GREE
Change for life

Service Manual

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

1. Summary

Indoor Unit:

A1(Blue)

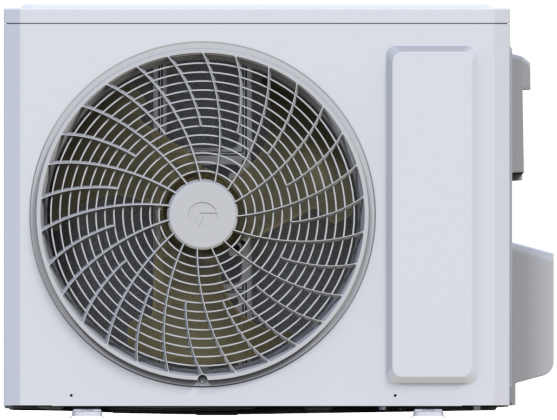
A1(White)

A1(Silver)

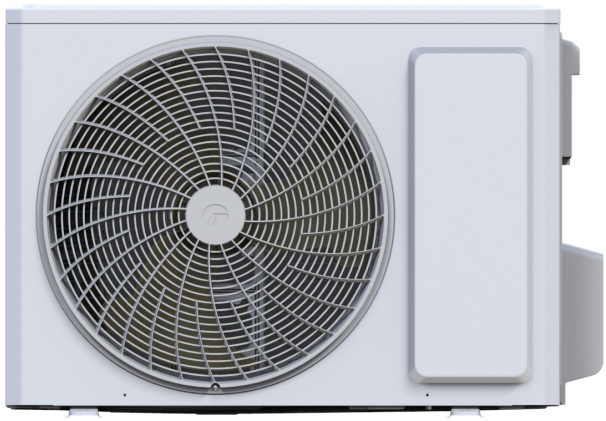
A1(Champagne)

Outdoor Unit:

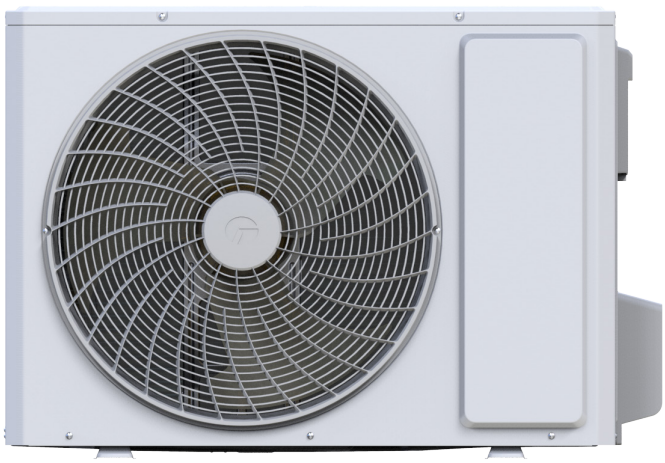
GWH09AUCXB-K6DNA1A/O
GWH12AUCXB-K6DNA1A/O



GWH18AUDXD-K6DNA1A/O



GWH24AUDXF-K6DNA1A/O



Remote Controller:

YAA1FB18(WiFi)

Model list:

No	Model	Product code	Indoor model	Indoor product code	Outdoor model	Outdoor product code	Remote Controller
1	GWH09AUCXB-K6DNA1A	CB575000300	GWH09AUCXB-K6DNA1A/I	CB575N00300	GWH09AUCXB-K6DNA1A/O	CB575W00300	YAA1FB18 (WiFi)
2	GWH09AUCXB-K6DNA1A	CB575000302	GWH09AUCXB-K6DNA1A/I	CB575N00302	GWH09AUCXB-K6DNA1A/O	CB575W00300	
3	GWH09AUCXB-K6DNA1A	CB575000303	GWH09AUCXB-K6DNA1A/I	CB575N00303	GWH09AUCXB-K6DNA1A/O	CB575W00300	
4	GWH09AUCXB-K6DNA1A	CB575000304	GWH09AUCXB-K6DNA1A/I	CB575N00304	GWH09AUCXB-K6DNA1A/O	CB575W00300	
5	GWH09AUCXB-K6DNA1A	CB575000301	GWH09AUCXB-K6DNA1A/I	CB575N00300	GWH09AUCXB-K6DNA1A/O	CB575W00301	
6	GWH12AUCXB-K6DNA1A	CB575000200	GWH12AUCXB-K6DNA1A/I	CB575N00200	GWH12AUCXB-K6DNA1A/O	CB575W00200	
7	GWH12AUCXB-K6DNA1A	CB575000202	GWH12AUCXB-K6DNA1A/I	CB575N00202	GWH12AUCXB-K6DNA1A/O	CB575W00200	
8	GWH12AUCXB-K6DNA1A	CB575000203	GWH12AUCXB-K6DNA1A/I	CB575N00203	GWH12AUCXB-K6DNA1A/O	CB575W00200	
9	GWH12AUCXB-K6DNA1A	CB575000204	GWH12AUCXB-K6DNA1A/I	CB575N00204	GWH12AUCXB-K6DNA1A/O	CB575W00200	
10	GWH12AUCXB-K6DNA1A	CB575000201	GWH12AUCXB-K6DNA1A/I	CB575N00200	GWH12AUCXB-K6DNA1A/O	CB575W00201	
11	GWH18AUDXD-K6DNA1A	CB575000100	GWH18AUDXD-K6DNA1A/I	CB575N00100	GWH18AUDXD-K6DNA1A/O	CB575W00100	
12	GWH18AUDXD-K6DNA1A	CB575000102	GWH18AUDXD-K6DNA1A/I	CB575N00102	GWH18AUDXD-K6DNA1A/O	CB575W00100	
13	GWH18AUDXD-K6DNA1A	CB575000103	GWH18AUDXD-K6DNA1A/I	CB575N00103	GWH18AUDXD-K6DNA1A/O	CB575W00100	
14	GWH18AUDXD-K6DNA1A	CB575000104	GWH18AUDXD-K6DNA1A/I	CB575N00104	GWH18AUDXD-K6DNA1A/O	CB575W00100	
15	GWH18AUDXD-K6DNA1A	CB575000101	GWH18AUDXD-K6DNA1A/I	CB575N00100	GWH18AUDXD-K6DNA1A/O	CB575W00101	
16	GWH24AUDXF-K6DNA1A	CB437004700	GWH24AUDXF-K6DNA1A/I	CB437N04700	GWH24AUDXF-K6DNA1A/O	CB437W04700	
17	GWH24AUDXF-K6DNA1A	CB437004702	GWH24AUDXF-K6DNA1A/I	CB437N04702	GWH24AUDXF-K6DNA1A/O	CB437W04700	
18	GWH24AUDXF-K6DNA1A	CB437004703	GWH24AUDXF-K6DNA1A/I	CB437N04703	GWH24AUDXF-K6DNA1A/O	CB437W04700	
19	GWH24AUDXF-K6DNA1A	CB437004704	GWH24AUDXF-K6DNA1A/I	CB437N04704	GWH24AUDXF-K6DNA1A/O	CB437W04700	
20	GWH24AUDXF-K6DNA1A	CB437004701	GWH24AUDXF-K6DNA1A/I	CB437N04700	GWH24AUDXF-K6DNA1A/O	CB437W04701	

2. Specifications

2.1 Specification Sheet

Model			GWH09AUCXB-K6DNA1A	GWH09AUCXB-K6DNA1A
Product Code			CB575000300/CB575000302 CB575000303/CB575000304	CB575000301
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	2700	2700
Heating Capacity		W	3000	3000
Cooling Power Input		W	670	670
Heating Power Input		W	680	680
Cooling Current Input		A	3.1	3.1
Heating Current Input		A	3.2	3.2
Rated Input		W	1400	1400
Rated Cooling Current		A	6.0	6.0
Rated Heating Current		A	6.2	6.2
Air Flow Volume		m^3/h	610/570/540/470/440/420/390/180	610/570/540/470/440/420/390/180
Dehumidifying Volume		L/h	0.80	0.80
EER		W/W	4.03	4.03
COP		W/W	4.41	4.41
SEER		W/W	8.5	8.5
SCOP(Average/WarmerColder)		W/W	4.6/5.7/3.5	4.6/5.7/3.5
Application Area		m^2	12-18	12-18
Indoor Unit	Model		GWH09AUCXB-K6DNA1A/I	GWH09AUCXB-K6DNA1A/I
	Product Code		CB575N00300/CB575N00302 CB575N00303/CB575N00304	CB575N00300
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ98×633.5	Φ98×633.5
	Cooling Speed	r/min	1200/1100 /1050/950/800/700/650/500	1200/1100 /1050/950/800/700/650/500
	Heating Speed	r/min	1200/1100 /1040/950/900/880/850	1200/1100 /1040/950/900/880/850
	Fan Motor Power Output	W	15	15
	Fan Motor RLA	A	0.22	0.22
	Fan Motor Capacitor	μF	/	/
	Heater Power Input	W	25	25
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ5	Φ5
	Evaporator Row-fin Gap	mm	2-1.4	2-1.4
	Evaporator Coil Length (LXDXW)	mm	635×22.8×306.3	635×22.8×306.3
	Swing Motor Model		MP24HF/MP24AK/MP24BA	MP24HF/MP24AK/MP24BA
	Swing Motor Power Output	W	1.5/1.5/1.5	1.5/1.5/1.5
	Fuse Current	A	3.15	3.15
	Sound Pressure Level	dB (A)	Cooling:38/37/34/31/26/23/22/19 Heating:39/37/34/31/30/29/28	Cooling:38/37/34/31/26/23/22/19 Heating:39/37/34/31/30/29/28
	Sound Power Level	dB (A)	Cooling:58/51/48/45/40/37/36/33 Heating:58/51/48/45/44/43/42	Cooling:58/51/48/45/40/37/36/33 Heating:58/51/48/45/44/43/42
	Dimension (WXHXD)	mm	837×293×200	837×293×200
	Dimension of Carton Box (LXWXH)	mm	891×357×261	891×357×261
	Dimension of Package (LXWXH)	mm	896×373×272	896×373×272
	Net Weight	kg	9.5	9.5
	Gross Weight	kg	11.5	11.5

Outdoor Unit	Outdoor Unit Model		GWH09AUCXB-K6DNA1A/O(LCLH)	GWH09AUCXB-K6DNA1A/O(LC)
	Outdoor Unit Product Code		CB575W00300	CB575W00301
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXF-A082zC170	QXF-A082zC170
	Compressor Oil		ZE-G;ES RB68GX or equivalent	ZE-G;ES RB68GX or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	15.00	15.00
	Compressor RLA	A	2.56	2.56
	Compressor Power Input	W	756.6	756.6
	Compressor Overload Protector		/	/
	Throttling Method		Capillary	Capillary
	Set Temperature Range	ºC	16~30	16~30
	Cooling Operation Ambient Temperature Range	ºC	-15~50	-15~50
	Heating Operation Ambient Temperature Range	ºC	-25~30	-15~30
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ7
	Condenser Rows-fin Gap	mm	1-1.2	1-1.2
	Condenser Coil Length (LXDXW)	mm	666×19.05×527	666×19.05×527
	Fan Motor Speed	rpm	850	850
	Fan Motor Power Output	W	30	30
	Fan Motor RLA	A	0.40	0.40
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m^3/h	1950	1950
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	400	400
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level	dB (A)	50	50
	Sound Power Level	dB (A)	61	61
	Dimension(WXHXD)	mm	732×555×330	732×555×330
	Dimension of Carton Box (LXWXH)	mm	791×373×590	791×373×590
	Dimension of Package(LXWXH)	mm	794×376×615	794×376×615
	Net Weight	kg	25	25
	Gross Weight	kg	27.5	27.5
	Refrigerant		R32	R32
	Refrigerant Charge	kg	0.53	0.53
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	16	16
	Outer Diameter Liquid Pipe		1/4"	1/4"
	Outer Diameter Gas Pipe		3/8"	3/8"
	Max Distance Height	m	10	10
	Max Distance Length	m	15	15
	Note: The connection pipe applies metric diameter.			

