKH42K3HI/GKH48K3HI exploded view and spare parts list.



NO.	Name of Part	GKH36K3HI		GKH42K3HI	
		Product Code	ET010N1080	Product Code	ET010N1070
		Part Code	Quantity	Part Code	Quantity
1	Electric Box Assy	'01399400146	1	'01399400146	1
2	Terminal Board	'4201025301	1	'4201025301	1
3	Terminal Board	'4201115404	1	'4201115404	1
4	Main Board	'30224000086	1	'30224000086	1
5	Capacitor CBB61S	'3301074706	1	'3301074706	1
6	Water Tray Assy	'20182701	1	'20182701	1
7	Evaporator Support Assy	'01072707	2	'01072707	2
8	Fan Fixer	'10312701	1	'10312701	1
9	Left Side Plate Assy	'01302711	1	'01302711	1
10	Body Installing Plate	'01332701	4	'01332701	4
11	Tube Exit Plate Assy	'01382715	1	'01382715	1
12	Connection sheet assy	'01349400007	1	'01349400007	1
13	Front Side Plate assy	'01302713	1	'01302713	1
14	Base Plate Assy	'01222701	1	'01222701	1
15	Water Level Switch	'45020216	1	'45020216	1
16	Right Side Plate Assy	'01302712	1	'01302712	1
17	Water Pump	'43138000058	1	'43138000058	1
18	Fan Motor	'1501271501	1	'1501271501	1
19	Rear Side Plate Assy	'01302709	1	'01302709	1
20	Centrifugal Fan	'10310101	1	'10310101	1
21	Evaporator Assy	'01029400099	1	'01029400099	1
22	Diversion Circle	'10372722	1	'10372722	1
23	Remote Controller	'30510516	1	'30510516	1
24	Drain Hose Sub-Assy	'05232702	1	'05232702	1
25	Room Sensor	'390001911	1	'390001911	1
26	Temperature Sensor	'390001921	1	'390001921	1

NO.	Name of Part	GKH48K3HI	
		Product Code	ET010N1060
		Part Code	Quantity
1	Electric Box Assy	'01399400146	1
2	Terminal Board	'4201025301	1
3	Terminal Board	'4201115404	1
4	Main Board	'30224000086	1
5	Capacitor CBB61S	'3301074706	1
6	Water Tray Assy	'20182701	1
7	Evaporator Support Assy	'01072707	2
8	Fan Fixer	'10312701	1
9	Left Side Plate Assy	'01302711	1
10	Body Installing Plate	'01332701	4
11	Tube Exit Plate Assy	'01382715	1
12	Connection sheet assy	'01349400007	1
13	Front Side Plate assy	'01302713	1
14	Base Plate Assy	'01222701	1
15	Water Level Switch	'45020216	1
16	Right Side Plate Assy	'01302712	1
17	Water Pump	'43138000058	1
18	Fan Motor	'1501271501	1
19	Rear Side Plate Assy	'01302709	1
20	Centrifugal Fan	'10310101	1
21	Evaporator Assy	'01029400099	1
22	Diversion Circle	'10372722	1
23	Remote Controller	'30510516	1
24	Drain Hose Sub-Assy	'05232702	1
25	Room Sensor	'390001911	1
26	Temperature Sensor	'390001921	1

