

8.Cassette type series

8.1 Summary.



figure 8-1

MODEL	NOTE
KF-50TW/E1(5031T1) KFR-50TW/E1(5051T1) KF-70TW/B1(7031T1) KFR-70TW/B1(7051T1)	1Ph 220-230V~50Hz R22
KF-50TW/E1(5031T1)N KFR-50TW/E1(5051T1)N KF-70TW/B1(7031T1)N KFR-70TW/B1(7051T1)N	1Ph 220-230V~50Hz R407C
KF-70TW/B(7031T)C KFR-70TW/B(7041T)	3Ph 380-400V~50Hz R22
KF-70TW/B(7031T)N KFR-70TW/B(7041T)N	3Ph 380-400V~50Hz R407C

Cassette type series



figure 8-2

MODEL	NOTE
KF-120TW/B(1231T)C KFR-120TW/B(1251T)B	3Ph 380-400V~50Hz R22
KF-120TW/B(1231T)N KFR-120TW/B(1241T)N	3Ph 380-400V~50Hz R407C

Cassette type series

8.2 Technical specifications.

Table 8-1

Model			KF-50TW/E1 (5031T1)	KFR-50TW/E1 (5051T1)		KF-70TW/B1 (7031T1)	KFR-70TW/B1 (7051T1)		
Function			Cooling	Cooling	Heating	Cooling	Cooling	Heating	
Power supply			1PH,220V-50Hz						
Capacity	Kcal/h		4300	4300	4644	6020	6020	6450	
	Btu/h		17065	17065	18430	23891	23891	25598	
	W		5000	5000	5400	7000	7000	7500	
Rated input (W)			1995	1995	1995	2750	2750	2750	
Rated current (A)			9.3	9.3	9.3	4.8	4.8	4.8	
Air flow (m³/h)			680			1180			
Electric heater power (W)			\	700		\	1400		
Dehumidifying volume(L/h)			2.9			4.0			
Indoor unit	Model		KF-50T1 (5031T1)	KFR-50T1 (5051T1)		KF-70T1 (7031T1)	KFR-70T1 (7051T1)		
	Motor fan speed(r/min)		620/570/520			600/550/500			
	Output power(W)		35W						
	Fan type/piece		Centrifugal fan-1						
	Diameter-length(mm)		φ 450mm/112mm			φ 450mm/140mm			
	Evaporator		Aluminum fin-copper tube						
	Row-fin distance(mm)		2/1.3			3/1.5	2/1.5		
	Working area(mm²)		1980x114.3			1980x171.5			
	Swing motor		SM008						
	Input power-speed		3W-2.5r/min						
	Control method		Remote control						
	Fuse(mA)		3.15A 0.2A						
	Work capacitor(μF)		3.5			3.5			
	Noise(dB(A))		≤ 46			≤ 47			
	Outline	panel	Width (mm)	950					
			Height (mm)	60					
			Depth (mm)	950					
		Main body	Width (mm)	840					
			Height (mm)	190			240		
			Depth (mm)	840					
	Net weight(kg)		Panel	6.5					
			Main body	25			30		

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

Cassette type series

Table 8-1 continue

Model			KF-50TW/E1 (5031T1)	KFR-50TW/E1 (5051T1)	KF-70TW/B1 (7031T1)	KFR-70TW/B1 (7051T1)	
Outdoor unit	Model		KF-50W/tE1	KFR-50W/tE1	KF-70W/tB1	KFR-70W/tB1	
	Input power W		1880	1880/1880	2610	2610/2480	
	Current A		8.8	8.8	11.85	11.85/11.3	
	Throttling method		Capillary				
	Compressor	type	Rotary			Reciprocating	
		model	SHW33TC4-U			AWG5532EXC	
		Starting method	PSC			CSR	
		Overload protector	Inner				
		L.R.A A	49			82	
		Working temp. (°C)	120			143.3	
		Input power W	1990			2660	
		Condenser		Aluminum fin-copper tube			
	Row-fin dittance(mm)		2/1.8			2/2.0	
	Working area (mm × mm)		670x600			810x600	
	Fan motor	Model	FW60D	FW60B		FW60D	FW60T
		Output power (W)	60			60	
		Fan motor speed (rpm)	780/620	780/620/350		780/620	780/620/620
		Quantity	1			1	
	Fan type/piece		Axial flow fan/1				
	Fan diameter (mm)		φ 450				
	Defrost method		Auto defrost				
	Noise [dB(A)]		≤ 58			≤ 60	
	Outl ine	Width (mm)	950			950	
height (mm)		710			840		
depth (mm)		412			412		
Net weight (kg)		65			75		
Refrigerant		R22					
Refrigerant charge(kg)		2.2	2.05		2.7		
Connection pipe	Diameter	Liquid pipe(mm)	φ 9.52 3/8"				
		Gas pipe(mm)	φ 16 5/8"				
	Standard length(m)		5				
	Max. Distance (m)	height	5				
		length	10				

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

Cassette type series

Table 8-2

Model			KF-70TW/ B(7031T)	KFR-70TW/B (7041T)	KFR-70TW/B (7051T)	KF-120TW/ B(1231T)C	KFR-120TW/B (1241T)C	KFR-120TW/B (1251T)B				
Function			Cooling	Cooling	Heating	Cooling	Heating	Cooling	Heating	Heating		
Power supply			3Ph,380V~50Hz									
Capacity(W)	Kcal/h	6020	6020	6450	6020	6450	10320	10320	10750	10750		
	Btu/h	23891	23891	25598	23891	25598	40956	40956	42663	42663		
	W	7000	7000	7500	7000	7500	12000	12000	12500	12500		
Rated input (W)			2750	2750	2600	2750	2750	2600	4750	4400	4400	
Rated current (A)			4.8	4.8	4.6	4.8	4.8	4.6	8.0	7.5	7.5	
Air flow (m³/h)			1180					1860				
Electric heater power (W)						2000		2100				
Dehumidifying volume(L/h)			4.0					7.0				
Indoor unit	Model		KF-70T (7031T1)	KFR-70T1 (7041T1)	KFR-70T1 (7051T1)		KF-120T (1231T)C	KFR-120T (1241T)		KFR-120T (1251T)B		
	Motor fan speed(r/min)		600/550/500					610/560/510				
	Output power(W)		35W					50W			60W	
	Fan type/piece		Centrifugal fan-1									
	Diameter-length(mm)		ϕ 450mm/140mm					ϕ 502mm/160mm				
	Evaporator		Aluminum fin-copper tube									
	Row-fin distance(mm)		2/1.5					3/1.5			2/1.5	
	Working area(m²)		1980x171.5					1980x252				
	Swing motor		SM008									
	InputPower-speed		3W-2.5r/min									
	Control method		Remote control									
	Fuse(mA)		3.15A 0.2A									
	Workcapacitor(μF)		3.5					4.5				
	Noise(dB(A))		≤ 47					≤ 53				
	Outline	panel	Width (mm)	950								
			Height (mm)	950								
			Depth (mm)	60								
		Main body	Width (mm)	840								
			Depth (mm)	840								
			Height (mm)	240					320			
	Net weight(kg)		Panel	6.5								
			Main body	30					38			

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

Cassette type series

Table 8-2 Continue.

Model			KF-70TW/B (7031T1)	KFR-70TW/B (7041T1)	KFR-70TW/B (7051T1)	KF-120TW/B1 (1231T)C	KFR-120TW/B (1241T)B
Outdoor unit	Model		KF-70W/tB	KFR-70W/tB		KF-120W/tBC	KFR-120W/tB
	Input power W		2630	2630/2480		4600	4600/4250
	Current A		4.8	4.8/4.6		7.5	7.5/7.0
	Throttling method		Capillary				
	Compressor	type	Reciprocating				
		model	AVA5535EXG			AVA5561EXG	
		Starting method	IR				
		Overload protector	Inner				
		L.R.A A	32.8			62	
		Working temp. (°C)	43.3				
		Input power W	2842			5248	
		Condenser		Aluminum fin-copper tube			
	Row-fin dittance(mm)		2/2.0				
	Working area (mmxmm)		810x600			1219x600	
	Fan motor	Model	FW60D	FW60T		FW68D	FW68T
		Output power (W)	60			68	
		Fan motor speed (rpm)	780/620	780/620/620		840/640	840/740/640
		Quantity	1			2	
	Fan type/piece		Axial flow fan/1			Axial flow fan/2	
	Fan diameter (mm)		φ 450				
	Defrost method		Auto defrost				
	Noise [dB(A)]		≤ 60			≤ 63	
	Out line	Width (mm)	950			950	
		height (mm)	840			1250	
		depth (mm)	412			412	
	Net weight (kg)		75			112	
	Refrigerant		R22				
	Refrigerant charge(kg)		2.6	2.7		4.0	4.2
Connection pipe	Diameter	Liquid pipe(mm)	φ 9.52 3/8"			φ 12 1/2"	
		Gas pipe(mm)	φ 16 5/8"			φ 19 3/4"	
	Standard length(m)		5				
	Max. Distance	height	5				
		length	10				

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Cassette type series

Table 8-3

Model			KF-50TW/E1N	KFR-50TW/E1N		KF-70TW/B1N 12305	KFR-70TW/B1N 12305		
Function			Cooling	Cooling	Heating	Cooling	Cooling	Heating	
Power supply			1Ph,220-230V~50Hz						
Capacity(W)	Kcal/h		4300	4300	4644	6020	6020	6450	
	Btu/h		17065	17065	18430	23891	23891	25598	
	W		5000	5000	5400	7000	7000	7500	
Rated input (W)			1995	1995	1995	2750	2750	2750	
Rated current (A)			9.3	9.3	9.3	4.8	4.8	4.8	
Air flow (m³/h)			680			1180			
Dehumidifying volume(L/h)			2.9			4.0			
Indoor unit	Model		KF-50T1N	KFR-50T1N		KF-70T1N 12305	KFR-70T1N 12305		
	Motor fan speed(r/min)		620/570/520			600/550/500			
	Output power(W)		35W						
	Fan type/piece		Centrifugal fan-1						
	Diameter-length(mm)		φ 450mm/112mm			φ 450mm/140mm			
	Evaporator		Aluminum fin-copper tube						
	Row-fin distance(mm)		2/1.3			2/1.5			
	Working area(m²)		1980x114.3			1980x171.5			
	Swing motor		SM008						
	Input power-speed		3W-2.5r/min						
	Control method		Remote control						
	Fuse(mA)		3.15A 0.2A						
	Work capacitor(μF)		3.5			3.5			
	Noise(dB(A))		≤ 46			≤ 47			
	Outline	panel	Width (mm)	950					
			Height (mm)	60					
			Depth (mm)	950					
		Main body	Width (mm)	840					
			Height (mm)	190			240		
			Depth (mm)	840					
	Net weight(kg)		Panel	6.5					
			Main body	25			30		

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

Cassette type series

Table 8-3 Continue

Model			KF-50TW/E1N	KFR-50TW/E1N	KF-70TW/B1N 12305	KFR-70TW/B1N 12305	
Outdoor unit	Model		KF-50W/tE1N	KFR-50W/tE1N	KF-70W/tB1N 12305	KFR-70W/tB1N 12305	
	Input power W		1880	1880/1880	2610	2610/2480	
	Current A		8.8	8.8	11.85	11.85/11.3	
	Throttling method		Capillary				
	Compressor	Rotary	Rotary			Rotary	
		model	C-2RN170H5U			C-RN220H5B	
		Starting method	PSC			CSR	
		Overload protector	inner				
		L.R.A A	49			82	
		Working temp. (℃)	120			143.3	
		Input power W	1990			2600	
	Condenser		Aluminum fin-copper tube				
	Row-fin diatance(mm)		2/1.8			2/2.0	
	Working area (mm × mm)		670x600			810x600	
	Fan motor	Model	FW60D	FW60B		FW60D	FW60T
		Output power (W)	60			60	
		Fan motor speed (rpm)	780/620	780/620/350		780/620	780/620/620
		Quantity	1			1	
	Fan type/piece		Axial flow fan/1				
	Fan diameter (mm)		φ 450				
	Defrost method		Auto defrost				
	Noise [dB(A)]		≤ 58			≤ 60	
	Outl ine	Width (mm)	950			950	
		height (mm)	710			840	
		depth (mm)	412				
	Net weight (kg)		65			75	
	Refrigerant		R407C				
	Refrigerant charge(kg)		2.2	2.2		2.8	
Connection pipe	Diameter	Liquid pipe(mm)	φ 9.52 3/8"				
		Gas pipe(mm)	φ 16 5/8"				
	Standard length(m)		5				
	Max.Distance	height	5				
		length	10				

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

Cassette type series

Table 8-4

Model			KF-70TW/BN 34005	KFR-70TW/BN 34005		KF-120TW/BN 34005	KFR-120TW/BN 34005		
Function			Cooling	Cooling	Heating	Cooling	Cooling	Heating	
Power supply			3Ph,380~400V~50Hz						
Capacity(W)	Kcal/h		6020	6020	6450	10320	10320	10750	
	Btu/h		23891	23891	25598	40956	40956	42663	
	W		7000	7000	7500	12000	12000	12500	
Rated input (W)			2750	2750	2600	2600	4750	4400	
Rated current (A)			4.8	4.8	4.6	4.6	8.0	7.5	
Air flow (m³/h)			1180			1860			
Dehumidifying volume(L/h)			4.0			7.0			
Indoor unit	Model		KF-70T1 34005	KFR-70T 34005		KF-120T 34005	KFR-120T 34005		
	Motor fan speed(r/min)		600/550/500			610/560/510			
	Output power(W)		35W			50W			
	Fan type/piece		Centrifugal fan-1			Centrifugal fan-2			
	Diameter-length(mm)		ϕ 450mm/112mm			ϕ 502mm/160mm			
	Evaporator		Aluminum fin-copper tube						
	Row-fin distance(mm)		2/1.5			3/1.5			
	Working area(m²)		1980x171.5			1980x252			
	Swing motor		SM008						
	Input power-speed		3W-2.5r/min						
	Control method		Remote control						
	Fuse(mA)		3.15A 0.2A						
	Work capacitor(μF)		3.5			3.5			
	Noise(dB(A))		≤ 47			≤ 53			
	Outline	panel	Width (mm)	950					
			Height (mm)	950					
			Depth (mm)	60					
		Main body	Width (mm)	840					
			Depth (mm)	840					
			Height (mm)	240			320		
	Net weight(kg)		Panel	6.5					
			Main body	30			38		

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

Cassette type series

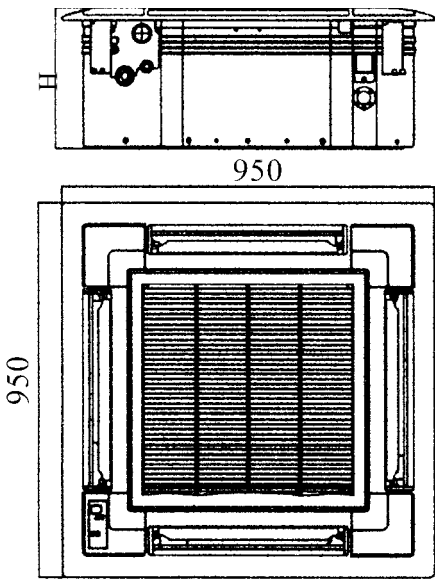
Table 8-4 Continue

Model		KF-70TW/EN 34005	KFR-70TW/BN 34005	KF-120TW/B 34005	KFR-120TW/B 34005
Outdoor unit	Model	KF-70W/tBN 34005	KFR-70W/tBN 34005	KF-120W/tbn 34005	KFR-120W/tBN 34005
	Input power W	2630	2630/2480	4600	4600/4250
	Current A	4.8	4.8/4.6	7.5	7.5/7.0
	Throttling method	Capillary			
	Compressor	type	Rotary		Scrou
		model	C-RN243H8A		C-SBN373H8A
		Starting method	IR		
		Overload protector	Inner		
		L.R.A A	32.8		62
		Working temp. (°C)	143.3		
		Input power W	2842		5248
	Condenser		Aluminum fin-copper tube		
	Row-fin distance(mm)		2/2.0		
	Working area (mm × mm)		810x600		1219x600
	Fan motor	Model	FW60D	FW60T	FW68D FW68A
		Output power (W)	60		68
		Fan motor speed (rpm)	780/620	780/620/620	840/640 840/350/350
		Quantity	1		2
	Fan type/piece		Axial flow fan/1		Axial flow fan/2
	Fan diameter (mm)		φ 450		
	Defrost method		Auto defrost		
	Noise [dB(A)]		≤ 60		≤ 63
	Outl ine	Width (mm)	950		950
		height (mm)	840		1250
		depth (mm)	412		412
	Net weight (kg)		75		112
	Refrigerant		R407C		
	Refrigerant charge(kg)		2.6	2.7	3.8 3.8
Connection pipe	Diameter	Liquid pipe(mm)	φ 9.52 3/8"		φ 12 1/2"
		Gas pipe(mm)	φ 16 5/8"		φ 19 3/4"
	Standard length(m)		5		
	Max.Distance	height	5		
		length	10		

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

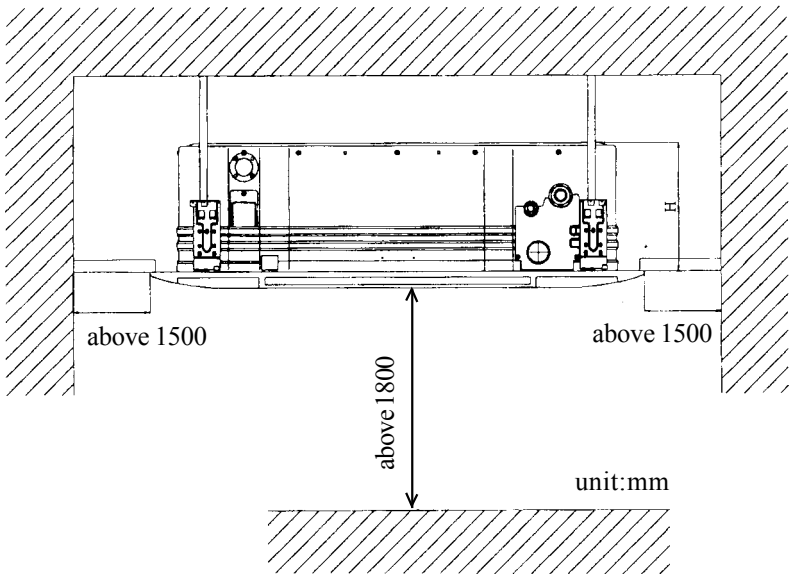
8.3 Outlines and dimensions of indoor unit