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

Model			GWH12AUCXB-K6DNA1A	GWH12AUCXB-K6DNA1A
Product Code			CB575000200/CB575000202 CB575000203/CB575000204	CB575000201
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	3510	3510
Heating Capacity		W	3810	3810
Cooling Power Input		W	989	989
Heating Power Input		W	977	977
Cooling Current Input		A	4.4	4.4
Heating Current Input		A	4.4	4.4
Rated Input		W	1650	1650
Rated Cooling Current		A	6.2	6.2
Rated Heating Current		A	7.4	7.4
Air Flow Volume		m^3/h	680/620/560/490/450/420/390/220	680/620/560/490/450/420/390/220
Dehumidifying Volume		L/h	1.40	1.40
EER		W/W	3.55	3.55
COP		W/W	3.90	3.90
SEER		W/W	7.2	7.2
SCOP(Average/WarmerColder)		W/W	4.1/5.2/3.1	4.1/5.2/3.1
Application Area		m^2	16-24	16-24
Indoor Unit	Model		GWH12AUCXB-K6DNA1A/I	GWH12AUCXB-K6DNA1A/I
	Product Code		CB575N00200/CB575N00202 CB575N00203/CB575N00204	CB575N00200
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ98×630	Φ98×630
	Cooling Speed	r/min	1300/1200/1100/1000/900/800/750/500	1300/1200/1100/1000/900/800/750/500
	Heating Speed	r/min	1300/1200/1100/1000/900/850/800	1300/1200/1100/1000/900/850/800
	Fan Motor Power Output	W	15	15
	Fan Motor RLA	A	0.20	0.20
	Fan Motor Capacitor	μF	/	/
	Heater Power Input	W	25	25
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ5	Φ5
	Evaporator Row-fin Gap	mm	2-1.4	2-1.4
	Evaporator Coil Length (LXDXW)	mm	634×22.8×304.8	634×22.8×304.8
	Swing Motor Model		MP24BA/MP24AK/MP24HF	MP24BA/MP24AK/MP24HF
	Swing Motor Power Output	W	1.5/1.5/1.5	1.5/1.5/1.5
	Fuse Current	A	3.15	3.15
	Sound Pressure Level	dB (A)	Cooling:41/38/36/33/30/27/25/19 Heating:41/38/36/33/29/27/26	Cooling:41/38/36/33/30/27/25/19 Heating:41/38/36/33/29/27/26
	Sound Power Level	dB (A)	Cooling:60/52/50/47/44/41/39/33 Heating:55/52/50/47/43/41/40	Cooling:60/52/50/47/44/41/39/33 Heating:55/52/50/47/43/41/40
	Dimension (WXHXD)	mm	837×293×200	837×293×200
	Dimension of Carton Box (LXWXH)	mm	891×357×261	891×357×261
	Dimension of Package (LXWXH)	mm	896×373×272	896×373×272
	Net Weight	kg	9.5	9.5
	Gross Weight	kg	11.5	11.5

Outdoor Unit	Outdoor Unit Model		GWH12AUCXB-K6DNA1A/O(LCLH)	GWH12AUCXB-K6DNA1A/O(LC)
	Outdoor Unit Product Code		CB575W00200	CB575W00201
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO., LTD	ZHUHAI LANDA COMPRESSOR CO., LTD
	Compressor Model		FTz-AN108ACBD	FTz-AN108ACBD
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	/	/
	Compressor RLA	A	4.40	4.40
	Compressor Power Input	W	/	/
	Compressor Overload Protector		/	/
	Throttling Method		Electron expansion valve	Electron expansion valve
	Set Temperature Range	ºC	16~30	16~30
	Cooling Operation Ambient Temperature Range	ºC	-15~50	-15~50
	Heating Operation Ambient Temperature Range	ºC	-25~30	-15~30
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7.94	Φ7.94
	Condenser Rows-fin Gap	mm	1-1.2	1-1.2
	Condenser Coil Length (LXDXW)	mm	666×19.05×527	666×19.05×527
	Fan Motor Speed	rpm	900	900
	Fan Motor Power Output	W	30	30
	Fan Motor RLA	A	0.40	0.40
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m^3/h	1950	1950
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	400	400
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level	dB (A)	52	52
	Sound Power Level	dB (A)	63	63
	Dimension(WXHXD)	mm	732×555×330	732×555×330
	Dimension of Carton Box (LXWXH)	mm	791×373×590	791×373×590
	Dimension of Package(LXWXH)	mm	794×376×615	794×376×615
	Net Weight	kg	25.5	25.5
	Gross Weight	kg	28	28
	Refrigerant		R32	R32
	Refrigerant Charge	kg	0.57	0.57
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	16	16
	Outer Diameter Liquid Pipe		1/4"	1/4"
	Outer Diameter Gas Pipe		3/8"	3/8"
	Max Distance Height	m	10	10
	Max Distance Length	m	15	15
	Note: The connection pipe applies metric diameter.			

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

Model			GWH18AUDXD-K6DNA1A	GWH18AUDXD-K6DNA1A
Product Code			CB575000100/CB575000102 CB575000103/CB575000104	CB575000101
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	5300	5300
Heating Capacity		W	5350	5350
Cooling Power Input		W	1582	1582
Heating Power Input		W	1393	1393
Cooling Current Input		A	7.2	7.2
Heating Current Input		A	6.3	6.3
Rated Input		W	2350	2350
Rated Cooling Current		A	10	10
Rated Heating Current		A	10.5	10.5
Air Flow Volume		m^3/h	1000/850/760/650/580/520/450	1000/850/760/650/580/520/450
Dehumidifying Volume		L/h	1.90	1.90
EER		W/W	3.35	3.35
COP		W/W	3.84	3.84
SEER		W/W	7.3	7.3
SCOP(Average/WarmerColder)		W/W	4.2/5.7/3.5	4.2/5.7/3.5
Application Area		m^2	23-34	23-34
Indoor Unit	Model		GWH18AUDXD-K6DNA1A/I	GWH18AUDXD-K6DNA1A/I
	Product Code		CB575N00100/CB575N00102 CB575N00103/CB575N00104	CB575N00100
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ106×739	Φ106×739
	Cooling Speed	r/min	1250/1150/1030/960/800/700/650/500	1250/1150/1030/960/800/700/650/500
	Heating Speed	r/min	1300/1150/1040/950/900/880/800	1300/1150/1040/950/900/880/800
	Fan Motor Power Output	W	45	45
	Fan Motor RLA	A	0.25	0.25
	Fan Motor Capacitor	μF	/	/
	Heater Power Input	W	/	/
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ5	Φ5
	Evaporator Row-fin Gap	mm	2-1.3	2-1.3
	Evaporator Coil Length (LXDXW)	mm	745×22.8×342.9	745×22.8×342.9
	Swing Motor Model		MP24AK/MP24BA/MP24HF	MP24AK/MP24BA/MP24HF
	Swing Motor Power Output	W	1.5/1.5 /1.5	1.5/1.5 /1.5
	Fuse Current	A	3.15	3.15
	Sound Pressure Level	dB (A)	Cooling:45/42/40/37/34/29/26/23 Heating:48/44/42/37/36/35/32	Cooling:45/42/40/37/34/29/26/23 Heating:48/44/42/37/36/35/32
	Sound Power Level	dB (A)	Cooling:60/55/53/50/47/42/39/36 Heating:60/57/55/50/49/48/45	Cooling:60/55/53/50/47/42/39/36 Heating:60/57/55/50/49/48/45
	Dimension (WXHXD)	mm	993×311×222	993×311×222
	Dimension of Carton Box (LXWXH)	mm	1050×377×288	1050×377×288
	Dimension of Package (LXWXH)	mm	1055×385×298	1055×385×298
	Net Weight	kg	12.5	12.5
	Gross Weight	kg	15	15

Outdoor Unit	Outdoor Unit Model		GWH18AUDXD-K6DNA1A/O(LCLH)	GWH18AUDXD-K6DNA1A/O(LC)
	Outdoor Unit Product Code		CB575W00100	CB575W00101
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXF-A120zH170A	QXF-A120zH170A
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	18.00	18.00
	Compressor RLA	A	5.00	5.00
	Compressor Power Input	W	1096	1096
	Compressor Overload Protector		HPC115/95U1/KSD115ºC	HPC115/95U1/KSD115ºC
	Throttling Method		Electron expansion valve	Electron expansion valve
	Set Temperature Range	ºC	16~30	16~30
	Cooling Operation Ambient Temperature Range	ºC	-15~50	-15~50
	Heating Operation Ambient Temperature Range	ºC	-25~30	-15~30
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ7
	Condenser Rows-fin Gap	mm	2-1.4	2-1.4
	Condenser Coil Length (LXDXW)	mm	895×38.1×528	895×38.1×528
	Fan Motor Speed	rpm	880	880
	Fan Motor Power Output	W	30	30
	Fan Motor RLA	A	0.40	0.40
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m^3/h	2200	2200
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	420	420
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level	dB (A)	56	56
	Sound Power Level	dB (A)	65	65
	Dimension(WXHXD)	mm	802×555×350	802×555×350
	Dimension of Carton Box (LXWXH)	mm	869×395×594	869×395×594
	Dimension of Package(LXWXH)	mm	872×398×620	872×398×620
	Net Weight	kg	31.5	31.5
	Gross Weight	kg	34	34
	Refrigerant		R32	R32
	Refrigerant Charge	kg	0.85	0.85
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	16	16
	Outer Diameter Liquid Pipe		1/4"	1/4"
	Outer Diameter Gas Pipe		1/2"	1/2"
	Max Distance Height	m	10	10
	Max Distance Length	m	25	25
	Note: The connection pipe applies metric diameter.			