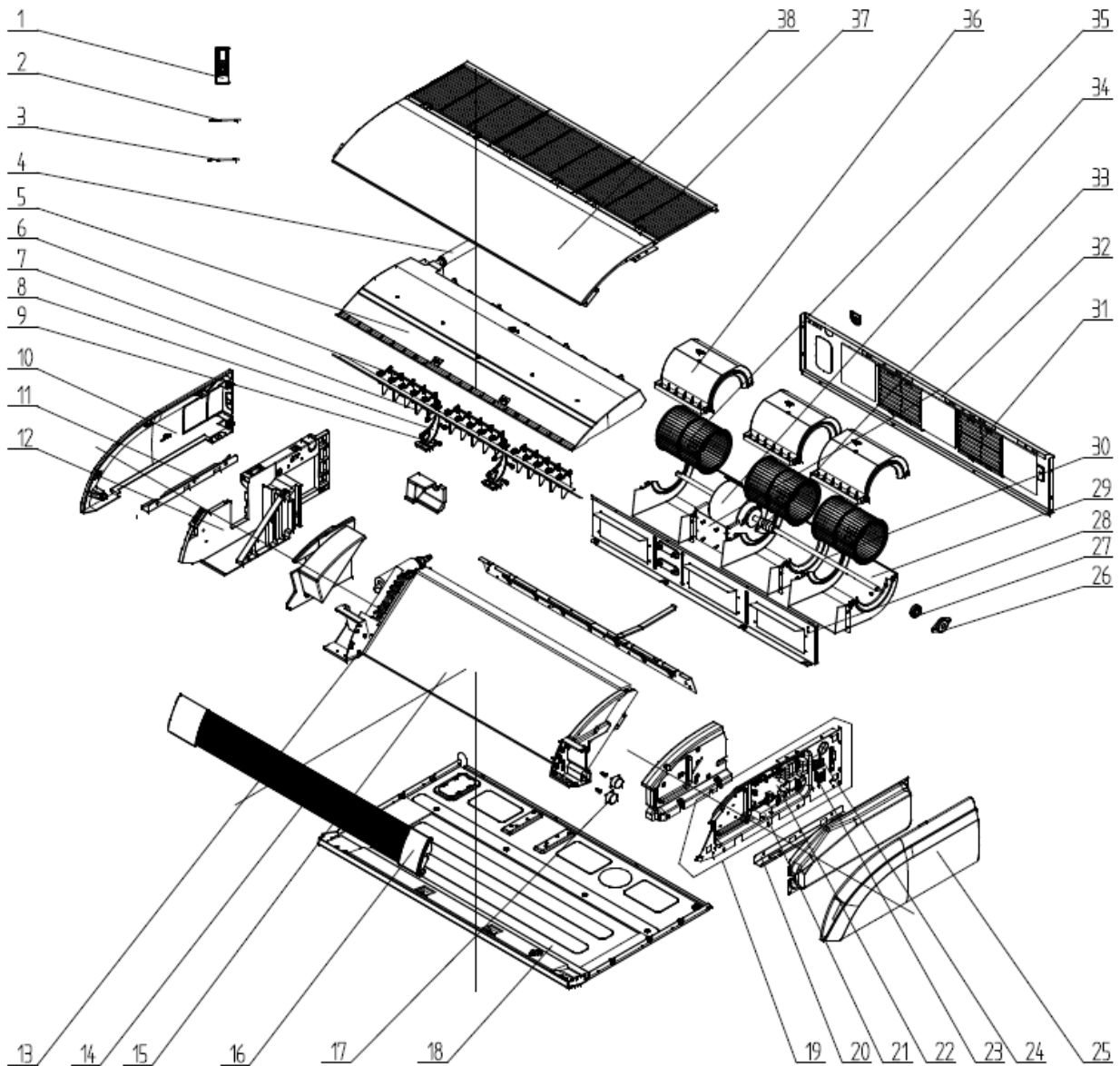
◆ Model: GKH60K3HI exploded view and spare parts list.



NO.	Name of Part	GKH60K3HI	
		Product Code	ET010N1050
		Part Code	Quantity
1	Electric Box Assy	'01399400154	1
2	Terminal Board	'4201025301	1
3	Diversion Circle	'10479400002	1
4	Fan Fixer	'10312701	1
5	Centrifugal Fan	'10429400003	1
6	Water Tray Assy	'01289400014	1
7	Evaporator Support	'01849406	3
8	Connection Sheet Assy	'01249400012	1
9	Side Plate 1	'01319400025	1
10	Liquid Level Switch	'4502021601	1
11	Body Installing Plate	'01332701	4
12	Side Plate 3	'01319400036	2
13	Base Plate Assy	'02229400021	1
14	Fan Motor	'15709400010	1
15	Seal Plate Assy	'01499400001	1
16	Side Plate 2	'01319400026	1
17	Drainage Pipe Sub-Assy	'26909400055	1
18	Water Pump	'43138000058	1
19	Strainer	'07212403	1
20	Evaporator Assy	'011001000005	1
21	Remote Controller	'30510516	1
22	Temperature Sensor	'390001921G	1
23	Temperature Sensor	'390000453	1
24	Capacitor	'3301074708	1
25	Terminal Board	'42010259	1
26	Main Board	'30224000086	1

5.2.3 Floor Ceiling Type

◆ Model: GTH18K3HI/GTH24K3HI/GTH30K3HI/GTH36K3HI/GTH42K3HI exploded view and spare parts list.



