

*Airwell*

# Service Manual

## HGF/YGF R410A

### 1 Introduction and Features

Indoor Unit	Outdoor Unit
AWSI-HGF009-N11(Airwell)	AWSU-YGF009-H11(Airwell)
AWSI-HGF012-N11(Airwell)	AWSU-YGF012-H11(Airwell)
AWSI-HGF018-N11(Airwell)	AWSU-YGF018-H11(Airwell)
AWSI-HGF022-N11(Airwell)	AWSU-YGF022-H11(Airwell)
ELSI-JGF009-N11(Electra)	ELAU-VGF009-H11(Electra)
ELSI-JGF012-N11(Electra)	ELAU-VGF012-H11(Electra)
ELSI-JGF018-N11(Electra)	ELAU-VGF018-H11(Electra)
ELSI-JGF022-N11(Electra)	ELAU-VGF022-H11(Electra)
JOSI-FGH009-N11(Johnson)	JOAU-FGY009-H11(Johnson)
JOSI-FGH012-N11(Johnson)	JOAU-FGY012-H11(Johnson)
JOSI-FGH018-N11(Johnson)	JOAU-FGY018-H11(Johnson)
JOSI-FGH022-N11(Johnson)	JOAU-FGY022-H11(Johnson)

9K/12K/18K/22K Indoor Unit



9K/12K Outdoor Unit



18/22K Outdoor Unit





Outdoor unit	Model of Outdoor Unit		AWAU-YGF009-H11 , ELAU-VGF009-H11 , JOAU-FGY009-H11
	Compressor Manufacturer/trademark		PANASONIC
	Compressor Model		5PS102EAA22
	Compressor Type		ROTARY
	L. R. A. (A)		20.9
	Compressor RLA(A)		3.85/3.60
	Compressor Power Input(W)		835/850
	Overload Protector		B160-150-241H
	Throttling Method		Capillary
	Starting Method		Capacitor
	Working Temp Range ( °C)		16-30°C/-7-43°C
	Condenser		Aluminum fin-copper tube
	Pipe Diameter (mm)		φ 9.52
	Rows-Fin Gap(mm)		1-1.4
	Coil length (l) x height (H) x coil width (L)		748X508X22
	Fan Motor Speed (rpm)		830±30
	Output of Fan Motor (W)		30
	Fan Motor RLA(A)		0.23
	Fan Motor Capacitor (uF)		2.5
	Air Flow Volume of Outdoor Unit		1500
	Fan Type-Piece		Axial fan - 1
	Fan Diameter (mm)		400
	Defrosting Method		Auto defrost
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side (MPa)		3.8
	Permissible Excessive Operating Pressure for the Suction Side (MPa)		1.2
	Sound Pressure Level dB (A) (H/M/L)		50
	Sound Power Level dB (A) (H/M/L)		60
Dimension (W/H/D) ( mm)		785×540×320	
Dimension of Package (L/W/H) ( mm)		820×580×355	
Net Weight /Gross Weight (kg)		31/34	
Refrigerant Charge (kg)		R410a/0.76	
Connection Pipe	Length (m)		4
	Gas additional charge(g/m)		30
	Outer Diameter	Liquid Pipe (mm )	Φ6 (1/4")
		Gas Pipe (mm )	Φ9.52 (3/8")
	Max Distance	Height (m)	10
	Length (m)	20	

Parameter data of specifications in the form are subject to change without prior notice. Refer to the actual data specified on the nameplate of the unit.



Outdoor unit	Model of Outdoor Unit		AWAU-YGF012-H11 , ELU-VGF012-H11 , JOAU-FGY012-H11
	Compressor Manufacturer/trademark		LANDA
	Compressor Model		QXA-B120C150
	Compressor Type		Rotary
	L. R. A. (A)		24
	Compressor RLA(A)		4.4
	Compressor Power Input(W)		1020
	Overload Protector		/
	Throttling Method		Capillary
	Starting Method		Capacitor
	Working Temp Range ( °C)		16-30°C/-7-43°C
	Condenser		Aluminum fin-copper tube
	Pipe Diameter (mm)		Φ9.52
	Rows-Fin Gap(mm)		1-1.4
	Coil length(l)x height(H)x coil width(L)		748X508X25.4
	Fan Motor Speed (rpm)		850
	Output of Fan Motor (W)		30
	Fan Motor RLA(A)		0.45
	Fan Motor Capacitor (uF)		2.5
	Air Flow Volume of Outdoor Unit		1800
	Fan Type-Piece		Axial fan - 1
	Fan Diameter (mm)		Φ400
	Defrosting Method		Auto defrost
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side(MPa)		2.5
Permissible Excessive Operating Pressure for the Suction Side(MPa)		0.6	
Sound Pressure Level dB (A) (H/M/L)		52	
Sound Power Level dB (A) (H/M/L)		62	
Dimension (W/H/D) (mm)		798/540/320	
Dimension of Package (L/W/H) (mm)		825/580/355	
Net Weight /Gross Weight (kg)		35/40	
Refrigerant Charge (kg)		820	
Conne- ction Pipe	Length (m)		4
	Gas additional charge(g/m)		30
	Outer Diameter	Liquid Pipe (mm)	Φ6 (1/4")
		Gas Pipe (mm)	Φ12 (1/2")
	Max Distance	Height(m)	10
Length (m)		20	

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Outdoor unit	Model of Outdoor Unit	AWAU-YGF018-H11 , ELAU-VGF018-H11 , JOAU-FGY018-H11		
	Compressor Manufacturer/trademark	Hitachi		
	Compressor Model	ASL180SV-C7LU		
	Compressor Type	Rotary		
	L. R. A. (A)	32		
	Compressor RLA(A)	6.8		
	Compressor Power Input(W)	1500		
	Overload Protector	Internal		
	Throttling Method	Capillary		
	Starting Method	Capacitor		
	Working Temp Range ( °C)	-7-43°C		
	Condenser	Aluminum fin-copper tube		
	Pipe Diameter (mm)	φ 7		
	Rows-Fin Gap(mm)	2、 1.6		
	Coil length(l)x height(H)x coil width(L)	735X495X25.4		
	Fan Motor Speed (rpm)	860±20		
	Output of Fan Motor (W)	35		
	Fan Motor RLA(A)	0.3		
	Fan Motor Capacitor (uF)	2.5		
	Air Flow Volume of Outdoor Unit	/		
	Fan Type-Piece	Axial fan - 1		
	Fan Diameter (mm)	φ 400		
	Defrosting Method	Auto defrost		
	Climate Type	T1		
	Isolation	I		
	Moisture Protection	IP24		
	Permissible Excessive Operating Pressure for the Discharge Side(MPa)	3.8		
	Permissible Excessive Operating Pressure for the Suction Side(MPa)	1.2		
	Sound Pressure Level dB(A) (H/M/L)	55		
	Sound Power Level dB(A) (H/M/L)	65		
Dimension (W/H/D) (mm)	848X540X320			
Dimension of Package (L/W/H) (mm)	878X360X580			
Net Weight /Gross Weight (kg)	40/44			
Refrigerant Charge (kg)	R410A 1.15kg			
Connection Pipe	Length (m)	5		
	Gas additional charge(g/m)	30		
	Outer Diameter	Liquid Pipe (mm)	6	
		Gas Pipe (mm)	12	
	Max Distance	Height (m)	5	
Length (m)		10		

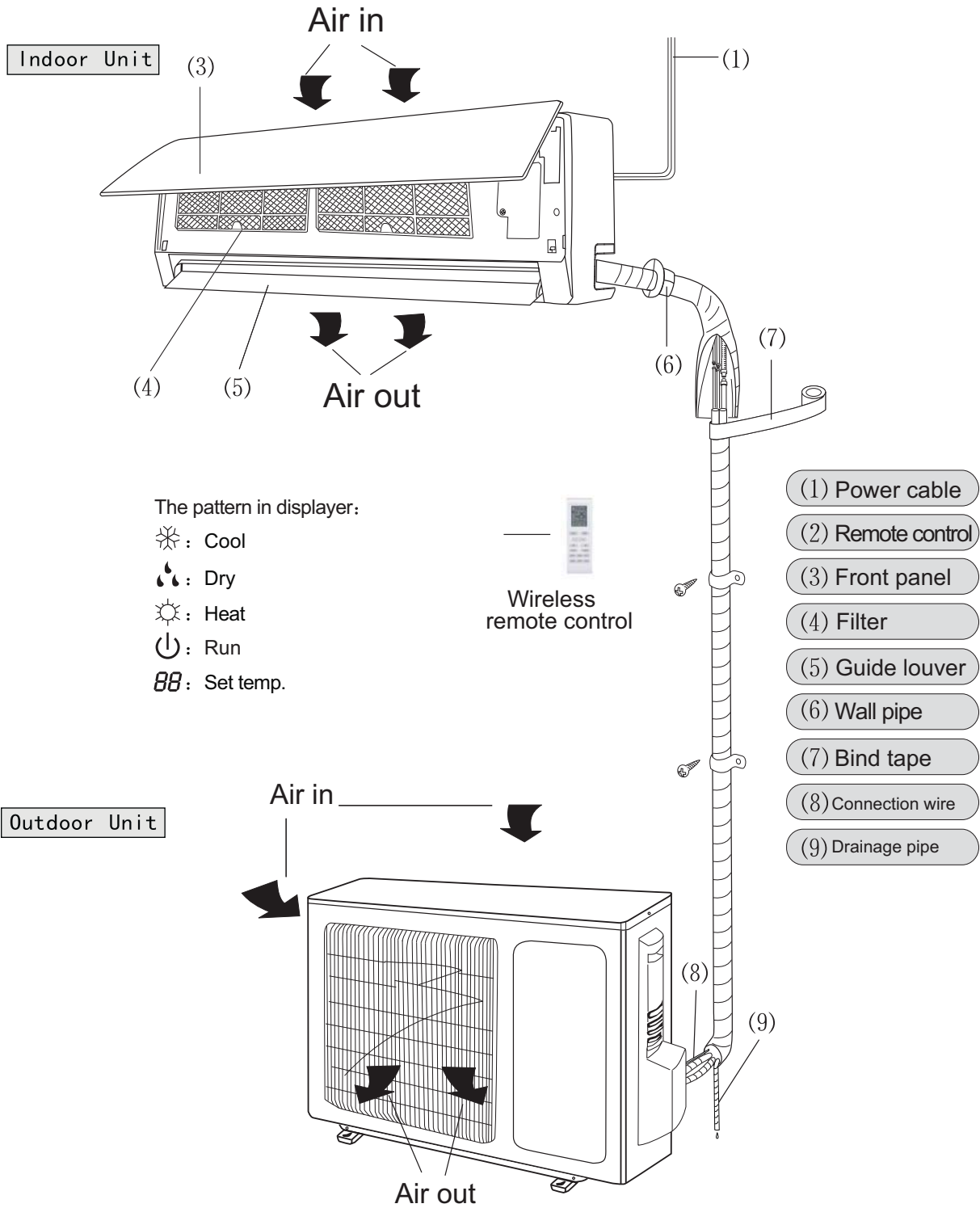
Parameter data of specifications in the form are subject to change without prior notice. Refer to the actual data specified on the nameplate of the unit.

Model			AWSI-HGF022-N11 , ELSI-JGF022-N11 , JOSI-FGH022-N11	
Function			C O O L I N G	H E A T I N G
Rated Voltage			220-240V~	
Rated Frequency			50Hz	
Total Capacity (W)			6155	6500
Power Input (W)			1900	1900
Rated Input (W)			2600	2700
Rated Current (A)			11.3	11.7
Air Flow Volume (m <sup>3</sup> /h) (S/H/M/L)			850/780/650/550	
Dehumidifying Volume (l/h)			3	
EER / C.O.P (W/W)			3.24	
Energy Class			A	
Indoor unit	Model of Indoor Unit		AWSI-HGF022-N11 , ELSI-JGF022-N11 , JOSI-FGH022-N11	
	Fan Motor Speed (r/min) (S/H/M/L)		1350/1200/1050/900	
	Output of Fan Motor (w)		20	
	Input of Heater (w)		/	
	Fan Motor Capacitor (uF)		1.5	
	Fan Motor RLA(A)		0.25	
	Fan Type-Piece		Cross flow fan - 1	
	Diameter-Length (mm)		Φ96 X 797	
	Evaporator		Aluminum fin-copper tube	
	Pipe Diameter (mm)		Φ7	
	Row-Fin Gap(mm)		2-1.4	
	Coil length(l) x height(H) x coil width (L)		715X304.8X25.4	
	Swing Motor Model		MP28VB	
	Output of Swing Motor (W)		2.5	
	Fuse (A)		PCB 3.15A Transformer 0.2A	
	Sound Pressure Level dB (A) (H/M/L)		47/44/41/38	
	Sound Power Level dB (A) (H/M/L)		57/54/51/48	
	Dimension (W/H/D) (mm)		940X200X298	
Dimension of Package (L/W/H) (mm)		1010X285X380		
Net Weight /Gross Weight (kg)		13/17		



Outdoor unit	Model of Outdoor Unit		AWAU-YGF022-H11 , ELAU-VGF022-H11 , JOAU-FGY022-H11
	Compressor Manufacturer/trademark		Shanghai Hitachi Electrical Appliances Co.,Ltd./Highly
	Compressor Model		ASH232SV-C8LU
	Compressor Type		rotary compressor
	L. R. A. (A)		40
	Compressor RLA(A)		8.8
	Compressor Power Input(W)		1900
	Overload Protector		Inner
	Throttling Method		Capillary
	Starting Method		Capacitor
	Working Temp Range ( °C)		-7°C ≤ T ≤ 43 °C
	Condenser		Aluminum fin-copper tube
	Pipe Diameter (mm)		7
	Rows-Fin Gap(mm)		2-1.4
	Coil length(l)x height(H)x coil width(L)		865×660×38.1
	Fan Motor Speed (rpm)		780
	Output of Fan Motor (W)		68
	Fan Motor RLA(A)		0.63
	Fan Motor Capacitor (uF)		3
	Air Flow Volume of Outdoor Unit		2790m <sup>3</sup> /h
	Fan Type-Piece		Axial fan - 1
	Fan Diameter (mm)		Φ460
	Defrosting Method		Auto defrost
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side(MPa)		3.8
	Permissible Excessive Operating Pressure for the Suction Side(MPa)		1.2
	Sound Pressure Level dB (A) (H/M/L)		56/54/52
	Sound Power Level dB (A) (H/M/L)		66/64/62
Dimension (W/H/D) (mm)		913X378X680	
Dimension of Package (L/W/H) (mm)		994X428X725	
Net Weight /Gross Weight (kg)		46/50	
Refrigerant Charge (kg)		R410/1.45	
Connection Pipe	Length (m)		4
	Gas additional charge(g/m)		50
	Outer Diameter	Liquid Pipe (mm)	Φ6
		Gas Pipe (mm)	Φ12
	Max Distance	Height(m)	5
Length(m)		10	
Parameter data of specifications in the form are subject to change without prior notice. Refer to the actual data specified on the nameplate of the unit.			

