

# Butterfly Series

## 1. Summary



Fig. 1

### MODEL

### NOTE

KF-23GW/A13 KFR-23GW/A13 KF-26GW/A13 KFR-26GW/A13	CE STANDARD 1Ph 220-230V 50Hz R22
KFR-23GW/A13-12405	1Ph 240V 50Hz R22
KF-20GW/NA13 KFR-20GW/NA13 KF-25GW/NA13 KFR-25GW/NA13	CE STANDARD 1Ph 220-230V 50Hz R407C
KF-23GW/A13-12206 KF-26GW/A13-12206	1Ph 220V 60Hz R22

## 2. Technical specifications

Table 1

Model		KF-23GW/A13	KFR-23GW/A13
Function		Cooling	Cooling/Heating
Power supply		1Ph 220-230V 50Hz	
Capacity (W)		2300	2300/2400
Rated input (W)		800	800/850
Rated current (A)		3.5	3.5/3.7
Air flow (m <sup>3</sup> /h)		420	
Dehumidifying volume (L/h)		0.8	
C.O.P (W/W)		2.87	2.87/2.82
Indoor unit	Model	KF-23G/A13	KFR-23G/A13
	Motor fan speed(rpm)	1090/930	
	Output power(W)	13	
	Fan type/piece	Cross flow fan-1	
	Diameter-length(mm)	φ 97 × 538	
	Evaporator	Aluminum fin-copper tube	
	Row-fin distance(mm)	1.5	
	Working area(m <sup>2</sup> )	0.13	
	Swing motor	MP24GA	
	Input power(W)	2	
	Fuse(A)	Controller 3.15A Transformer 0.2A	
	Working capacitor( μF)	1	
	Noise(dB(A))	≤ 37	
	Dimension(width-height-depth)(mm)	710 × 180 × 250	
Net weight(kg)	7		
Outdoor unit	Model	KF-23W/A13	KFR-23W/A13
	Input power(W)	770	770/820
	Current(A)	3.4	3.4/3.6
	L.R.A.(A)	16	
	Throttling method	Capillary	
	Compressor	KH134VFRC	
	Compressor power (W)	780	
	Protector	Internal overload protection	
	Starting method	Capacitor starting	
	Working temp.	Exhaust temperature ≤ 115℃	
	Condenser	Aluminum fin-copper	
	Pipe-diameter (mm)	φ 9.52	
	Working area(m <sup>2</sup> )	0.3	
	Fan motor speed(rpm)	950	
	Type-piece	Axial fan-1	
	Diameter(mm)	φ 320	
	Defrosting method	Auto defrost	
	Noise (dB(A))	≤ 52	
	Dimension(width-height-depth)(mm)	720 × 260 × 430	
	Net weight(kg)	25	
Refrigerant charge (kg)	R22/0.55	R22/0.65	
Connecting pipe	Length (m)	4	
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6
		Gas pipe(mm)	φ 9.52
	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.

## Butterfly Series

Table 2

Model		KF-26GW/A13	KFR-26GW/A13
Function		Cooling	Cooling/Heating
Power supply		1Ph 220-230V 50Hz	
Capacity (W)		2600	2600/3000
Rated input (W)		1000	1000/1050
Rated current (A)		4.4	4.4/4.6
Air flow (m <sup>3</sup> /h)		420	
Dehumidifying volume (L/h)		1.0	
C.O.P (W/W)		2.6	2.60/2.86
Indoor unit	Model	KF-23G/A13	KFR-26G/A13
	Motor fan speed(rpm)	1090/930	
	Output power(W)	13	
	Fan type/piece	Cross flow fan-1	
	Diameter-length(mm)	φ 97 × 538	
	Evaporator	Aluminum fin-copper tube	
	Row-fin distance(mm)	1.5	
	Working area(m <sup>2</sup> )	0.13	
	Swing motor	MP24GA	
	Input power(W)	2	
	Fuse(A)	Controller 3.15A	Transformer 0.2A
	Working capacitor( μF)	1	
	Noise(dB(A))	≤ 37	
	Dimension(width-height-depth)(mm)	710 × 180 × 250	
	Net weight(kg)	7	
Outdoor unit	Model	KF-26W/A13	KFR-26W/A13
	Input power(W)	970	970/1020
	Current(A)	4.3	4.3/4.5
	L.R.A.(A)	22	
	Throttling method	Capillary	
	Compressor	2P17S225ANA	RH174VHAC
	Compressor power (W)	885	
	Protector	Outernal overload protection	
	Starting method	Capacitor starting	
	Working temp.	Exhaust temperature ≤ 115℃	
	Condenser	Aluminum fin-copper	
	Pipe-diameter (mm)	φ 9.52	
	Working area(m <sup>2</sup> )	0.3	
	Fan motor speed(rpm)	950	
	Type-piece	Axial fan-1	
	Diameter(mm)	φ 320	
	Defrosting method	Auto defrost	
	Noise (dB(A))	≤ 52	
	Dimension(width-height-depth)(mm)	720 × 260 × 430	
	Net weight(kg)	25	32
Refrigerant charge (kg)	R22/0.65	R22/0.9	
Connecting pipe	Length (m)		4
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6
		Gas pipe(mm)	φ 9.52
	Max distance	Height(m)	5
Length(m)		10	

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## Butterfly Series

Table 3

Model			KFR-23GW/A13-12405		
Function			Cooling/Heating		
Power supply			1Ph 240V 50Hz		
Capacity (W)			2300/2400		
Rated input (W)			820/800		
Rated current (A)			3.5/3.4		
Air flow (m <sup>3</sup> /h)			380		
Dehumidifying volume (L/h)			1.0		
C.O.P (W/W)			2.82/3.00		
Indoor unit	Model		KFR23G/A13-12405		
	Motor fan speed(rpm)		1080/980/910		
	Output power(W)		13		
	Fan type/piece		Cross flow fan-1		
	Diameter-length(mm)		φ 97 × 538		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		1.5		
	Working area(m <sup>2</sup> )		0.13		
	Swing motor		MP24GA		
	Input power(W)		2		
	Fuse(A)		Controller 3.15A Transformer 0.2A		
	Working capacitor( μF)		1		
	Noise(dB(A))		≤ 37		
	Dimension(width-height-depth)(mm)		710 × 180 × 250		
Net weight(kg)		7			
Outdoor unit	Model		KFR-23W/A13-12405		
	Input power(W)		790/770		
	Current(A)		3.3/3.3		
	L.R.A.(A)		23		
	Throttling method		Capillary		
	Compressor		KH134VFRC		
	Compressor power (W)		780		
	Protector		Internal overload protection		
	Starting method		Capacitor starting		
	Working temp.		Exhaust temperature ≤ 115℃		
	Condenser		Aluminum fin-copper		
	Pipe-diameter (mm)		φ 9.52		
	Working area(m <sup>2</sup> )		0.3		
	Fan motor speed(rpm)		950		
	Type-piece		Axial fan-1		
	Diameter(mm)		φ 320		
	Defrosting method		Auto defrost		
	Noise (dB(A))		≤ 52		
	Dimension(width-height-depth)(mm)		720 × 260 × 430		
Net weight(kg)		25			
Refrigerant charge (kg)		R22/0.65			
Connecting pipe	Length (m)		4		
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6		
		Gas pipe(mm)	φ 9.52		
	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.

## Butterfly Series

Table 4

Model		KF-20GW/NA13	KFR-20GW/NA13
Function		Cooling	Cooling/Heating
Power supply		1Ph 220-230V 50Hz	
Capacity (W)		2000	2000/2300
Rated input (W)		850	850/880
Rated current (A)		3.70	3.70/3.83
Air flow (m <sup>3</sup> /h)		420	
Dehumidifying volume (L/h)		0.8	
C.O.P (W/W)		2.35	2.35/2.88
Indoor unit	Model	KF-20G/NA13	KFR-20G/NA13
	Motor fan speed(rpm)	1090/930	
	Output power(W)	13	
	Fan type/piece	Cross flow fan-1	
	Diameter-length(mm)	φ 97 × 538	
	Evaporator	Aluminum fin-copper tube	
	Row-fin distance(mm)	1.5	
	Working area(m <sup>2</sup> )	0.13	
	Swing motor	MP24GA	
	Input power(W)	2	
	Fuse(A)	Controller 3.15A	Transformer 0.2A
	Working capacitor( μF)	1	
	Noise(dB(A))	≤ 37	
	Dimension(width-height-depth)(mm)	710 × 180 × 250	
	Net weight(kg)	7	
Outdoor unit	Model	KF-20W/NA13	KFR-20W/NA13
	Input power(W)	820	820/770
	Current(A)	3.57	3.57/3.35
	L.R.A.(A)	19	
	Throttling method	Capillary	
	Compressor	C-1RN70H5C	
	Compressor power (W)	785	
	Protector	Outernal overload protection	
	Starting method	Capacitor starting	
	Working temp.	Exhaust temperature ≤ 115℃	
	Condenser	Aluminum fin-copper	
	Pipe-diameter (mm)	φ 9.52	
	Working area(m <sup>2</sup> )	0.3	
	Fan motor speed(rpm)	950	
	Type-piece	Axial fan-1	
	Diameter(mm)	φ 320	
	Defrosting method	Auto defrost	
	Noise (dB(A))	≤ 53	
	Dimension(width-height-depth)(mm)	720 × 260 × 430	
	Net weight(kg)	25	
Refrigerant charge (kg)	R407C/0.58	R407C/0.65	
Connecting pipe	Length (m)		4
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6
		Gas pipe(mm)	φ 9.52
	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.

## Butterfly Series

Table 5

Model		KF-25GW/NA13	KFR-25GW/NA13
Function		Cooling	Cooling/Heating
Power supply		1Ph 220-230V 50Hz	
Capacity (W)		2500	2500/2800
Rated input (W)		980	980/1030
Rated current (A)		4.3	4.3/4.5
Air flow (m <sup>3</sup> /h)		420	
Dehumidifying volume (L/h)		0.8	
C.O.P (W/W)		2.55	2.55/2.72
Indoor unit	Model	KF-25G/NA13	KFR-25G/NA13
	Motor fan speed(rpm)	1090/930	
	Output power(W)	13	
	Fan type/piece	Cross flow fan-1	
	Diameter-length(mm)	φ 97 × 538	
	Evaporator	Aluminum fin-copper tube	
	Row-fin distance(mm)	1.5	
	Working area(m <sup>2</sup> )	0.13	
	Swing motor	MP24GA	
	Input power(W)	2	
	Fuse(A)	Controller 3.15A	Transformer 0.2A
	Working capacitor( μF)	1	
	Noise(dB(A))	≤ 37	
	Dimension(width-height-depth)(mm)	710 × 180 × 250	
	Net weight(kg)	7	
Outdoor unit	Model	KF-25W/NA13	KFR-25W/NA13
	Input power(W)	950	950/1000
	Current(A)	4.14	4.14/4.35
	L.R.A.(A)	24	
	Throttling method	Capillary	
	Compressor	C-RV167H01AA	
	Compressor power (W)	940	
	Protector	Outernal overload protection	
	Starting method	Capacitor starting	
	Working temp.	Exhaust temperature ≤ 115℃	
	Condenser	Aluminum fin-copper	
	Pipe-diameter (mm)	φ 9.52	
	Working area(m <sup>2</sup> )	0.3	
	Fan motor speed(rpm)	950	
	Type-piece	Axial fan-1	
	Diameter(mm)	φ 320	
	Defrosting method	Auto defrost	
	Noise (dB(A))	≤ 55	
	Dimension(width-height-depth)(mm)	720 × 260 × 430	
	Net weight(kg)	32	
Refrigerant charge (kg)	R407C/0.95	R407C/0.95	
Connecting pipe	Length (m)		4
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6
		Gas pipe(mm)	φ 9.52
	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.

