TECHNICAL SERVICE MANUAL

—— Bird Series

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
Jinji West Rd. Qianshan Zhuhai
Guangdong China

Introduction

In this technical service manual, you will find rich references to Bird Series products, including photos, technical specifications, explosive views, spare parts lists and circuit diagrams. Service people and engineers of Gree's customers and distributors would find it a very handy source of technical information of our products.

Technical Support Department
GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
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CONTENTS

3. Bird Multi-Split type

3.1 Summary

MODEL	NOTE
KF-(32+18X2)GW/A12 KF-18X4GW/A12	CE STANDARD 1Ph 220-230V 50Hz R22
KF-(32+18X2)GW/NA12 KF-18X4GW/NA12	CE STANDARD 1Ph 220-230V 50Hz R407C
GSW(7X2+12)-22L/A GSW(7X4)-22L/A	1Ph 220V 60Hz R22

3.2 Technical specifications

Table 3-1

Model			KF-18X4GW/A12	KF-(32+18X2)GW/A12	
Function			Cooling	Cooling	
Power supply			1Ph 220-230V 50Hz		
Capacity(W)			1800X4	3200+1800X2	
Rated input(W)			1400X2	1400X2	
Rated current(A)			5.68X2	5.68X2	
Air flow(m^3/h)			450		
Dehumidifying volume(L/h)			1.2X4	1.2X2+1.4	
EER(W/W)			2.75	2.6	
Indoor unit	Model		KF-18X4G/A12	KF-(32+18X2)G/A12(18)	KF-(32+18X2)G/A12(32)
	Motor fan speed(rpm)		1050/1000/900	1050/1000/900	1200/1100/1000
	Output power(W)		13		
	Fan type/piece		Cross flow fan-1		
	Diameter-length		ϕ 97mm-583		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		2-1.4		
	Working area(m^2)		0.14		
	Swing motor		MP24GA		
	Input/speed(W)		2		
	Fuse(A)		Controller3.15A transformer0.2A		
	Working capacitor(μF)		1		
	Noise(dB(A))		⩽ 36	⩽ 36	⩽ 39
	Dimension(width-height-depth)(mm)		770-250-180		
	Net weight(Kg)		8.5		
Outdoor unit	Model		KF-18X4W/A12	KF-(32+18X2)W/A12	
	Input power(W)		2680	2710	
	Current(A)		5.54X2	5.54X2	
	L.R.A.(A)		31		
	Throttling method		Capillary		
	Compressor model		Rotary		
	Compressor		C-RV222H01AA		
	Starting method		Capacitor starting		
	Working temp.		⩽ 115℃		
	Condenser		Aluminum fin-copper tube		
	Pipe-diameter		9.52		
	Row-fin distance(mm)		2X1.8		
	Working area(m^2)		0.59		
	Fan motor power(W)/speed(rpm)		60/780		
	Type-piece		Axial fan-1		
	Diameter(mm)		450		
	Defrosting method		Auto defrost		
	Noise(dB(A))		58		
	Dimension(width-height-depth)(mm)		950 × 840 × 412		
	Net weight(Kg)		71		
	Refrigerant charge(Kg)		R22/1.2X2	R22/1.2X2	
Connecting pipe	Length(m)		4		
	Outer diameter of connecting pipe	Liquid pipe(mm)	6 (1/4")		
		Gas pipe(mm)	9.52 (3/8")		
	Max distance	Height(m)	5		
		Length(m)	10		

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

Table 3-2

Model			KF-18X4GW/NA12	KF-(32+18X2)GW/NA12	
Function			Cooling	Cooling	
Power supply			1Ph 220-230V 50Hz		
Capacity(W)			1800X4	3200+1800X2	
Rated input(W)			1450X2	1450X2	
Rated current(A)			5.87X2	5.87X2	
Air flow(m^3/h)			450		
Dehumidifying volume(L/h)			1.2X4	1.2X2+1.4	
EER(W/W)			2.7	2.5	
Indoor unit	Model		KF-18X4G/NA12	KF-(32+18X2)G/NA12(18)	KF-(32+18X2)G/NA12(32)
	Motor fan speed(rpm)		1200/1100/1000		
	Output power(W)		13		
	Fan type/piece		Cross flow fan-1		
	Diameter-length		ϕ 97mm-583		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		2-1.4		
	Working area(m^2)		0.14		
	Swing motor		MP24GA		
	Input/speed(W)		2		
	Fuse(A)		Controller3.15A transformer0.2A		
	Working capacitor(μF)		1		
	Noise(dB(A))		⩽ 39		
	Dimension(width-height-depth)(mm)		770-250-180		
	Net weight(Kg)		8.5		
Outdoor unit	Model		KF-18X4W/A12	KF-(32+18X2)W/A12	
	Input power(W)		2780	2810	
	Current(A)		5.72X2	5.72X2	
	L.R.A.(A)		31		
	Throttling method		Capillary		
	Compressor model		Rotary		
	Compressor		C-RV237H01AA		
	Starting method		Capacitor starting		
	Working temp.		⩽ 115℃		
	Condenser		Aluminum fin-copper tube		
	Pipe-diameter		9.52		
	Row-fin distance(mm)		2X1.8		
	Working area(m^2)		0.59		
	Fan motor power(W)/speed(rpm)		60/780		
	Type-piece		Axial fan-1		
	Diameter(mm)		450		
	Defrosting method		Auto defrost		
	Noise(dB(A))		58		
	Dimension(width-height-depth)(mm)		950 × 840 × 412		
	Net weight(Kg)		71		
	Refrigerant charge(Kg)		R407C/1.27X2	R407C/1.27X2	
Connecting pipe	Length(m)		4		
	Outer diameter of connecting pipe	Liquid pipe(mm)	6 (1/4")		
		Gas pipe(mm)	9.52 (3/8")		
	Max distance	Height(m)	5		
		Length(m)	10		

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

Table 3-3

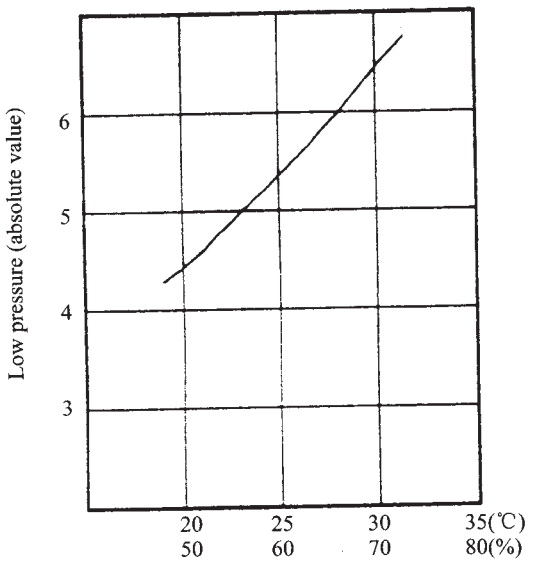
Model			GSW(7X4)-22L/A	GSW(7X2+12)-22L/A	
Function			Cooling	Cooling	
Power supply			1Ph 220V 60Hz		
Capacity(W)			1800X4	1800X2+3200	
Rated input(W)			2800	2700	
Rated current(A)			12.7	12.3	
Air flow(m^3/h)			400X4	400X2+480	
Dehumidifying volume(L/h)			0.7X4	0.7X2+1.4	
EER(W/W)			2.7	2.5	
Indoor unit	Model		GSW(7X4)-22L/A(I)	GSW(7X2+12)-22L/A(I7)	GSW(7X2+12)-22L/A(I12)
	Motor fan speed(rpm)		1050/1000/900	1050/1000/900	1200/1100/1000
	Output power(W)		13		
	Fan type/piece		Cross flow fan-1		
	Diameter-length		ϕ 97mm-583		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		2-1.4		
	Working area(m^2)		0.14		
	Swing motor		MP24GA		
	Input/speed(W)		2		
	Fuse(A)		Controller3.15A transformer0.2A		
	Working capacitor(μF)		1		
	Noise(dB(A))		⩽ 36	⩽ 36	⩽ 40
	Dimension(width-height-depth)(mm)		770-250-180		
	Net weight(Kg)		8.5		
Outdoor unit	Model		GSW(7X4)-22L/A(O)	GSW(7X2+12)-22L/A(O)	
	Input power(W)		2680	2710	
	Current(A)		5.54X2	5.54X2	
	L.R.A.(A)		31		
	Throttling method		Capillary		
	Compressor model		Rotary		
	Compressor		2P19S236A1G		
	Starting method		Capacitor starting		
	Working temp.		⩽ 115℃		
	Condenser		Aluminum fin-copper tube		
	Pipe-diameter		9.52		
	Row-fin distance(mm)		2X1.8		
	Working area(m^2)		0.59		
	Fan motor power(W)/speed(rpm)		60/780		
	Type-piece		Axial fan-1		
	Diameter(mm)		450		
	Defrosting method		Auto defrost		
	Noise(dB(A))		60		
	Dimension(width-height-depth)(mm)		950 × 840 × 410		
	Net weight(Kg)		70		
	Refrigerant charge(Kg)		R22/1.2X2	R22/1.2X2	
Connecting pipe	Length(m)		4		
	Outer diameter of connecting pipe	Liquid pipe(mm)	6 (1/4")		
		Gas pipe(mm)	9.52 (3/8")		
	Max distance	Height(m)	5		
		Length(m)	10		

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

3.3 Performance curves

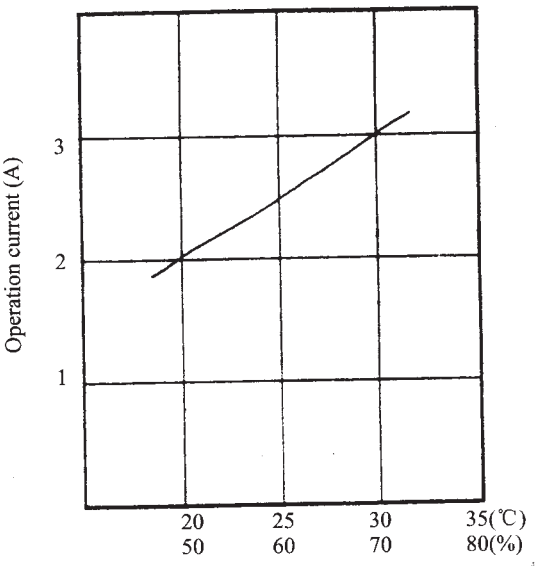
- Technical date
- Performance curve as fig1 fig2
- The change relation between low pressure , operation current and temp.