### 3 Name of Component

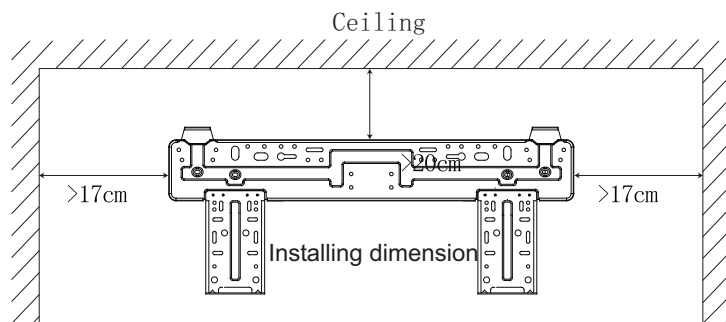
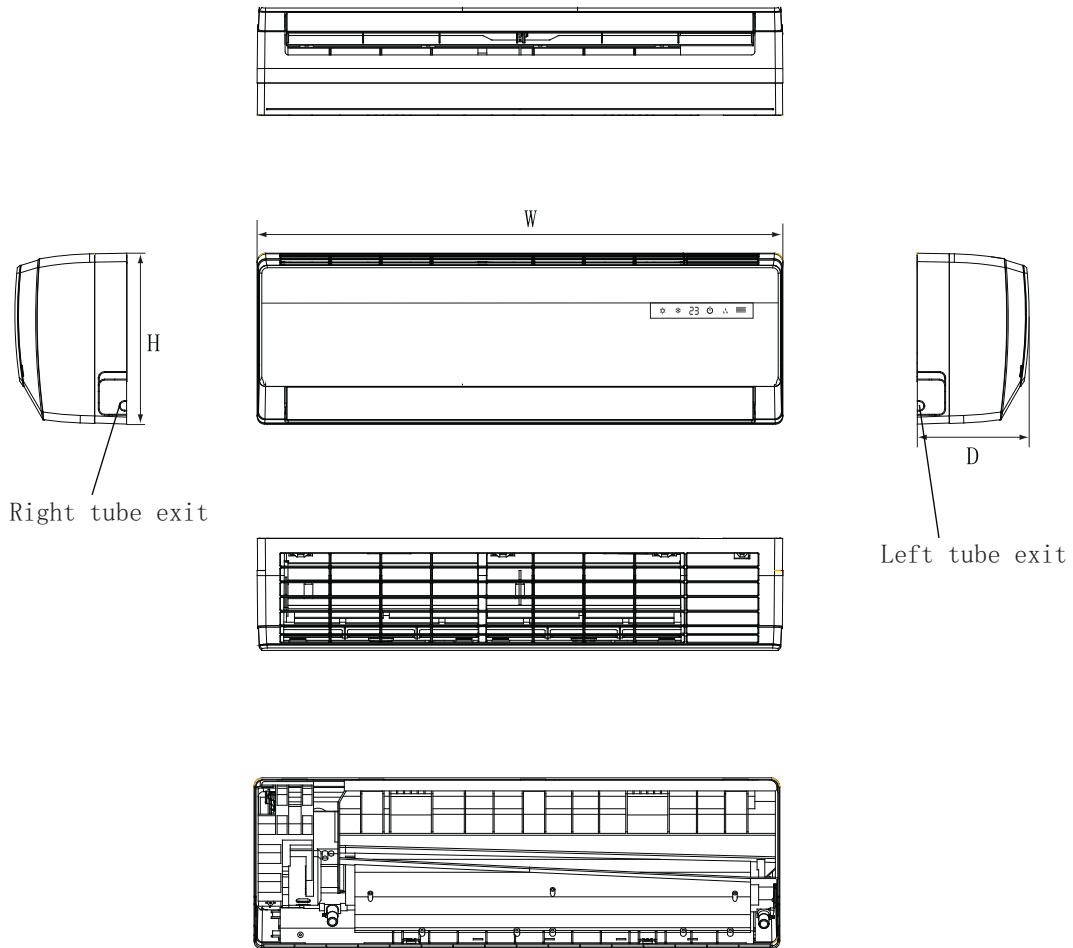


Please subject to the actual product in case that the photo and the actual product may different.

## 4 Appearance and Installation Dimension

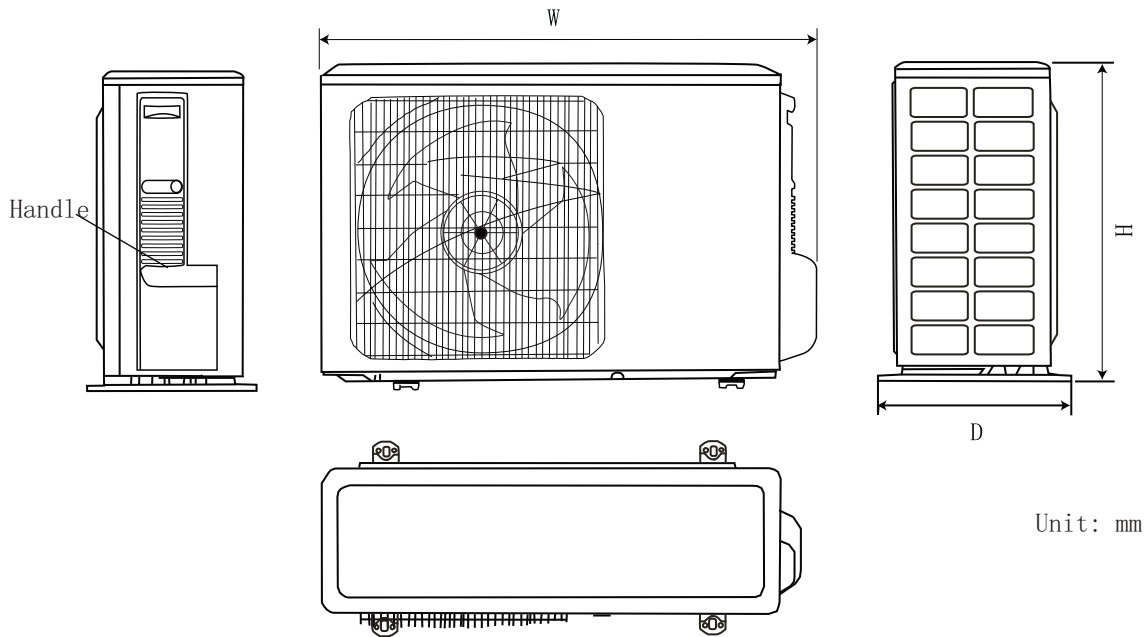
### 4.1 Appearance and Installation Dimension of the Indoor Unit

Take panel as an example:

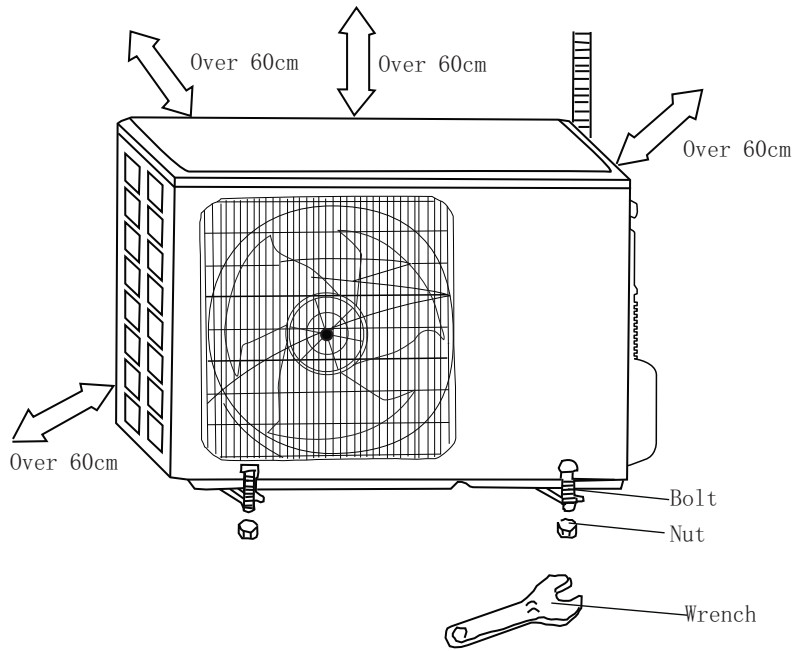


	W (mm)	H (mm)	D (mm)
9K	730	255	174
12K	790	265	170 (177)
18K/22K	940	200	298

## 4.2 Appearance and Installaion Dimension of the Outdoor Unit (9K/12K/18K)

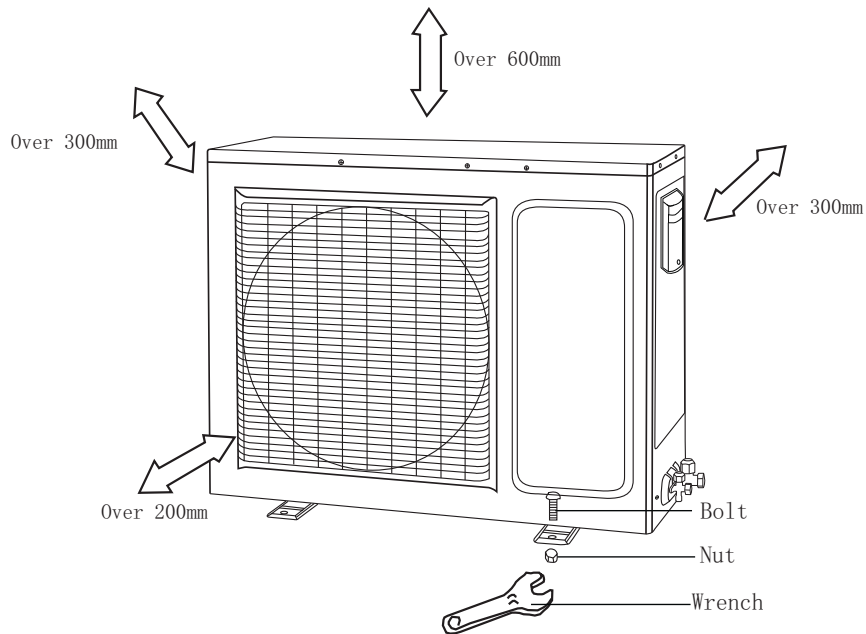
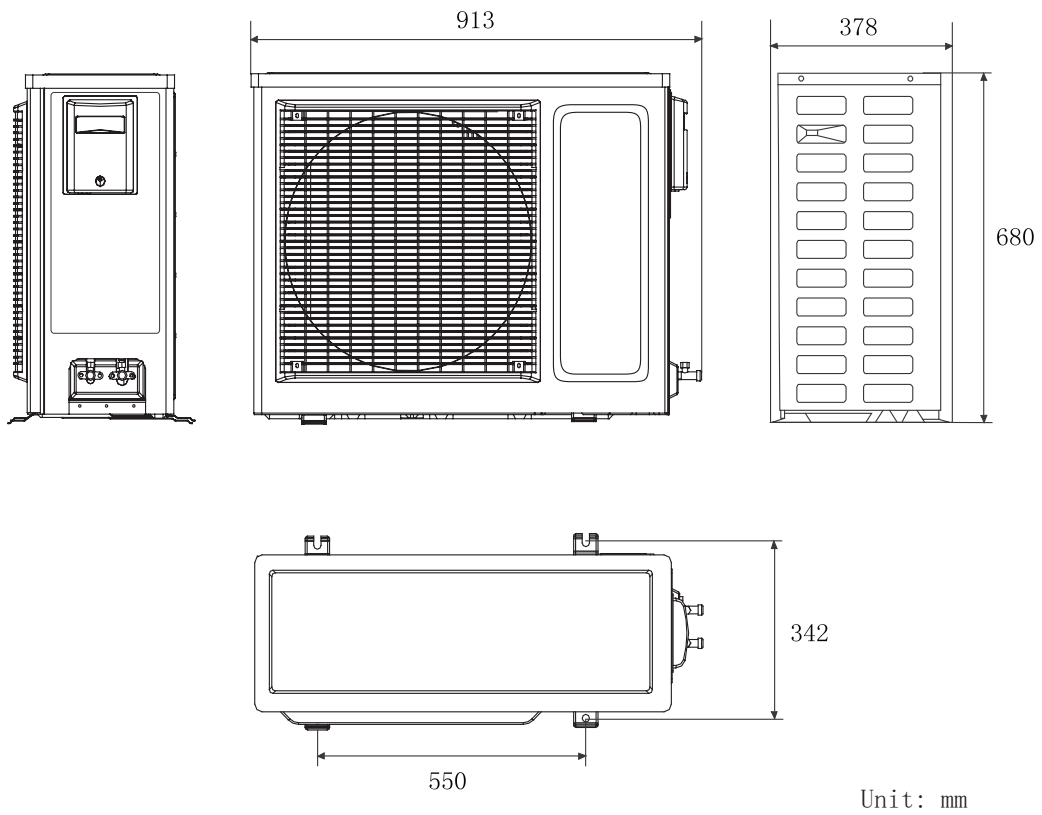