## Butterfly Series

Table 6

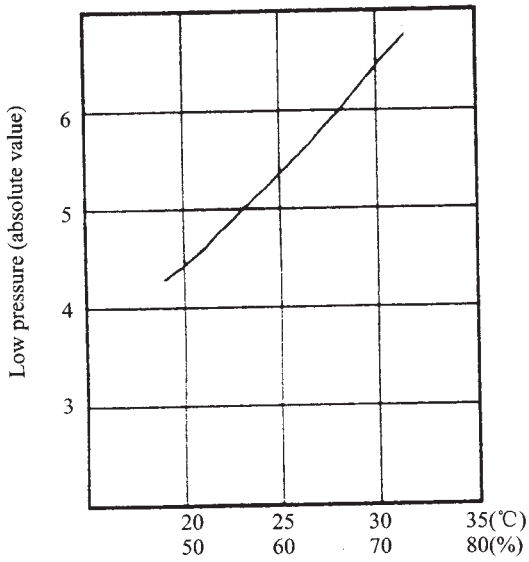
Model		KF-23GW/A13-12206	KF-26GW/A13-12206
Function		Cooling	
Power supply		1Ph 220V 60Hz	
Capacity (W)		2300	2600
Rated input (W)		755	840
Rated current (A)		3.44	3.82
Air flow (m <sup>3</sup> /h)		400	400
Dehumidifying volume (L/h)		0.8	0.8
C.O.P (W/W)		3.05	3.1
Indoor unit	Model	KF-23G/A13-12206	KF-26G/A13-12206
	Motor fan speed(rpm)	1060/990/910	
	Output power(W)	13	
	Fan type/piece	Cross flow fan-1	
	Diameter-length(mm)	φ 97 × 538	
	Evaporator	Aluminum fin-copper tube	
	Row-fin distance(mm)	1.5	
	Working area(m <sup>2</sup> )	0.13	
	Swing motor	MP24GA	
	Input power(W)	2	
	Fuse(A)	Controller 3.15A	Transformer 0.2A
	Working capacitor( μF)	1	
	Noise(dB(A))	≤ 37	
	Dimension(width-height-depth)(mm)	710 × 180 × 250	
	Net weight(kg)	8	
Outdoor unit	Model	KF-23W/A13-12206	KF-26W/A13-12206
	Input power(W)	720	805
	Current(A)	3.28	3.66
	L.R.A.(A)	21	26
	Throttling method	Capillary	
	Compressor	2R12S236A6F	2P14S236A1J
	Compressor power (W)	735	850
	Protector	Internal overload protection	
	Starting method	Capacitor starting	
	Working temp.	Exhaust temperature ≤ 115℃	
	Condenser	Aluminum fin-copper	
	Pipe-diameter (mm)	φ 9.52	
	Working area(m <sup>2</sup> )	0.3	
	Fan motor speed(rpm)	20/950	20/730
	Type-piece	Axial fan-1	
	Diameter(mm)	φ 320	φ 400
	Defrosting method	Auto defrost	
	Noise (dB(A))	≤ 52	
	Dimension(width-height-depth)(mm)	720 × 260 × 430	848 × 320 × 540
	Net weight(kg)	25	32
Refrigerant charge (kg)	R22/0.55	R22/0.83	
Connecting pipe	Length (m)		4
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6
		Gas pipe(mm)	φ 9.52
	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. Performance curves

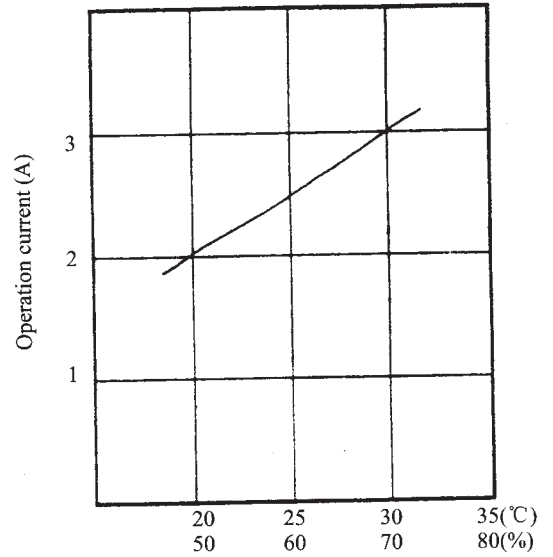
The change relation between low pressure , operation current and temp.

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



Dry bulb temp. / humidity

(a)

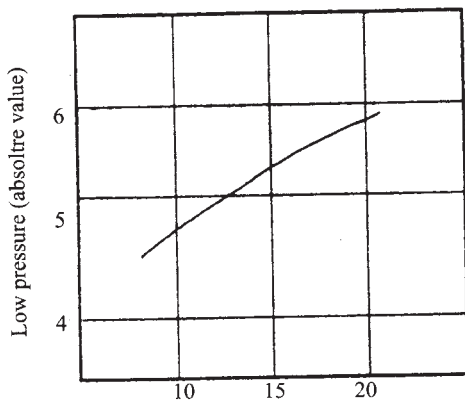


Dry bulb temp. / humidity

(b)

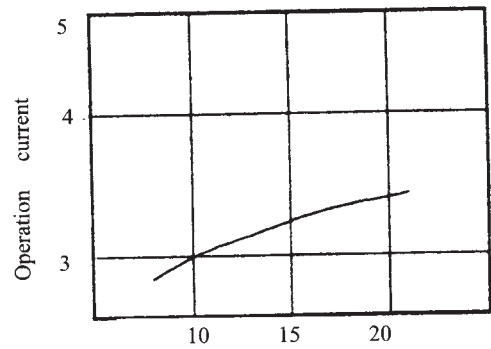
Heating operation

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



Outdoor dry bulb temp.

(c)



Outdoor dry bulb temp.

(d)

Fig. 2



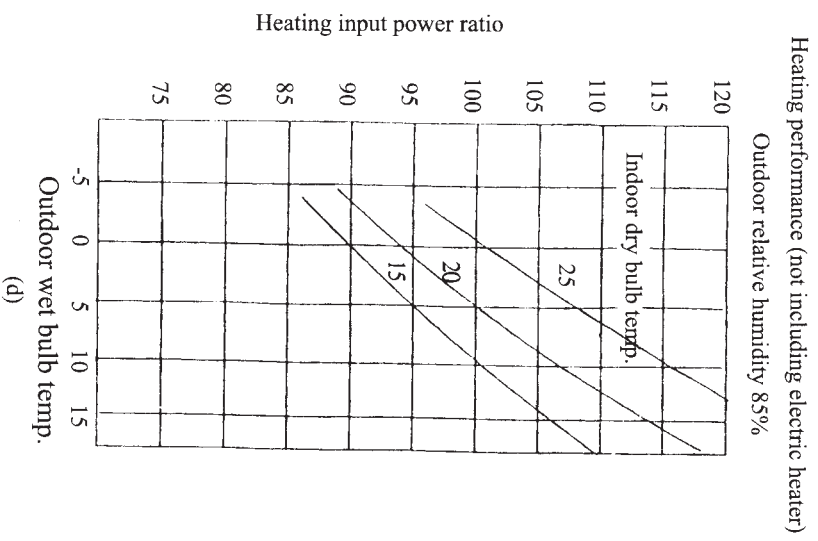
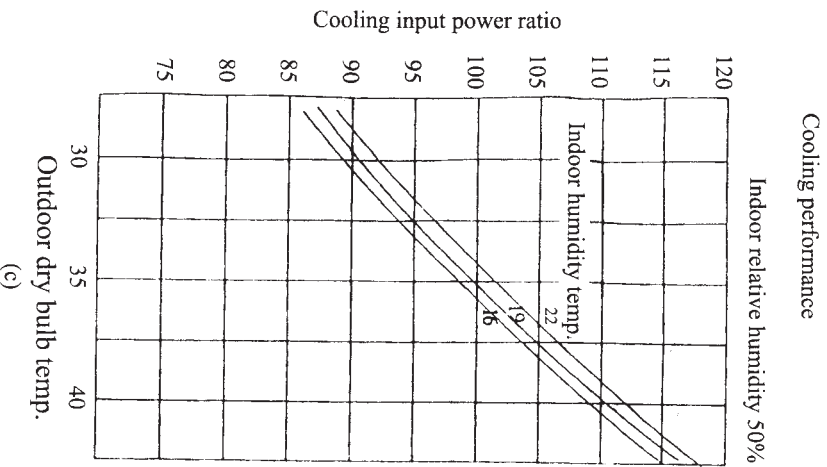
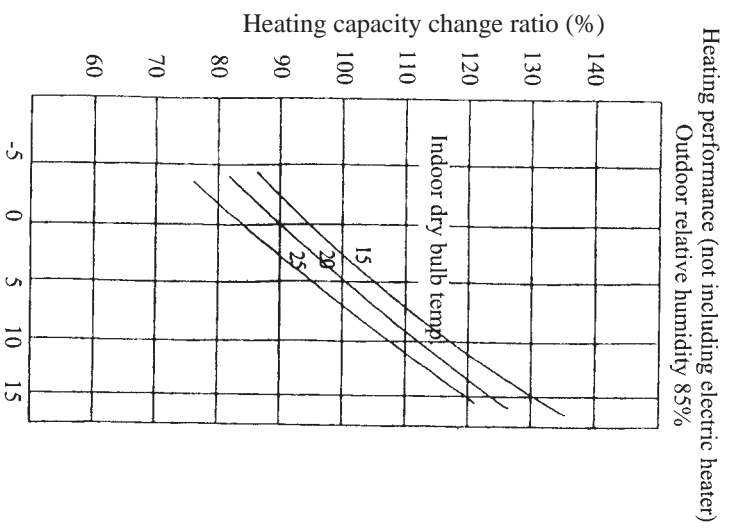
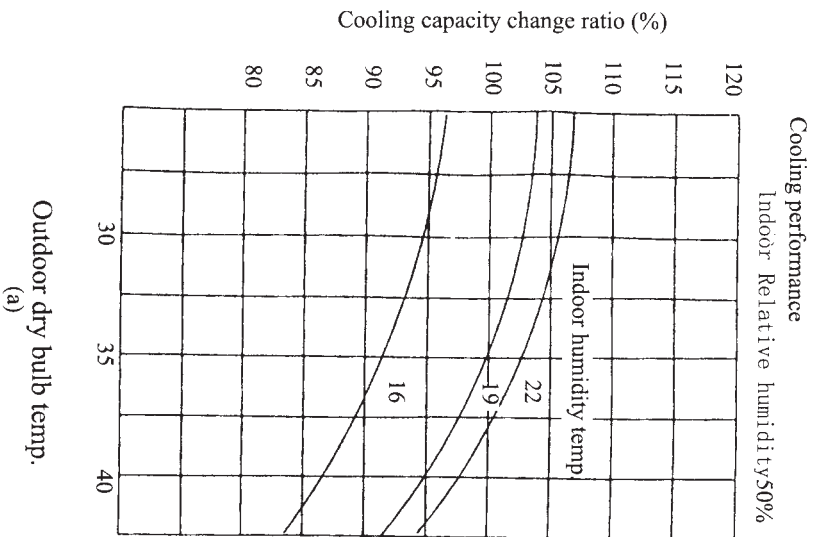
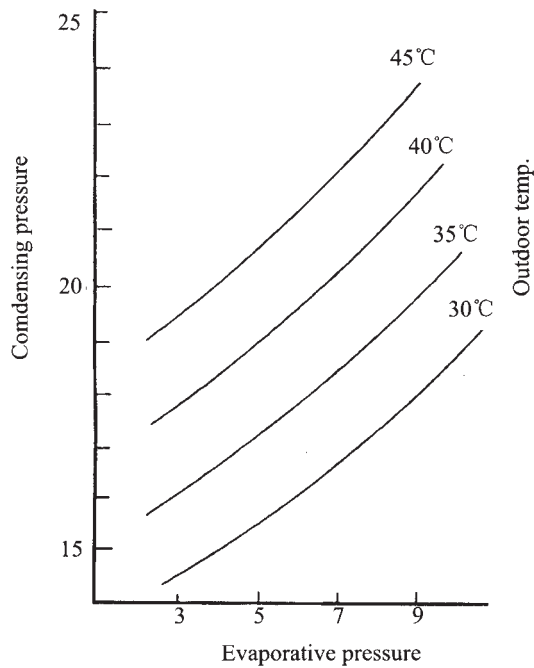
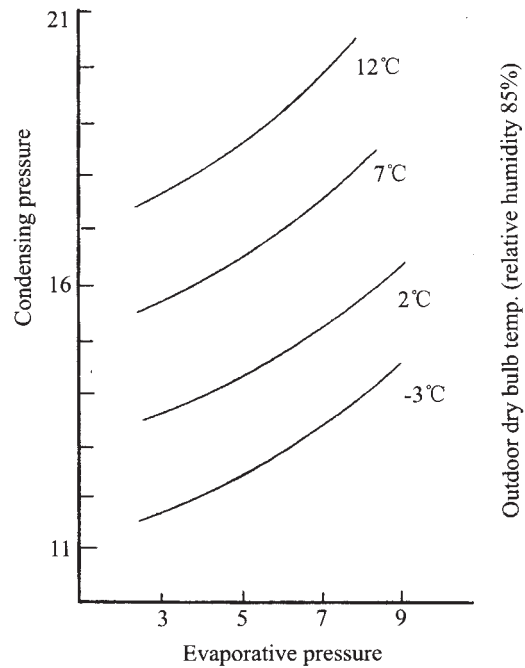