NO.	Name of Part	GTH18K3HI		GTH24K3HI	
		Product Code	ED020N1440	Product Code	ED020N1450
		Part Code	Quantity	Part Code	Quantity
1	Remote Controller	'30510516	1	'30510516	1
2	Temperature Sensor	'390001923	1	'390001923	1
3	Room Sensor	'39000191	1	'39000191	1
4	Drainage Pipe Sub-Assy	'05235434	1	'05235434	1
5	Water Tray	'200063000003	1	'200063000003	1
6	Swing Lever	'10582009	3	'10582009	3
7	Air Louver	'200007000001	15	'200007000001	15
8	Supporter	'26909400076	2	'26909400076	2
9	Rotating Shaft 3	'26909430	4	'26909430	4
10	Right Cover Plate	'26909400071	1	'26909400071	1
11	Installation Supporting Frame(Right)	'01809402	1	'01809402	1

12	Right Side Plate	'26909400074	2	'26909400074	2
13	Axile Bush	'10542704	2	'10542704	2
14	Guide Louver	'200004500422	2	'200004500422	2
15	Evaporator Assy	'011001000136	1	'011001000136	1
16	Display Board	'30294000009	1	'30294000009	1
17	Stepping Motor	'1521240206	2	'1521240206	2
18	Base Plate Assy	'02229400036	1	'02229400036	1
19	Electric Box Assy	'01399400149	1	'01399400149	1
20	Installation Supporting Frame(Left)	'01809401	1	'01809401	1
21	Capacitor	'33010014	1	'33010014	1
22	Main Board	'300002000111	1	'300002000111	1
23	Terminal Board	'4201025301	1	'4201025301	1
24	Terminal Board	'42010178	1	'42010178	1
25	Left Cover Plate	'26909400070	1	'26909400070	1
26	Support Of Motor Bearing	'01792408	1	'01792408	1
27	O-Gasket of Bearing	'76512404	1	'76512404	1
28	Clapboard Assy	'01249400029	1	'01249400029	1
29	Propeller Housing(Lower)	'200230000001	3	'200230000001	3
30	Rotary Axis	'700004500433	1	'700004500433	1
31	Filter Sub-Assy(Rear Side Plate)	'111001000001	2	'111001000001	2
32	Rear Side Plate Sub-Assy	'017051000005	1	'017051000005	1
33	Joint Slack	'73018731	1	'73018731	1
34	Fan Motor	'150101000056	1	'150101000056	1
35	Centifugal Fan	'103003000001	3	'103003000001	3
36	Propeller Housing(Upper)	'200230000002	3	'200230000002	3
37	Front Grill Sub-Assy	'26909400066	3	'26909400066	3
38	Top Cover	'01269400012P	1	'01269400012P	1