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

Model			GWH24AUDXF-K6DNA1A	GWH24AUDXF-K6DNA1A
Product Code			CB437004700/CB437004702 CB437004703/CB437004704	CB437004701
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	7100	7100
Heating Capacity		W	7300	7300
Cooling Power Input		W	2030	2030
Heating Power Input		W	1870	1870
Cooling Current Input		A	9	9
Heating Current Input		A	9.3	9.3
Rated Input		W	3500	3500
Rated Cooling Current		A	13	13
Rated Heating Current		A	14	14
Air Flow Volume		m^3/h	1000/850/760/580/520/450/400/280	1000/850/760/580/520/450/400/280
Dehumidifying Volume		L/h	2.40	2.40
EER		W/W	3.51	3.51
COP		W/W	3.90	3.90
SEER		W/W	7	7
SCOP(Average/WarmerColder)		W/W	4.30/5.50/3.40	4.30/5.50/3.40
Application Area		m^2	27-42	27-42
Indoor Unit	Model		GWH24AUDXF-K6DNA1A/I	GWH24AUDXF-K6DNA1A/I
	Product Code		CB437N04700/CB437N04702 CB437N04703/CB437N04704	CB437N04700
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ106×739	Φ106×739
	Cooling Speed	r/min	1400/1200/1120/1050/980/860/750/550	1400/1200/1120/1050/980/860/750/550
	Heating Speed	r/min	1400/1200/1120/1050/950/850/750	1400/1200/1120/1050/950/850/750
	Fan Motor Power Output	W	45	45
	Fan Motor RLA	A	0.25	0.25
	Fan Motor Capacitor	μF	/	/
	Heater Power Input	W	/	/
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	2-1.4	2-1.4
	Evaporator Coil Length (LXDXW)	mm	745×22.8×342.9	745×22.8×342.9
	Swing Motor Model		MP24AK/MP24HF	MP24AK/MP24HF
	Swing Motor Power Output	W	1.5/1.5	1.5/1.5
	Fuse Current	A	3.15	3.15
	Sound Pressure Level	dB (A)	Cooling:48/44/41/40/38/36/33/27 Heating:50/47/43/41/40/36/35	Cooling:48/44/41/40/38/36/33/27 Heating:50/47/43/41/40/36/35
	Sound Power Level	dB (A)	Cooling:65/59/56/55/53/51/48/42 Heating:64/62/58/56/55/51/50	Cooling:65/59/56/55/53/51/48/42 Heating:64/62/58/56/55/51/50
	Dimension (WXHXD)	mm	993×311×222	993×311×222
	Dimension of Carton Box (LXWXH)	mm	1050×377×288	1050×377×288
	Dimension of Package (LXWXH)	mm	1055×385×298	1055×385×298
	Net Weight	kg	13	13
	Gross Weight	kg	15.5	15.5

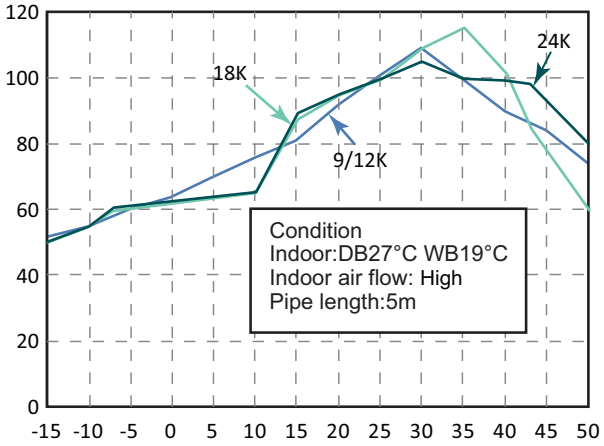
Outdoor Unit	Outdoor Unit Model		GWH24AUDXF-K6DNA1A/O(LCLH)	GWH24AUDXF-K6DNA1A/O(LC)
	Outdoor Unit Product Code		CB437W04700	CB437W04701
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXFS-M180zX170	QXFS-M180zX170
	Compressor Oil		/	/
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	24.00	24.00
	Compressor RLA	A	3.50	3.50
	Compressor Power Input	W	1350	1350
	Compressor Overload Protector		HPC 115/95U1 KSD115ºC	HPC 115/95U1 KSD115ºC
	Throttling Method		Electron expansion valve	Electron expansion valve
	Set Temperature Range	ºC	16~30	16~30
	Cooling Operation Ambient Temperature Range	ºC	-15~50	-15~50
	Heating Operation Ambient Temperature Range	ºC	-25~30	-15~30
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7.94	Φ7.94
	Condenser Rows-fin Gap	mm	2-1.4	2-1.4
	Condenser Coil Length (LXDXW)	mm	934×38.1×616	934×38.1×616
	Fan Motor Speed	rpm	800	800
	Fan Motor Power Output	W	60	60
	Fan Motor RLA	A	0.65	0.65
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m^3/h	3600	3600
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	520	520
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level	dB (A)	59	59
	Sound Power Level	dB (A)	70	70
	Dimension(WXHXD)	mm	958×660×402	958×660×402
	Dimension of Carton Box (LXWXH)	mm	1029×453×715	1029×453×715
	Dimension of Package(LXWXH)	mm	1032×456×737	1032×456×737
	Net Weight	kg	45	45
	Gross Weight	kg	49.5	49.5
	Refrigerant		R32	R32
	Refrigerant Charge	kg	1.4	1.4
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	40	40
	Outer Diameter Liquid Pipe		1/4"	1/4"
	Outer Diameter Gas Pipe		5/8"	5/8"
	Max Distance Height	m	10	10
	Max Distance Length	m	25	25
	Note: The connection pipe applies metric diameter.			

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

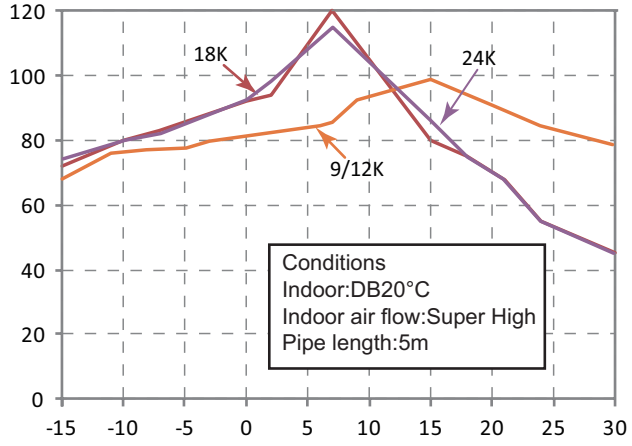
2.2 Capacity Variation Ratio According to Temperature

Heating operation ambient temperature range is -15ºC~30ºC

Cooling

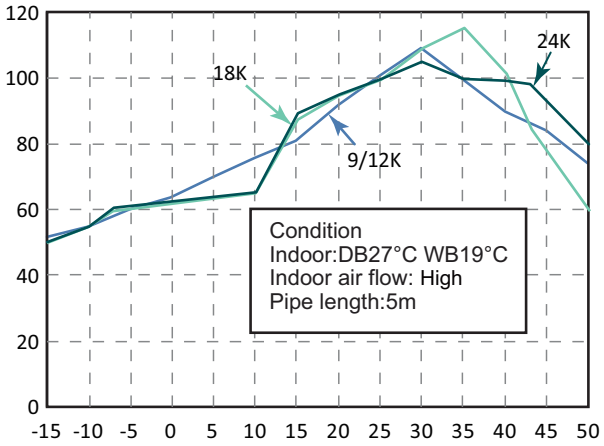


Heating

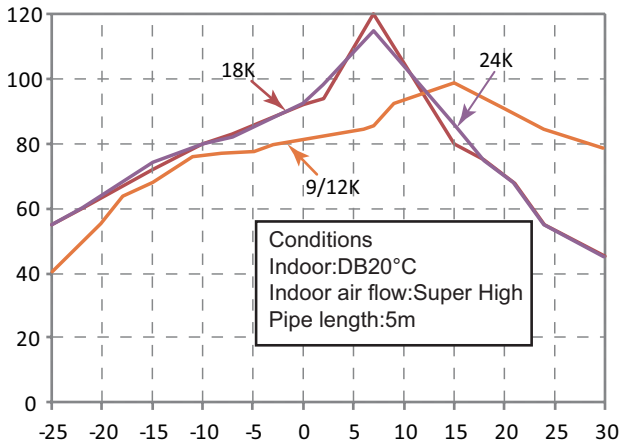


Heating operation ambient temperature range is -25ºC~30ºC

Cooling



Heating



2.3 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)		
27/19	35/24	09K	0.8~1.1	12 ~ 15	65 ~ 38	Super High	High
27/19	35/24	12K	0.9~1.1	12 ~ 14	75 ~ 37	Super High	High
27/19	35/24	18K	0.9~1.1	12 ~ 14	75 ~ 37	Super High	High
27/19	35/24	24K	0.9~1.1	12 ~ 14	75 ~ 37	Super High	High

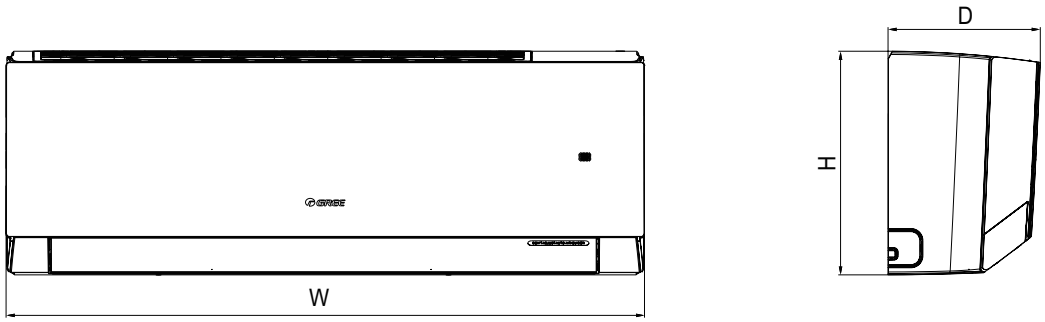
Heating:

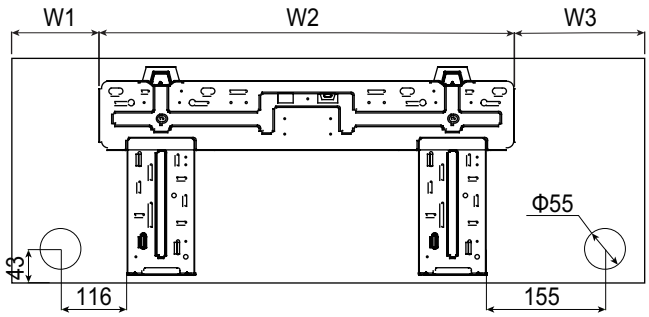
Rated heating condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)		
20/-	7/6	09K	2.8~3.2	63 ~ 35	2 ~ 5	Super High	High
20/-	7/6	12K	2.2~2.4	70 ~ 35	2 ~ 4	Super High	High
20/-	7/6	18K	2.2~2.4	70 ~ 40	1 ~ 5	Super High	High
20/-	7/6	24K	2.2~2.4	70 ~ 35	2 ~ 4	Super High	High

Instruction:
T1: Inlet and outlet pipe temperature of evaporator
T2: Inlet and outlet pipe temperature of condenser
P: Pressure at the side of big valve
Connection pipe length: 5 m.