Unit: mm



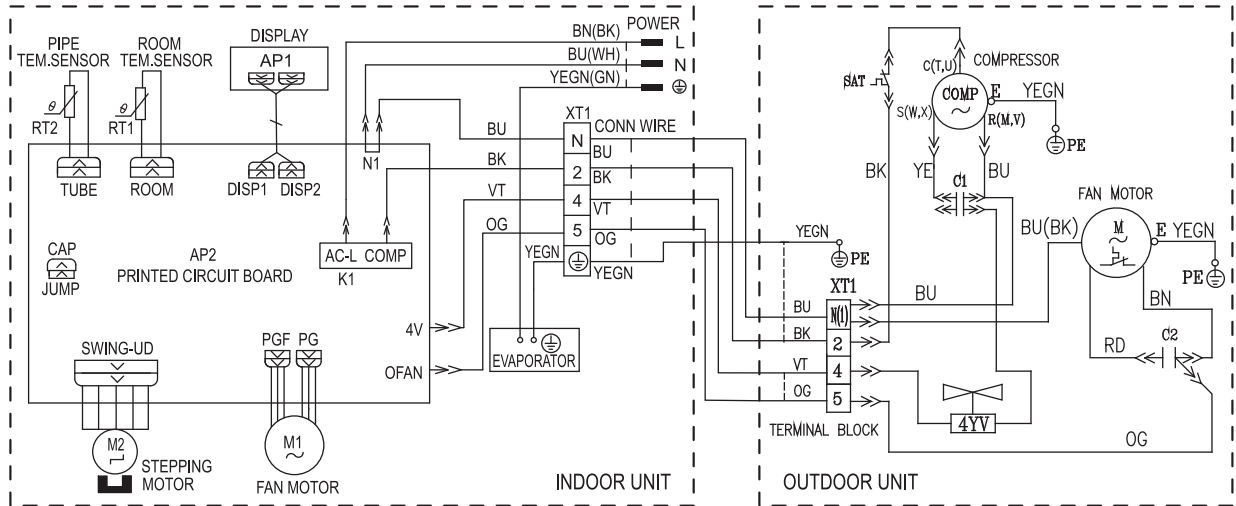
	W (mm)	H (mm)	D (mm)
9K	785	540	320
12K	798	540	320
18K	848	540	320

4.3 Appearance and Installation Dimension of the Outdoor Unit(22K)

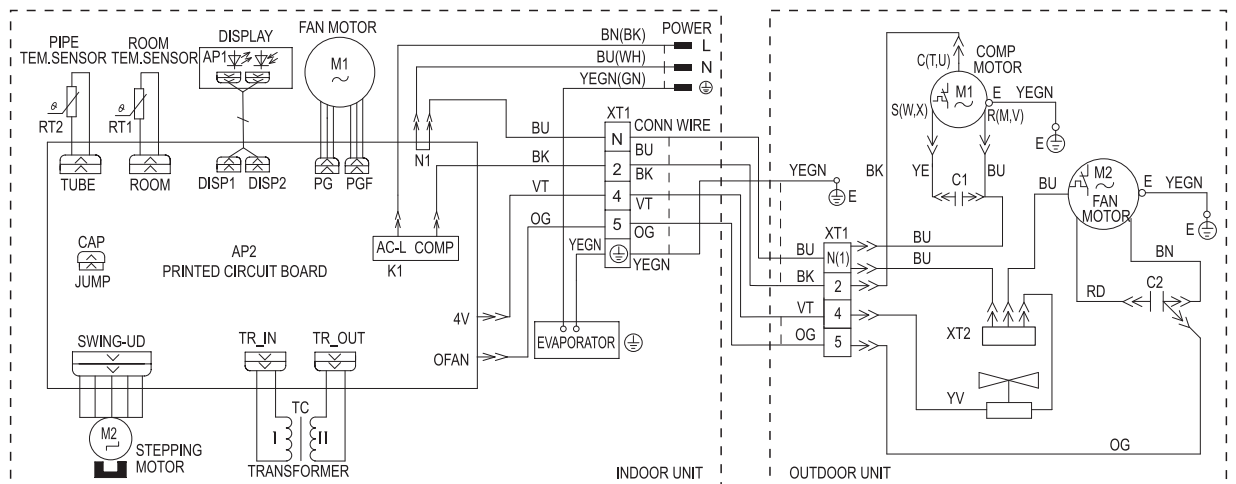


# 5 Electrical Diagram

AWSI-HGF009-N11 ELSI-JGF009-N11 JOSI-FGH009-N11

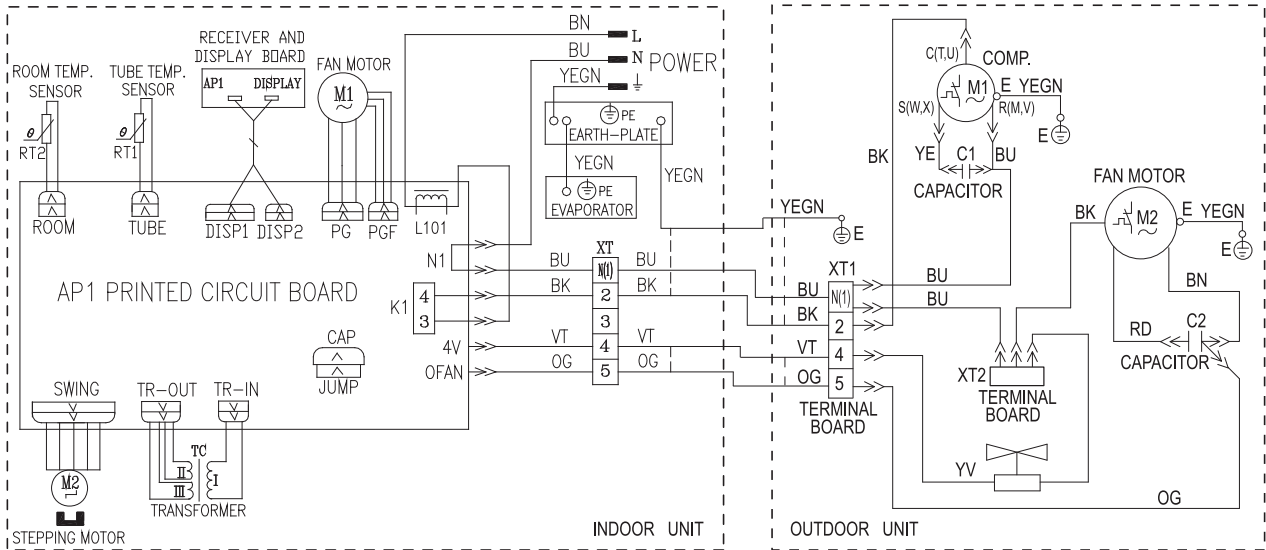


AWSI-HGF012-N11 ELSI-JGF012-N11 JOSI-FGH012-N11

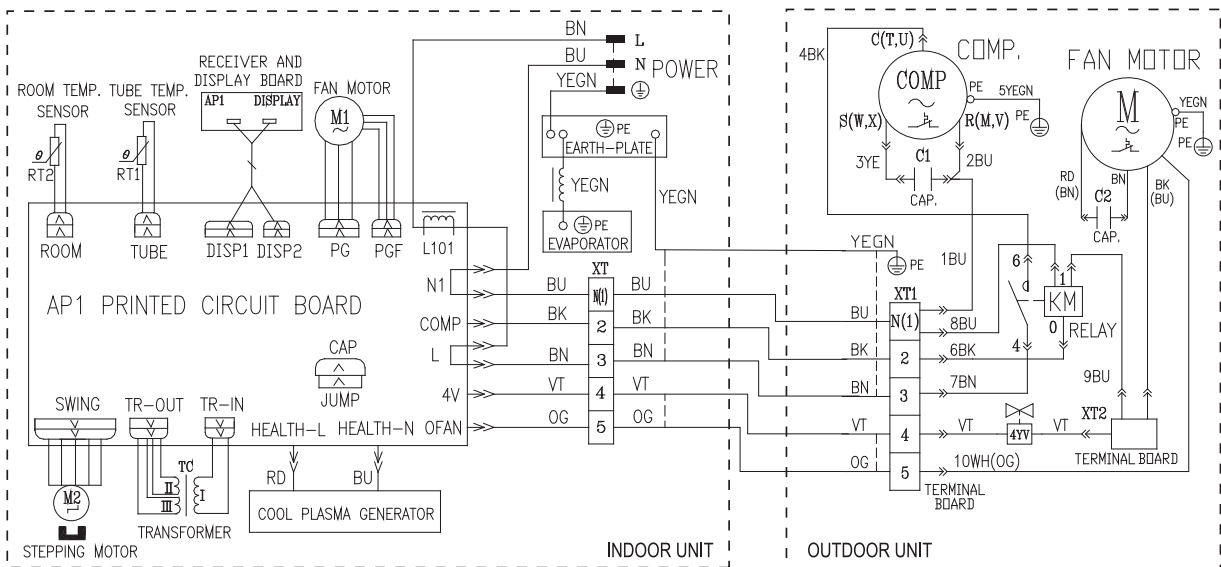


In case of any change in the Electrical Diagram shown above, please follow the drawing on cabinet.

**AWSI-HGF018-N11 ,ELSI-JGF018-N11 ,JOSI-FGH018-N11**



**AWSI-HGF022-N11,ELSI-JGF022-N11,JOSI-FGH022-N11**



In case of any change in the Electrical Diagram shown above, please follow the drawing on cabinet.

## 6 Remote Controller Function Manual and Operating Instructions

### 6.1 Remote Controller Function Manual

#### 1 Temperature Parameters

- ◆ Indoor preset temperature ( $T_{\text{preset}}$ )
- ◆ Indoor ambient temperature ( $T_{\text{amb.}}$ )

#### 2 Basic Functions of System

Once energized, the compressor should in no way be restarted unless after at least 3-minute time interval. In case of having memory function, for the first energization, the compressor will be started without 3-minute lag, if being under the condition of power-off, and the compressor will have 3-minute delay to be started under the condition of power-on. Once started, the compressor will not be stopped within 6 minutes with the changes of room temperature.

##### (1) Cooling Mode

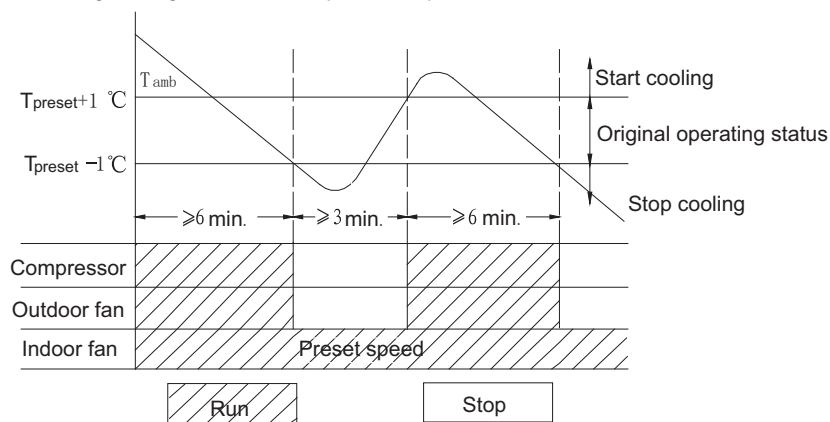
##### ① Cooling Condition and Process

When  $T_{\text{amb.}} \geq T_{\text{preset}} + 1^\circ\text{C}$ , the unit will run under cooling mode, in which case the compressor and outdoor fan will be started, and the indoor fan will run at preset speed.

When  $T_{\text{amb.}} \leq T_{\text{preset}} - 1^\circ\text{C}$ , the compressor and the outdoor fan will be stopped, in which case the indoor fan will run at preset speed.

When  $T_{\text{preset}} - 1^\circ\text{C} < T_{\text{amb.}} < T_{\text{preset}} + 1^\circ\text{C}$ , the unit will maintain its original operating status.

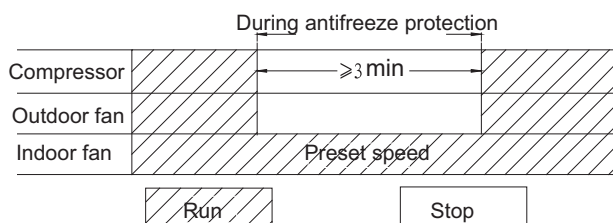
- Under this mode, the switchover valve will be de-energized and the temperature can be set from 16 to 30°C. The display shows the signal of running, cooling as well as the preset temperature.



##### ② Protection function

##### ◆ Antifreeze Protection

If it is detected that the system is under antifreeze protection, the compressor will be stopped, and the indoor fan will run at preset speed. When antifreeze protection is released, the compressor has stopped for 3 minutes, and the unit will resume its original operating status.





### ③ Overload protection

When the system's current is inspected to be more than 22A for continuous 3 seconds, the main unit will enter the status as such that only the fan is running. After 3 minutes, if the fault is eliminated, the complete unit will resume its original operating status. In case of continuously having over-current protection for 6 times (for example: if the compressor is in operation for more than 6 minutes continuously, the protection frequency will be subject to zero clearing), the complete unit will stop and the main unit enter the status as such that only the fan is running. At this time, it is required to close the unit by remote control and then the unit can normally be started. The digital tube displays the fault code "E5", and the operating indicator light will flash (go out for 3S, and flash for 5 times).

## (2) Dehumidifying Mode

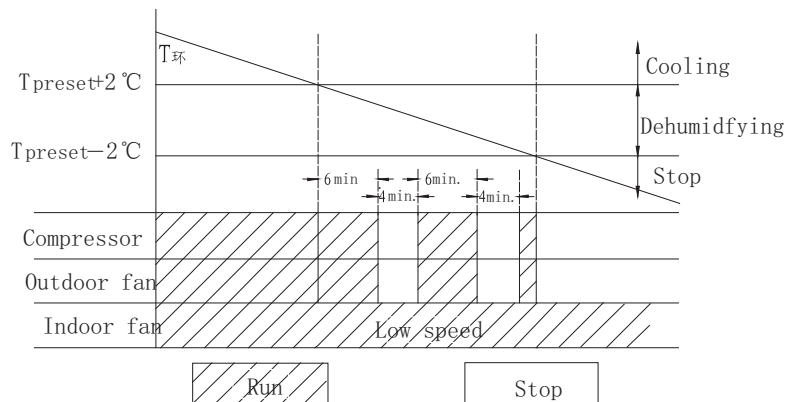
### ① Working Conditions and Process of Dehumidifying

When  $T_{amb} > T_{preset} + 2$ , the unit will run under dehumidifying and cooling mode, in which case the compressor, the outdoor fan will be in operation and the indoor fan will run at preset speed.