Cooling operation condition :In testing , indoor and outdoor have same work condition.



Dry bulb temp. / humidity

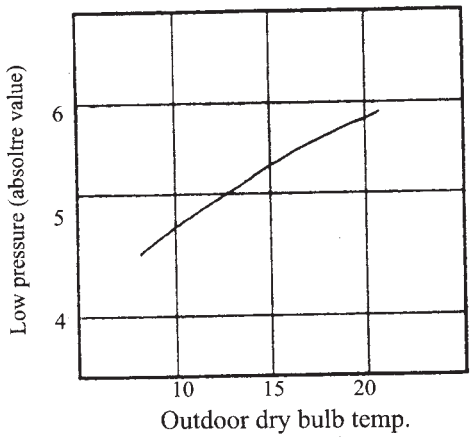
(a)



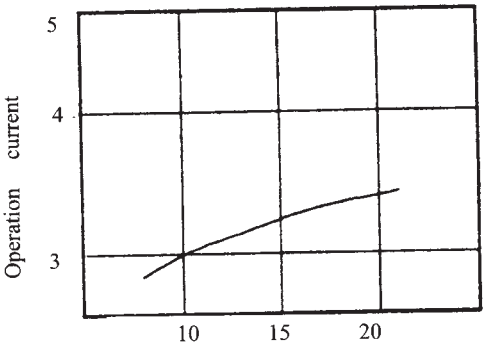
Dry bulb temp. / humidity

(b)

Heating operation
Indoor work condition : dry bulb temp. 21 ,wet bulb temp. 15.5



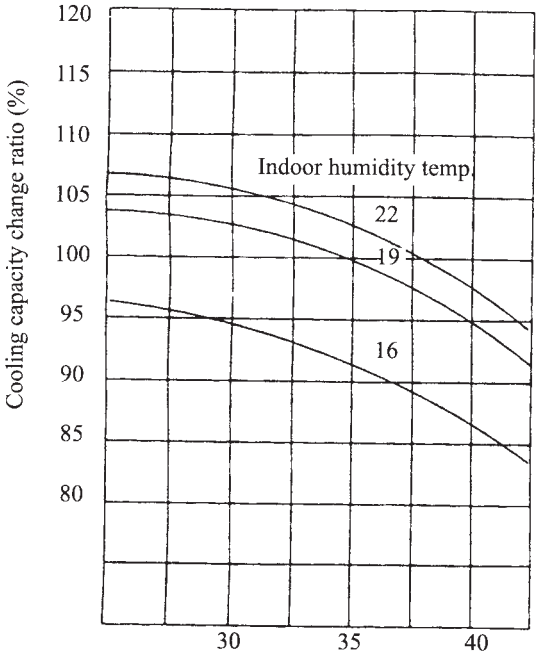
(c)



(d)

Cooling performance

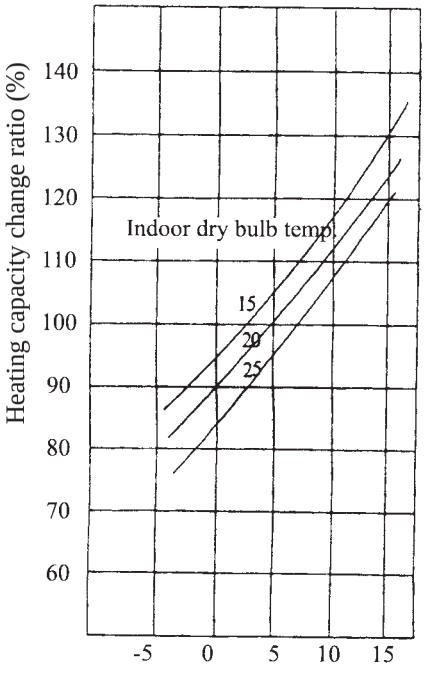
Indoor Relative humidity50%



(a)

Heating performance (not including electric heater)

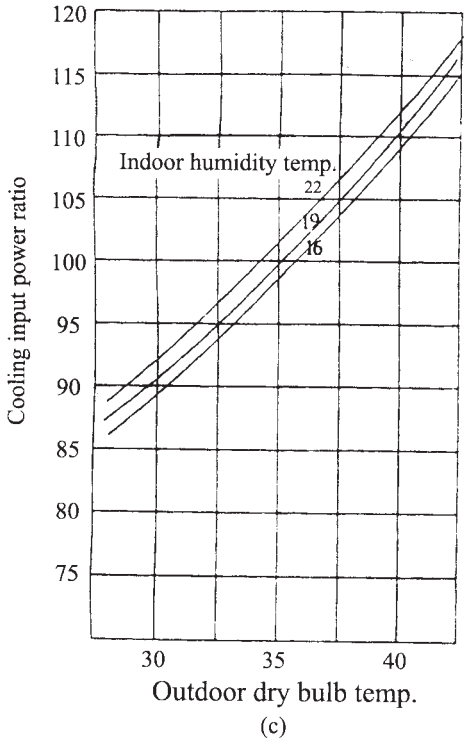
Outdoor relative humidity 85%



(b)

Cooling performance

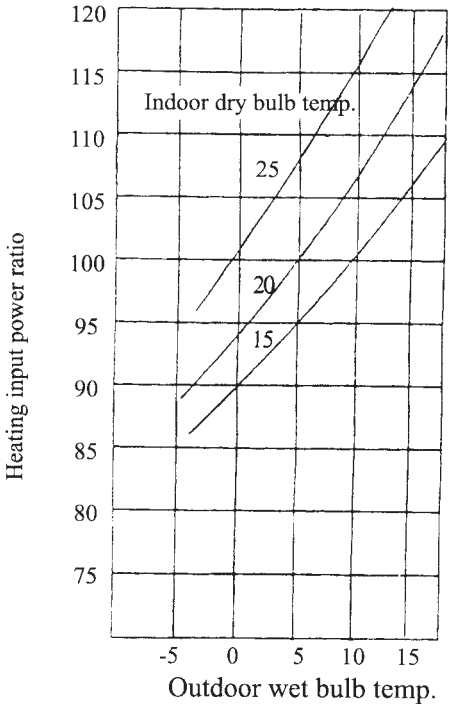
Indoor relative humidity 50%



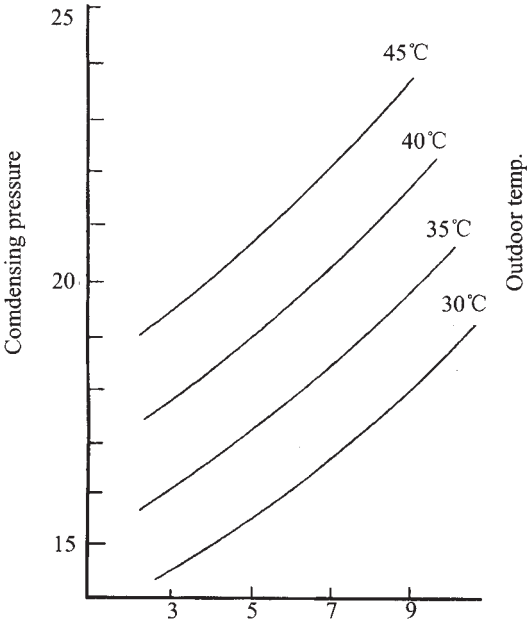
(c)

Heating performance (not including electric heater)

Outdoor relative humidity 85%

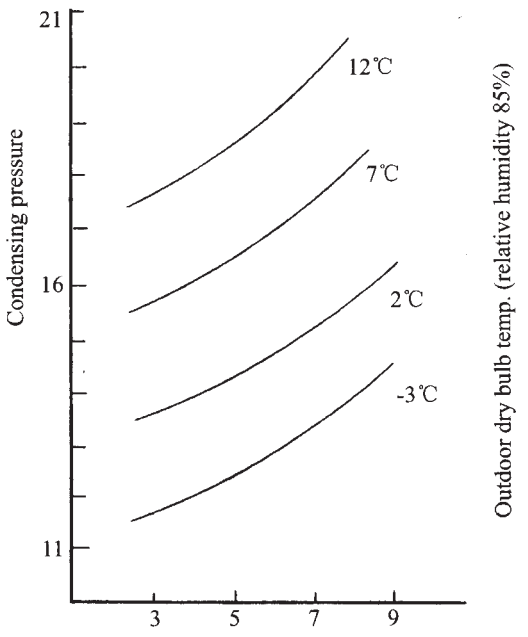


(d)



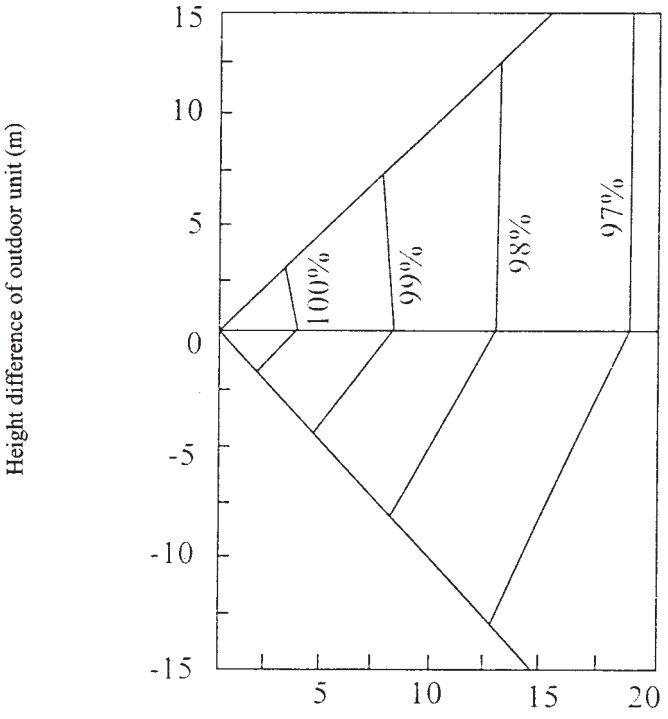
The affection to the charging quantity by pressure under cooling work condition.
(Indoor work condition:dry bulb 27℃,wet bulb 19.5℃)