Model	H
50	220
70	270
120	355



unit:mm

Model	H
50	210
70	260
120	340



unit:mm

figure 8-3

8.4 Outlines and dimensions of outdoor unit

For 50,70 model

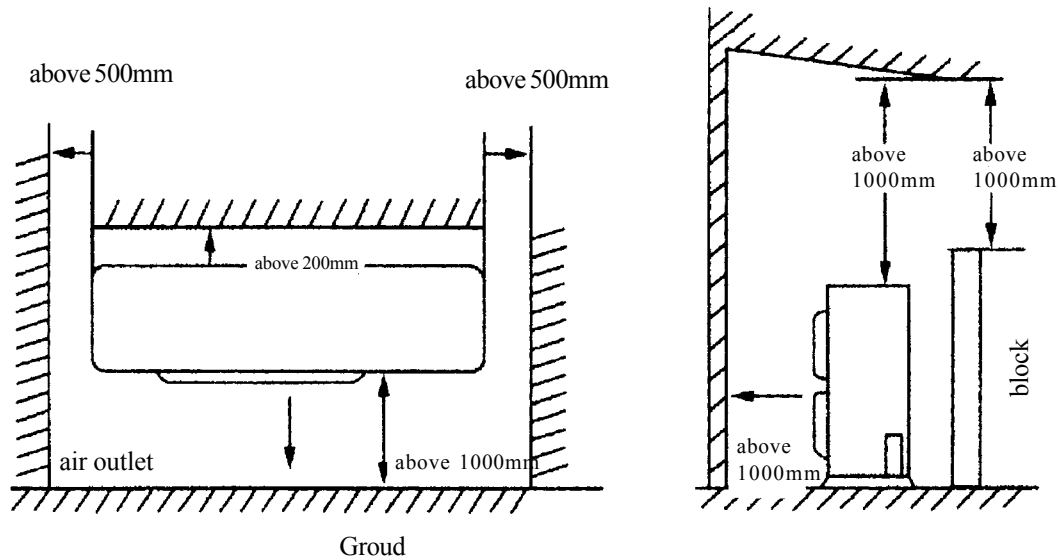
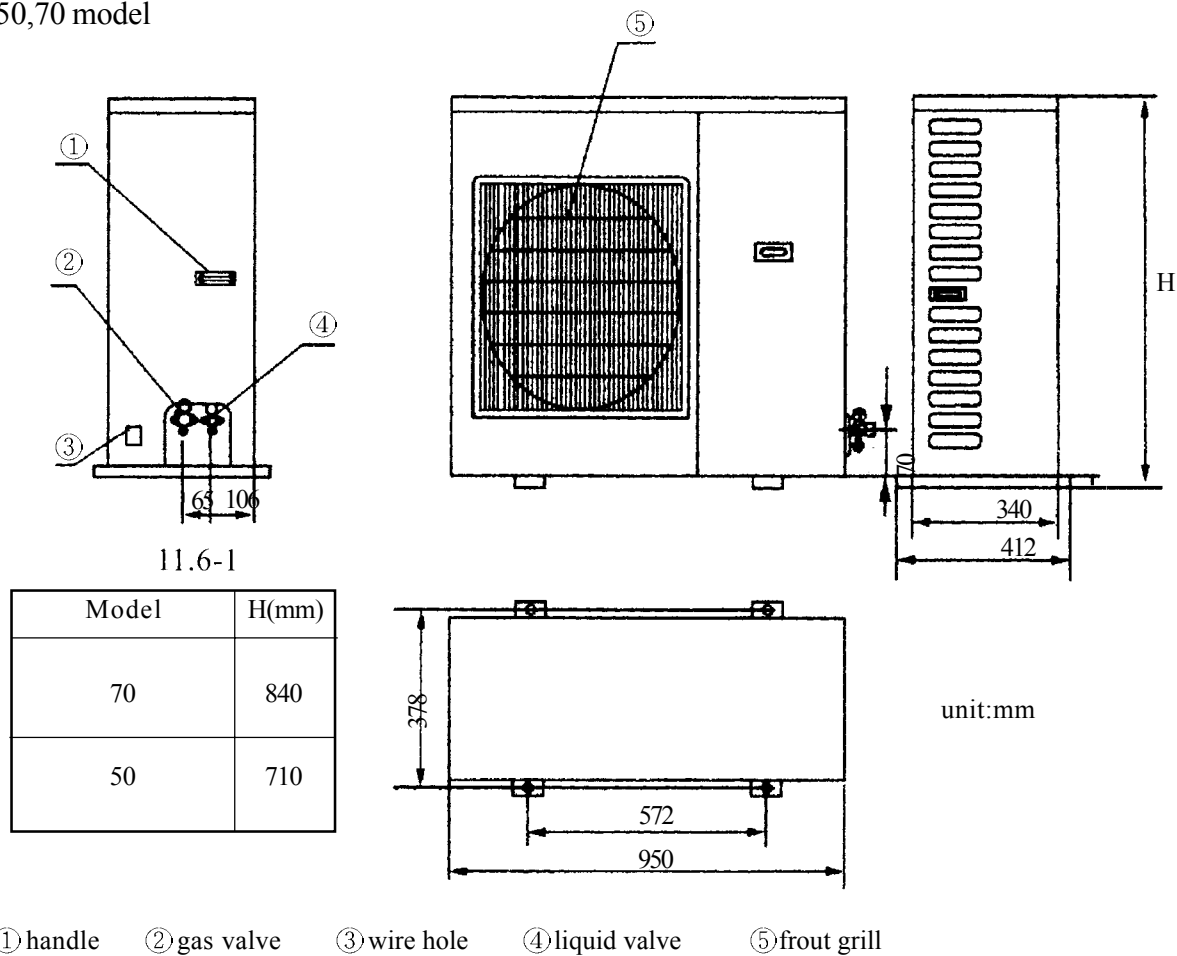
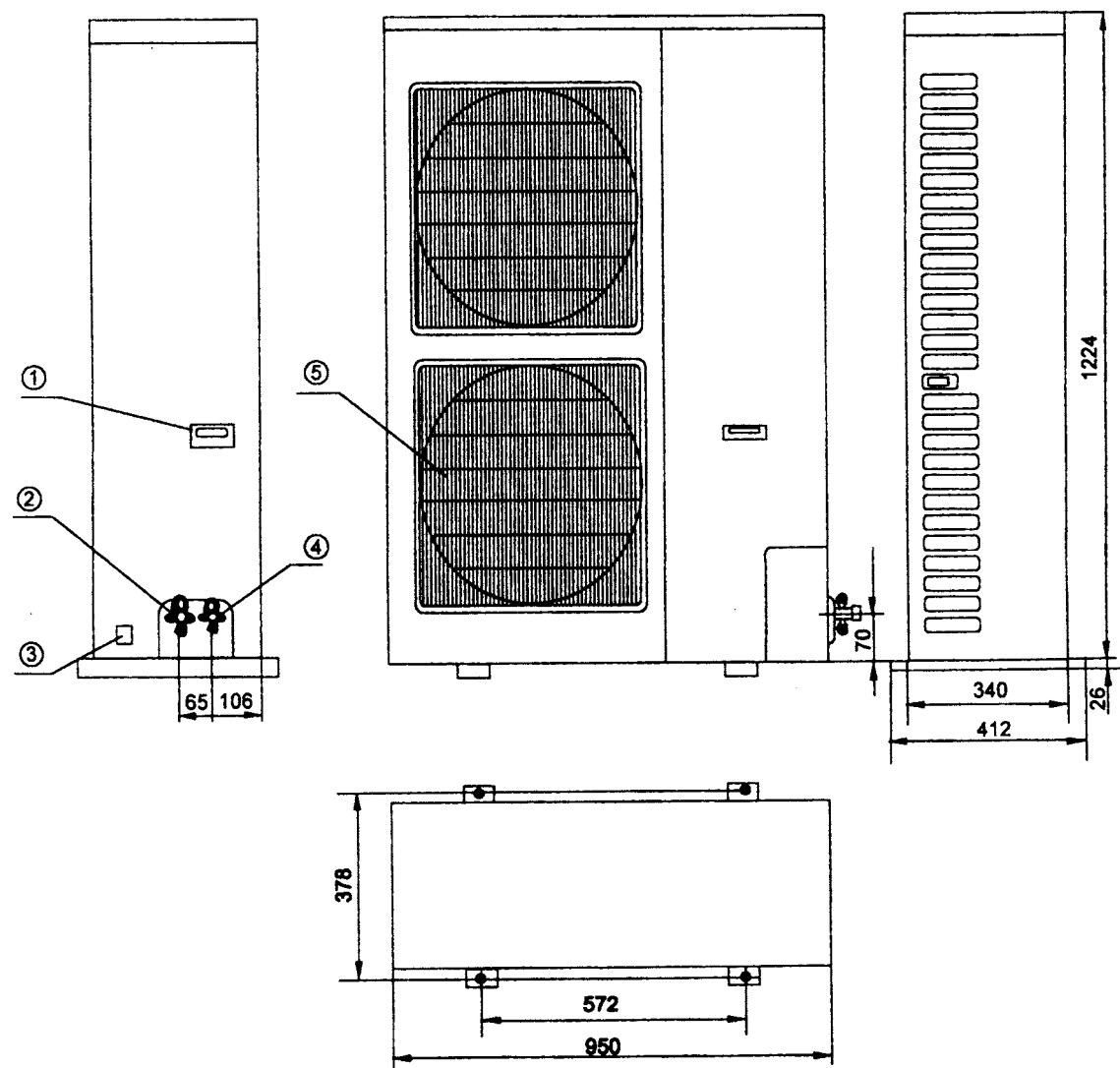


figure 8-4

Cassette type series

For 120 model



- ① handle ② gas valve ③ wire hole ④ liquid valve ⑤ front grill

figure 8-5

8.5 Explosive view of indoor panel

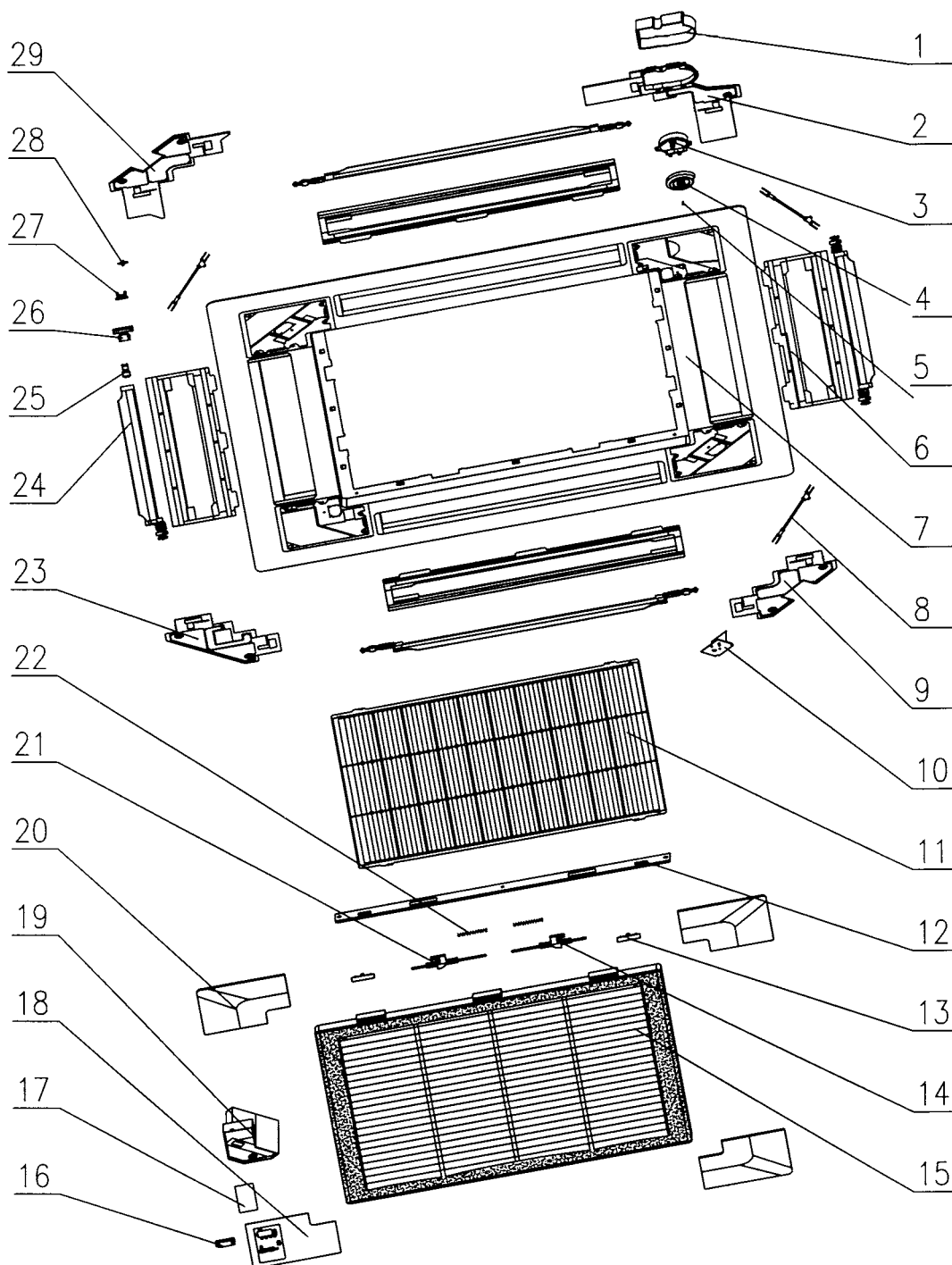


figure 8-6

Cassette type series

8.6 Spare parts list of indoor unit

Table 8-5

No	Description		Part No	Qty
			T01	
1	Motor Cover	电机盖	22242701	1
2	Inner Conner Cover IV	角内盖 IV	02242705	1
3	Synchronous Motor	同步电机 SM008	15212701	1
4	Motor Holder	电机座	26152702	1
5	Pin	销 3X4	70410003	1
6	Air Outlet Foam	出风口泡沫	12312701	4
7	Front Panel	面板	20002701	1
8	Connecting Lever	连杆	10582701	3
9	Inner Conner Cover III	角内盖 III	22242704	1
10	Hanging Ring	吊环件	70810101	4
11	Filter	过滤网	11122701	1
12	Fixing Plate of Net Hook	网扣固定板	01722721	1
13	Net Hook	网扣	26252703	2
14	Right Clamp	右卡扣	26252702	1
15	Air Inlet Grille	进风格栅	22412702	1
16	Receiving Window	接收窗	22432702	1
17	Receiver PCB	接收板	30002603	1
18	Outer Conner Cover II	角外盖 II	22242707	1
19	Cover of Receiving Window	接收窗盖	22242708	1
20	Outer Conner Cover I	角外盖 I	22242706	3
21	Left Clamp	左卡扣	26252701	1
22	Spring	弹簧	73010011	2
23	Inner Conner Cover II	角内盖 II	22242703	1
24	Air Guider Assy	导风板部件	75112721	4
25	Crank	活动轴	10542701	8
26	Positioning Holder	定位座	26152701	8
27	Universal Joint	万向头	10562702	8
28	Gimbal	万向节	10562701	8
29	inner conner cover I	角内盖 I	22242702	1

The data are subject to change without notice.