When  $T_{preset} - 2^{\circ}\text{C} \leq T_{amb} \leq T_{preset} + 2$ , the unit will run under dehumidifying mode, in which case the indoor fan will run at low speed, the compressor and the outdoor fan will be stopped after 6 minutes and then restarted after 4 minutes, dehumidifying process is repeated in cycle.

When  $T_{amb} < T_{preset} - 2^{\circ}\text{C}$ , the compressor and outdoor fan will be stopped and the indoor fan will run at low speed.

➤ Under this mode, the switchover valve will be de-energized and the temperature can be set from 16 to 30°C. The display shows the signal of running, cooling and the preset temperature.



### ② Protection Function

#### ◆ Antifreeze Protection

Under the dehumidification cooling mode, when antifreeze protection of the system is to be inspected, the compressor and outdoor fan will stop running, and the indoor fan will be in operation at low speed. When the antifreeze protection is relieved and the compressor has stopped for 3 minutes, the complete unit will resume its original status. After satisfying operation for 6 minutes and stop for 4 minutes, when antifreeze protection of the system is to be inspected, the compressor and outdoor fan will stop running, and the indoor fan will be in operation at low speed. When the antifreeze protection is relieved and the compressor has stopped for 4 minutes, the complete unit will resume its original status.

### ③ Other Protections

Other protections are same as the protection functions under the refrigeration mode.

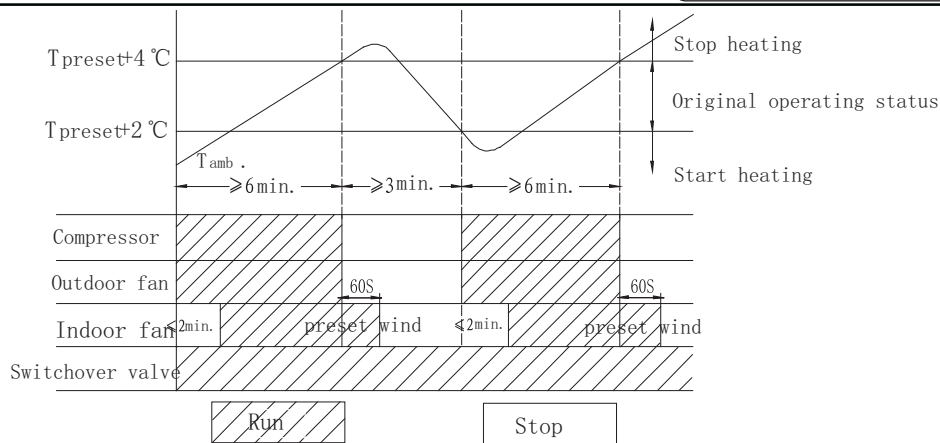
## (3) Heating Mode (The single cooling machine has no heating mode)

### ① Heating Conditions and Process

When  $T_{amb} \leq T_{preset} + 2^{\circ}\text{C}$ , the unit will run under heating mode, in which case the switchover valve, compressor and outdoor fan will be simultaneously started, and the indoor fan will be started to run at low speed after 2 minutes at most. If  $T_{amb} \geq T_{preset} + 4$ , the compressor and the outdoor fan will be stopped, the switchover valve will remain energized and the indoor fan will be stopped after blowing at low speed for 60 seconds.

When  $T_{preset} + 2^{\circ}\text{C} < T_{amb} < T_{preset} + 4^{\circ}\text{C}$ , the unit will maintain its former status.

➤ Under this mode, the switchover temperature can be set within a range from 16 to 30°C. The display shows the signal of running, cooling as well as the preset temperature.



## ② Defrosting Conditions and Process

Intelligent defrosting is adopted, and it can conduct defrosting automatically according to the frosting condition. Double 8 displays H1.

## ③ Protection Function

### ◆ High Temp. Protection

If it is detected that the evaporator tube temperature is too high, the outdoor fan will be stopped. When the temperature of the evaporator tube resumes to normal, the outdoor fan will be restarted.

### ◆ Noise Silencing Protection

If the unit is stopped by pressing ON/OFF, the swichover valve will be stopped after 2-minute lag; or 2 minutes will be delayed upon mode switching.

## ④ Overload Protection

The overload protection is same as the overload protection under the cooling mode (while the indoor fan is running based on afterheat blowing).

## (4) Fan Mode

Under such mode, the indoor fan is running at the preset speed, and the compressor, outdoor fan and swichover valve all stop operating.

- Under such mode, the temperature can be set from 16-30°C. The display equipment will show the operation signal and the preset temperature.

## (5) Auto Mode

Under this mode, the system will automatically select the running mode (cooling, heating and air flow) depending on the ambient temperature. The display will show the operation signal, the actual operation mode signal and the preset temperature. There are 30s delay protection for mode conversion. The protection function is same as the protection function under each mode.

## 3 Other Control

### (1) Timing Function

The main board is equipped with common timing function and moment timing function at the same time, and the timing function can be selected by providing remote controllers of different function.

#### ① Common timing

**Timed on:** It is available to set the timed start function under the shutdown condition. After reaching the preset start time, the controller will operate according to the original set mode. The timing interval is 0.5h, and the set range is 0.5-24h.

**Timed off:** It is available to set the timed stop function under the start-up condition. After reaching the preset time, the system will close. The timing interval is 0.5h, and the set range is 0.5-24h.

#### ② Moment timing

**Timed on:** If the system is subject to the preset time of start under the operation condition, it will continuously operate.

If the system is subject to the preset time of start under the shutdown condition, after reaching the preset time of start, the system will start operating according to the preset mode.

**Timed off:** If the system is subject to the preset time of stop under the shutdown condition, when setting the timed stop, the system will maintain holding state. If the system is subject to the preset time of stop under the start-up condition, after reaching the preset time of stop, the system will stop running.

### Timed changing:

When the system is under the timing condition, it is available to set start and stop by controlling the on/off key in the remote controller and also it is available to reset the timing time, and the system will operate according to the latest set condition.

When the system is under the operation condition, if it is required to set the timed start and timed stop at the same time, the system will keep the present set operation condition. After reaching the preset time of stop, the system will stop operating. □□

When the system is under the shutdown condition, if it is required to set the timed start and timed stop at the same time, the system will keep the shutdown condition. Only after reaching the preset time of start, the system will start operating. □□

Afterwards, in each day, when reaching the preset time of start, the system will start operating according to the preset mode, and when reaching the preset time of stop, it will stop operating. When the timed stop and the timed start are set to be at the same time, it is required to follow the order of stop. □□

### (2) Auto Keying

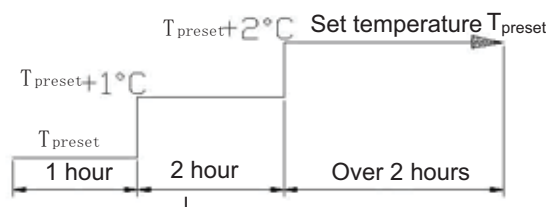
When pressing such key once, the system will start operating based on the automation mode, the indoor fan will operate according to the automatic wind gear, and the swing motor will operate when the indoor fan is under operation. The system will stop when pressing such key again.

### (3) Buzzer

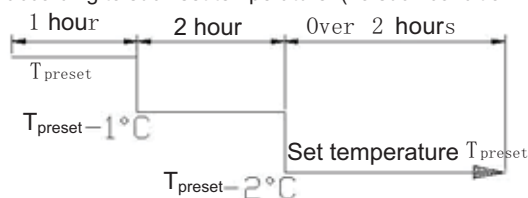
The buzzer will send out warning tone when the controller is powered on and subject to key pressing and receive the signal from the remote controller.

### (4) Sleep Function

Under cooling or dehumidifying mode, the preset temperature will automatically rise by 1 °C one hour after setting of sleep function from remote controller and rise by another 2 °C after 2 hours, totaling 3 °C are increased within two hours. Then it will continuously operate according to such set temperature.



Under heating mode, the preset temperature will automatically decrease by 1 °C one hour after setting of sleep function from remote controller and decrease by another 1 °C after 2 hours, totaling 2 °C are increased within two hours. Then it will continuously operate according to such set temperature. (no such condition for the single cooling unit)



### (5) Turbo Function

It is available to set the turbo function under the heating and cooling modes.

### (6) Drying Function

It is available to set the drying function under the heating and cooling modes.

### (7) Automatic Control of Fan Speed

Under this mode, the air conditioner can automatically select the speed of indoor fan (high, medium or low) with the change of ambient temperature.

### (8) Swing Motor Control

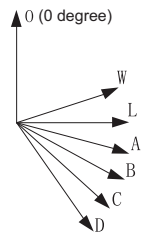
After being powered on, the swing motor firstly makes the wind board rotated to position 0 anticlockwise, and the air exit will be closed.

After starting, if the swing function has not been set, under the heating condition, the up-down wind blade will be rotated to D position clockwise. Under other conditions, the up-down wind blade will be rotated to horizontal L position.

When setting the windshield function at the time of starting, the wind blade will swing between W and D. The wind blade has seven kinds of swing conditions: position L, position A, position B, position C, position D, swinging between position L and D, and stopping in any position from L and D (the included angle of L-D is equiangular)

The wind board is closed at the position 0 at the time of shutdown. The swing action will be only effective when the swing is set and the indoor fan is in operation.

Note: When the remote control is set to be in the position L to D, the position A to C, and the position B to D, the wind board will swing between the position of W and D.



## (9) Display

### ① Operation picture and mode picture display

After being powered on, all the display pictures will be displayed once. The operation indicator picture is red during the holding state. When starting the machine by remote control, the operation indicator picture will be on, and at the same time, the picture of present set operation mode will be displayed ( the mode indicator shows cooling, heating, and dehumidification). All the displays will be closed if the lighting key is closed.

### ② Double 8 display

If the air conditioning is subject to the first power-on start, the nixie tube will display the present set temperature on default (the set temperature range is 16-30jæ). When receiving the signal to display the set temperature signal, the nixie tube will display the set temperature. When receiving the signal to display the environmental temperature signal, the nixie tube will display the indoor environmental temperature at present. In case of other conditions to be set by remote control, the display will maintain unchanged. During displaying the environmental temperature, the remote control receives the effective remote control signal and then it will display the set temperature for 5s and then restore to the environmental temperature display. The environmental temperature thermo-bulb has the fault display "F1", the indoor tube temperature thermo-bulb has the fault display "F2", and the jumper cap has the fault protection display "C5".

## (10) PG motor locked-rotor protection

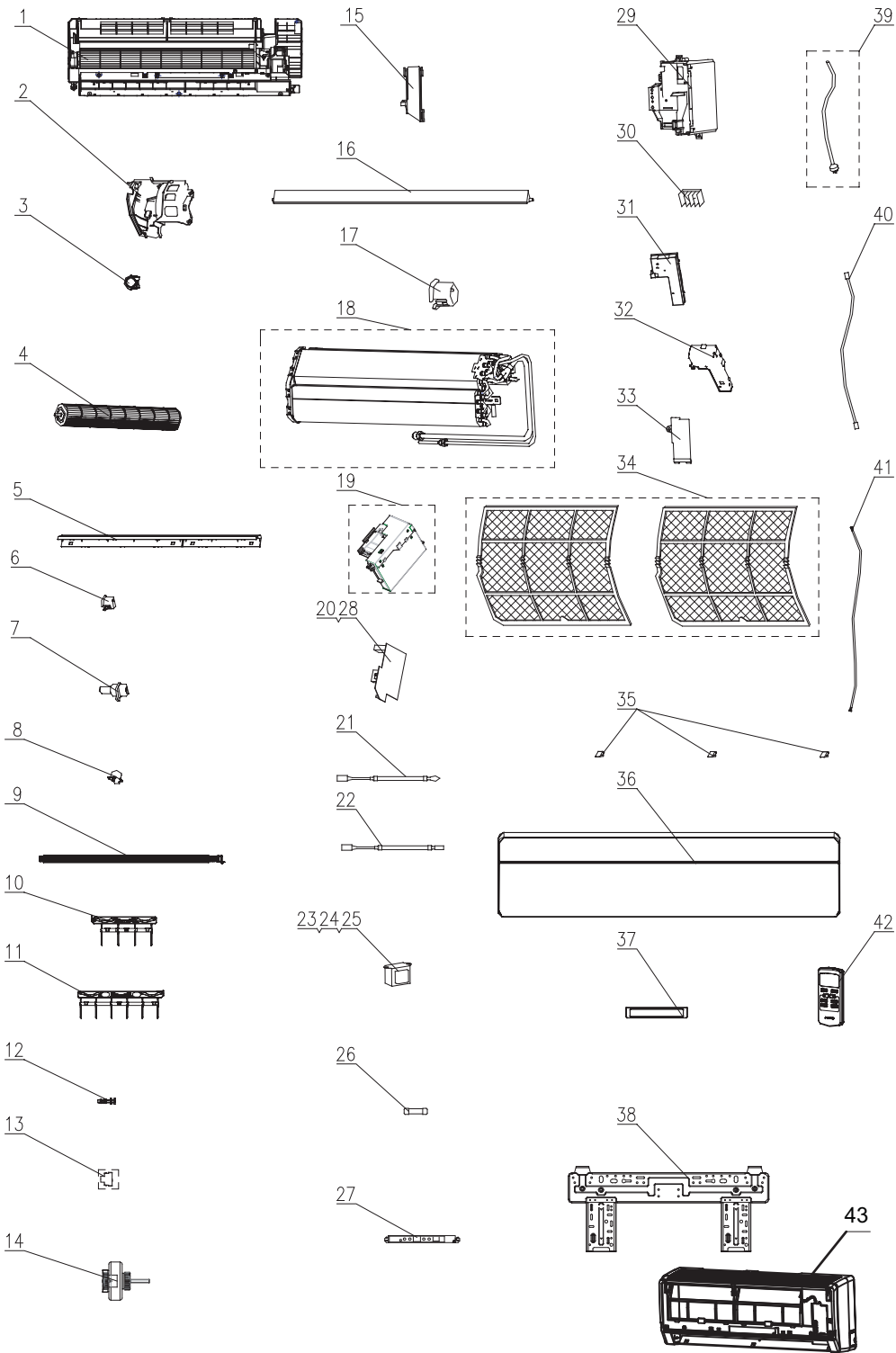
When starting the fan, if the motor has a relatively low operation rotating speed during a period, in order to prevent the motor from automatic protection, it is required to stop operating and display the locker-rotor. If being under the start-up condition, the double 8 nixie tube will display the locked-rotor fault code H6. If being under the shutdown condition, the locker-rotor fault information will not be displayed.