(e)



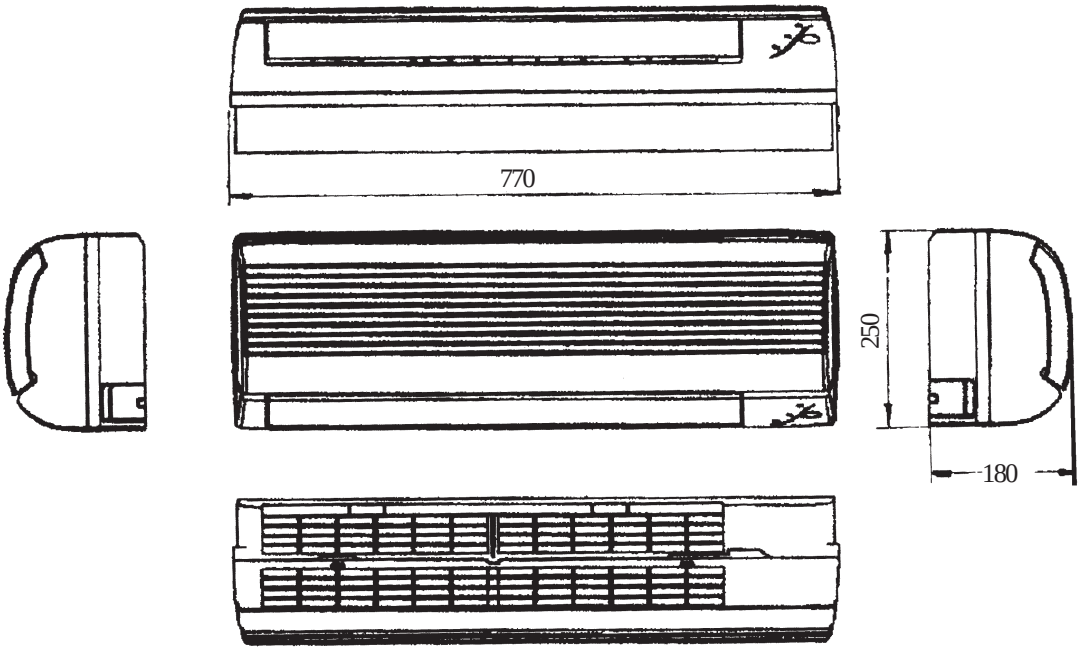
The affection to the charging quantity by pressure under heating work condition.
(Indoor work condition:dry bulb 21℃)

(f)

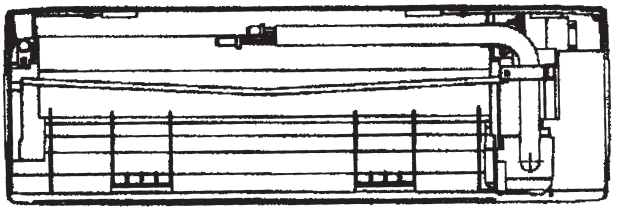


Cooling capacity vary with the length of connection pipe

3.4 Outlines and dimensions of indoor unit

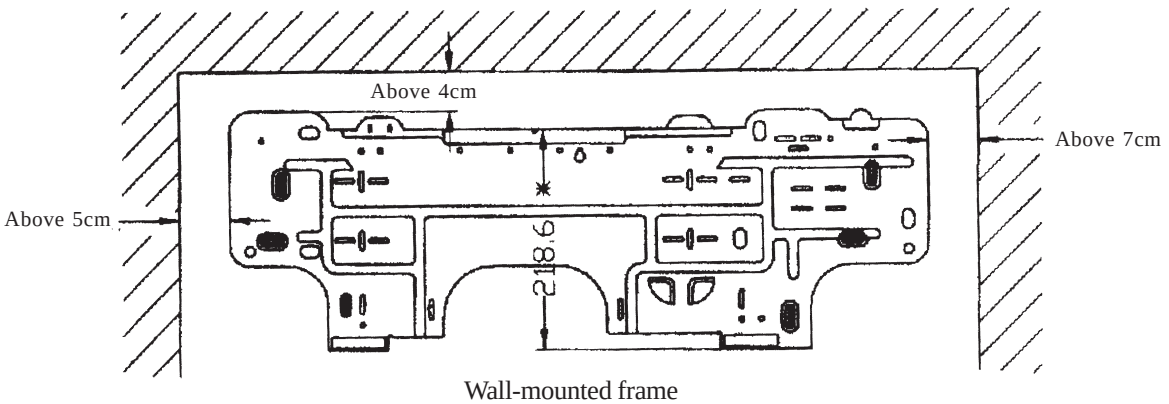


Back view



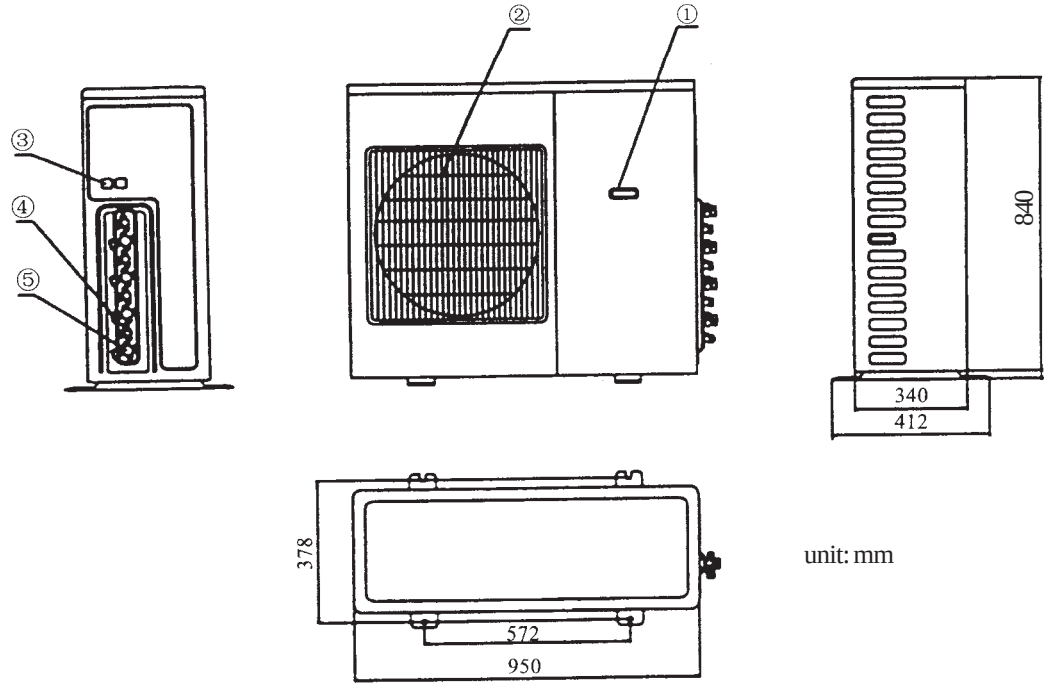
Unit:mm

Ceiling



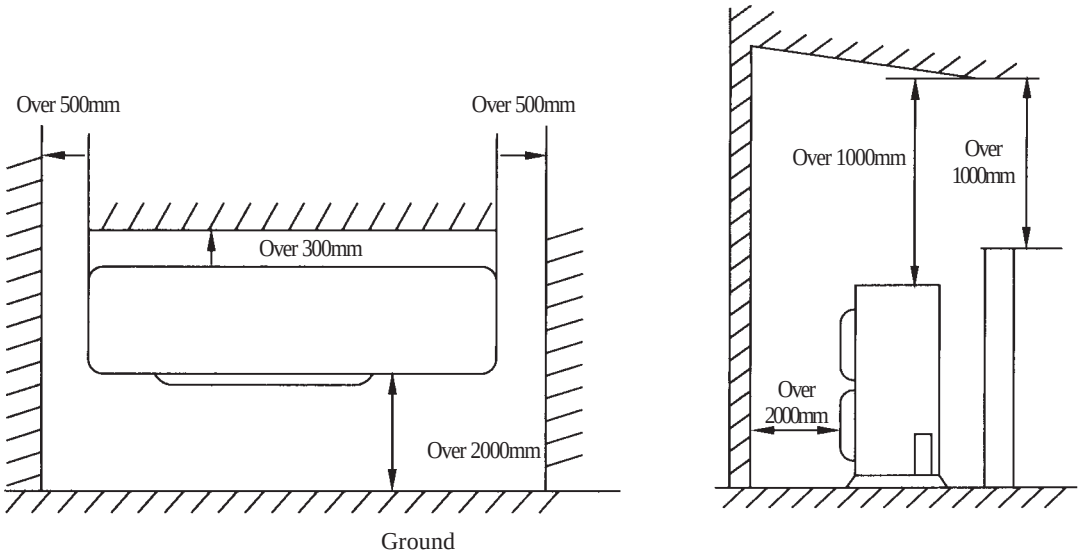
Wall-mounted frame

3.5 Outlines and dimensions of outdoor unit



unit: mm

① Handle ② Front panel ③ Wire hole ④ Liquid valve assy ⑤ Gas valve assy



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3.6 Explosive view and spare parts list of indoor unit