8.7 Explosive view of outdoor unit

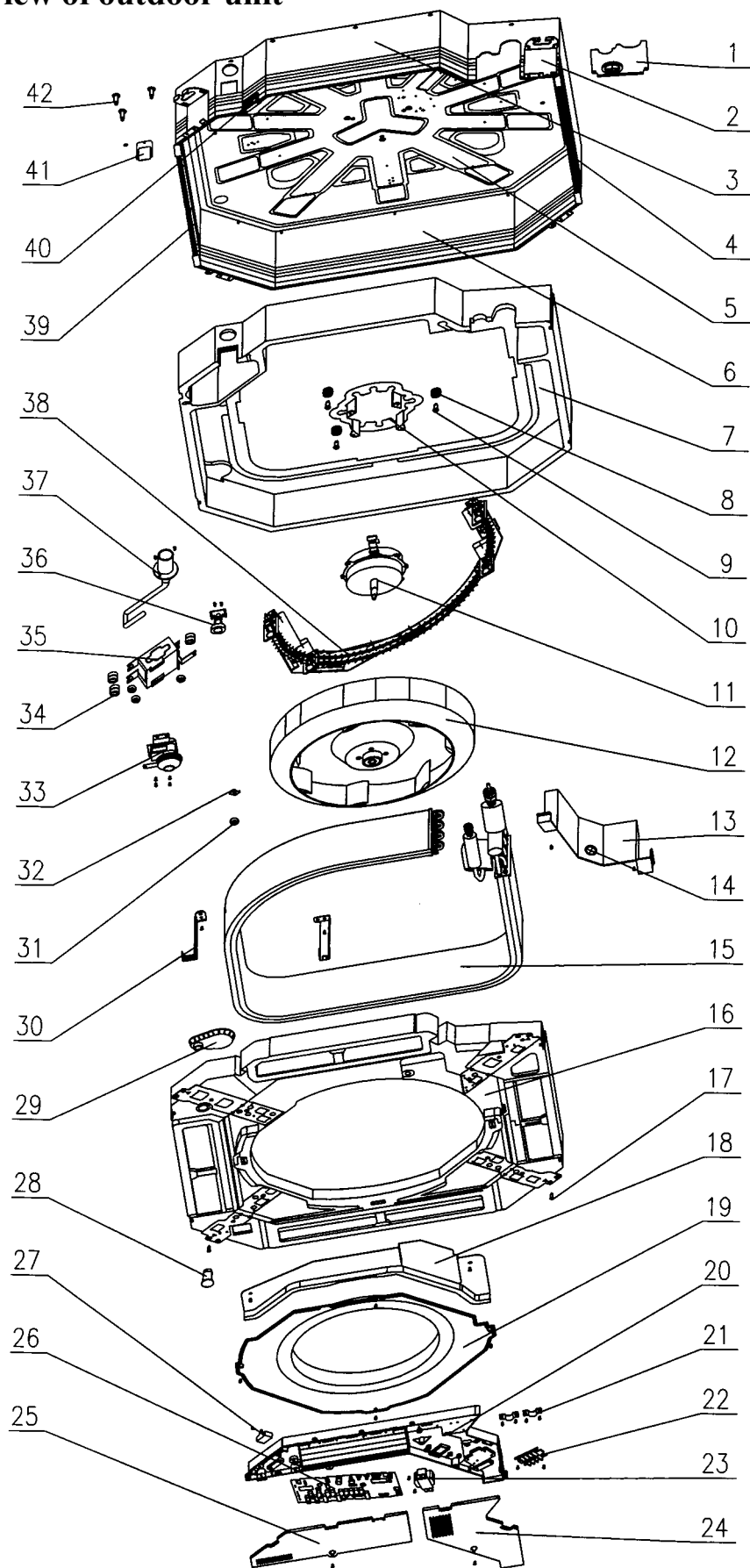


figure 8-7

Cassette type series

8.8 Spare parts list of indoor unit

Table 8-6

No	Description		Part No						Qty
			KF- 50T/E1N	KFR- 50T/E1N	KF- 70T/B1N	KFR- 70T/B1N	KF- 120T/BN	KFR- 120T/BN	
1	Tube-exit Plate	出管口板部件	01382717	01382717	01382715	01382715	01382715	01382715	1
2	Body Fixing Plate	主体安装板	01332701	01332701	01332701	01332701	01332701	01332701	1
3	Front Side Plate	前侧板部件	01302717	01302717	\	\	\	\	1
3	Front Side Plate	前侧板部件	\	\	01302713	01302713	\	\	1
3	Front Side Plate	前侧板部件	\	\	\	\	01302718	01302718	1
4	Left Side Plate	左侧板部件	01302740	01302740	\	\	\	\	1
4	Left Side Plate	左侧板部件	\	\	01302715	01302715	\	\	1
4	Left Side Plate	左侧板部件	\	\	\	\	01302711	01302711	1
5	Busing plate	底板	01222702	01222702	01222702	01222702	01222702	01222702	1
6	Rear Side Plate	后侧板部件	01302719	01302719	\	\	\	\	1
6	Rear Side Plate	后侧板部件	\	\	01302714	01302714	\	\	1
6	Rear Side Plate	后侧板部件	\	\	\	\	01302709	01302709	1
7	Bottom Foam	底板泡沫部件	52012720	52012720	52012722	52012722	52012721	52012721	1
8	Motor Gasket	电机橡胶垫	76712711	76712711	76712711	76712711	76712711	76712711	1
9	Bolt	螺栓	70212711	70212711	70212711	70212711	70212711	70212711	1
10	Motor Support	电机固定架	01702701	01702701	01702701	01702701	01702701	01702701	1
11	Motor FN35D	电机(FN35D)	15012705	15012705	\	\	\	\	1
11	Motor FN35D	电机(FN35B)	\	\	15012703	15012703	\	\	1
11	Motor FN50T	电机(FN50T)	\	\	\	\	15012710	15012710	1
11	Motor FN60T	电机(FN60T)	\	\	\	\	\	\	1
12	Centifugal Fan	离心风叶	10312721	10312721	\	\	\	\	1
12	Centifugal Fan	离心风叶	\	\	10312705	10312705	\	\	1
12	Centifugal Fan	离心风叶	\	\	\	\	10312741	10312741	1
13	Evap Connection	蒸发器连接板部件	01072004	01072004	01074042	01074042	01072730	01072732	1
14	Cable-cross Loop	过线胶圈	76512701	76512701	76512701	76512701	76512701	76512701	1
15	Evaporator Assy	蒸发器部件	01002720	01002720	\	\	\	\	1
15	Evaporator Assy	蒸发器部件	\	\	01002721	01002721	\	\	1
15	Evaporator Assy	蒸发器部件	\	\	\	\	01002704	01002704	1
16	Water Tray	接水盘部件	20182701	20182701	20182701	20182701	20182701	20182701	1
17	Rubber Plug	橡胶塞	76712701	76712701	76712701	76712701	76712701	76712701	1
18	Electric Plate	电器盒底板	01412721	01412721	01412721	01412721	01412721	01412721	1
19	Flow-guide Loop	导流圈	10372701	10372701	10372701	10372701	10372701	10372701	1
20	Electric Box	电器盒	20102701	20102701	20102701	20102701	20102701	20102701	1
21	Insulated Clamp	绝缘线夹 B	71010082	71010082	71010082	71010082	71010082	71010082	3
22	Terminal Board	接线板 T360B	42011222	42011222	42011222	42011222	42011222	42011222	1
23	Transformer	电源变压器(SC28B1)	43110170	43110170	43110170	43110170	43110170	43110170	1
24	Electric Box Cover I	电器盒盖 I	20102702	20102702	20102702	20102702	20102702	20102702	1
25	Electric Box Cover II	电器盒盖 II	20102703	20102703	20102703	20102703	20102703	20102703	1
26	PCB 6051	控制器 6051	30026629	\	30026629	\	30026629	\	1
26	PCB 6053	控制器 6053	\	30026620	\	30026620	\	30026620	1
27	Capacitor 3.5uF	电容 3.5uF	33010010	33010010	33010010	33010010	\	\	1
27	Capacitor 4.5uF	电容 4.5uF	\	\	\	\	33010012	33010012	1
28	Rubber Plug	橡胶塞	76712701	76712701	76712701	76712701	76712701	76712701	1
29	Drainage Plastic	排水塑件	06122701	06122701	06122701	06122701	06122701	06122701	1
30	Evap Support	蒸发器固定架部件	01072704	01072704	01072703	01072703	01072705	01072705	2
31	Nut with Washer	带垫螺母 M6	70310012	70310012	70310012	70310012	70310012	70310012	1
32	Fixer	风叶固定件	10312701	10312701	10312701	10312701	10312701	10312701	1
33	Water Pump	水泵	43130318	43130318	43130318	43130318	43130318	43130318	1
34	Pump Gasket	水泵橡胶垫	76712702	76712702	76712702	76712702	76712702	76712702	3
35	Pump Support	水泵安装架	01332001	01332001	01332702	01332702	01332721	01332721	1

Cassette type series

Table 8-6 continue

No	Description		Part No						Qty
			KF- 50T/E1N	KFR- 50T/E1N	KF- 70T/B1N	KFR- 70T/B1N	KF- 120T/B1N	KFR- 120T/B1N	
36	Water Level Switch	液位开关	45010201	45010201	45010201	45010201	45010201	45010201	1
37	Pump Drainpipe	水泵排水管(2P)	05232721	05232721	\	\	\	\	1
37	Pump Drainpipe	水泵排水管	\	\	05230026	05230026	05230026	05230026	1
38	Auxiliary Heater	辅助电加热部件	\	\	\	\	\	\	1
39	Right Side Plate	右侧板部件	01302710	01302710	\	\	\	\	1
39	Right Side Plate	右侧板部件	\	\	01302716	01302716	\	\	1
39	Right Side Plate	右侧板部件	\	\	\	\	01302712	01302712	1
40	Cable-cross Block	过线胶块	76512702	76512702	76512702	76512702	76512702	76512702	1
41	Pump Cover Board	水泵备用盖板部件	01252712	01252712	01252713	01252713	01252713	01252713	1
42	Bolt	螺栓	70212701	70212701	70212701	70212701	70212701	70212701	3
43	Remote Controller	英文遥控器	30512505	30512505	30512505	30512505	30512505	30512505	1

The data are subject to change without notice.

Cassette type series

Table 8-7

No	Description		Part No						Qty
			KF- 50T/E1	KFR- 50T/E1	KF- 70T/B1	KFR- 70T/B1	KF- 120T/B	KFR- 120T/B	
1	Tube-exit Plate	出管口板部件	01382717	01382717	01382715	01382715	01382715	01382715	1
2	Body Fixing Plate	主体安装板	01332701	01332701	01332701	01332701	01332701	01332701	1
3	Front Side Plate	前侧板部件	01302717	01302717	\	\	\	\	1
3	Front Side Plate	前侧板部件	\	\	01302713	01302713	\	\	1
3	Front Side Plate	前侧板部件	\	\	\	\	01302718	01302718	1
4	Left Side Plate	左侧板部件	01302740	01302740	\	\	\	\	1
4	Left Side Plate	左侧板部件	\	\	01302715	01302715	\	\	1
4	Left Side Plate	左侧板部件	\	\	\	\	01302711	01302711	1
5	Busing plate	底板	01222702	01222702	01222702	01222702	01222702	01222702	1
6	Rear Side Plate	后侧板部件	01302719	01302719	\	\	\	\	1
6	Rear Side Plate	后侧板部件	\	\	01302714	01302714	\	\	1
6	Rear Side Plate	后侧板部件	\	\	\	\	01302709	01302709	1
7	Bottom Foam	底板泡沫部件	52012720	52012720	52012722	52012722	52012721	52012721	1
8	Motor Gasket	电机橡胶垫	76712711	76712711	76712711	76712711	76712711	76712711	1
9	Bolt	螺栓	70212711	70212711	70212711	70212711	70212711	70212711	1
10	Motor Support	电机固定架	01702701	01702701	01702701	01702701	01702701	01702701	1
11	Motor FN35D	电机(FN35D)	15012705	15012705	\	\	\	\	1
11	Motor FN35D	电机(FN35B)	\	\	15012703	15012703	\	\	1
11	Motor FN50T	电机(FN50T)	\	\	\	\	15012710	15012710	1
11	Motor FN60T	电机(FN60T)	\	\	\	\	\	15012706	1
12	Centifugal Fan	离心风叶	10312721	10312721	\	\	\	\	1
12	Centifugal Fan	离心风叶	\	\	10312705	10312705	\	\	1
12	Centifugal Fan	离心风叶	\	\	\	\	10312741	10312741	1
13	Evap Connection	蒸发器连接板部件	01072004	01072004	01074042	01074042	01072730	01072732	1
14	Cable-cross Loop	过线胶圈	76512701	76512701	76512701	76512701	76512701	76512701	1
15	Evaporator Assy	蒸发器部件	01002713	01002713	\	\	\	\	1
15	Evaporator Assy	蒸发器部件	\	\	01002716	01002716	\	\	1
15	Evaporator Assy	蒸发器部件	\	\	\	\	01002704	01002704	1
16	Water Tray	接水盘部件	20182701	20182701	20182701	20182701	20182701	20182701	1
17	Screw	带垫自攻螺丝钉	70140032	70140032	70140032	70140032	70140032	70140032	4
18	Electric Plate	电器盒底板	01412721	01412721	01412721	01412721	01412721	01412721	1
19	Flow-guide Loop	导流圈	10372701	10372701	10372701	10372701	10372701	10372701	1
20	Electric Box	电器盒	20102701	20102701	20102701	20102701	20102701	20102701	1
21	Insulated Clamp	绝缘线夹 B	71010082	71010082	71010082	71010082	71010082	71010082	3
22	Terminal Board	接线板 T360B1	42010171	42010171	42010171	42010171	42010171	\	1
23	Transformer	电源变压器(SC28B1)	43110170	43110170	43110170	43110170	43110170	43110170	1
24	Electric Box Cover I	电器盒盖 I	20102702	20102702	20102702	20102702	20102702	20102702	1
25	Electric Box Cover II	电器盒盖 II	20102703	20102703	20102703	20102703	20102703	20102703	1
26	PCB 6051	控制器 6051	30026629	\	30026629	\	30026629	\	1
26	PCB 6053	控制器 6053	\	30026620	\	30026620	\	30026620	1
27	Capacitor 3.5uF	电容 3.5uF	33010010	33010010	33010010	33010010	\	\	1
27	Capacitor 4.5uF	电容 4.5uF	\	\	\	\	33010012	33010012	1
28	Rubber Plug	橡胶塞	76712701	76712701	76712701	76712701	76712701	76712701	1
29	Drainage Plastic	排水塑件	06122701	06122701	06122701	06122701	06122701	06122701	1
30	Evaporator Support	蒸发器固定架部件	01072704	01072704	01072703	01072703	01072705	01072707	2
31	Nut with Washer	带垫螺母 M6	70310012	70310012	70310012	70310012	70310012	70310012	1
32	Fixer	风叶固定件	10312701	10312701	10312701	10312701	10312701	10312701	1
33	Water Pump	水泵(PJV-1415)	43130318	43130318	43130318	43130318	43130318	43130318	1
34	Pump Gasket	水泵橡胶垫	76712702	76712702	76712702	76712702	76712702	76712702	3
35	Pump Support	水泵安装架	01332001	01332001	01332702	01332702	01332721	01332721	1

Cassette type series

Table 8-7 continue

No	Description		Part No						Qty
			KF- 50T/E1	KFR- 50T/E1	KF- 70T/B1	KFR- 70T/B1	KF- 120T/B	KFR- 120T/B	
36	Water Level Switch	液位开关	45010201	45010201	45010201	45010201	45010201	45010201	1
37	Pump Drainpipe	水泵排水管(2P)	05232721	05232721	\	\	\	\	1
37	Pump Drainpipe	水泵排水管	\	\	05230026	05230026	05230026	05230026	1
38	Auxiliary Heater	辅助电加热部件	\	32002703	\	32002701	\	32007202	1
39	Right Side Plate	右侧板部件	01302710	01302710	\	\	\	\	1
39	Right Side Plate	右侧板部件	\	\	01302716	01302716	\	\	1
39	Right Side Plate	右侧板部件	\	\	\	\	01302712	01302712	1
40	Cable-cross Block	过线胶块	76512702	76512702	76512702	76512702	76512702	76512702	1
41	Pump Cover Board	水泵备用盖板部件	01252712	01252712	01252713	01252713	01252713	01252713	1
42	Bolt	螺栓	70212701	70212701	70212701	70212701	70212701	70212701	3
43	Remote Controller	英文遥控器	30512505	30512505	30512505	30512505	30512505	30512505	1

The data are subject to change without notice.

8.9.1 Explosive view of outdoor unit (for 50 model)

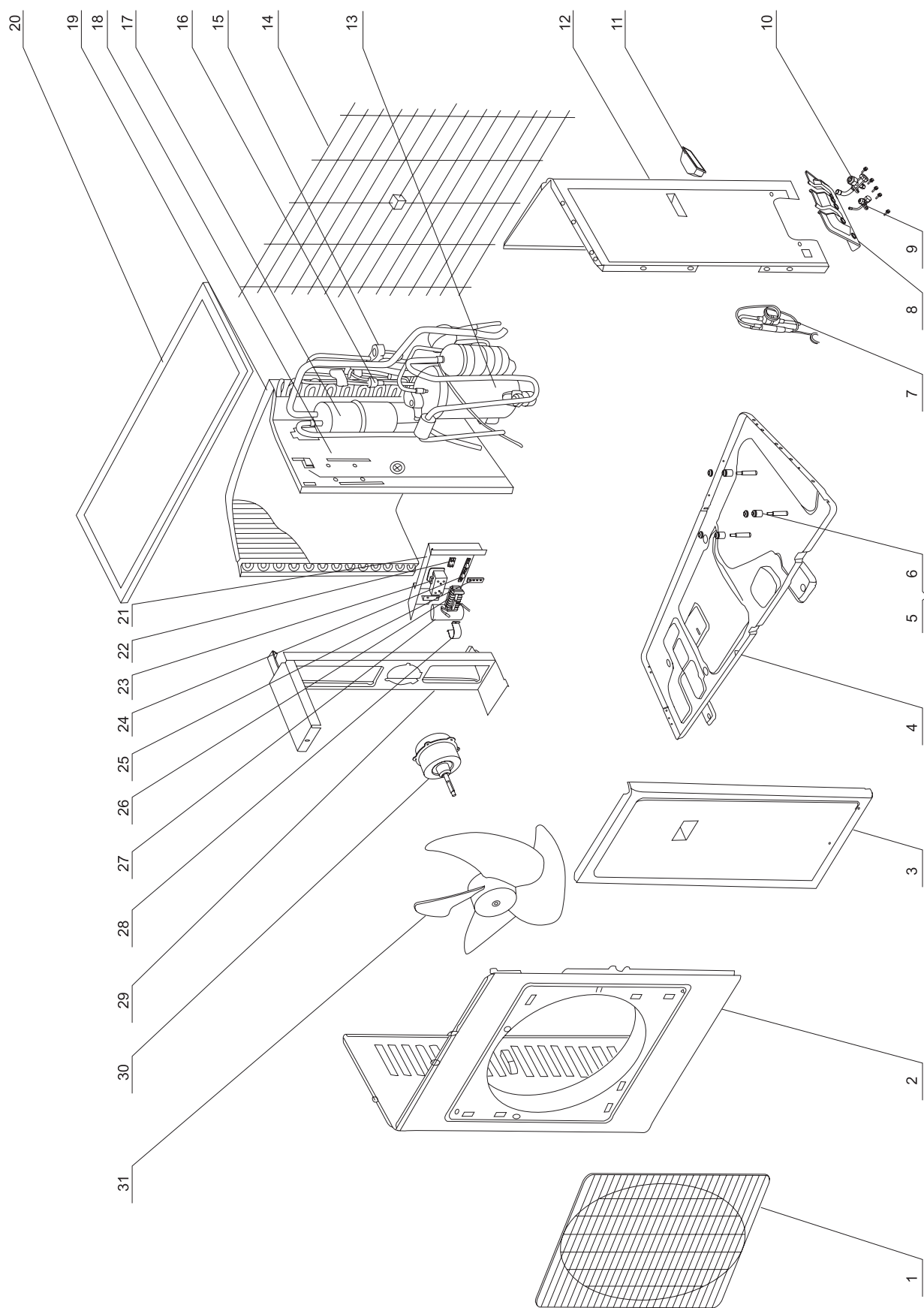


figure 8-8

Cassette type series

8.9.2 Spare parts list of outdoor unit (for 50 model)

Table 8-8

No	Description		Part No				Qty
			KF- 50W/tE1	KFR- 50W/tE1	KF- 50W/tE1N	KFR- 50W/tE1N	
1	Front Grill	面罩	22265251	22265251	22265251	22265251	1
2	Front Plate	外罩	01433028	01433028	01433028	01433028	1
3	Front Side Plate	前侧板	01303023	01303023	01303023	01303023	1
4	Metal Base	底盘组件	01205031	01205011	01205011	01205011	1
5	Base Support	支脚	01795251	01795251	01795251	01795251	2
6	Nut with Washer M8	带垫螺母 M8	70310014	70310014	70310014	70310014	3
7	Capillary Assy	毛细管组件	03003706	03003706	03003706	03003706	1
8	Valve Support	阀门支架	01715256	01715256	01715256	01715256	1
9	Liquid Valve Assy	小阀门组件	07103702	07103702			1
9	Liquid Valve Assy	小阀门组件			07105002	07105002	1
10	Gas Valve Assy	大阀门组件	07105251	07105251			1
10	Gas Valve Assy	大阀门组件			07105007	07105007	1
11	Handle	把手	26235251	26235251	26235252	26235252	1
12	Rear Side Plate	后侧板	01305002	01305002	01305002	01305002	1
13	Compressor SHW33TC4-U	压缩机	00100131	00100131	\	\	1
13	Compressor C2RN170H5U	压缩机	\	\	00100075	00100075	1
14	Rear grill Assy	网罩	01473025	01473025	01473025	01473025	1
15	4 way Valve	四通阀组件	\	03023066	\	03023066	1
16	Silencer	消音器	07245007	07245007	07245007	07245007	1
17	Gas-liquid Separator	汽液分离器部件	07225001	07225001	07225001	07225001	1
18	Isolation Sheet Assy	中间隔板组件	01233022	01233022	01233022	01233022	1
19	Condenser Assy	冷凝器部件	01750001	01750001			1
	Condenser Assy	冷凝器部件			0 1103704	0 1103703	1
20	Top Cover Assy	顶盖	01255262	01255262	01255262	01255262	1
21	Electric Box	电器盒组件	01405001	01405001	01405001	01405001	1
22	Capacitor 3uF/450V	电容	33010021	33010021	33010021	33010021	1
23	Contacto	双极交流接触器	44010221	44010221	44010222	44010222	1
24	Wire Clamp	电线夹	71010102	71010102	71010102	71010102	2
25	Velometer	调速器 TS60	30024413	30024413	30024413	30024413	1
26	Terminal Board 2-8	2-8 接线板	42011103	42011103	42011103	42011103	1
27	Capacitor 50uF/450V	电容	33000001	33000001	\	\	1
	Capacitor 50uF/450V	电容	\	\	33000022	33000022	1
28	Capacitor Clamp	电容夹	02143442	02143442	02143442	02143442	1
29	Motor Support	电机支架组件	01703025	01703025	01703025	01703025	1
30	Motor FW60D	电机FW60B	15013701	15013701	\	\	1
	Motor FW60T	电机FW60T	15013703	15013703	\	\	1
31	Axial Flow Fan	轴流风叶	10335253	10335253	10335253	10335253	1

The data are subject to change without notice.