## (11) Power-fail memory protection

Memory content: mode, up-down purging, lighting, set temperature, and set fan speed. After having power failure, it can automatically start operating according to the memory content after being powered on again. If no timing function is set in the final remote control order, the system will memorize the latest remote control order and then operate based on the manner set during the latest time. There is common timing function included in the latest remote control order. If the system has power failure when the timed time is still not reached, the system will memorize the timing function in the latest remote control order after being powered on again, and the timing time will be calculated from the power-on time again. If there is timing function in the latest remote control order, when the timed time is reached and there is power-failure after the system conduct the action of the set timed start or timed stop, then after powered on again, the system will memorize the operating condition before power failure and will not implement the timing action, and also the moment timing will not be memorized.

**7.3 Assembly Drawing and List of Components and Parts of Indoor Unit**

Being applicable to: AWSI-HGF009-N11 、 ELSI-JGF009-N11 、 JOSI-FGH009-N11



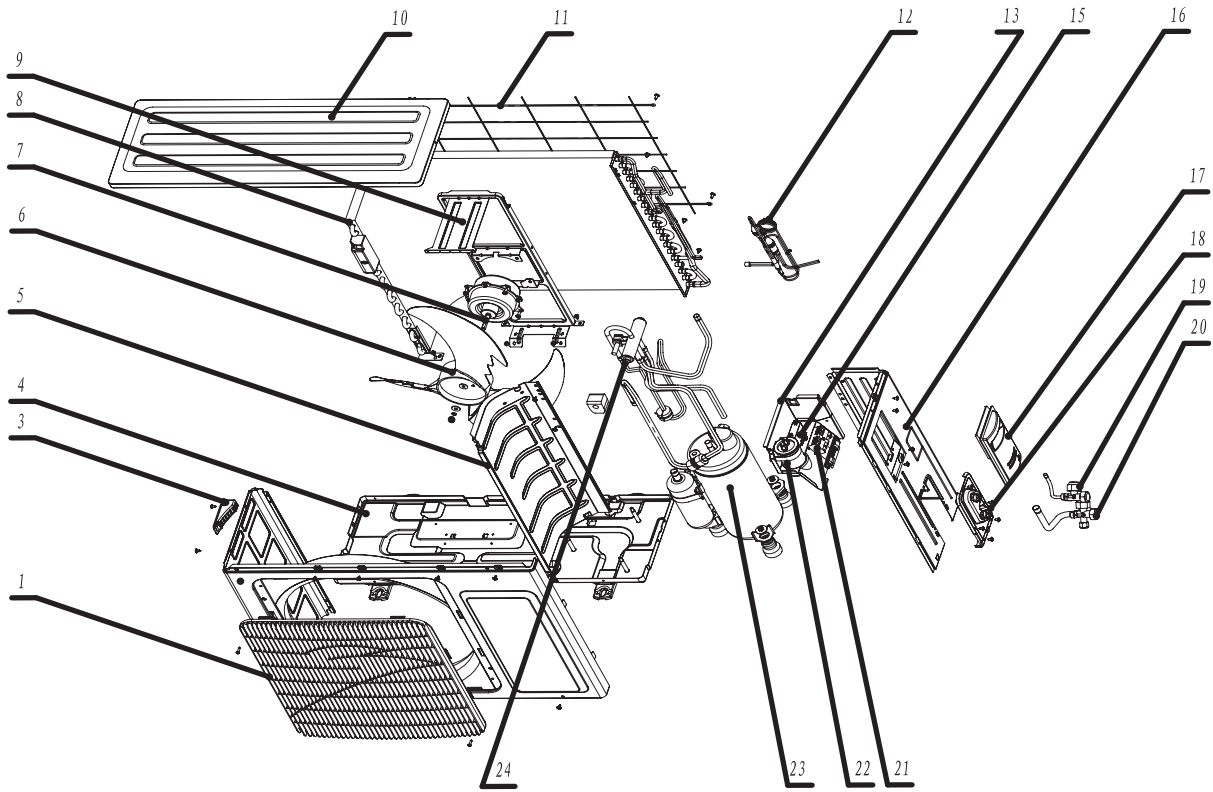
## Bee Series

No	Description	PartCode	Qty
		AWSI-HGF009-N11 , ELSI-JGF009-N11 , JOSI-FGH009-N11	
1	Rear Case assy	22202135	1
2	Motor Press Plate	26112201	1
3	Ring of Bearing	26152022	1
4	Cross Flow Fan	10352034	1
5	Helicoid tongue	26112202	1
6	Axile Bush	10542704	1
7	crank	10582070	1
8	Stepping Motor	1521210801	1
9	Drainage hose	0523001407	1
10	Air Louver 1	10512113	1
11	Air Louver 2	10512114	1
12	Rubber Plug (Water Tray)	76712012	1
13	O-Gasket sub-assy of Bearing	76512051	1
14	Fan Motor	15012115	1
15	Pipe Clamp	26112199	1
16	Guide Louver	10512162	1
17	Axile Bush	10542008	1
18	Evaporator Assy	0100257702	1
19	Electric Box Assy	20202273_K36264	1
20	Main Board	30135353	1
21	Ambient Temperature Sensor	390000453	1
22	Tube Sensor	390000591	1
23	Relay	44020331	1
24	Relay	44020345	2
25	Relay	44020386	1
26	Fuse	46010055	1
27	Display Board	30565089	1
28	Jumper	4202300114	1
29	Electric Box	20112091	1
30	Terminal Board	42010262	1
31	Electric Box Cover	20122114	1
32	<b>Shielding Box</b>	01592080	1
33	Electric Box Cover2	20122075	1
34	Filter Sub-Assy	11122095	2
35	Screw Cover	24252016	3
36	Front Panel Assy	20012462_K36264	1
37	Receiver Window	22432172	1
38	Wall Mounting Frame	01252231	1
39	Power Cord	400220113	1
40	Connecting Cable	40020540	1
41	Connecting Cable	40020536	1
42	Remote Controller	30510041_K36264	1
43	<b>Font Case</b>	20012396	1

The above data is subject to change without prior notice.

## 7.4 Assembly Drawing and List of Components and Parts of Outdoor Unit

Being applicable to the outdoor unit of: AWAU-YGF009-H11 , ELAU-VGF009-H11 , JOAU-FGY009-H11



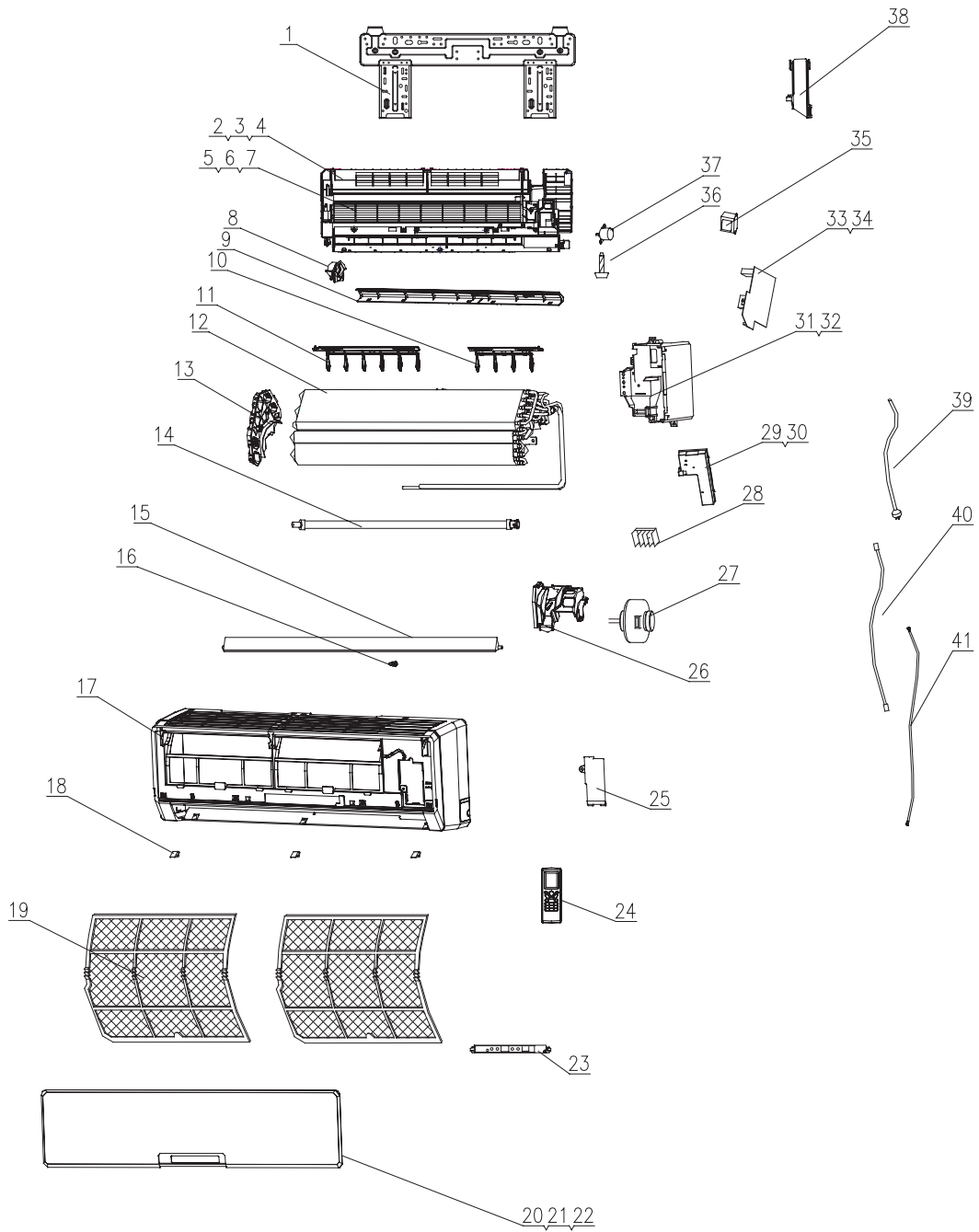
NO.	Description	Part Code	Qty.
		AWAU-YGF009-H11, ELAU-VGF009-H11, JOAU-FGY009-H11	
1	Front grill	22413431	1
3	Small Handle	26233100	1
4	Chassis Sub-assy	01203799P	1
5	Clapboard Sub-Assy	01233066	1
6	Axial Flow Fan	10333004	1
7	Fan Motor	150130671	1
8	Condenser Assy	0111347201	1
9	Motor Support	01703058	1
10	Top Cover Sub-Assy	01253031	1
11	Rear grill	1112320501	1
12	Capillary Sub-Assy	0306301701	1
13	Electric Box Assy	02603240	1
15	Capacitor CBB61	33010026	1
16	Right Side Plate Sub-Assy	01303183	1
17	Big Handle	26233433	1
18	Valve Support	0170308901P	1
19	Valve	07100003	1
20	Valve	07100005	1
21	Terminal Board	42010265	1
22	Capacitor CBB65	33000018	1
23	Compressor and fittings	00103203	1
24	4-way Valve Assy	0312328601	1

The above data is subject to change without prior notice.