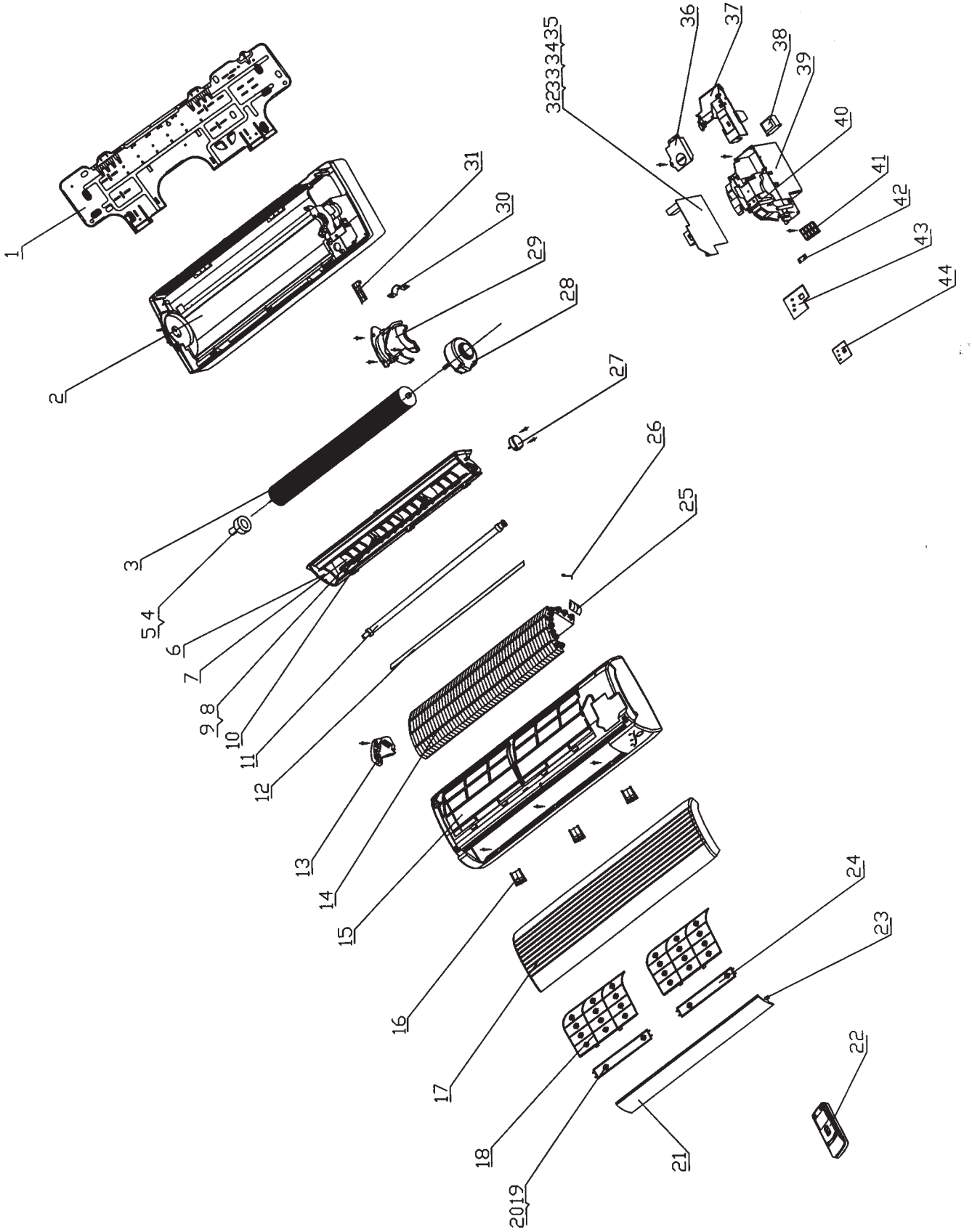


Table 3-4

No.	Description		Part No.			Qty
			KF-(32+18X2) G/A12 (18)	KF-(32+18X2) G/A12 (32)	KF-18X4G/A12	
1	Wall-Mounting Frame	壁挂板	01252438	01252438	01252438	1
2	Rear Case	底壳	22202001	22202001	22202001	1
3	Cross Flow Fan	贯流风叶	10352001	10352001	10352001	1
4	Fan Bearing	风扇轴承	76512210	76512210	76512210	1
5	Ring of Bearing	贯流风叶轴承胶圈	76512203	76512203	76512203	1
6	Water Tray Assy	接水盘部件	20182012	20182012	20182012	1
7	Swing Louver	扫风叶片	10512002	10512002	10512002	12
8	Connecting Lever 1	扫风连杆 1	10582002	10582002	10582002	1
9	Connecting Lever 2	扫风连杆 2	10582003	10582003	10582003	1
10	Manual Lever	拨杆	10582001	10582001	10582001	2
11	Drainage Pipe	排水管	05232411	05232411	05232411	1
12	Evaporator Gate	蒸发器引水板	26112022	26112022	26112022	1
13	Evaporator Supporter	蒸发器角形架	24212001	24212001	24212001	1
14	Evaporator Assy	蒸发器部件	01002015	01002015	01002015	1
15	Front Case Assy	面板体部件	20002018	20002018	20002018	1
16	Screw Cover	螺钉盖	24252001	24252001	24252001	3
17	Front Panel	面板	20002001	20002001	20002001	1
18	Filter	过滤网	11122002	11122002	11122002	2
19	Air Cleaner holder	净化器支架	24222001	24222001	24222001	2
20	Air Cleaner A	净化器滤网 A	11012002	11012002	11012002	1
21	Guide Louver	导风板	10512001	10512001	10512001	1
22	Remote Controller	遥控器 Y512	30512505	30512505	30512505	1
23	Guide Louver Bearing	导风板轴套	10542011	10542011	10542011	3
24	Air Cleaner B	净化器滤网 B	11012003	11012003	11012003	1
25	Evaporator Pipe Cover	蒸发器接水槽	06122001	06122001	06122001	1
26	Sensor Insert	感温头插片 B	42020063	42020063	42020063	1
27	Stepping Motor MP24GA	步进电机 MP24GA	15212102	15212102	15212102	1
28	Motor FN13A	电机 FN13A	15014003	15014003	15014003	1
29	Motor Clamp	电机压板	26112023	26112023	26112023	1
30	Wire Clamp	电线夹	71010103	71010103	71010103	1
31	Pipe Clamp	连接管压板	24242001	24242001	24242001	1
32	PCB 5C51F0A	控制器 5C51F0A	30025113	\	30025113	1
	PCB 5C51C0A	控制器 5C51C0A	\	30025113	\	1
33	Tube Sensor	管温感温包	39000116	39000116	39000116	1
34	Room Sensor	室温感温包	39000043	39000043	39000043	1
35	Fuse 3.15A 250V AC	保险管	46010014	46010014	46010014	1
36	Electric Box Cover 2	电器盒顶盖 2	01412007	01412007	01412007	1
37	Electric Box Cover	电器盒顶盖 1	20102084	20102084	20102084	1
38	Transformer	电源变压器	43110170	43110170	43110170	1
39	Electric Box	电器盒	20102001	20102001	20102001	1
40	Cable Clamp	压线槽	70482001	70482001	70482001	1
41	Terminal Board T4B3A	四位接线板 T4B3A	42011233	42011233	42011233	1
42	Wire Clip	压线片	42012401	42012401	42012401	1
43	LED Holder	指示灯架	24212005	24212005	24212005	1
44	LED Board	接收板 JD	30046019	30046019	30046019	1
45	Connecting Cable	电源连接线	40020413	40020413	40020413	1
46	Signal Cable	信号控制线	\	\	\	\
47	Power Cord	电源线	40020267	40020267	40020267	1

The data are subject to change without notice.

Table 3-5

No.	Description		Part No.			Qty
			KF-(32+18X2) G/NA12 (18)	KF-(32+18X2) G/NA12 (32)	KF-18X4G/NA12	
1	Wall-Mounting Frame	壁挂板	01252438	01252438	01252438	1
2	Rear Case	底壳	22202001	22202001	22202001	1
3	Cross Flow Fan	贯流风叶	10352001	10352001	10352001	1
4	Fan Bearing	风扇轴承	76512210	76512210	76512210	1
5	Ring of Bearing	贯流风叶轴承胶圈	76512203	76512203	76512203	1
6	Water Tray Assy	接水盘部件	20182012	20182012	20182012	1
7	Swing Louver	扫风叶片	10512002	10512002	10512002	12
8	Connecting Lever 1	扫风连杆 1	10582002	10582002	10582002	1
9	Connecting Lever 2	扫风连杆 2	10582003	10582003	10582003	1
10	Manual Lever	拨杆	10582001	10582001	10582001	2
11	Drainage Pipe	排水管	05232411	05232411	05232411	1
12	Evaporator Gate	蒸发器引水板	26112022	26112022	26112022	1
13	Evaporator Supporter	蒸发器角形架	24212001	24212001	24212001	1
14	Evaporator Assy	蒸发器部件	01002015	01002015	01002015	1
15	Front Case Assy	面板体部件	20002018	20002018	20002018	1
16	Screw Cover	螺钉盖	24252001	24252001	24252001	3
17	Front Panel	面板	20002001	20002001	20002001	1
18	Filter	过滤网	11122002	11122002	11122002	2
19	Air Cleaner holder	净化器支架	24222001	24222001	24222001	2
20	Air Cleaner A	净化器滤网 A	11012002	11012002	11012002	1
21	Guide Louver	导风板	10512001	10512001	10512001	1
22	Remote Controller	遥控器 Y512	30512506	30512506	30512506	1
23	Guide Louver Bearing	导风板轴套	10542011	10542011	10542011	3
24	Air Cleaner B	净化器滤网 B	11012003	11012003	11012003	1
25	Evaporator Pipe Cover	蒸发器接水槽	06122001	06122001	06122001	1
26	Sensor Insert	感温头插片 B	42020063	42020063	42020063	1
27	Stepping Motor MP24GA	步进电机 MP24GA	15212102	15212102	15212102	1
28	Motor FN9E	电机 FN9E	15012054	15012054	15012054	1
29	Motor Clamp	电机压板	26112023	26112023	26112023	1
30	Wire Clamp	电线夹	71010103	71010103	71010103	1
31	Pipe Clamp	连接管压板	24242001	24242001	24242001	1
32	PCB 5K512J	控制器 5K512J	30025569	30025569	30025569	1
33	Tube Sensor	管温感温包	39000159	39000159	39000159	1
34	Room Sensor	室温感温包	39000155	39000155	39000155	1
35	Fuse 3.15A 250V AC	保险管	46010014	46010014	46010014	1
36	Electric Box Cover 2	电器盒顶盖 2	01412007	01412007	01412007	1
37	Electric Box Cover	电器盒顶盖 1	20102084	20102084	20102084	1
38	Transformer	电源变压器	43110170	43110170	43110170	1
39	Electric Box	电器盒	20102001	20102001	20102001	1
40	Cable Clamp	压线槽	70482001	70482001	70482001	1
41	Terminal Board T4B3A	四位接线板 T4B3A	42011233	42011233	42011233	1
42	Wire Clip	压线片	42012401	42012401	42012401	1
43	LED Holder	指示灯架	24212005	24212005	24212005	1
44	LED Board	接收板 JD	30046034	30046034	30046034	1
45	Connecting Cable	电源连接线	40020413	40020413	40020413	1
46	Signal Cable	信号控制线	\	\	\	\
47	Power Cord	电源线	40020267	40020267	40020267	1

The data are subject to change without notice.