8.10.1 Explosive view for outdoor unit (For 70 model)

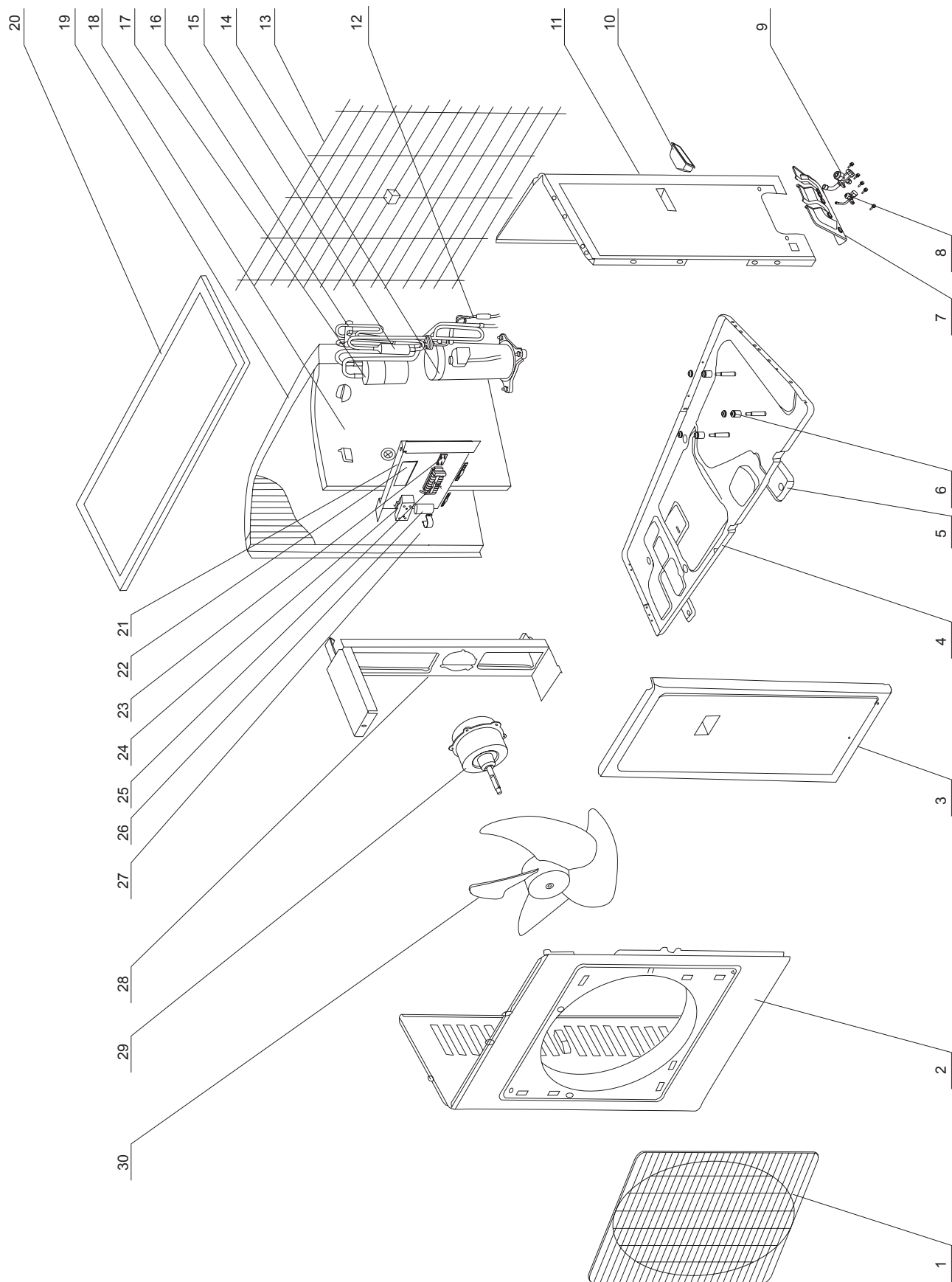


figure 8-9

Cassette type series

8.10.2 Spare parts list of outdoor unit (For 70 model)

Table 8-9

No	Description		Part No				Qty
			KF- 70W/tB1	KFR- 70W/tB1	KF- 70W/tB1N	KFR- 70W/tB1N	
1	Front Grill	面罩	22265251	22265251	22265251	22265251	1
2	Front Plate	外罩	01435251	01435251	01435251	01435251	1
3	Front Side Plate	前侧板	01305251	01305251	01305251	01305251	1
4	Metal Base	底盘组件	01205011	01205011	01205011	01205011	1
5	Base Support	支脚	01795251	01795251	01795251	01795251	2
6	Nut with Washer M8	带垫螺母 M8	70310014	70310014	70310014	70310014	3
7	Valve Support	阀门支架	01715256	01715256	01715256	01715256	1
8	Liquid Valve Assy	小阀门组件	07103702	07103702			1
8	Liquid Valve Assy	小阀门组件			07105002	07105002	1
9	Gas Valve Assy	大阀门组件	07105251	07105251			1
9	Gas Valve Assy	大阀门组件			07105007	07105007	1
10	Handle	把手	26235252	26235252	26235252	26235252	1
11	Rear Side Plate	后侧板	01305261	01305261	01305261	01305261	1
12	Capillary Assy	毛细管组件	03003710	03003710	03003701	03003701	1
13	Rear grill Assy	网罩	01475251	01475251	01475251	01475251	1
14	Compressor	压缩机 AVA5535EXG	00100503	00100503	\	\	1
14	Compressor	压缩机 C-RN220H5B	\	\	00100063	00100063	1
15	Silencer	消音器	07245201	07245201	07245005	07245005	1
16	4 way Valve	四通阀组件	03025202	03025202	03025202	03025202	1
17	Gas-liquid Separator	汽液分离器部件	07255251	07255251	07255251	07255251	1
18	Isolation Sheet Assy	中间隔板组件	01235252	01235252	01235252	01235252	1
19	Condenser Assy	冷凝器部件	01105031	01105031			1
	Condenser Assy	冷凝器部件			0 1103707	0 1103707	1
20	Top Cover Assy	顶盖	01255261	01255261	01255261	01255261	1
21	Electric Box	电器盒组件	1405106	1405106	1405106	1405106	1
22	Velometer	调速器 TS60	30024413	30024413	30024413	30024413	1
23	Capacitor 3uF/450V	电容	33010021	33010021	33010021	33010021	1
24	AC Contactor	双极交流接触器	44010221	44010221	44010222	44010222	1
25	Terminal Board 2-8	2-8 接线板	42011103	42011103	42011103	42011103	1
26	Capacitor 40uF	电容 CBB65	33000022	33000022	33000022	33000022	1
27	Capacitor Clamp	电容夹	02143441	02143441	02143441	02143441	1
28	Motor Support	电机支架组件	01705251	01705251	01705251	01705251	1
29	Motor FW60D	电机 FW60D	\	\	15013702	15013702	1
29	Motor FW60T	电机 FW60T	15013702	15013703	\	15013703	1
30	Axial Flow Fan	轴流风叶	10335255	10335255	10335255	10335255	1

The data are subject to change without notice.

8.11.1 Explosive view of outdoor unit (For 120 model)

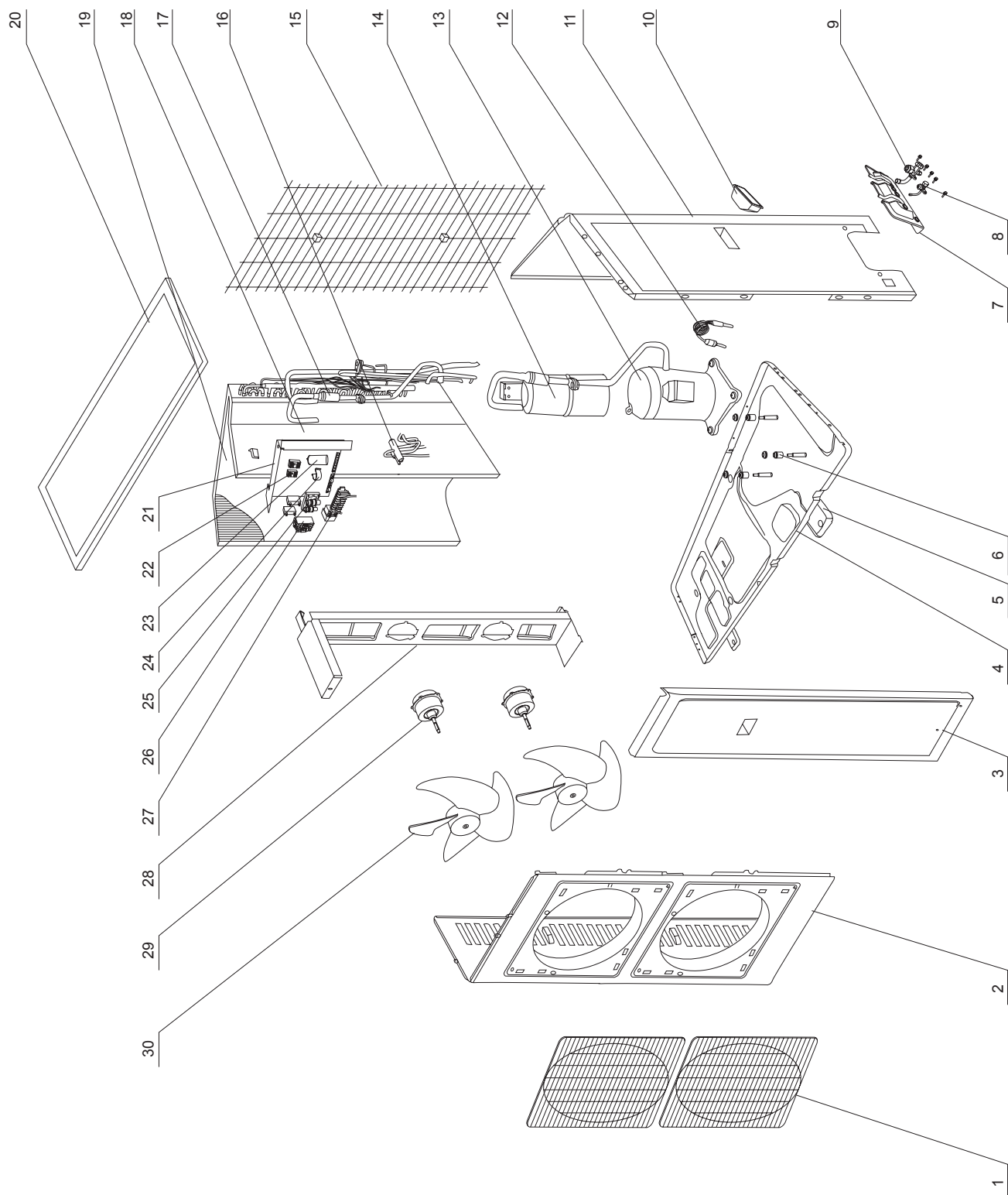


figure 8-10

Cassette type series

8.11.2 Spare parts of outdoor unit (For 120 model)

Table 8-11

No	Description		Part No				Qty
			KF- 120W/tB	KFR- 120W/tB	KF- 120W/tBN	KFR- 120W/tBN	
1	Front Grill	面罩	22265251	22265251	22265251	22265251	2
2	Front Plate	外罩	01435432	01435432	01435432	01435432	1
3	Front Side Plate	前侧板	01305437	01305437	01305437	01305437	1
4	Metal Base	底盘组件	01205432	01205432	01205432	01205432	1
5	Base Support	支脚	01795251	01795251	01795251	01795251	2
6	Nut with Washer M8	带垫螺母 M8	70310014	70310014	70310014	70310014	3
7	Valve Support	阀门支架	01715256	01715256	01715256	01715256	1
8	Liquid Valve Assy	小阀门组件	07135431	07135431			1
8	Liquid Valve Assy	小阀门组件			07103704	07103704	1
9	Gas Valve Assy	大阀门组件	07105435	07105435			1
9	Gas Valve Assy	大阀门组件			07103703	07103703	1
10	Handle	把手	26235252	26235252	26235252	26235252	1
11	Rear Side Plate	后侧板	01305440	01305440	01305440	01305440	1
12	Capillary Assy	毛细管组件	03003710	03003710	03003714	03003713	1
13	Compressor AGC5561EXG	压缩机	00100502	00100502	\	\	1
	Compressor C-SBN373H8A	压缩机	\	\	00100332	00100332	1
14	Gas-liquid Separator	汽液分离器部件	07225433	07225433	07225433	07225433	1
15	Rear Grill Assy	网罩	01475431	01475431	01475431	01475431	1
16	4 way Valve	四通阀组件	\	03025441	\	03025441	1
17	Silencer	消音器	07245005	07245434	07245005	07245434	1
18	Isolation Sheet Assy	中间隔板组件	01235441	01235441	01235441	01235441	1
19	Condenser Assy	冷凝器部件	03003709	03003709			1
	Condenser Assy	冷凝器部件			01103709	03003710	1
20	Top cover Assy	顶盖	01255261	01255261	01255261	01255261	1
21	Electric Box	电器盒组件	01415205	01415205	01415205	01415205	1
22	Capacitor	电容 3.5uF/450VAC	33010010	33010010	33010010	33010010	2
23	Capacitor	电容 50uF/450V	33010710	33010710	33010710	33010710	1
24	Terminal Board	接线板 T5A0A-94	\	42011223	\	42011223	1
	Terminal Board	接线板 GT8FOA1	42011036	\	42011224	\	1
25	Velometer	调速器 TS60	\	30024413	\	30024413	1
26	AC Contactor	双极交流接触器	44010211	44010211	44010211	44010211	1
27	Terminal Board 2-8	2-8 接线板	42011103	42011103	42011103	42011103	1
28	Motor Support	电机支架组件	01705433	01705433	01705433	01705433	1
29	Motor	电机 FW60T	15013302	15013302	\	\	2
	Motor	电机 FW68D	\	\	15013303	15013303	2
30	Axial Flow Fan	轴流风叶	10335253	10335253	10335253	10335253	2

The data are subject to change without notice.

Cassette type series

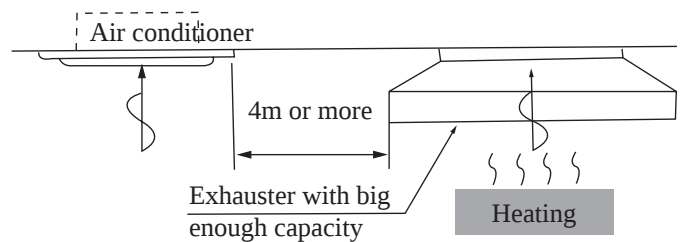
8.12 Installation guide.

● Location

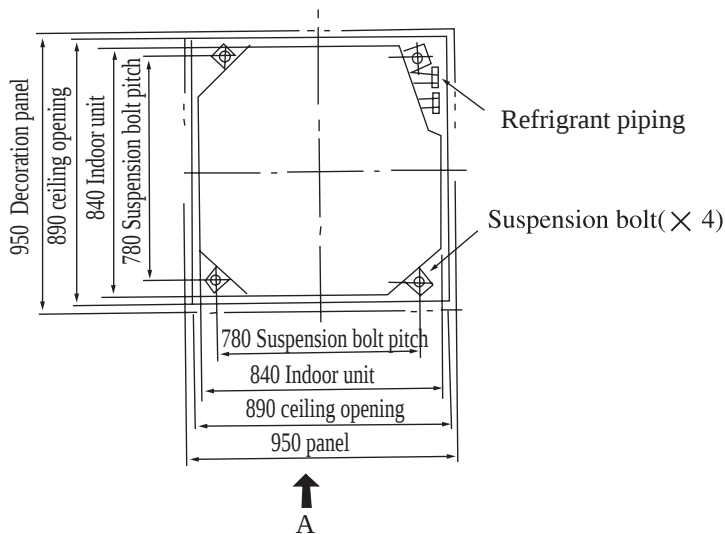
1. Do not place object near the air outlet so that conditioned air can reach the whole room.
2. Be sure to install the indoor unit firmly and horizontally.
3. Select the place that can support 4 times of the indoor unit's weight and will not increase noise and vibration.
4. Select a place easy to drain water and connect with the outdoor unit.
5. Make sure there is enough space for maintenance and make sure the distance between the unit and ground is 1.8m or more.
6. Make sure the suspension bolt pitch can hold 4 times of the indoor units's weight, otherwise, you should strengthen the suspension bolt pitch.

● Note:

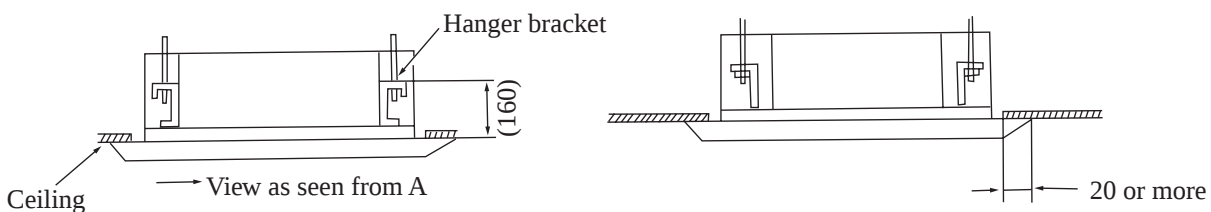
1. Keep enough distance from the kitchen.
2. The appliance shall not be installed in the laundry.



● Ceiling opening and suspension bolt (M10) pitch dimension.



* Drilling of ceiling must be done by qualified personnel.

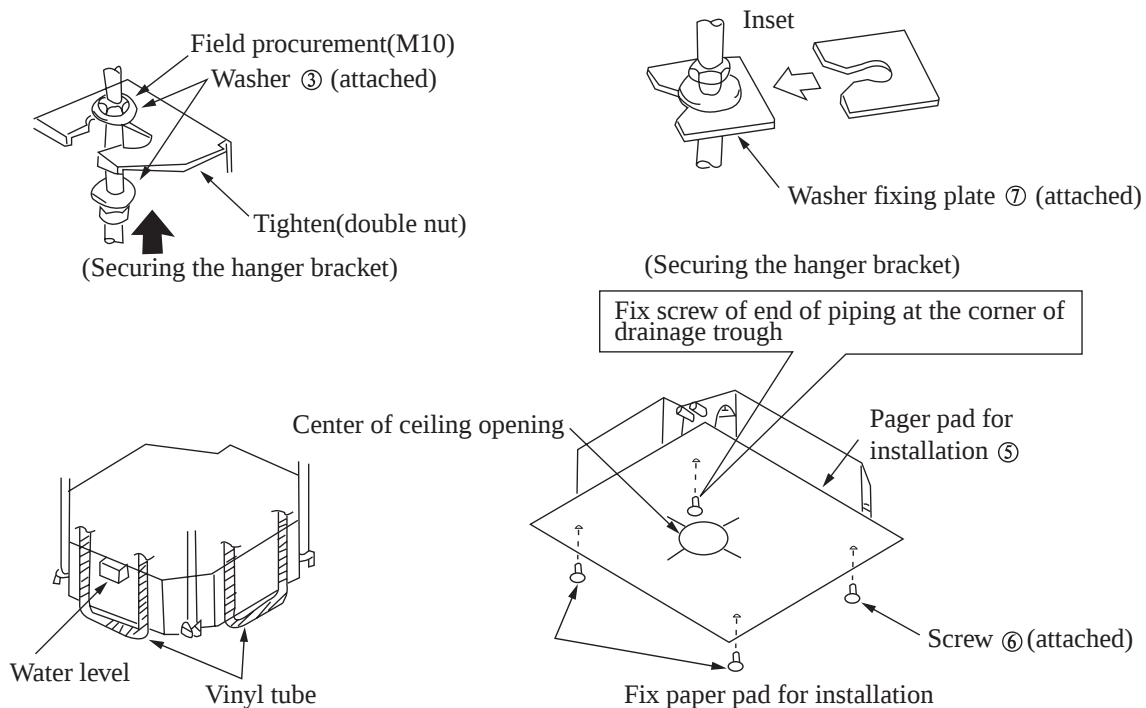


● Note

Installation is possible with a ceiling dimension of 890 (marked with * can be 910), but the ceiling-panel overlapping dimension must be 20mm or more.