Fig. 3



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

(e)



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

(f)

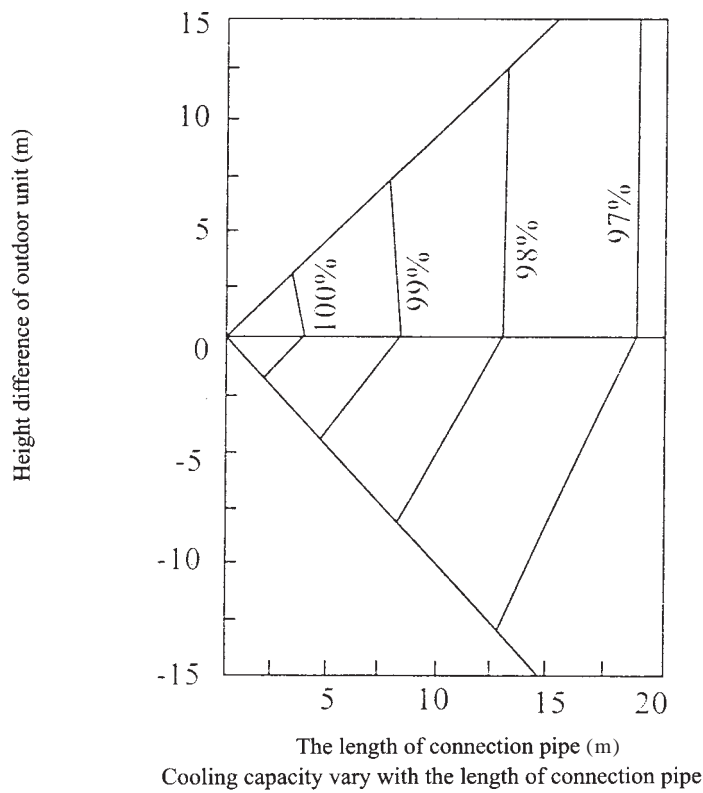


Fig. 4

4. Outlines and dimensions of indoor unit

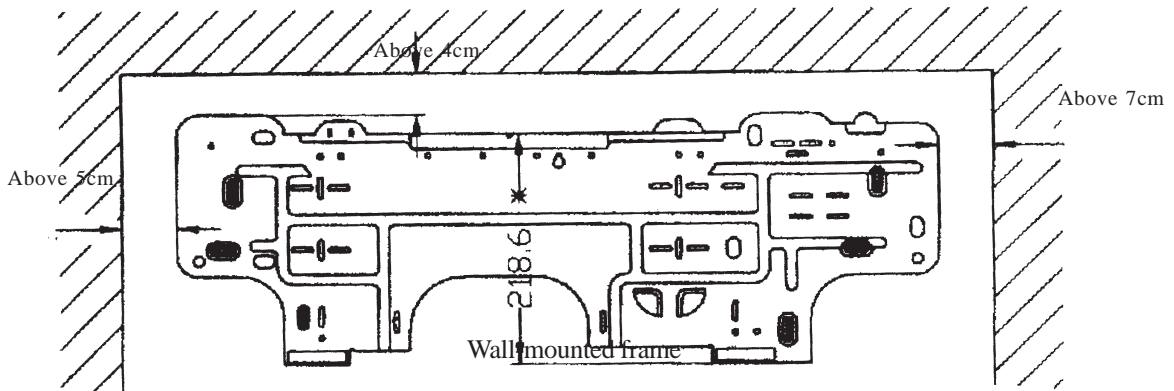
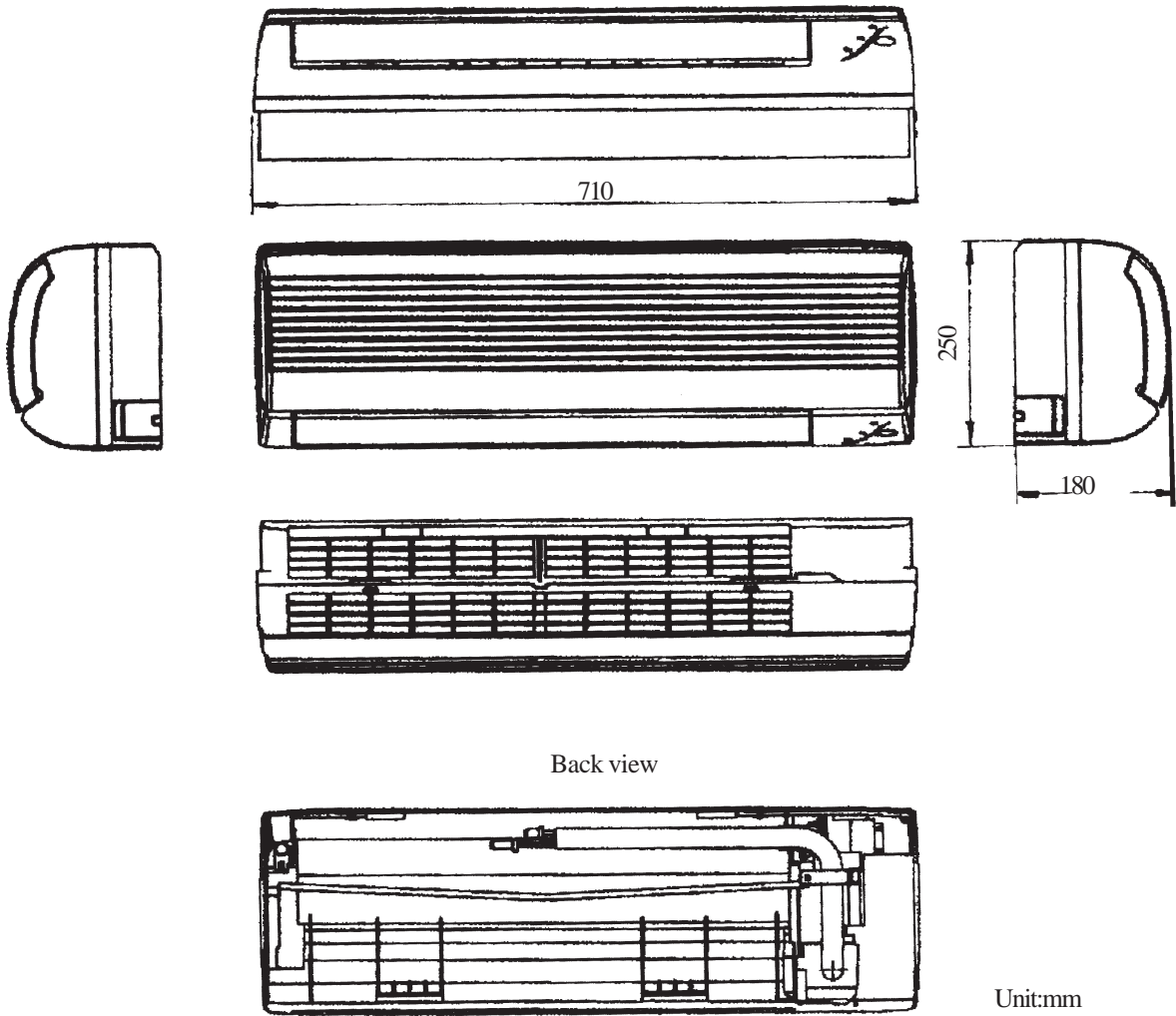