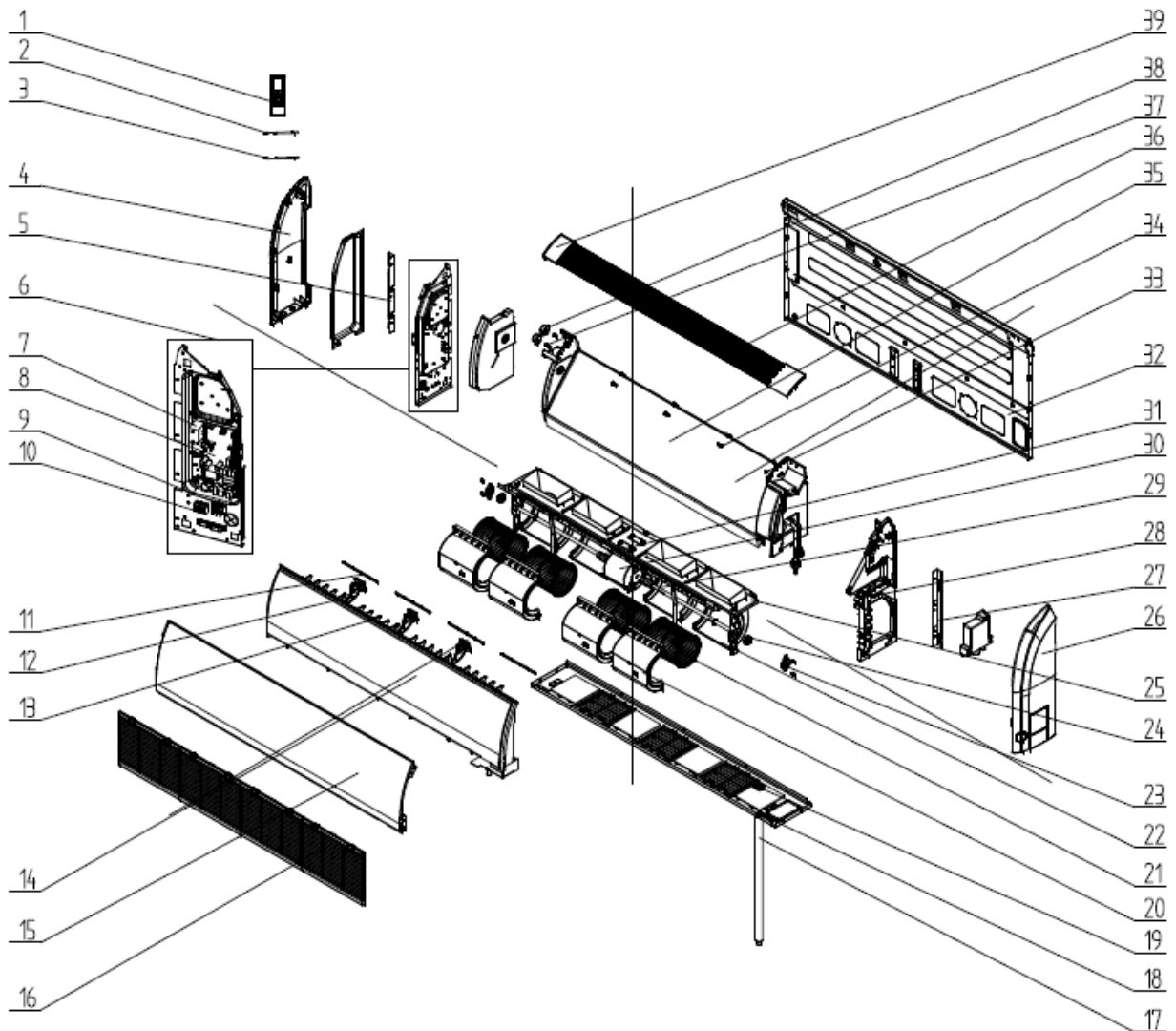
NO.	Name of Part	GTH30K3HI		GTH36K3HI	
		Product Code	ED020N1460	Product Code	ED020N1420
		Part Code	Quantity	Part Code	Quantity
1	Remote Controller	'30510516	1	'30510516	1
2	Temperature Sensor	'390001923	1	'390001923	1
3	Room Sensor	'39000191	1	'39000191	1
4	Drainage Pipe Sub-Assy	'05235434	1	'05235434	1
5	Water Tray	'200063000003	1	'200063000003	1
6	Swing Lever	'10582009	3	'10582009	3
7	Air Louver	'200007000001	15	'200007000001	15
8	Supporter	'26909400076	2	'26909400076	2
9	Rotating Shaft 3	'26909430	4	'26909430	4
10	Right Cover Plate	'26909400071	1	'26909400071	1
11	Installation Supporting Frame(Right)	'01809402	1	'01809402	1
12	Right Side Plate	'26909400074	2	'26909400074	2
13	Axile Bush	'10542704	2	'10542704	2
14	Guide Louver	'200004500422	2	'200004500422	2
15	Evaporator Assy	'011001000136	1	'011001000136	1
16	Display Board	'30294000009	1	'30294000009	1
17	Stepping Motor	'1521240206	2	'1521240206	2
18	Base Plate Assy	'02229400036	1	'02229400036	1

19	Electric Box Assy	'01399400149	1	'01399400149	1
20	Installation Supporting Frame(Left)	'01809401	1	'01809401	1
21	Capacitor	'33010014	1	'33010014	1
22	Main Board	'300002000111	1	'300002000111	1
23	Terminal Board	'4201025301	1	'4201025301	1
24	Terminal Board	'42010178	1	'42010178	1
25	Left Cover Plate	'26909400070	1	'26909400070	1
26	Support Of Motor Bearing	'01792408	1	'01792408	1
27	O-Gasket of Bearing	'76512404	1	'76512404	1
28	Clapboard Assy	'01249400029	1	'01249400029	1
29	Propeller Housing(Lower)	'200230000001	3	'200230000001	3
30	Rotary Axis	'700004500433	1	'700004500433	1
31	Filter Sub-Assy(Rear Side Plate)	'111001000001	2	'111001000001	2
32	Rear Side Plate Sub-Assy	'017051000005	1	'017051000005	1
33	Joint Slack	'73018731	1	'73018731	1
34	Fan Motor	'150101000056	1	'150101000056	1
35	Centifugal Fan	'103003000001	3	'103003000001	3
36	Propeller Housing(Upper)	'200230000002	3	'200230000002	3
37	Front Grill Sub-Assy	'26909400066	3	'26909400066	3
38	Top Cover	'01269400012P	1	'01269400012P	1