● Indoor unit installation

1. Install the indoor unit temporarily.
 - Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket. the washer fixing plate ⑦ will prevent the washer from falling.
 - Refer to the paper pad for installation ⑤ for ceiling opening dimension.
 - The center of the ceiling is indicated on the paper pad for installation, the center of the unit is indicated on the label attached to the unit and on the paper pad for installation.
 - Fix the paper pad to the unit with screws ⑥ (×3)
2. Refer to diagram 3, adjust the unit to the right position for installation.
3. Check if the unit is horizontally level.
 - The indoor unit is equipped with a built-in drainage pump and float switch. at each of the unit's 4 corners, verify that it is level by using a water level or a water filled vinyl tube. (If the unit is tilted against condensate flow, the float switch may malfunction and cause water to drip.)
4. Remove the washer fixing plate ⑦ used for preventing the washer from falling and tighten the upper nut.
5. Remove the paper pad for installation ⑤.



Warning

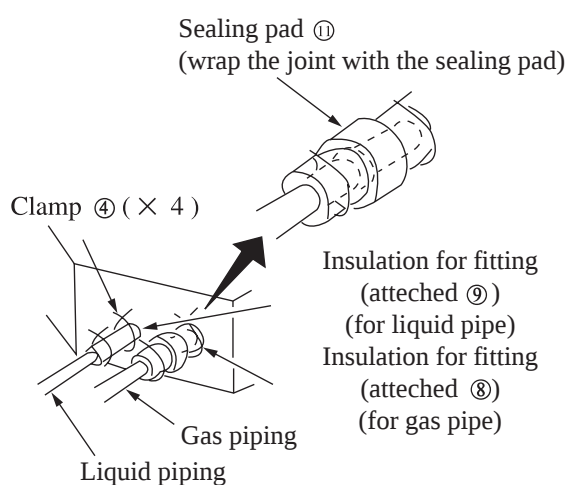
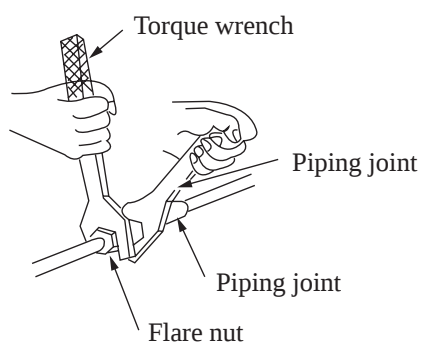
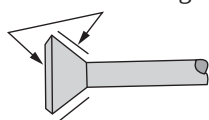
Tighten the nut to prevent the unit from falling.

Cassette type series

● Connection of refrigerant pipe

- Be sure to use both a spanner and torque wrench together as shown in the drawing, connecting or disconnecting pipes to/from the unit.
- Refer to table 1 to determine the proper tightening torque (over tightening may damage the flare and cause leaks.)
- When connecting the flare nut, coat the flare both inside and outside with refrigerating machine oil and initially tighten by hand 3 or 4 turns.
- Check the pipe connector for gas leaks, then insulate it as shown in the drawing below.
- Use sealing pad (11) to wrap joint between gas pipe and the insulation (8).

Coat here with refrigerating machine oil



● Table 1

Pipe gauge	Tightening torque	Notes	
Φ 9.52	30~40N.m	KF(R)-50TW/E1 KF(R)-70TW/B KF(R)-70TW/B1 KF(R)-120TW/B	Add 30g
Φ 16	60~65N.m		Add 30g
Φ 12	45~50N.m		Add 30g
Φ 19	70~75N.m		Add 30g

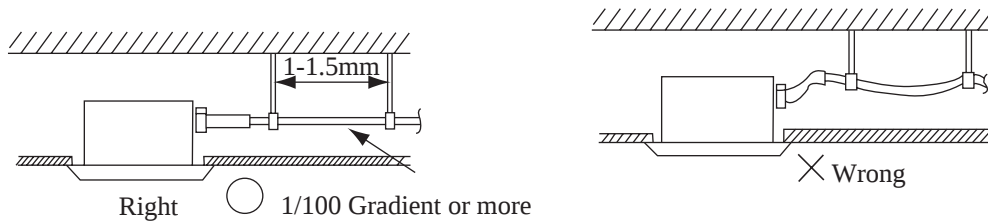
The maximum length for refrigerant piping is 25 meters, when the length exceeds 10 meters, you should charge additional (refrigerant as shown in following for per-meter added).

Cassette type series

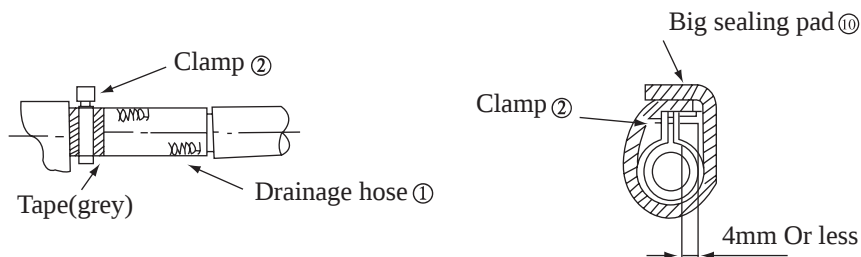
● Drainage pipe

1. Installation of drainage pipe.

- The diameter of the drainage pipe should be greater than or equal to the diameter of the connecting pipe[vinyl tube, pipe size:25mm(outer dimension)]
- Keep the drainage pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming.
- If the drainage hose cannot be sufficiently set on a slope, add a drainage raising pipe.
- To keep the drainage hose from sagging, keep space between hanging hooks at 1~1.5m.

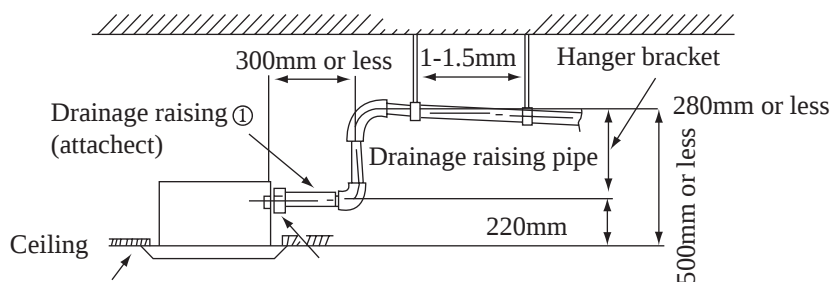


- Use the attached drainage hose ① and clamp ②. Insert the drainage hose into the drainage socket up to the grey tape. Tighten the clamp until the screw head is less than 4 mm from the hose.
- Wrap the big sealing pad around clamp of the drainage hose to insulate.
- Insulate the drainage hose inside the room.



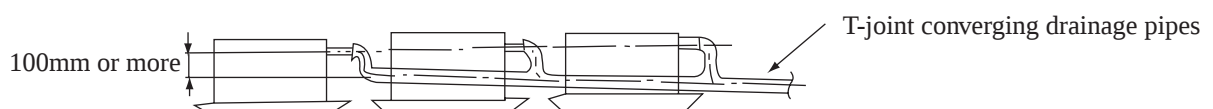
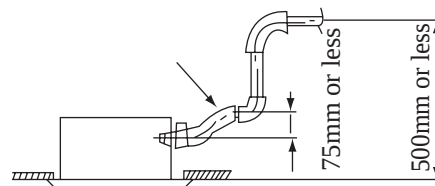
● Precautions for drainage raising pipe

- Install the drainage raising pipe at a height of less than 280 mm.
- Install the drainage raising pipe at a right angle to the indoor unit and no more than 300 mm from the unit.



● Note

- The incline of attached drain hose ① should be 75mm or less, so that the drainage socket does not have to stand additional force.
- If converging multiple drainage pipes, install according to the procedure shown below.



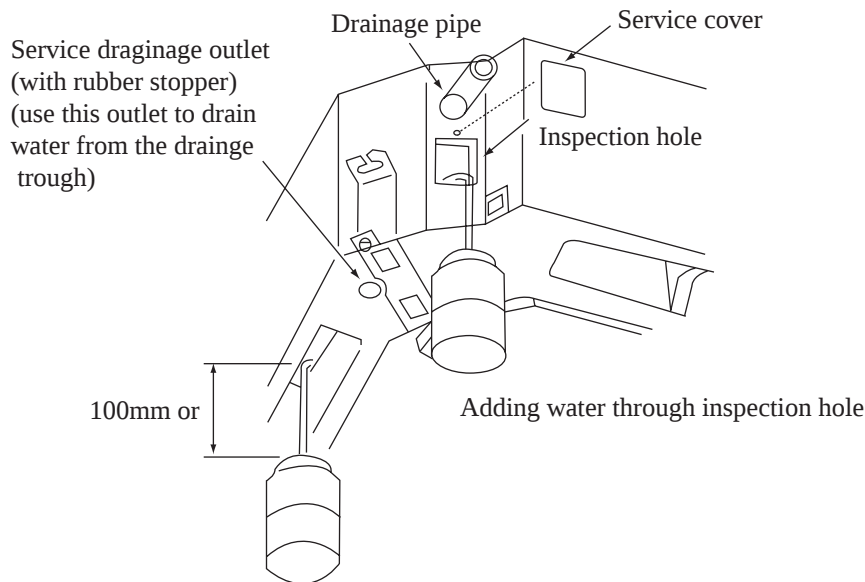
Select converging drainage pipes whose gauge is suitable for the operating capacity of the unit.

Cassette type series

2. After finishing installation, check if drainage water flows smoothly.

- Add approximately 600 cc of water to the drainage trough through air outlet or inspection hole slowly and check drainage flow.
- When electric wiring is finished, check drainage flow during cooling operation.

● Method of adding water.



● Warning: Before obtaining access to terminals, all supply circuits must be disconnected.

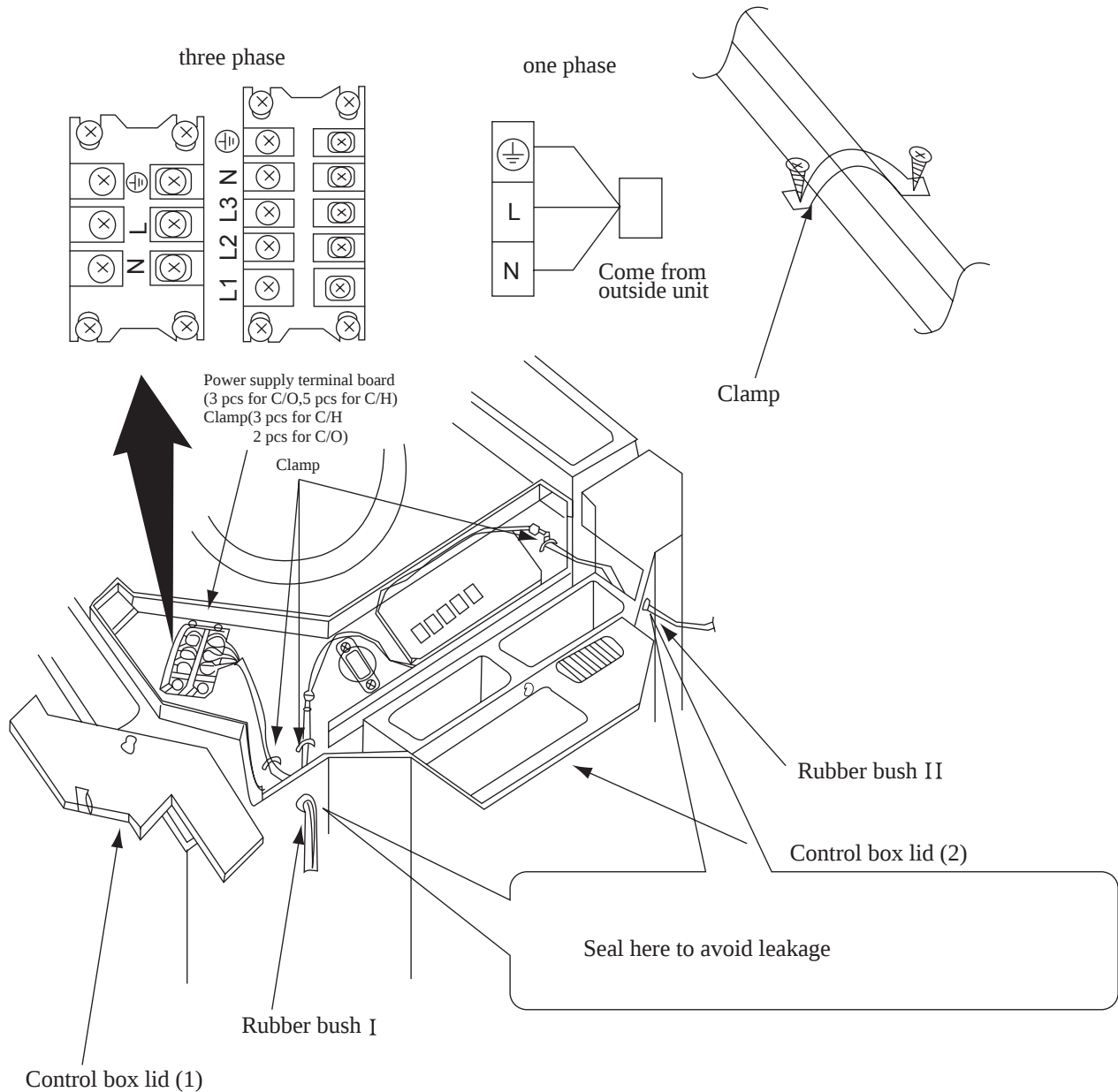
● Electric wiring

- All field supplied parts and materials must conform to local laws and regulations.
- For electric wiring, refer to " WIRING DIAGRAM " attached to the unit body.
- All wiring must be performed by a skilled technician.
- A circuit breaker capable of shutting down power supply to the entire system and with at least 3 mm contact separation must be installed.
- Earth properly.
- Wiring must conform to national laws and regulations.
- Installing the protector with not more than 30mA leakage current is a must.
- If the supply cord is damaged, it must be replaced by the manufactory or its service agents or a similarty qualified person in order to avoid a hazard.

● Wiring of unit and the controller

- Wiring of the indoor unit.
- Remove the control box lid(1), pull the wires inside through rubber bush I and wiring according to the " WIRING DIAGRAM ", then tighten it with clamp.
- Wiring of the controller.
- Remove the control box lid(2), pull wires inside through rubber bush II and connect to the controller.
- Wrap the wire with sealing pad(12).
- After wiring, tighten it with clamp and fix the control box lid(1),(2).
- Heating and cooling: connect the rubber wire (5-cords) to the power supply terminal board in properly.
- Cooling: connect the rubber wire (3-cords) to the power supply terminal board properly.

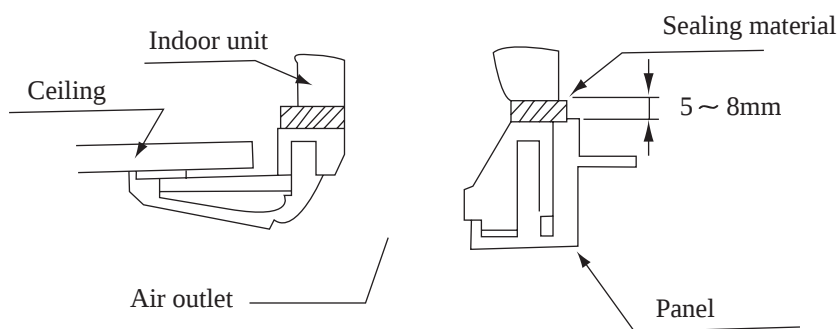
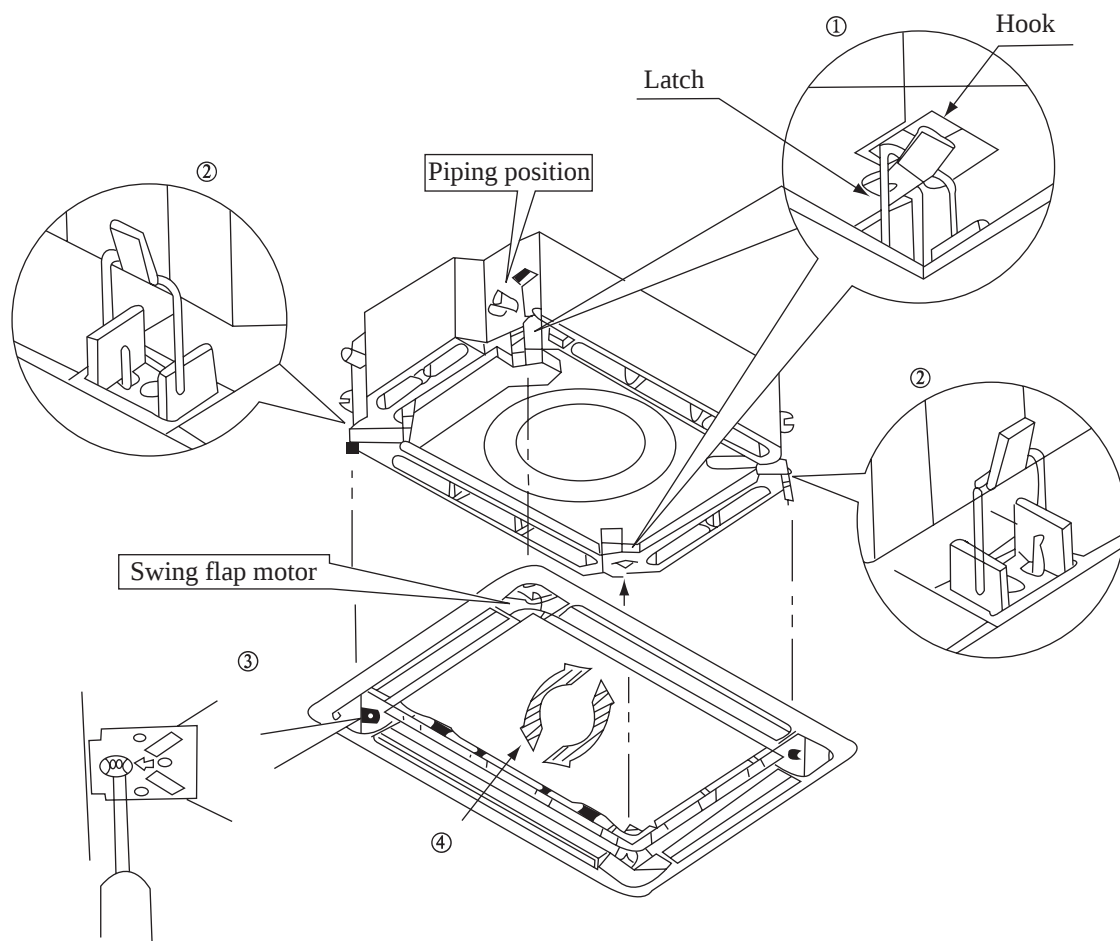
Cassette type series



● Precautions: Be sure to connect the indoor unit and outdoor unit at right poles.