Fig. 5

### 5. Outlines and dimensions of outdoor unit

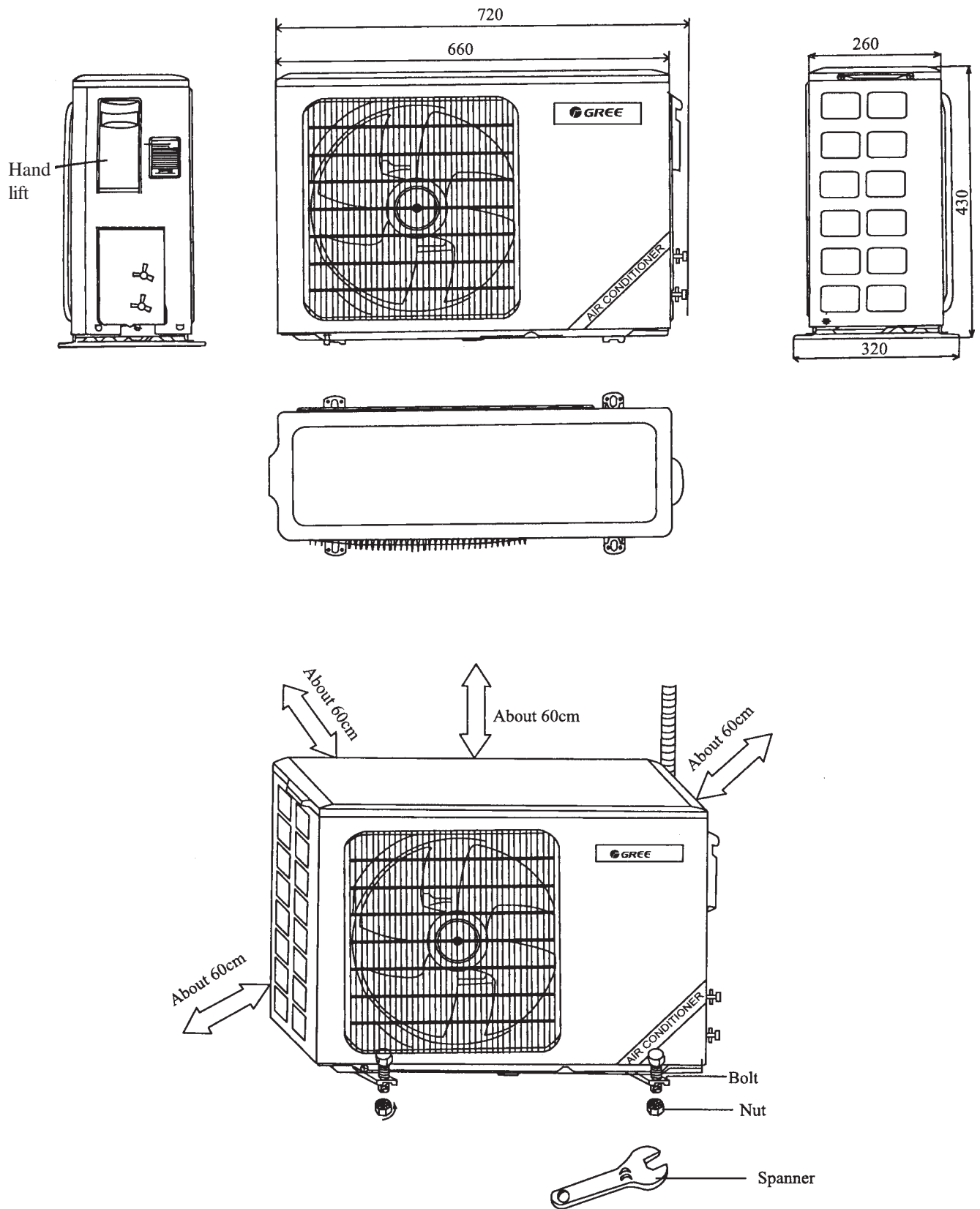


Fig. 6

### 6. Explosive view and spare parts list of indoor unit

Model: KF(R)-23G/A13

KF(R)-20G/NA13

KF(R)-26G/A13

KF(R)-25G/NA13

KFR-23G/A13-12405

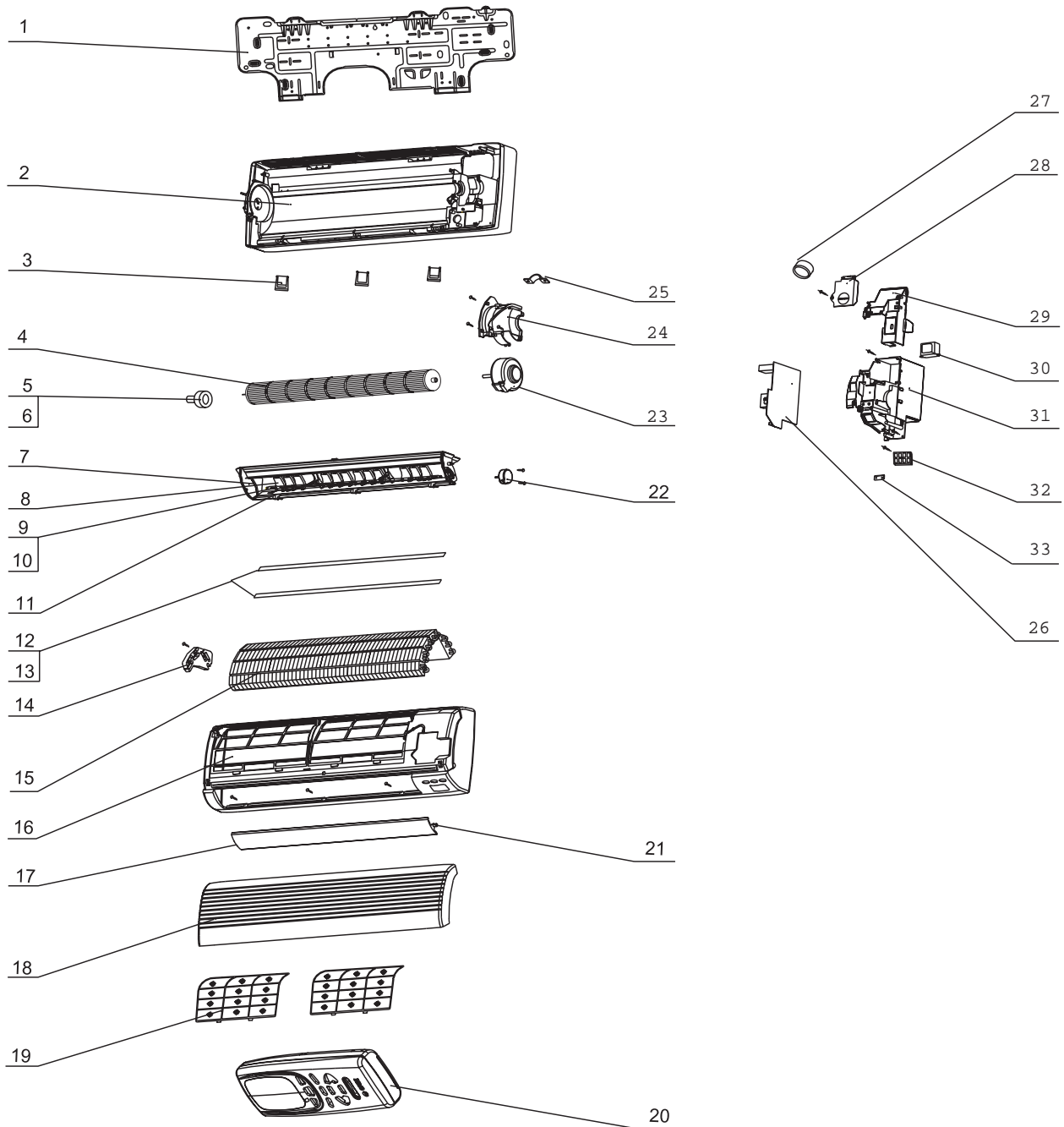


Fig. 7

## Butterfly Series

Table 7

No	Description		Part No					Qty
			KF-23G/A13	KFR-23G/A13	KF-26G/A13	KFR-26G/A13	KFR-23G/A13-12405	
1	Wall-Mounting Frame	壁挂板	01252206	01252206	01252206	01252206	01252206	1
2	Rear Case	底壳	22202004	22202004	22202004	22202004	22202004	1
3	Screw Cover	螺钉盖	24252001	24252001	24252001	24252001	24252001	3
4	Cross Flow Fan	贯流风叶	10352398	10352398	10352398	10352398	10352398	1
5	Bearing	风扇轴承	76512210	76512210	76512210	76512210	76512210	1
6	Fan Bearing	贯流风叶轴承胶圈	76512203	76512203	76512203	76512203	76512203	1
7	Water Tray	接水盘	20182004	20182004	20182004	20182004	20182004	1
8	Swing Louver	扫风叶片	10512002	10512002	10512002	10512002	10512002	10
9	Swing Connecting Rod Clevel 1	扫风连杆 1	11582004	11582004	11582004	11582004	11582004	1
10	Swing Connecting Rod Clevel 2	扫风连杆 2	11582005	11582005	11582005	11582005	11582005	1
11	Air-Guide Holder	拨杆	10582001	10582001	10582001	10582001	10582001	2
12	Evaporator Quickset 1	蒸发器插条 1	26112005	26112005	26112005	26112005	26112005	1
13	Evaporator Quickset 2	蒸发器插条 2	26112006	26112006	26112006	26112006	26112006	1
14	Evaporator Supporter	蒸发器角形架	24212001	24212001	24212001	24212001	24212001	1
15	Evaporator Assy	蒸发器部件	01002111	01002111	01002111	01002111	01002137	1
16	Front Case	面板体部件	20002040	20002134	20002040	20002134	200021392	1
17	Guide Louver	导风板	26112004	26112004	26112004	26112004	26112004	1
18	Front Panel	面板	20002035	20002035	20002035	20002035	20002035	1
19	Filter	过滤网	11122006	11122006	11122006	11122006	11122006	2
20	Remote Controller	遥控器 Y512F	30515009	30515009	30515009	30515009	30515009	1
21	Sheath Of Air Guide Axes	导风板轴套	10542011	10542011	10542011	10542011	10542011	3
22	Stepping Motor MP24GA	步进电机 MP24GA	15212102	15212102	15212102	15212102	15212102	1
23	Motor FN13B	电机 FN13B	15012038	15012038	15012038	15012038	/	1
	Motor FN13H	电机 FN13H	/	/	/	/	15012065	1
24	Motor Clamp	电机压板	26112014	26112014	26112014	26112014	26112014	1
25	Groove	压线槽	70482001	70482001	70482001	70482001	70482001	1
26	PCB 5K522J	接收板 JD	30046054	30046054	30046054	30046054	30046054	1
	Main Board	主板 5K51	30055758	/	30055758	/	/	1
	Main Board	主板 5K52	/	30055759	/	30055759	30055759	1
27	Magnetic Ring	磁环 28X16X13	49010104	49010104	49010104	49010104	49010104	1
28	Electric Box Cover 2	电器盒顶盖 2	20102008	20102008	20102008	20102008	20102008	1
29	Electric Box Cover 1	电器盒顶盖 1	20102009	20102009	20102009	20102009	20102009	1
30	Transformer	电源变压器 SC28B1	43110170	43110170	43110170	43110170	/	1
	Transformer	电源变压器 SC28B5	/	/	/	/	43110204	1
31	Electric Box	电器盒	20102010	20102010	20102010	20102010	20102010	1
32	Terminal Board GT4A3A3	接线板 GT4A3A3	42011134	42011134	42011134	42011134	42011134	1
33	Groove	压线片	70482001	70482401	70482401	70482401	70482401	1
34	Room Sensor	室温感温包	39000043	30055759	39000043	30055759	30055759	1
35	Tube Sensor	管温感温包	39000058	39000058	39000058	39000058	39000058	1

The data are subject to change without notice.

## Butterfly Series

Table 8

No.	Description		Part No.				Qty
			KF-20G/NA13	KFR-20G/NA13	KF-25G/NA13	KFR-25G/NA13	
1	Wall-Mounting Frame	壁挂板	01252209	01252209	01252209	01252209	1
2	Rear Case	底壳	22202004	22202004	22202004	22202004	1
3	Screw Cover	螺钉盖	24252001	24252001	24252001	24252001	3
4	Cross Flow Fan	贯流风叶	10352398	10352398	10352398	10352398	1
5	Bearing	风扇轴承	76512210	76512210	76512210	76512210	1
6	Fan Bearing	贯流风叶轴承胶圈	76512203	76512203	76512203	76512203	1
7	Water Tray	接水盘	20182004	20182004	20182004	20182004	1
8	Swing Louver	扫风叶片	10512002	10512002	10512002	10512002	10
9	Swing Con-necting Rod Clevel 1	扫风连杆 1	11582004	11582004	11582004	11582004	1
10	Swing Con-necting Rod Clevel 2	扫风连杆 2	11582005	11582005	11582005	11582005	1
11	Air-Guide Holder	拔杆	10582001	10582001	10582001	10582001	2
12	Evaporator Quickset 1	蒸发器插条 1	26112005	26112005	26112005	26112005	1
13	Evaporator Quickset 2	蒸发器插条 2	26112006	26112006	26112006	26112006	1
14	Evaporator Supporter	蒸发器角形架	24212001	24212001	24212001	24212001	1
15	Evaporator Assy	蒸发器部件	01002111	01002111	01002111	01002111	1
16	Front Case	面板体部件	20002134	200021391	20002134	200021391	1
17	Guide Louver	导风板	26112004	26112004	26112004	26112004	1
18	Front Panel	面板	20002035	20002035	20002035	20002035	1
19	Filter	过滤网	11122006	11122006	11122006	11122006	2
20	Remote Controller	遥控器 Y512F	30515009	30515009	30515009	30515009	1
21	Sheath Of Air Guide Axes	导风板轴套	10542011	10542011	10542011	10542011	3
22	Stepping Motor MP24GA	步进电机 MP24GA	15212102	15212102	15212102	15212102	1
23	Motor FN13B	电机 FN13B	15012038	15012038	15012038	15012038	1
24	Motor Clamp	电机压板	26112014	26112014	26112014	26112014	1
25	Groove	压线槽	70482001	70482001	70482001	70482001	1
26	PCB 5K522J	接收板 JD	30046054	/	30046054	30046054	1
	Main Board	主板 5K51	30055758	/	30055758	/	1
	Main Board	主板 5K52	/	/	/	30055759	1
	PCB 5K52	控制器 5K52	/	30055759	/	/	1
27	Magnetic Ring	磁环 28X16X13	49010104	49010104	49010104	49010104	1
28	Electric Box Cover 2	电器盒顶盖 2	20102008	20102008	20102008	20102008	1
29	Electric Box Cover 1	电器盒顶盖 1	20102009	20102009	20102009	20102009	1
30	Transformer	电源变压器 SC28B1	43110170	43110170	43110170	43110170	1
31	Electric Box	电器盒	20102010	20102010	20102010	20102010	1
32	Terminal Board GT4A3A3	接线板 GT4A3A3	42011134	42011134	42011134	42011134	1
33	Groove	压线片	70482401	70482401	70482401	70482401	1
34	Room Sensor	室温感温包	39000043	30055759	39000043	30055759	1
35	Tube Sensor	管温感温包	39000058	39000058	39000058	39000058	1

The data are subject to change without notice.