## 7.5 Assembly Drawing and List of Components and Parts of Indoor Unit

Being applicable to: AWSI-HGF012-N11 , ELSI-JGF012-N11 , JOSI-FGH012-N11



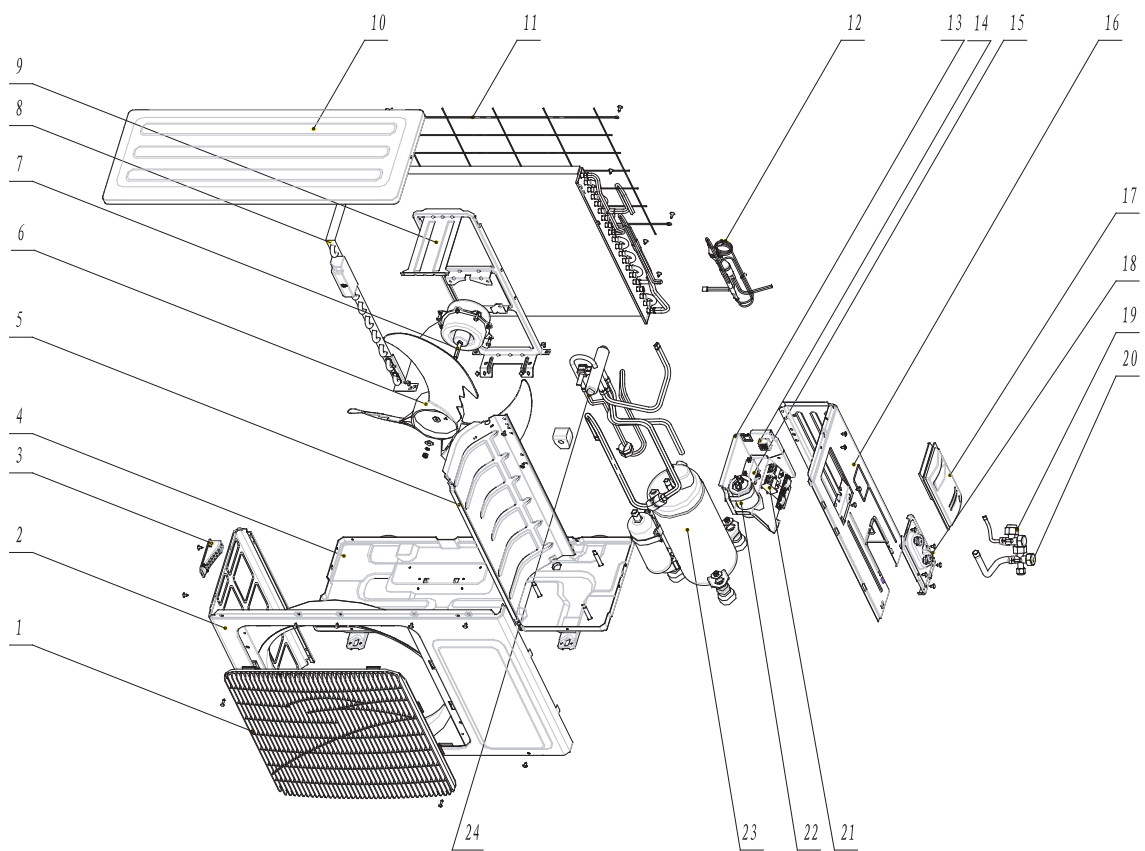
## Bee Series

No	Description	Part Code	Qty
		AWSI-HGF012-N11 , ELSI-HGF012-N11 , JOSI-FGH012-N11	
1	Wall-Mounting Frame	01252015	1
2	RearCase Assy	2220210101	1
3	Axile Bush	10542704	1
4	Crank	10582070	1
5	Cross Flow Fan	10352018	1
6	O-Gasketsub-assyofBearing	76512051	1
7	O-GasketofCross Fan Bearing	76512203	1
8	Ring ofBearing	26152022	1
9	Helicoid tongue	26112162	1
10	AirLouver2	10512114	1
11	AirLouver1	10512113	1
12	Evaporator Assy	0100255213	1
13	Evaporator Support	24212090	1
14	Drainage hose	0523001406	1
15	Guide Louver	10512111	1
16	Axile Bush	10542008	1
17	Front Case	20012179	1
18	Screw Cover	24252016	3
19	FilterSub-Assy	11122081	2
20	Frontpanel Assy	20012463_K36264	1
21	Frontpanel	20012450	1
22	Receiver Window	22432508	1
23	Receiver Board	30565089	1
24	Remote Controller	30510041_K36264	1
25	Electric BoxCover2	20122075	1
26	Motor Press Plate	26112160	1
27	Fan Motor	15012115	1
28	Terminal Board	42010262	1
29	Electric Box Cover 1	20122103	1
30	Shield cover of Electric Box	01412036	1
31	Electric Box Assy	20202388_K36264	1
32	Electric Box	20112082	1
33	Main Board	30135283	1
34	Jumper	4202300128	1
35	Transformer	43110236	1
36	RubberPlug (WaterTray)	76712012	1
37	Stepping Motor	1521210801	1
38	Pipe Clamp	26112164	1
39	Power Cable	400220113	1
40	Connecting Cable	40020540	1
41	Connecting Cable	40020536	1

The above data is subject to change without prior notice.

## 7.6 Assembly Drawing and List of Components and Parts of Outdoor Unit

Being applicable to the outdoor unit of: AWAU-VGF012-H11 , ELAU-VGF012-H11 , JOAU-FGY012-H11



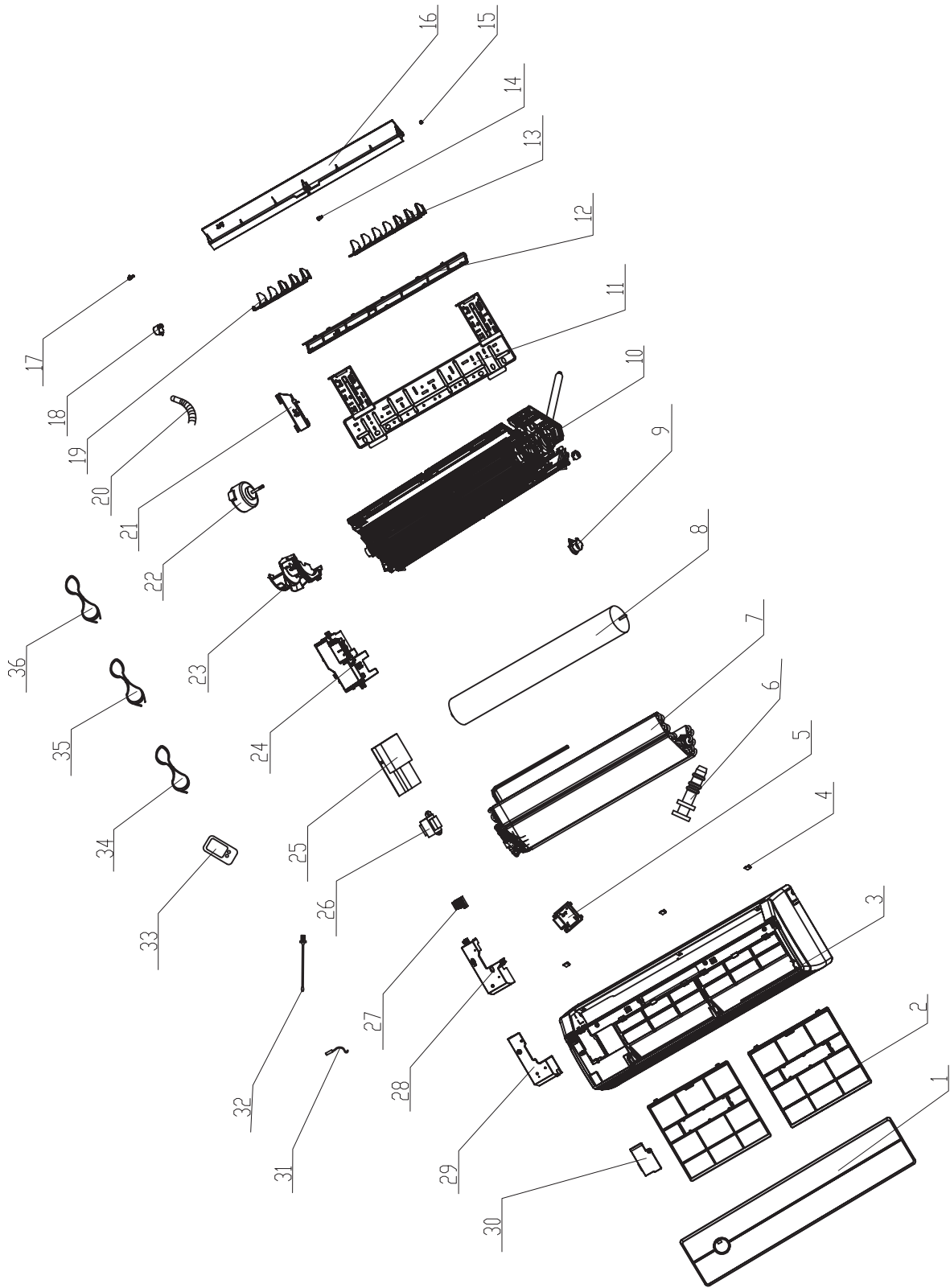
Bee Series

No	Description	Part Code	Qty
		AWAU-YGF012-H11, ELSI-JGF012-H11, JOAU-FGY012-H11	
1	FrontGrill	22413431	1
2	Front Plate	01533026	1
3	SmallHandle	26233100	1
4	Metal Base	01203767P	1
5	Isolation Sheet	01233066	1
6	Axial Flow Fan	10333004	1
7	Motor FW 35X	150130676	1
8	Condenser Assy	01113449	1
9	Motor Support	01703058	1
10	Top coverplate	01253031	1
11	Rear Grill	1112320501	1
12	Capillary Assy	03103997	1
13	Electric Plate	01403947	1
14	Terminal Board (one)	42011147	1
15	CapacitorCBB61 2.5uF/450V	33010026	1
16	RightSide Plate Assy	01303183	1
17	Handle	26233433	1
18	Valve Support	0170308901P	1
19	Valve 1/4"	07100003	1
20	Valve 1/2"	07100006	1
21	Terminal Board (four)	42010265	1
22	CapacitorCBB65 35uF/450V	33010743	1
23	Compressor QXA-B120C150	00103764	1
24	4-wayValve Assy	03123341	1

The above data is subject to change without prior notice.

## 7.7 Assembly Drawing and List of Components and Parts of Indoor Unit

Being applicable to: AWSI-HGF018-N11 , ELSI-JGF018-N11 , JOSI-FGH018-N11

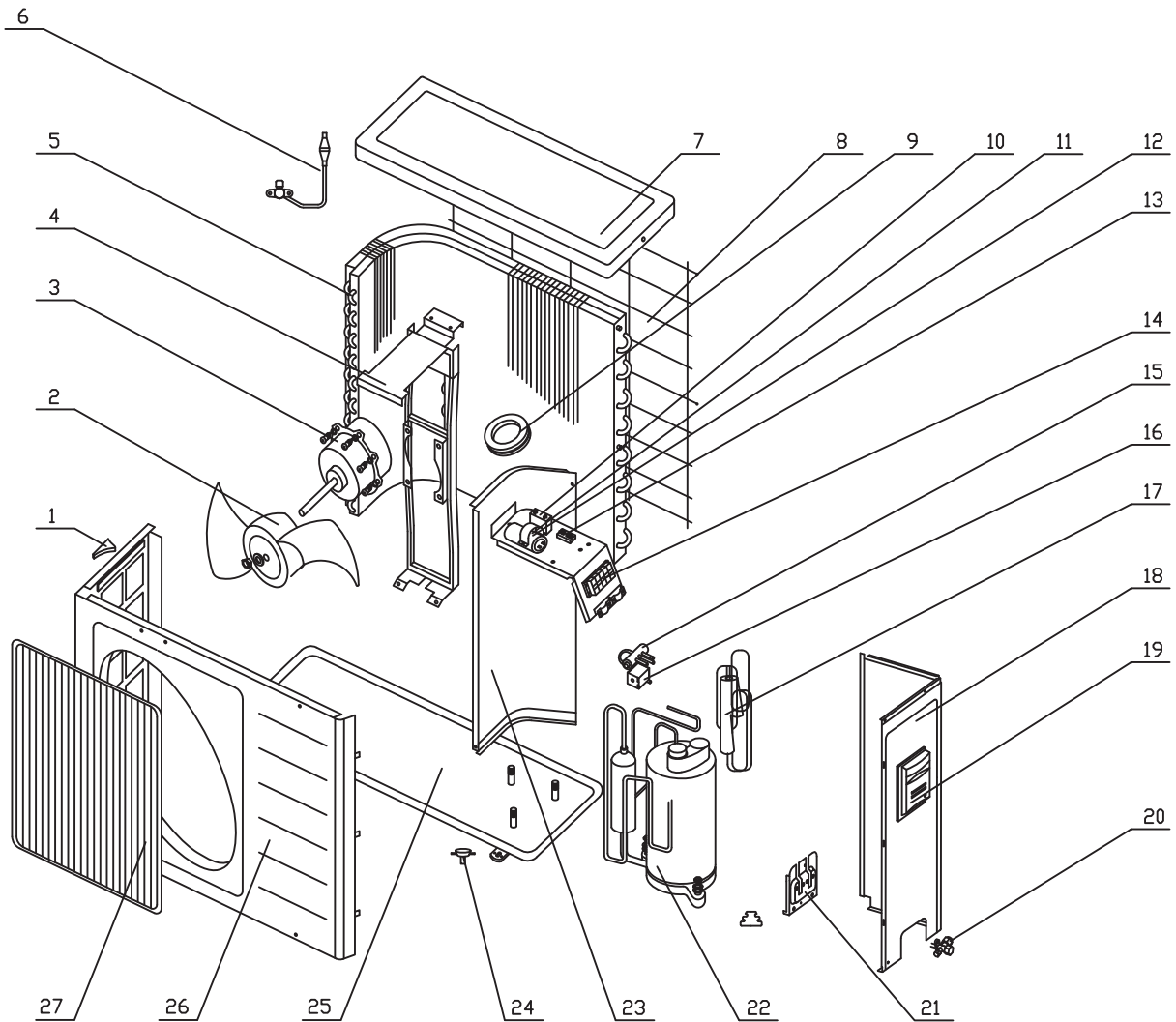


NO.	Description	Part Code	Qty.
		AWSI-HGF018-N11, ELSI-JGF018-N11, JOSI-FGH018-N11	
1	Front Panel Assy	20012466 K36264	1
2	Filter Sub-Assy	1112208901	2
3	Front Case	20012282	1
4	Screw Cover	24252016	3
5	Display Board	30565089	1
6	Rubber Plug (Water Tray)	76712012	1
7	Evaporator Assy	01002590	1
8	Cross Flow Fan	10352019	1
9	Ring of Bearing	26152022	1
10	Rear Case assy	12312214	1
11	Wall Mounting Frame	01252218	1
12	Helicoid tongue	26112238	1
13	Air Louver 1	10512116	1
14	Axile Bush	10542008	1
15	Left Axile Bush	10512037	1
16	Guide Louver	10512115	1
17	Crank	10582070	1
18	Step Motor	15012086	1
19	Air Louver 2	10512117	1
20	Drainage hose	05230014	1
21	Pipe Clamp	26112164	1
22	Fan Motor	15012116	1
23	Motor Press Plate	26112178	1
24	Electric Box	20112108	1
25	Main Board	30135228	1
26	Transformer	43110237	1
27	Terminal Board	42010268	1
28	Electric Box Cover1	20122128	1
29	Shield cover of Electric Box	01592092	1
30	Electric Box Cover2	20112081	1
31	Tube Sensor	390000591	1
32	Ambient Temperature Sensor	390000451	1
33	Remote Controller	30510041 K36264	1
34	Connecting	400205402	1
35	Connecting	4002053603	1
36	Power Cord	400203253	1

The above data is subject to change without prior notice.