Installation of panel

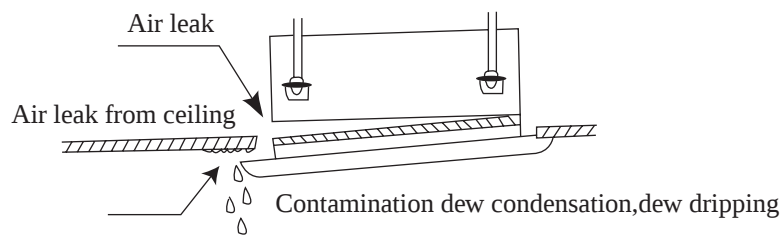
1. Set the panel to the indoor unit body by matching the position of the swing flap motor of the decoration panel to the piping position of the panel to the piping position of the indoor unit as shown in fig.4.
2. Install the decoration panel
 - (1) Hang the latch, which is located on the opposite side of the swing flap motor on the panel, temporarily to the back of the indoor unit. (2 Positions)
 - (2) Temporarily hang the remaining 2 latches to the hooks on the sides of the indoor unit. (be careful not to let the swing motor lead wire get caught in the sealing material.)
 - (3) Screw all 4 hexagon head screws located right beneath the latches in approximately 15mm. (panel will rise)
 - (4) Adjust the panel by turning it to the arrowed direction in Fig.4 so that the ceiling opening is completely covered.
 - (5) Tighten the screws until the thickness of the sealing material between the panel and the indoor unit body is reduced to 5~8 mm.



(Fig.4)

● Precautions

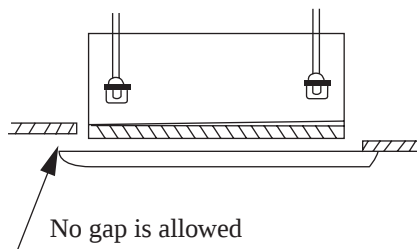
1. Improper screwing of the screws may cause the troubles shown in Fig.5.



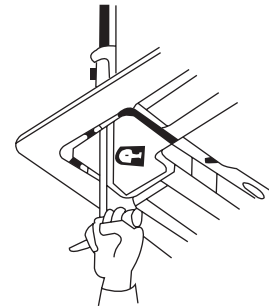
(Fig.5)

Cassette type series

2.If gap is still left between the ceiling and the panel after screwing the screws,readjust height of the indoor unit body(Refer to Fig.6).



Adjustment of the indoor unit body from the holes in the corner of the panel is possible if the indoor unit is kept leveled and the drainage pipe piping etc is unaffected.

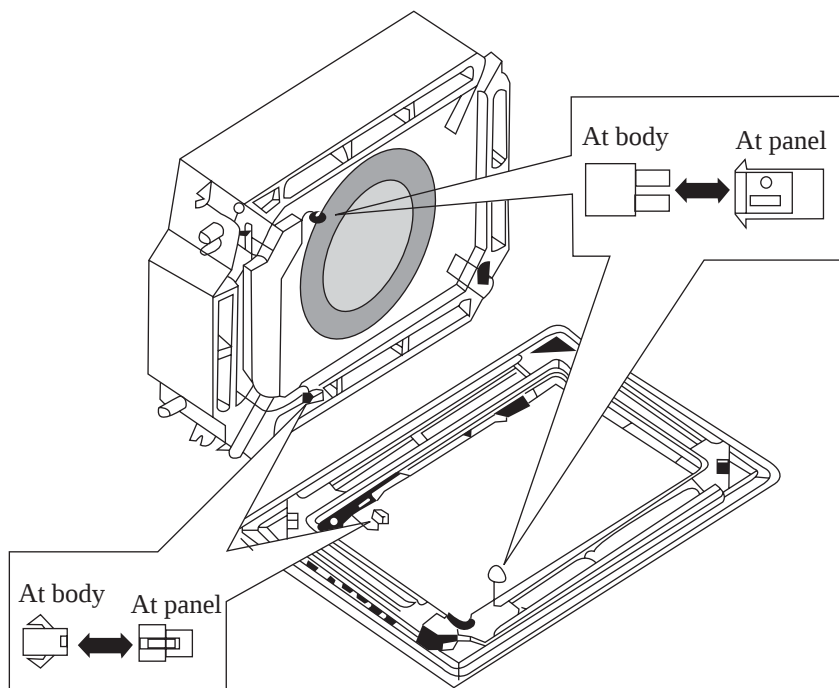


(Fig.6)

* After fixing,be sure no gap left between the ceiling and the panel.

3.Wiring of the decoration panel.

⑥ Connect te joints for swing flap motor lead wire(at 2 places) installed on the panel (Refer to Fig.7).



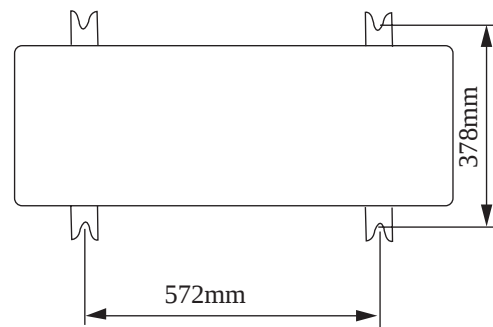
(Fig.7)

Selecting installation site

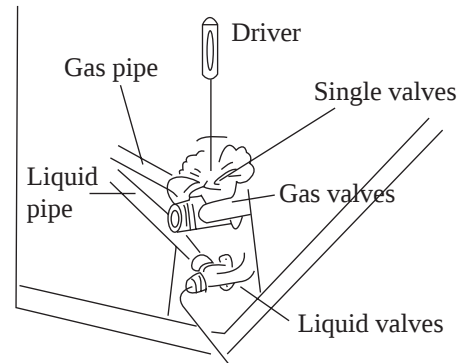
- Select an installation site where the following conditions are satisfied and that meets with your customer's approval.
- Places which are well-ventilated.
- Safe places which can withstand the unit's weight and vibration and where the unit can be installed level.
- Places where the unit does not bother next-door neighbors.
- Places where there is no possibility of flammable gas leak.
- Places where things distressed in water do not exist because water drains off the outdoor unit.
- Places where servicing space can be well ensured.
- Places where strong wind can not blow directly to outdoor unit.

Outdoor unit installation

1. Install the unit firmly with combination of M10 or more bolts and nuts on the foundation that can fully support the weight of the unit and make sure the unit stand vertically.
2. Do not install the unit on the top of building.
3. If there is noise caused by vibration add rubber between the unit and the foundation, Please.
4. When the air conditioner is heating or defrosting, drain water of the outdoor unit to an appropriate place with the drain hose.
5. Fixing method: Fix the outdoor drainage hose head in the hole of the chassis, then connect the drainage hose with the mouth of drainage pipe.



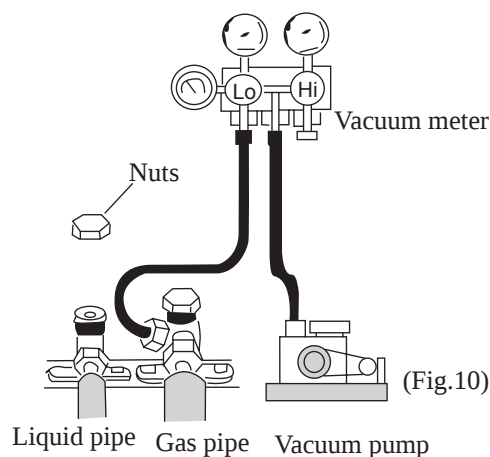
(Fig.8)



(Fig.9)

Connecting the pipe.

1. Remove the flare nuts of the valves.
 2. Match the piping center, tighten the flare nuts with hand.
 3. Tightening the flare nuts with a driver.
 4. Remove the nuts of one-way valve.
 5. Loosen the valve spindle with a hexogen wrench and press the needle to let gas out.
 6. After 15 seconds when refrigerant gas leaks out, turn off the valve and tighten the nuts.
 7. Fully open valves. (Fig.9)
 8. Tighten the nuts, then check whether there is gas leaking out.
- * If possible, evacuate from the one-way valve with a vacuum pump. (Fig.10)



(Fig.10)

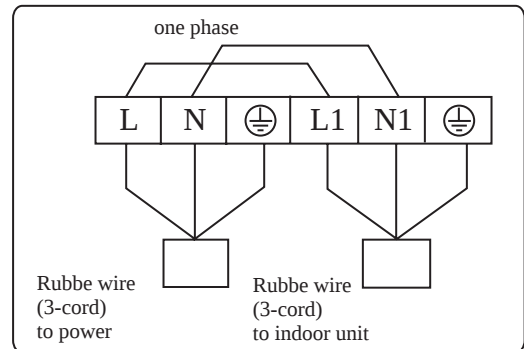
Cassette type series

Electric wiring

- (1) Read the name plate carefully, then arrange wiring according to the “WIRING DIAGRAM”
- (2) A circuit breaker capable of shutting down power supply to the entire system must be installed.
- (3) Earth properly.
- (4) All wiring must be performed by a skilled electrician according to the “WIRING DIAGRAM”. Wrong wiring may cause fire or electric shock.

Connect the power connecting wires

- (1) Remove the front side plate (Fig. 11).
- (2) Break through the hole for wires and put on rubber bush.
- (3) Pull all wires through the rubber bush.
- (4) Connect the outdoor unit according to the “WIRING DIAGRAM” of outdoor unit. Make sure to wire firmly.
- (5) Tighten the wires with clamp and clasp.

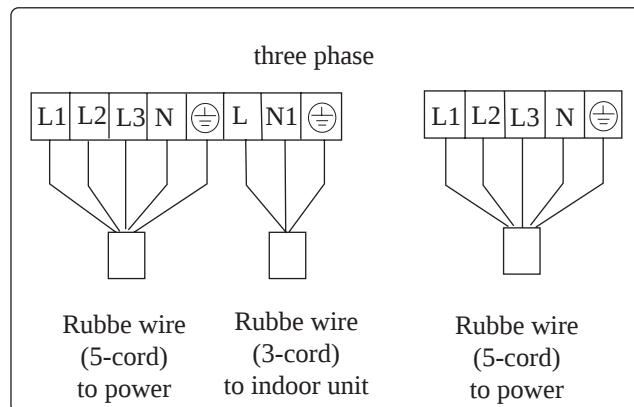


Note

- (1) Earth the units firmly.
- (2) Wire the units firmly.
- (3) Don't pull the connector too forcefully.
- (4) For cooling only type:

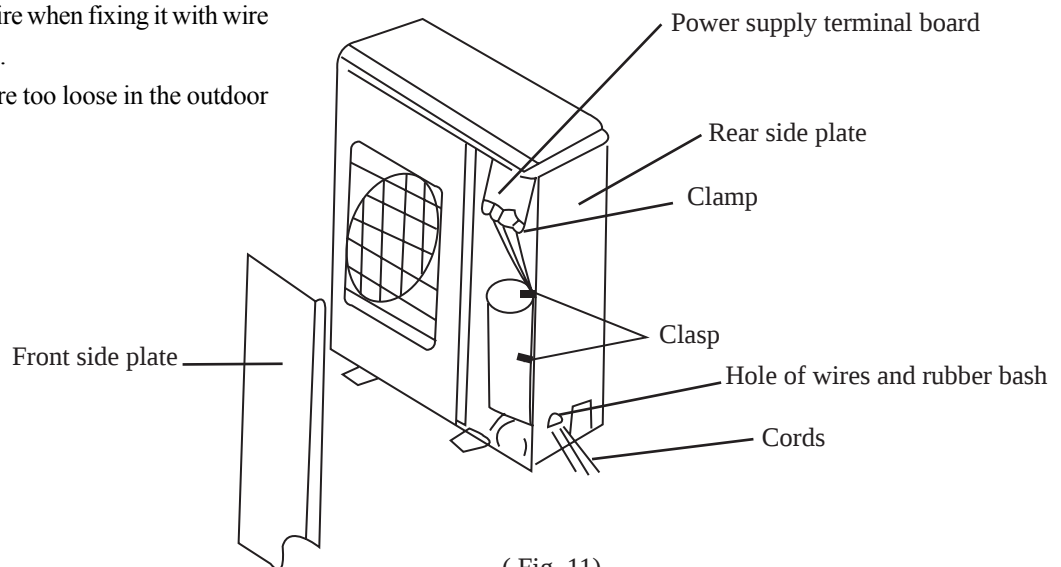
Connect the rubber wire (3-cords) to L, N1 ⊕ of the power supply terminal board (8p) and the rubber wire (5-cords) to L1, L2, L3, N ⊕, of the power supply terminal board (8p) accordingly.

For cooling/heating type:
Connect the rubber wire (5-cords) to the power supply terminal board (5p) properly.



- (5) Connect the other wires properly.

- Do not pull the wire when fixing it with wire clamp and clasp.
- Do not let the wire too loose in the outdoor unit.



(Fig .11)

Cassette type series

● Test operation

1. Prepare for test

- (1) Do not turn on the power switch before all installation is finished.
- (2) Connect wires correctly and firmly.
- (3) Open the check valve.
- (4) Remove all dust.

2. Testing

- (1) Turn on the power switch and press “1/0” button.
- (2) Press “MODE” button select COOL, HEAT, FAN, etc to test whether it operates normally.

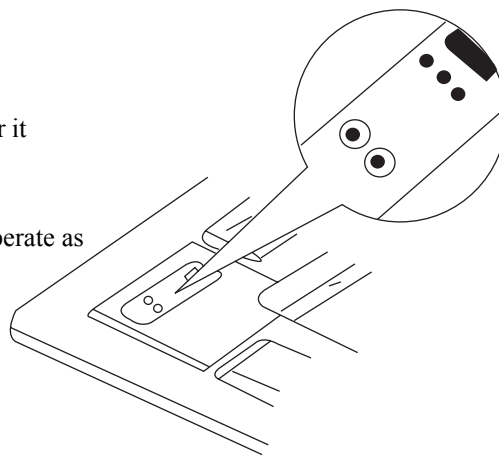
3. Emergency operation.

When the batteries fail or when the remote controller is missing, operate as shown below.

- * On stopping you can press the “AUTO” button on cover No. Ⅱ until it is in “AUTO” mode.

The air conditioner select from COOL, HEAT, DRY, FAN modes automatically.

- * On operating, press the “AUTO” button, the air conditioner will stop.



Note

The “TEST” button on the cover No. Ⅱ is specially for testing the air conditioner. When pressing it, the air conditioner will be forced to operate or stop. Do not press it when air conditioner is in normal operation.

For the following items, take special care during construction and check after installation is finished.

Items to check	If not properly done, what is likely to happen	Check
Is the indoor unit fixed firmly?	The unit may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the nameplate	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	Risk of electric leakage.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or intake of either the indoor or outdoor units?	It may result in insufficient cooling.	
Have records of refrigerant piping length and additional refrigerant charge been made?	Volume of refrigerant charge in the system is not clear.	

Note to the installer

Be sure to instruct the customer how to operate the system and show him/her the attached operation manual.

8.13 Circuit diagram

These circuit diagrams are subject to change without notice.
Please refer to the ones stuck on the machines.

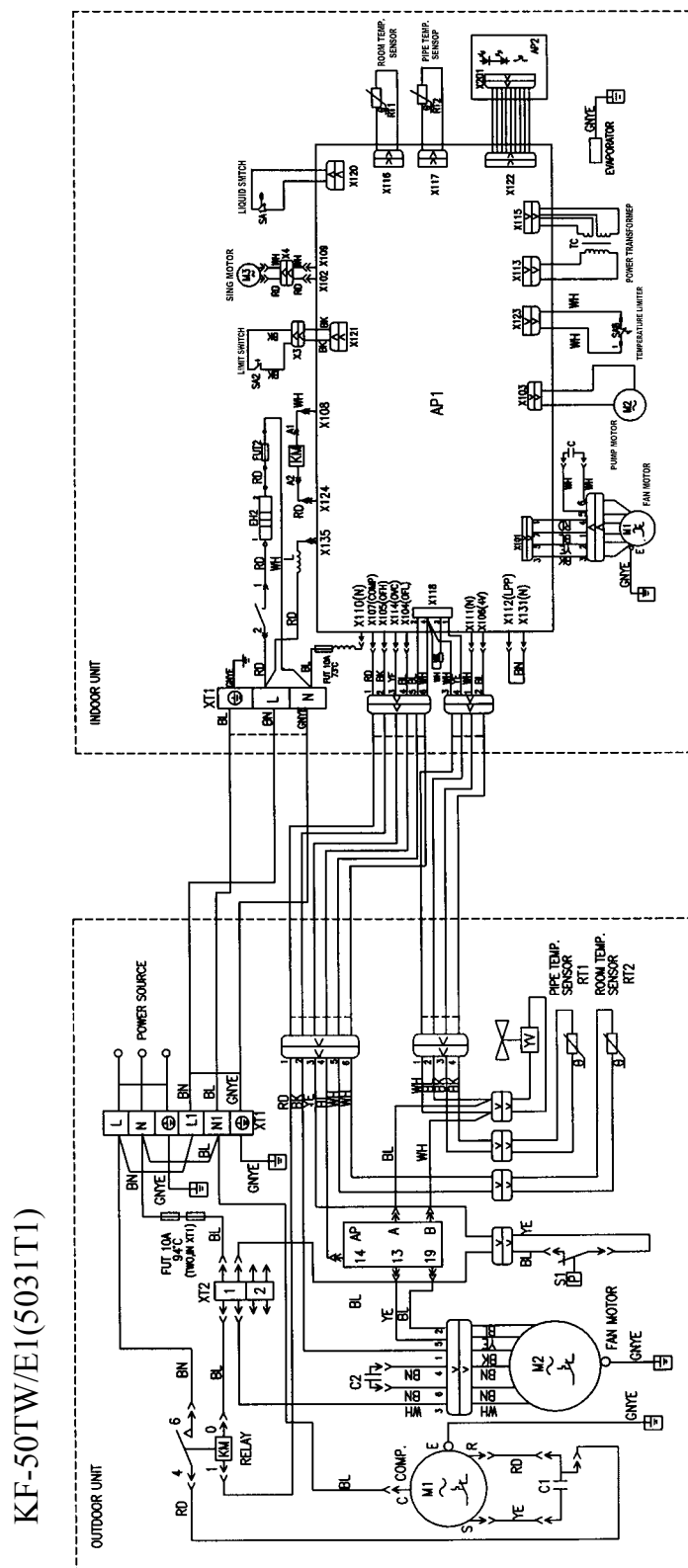


figure 8-11

KFR-50TW/E1(5051T1)