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# Butterfly Series

Model: KF-23G/A13-12206  
KF-26G/A13-12206

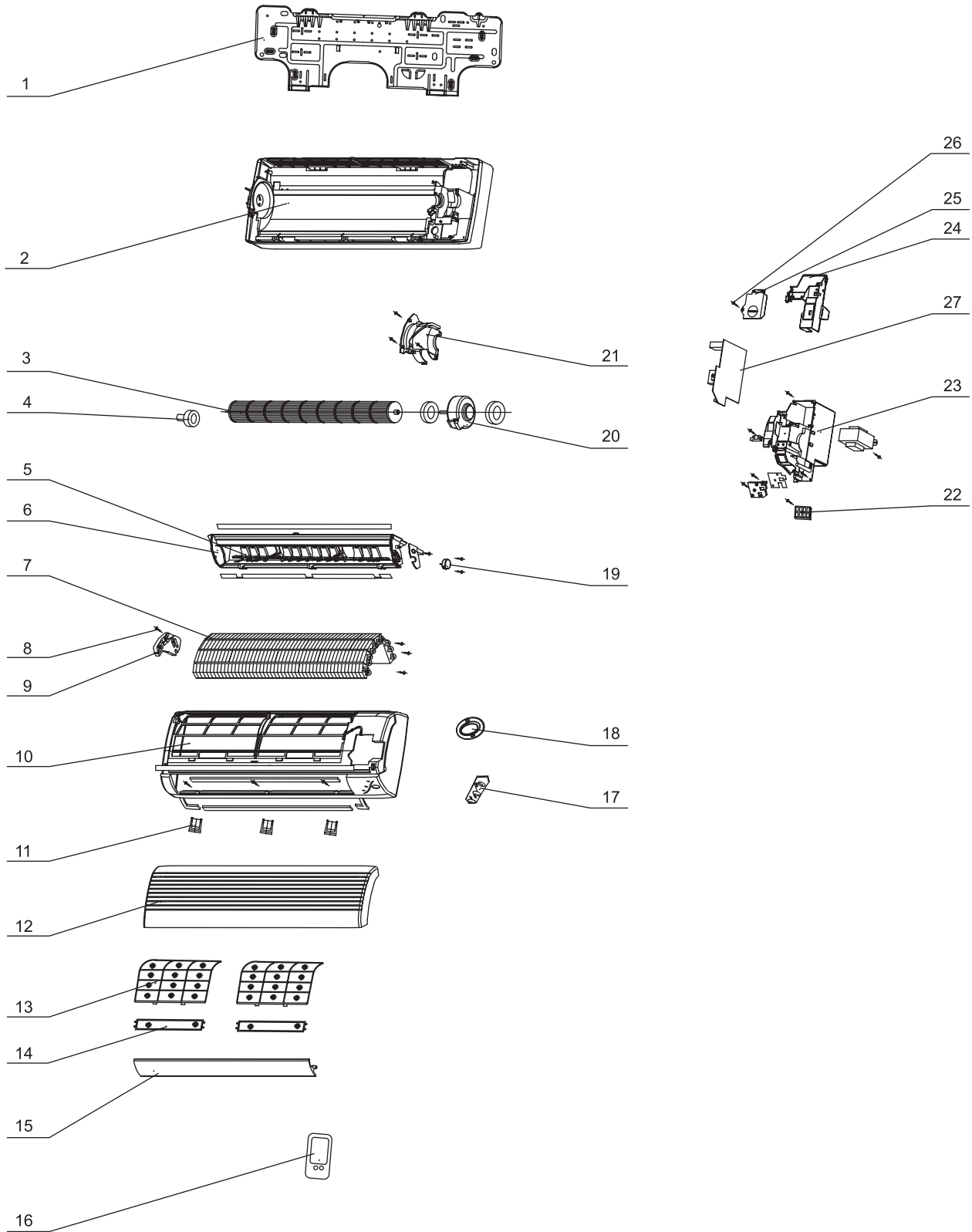


Fig. 8

## Butterfly Series

Table 9

No.	Description		Part No.		Qty
			KF-23G/A13-12206	KF-26G/A13-12206	
1	Wall-Mounting Frame	壁挂板	01252206	01252206	1
2	Rear Case	底壳	22202004	22202004	1
3	Cross Flow Fan	贯流风叶	10352398	10352398	1
4	Fan Bearing	贯流风叶轴承胶圈	76512203	76512203	1
5	Swing Louver	扫风叶片	10512002	10512002	1
6	Water Tray	接水盘	20182004	20182004	1
7	Evaporator Assy	蒸发器部件	01002137	01002137	1
8	Self Tapping Screw	自攻螺钉 ST4.2X13	70140553	70140553	1
9	Evaporator Supporter	蒸发器角形架	24212001	24212001	1
10	Front Case	面板体	20002034	20002034	1
11	Screw Cover	螺钉盖	24252001	24252001	3
12	Front Panel	面板	20002035	20002035	1
13	Filter	过滤网	11122006	11122006	2
14	Air Filter Bracket	净化器支架	24222001	24222001	2
15	Guide Louver	导风板	26112004	26112004	1
16	Remote Controller	遥控器 Y522F	30515007	30515007	1
17	Indicator Light Ban	指示灯板	22432007	22432007	1
18	Incept Telecontrol Window	数码管透光板	22432006	22432006	1
19	Stepping Motor MP24GA	步进电机 MP24GA	15212102	15212102	1
20	Motor FN13F	电机 FN13F(配左右胶圈)	15012055	15012055	1
21	Motor Clamp	电机压板	26112014	26112014	1
22	Terminal Board GT4A3A3	接线板 GT4A3A3	42011134	42011134	1
23	Electric Box	电器盒	20102010	20102010	1
24	Electric Box Cover 1	电器盒顶盖 1	20102009	20102009	1
25	Electric Box Cover 2	电器盒顶盖 2	20102008	20102008	1
26	Self Tapping Screw	自攻螺钉 ST4.2X13	70140553	70140553	5
27	PCB5K522J	接收板 JD	30046054	30046054	1
	Main Board	主板 5K51	30055758	30055758	1
28	Room Sensor	室温感温包	39000043	39000043	1
29	Tube Sensor	管温感温包	39000058	39000058	1

The data are subject to change without notice.