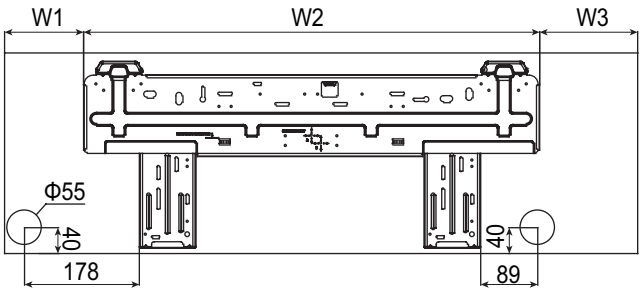
3. Outline Dimension Diagram

3.1 Indoor Unit





AUC

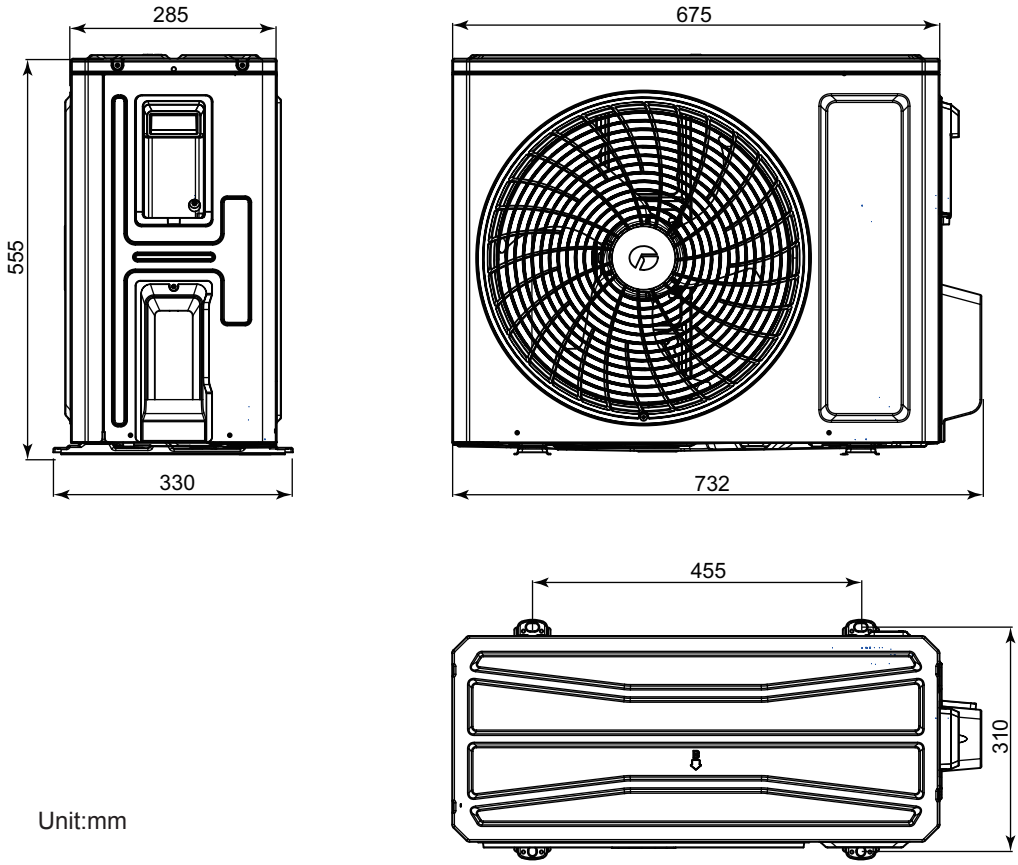


AUD

Model (-The first three characters)	W	H	D	W1	W2	W3
AUC	837	293	200	119	542	176
AUD	993	311	222	128	707.5	157.5