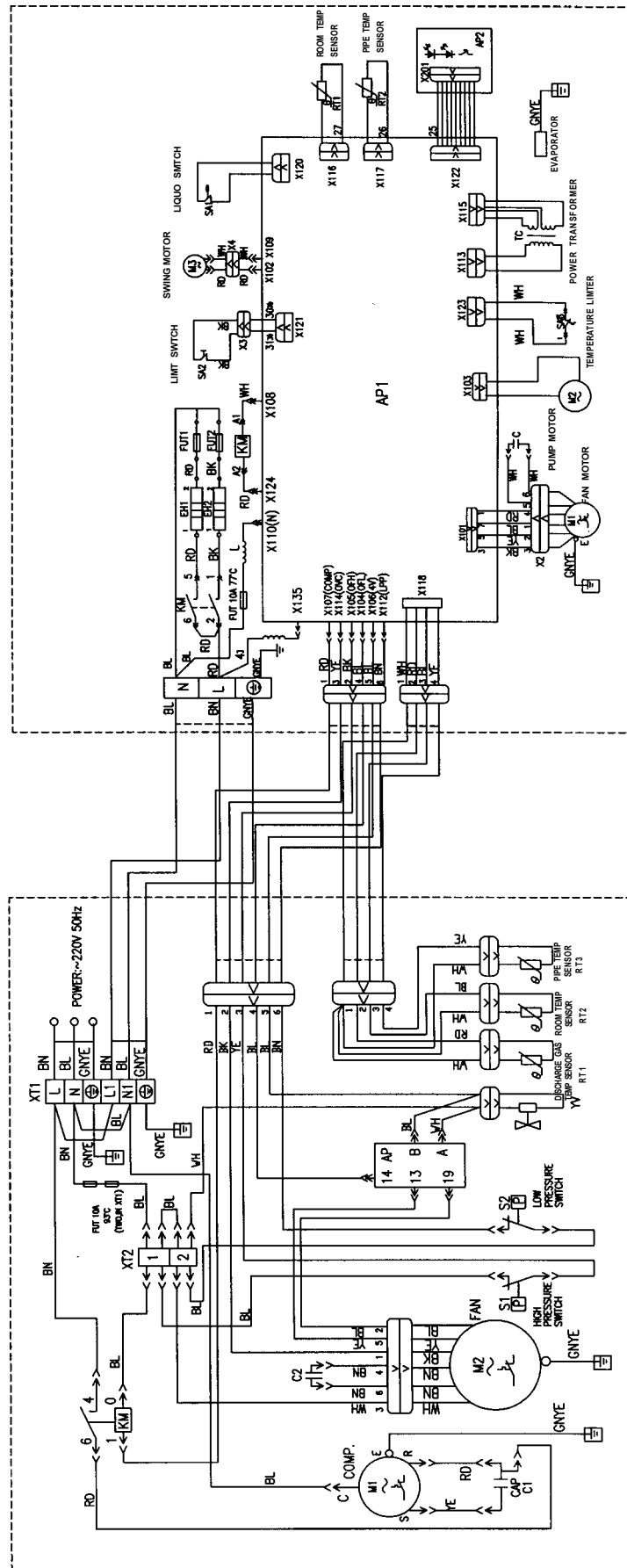


figure 8-12

KF-70TW/B1(7031T1)N

KF-50TW/E1(5031T1)N

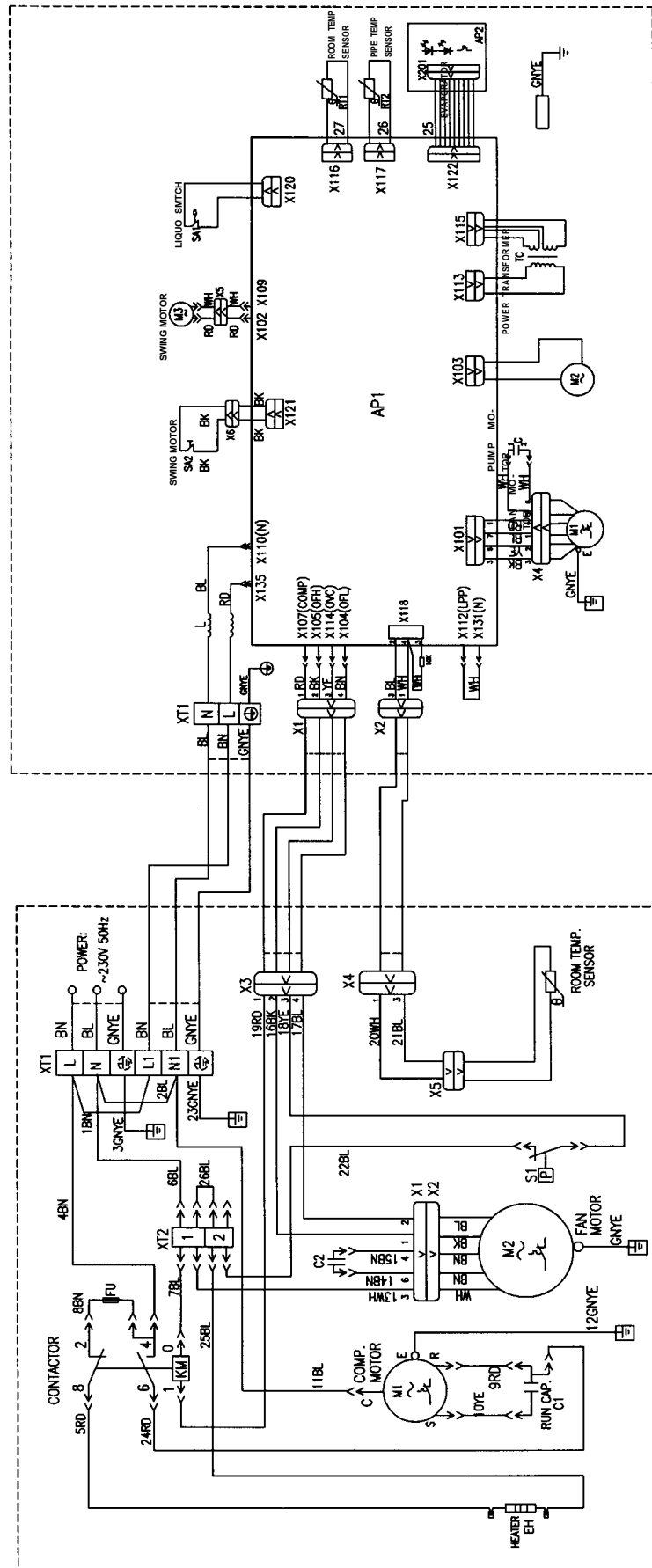


figure 8-13

KFR-70TW/B1(7041T1)N
KFR-50TW/E1(5041T1)N

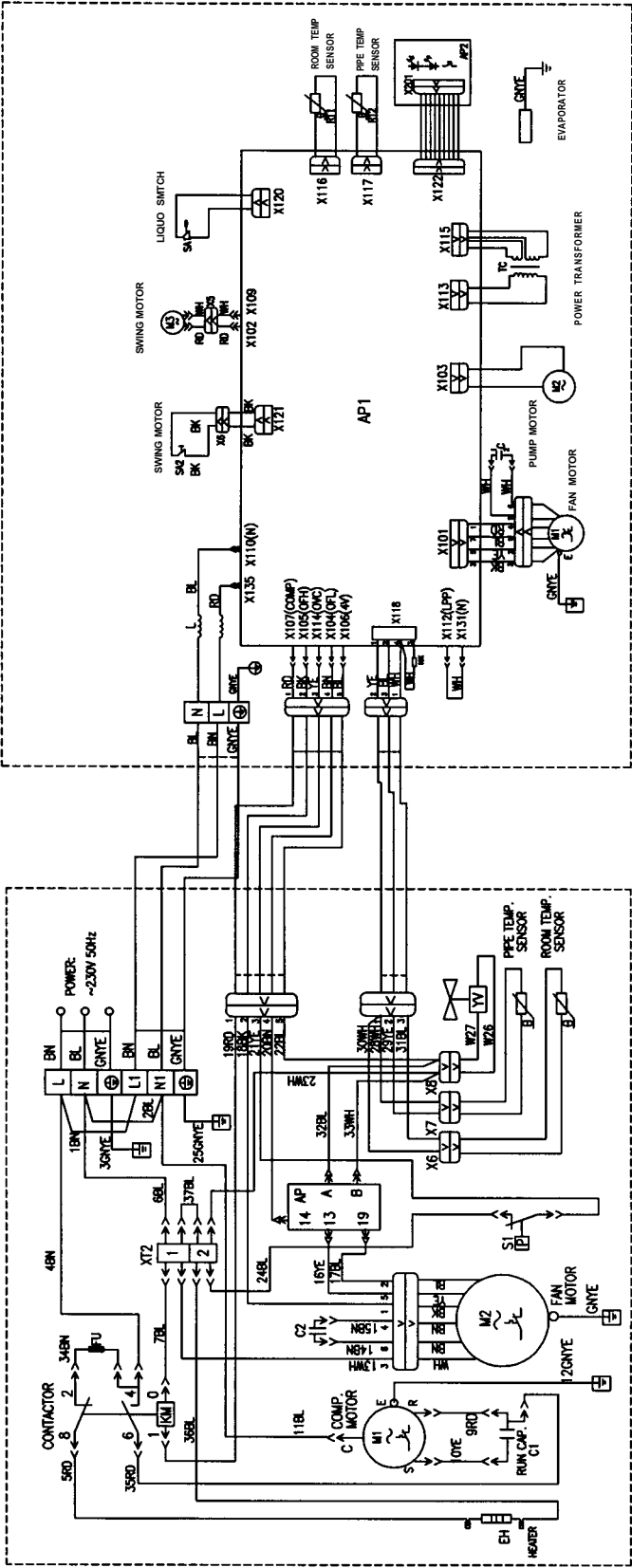


figure 8-14

KF-70TW/B1(7031T1)

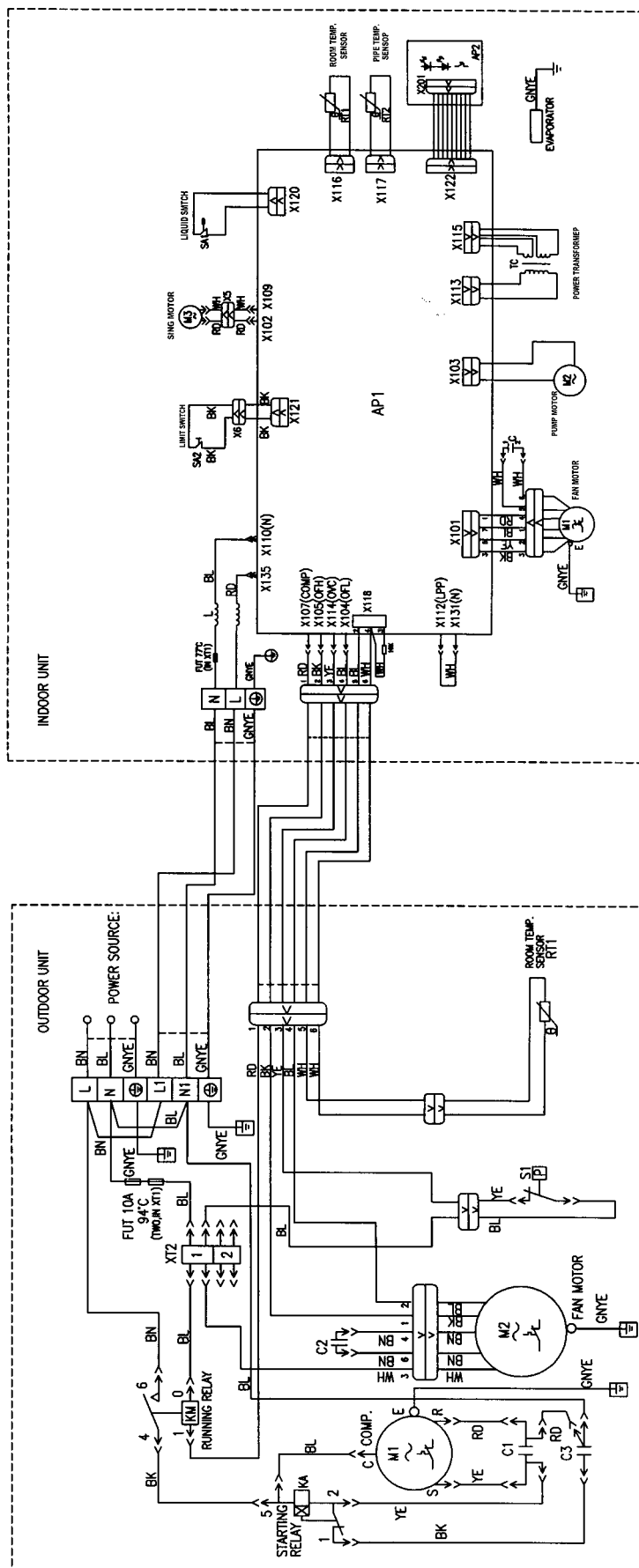


figure 8-15

KF-70TW/B1(7041T1)