### 7. Explosive view and spare parts list of outdoor unit

Model: KF(R)-23W/A13

KF(R)-20W/NA13

KF(R)-26W/A13

KF(R)-25W/NA13

KFR-23W/A13-12405

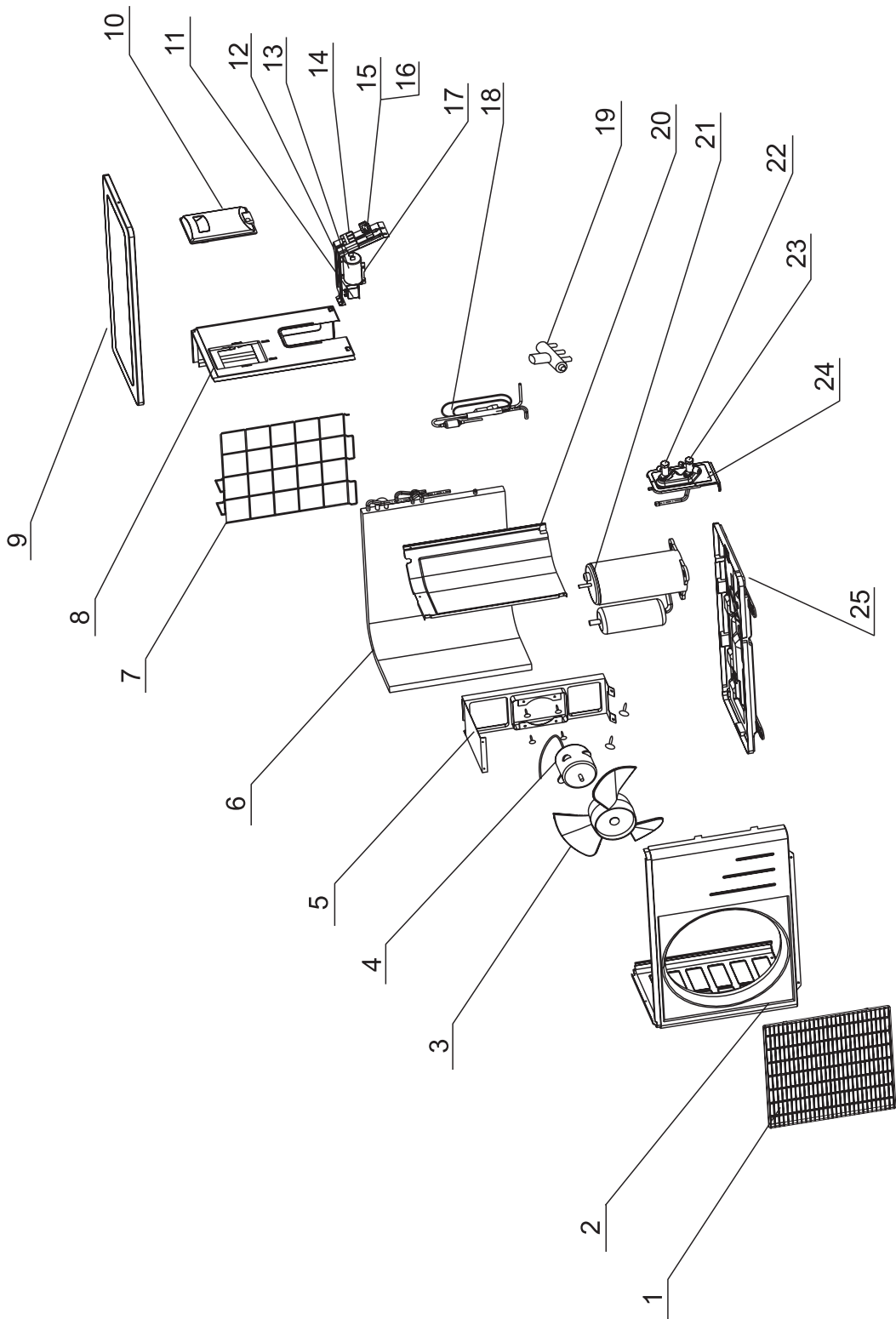


Fig. 9

## Butterfly Series

Table 10

No	Description		Part No					Qty
			KF-23W/A13	KFR-23W/A13	KF-26W/A13	KFR-26W/A13	KFR-23W/A13-12405	
1	Front Grill	面罩	22263002	22263002	22263002	22263002	22263002	1
2	Front Plate	面板	20003100	20003100	20003100	20003100	20003100	1
3	Axial Flow Fan	轴流风叶	10333002	10333002	10333002	10333002	10333002	1
4	Motor FW20B	电机 FW20B	15013045	15013045	15013045	15013045	/	1
	Motor FW20H	电机 FW20H	/	/	/	/	15013157	1
5	Motor Support	电机支架组件	01703200	01703200	01703200	01703200	01703200	1
6	Condenser Assy	冷凝器部件	01103222	01103222	01103222	01103222	01103222	1
7	Rear Grill Assy	后护网	11123200	11123200	11123200	11123200	11123200	1
8	Right Side Plate Assy	右侧板	01303010	01303010	01303010	01303010	01303010	1
9	Top Cover Assy	顶盖组件	01253263	01253263	01253263	01253263	01253263	1
10	Handle	大提手组件	26233028	26233028	26233028	26233028	26233028	1
11	Capacitor CBB61 (1.5uF/450VAC)	电容 CBB61 1.5uF/450VAC	33010020	33010020	33010020	33010020	33010020	1
12	Electric Box Assy	电器盒	01413002	01413002	01413002	01413002	01413002	1
13	Compressor Capacitor (17uF/450VAC)	电容 CBB65 (17uF/450VAC)	33000035	33000035	/	/	33000035	1
	Compressor Capacitor (30uF/450VAC)	电容 CBB65 (30uF/450VAC)	/	/	33000037	/	/	1
	Compressor Capacitor (25uF/450VAC)	电容 CBB65 (25uF/450VAC)	/	/	/	33000020	/	1
14	Terminal Board	三位接线板 T386A	42011241	42011241	42011241	42011241	42011241	1
15	Wire Seat	压线座	24253001	24253001	24253001	24253001	24253001	1
16	Wire Clip	压线板	24253002	24253002	24253002	24253002	24253002	1
17	Metal Clamp	电容夹	02143014	02143014	02143014	02143014	02143014	1
18	Capillary	毛细管组件	03003228	03003229	03003194	03003108	03003473	1
19	4-way Valve	四通阀	/	43000402	/	43000402	43000402	1
	4-way Valve Fittings	四通阀配件	/	43000400	/	43000400	430004010	1
20	Clapboard Assemble	隔板组件	01233101	01233101	01233101	01233101	01233101	1
21	Compressor And Fittings	压缩机及其配件 KH134VFRC	0010051	0010051	/	/	0010051	1
		压缩机及其配件 2P17S225ANA (过载外置)	/	/	00120110	/	/	1
		压缩机及其配件 RH174VHAC	/	/	/	00120078	/	1
22	Valve 1/4"	阀门 1/4"	07100125	07100125	07100125	07100125	07100125	1
23	Valve 3/8"	阀门 3/8"	07100145	07100145	07100145	07100145	07100145	1
24	Valve Support	阀门支架	01713036	01713036	01713036	01713036	01713036	1
25	Metal Base	底盘组件	01203153	01203153	01203153	01203153	01203153	1
26	Drainage Tie-in	室外机排水接头	/	06123401	/	06123401	/	1

The data are subject to change without notice.

## Butterfly Series

Table 11

No.	Description		Part No.				Qty
			KF-20W/NA13	KFR-20W/NA13	KF-25W/NA13	KFR-25W/NA13	
1	Front Grill	面罩	22263002	22263002	22263002	22263002	1
2	Front Plate	面板	20003100	20003100	20003100	20003100	1
3	Axial Flow Fan	轴流风叶	10333002	10333002	10333002	10333002	1
4	Motor FW20B	电机FW20B	15013045	15013045	15013045	15013045	1
5	Motor Support	电机支架组件	01703200	01703200	01703035	01703035	1
6	Condenser Assy	冷凝器部件	01103219	01103220	01103218	01103221	1
7	Rear Grill Assy	后护网	11123200	11123200	11123200	11123200	1
8	Right Side Plate Assy	右侧板	01303010	01303010	01303010	01303010	1
9	Top Cover Assy	顶盖组件	01253263	01253263	01253263	01253263	1
10	Handle	大提手组件	26233033	26233033	26233033	262330331	1
11	Capacitor CBB61 (1.5uF/450VAC)	电容CBB61 1.5uF/450VAC	33010020	33010020	33010020	33010020	1
12	Electric Box Assy	电器盒	01413002	01413002	01413002	01413002	1
13	Compressor Capacitor (22.5uF/450VAC)	电容CBB65(22.5uF/450VAC)	33000002	33000002	33000002	33000002	1
14	Terminal Board	三位接线板 T386 A	42011241	42011241	42011241	42011241	1
15	Wire Seat	压线座	24253001	24253001	24253001	24253001	1
16	Wire Clip	压线板	24253002	24253002	24253002	24253002	1
17	Metal Clamp	电容夹	02143014	02143014	02143014	02143014	1
18	Capillary	毛细管组件	03003253	03003255	03003253	03003256	1
19	4-way Valve	四通阀	/	430004021	/	430004021	1
	4-way Valve Fittings	四通阀配件	/	43000400	/	43000400	1
20	Clapboard Assemble	隔板组件	01233101	01233101	01233101	01233101	1
21	Compressor And Fittings	压缩机及其配件 C-1RN70H5C	00100354	00100354	/	/	1
		压缩机及其配件 C-RV167H01AA (过载内外置)	/	/	00100355	00100355	1
22	Valve 1/4"	阀门 1/4"	07100149	07100149	07100149	07100149	1
23	Valve 3/8"	阀门 3/8"	07100150	07100150	07100150	07100150	1
24	Valve Support	阀门支架	01713036	01713036	01713036	01713036	1
25	Metal Base	底盘组件	01203116	01203115	01203117	01203117	1
26	Drainage Tie-in	室外机排水接头	/	06123401	/	06123402	1

The data are subject to change without notice.

## Butterfly Series

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# Butterfly Series

Model: KF-23W/A13-12206  
KF-26W/A13-12206

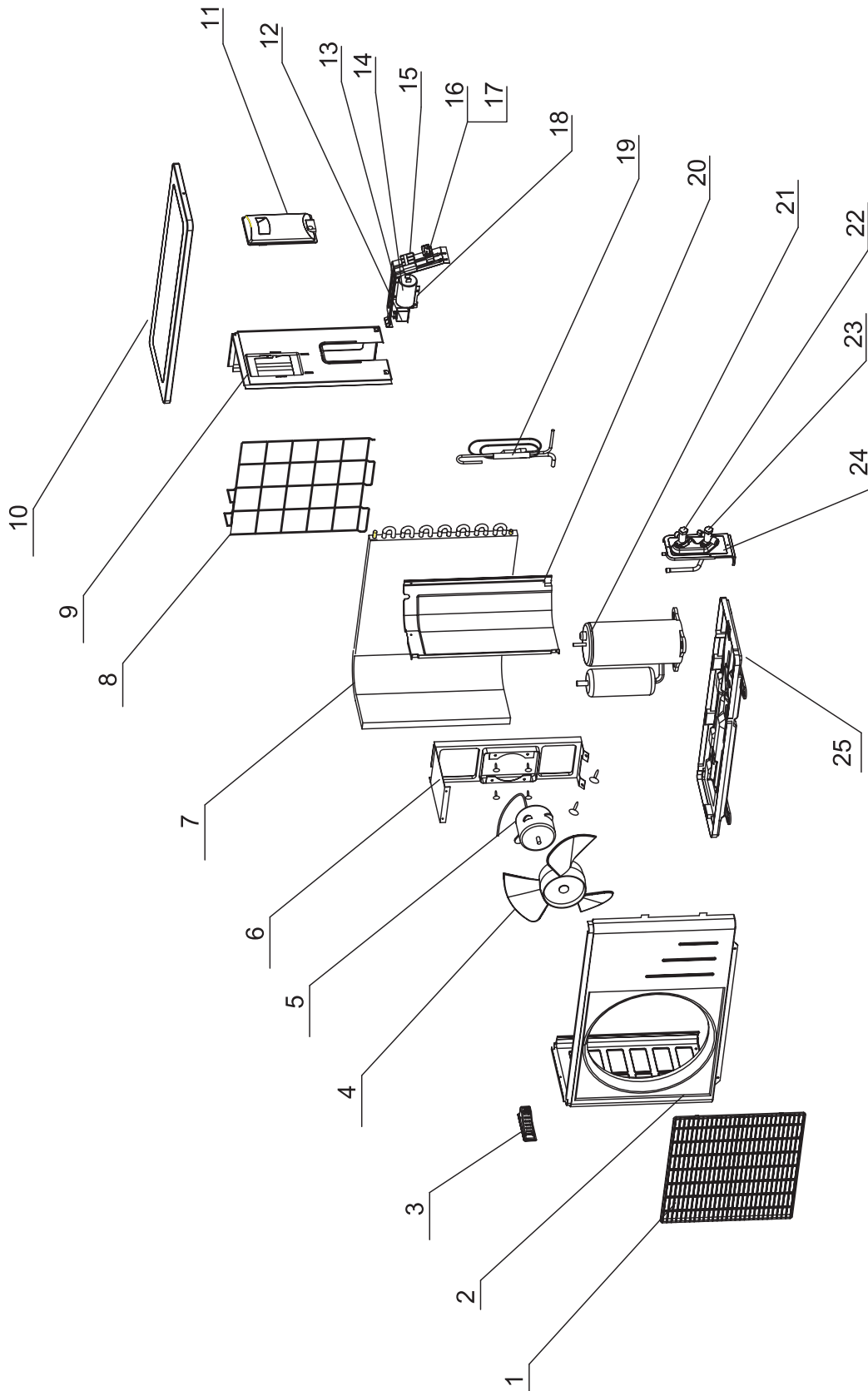


Fig. 10

## Butterfly Series

Table 12

No.	Description		Part No.		Qty
			KF-23W/A13-12206	KF-26W/A13-12206	
1	Front Grill	面板格栅	22263002	22413431	1
2	Front Plate	面板	20003100	20002041	1
3	Little Handle	小提手	26233100	/	1
4	Axial Flow Fan	轴流风叶	10333002	10333412	1
5	Motor FW20C	电机FW20C	15013004	/	1
	Motor FW25P	电机FW25P	/	15013152	1
6	Motor Support	电机支架组件	01703200	/	1
	Motor Support	电机支架	/	01703391	1
7	Condenser Assy	冷凝器部件	01103245	011032431	1
8	Rear Grill Assy	后护网组件	11123301	11123402	1
9	Right Side Plate Assy	右侧板组件	01303151	01302000	1
10	Top Cover Assy	顶盖组件	01253263	01253261	1
11	Handle	大提手	26233101	26233431	1
12	Fan Motor Capacitor (CBB61 2.0uF/450V)	电容CBB61 2.0uF/450V(VDE)	33010025	/	1
	Fan Motor Capacitor (2.5uF/450V)	电容CBB61 2.5uF/450V(VDE-TUM)	/	33010026	1
13	Electric Box Assy	电器盒	01413002	01413425	1
14	Compressor Capacitor (15uF/450V)	压缩机电容15uF/450V(VDETUV)	33010728	/	1
	Compressor Capacitor (30uF/450VAC)	压缩机电容CBB6530uF/450VAC	/	33000018	1
15	Terminal Board	三位接线板 T386A	42011241	42011241	1
16	Wire Clip	压线板	24253002	/	1
17	Wire Seat	压线座	24253001	/	1
18	Capacitor Locator	电容限位块	02113002	/	1
19	Capillary Assy	毛细管组件	03003237	03003295	1
20	Clapboard Assy	隔板组件	01233101	01233417	1
21	Compressor	压缩机及其配件2R12S236A6F (过载为MRA98854)	00100270	/	1
	Compressor	压缩机及其配件 (过载外置)2P14S236A1J	/	00100253	1
22	Valve 1/4"	阀门 1/4"	07100024	07100120	1
23	Valve 3/8"	阀门 3/8"	07100145	07100145	1
24	Valve Support	阀门支架	01713036	01713036	1
25	Metal Base	底盘组件	01203142	01203035	1

The data are subject to change without notice.