## 7.8 Assembly Drawing and List of Components and Parts of Outdoor Unit

Being applicable to the outdoor unit of: AWAU-YGF018-H11 , ELAU-VGF018-H11 , JOAU-FGY018-H11



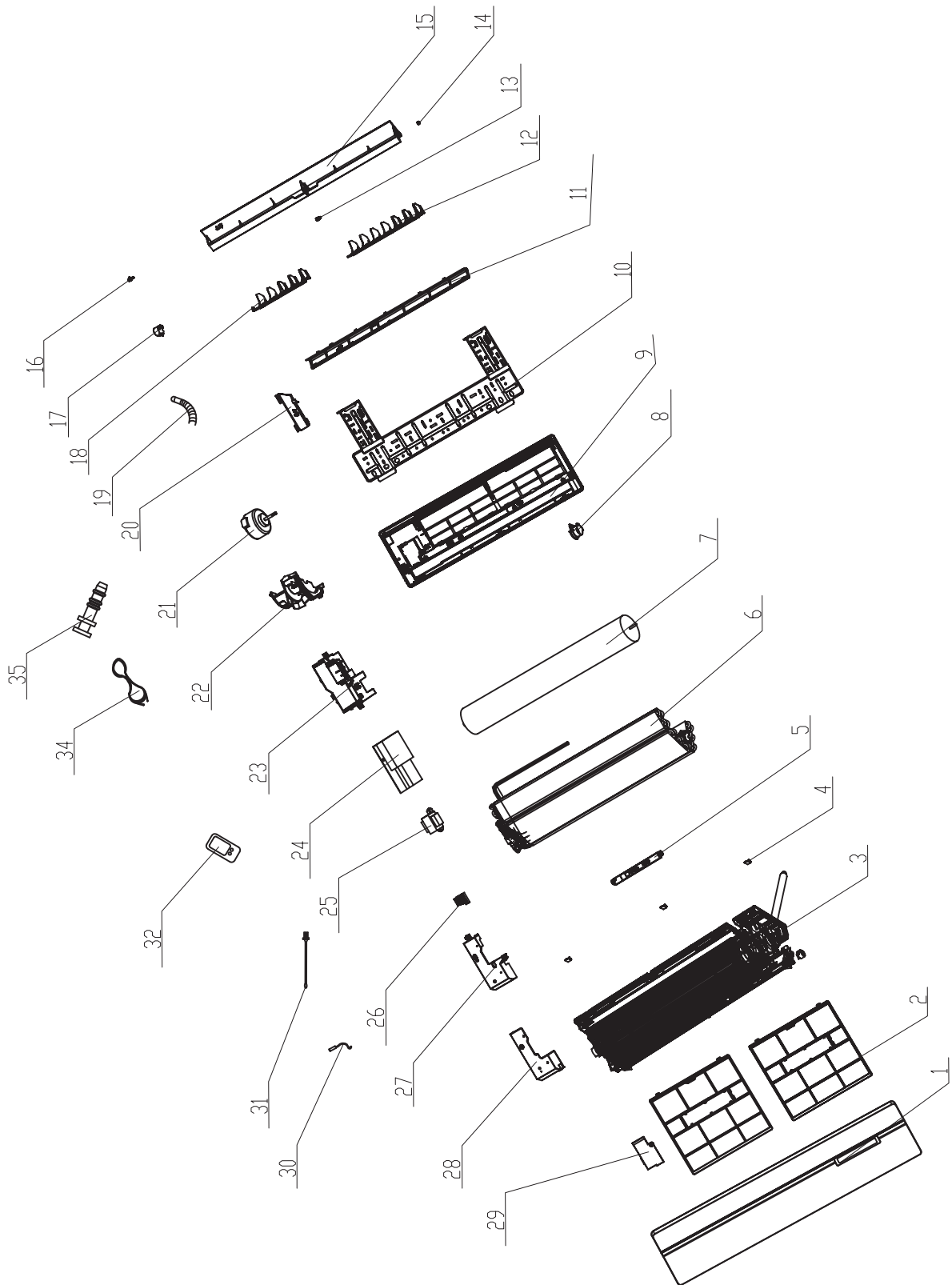
NO.	Description	Part Code	Qty.
		AWAU-YGF018-H11, ELAU-VGF018-H11, JOAU-FGY018-H11	
1	left handle	26235401	1
2	Axial Flow Fan	10335257	1
3	Fan Motor	15015057	1
4	Motor Support Sub-Assy	0170510702	1
5	Condenser Assy	01113238	1
6	Valve	07100003	1
7	Top Cover	01255001	1
8	Rear Grill	01475004	1
9	Drainage Plug	06813401	3
10	Capacitor CBB65	33000039	1
11	Electric Box Assy	02603068	1
12	Capacitor CBB61	33010026	1
13	Terminal Board	42011147	1
14	Terminal Board	42010265	1
15	4-way Valve Assy	03023870	1
16	Magnet Coil	430004002	1
17	Capillary Sub-Assy	03103780	1
18	Right Side Plate	01305013	1
19	Handle	26235254	1
20	Cut-off Valve	07130213	1
21	Valve Support Sub-Assy	01713075	1
22	Compressor and fittings	00103007	1
23	Clapboard Sub-Assy	01233035	1
24	Drainage Connector	06123401	1
25	Chassis Sub-assy	0120362602P	1
26	Front Panel	01305015	1
27	Front grill	22415001	1

The above data is subject to change without prior notice.



## 7.9 Assembly Drawing and List of Components and Parts of Indoor Unit

Being applicable to: AWSI-HGF022-N11 , ELSI-JGF022-N11 , JOSI-FGH022-N11

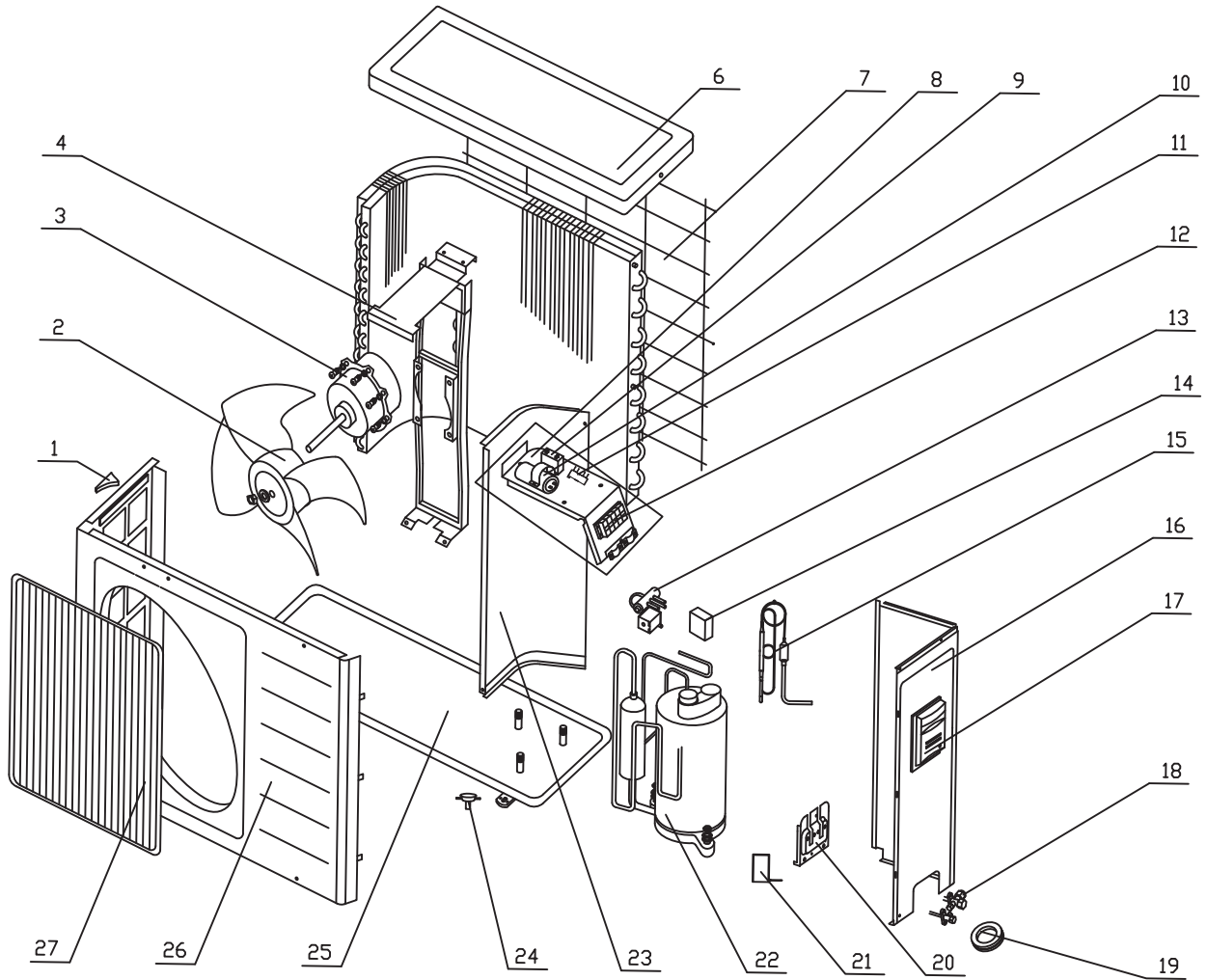


NO.	Description	Part Code	Qty.
		AWSI-HGF022-N11, ELSI-JGF022-N11, JOSI-FGH022-N11	
1	Front Panel Assy	20012466_K36264	1
2	Filter Sub-Assy	1112208901	2
3	Rear Case assy	12312214	1
4	Screw Cover	24252016	3
5	Display Board	30565089	1
6	Evaporator Assy	01002590	1
7	Cross Flow Fan	10352019	1
8	Ring of Bearing	26152022	1
9	Front Case Sub-Assy	20012299	1
10	Wall Mounting Frame	01252218	1
11	Helicoid tongue	26112238	1
12	Air Louver 1	10512116	1
13	Axile Bush	10542008	1
14	Left Axile Bush	10512037	1
15	Guide Louver	10512115	1
16	Crank	10582070	1
17	Step Motor	15012086	1
18	Air Louver 2	10512117	1
19	Drainage hose	05230014	1
20	Pipe Clamp	26112164	1
21	Fan Motor	15012116	1
22	Motor Press Plate	26112178	1
23	Electric Box	20112108	1
24	Main Board	30135295	1
25	Transformer	43110237	1
26	Terminal Board	4201026201	1
27	Electric Box Cover1	20122128	1
28	Shield cover of Electric Box	01592092	1
29	Electric Box Cover2	20112081	1
30	Tube Sensor	390000591	1
31	Ambient Temperature Sensor	390000451	1
32	Remote Controller	30510041_K36264	1
34	Power Cord	400203253	1
35	Rubber Plug (Water Tray)	76712012	1

The above data is subject to change without prior notice.