Table 3-6

No.	Description		Part No.			Qty
			GSW(7X2+12) -22L/A(I7)	GSW(7X2+12) -22L/A(I12)	GSW(7X4) -22L/A(I)	
1	Wall-Mounting Frame	壁挂板	01252438	01252438	01252438	1
2	Rear Case	底壳	22202001	22202001	22202001	1
3	Cross Flow Fan	贯流风叶	10352001	10352001	10352001	1
4	Fan Bearing	风扇轴承	76512210	76512210	76512210	1
5	Ring of Bearing	贯流风叶轴承胶圈	76512203	76512203	76512203	1
6	Water Tray Assy	接水盘部件	20182012	20182012	20182012	1
7	Swing Louver	扫风叶片	10512002	10512002	10512002	12
8	Connecting Lever 1	扫风连杆 1	10582002	10582002	10582002	1
9	Connecting Lever 2	扫风连杆 2	10582003	10582003	10582003	1
10	Manual Lever	拨杆	10582001	10582001	10582001	2
11	Drainage Pipe	排水管	05232411	05232411	05232411	1
12	Evaporator Gate	蒸发器引水板	26112022	26112022	26112022	1
13	Evaporator Supporter	蒸发器角形架	24212001	24212001	24212001	1
14	Evaporator Assy	蒸发器部件	01002015	01002015	01002015	1
15	Front Case Assy	面板体部件	20002108	20002108	20002108	1
16	Screw Cover	螺钉盖	24252001	24252001	24252001	3
17	Front Panel	面板	20002001	20002001	20002001	1
18	Filter	过滤网	11122002	11122002	11122002	2
19	Air Cleaner holder	净化器支架	24222001	24222001	24222001	2
20	Air Cleaner A	净化器滤网 A	11012002	11012002	11012002	1
21	Guide Louver	导风板	10512001	10512001	10512001	1
22	Remote Controller	遥控器 Y512	30512505	30512505	30512505	1
23	Guide Louver Bearing	导风板轴套	10542011	10542011	10542011	3
24	Air Cleaner B	净化器滤网 B	11012003	11012003	11012003	1
25	Evaporator Pipe Cover	蒸发器接水槽	06122001	06122001	06122001	1
26	Sensor Insert	感温头插片 B	42020063	42020063	42020063	1
27	Stepping Motor MP24GA	步进电机 MP24GA	15212102	15212102	15212102	1
28	Motor FN20B-PG	电机 FN20B-PG	15012035	15012035	15012035	1
29	Motor Clamp	电机压板	26112014	26112014	26112014	1
30	Wire Clamp	电线夹	71010103	71010103	71010103	1
31	Pipe Clamp	连接管压板	24242001	24242001	24242001	1
32	PCB 5C51-0A	控制器 5C51-0A	30025133	30025133	30025133	1
33	Tube Sensor	管温感温包	39000116	39000116	39000116	1
34	Room Sensor	室温感温包	39000043	39000043	39000043	1
35	Fuse 3.15A 250VAC	保险管	46010014	46010014	46010014	1
36	Electric Box Cover 2	电器盒顶盖 2	01412007	01412007	01412007	1
37	Electric Box Cover 1	电器盒顶盖 1	01412084	01412084	01412084	1
38	Transformer	电源变压器 SC28B1	43110170	43110170	43110170	1
39	Electric Box	电器盒	20102001	20102001	20102001	1
40	Cable Clamp	压线槽	70482001	70482001	70482001	1
41	Terminal Board T4B3A	接线板 T4B3A	42011233	42011233	42011233	1
42	Wire Clip	压线片	70482401	70482401	70482401	1
43	LED Holder	指示灯架	24212005	24212005	24212005	1
44	LED Board	接收板 JD	30046019	30046019	30046019	1
45	Connecting Cable	电源连接线	40020413	40020413	40020413	1
46	Signal Cable	信号控制线	\	\	\	\
47	Power Cord	电源线	40020268	40020268	40020268	1

The data are subject to change without notice.