## 8. Circuit diagram

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

KF-23GW/A13 KF-20GW/A13  
KF-26GW/A13 KF-25GW/A13

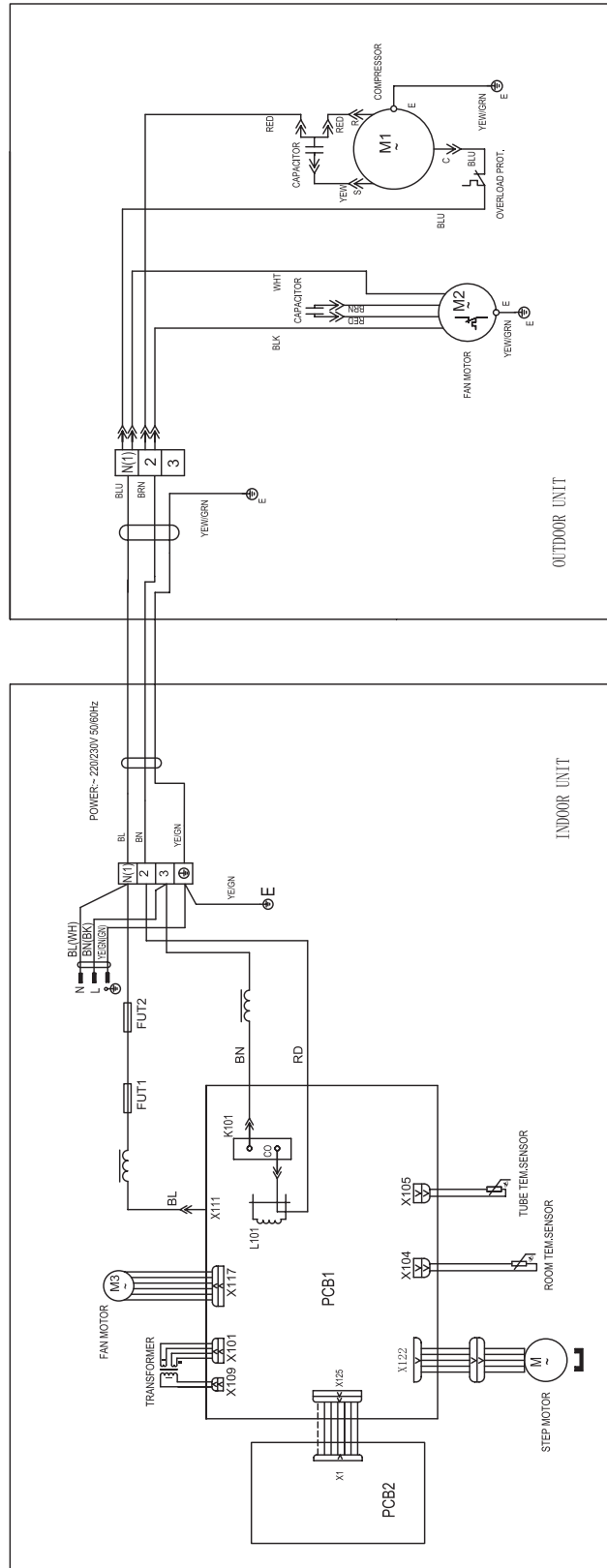


Fig. 11

KFR-20GW/NA13 KFR-23GW/A13  
 KFR-25GW/NA13 KFR-23GW/A13-12405

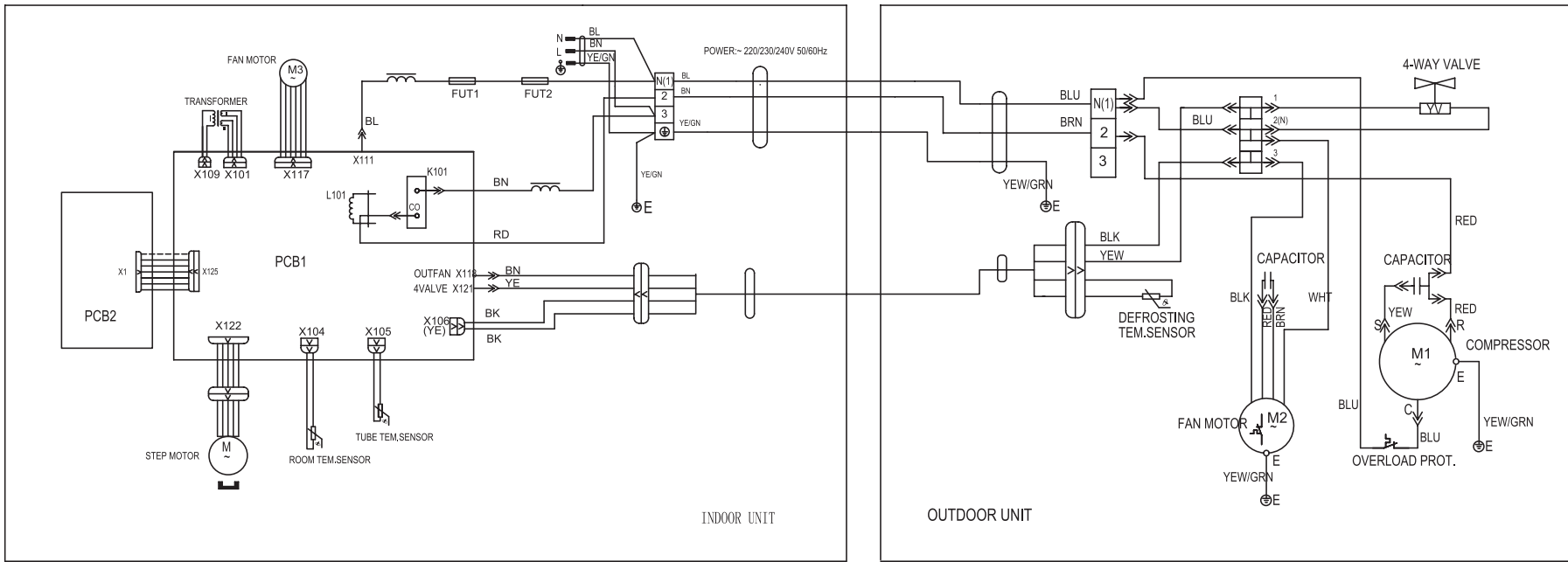


Fig. 12

KFR-26GW/A13

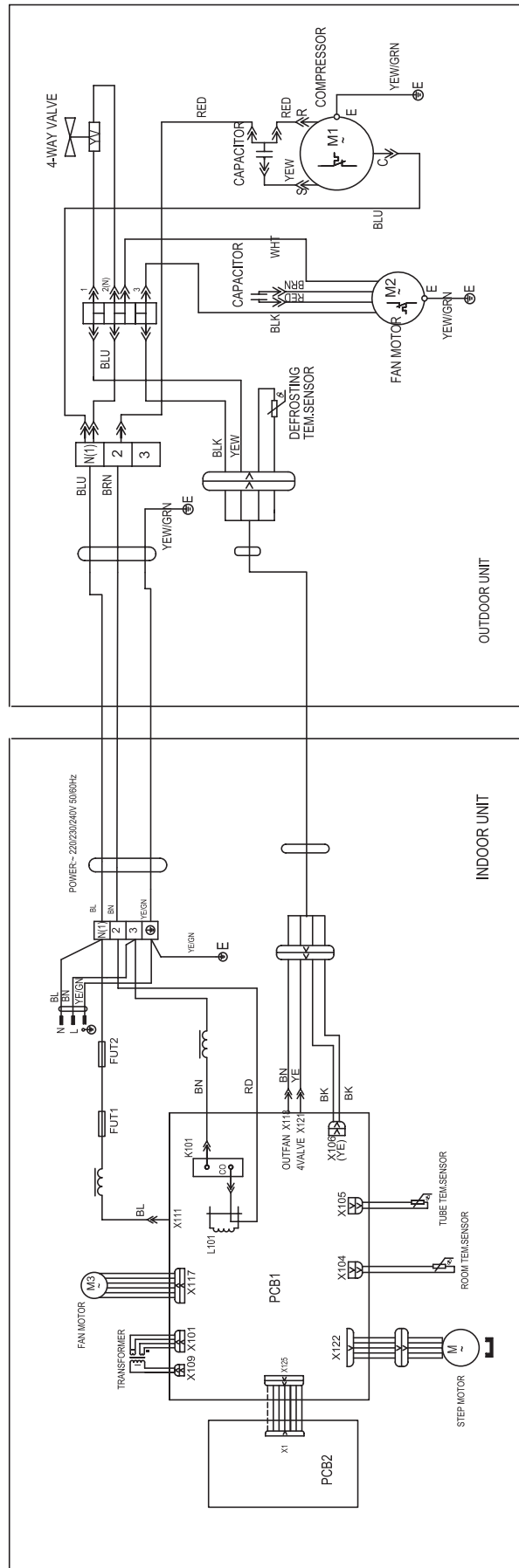


Fig. 13

KF-23GW/A13-12206  
 KF-26GW/A13-12206

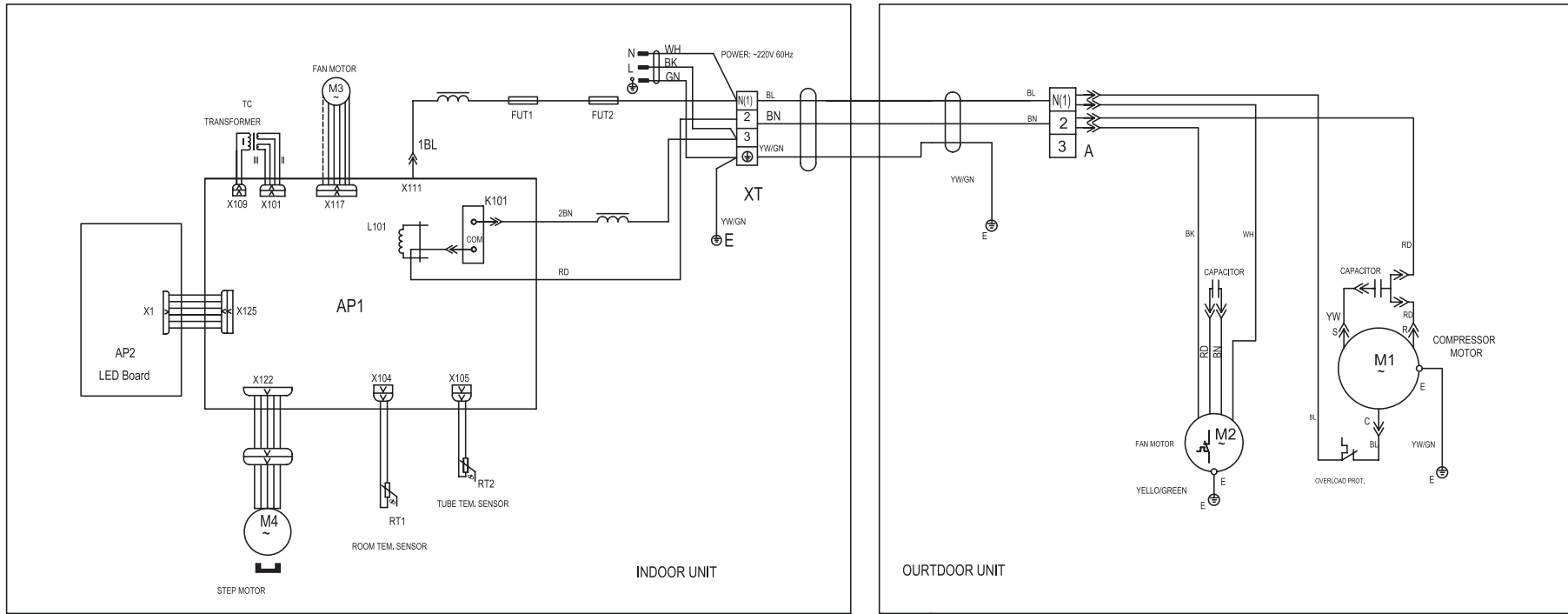


Fig. 14

## 9. PCB function manual

### PCB function manual for butterfly

#### A. running mode

1. cooling 2. dehumidifying 3. heating 4. 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
2. stepping motor (swing motor)
3. outdoor motor
4. compressor
5. four-way reversing valve
6. cooling, dehumidifying indicator; running indicator (for birdline, butterfly series)
7. auxiliary electric heater

#### D. fundamental functions

1. cooling mode

(1) the running conditions and control measures

- a. if  $T_{in} \geq T_{set} + 1^{\circ}\text{C}$ , the machine runs at the cooling mode. Compressor and outdoor motor runs, indoor fan runs at the set fan speed.
- b. if  $T_{in} \leq T_{set} - 1^{\circ}\text{C}$ , the machine stops. Compressor stops first, outdoor motor stops after 15 seconds, indoor motor runs at the set fan speed.
- c. if  $T_{set} - 1^{\circ}\text{C} < T_{in} < T_{set} + 1^{\circ}\text{C}$ , keep the previous state.