## 7. 10 Assembly Drawing and List of Components and Parts of Outdoor Unit

Being applicable to: AWAU-YGF022-H11 , ELEU-VGF022-H11 , JOAU-FGY022-H11



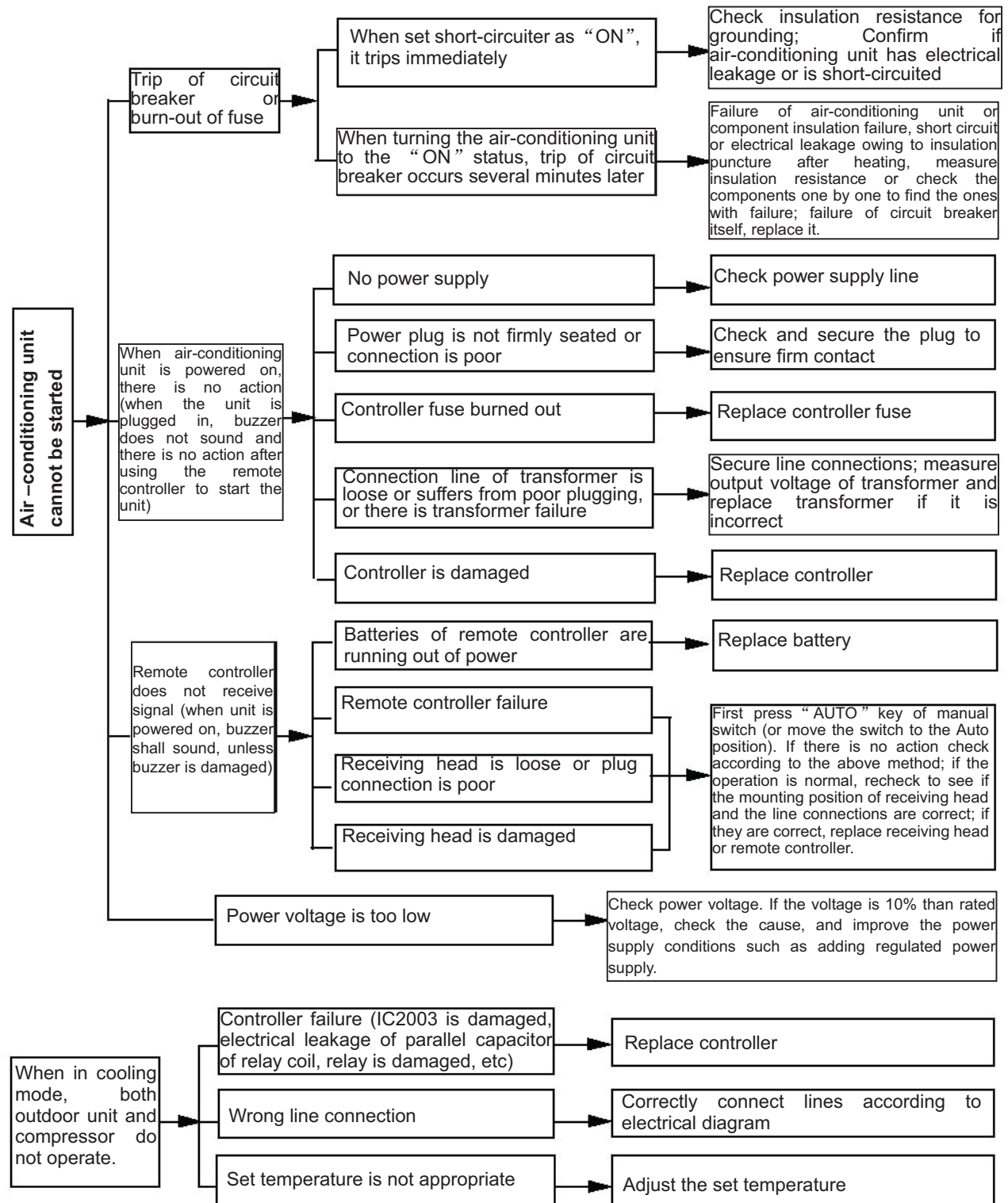
Bee Series

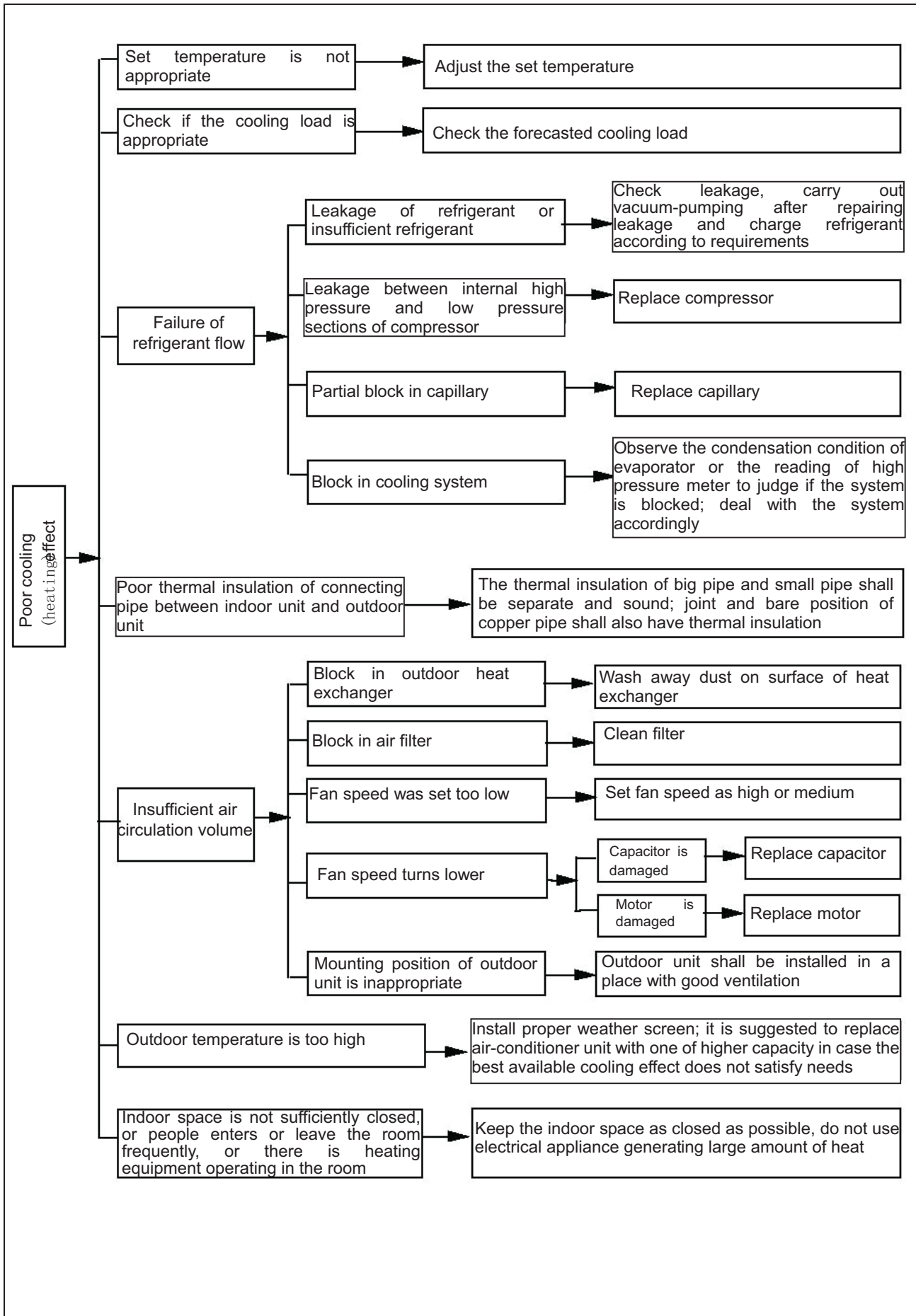
NO.	Description	Part Code	Qty.
		AWAU-YGF022-H11, ELAU-VGF022-H11, JOAU-FGY022-H11	
1	left handle	26235401	1
2	Axial Flow Fan	10335257	1
3	Fan Motor	15015057	1
4	Motor Support Sub-Assy	0170305901	1
6	Top Cover	01255001	1
7	Rear Grill	0147500401	1
8	Electric Box Assy	02603219	1
9	Capacitor CBB65	33000039	1
10	Capacitor CBB61	33010027	1
11	Terminal Board	42011147	1
12	Terminal Board	420101941	1
13	4-way Valve Assy	03123248	1
14	Overload Protector	00180157	1
15	Capillary Sub-Assy	03103946	1
16	Right Side Plate	01305013	1
17	Handle	26235254	1
18	Cut-off Valve	07130213	1
19	Drainage Plug	06813401	3
20	Valve Support Sub-Assy	01713075	1
21	Magnet Coil	430004002	1
22	Compressor and fittings	00103702	1
23	Clapboard Sub-Assy	01233035	1
24	Drainage Connector	06123401	1
25	Chassis Sub-assy	0120362602P	1
26	Front Panel	01305015	1
27	Front grill	22415001	1

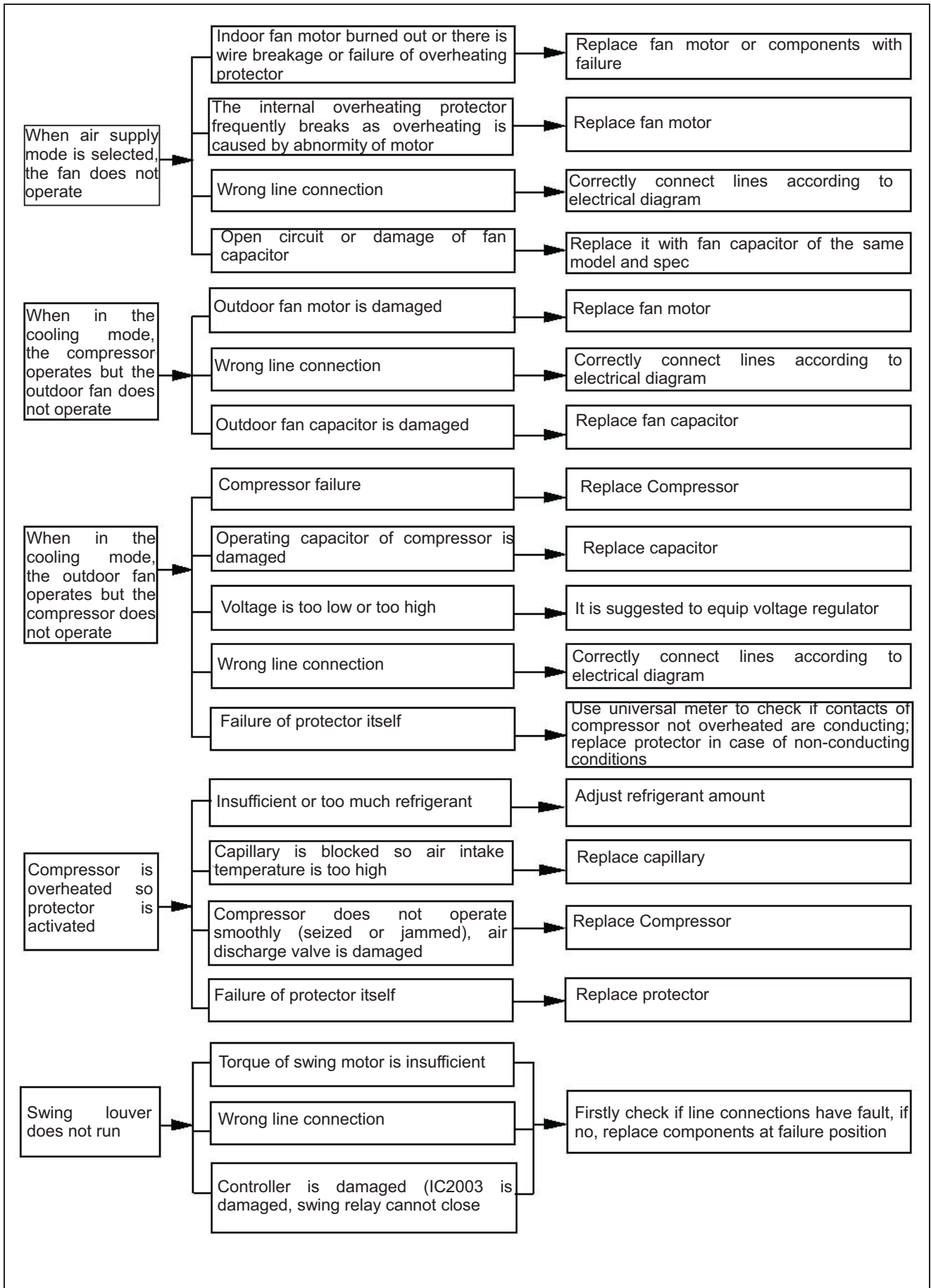
The above data is subject to change without prior notice.

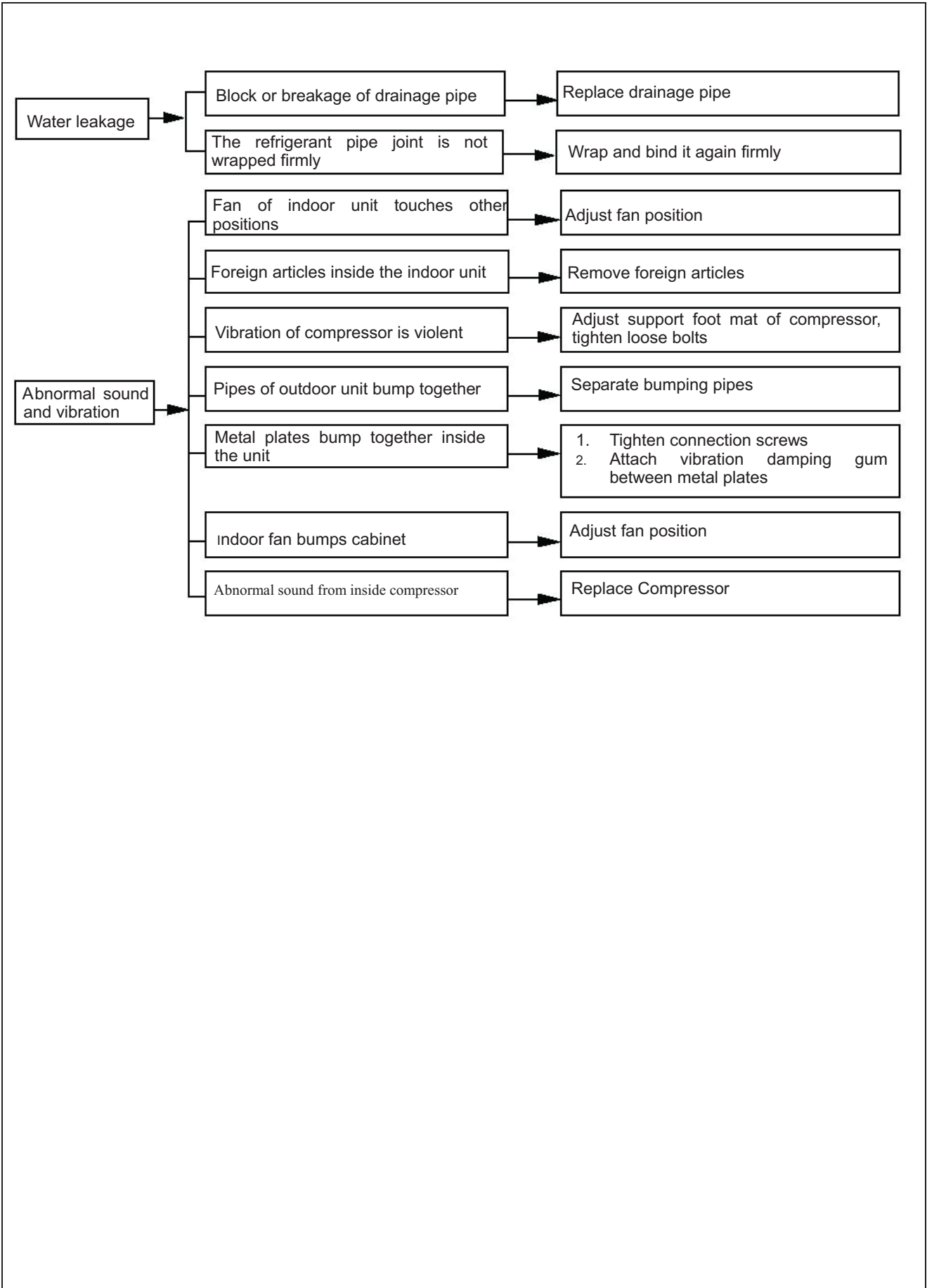
## 12 Trouble-Shooting

Note: when replacing the controller, the jumper cap of this controller shall be inserted into the new controller, otherwise the running indicating light will be turned off for 3 seconds and twinkle 15 times (the indicating light with double 8 display displays C5 at the same time), and the machine can not be started in a normal manner.











**Locked-rotor protection H6 of PG motor:**

Possible reasons:

1.  The fanspeed is too low due to tuyere blockage;
2.  Fan blade get stuck;
3.  Motor get stuck;
4.  The motor capacitance is damaged;
5.  Motor damage (foreign odor, open winding circuit or short winding circuit are all abnormal conditions, and when measuring the winding resistance, note if the temperature of the motor casing is too high causing thermal protection action);
6.  Hall integrated circuit plate is damaged (in normal function, both output and input have voltages).
7.  The main board is damaged.
8.  Thermal protection of the motor.

Handling methods:

1.  Remove barriers
2.  Reassembling;
3.  Motor replacement;
4.  Capacitance replacement;
5.  Motor replacement;
6.  Circuit board replacement;
7.  Main board replacement;
8.  In normal conditions, the motor does not protect itself. However, in other abnormal conditions, when motor load is too heavy due to evaporator dirt and fan blade dust, thermal protection occurs frequently in operation process. The solutions depend on specific reasons, cleaning whatever should be cleaned and replacing whatever should be replaced.