3.7 Explosive view and spare parts list of outdoor unit

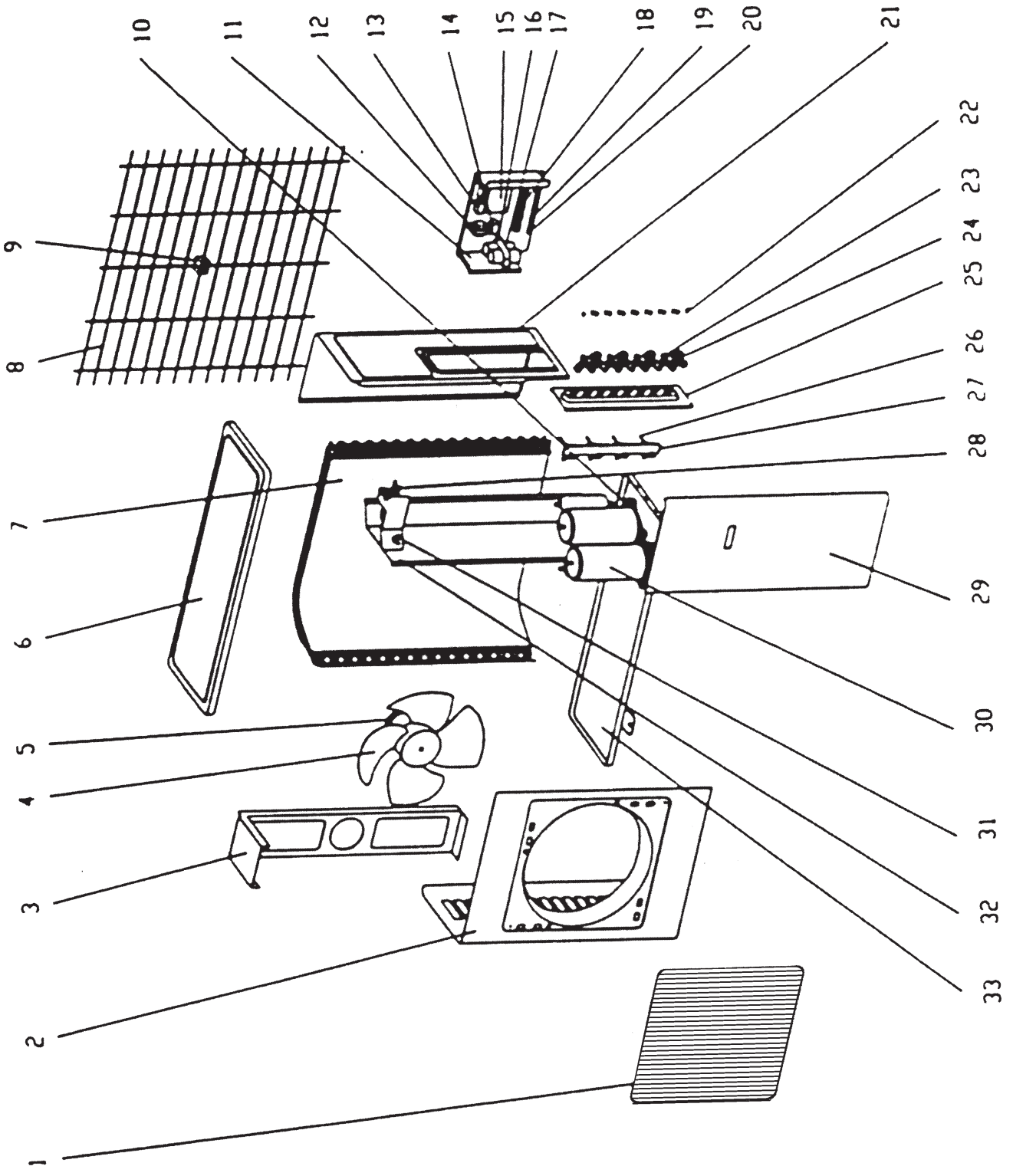


Table 3-7

No.	Description		Part No.				Qty
			KF-(32+18X2) W/A12	KF-18X4 W/A12	KF-(32+18X2) W/NA12	KF-18X4 W/NA12	
1	Front Grill	面罩	22265251	22265251	22265251	22265251	1
2	Front Plate	外罩	01435254	01435254	01435254	01435254	1
3	Motor Support	电机支架	01705253	01705253	01705253	01705253	1
4	Axial Flow Fan	轴流风叶	10335253	10335253	10335253	10335253	1
5	Motor LW60B	电机LW60B	15015205	15015205	\	\	1
	Motor FW60L	电机FW60L	\	\	15013063	15013063	1
6	Top Cover	顶盖	01255262	01255262	01255262	01255262	1
7	Condenser	冷凝器	01133012	01133012	01133010	01133010	1
8	Rear Grill	网罩	01475251	01475251	01475251	01475251	1
9	Underlay of Rear Grill	网罩垫块	76315251	76315251	76315251	76315251	1
10	Compressor Bolt	压缩机螺栓	70210054	70210054	70210054	70210054	6
11	Electric Plate Assy	电器盒组件	01403402	01403402	01403229	01403255	1
12	Transformer SC21C	变压器SC21C	43110161	43110161	43110161	43110161	1
13	Terminal Board 2-8	接线板2-8	42011103	42011103	42011103	42011103	3
14	Capacitor CBB61 3uF/450V	电容CBB61 3uF/450V	33010027	33010027	33010027	33010027	1
15	Main Board KQ001	主板KQ001	30055001	30055001	30055001	30055001	1
16	Capacitor Clamp	电容夹	02143013	02143013	02143013	02143013	1
17	Capacitor CBB65 25uF/450V	电容CBB65 25uF/450V	\	\	33000020	33000020	2
	Capacitor CBB65 30uF/450V	电容CBB65 30uF/450V	33000021	33000021	\	\	2
18	Terminal Board RS9413	接线板RS9413	42011104	42011104	42011104	42011104	3
	Terminal Board RS9413G	接线板RS9413G	42010178	42010178	42010178	42010178	1
19	Capacitor Clamp	电容夹	\	\	\	\	\
20	Insulation Gasket	绝缘垫片	70413432	70413432	70413432	70413432	1
21	Rear Side Plate	后侧板	01303007	01303007	01303007	01303007	1
22	Self-tapping Screw	自攻螺钉	70140165	70140165	70140165	70140165	16
23	Valve 1/4"	阀门 1/4"	07100014	07100014	07100131	07100131	3
24	Valve 3/8"	阀门 3/8"	07100108	07100108	07100132	07100132	3
25	Valve Support	阀门支架	01713033	01713032	01713040	01713032	1
26	Electromagnetic Valve	电磁阀 NEV-L202DXF	43000062	43000062	43000062	43000062	1
27	ElectromagneticValveSupport1	电磁阀支架 1	01713034	07143030	01713034	07143030	1
28	Electromagnetic Valve	电磁阀 VF10100	43000057	43000057	43000057	43000057	2
29	Front Side Plate	前侧板	01305247	01305247	01305247	01305247	1
30	Compressor C-RV222H01AA	压缩机C-RV222H01AA	00100340	00100340	\	\	2
	Compressor C-RV237H01AA	压缩机C-RV237H01AA	\	\	00100353	00100353	2
31	ElectromagneticValveSupport2	电磁阀支架 2	07143031	07143031	07143031	07143031	1
32	Isolation Sheet Assy	隔板组件	01235253	01235253	01534251	01534251	1
33	Metal Base	底盘组件	01203304	01203304	01203304	01203304	1

The data are subject to change without notice.

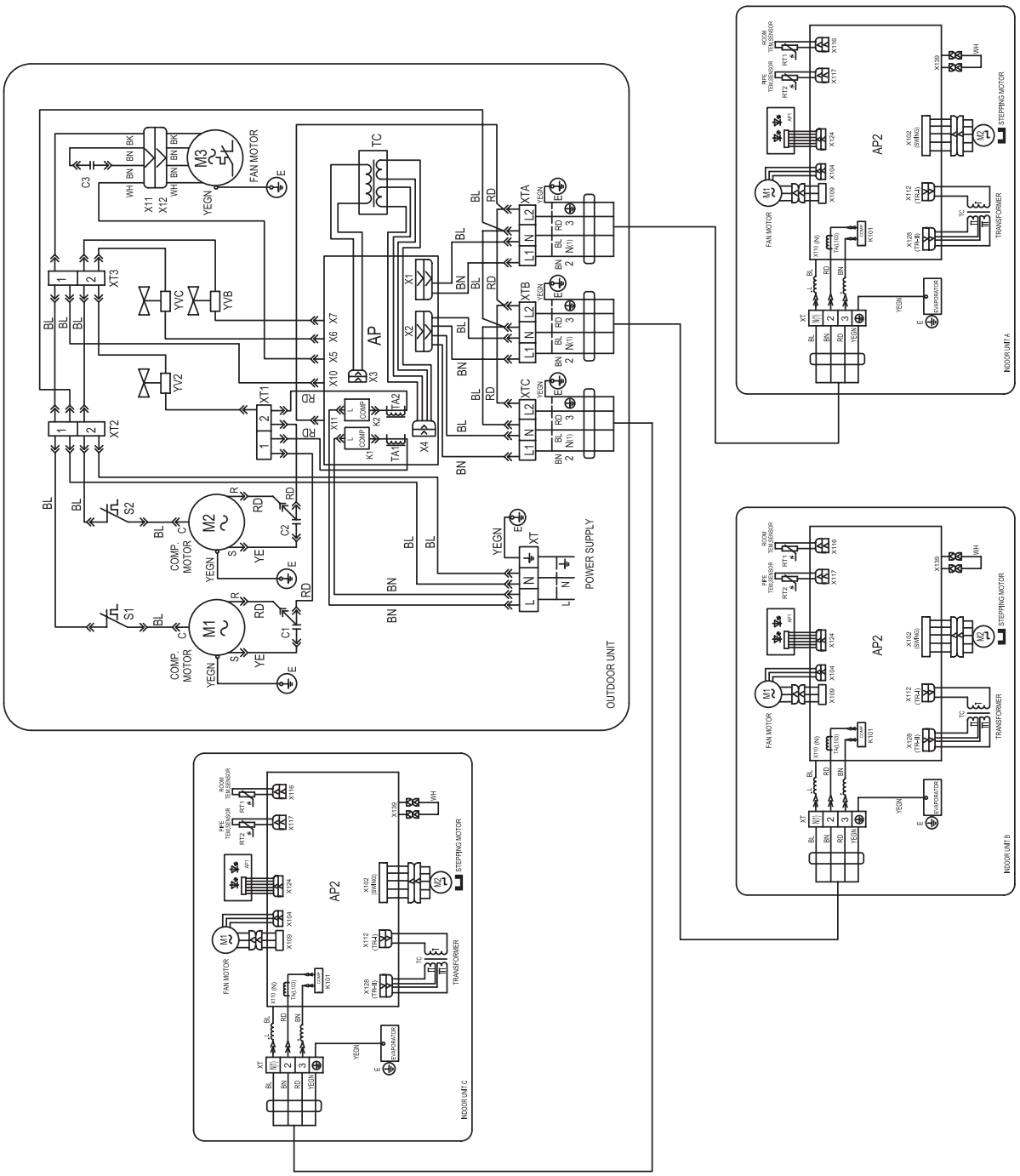
Table 3-8

No.	Description		Part No.		Qty
			GSW(7X2+12) -22L/A(O)	GSW(7X4) -22L/A(O)	
1	Front Grill	面罩	22265251	22265251	1
2	Front Plate	外罩	01435254	01435254	1
3	Motor Support	电机支架	01705253	01705253	1
4	Axial Flow Fan	轴流风叶	10335254	10335254	1
5	Motor LW60B	电机 FW60F	15013250	15013250	1
6	Top Cover	顶盖	01255262	01255262	1
7	Condenser	冷凝器	01133010	01133012	1
8	Rear Grill	网罩	01475251	01475351	1
9	Underlay of Rear Grill	网罩垫块	76315251	76315251	1
10	Compressor Bolt	压缩机螺栓	70210054	70210054	6
11	Electric Plate Assy	电器盒组件	01403402	01403402	1
12	Transformer SC21C(130℃)	变压器SC21C(130℃)	43110161	43110161	1
13	Terminal Board 2-8	接线板2-8	42011103	42011103	3
14	Capacitor 3uF/450V(VDE)	电容3uF/450V(VDE)	33010027	33010027	1
15	Main Board KQ001	主板 KQ001	30055001	30055001	1
16	Capacitor Clamp	电容夹	02143013	02143013	1
17	Capacitor 30uF/450V(VDE)	电容30uF/450V(VDE)	33000021	33000021	2
18	Terminal Board RS9413	接线板RS9413	42011104	42011104	3
	Terminal Board RS9413G	接线板RS9413G	42010178	42010178	1
19	Capacitor Clamp	电容夹	02143013	02143013	1
20	Insulation Gasket	绝缘垫片	70413432	70413432	1
21	Rear Side Plate	后侧板	01303007	01303007	1
22	Self-tapping Screw	自攻螺钉	70140260	70140165	16
23	Valve 1/4"	阀门 1/4"	07100014	07100014	3
24	Valve 3/8"	阀门 3/8"	07100108	07100108	3
25	Valve Support	阀门支架	01713033	01713030	1
26	Electromagnetic Valve	电磁阀 NEV-L202DXF	43000062	43000062	1
27	Electromagnetic Valve Support1	电磁阀支架 1	01713034	07143030	1
28	Electromagnetic Valve	电磁阀 VF10100	43000057	43000057	2
29	Front Side Plate	前侧板	01305247	01305247	1
30	Compressor 2P19S236A1G	压缩机 2P19S236A1G	00100259	00100259	2
31	Electromagnetic Valve Support2	电磁阀支架 2	07143031	07143031	1
32	Isolation Sheet Assy	隔板组件	01235253	01235253	1
33	Metal Base	底盘组件	01203346	01203345	1