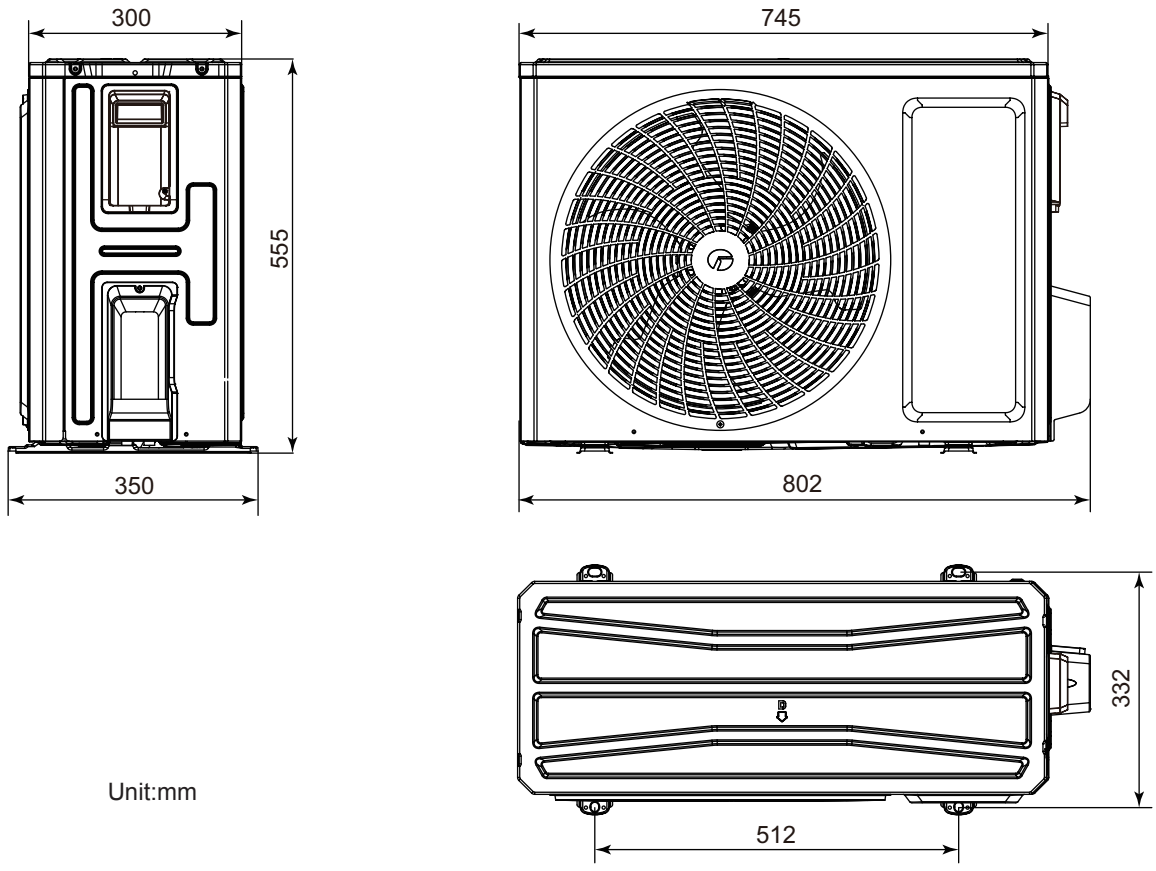
3.2 Outdoor Unit

GWH09AUCXB-K6DNA1A/O GWH12AUCXB-K6DNA1A/O



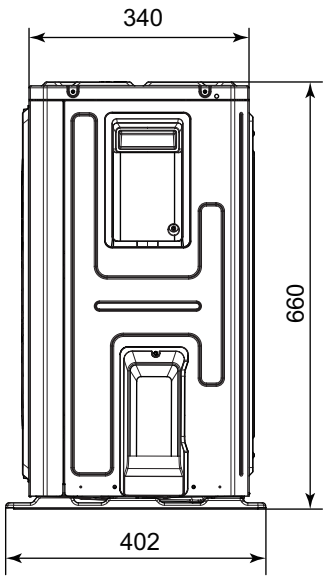
Unit:mm

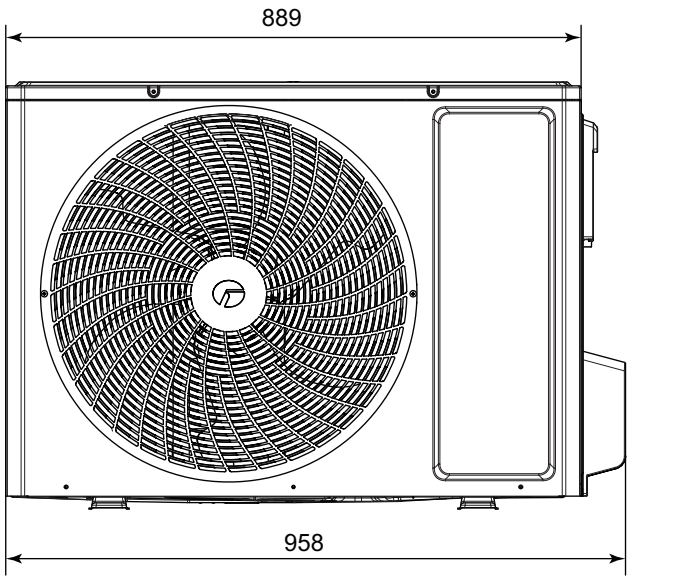
GWH18AUDXD-K6DNA1A/O

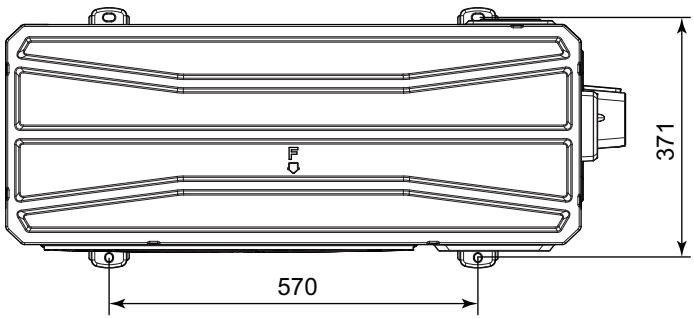


Unit:mm

GWH24AFE-K6DNA2I/O



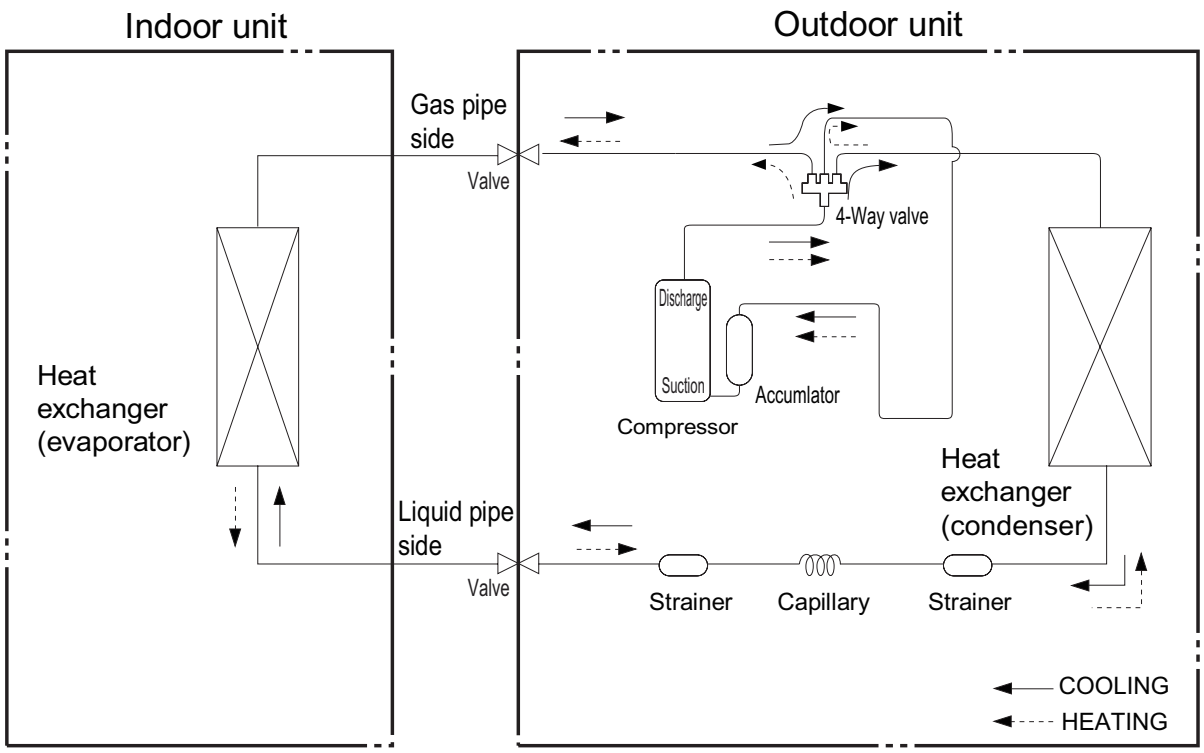




Unit:mm

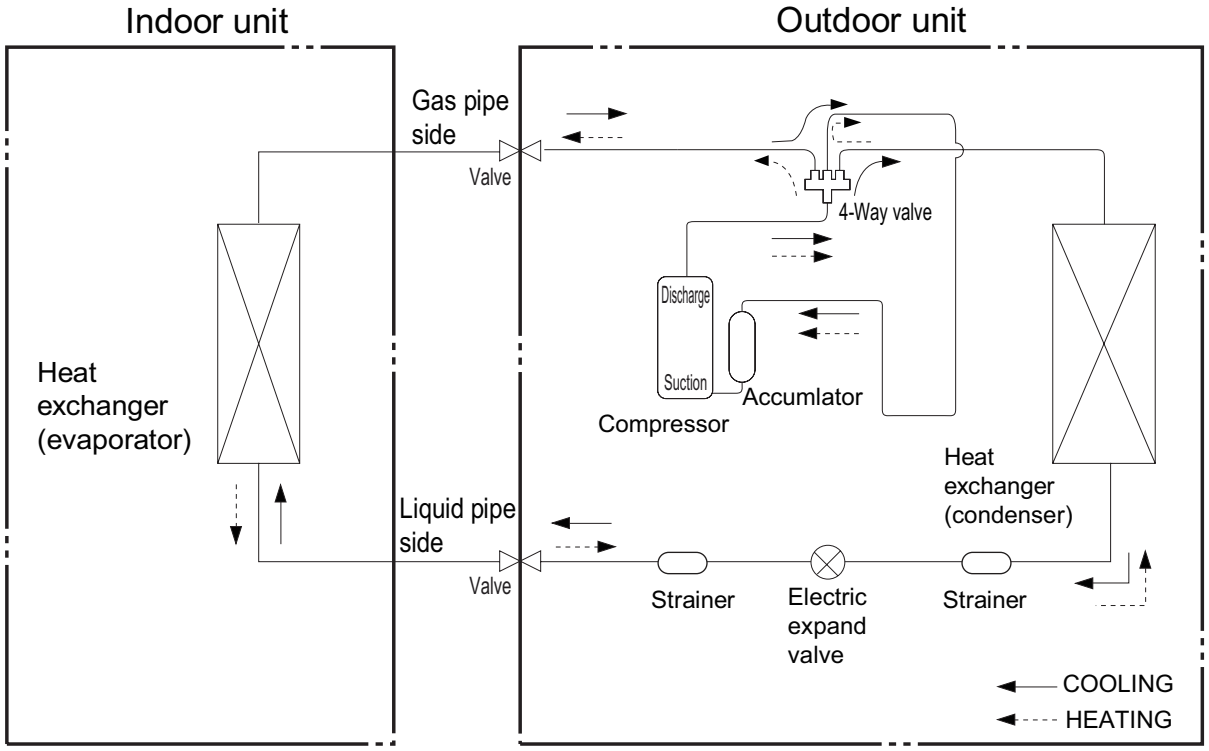
4. Refrigerant System Diagram

09K



Connection pipe specification:
Liquid pipe:1/4"
Gas pipe:3/8"

12/18/24K

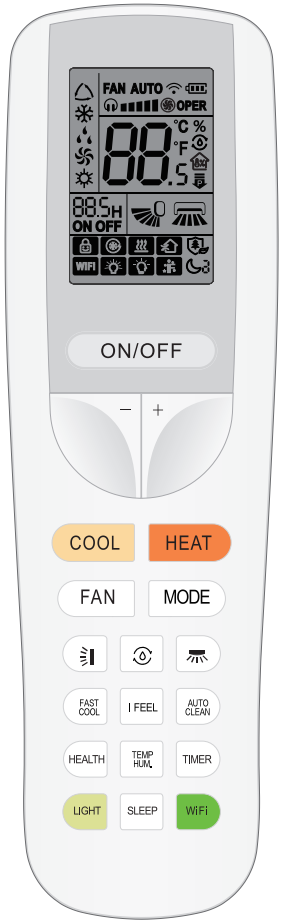


Connection pipe specification:
Liquid pipe:1/4"
Gas pipe:3/8"(09/12K)
Gas pipe:1/2"(18K)
Gas pipe:5/8"(24K)

6. Function and Control

6.1 Remote Controller Introduction

Introduction for icons on display screen



Introduction for icons on display screen

		Quiet
	FAN AUTO	Set fan speed
		Turbo mode
		Send signal
Operation mode		Auto mode
		Cool mode
		Dry mode
		Fan mode
		Heat mode
		X-FAN function
		Humidity control
		Power limiting operation
		Set temperature
		Indoor ambient temp.
		Indoor ambient humidity
	ONOFF	TIMER ON / TIMER OFF
		Left & right swing
		Up & down swing
		Child lock
		Fast cool
		Health and UVC functions
	WIFI	WiFi function
		LED
		Auto LED
		I feel
		Sleep mode

Introduction for buttons on remote controller

NOTE:

● This is a general use remote controller. It could be used for the air conditioner with multifunction. For the functions which the model doesn't have, if press the corresponding button on the remote controller, the unit will keep the original running status.

● After putting through the power, the air conditioner will give out a sound. Power indicator " ⏻ is ON. After that, you can operate the air conditioner by using remote controller.

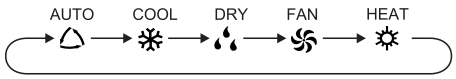
● Under on status, pressing the button on the remote controller, the signal icon " on the display of remote controller will blink once and the air conditioner will give out a "di" sound, which means the signal has been sent to the air conditioner.

ON/OFF button

Press this button to turn on the unit. Press this button again to turn off the unit.

MODE button

Press this button to select your required operation mode.



● When selecting auto mode, air conditioner will operate automatically according to the sensed temperature. Press "FAN" button can adjust fan speed. Press " / " button can adjust fan blowing angle.

● After selecting cool mode, air conditioner will operate under cool mode. Press " + " or " - " button to adjust set temperature. Press "FAN" button to adjust fan speed. Press " / " button to adjust fan blowing angle.

● When selecting dry mode, the air conditioner operates at low speed under dry mode. Under dry mode, fan speed can't be adjusted. Press " / " button to adjust fan blowing angle.

● When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. Press "FAN" button to adjust fan speed. Press " / " button to adjust fan blowing angle.

● When selecting heat mode, the air conditioner operates under heat mode. Press " + " or " - " button to adjust set temperature. Press "FAN" button to adjust fan speed. Press " / " button to adjust fan blowing angle.

NOTE:

● For preventing cold air, after starting up heat mode, indoor unit will delay 1~5 minutes to blow air (Actual delay time depends on indoor ambient temperature).

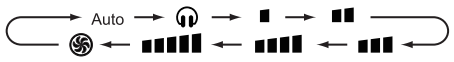
● Set temperature range from remote controller: 16~30°C(61-86°F).

● This mode indicator is not available for some models.

● Cooling only unit won't receive heat mode signal. If setting heat mode with remote controller, press " ON/OFF " button can't start up the unit.

FAN button

This button is used for setting Fan Speed in the sequence that goes from AUTO, , , , , , to , then back to Auto.



Low speed Low-Medium speed Medium speed
Medium-High speed High speed
Turbo speed Quiet speed

NOTE:

- It's low fan speed under dry mode.
- X-FAN function Hold fan speed button for 2s in cool or dry mode, the icon " " is displayed and the indoor fan will continue operation for a few minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in auto, fan or heat mode.

This function indicates that moisture on evaporator of indoor unit will be blowed after the unit is stopped to avoid mould.

- Having set X-FAN function on: After turning off the unit by pressing " ON/OFF " button indoor fan will continue running for a few minutes. at low speed. In this period, Hold fan speed button for 2s to stop indoor fan directly.
- Having set X-FAN function off: After turning off the unit by pressing " ON/OFF " button, the complete unit will be off directly.

button

Press " + " or " - " button once increase or decrease set temperature 1°C(°F). Holding " + " or " - " button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly.

COOL button

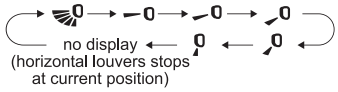
Press this button, unit will operate in cool mode.

HEAT button

Press this button, unit will operate in heat mode.

button

Press this button can select up & down swing angle. Fan blow angle can be selected circularly as below:



- When selecting "", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting " ", air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.
- Hold " " button above 2s to set your required swing angle. When reaching your required angle, release the button.