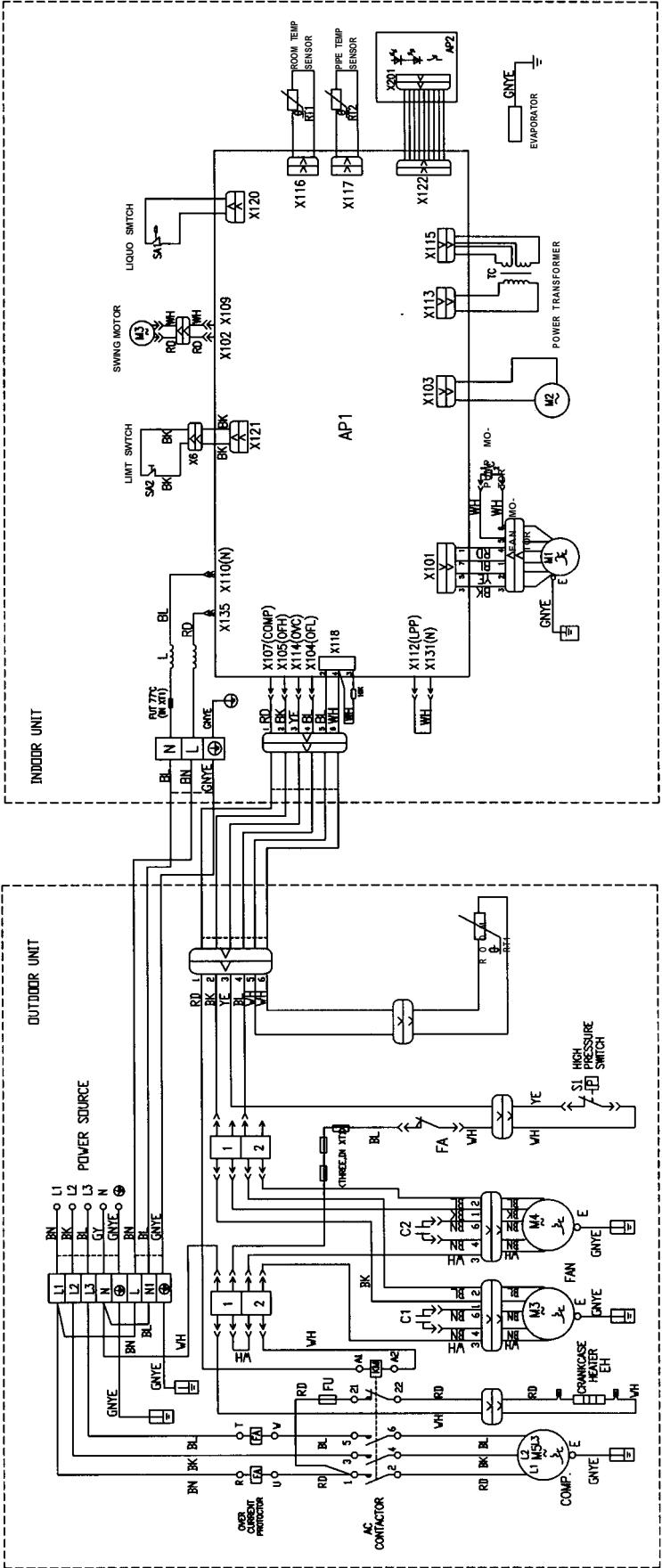


figure 8-16

KF-120TW/B(1231T)C

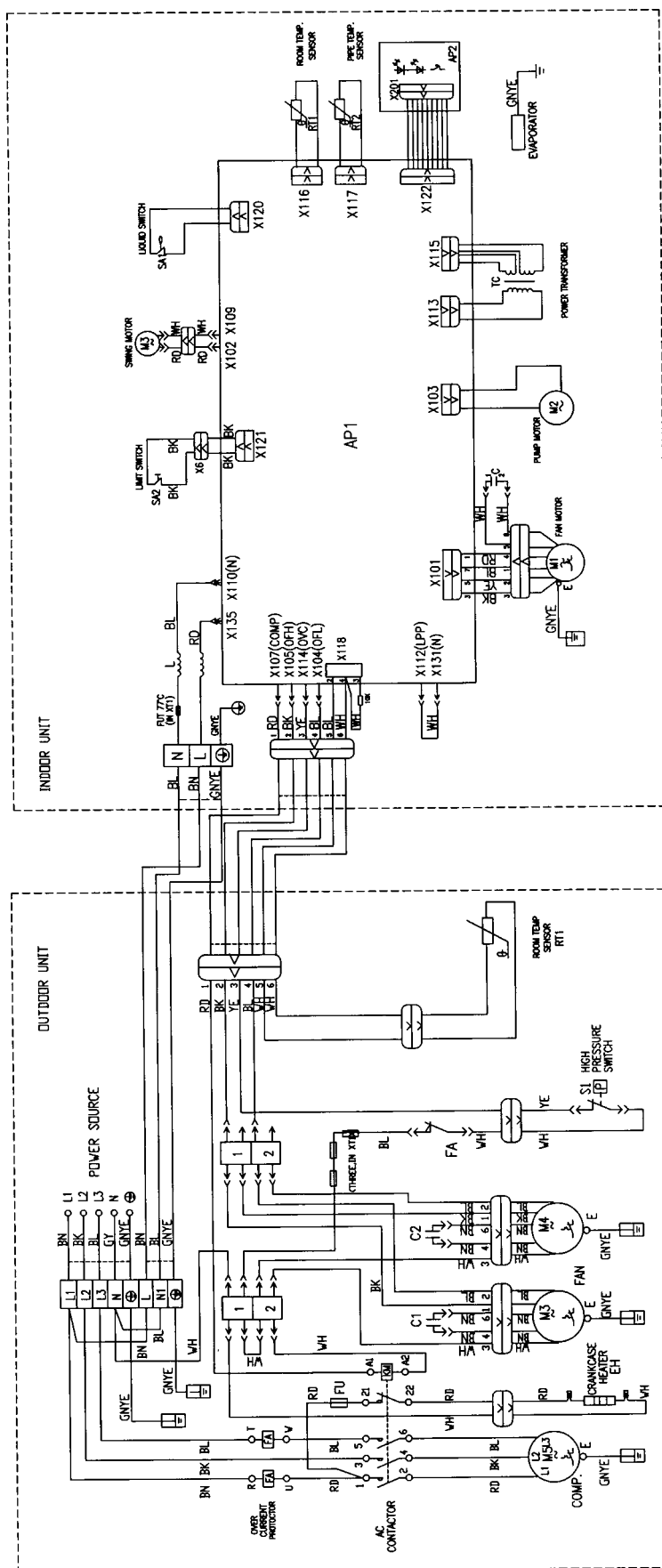


figure 8-17

KFR-120TW/B(1251T)B

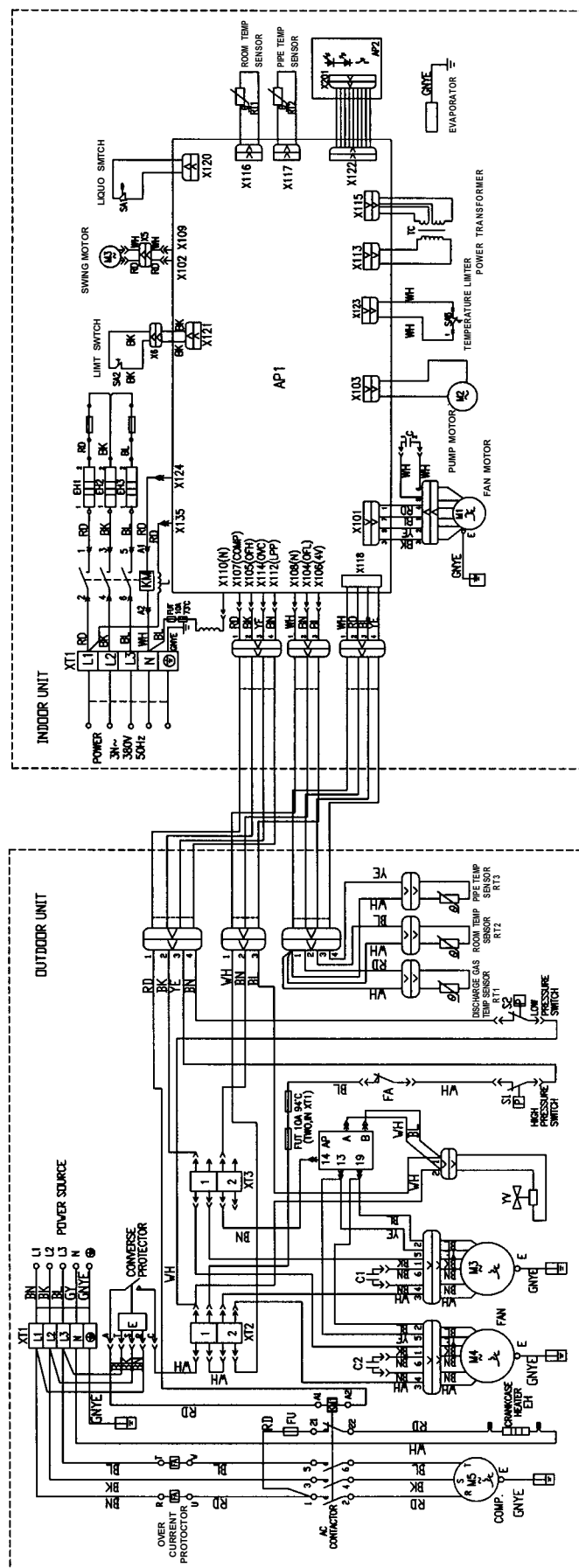


figure 8-18

KFR-120TW/BN(1231T)N

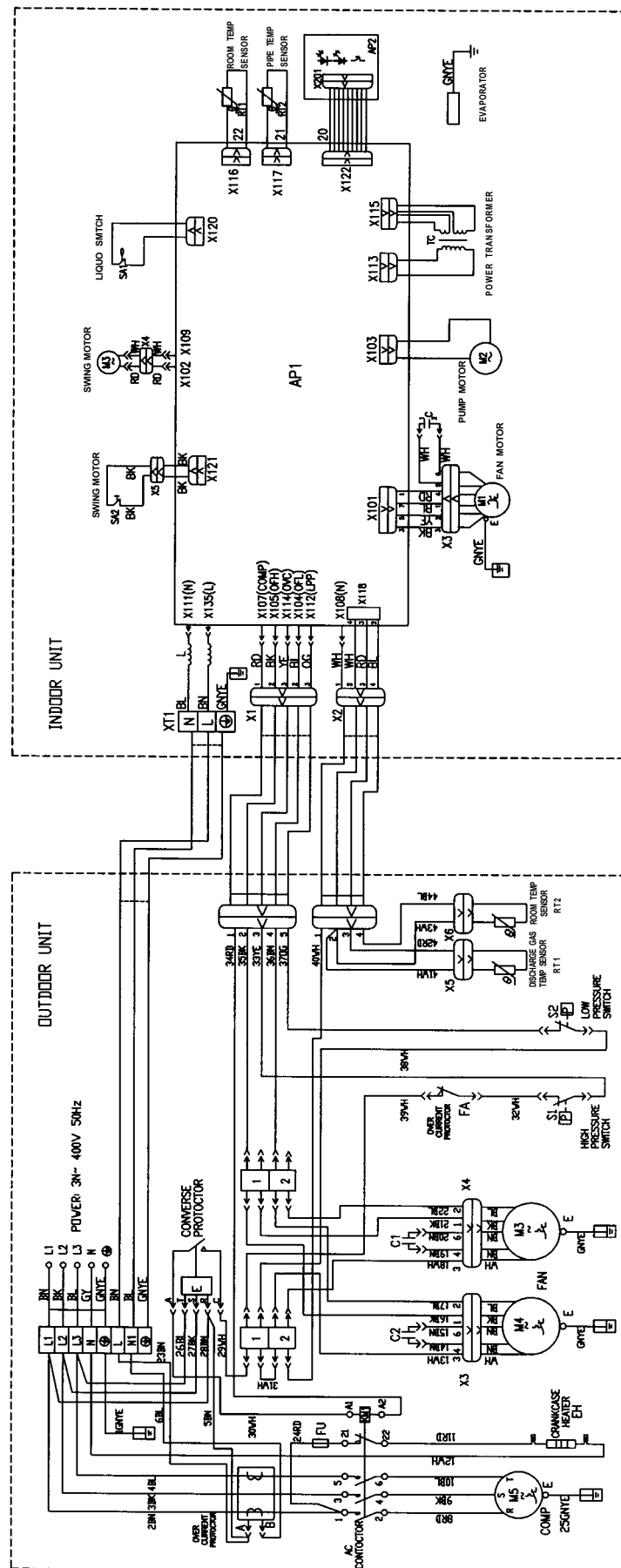


figure 8-19

KFR-120TW/B(1241T)N

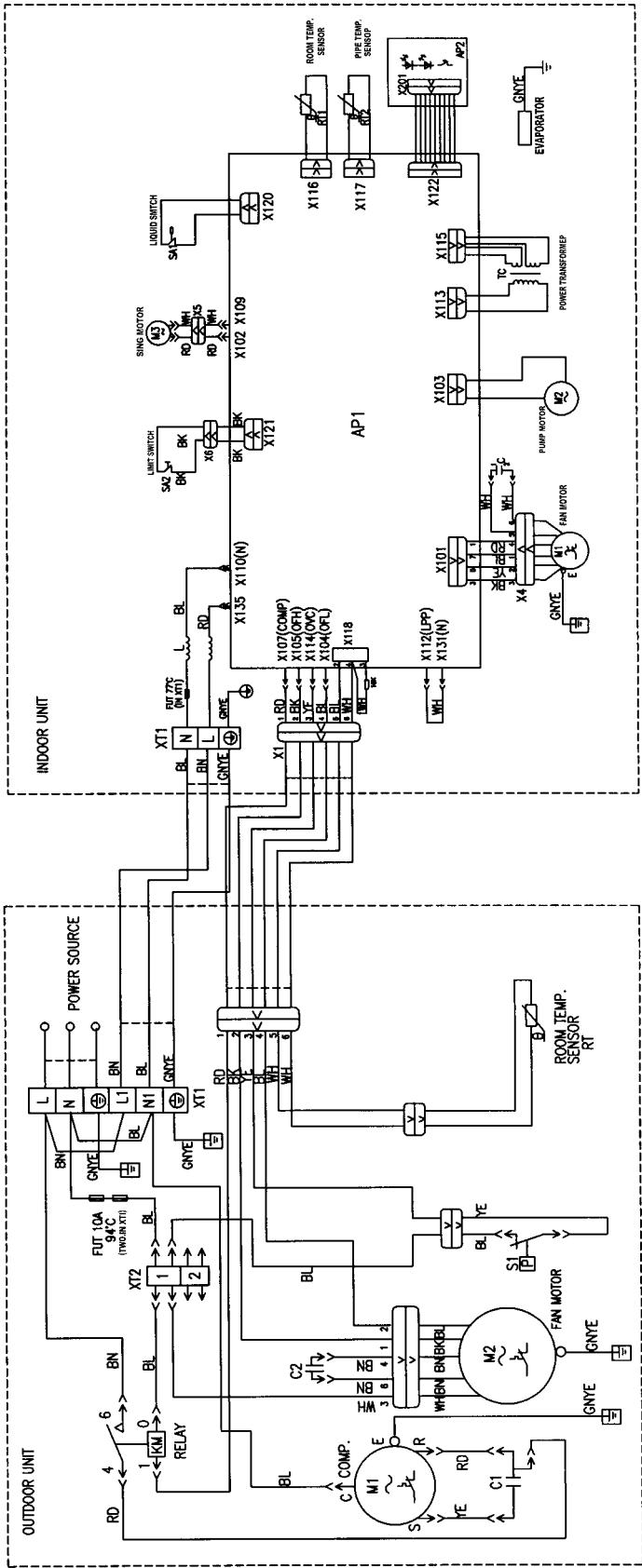


figure 8-20

8.14 PCB function manual

Cassette type-PCB Function manual

1. Running mode:

- 1) COOL; 2) DRY; 3) FAN; 4) HEAT; 5) AUTO.

2. Controlling contents:

- 1) indoor unit fan motor(high, middle and low speed);
- 2) sweep fan motor;
- 3) electrical heater;
- 4) outdoor unit fan motor(high and low);
- 5) reversing valve;
- 6) compressor;
- 7) water pump;
- 8) fresh air fan motor;
- 9) anion creator.

3. The parameter to be input:

- 1) the ambient temperature of the indoor unit (shorten form is T_{in});
- 2) the evaporator temperature of the indoor unit (shorten form is T_{eva});
- 3) the condenser temperature of the outdoor unit (shorten form is T_{con});
- 4) the ambient temperature of the outdoor unit (shorten form is T_{out});
- 5) the temperature of the gas output from the compressor (shorten form is T_{output}).

4. The different controlling mode for the different function mode:

Under all of the modes, the compressor will continue work for 6 min once it starts (except for the protection of full-water). And it will be restart in 3min after it stops. At the beginning, the indoor unit fan motor runs for 8sec in high speed then change to the set fan speed; and it is same in the outdoor unit.

1) Cooling mode:

If $T_{in} \geq T_{set} - 1^{\circ}\text{C}$, cooling mode act, compressor and outdoor unit run, and indoor unit run in the set speed;

If $T_{in} \leq T_{set} - 1^{\circ}\text{C}$, the unit will be stop from cooling mode, compressor and outdoor unit stop, and indoor unit still run in the set speed;

If $T_{set} - 1^{\circ}\text{C} < T_{in} < T_{set} + 1^{\circ}\text{C}$, keep running in the old mode;

In the cooling mode, the range of T_{set} is $16^{\circ}\text{C} \sim 30^{\circ}\text{C}$.

Outdoor fan motor working state:

$T_{out} \geq 27^{\circ}\text{C}$, outdoor fan motor runs in high speed;

$T_{out} \leq 24^{\circ}\text{C}$, outdoor fan motor runs in low speed;

$24^{\circ}\text{C} < T_{out} < 27^{\circ}\text{C}$, outdoor fan motor runs in old speed

2) Drying mode:

If $T_{in} > T_{set} + 2^{\circ}\text{C}$, drying mode act, compressor, indoor unit fan motor and outdoor unit fan motor run, The indoor unit fan motor runs in low speed;

If $T_{set} - 2^{\circ}\text{C} \leq T_{in} \leq T_{set} + 2^{\circ}\text{C}$, compressor, indoor unit fan motor and outdoor unit fan motor run for 6min, then stop for 4min, then run by this cycle. The indoor unit fan motor runs in low speed;

If $T_{in} < T_{set} - 2^{\circ}\text{C}$, compressor, outdoor unit fan motor and indoor unit fan motor stop.

In drying mode, the range of T_{set} is $16^{\circ}\text{C} \sim 30^{\circ}\text{C}$.

Outdoor fan motor working state:

$T_{out} \geq 27^{\circ}\text{C}$, outdoor fan motor runs in high speed;

$T_{out} \leq 24^{\circ}\text{C}$, outdoor fan motor runs in low speed;

$24^{\circ}\text{C} < T_{out} < 27^{\circ}\text{C}$, outdoor fan motor runs in old speed

3) Heating mode:

If $T_{in} \leq T_{set} + 1^{\circ}\text{C}$, heating mode act, reversing, compressor and outdoor unit fan motor run, indoor unit fan motor runs in the set speed and the condition of avoiding the cold wind;

If $T_{in} \geq T_{set} + 3^{\circ}\text{C}$, compressor and outdoor unit fan motor stop, reserving valve is still electric ,the indoor unit fan motor runs in the set speed and flow the rest heat;

If $T_{set} + 1^{\circ}\text{C} < T_{in} < T_{set} + 3^{\circ}\text{C}$, keep running in the old mode;

In the heating mode, the range of T_{set} is $16^{\circ}\text{C} \sim 30^{\circ}\text{C}$, the initialize is 25°C .

In the heating mode, the 4-way valve will be electroless in 2min after the unit is turned off.

The working condition of the outdoor unit:

If $T_{out} \geq 16^{\circ}\text{C}$, the outdoor unit fan motor runs in low speed;

If $T_{out} \leq 13^{\circ}\text{C}$, the outdoor unit fan motor runs in high speed;

If $13^{\circ}\text{C} > T_{out} > 16^{\circ}\text{C}$, the outdoor unit fan motor runs in the old speed;

The outdoor unit fan motor stop when it is defrosting.

The conditions of avoiding cold wind:

Indoor unit adjust the guider into horizontal first, indoor unit fan motor runs in high speed for 8sec then run in low speed.

- Compressor run as soon as T_{in} achieve the temperature unit should start, indoor unit fan motor runs in low speed, guider is still horizontal. 30sec later, indoor unit fan motor runs in the set speed, guider run in the set mode (it run in the max angle if it has not be set).
- Indoor unit fan motor run in the low speed and guider is horizontal if T_{in} doesn't achieve the temperature unit should start.

The conditions of flowing hot wind:

Once the compressor is stop, guider turn into horizontal, the indoor unit fan motor runs in low speed.

The conditions of beginning defrosting:

After the unit continue heating for 44min or if $T_{con} \leq -8^{\circ}\text{C}$, the defrosting mode act, guider turn into horizontal, the reversal valve, the indoor and outdoor unit stop.

If there is electrical heater in the unit, then it will be stop first and the reversal valve, the

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indoor and outdoor unit stop in 1min.

The conditions of stopping defrosting:

After the unit continue defrosting for 10min or if $T_{con} \geq 10^{\circ}\text{C}$, the defrosting stop, the reversal valve, the outdoor unit run, and the indoor unit fan motor will run in the condition of avoiding the cold wind.

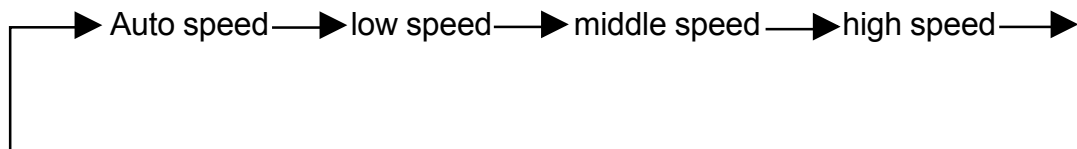
The working condition of electrical heater:

When the indoor unit runs in high or middle speed and compressor runs, and $T_{eva} \leq 44^{\circ}\text{C}$ and $T_{in} \leq 23^{\circ}\text{C}$, and $T_{in} \leq T_{set} - 1^{\circ}\text{C}$, the electrical heater act.

When the indoor unit is stop or runs in low speed or compressor in stop, or $T_{eva} \geq 52^{\circ}\text{C}$ or $T_{in} \geq 26^{\circ}\text{C}$, or $T_{in} \geq T_{set} + 2^{\circ}\text{C}$, the electrical heater stop and will restart in 2min.

4) Fanning mode:

The indoor unit fan motor runs in the set fan speed:



The range of is $16^{\circ}\text{C} \sim 30^{\circ}\text{C}$.

5) Auto mode:

It runs according the T_{in} .

If $T_{in} > 26^{\circ}\text{C}$, cooling mode act, the T_{set} is 26°C automatically.

If $20^{\circ}\text{C} \leq T_{in} \leq 26^{\circ}\text{C}$, drying mode act, the T_{set} is 24°C automatically.

If $T_{in} < 20^{\circ}\text{C}$, heating mode act, the T_{set} is 20°C automatically till $T_{in} \geq 24^{\circ}\text{C}$.

If the unit is cooling only, if $T_{in} < 20^{\circ}\text{C}$, fanning mode act, the T_{set} is 20°C automatically till $T_{in} \geq 24^{\circ}\text{C}$.

Once the each mode act, it will be in 30sec to change to the auto mode according the T_{in} .

5. Timer and sleep mode:

1) Sleep mode:

If it is cooling or drying, in 1hour of the beginning, the T_{set} will be increased 1°C , and it will be increased 1°C after 2hour, then the unit runs in this temperature.

If it is heating, in 1hour of the beginning, the T_{set} will be decreased 1°C , and it will be decreased 1°C after 2hour, then the unit runs in this temperature.

There is no sleep mode when fanning and auto mode act.

2) Timer for Turn on:

The unit is stop when the timer for turn on is acted, when it is time to turn on, the controller will act in the set mode. The distance of setting twice is 0.5hour and the range time is 0.5~24hour.

3) Timer for Turn off:

The unit is run when the timer for turn off is acted, the unit is stop, when it is time to turn off.

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The distance of setting twice is 0.5hour and the range time is 0.5~24hour.

6. Other functions:

1) Sweeping:

It controlled by the “sweep” button of the remote controller. It is available when the indoor unit fan motor is run.

2) Buzzer function:

It will be act when the controller is turned on or received a right signal.

3) Auto fan speed of indoor unit:

The indoor unit fan motor will run by the rules till it runs for 30sec after the unit is turned on.

When heating act:

If $T_{in} \geq T_{set} + 2^{\circ}\text{C}$, the indoor unit fan motor runs in low fan speed;

If $T_{in} \leq T_{set} + 1^{\circ}\text{C}$, it is middle fan speed;

If $T_{in} < T_{set} - 1^{\circ}\text{C}$, it is high fan speed.

When cooling act:

If $T_{in} \leq T_{set}$, it is low fan speed;

If $T_{in} \geq T_{set} + 1^{\circ}\text{C}$, it is middle fan speed;

If $T_{in} > T_{set} + 3^{\circ}\text{C}$, it is high fan speed.

When fanning act:

If $T_{in} \leq T_{set}$, it is low fan speed;

If $T_{in} \geq T_{set} + 1^{\circ}\text{C}$, it is middle fan speed;

If $T_{in} > T_{set} + 3^{\circ}\text{C}$, it is high fan speed.

4) Indicator light:

a. **Running indicate light:** it turn on when the unit is turned on and turn off when the unit is turned on. It will be flashing when:

Defrosting, avoiding the cold wind, protecting of full-water tank.

b. **Timer light:** it turn on when the timer is set or the unit is in the mode of sleeping except the unit is off. It will be flashing when:

Protecting of the compressor in high-pressure, protecting of the compressor in low-pressure, protecting of the low power supply, protecting of the high-temperature of the compressor outlet pipe.

c. **Compressor light:** it turn on when the compressor runs and off when the compressor stop.