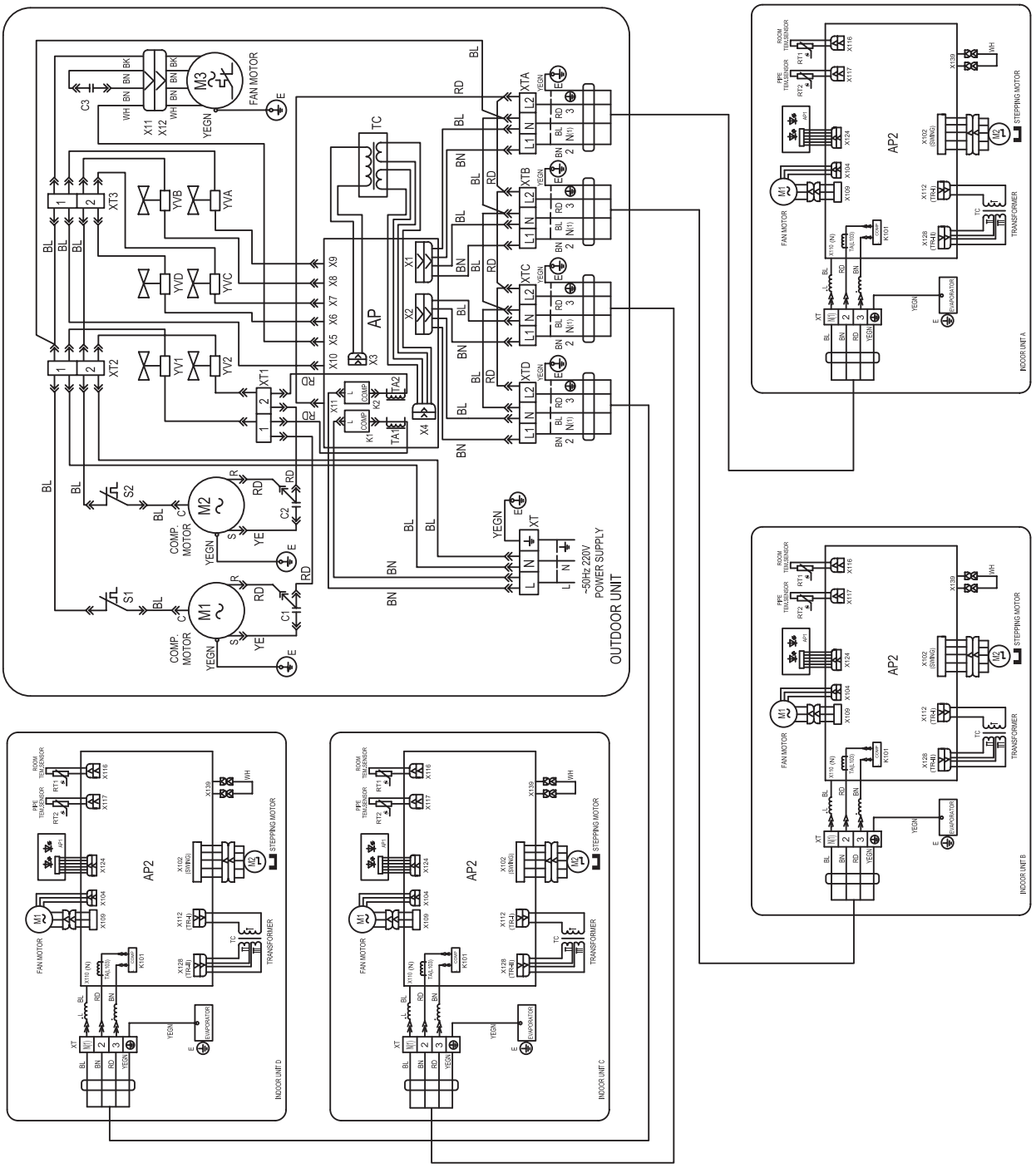
The technical data are subject to change without notice .

3.8 Circuit diagram

These circuit diagrams are subject to change.
Please refer to the ones stuck on the machines.

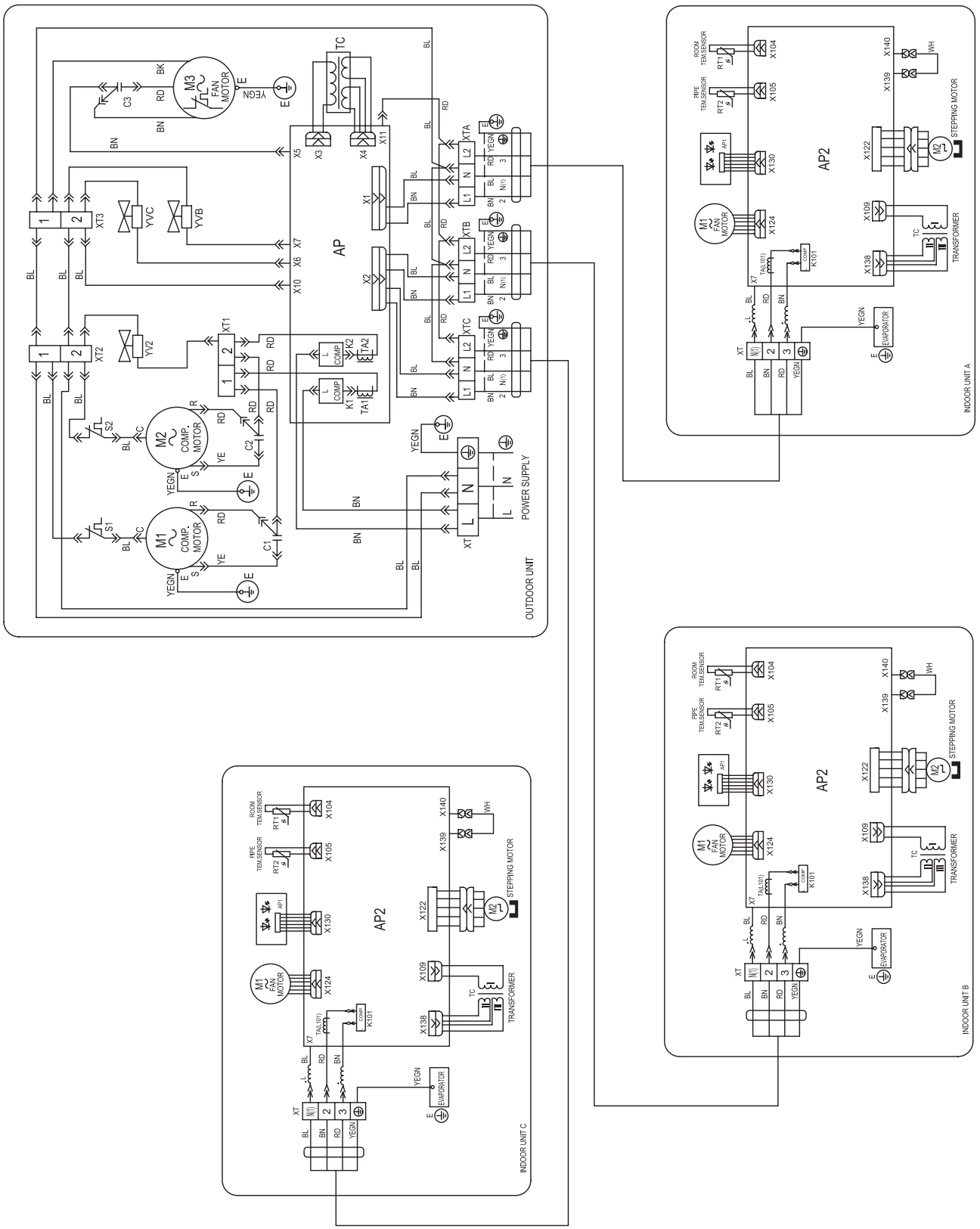


KF-(32+18X2)GW/A12
GSW-(7X2+12)-22L/A

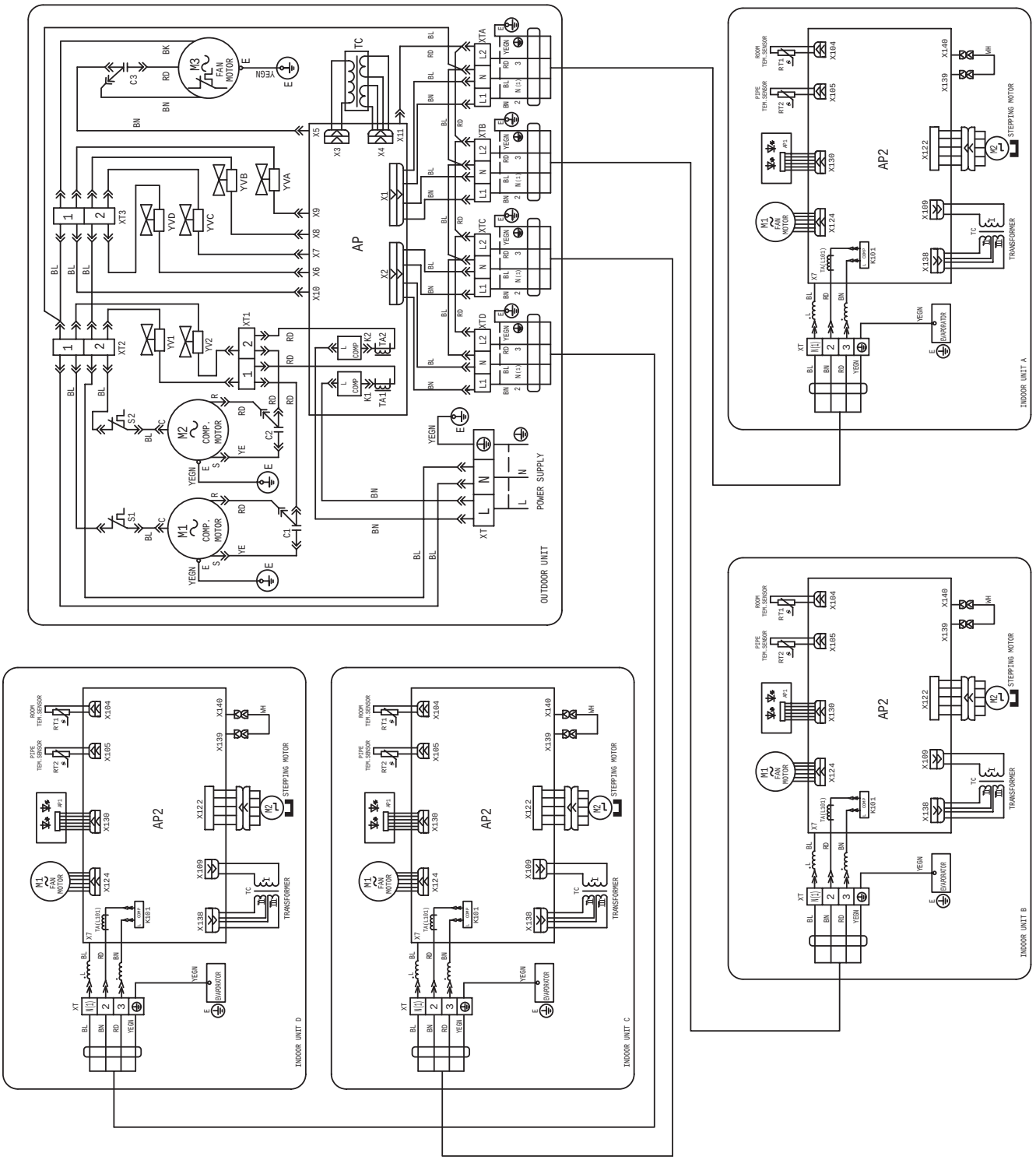


KF-18X4GW/A12

GSW(7X4)-22L/A



KF-(32+18X2)GW/NA12



KF-18X4GW/NA12

3.9 PCB function manual

5 in 1 PCB function manual

A. running mode

1. cooling 2.dehumidifying 3.heating 4.fan 5.auto

B. input parameters

1. indoor ambient temp. T_{in}
2. evaporator tube temp. T_{eva}
3. setting temp. T_{set}
4. condenser tube temp. T_{con}

C. targets

1. indoor motor (PG motor)
2. swing motor
3. outdoor motor
4. compressor
5. four-way reversing valve
6. electric heater
7. fresh motor

D. fundamental functions

1. cooling mode

(1) the running conditions and control measures

a. If $T_{in} \geqslant T_{set} + 1℃$, the machine runs at the cooling mode. Compressor runs, outdoor motor runs, indoor fan runs at the set fan speed.

b. If $T_{in} \leqslant T_{set} -1℃$, the machine stops. Compressor stops first , outdoor motor stops after 15 seconds.

c. If $T_{set} -1℃ < T_{in} < T_{set} +1℃$,keep the previous state.