NOTE:

- Press this button continuously more than 2s, the main unit will swing back and forth from up to down, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- Under swing up and down mode, when the status is switched from off to , if press this button again 2s later, status will switch to off status directly; if press this button again within 2s, the change of swing status will also depend on the circulation sequence stated above.

button

Under cooling mode, press this button can select humidity control with cooling mode, smart dehumid ification with cooling mode, general cooling mode, and can be set to operate circularly. After dehumidification mode is activated, screen of remote controller will display " " icon. When the humidity control mode is selected, you can press "+" and "-" buttons to set the humidity value; when smart dehumidification is set, the remote controller and indoor unit will display "Ao" for 5 seconds.

Under dry mode, press this button can select humidity control with dehumidification mode, continuous dehumidification with dehumidification mode, general dehumidification mode, and can be set to operate circularly. After dehumidification mode is activated, screen of remote controller will display " " icon. When the humidity control mode is selected, you can press "+" and "-" buttons to set the humidity value; when continuous dehumidification is set, the remote controller and indoor unit will display "Co".

NOTE:

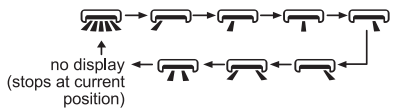
- The air conditioner is mainly used for controlling the temperature, while the humidity control is the auxiliary function.

The humidity will be affected by the factors such as indoor and outdoor environment, degree of indoor sealing and indoor flow.

- When the set humidity is higher than current atmospheric humidity, the set humidity can't be reached.

button

Press this button can select left & right swing angle. Fan blow angle can be selected circularly as below:



NOTE:

- Press this button continuously more than 2s, the main unit will swing back and forth from left to right, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- Under swing left and right mode, when the status is switched from off to , if press this button again 2s later, status will switch to off status directly; if press this button again within 2s, the change of swing status will also depend on the circulation sequence stated above.
- This function only applicable for some models.

FAST COOL button

Press this button under cooling mode can select 25°C(77°F) fast cooling mode, 16°C(61°F) fast cooling mode and normal cooling mode circularly. " " icon will be displayed on the remote controller under fast cooling mode.
Once it enters into fast cooling mode, the fan speed is auto fan and the set temperature is 25°C(77°F) or 16°C(61°F). At this time, the set temperature flashes to display for 5s. In the flashing period, press " + " or " - " button to adjust the set temperature.
Press "FAN" button to adjust the fan speed. If the set temperature and the fan speed haven't been adjusted during that time, the remote controller and the indoor unit will operate under current set temperature and fan speed for 20 minutes. 20 minutes later, the set temperature and the fan speed for the remote controller and the indoor unit will turn to the status before quick cooling.
NOTE:
● If the set temperature and the fan speed have been adjusted during the operation under fast cooling mode, the unit will exit from the fast cooling mode. Then the indoor unit operates continuously under the adjusted status.
● Fast cooling function is only applicable for some models. If this function is unavailable for this indoor unit, 20 minutes later, the remote controller will turn back to the status before fast cooling. Indoor unit operates continuously according to current status. At this time, status of indoor unit and the display status on the remote controller may be different.
● This function is only available for some models.

I FEEL button

Press this button to start I FEEL function and " " will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to turn off I FEEL function and " " will disappear.
● Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.When I FEEL function is turned on, the remote controller should be put within the area where indoor unit can receive the signal sent by the remote controller.

AUTO CLEAN button

Under unit off status, press this button to turn on or turn off the auto clean function. When the auto clean function is turned on, indoor unit displays "CL".
During the auto clean process of evaporator, the unit will perform fast cooling or fast heating. There may be some noise, which is the sound of flowing liquid or thermal expansion or cold shrinkage. The air conditioner may blow cool or warm air, which is a normal phenomenon. During cleaning process, please make sure the room is well ventilated to avoid affecting the comfort.
NOTE:
● The auto clean function can only work under normal ambient temperature. If the room is dusty, clean it once a month; if not, clean it once every three months. After the auto clean function is turned on, you can leave the room. When auto clean is finished, the air conditioner will enter standby status.
● This function is only available for some models.

HEALTH button

Press this button to turn on or turn off the health and UVC functions in operation status.

● When selecting " " with remote controller, Cold Plasma will be turn on.
● When selecting " " with remote controller, UVC sterilization function will be turn on.
● When selecting " " with remote controller, Cold Plasma and UVC sterilization function will be turn on together.
NOTE:
● Health and UVC sterilization are only available for some models.

TEMP HUM. button

By pressing this button, you can see indoor ambient temperature or indoor ambient humidity on indoor unit's display. The setting on remote controlleris selected circularly as below:

● When selecting " " with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.
● When selecting " " with remote controller, temperature indicator on indoor unit displays indoor ambient humidity.

TIMER button

● At ON status, press this button once can set TIMER OFF. The character of HOUR and OFF will flash. Press "+" or "-" button within 5s can adjust the time of TIMER ON. After each pressing of "+" or "-" button, time will increase or decrease half an hour. When holding "+" or "-" button, 2s later, the time will change quickly until to reach to your required time. After that, press "TIMER" button to confirm it. The character of HOUR and OFF won't flash again.
Cancel TIMER OFF: Press "TIMER" button again under TIMER OFF status.
● At OFF status, press this button once can set TIMER ON. Please refer to TIMER off for detailed operation.
Cancel TIMER ON: Press "TIMER" button again under TIMER ON status.
NOTE:
● Time setting range: 0.5-24 hours.
● Time interval between two operations can't exceed 5s. Otherwise, remote controller will exit the setting status automatically.

LIGHT button

Press this button to control the LED status on the displayer, the circulation change is as follow:

When selecting " " (Auto LED) with remote controller, LED indicator on indoor unit will adjust the luminance automatically according to the ambient intensity of illumination.

SLEEP button

Press this button, can select Sleep 1 ( ), Sleep 2 ( ), Sleep 3 ( ) and cancel the Sleep, circulate between these, after electrified, Sleep Cancel is defaulted.

● Sleep 1 is Sleep mode 1, in Cool modes; sleep status after run for one hour, the main unit setting temperature will increase 1 , two hours, setting temperature increased 2 , then the unit will run at this setting temperature; In Heat mode: sleep status after run for one hour, the setting temperature will decrease 1 , two hours, setting temperature will decrease 2 , then the unit will run at this setting temperature.

● Sleep 2 is sleep mode 2, that is air conditioner will run according to the presetting a group of sleep temperature curve.

● Sleep 3 the sleep curve setting under Sleep mode by DIY;

(1) Under Sleep 3 mode, press "AUTO CLEAN" button for a long time, remote controller enters into user individuation sleep setting status, at this time, the time of remote controller will display "1hour", the setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink (The first entering will display according to the initial curve setting value of original factory);

(2) Adjust " + " and " - " button, could change the corresponding setting temperature, after adjusted, press "Turbo" button for confirmation;

(3) At this time, 1hour will be automatically increased at the timer position on the remote control, (that are "2hours" or "3hours" or "8hours"), the place of setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink;

(4) Repeat the above step (2)~(3) operation, until 8 hours temperature setting finished, sleep,curvesetting finished, at this time, the remote controller will resume the original timer display; temperature display will resume to original setting temperature.

● Sleep 3 the sleep curve setting under Sleep mode by DIY could be inquired:

The user could accord to sleep curve setting method to inquire the presetting sleep curve, enter into user individuation sleep setting status, but do not change the temperature, press "AUTO CLEAN" button directly for confirmation. Note: In the above presetting or enquiry procedure, if continuously within 10s, there is no button pressed, the sleep curve setting within 10s, there is no button pressed, the sleep curve setting status will be automatically quit and resume to display the original displaying. In the presetting or enquiry procedure, press "ON/OFF" button, "MODE" button, "TIMER" button or "SLEEP" button, the sleep curve setting or enquiry status will quit similarly.

WiFi button

Press "WiFi" button to turn on WiFi function, "WiFi" icon will be displayed on the remote controller;

Hold "WiFi" button for 5s to turn off WiFi function and "WiFi" icon will disappear.

Under off status, press "MODE" and "WiFi" buttons simultaneously for 1s, WiFi module will restore factory settings.

NOTE:

● This function is only available for some models.

Function introduction for combination buttons

Energy-saving function

Under cooling mode, press "TEMP/HUM." and "TIMER" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "TEMP/HUM." and "TIMER" buttons simultaneously again to exit energy-saving function.

NOTE:

● Under energy-saving function, fan speed is defaulted at auto speed and it can't be adjusted.

● Under energy-saving function, set temperature can't be adjusted.

● Sleep function and energy-saving function can't operate at the same time. If energy-saving function has been set under cool mode, press "SLEEP" button will cancel energy-saving function. If sleep function has been set under cool mode, start up the energy-saving function will cancel sleep function.

Child lock function

Press "+" and "-" simultaneously to turn on or turn off child lock function. When child lock function is on, " " icon is displayed on remote controller. If you operate the remote controller, the " " icon will blink three times without sending signal to the unit.

Temperature display switchover function

Under OFF status, press " - " and "MODE" buttons simultaneously to switch temperature display between °C and °F.

Volume control of IDU Buzzer

Press "LIGHT" and "MODE" buttons simultaneously to reduce the sound level of the indoor unit' buzzer.

NOTE:

● This function is only available for some models.

Clean reminder function of filter

The reminder function is defaulted to be OFF. Hold TEMP/HUM. button on the remote controller for 5s to turn it on. The buzzer will give out sound for 0.5s and the dual-8 nixie tube on the display will be on for 3s;

Once the reminder function is turned on, when the air conditioner has reached to the set time, the dual-8 nixie tube will flash about 30s when the unit is turned on each time to remind the user to clean the filter; you can turn off this cycle reminder by holding the TEMP/HUM. button on the remote controller for 5s and then the air conditioner will count time again.

NOTE:

● Once the reminder function is turned on, only this cycle reminder can be cleared.

● This function is only available for some models.

function

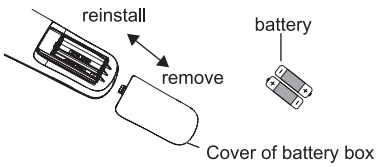
function is for limiting power of the whole unit.
Press "SLEEP" and "MODE" buttons simultaneously, the remote controller will circularly display as the following:

● Maximum power limited under the mode is lower than that of mode.
● If you want to cancel the power limiting function, press the button till the icon in remote controller is not displayed.
● When the remote controller is turned off, power limiting function is cancelled. If you want to activate the function, please repress this button.
● If the current power is lower than the maximum power of mode, then the power will not be limited after entering into such mode.
● For the model with one outdoor unit and two indoor units, if any one of indoor units enters into power limiting function, the outdoor unit will enter into the set limiting power mode of indoor unit; when two indoor units enter into power limiting mode, then the power of outdoor unit will be limited according to the lower power of the two indoor units.

NOTE:

● This button is only available for the model with such function.