NO.	Name of Part	GTH42K3HI	
		Product Code	ED020N1470
		Part Code	Quantity
1	Remote Controller	'30510516	1
2	Temperature Sensor	'390001923	1
3	Room Sensor	'39000191	1
4	Drainage Pipe Sub-Assy	'05235434	1
5	Water Tray	'200063000003	1
6	Swing Lever	'10582009	3
7	Air Louver	'200007000001	15
8	Supporter	'26909400076	2
9	Rotating Shaft 3	'26909430	4
10	Right Cover Plate	'26909400071	1
11	Installation Supporting Frame(Right)	'01809402	1
12	Right Side Plate	'26909400074	2
13	Axile Bush	'10542704	2
14	Guide Louver	'200004500422	2
15	Evaporator Assy	'011001000136	1
16	Display Board	'30294000009	1
17	Stepping Motor	'1521240206	2
18	Base Plate Assy	'02229400036	1
19	Electric Box Assy	'01399400149	1
20	Installation Supporting Frame(Left)	'01809401	1
21	Capacitor	'33010014	1
22	Main Board	'300002000111	1
23	Terminal Board	'4201025301	1
24	Terminal Board	'42010178	1
25	Left Cover Plate	'26909400070	1

26	Support Of Motor Bearing	'01792408	1
27	O-Gasket of Bearing	'76512404	1
28	Clapboard Assy	'01249400029	1
29	Propeller Housing(Lower)	'200230000001	3
30	Rotary Axis	'700004500433	1
31	Filter Sub-Assy(Rear Side Plate)	'111001000001	2
32	Rear Side Plate Sub-Assy	'017051000005	1
33	Joint Slack	'73018731	1
34	Fan Motor	'150101000056	1
35	Centifugal Fan	'103003000001	3
36	Propeller Housing(Upper)	'200230000002	3
37	Front Grill Sub-Assy	'26909400066	3
38	Top Cover	'01269400012P	1

◆ Model: GTH48K3HI/GTH60K3HI exploded view and spare parts list.



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NO.	Name of Part	GTH48K3HI		GTH60K3HI	
		Product Code	ED020N1430	Product Code	ED020N1480
		Part Code	Quantity	Part Code	Quantity
1	Remote Controller	'30510516	1	'30510516	1
2	Room Sensor	'39000191	1	'39000191	1
3	Tube Sensor	'3900020720G	1	'3900020720G	1
4	Cover Plate(Left)	'26909400070	1	'26909400070	1
5	Installation Supporting Frame(Left)	'01809401	1	'01809401	1
6	Electric Box Assy	'01399400149	1	'01399400149	1
7	Capacitor	'3301074719	1	'3301074719	1
8	Main Board	'300002000111	1	'300002000111	1
9	Terminal Board	'42010178	1	'42010178	1
10	Terminal Board	'4201025301	1	'4201025301	1
11	Swing Lever	'10582009	4	'10582009	4
12	Supporter(Guide Louver)	'26909400076	3	'26909400076	3
13	Air Louver	'200007000001	20	'200007000001	20
14	Water Tray	'200063000002	1	'200063000002	1
15	Top Cover	'01269400013P	1	'01269400013P	1
16	Front Grill Sub-Assy	'26909400066	4	'26909400066	4
17	Drainage Pipe Sub-Assy	'05235434	1	'05235434	1
18	Rear Side Plate Sub-Assy	'017051000006	1	'017051000006	1
19	Filter Sub-assy(Rear Side Plate)	'111001000001	3	'111001000001	3
20	Propeller Housing(Upper)	'200230000002	4	'200230000002	4
21	Centifugal Fan	'103003000001	4	'103003000001	4
22	Propeller Housing(Lower)	'200230000001	4	'200230000001	4
23	Support Of Motor Bearing	'01792408	2	'01792408	2
24	O-Gasket of Bearing	'76512404	1	'76512404	1
25	Clapboard Sub-Assy	'01249400019	1	'01249400019	1
26	Cover Plate(Right)	'26909400071	1	'26909400071	1
27	Installation Supporting Frame(right)	'01809402	1	'01809402	1
28	Right Side Plate	'26909400074	1	'26909400074	1
29	Rotary Axis	'700004000001	2	'700004000001	2
30	Fan Motor	'15709405	1	'15709405	1
31	Joint Slack	'73018731	2	'73018731	2
32	Base Plate Assy	'02229400035	1	'02229400035	1
33	Axile Bush	'10542704	2	'10542704	2
34	Rotating Shaft 3	'26909430	6	'26909430	6
35	Evaporator Assy	'011001000176	1	'011001000176	1
36	Guide Louver	'200004500426	2	'200004500426	2
37	Crankshaft	'200023000001	2	'200023000001	2
38	Stepping Motor	'1521240206	2	'1521240206	2
39	Display Board	'30294000009	1	'30294000009	1

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