(2) In this mode, the reversing valve is inactive, the temp. setting range is from 16~30℃.

(3) protect function

a. anti-freezing function

If the compressor has run 6 minutes , and detect $T_{eva} < 0℃$ for continuous 3 minutes, then the compressor , outdoor fan stop, indoor fan runs at the set fan speed. After 3 minutes later, it will run at the original state if $T_{eva} \geqslant 10℃$.

b. compressor protection

Compressor's starting interval should be more than 3 minutes no matter in whatever modes and conditions.

c. overload protection

If it detects the system current surpass the designed 13 A for continuous 3 minutes, the machine goes into fan mode only, when 3 minutes passes and it detects the current no more than 13 A, it will be back to original state. If it detects overloading states for 3 consecutive times within 30 minutes, the machine stops, and it must be restarted by remote controller.

2. dehumidifying mode

(1) the working conditions and control measures

a. If $T_{in} > T_{set}+2℃$, it is in cooling running, the indoor motor speed can be selected ,and outdoor motor runs at low speed.

b. If $T_{set}-2℃ \leqslant T_{in} \leqslant T_{set}+2℃$,it goes into dehumidifying running ,the indoor motor run at low speed, 6 minutes later the compressor and the outdoor fan stop, another 30 seconds later the indoor fan stops, 3 and a half minutes later, compressor and outdoor fan run again ,indoor motor runs at low speed, then the machine cycles the above procedures repeatedly.

c. If $T_{in} < T_{set}-2℃$, compressor ,outdoor motor and indoor motor stop.

(2) In this mode, the reversing valve is inactive , the temp. setting range is 16~30℃.

(3) anti-freezing protection

If $T_{in} > T_{set}+2℃$, it goes into cooling running , anti-freezing function is the same with cooling mode, but the compressor must stops for 4 minutes. when it goes into dehumidifying mode, compressor runs 6 minutes , if it detects $T_{eva} < 0℃$,compressor and outdoor motor stop, indoor motor runs at low speed ,after 3 minutes delayed, and $T_{eva} \geqslant 10℃$,it will be back to its original state.

3. heating mode

(1) the working conditions and control measures

a. If $T_{in} \leqslant T_{set}+2℃+T_{add}$, it goes into heating mode, reversing valve, compressor and outdoor motor all work in the same time, indoor fan will run at the same procedures with anti cool air function.

b. If $T_{in} \geqslant T_{set}+4℃+T_{add}$, compressor stops first, 15 seconds later, outdoor motor stops ,but reversing valve keeps working, indoor motor runs at the procedures of blowing surplus heat.

c. If $T_{set}+2℃+T_{add} < T_{in} < T_{set}+4℃+T_{add}$, keep the previous running state. (T_{add}=1℃ or 0℃, it can be selected)

(2) In this mode, the temperature setting range is 16~30℃.

(3) the working conditions of auxiliary electric heater

In heating mode, when compressor is working, indoor motor runs at high speed and middle speed. If it detects T_{eva}<50℃ for continuous 8 seconds and $T_{in} \leqslant 25℃$, electric heater will work ,if compressor stops or indoor motor runs at low speed or $T_{eva} \geqslant 54℃$ or $T_{in} \geqslant 28℃$ or 10 seconds before defrosting , the electric heater will stop.

(4) protections

a. anti cool air

When the compressor starts, if $T_{eva} \geqslant 41℃$ or the indoor fan runs after 20 seconds delayed, swing motor will run at the set speed .

b. anti high temp.

In heating mode, if it detects $T_{eva} \geq 56℃$(58℃ can be selected), outdoor motor will stop. If $T_{eva} \leq 53℃$, outdoor motor will be back running.

c. blowing surplus heat

In heating mode, when set temp is reached, the compressor stops first,15 seconds later outdoor fan stops, the indoor motor blows 30 seconds (60 seconds can be selected) at low speed.

d. Compressor's protection is the same with the one in cooling mode.

e. overload protection

If it detects that the system current surpassed the designed 13 A for continuous 3 seconds, compressor, electric heater and outdoor motor stop , indoor motor runs the same procedures as the blowing surplus heat condition. After 3 minutes and current no more than 13 A, the machine will be back to its original state, indoor motor runs as the anti cool air condition. If it detects overloading state for 3 consecutive times within 30 minutes, the machine stops, and it must be restarted by remote controller.

f. defrosting conditions and procedures

In heating mode, if compressor has run 44 minutes (in its first 6 minutes it will not detect defrosting temp.) , and it has detected $T_{con} \leq -4℃$ for continuous 1 minute, it begins to defrost , electric heater will stop for 10 seconds (even if electric heater is not working) , then indoor motor stops , reversing valve becomes inactive in another 2 seconds. Another 2 seconds later, outdoor motor stops, when $T_{con} \geq 10℃$or defrosting lasts for 10 minutes , outdoor motor and reversing valve become active , indoor motor will run as the anti cool air condition, then it cycles again, recalculates the compressor's running time again. (In this period , if any protection works ,and after the machine is back to work , it will re-start defrosting state. it will not detect outdoor tube temp when compressor's in its first 6 minutes running)

g. noise lowering protection

When you use RUN/STOP button to switch off the machine, reversing valve will become inactive in 2 minutes.

4. fan mode

The light is on when it runs.

5. AUTO mode

(1) In AUTO mode, standard cooling T_{set}=25℃, standard heating T_{set}=20℃

(2) working procedures

a. If $T_{in} \geq T_{set} + 1℃$, select cooling mode, from this time, the set temp. is 25℃. If $T_{in} \leq T_{set}-1℃$, compressor and outdoor motor stop, indoor motor runs at the set speed. If $T_{set}-1℃ < T_{in} < T_{set}+1℃$, keep the original state.

b. If $T_{in} \leq T_{set}+2℃$, select heating mode, from this time, the set temp. is 20℃. If $T_{in} \geq T_{set} + 4℃$, compressor stops first, outdoor motor stops 15 seconds later , reversing valve is always active, indoor motor runs as the blowing surplus heat condition. If $T_{set}+2℃ \leq T_{in} < T_{set}+4℃$, keeps the original state.

Cooling & heating AUTO mode: in AUTO mode, when the machine is switched from heating mode to the other modes, reversing valve becomes inactive in 90 seconds.

Cooling only AUTO mode: there is no heating function in this mode.

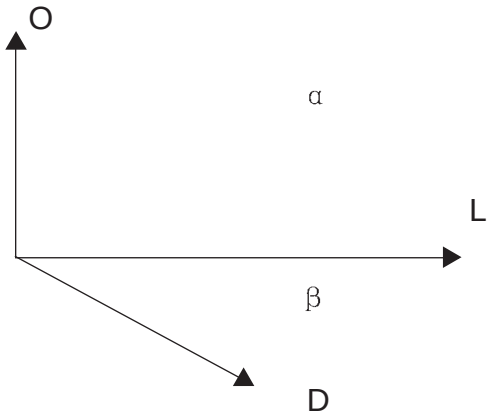
(3) protections

It is same as the one in cooling or heating mode.

E. other controls

1. SWING mode

Refer to the figure below:



2. beeper

a. When PCB becomes active or receives the signal from the remote controller , the beeper will beep.

b. If the rmostat is open-circuited or short-circuited, when you press the TEST button, the beeper will alarm at the frequency 2Hz.

3. indication lamps

It flashes when defrosting begin.

4. multi-step switch

a. If the switch is in AUTO position, the machine will run at the AUTO mode, if there is a signal from remote controller, it will run according to the signal .

b. If the switch is in TEST position, the machine will run at the COOL mode, indoor motor will run at high speed , swing motor will run according to SWING mode. If there is a signal from remote controller, it will run according to the signal .if the thermostat is open-circuited or short-circuited , the beeper will alarm at the frequency 2Hz .

c. If the switch is in RUN position , the machine will run according to the remote signal.

d. If the switch is in STOP position, the machine will stop.

5. SLEEP mode

a. In cooling or dehumidifying mode, 1 hour after you set the sleep timer ,T_{set} will add 1℃ automatically, another 1 hour, another 1℃ will be added.

b. In heating mode, 1 hour after you set the sleep timer, T_{set} will lower 1℃automatically, another

1 hour, another 1℃will be lowered .

6. Automatic fan speed

a. In cooling mode, if $T_{in} > T_{set} + 3℃$ high speed

$T_{set} + 1℃ \leqslant T_{in} \leqslant T_{set} + 3℃$ middle speed

$T_{in} < T_{set} + 1℃$ low speed

b. In heating mode, if $T_{in} \leqslant T_{set} - 2℃$ high speed

$T_{set} - 2℃ < T_{in} < T_{set}$ middle speed

$T_{in} \geqslant T_{set} + 2℃$ low speed

F. Fresh air function

1. two fresh air modes

a. fresh air 2

Fresh air motor will work 1 hour, then rest 1 hour, then cycle again.

b. fresh air 1

Press the button AIR on the remote controller to select fresh air 1 function, the swing motor keeps running till you give a signal to change it.

G. Time function

1. Set time to turn on

When you set time the machine is inactive. If it reaches the time you have set, it will run as the previous settings. The time setting range is 0.5~24h.

2. Set time to turn off

When the machine is inactive you can set the time to be turned off. It will stop working when the time comes. The time setting range is 0.5~24h.

H. Memory function

After the power is cut suddenly, when it's restarted, it will run at the orginal state.