Replacement of batteries in remote controller



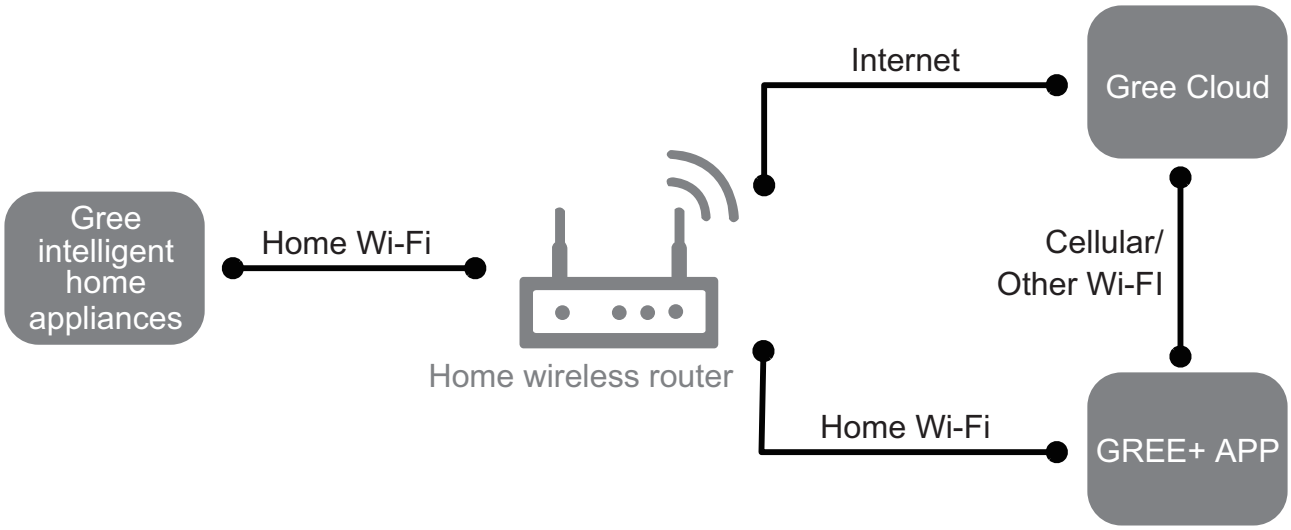
1. Press the back side of remote controller marked with " OPEN ", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

NOTICE:

● During operation, point the remote control signal sender at the receiving window on indoor unit.
● The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
● Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
● Replace new batteries of the same model when replacement is required.
● When you don't use remote controller for a long time, please take out the batteries.
● If the display on remote controller is fuzzy or there's no display, please replace batteries.

6.2 GREE+ App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.4 and above version

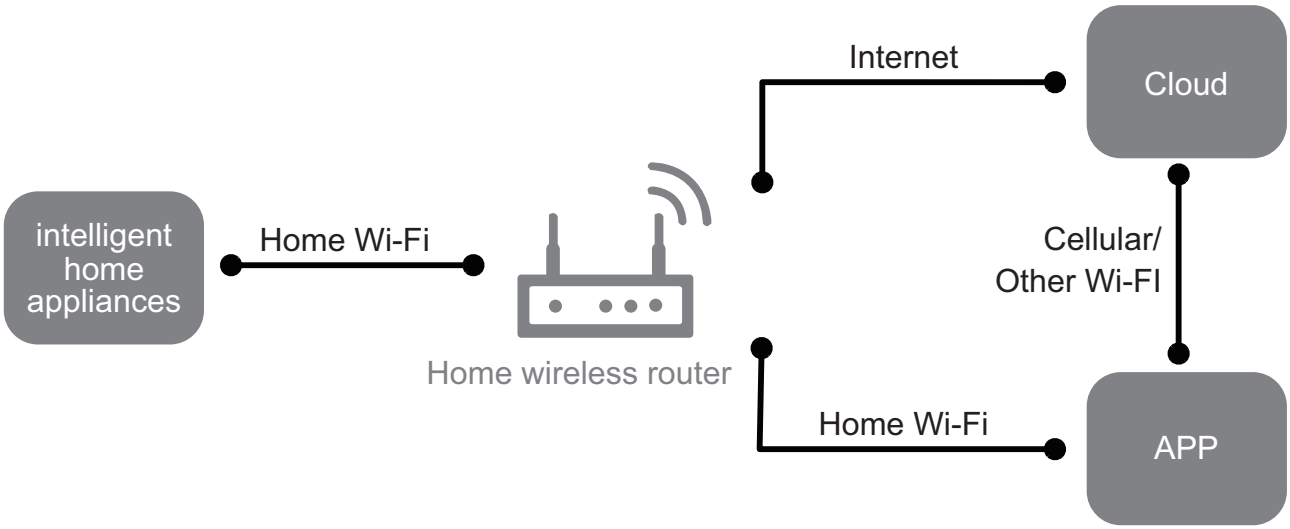
Download and installation

GREE+ App Download Linkage

Scan the QR code or search "GREE+" in the application market to download and install it. When "GREE+" App is installed, register the account and add the device to achieve long-distance control and LAN control of Gree smart home appliances.
For more information, please refer to "Help" in App.

6.3 Ewpe Smart App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.4 and above version

Download and installation

App Download Linkage

Scan the QR code or search "Ewpe Smart" in the application market to download and install it. When "Ewpe Smart" App is installed, register the account and add the device to achieve long-distance control and LAN control of smart home appliances.
For more information, please refer to "Help" in App.

6.4 Brief Description of Models and Functions

●Indoor Unit

1.Basic function of system

(1)Cooling mode

(1) Under this mode, fan and swing operates at setting status. Temperature setting range is 16~30^{O}C.

(2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

(2)Drying mode

(1) Under this mode, fan operates at low speed and swing operates at setting status. Temperature setting range is 16~30^{O}C.

(2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

(3) Protection status is same as that under cooling mode.

(4) Sleep function is not available for drying mode.

(3)Heating mode

(1) Under this mode, Temperature setting range is 16~30^{O}C.

(2) Working condition and process for heating mode:

When turn on the unit under heating mode, indoor unit enters into cold air prevention status. When the unit is stopped or at OFF status, and indoor unit has been started up just now, the unit enters into residual heat-blowing status.

(4)Working method for AUTO mode:

1.Working condition and process for AUTO mode:

a.Under AUTO mode, standard heating Tpreset=20^{O}C and standard cooling Tpreset=25^{O}C. The unit will switch mode automatically according to ambient temperature.

2.Protection function

a. During cooling operation, protection function is same as that under cooling mode.

b. During heating operation, protection function is same as that under heating mode.

3. Display: Set temperature is the set value under each condition. Ambient temperature is (Tamb.-Tcompensation) for heat pump unit and Tamb. for cooling only unit.

4. If theres I feel function, Tcompensation is 0. Others are same as above.

(5)Fan mode

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30^{O}C.

2. Other control

(1) Buzzer

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

(2) Auto button

If press this auto button when turning off the unit, the complete unit will operate at auto mode. Indoor fan operates at auto fan speed and swing function is turned on. Press this auto button at ON status to turn off the unit.

(3) Auto fan

Heating mode: During auto heating mode or normal heating ode, auto fan speed will adjust the fan speed automatically according to ambient temperature and set temperature.

(4) Sleep

After setting sleep function for a period of time, system will adjust set temperature automatically.

(5) Timer function:

General timer and clock timer functions are compatible by equipping remote controller with different functions.

(6) Memory function

memorize compensation temperature, off-peak energization value. Memory content: mode, up&down swing, light, set temperature, set fan speed, general timer (clock timer cant be memorized).

After power recovery, the unit will be turned on automatically according to memory content.

(7) Health function

During operation of indoor fan, set health function by remote controller. Turn off the unit will also turn off health function.

Turn on the unit by pressing auto button, and the health is defaulted ON.

(8)I feel control mode

After controller received I feel control signal and ambient temperature sent by remote controller, controller will work according to the ambient temperature sent by remote controller.

(9)Entry condition for compulsory defrosting function

When turn on the unit under heating ode and set temperature is 16^{O}C (or 16.5^{O}C by remote controller), press "△, ▽, △, ▽, △, ▽" button successively within 5s and then indoor unit will enter into compulsory defrosting setting status:

(1) If theres only indoor units controller, it enters into indoor normal defrosting mode.

(2) If theres indoor units controller and outdoor units controller, indoor unit will send compulsory defrosting mode signal to outdoor unit and then outdoor unit will operate under normal defrosting mode. After indoor unit received the signal that outdoor unit has entered into defrosting status, indoor unit will cancel to send compulsory mode to outdoor unit. If outdoor unit hasnt received feedback signal from outdoor unit after 3min, indoor unit will also cancel to send compulsory defrosting signal.

(10)Refrigerant recovery function:

Enter into Freon recovery mode actively: Within 5min after energization, turn on the unit at 16^{O}C under cooling mode, and press light button for 3 times within 3s to enter into Freon recovery mode. Fo is displayed and Freon recovery mode will be sent to outdoor unit.

(11)Ambient temperature display control mode

1. When user set the remote controller to display set temperature (corresponding remote control code: 01), current set temperature will be displayed.

2. Only when remote control signal is switched to indoor ambient temperature display status (corresponding remote control code: 10) from other display status (corresponding remote control code: 00, 01,11),controller will display indoor ambient temperature for 3s and then turn back to display set temperature.

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30^{O}C.

(12)Off-peak energization function:

Adjust compressors minimum stop time. The original minimum stop time is 180s and then we change to:

The time interval between two start-ups of compressor cant be less than 180+Ts(0≤T≤15). T is the variable of controller. Thats to say the minimum stop time of compressor is 180s~195s. Read-in T into memory chip when refurbish the memory chip each time.

After power recovery, compressor can only be started up after 180+T s at least.

(13) SE control mode

The unit operates at SE status.

(14) X-fan mode

When X-fan function is turned on, after turn off the unit, indoor fan will still operate at low speed for 2min and then the complete unit will be turned off. When x-fan function is turned off, after turn off the unit, the complete unit will be turned off directly.

(15) 8°C heating function

Under heating mode, you can set 8°Cheating function by remote controller. The system will operate at 8°C set temperature.

(16)Turbo function

Turbo function can be set under cooling and heating modes. Press Fan Speed button to cancel turbo setting. Turbo function is not available under auto, drying and fan modes.

●Outdoor Unit

1. Cooling mode:

Working condition and process of cooling mode:

① When Tindoor ambient temperature≥Tpreset, unit enters into cooling mode. Indoor fan, outdoor fan and compressor start operation. Indoor fan operates according to set fan speed.

② When Tindoor ambient temperature≤Tpreset-2°C, compressor stops operation and outdoor fan will stop 30s later. Indoor fan operates according to set fan speed.

③ When Tpreset-2°C ＜ Tindoor ambient temperature ＜ Tpreset, unit operates according to the previous status.

Under cooling mode, 4-way valve is not energized. Temperature setting range is 16~30°C. If compressor stops because of malfunction in cooling mode, indoor fan and swing motor will work according to the original status.