(2) in this mode, the reversing valve is inactive, the temp. setting range is from  $16^{\circ}\text{C}$  to  $30^{\circ}\text{C}$ .

(3) Protect function

a. anti-freezing function.

if compressor has run 6 minutes, and detects  $T_{eva} < 0^{\circ}\text{C}$  for continuous 3 minutes, then the compressor stops, outdoor fan stops after 15 seconds, indoor fan runs at the set fan speed. After 3 minutes later, it will run at the original state if  $T_{eva} \geq 10^{\circ}\text{C}$ .

b. compressor protection

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

## Butterfly Series

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and conditions. If it's plugged in first time, the compressor does not have 3 minutes delay. When compressor is started, it will not stop within 5 minutes unless it is plugged out.

### c. overload protection

If it detects the system current surpass the designed 15 A for continuous 3 minutes, the machine goes into fan mode, when 3 minutes passed and it detects the current no more than 15 A, it will back to original state. If it detects overloading states for 6 consecutive times, the machine stops, and must be restarted by remote controller.

## 2. dehumidifying mode

### (1) the working conditions and control measures

- a. if  $T_{in} > T_{set} + 2^{\circ}\text{C}$ , it is in cooling running, the indoor motor speed can be selected .
- b. If  $T_{set} - 2^{\circ}\text{C} \leq T_{in} \leq T_{set} + 2^{\circ}\text{C}$ , it goes into dehumidifying running ,the indoor motor runs at the low speed, 6 minutes later the compressor stops, another 15 seconds later the outdoor fan stops and another 30 seconds later, the indoor motor 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  $T_{in} < T_{set} - 2^{\circ}\text{C}$ , compressor ,outdoor motor and indoor motor stop.

(2) in this mode, the reversing valve is inactive , the temp. setting range is from  $16^{\circ}\text{C}$  to  $30^{\circ}\text{C}$ .

### (3) Anti-freezing protection.

If compressor has runs 6 minutes , and detects  $T_{eva} < 0^{\circ}\text{C}$  ,compressor stops and outdoor motor stops after 15 seconds, indoor motor runs at low speed ,after 3 minutes delay ,and  $T_{eva} \geq 10^{\circ}\text{C}$ , it will be back to its original state.

## 3. heating mode

### (1) the working conditions and control measures

- a. If  $T_{in} \leq T_{set} + 2^{\circ}\text{C}$ , 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  $T_{in} \geq T_{set} + 4^{\circ}\text{C}$ , 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  $T_{set} + 2^{\circ}\text{C} < T_{indoor} < T_{set} + 4^{\circ}\text{C}$ , keep the previous running state.

(2) in this mode, the temperature setting range is from  $16^{\circ}\text{C}$  to  $30^{\circ}\text{C}$ .

### (3) auxiliary electric heater:

- a. The working conditions of auxiliary electric heater: In heating mode, when compressor is working, indoor motor runs. if it detects  $T_{eva} \leq 48^{\circ}\text{C}$  for continuous 8 seconds and  $T_{indoor} \leq 22^{\circ}\text{C}$ , electric heater will work.
- b. The stopping conditions of auxiliary electric heater: if compressor stops or  $T_{eva} \geq 52^{\circ}\text{C}$  or  $T_{indoor} \geq 25^{\circ}\text{C}$  or 2 minutes before defrosting , the electric heater will stop. Once stop, next startup must be after 2 minutes.

### (4) protections

#### a .anti cool air

- ① when the machine starts heating and  $T_{eva} \leq 39^{\circ}\text{C}$ , indoor motor will run at low speed 3

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minutes later, if  $T_{eva} \geq 41^{\circ}\text{C}$ , indoor motor will run at the set speed .

② When the machine has run in heating mode, if it detects  $T_{eva} \leq 42^{\circ}\text{C}$ , indoor motor runs at low speed, if it detects  $T_{eva} \geq 43^{\circ}\text{C}$ , indoor motor runs at the set speed.

b. anti high temp.

In heating mode, if it detects  $T_{eva} \geq 58^{\circ}\text{C}$ , outdoor motor will stop( in this period it will not detect the defrosting temp.). if  $T_{eva} \leq 52^{\circ}\text{C}$ , outdoor motor will be back running.

c. blowing surplus heat

In heating mode, when set temp is reached , compressor and outdoor fan stops, Indoor motor blows 60 seconds at the set speed.

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

e. Overload protection

If it detects that the system current surpassed the designed 15 A for continuous 3 seconds, compressor and outdoor motor stop 15 seconds later, indoor motor stops. After 3 minutes and current no more than 15 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 6 consecutive times, the previous protecting times will reset.

f. defrosting conditions and procedures

In heating mode, if compressor has run 45 minutes ( in its first 6 minutes it will not detect defrosting temp.) , and it has detected  $T_{con} \leq -8^{\circ}\text{C}$  for continuous 1 minutes , it begins to defrost , indoor motor, reversing valve and outdoor motor will stop after 15 seconds. when  $T_{con} \geq 10^{\circ}\text{C}$  or defrosting lasts for 10 minutes , outdoor motor and reversing valve becomes active , indoor motor will run as the anti cool air condition, then it cycles again, recalculates the compressor's running time again.

g. noise eliminated protection

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

### 4. AUTO mode

(1) in AUTO mode, standard cooling  $T_{set}=25^{\circ}\text{C}$ , standard heating  $T_{set}=20^{\circ}\text{C}$

(2) working procedures

a. If it detects  $T_{in} \leq 22^{\circ}\text{C}$ , select heating mode; if  $22^{\circ}\text{C} \leq T_{in} \leq 26^{\circ}\text{C}$ , fresh air is active, from this time, the set temp. is  $25^{\circ}\text{C}$ , the cooling indicator light; if  $T_{in} \geq 26^{\circ}\text{C}$ , select cooling mode.

b. After auto mode running, if it detects  $T_{in} \leq T_{set}$ , select heating mode, from this time, the set temp. is  $20^{\circ}\text{C}$ ; if it detects  $T_{in} \geq T_{set} + 4^{\circ}\text{C}$ , compressor and outdoor motor will stop after 15 seconds, but the reversing valve is always active, indoor motor runs as the blowing surplus heat condition. If  $T_{set} + 2^{\circ}\text{C} < T_{indoor} < T_{set} + 4^{\circ}\text{C}$ , keeps the original state. For indoor motor, when use remote controller (Y502), runs at the set speed, when press auto button, runs at low speed.

c. After auto mode running, if it detects  $T_{in} \geq T_{set} + 3^{\circ}\text{C}$ , select cooling mode, from this time the set temp. is  $25^{\circ}\text{C}$ , when  $T_{in} \leq T_{set} - 13^{\circ}\text{C}$ , compressor and outdoor motor will stop after 15 seconds. For indoor motor, when use remote cotroller Y502, runs at the set speed; when

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press auto button, runs at low speed. If  $T_{\text{set}} - 1^\circ\text{C} < T_{\text{in}} < T_{\text{set}} + 1^\circ\text{C}$ , keep the previous running state.

d. After auto mode running, if it detects  $22^\circ\text{C} < T_{\text{in}} < 26^\circ\text{C}$ , keep the previous running 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.

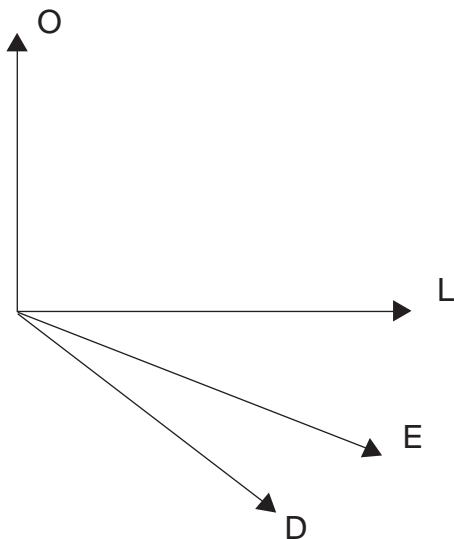
(3) protections

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

## E. other controls

1. SWING mode

- When it is active, the louver returns to position O, close the air outlet.
- When machine works, it turns to the max. Air output position D.
- In swing state, the louver swings between position L and position D.
- When the machine is switched off, it is back to position O.
- When the machine is running and the swing is off, the louver stops at position E.



2. beeper

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

3. indication lamps

it flashes when defrosting begin.

4. press the AUTO button a time, the machine runs in AUTO mode, indoor motor runs in low speed, fresh air function is not active, press again the machine stops.

5. Automatic fan speed .

- |   |              |
|---|--------------|
| a. in cooling mode, if $T_{\text{indoor}} > T_{\text{set}} + 5^\circ\text{C}$ | high speed   |
| $T_{\text{indoor}} \geq T_{\text{set}} + 3^\circ\text{C}$                     | middle speed |
| $T_{\text{indoor}} \geq T_{\text{set}} + 1^\circ\text{C}$                     | low speed    |



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- b. in heating mode, if  $T_{\text{indoor}} \leq T_{\text{set}} - 5^{\circ}\text{C}$  high speed  
 $T_{\text{indoor}} \leq T_{\text{set}} - 3^{\circ}\text{C}$  middle speed  
 $T_{\text{indoor}} \leq T_{\text{set}} - 1^{\circ}\text{C}$  low speed
- c. in dehumidify mode, if  $T_{\text{indoor}} \geq T_{\text{set}} + 5^{\circ}\text{C}$  high speed  
 $T_{\text{indoor}} \geq T_{\text{set}} + 2^{\circ}\text{C}$  low speed

### 6. SLEEP mode.

- a. In cooling or dehumidifying mode, 1 hour after you set the sleep timer,  $T_{\text{set}}$  will add  $1^{\circ}\text{C}$  automatically, 2 hour after you set the sleep timer,  $T_{\text{set}}$  will add  $2^{\circ}\text{C}$  automatically.
- b. In heating mode, 1 hour after you pset the sleep timer,  $T_{\text{set}}$  will lower  $1^{\circ}\text{C}$  automatically, 2 hour after you set the sleep timer,  $T_{\text{set}}$  will lower  $2^{\circ}\text{C}$  automatically .
- c. In auto mode, when you set the sleep mode, the set temp. will not change.

# **TECHNICAL SERVICE MANUAL**

— **Butterfly 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 Butterfly 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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