2. Drying mode

(1) Working condition and process of drying mode

① When Tindoor ambient temperature ＞ Tpreset, unit will be in drying mode. Outdoor fan and compressor start operation while indoor fan will operate at low fan speed.

② When Tpreset-2°C≤Tindoor ambient temperature≤Tpreset, unit operates according to the previous status.

③ When Tindoor ambient temperature ＜ Tpreset-2°C, compressor stops operation and outdoor fan will stop 30s later.

(2) Under drying mode, 4-way valve is not energized. Temperature setting range is 16~30°C.

(3) Protection function: same as in cooling mode.

3. Fan mode

(1) Under this mode, indoor fan can select different fan speed (except Turbo) or auto fan speed. Compressor, outdoor fan and 4-way valve all stop operation.

(2) In fan mode, temperature setting range is 16~30°C.

4. Heating mode

Working condition and process of heating mode:

① When Tpreset-(Tindoor ambient temperature-Tcompensation)≥1°C, unit enters into heating mode. Compressor, outdoor fan and 4-way valve start operation.

② When -2°C ＜ Tpreset-(Tindoor ambient temperature-Tcompensation) ＜ 1°C, unit operates according to the previous status.

③ When Tpreset-(Tindoor ambient temperature-Tcompensation)≤-2°C, compressor stops operation and outdoor fan will stop 30s later. Indoor fan will be in residual-heat blowing status.

④ When unit is turned off under heating mode or changed to other modes from heating mode, 4-way valve will be power-off 2min after compressor stops working (compressor is in operation status under heating mode).

⑤ When Toutdoor ambient temperature ＞ 30°C, compressor stops operation immediately. Outdoor fan will stop 30s later.

⑥ Under the condition that compressor is turned on, when unit is changed to heating mode from cooling or drying mode, 4-way valve will be energized in 2~3mins delay.

Note: Tcompensation is determined by IDU and ODU. If IDU controls the compensation temperature, then Tcompensation is determined according to the value sent by IDU to ODU; If IDU does not control the compensation temperature, then Tcompensation will default to 3°C by the ODU.

5. Freon recovery mode

After the Freon recovery signal from IDU is received, cooling at rated frequency will be forcibly turned on to recover Freon.

Indoor unit will display Fo. If any signal from remote controller is received, unit will exit from Freon recovery mode and indoor unit stops displaying Fo.

6. Compulsory defrosting

If unit is turned on under heating mode and set temperature is 16OC (by remote controller), press "△, ▽, △, ▽, △, ▽" within 5s, unit will enter into compulsory defrosting mode and send the signal to ODU. When the compulsory defrosting signal from ODU is received, IDU will exit from the compulsory defrosting mode and stop sending the signal to ODU.

After ODU receives the compulsory defrosting code, it will start compulsory defrosting. Defrosting frequency and opening angle will be the same as in normal defrosting mode. When compulsory defrosting is finished, the complete unit resumes original status.

7. Auto mode

Auto mode is determined by controller of IDU. See IDU logic for details.

8. 8°C heating

Set temperature is 8°C. Display board of IDU displays 8°C. Under this mode, "Cold air prevention" function is shielded.

If compressor is operating under this mode, fan speed will adjust according to auto fan speed; if compressor stops operation under this mode, indoor fan will be in residual-heat blowing status.

When power on, communication light will be blinking in a normal way (after receiving a group of correct signals, blinking stops for 0.2s~0.3s). If theres no communication, communication light will be always on. If other ODU has malfunction, communication light will be on for 1s and off for 1s in a circular way.

7. Notes for Installation and Maintenance

Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.
The following contents are very important for installation and maintenance.

Please follow the instructions below.

●The installation or maintenance must accord with the instructions.
●Comply with all national electrical codes and local electrical codes.
●Pay attention to the warnings and cautions in this manual.
●All installation and maintenance shall be performed by distributor or qualified person.
●All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.
●Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.

⚠ WARNINGS

Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire cant be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires cant be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.
10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.
11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.
12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.
13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
14. Replace the fuse with a new one of the same specification if it is burnt down; dont replace it with a cooper wire or conducting wire.
15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the indoor unit and outdoor unit, a sufficient fixing bolt must be installed; make sure the installation support is firm.
4. Ware safety belt if the height of working is above 2m.
5. Use equipped components or appointed components during installation.
6. Make sure no foreign objects are left in the unit after finishing installation.

Refrigerant Safety Precautions:

1. When refrigerant leaks or requires discharge during installation, maintenance, or disassembly, it should be handled by certified professionals or otherwise in compliance with local laws and regulations.
2.Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
3. Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture or other hazards.
4. Make sure no refrigerant gas is leaking out when installation is completed.
5. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
6. Never touch the refrigerant piping or compressor without wearing glove to avoid scald or frostbite.

Improper installation may lead to fire hazard, explosion, electric shock or injury.

Safety Precautions for Installing and Relocating the Unit:

To ensure safety, please be mindful of the following precautions.

⚠ WARNINGS

1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.

Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.

2.When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.

Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.

3.When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode.Then, fully close the valve at high pressure side (liquid valve).About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.

If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.

4.During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

5.When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

6.Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.

If there leaked gas around the unit, it may cause explosion and other accidents.

7.Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire.

Poor connections may lead to electric shock or fire.

8.Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.

Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

Safety Precautions for Refrigerant

●To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32,which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can leads to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.
●Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

WARNING:

●Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture.
Should repair be necessary,contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance shall be stored in a room without continuously operating ignition sources. (for example:open flames , an operating gas appliance or an operating electric heater.)
●Do not pierce or burn.
●Appliance shall be installed, operated and stored in a room with a floor area larger than Xm^2.
●Appliance filled with flammable gas R32. For repairs, strictly follow manufacturers instructions only.Be aware that refrigrants not contain odour.
●Read specialists manual.

Safety Operation of Flammable Refrigerant

Qualification requirement for installation and maintenance man

●Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.
●Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

Installation notes

●The air conditioner is not allowed to use in a room that has running fire (such as fire source,working coal gas ware, operating heater).
●It is not allowed to drill hole or burn the connection pipe.
●The air conditioner must be installed in a room that is larger than the minimum room area.
The minimum room area is shown on the nameplate or following table a.
●Leak test is a must after installation.

table a - Minimum room area (m^2)

Charge amount (kg)	floor location	window mounted	wall mounted	ceiling mounted
≤1.2	/	/	/	/
1.3	14.5	5.2	1.6	1.1
1.4	16.8	6.1	1.9	1.3
1.5	19.3	7	2.1	1.4
1.6	22	7.9	2.4	1.6
1.7	24.8	8.9	2.8	1.8
1.8	27.8	10	3.1	2.1
1.9	31	11.2	3.4	2.3
2	34.3	12.4	3.8	2.6
2.1	37.8	13.6	4.2	2.8
2.2	41.5	15	4.6	3.1
2.3	45.4	16.3	5	3.4
2.4	49.4	17.8	5.5	3.7
2.5	53.6	19.3	6	4

Maintenance notes

●Check whether the maintenance area or the room area meet the requirement of the nameplate.
— Its only allowed to be operated in the rooms that meet the requirement of the nameplate.
●Check whether the maintenance area is well-ventilated.
— The continuous ventilation status should be kept during the operation process.
●Check whether there is fire source or potential fire source in the maintenance area.
— The naked flame is prohibited in the maintenance area; and the “no smoking” warning board should be hanged.
●Check whether the appliance mark is in good condition.
— Replace the vague or damaged warning mark.

Welding

●If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:
a. Shut down the unit and cut power supply
b. Eliminate the refrigerant
c. Vacuuming
d. Clean it with N_2 gas
e. Cutting or welding
f. Carry back to the service spot for welding
●Make sure that there isnt any naked flame near the outlet of the vacuum pump and its well-ventilated.

●The refrigerant should be recycled into the specialized storage tank.

Filling the refrigerant

●Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant wont contaminate with each other.
●The refrigerant tank should be kept upright at the time of filling refrigerant.
●Stick the label on the system after filling is finished (or havent finished).
●Dont overfilling.
●After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when its removed.

Safety instructions for transportation and storage

●Please use the flammable gas detector to check before unload and open the container.
●No fire source and smoking.
●According to the local rules and laws.

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

●Work procedure

Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

●General work area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material

●Checking for presence of refrigerant

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres.
Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

●Presence of fire extinguisher

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.

●No ignition sources

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. " NO Smoking " signs shall be displayed.

●Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

●Checks to the refrigeration equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.
The following checks shall be applied to installations using flammable refrigerants:
---The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed;
---The ventilation machinery and outlets are operating adequately and are not obstructed;
---If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
---Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
---Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

●Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.
Initial safety checks shall include:
1.That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
2.That no live electrical components and wiring are exposed while charging, recovering or purging the system;
3.That there is continuity of earth bonding.

●Repairs to sealed components

1. During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
2. Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected.This shall include damage to cables, excessive number of connections,

terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
Ensure that the apparatus is mounted securely.
Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres.
Replacement parts shall be in accordance with the manufacturer's specifications.
NOTE : The use of silicon sealant can inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

●Repair to intrinsically safe components
Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.
Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

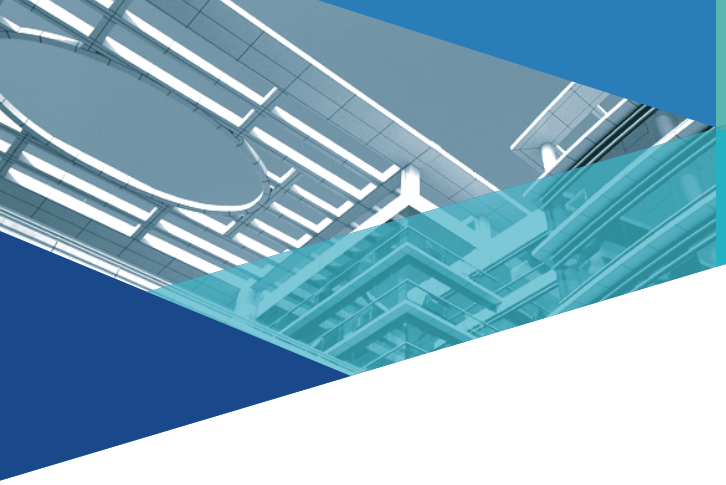
●Cabling
Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

●Detection of flammable refrigerants
Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

●Leak detection methods
The following leak detection methods are deemed acceptable for all refrigerant systems.
Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration.
(Detection equipment shall be calibrated in a refrigerant-free area.)
Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.
Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
If a leak is suspected, all naked flames shall be removed/ extinguished.
If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. For appliances containing flammable refrigerants, oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

●Removal and evacuation
When breaking into the refrigerant circuit to make repairs – or for any other purpose –conventional procedures shall be used. However, for flammable refrigerants it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:
1.remove refrigerant;
2.purge the circuit with inert gas; evacuate;
3.purge again with inert gas;
4.open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders.
For appliances containing flammable refrigerants, the system shall be "flushed" with OFN to render the unit safe. This process may need to be repeated several times.Compressed air or oxygen



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