CONDENSING UNIT SERVICE MANUAL

T1/R22/50&60Hz
(GC201207-I)

GREE ELECTRIC APPLIANCES, INC.OF ZHUHAI

CONTENTS

PRODUCT

PRODUCT

1 MODELS LIST

1.1 Outdoor Unit

Model			Nominal Capacity	Power supply	Appearance
Refrigerant	Model Name	Product Code	Ton	V,Ph,Hz	
R22	HW30M-E	EM115W0071	2.5	230V 1Ph 50Hz	
	HW24L-E	EM115W0050	2	230V 1Ph 50Hz	
	HW36L-E	EM115W0170	3	230V 1Ph 50Hz	
	HWR24L-E	EM115W0350	2	230V 1Ph 50Hz	
	HWR36L-E	EM115W0230	3	230V 1Ph 50Hz	
	HW30M-G	EM115W0091	2.5	380V 3Ph 50Hz	
	HW36L-G	EM115W0190	3	380V 3Ph 50Hz	
	HW42L-G	EM115W0110	3.5	380V 3Ph 50Hz	
	HW60L-G	EM115W0130	5	380V 3Ph 50Hz	
	HWR36L-G	EM115W0210	3	380V 3Ph 50Hz	
	HWR42L-G	EM115W0370	3.5	380V 3Ph 50Hz	
	HWR60L-G	EM115W0330	5	380V 3Ph 50Hz	
	HW60M-D	CM115W2101	5	208/230V 1Ph 60Hz	
		CM115W2102			
		CM115W214			
	HW18M/A-D	EM115W0250	1.5	208/230V 1Ph 60Hz	
		EM115W0251			
	HW24M/A-D	EM115W0270	2	208/230V 1Ph 60Hz	
		EM115W0271			
	HW30M/A-D	EM115W0292	2.5	208/230V 1Ph 60Hz	
		EM115W0294			
	HW36M/A-D	EM115W0311	3	208/230V1 Ph 60Hz	
	HW24L-D	EM115W0030	2	208/230V 1Ph 60Hz	
	HW42L-D	CM115W281	3.5	208/230V 1Ph 60Hz	
		CM115W282			
	HW48L-D	EM115W0150	4	208/230V 1Ph 60Hz	
	HW36M-F	EM115W0540	3	208/230V 3Ph 60Hz	
	HW42M-F	EM115W0550	3.5	208/230V 3Ph 60Hz	
	HW60M-F	EM115W0011	5	208/230V 3Ph 60Hz	
		EM115W0014			
	HWR60M-F	EM115W0710	5	208/230V 3Ph 60Hz	

Note:1Ton =12000Btu/h = 3.517kW

2 NOMENCLATURE

According to the nomenclature, take the model which includes relatively the most complete description for example.

HW	R	36	L	-	E
1	2	3	4		5

NO.	Description	Options
1	Unit code	HW-Condensing unit
2	Unit function	Default-Cooling only R-Heat pump
3	Cooling capacity	Number×1000Btu/h
4	Energy Efficiency	M-Middle L-Low
5	Power Supply	D=208/230V,60Hz,1ph ; E=230V,50Hz,1ph; F=208/230V,60Hz,3ph; G=380V,50Hz,3ph

3 FUNCTION

Function	Description
Compact design	The compact design of the outdoor unit helps to reduce the installation space and transportation cost.
Overload protection	Compressor has its own overheat protection. Once the temperature of compressor is higher than allowable level, compressor will stop and only when temperature recovers, compressor restarts.
Reverse (open) phase protection	Once the phase sequence of power supply is incongruent or the phase is absent, unit can't work.
Force defrosting	The system will put into defrosting when we press the force defrosting switch. Then the 4-way valve will gain electricity and the outdoor fan stops and the auxiliary electric-heater get electricity. Force defrosting starts running.

4 PRODUCT DATA

4.1 Product Data at Rated Condition

Model	HW18M/A-D	HW24M/A-D	HW30M/A-D	HW36M/A-D	HW30M-E	HW30M-G
Product Code	EM115W0250 EM115W0251	EM115W0270 EM115W0271	EM115W0292 EM115W0294	EM115W0311	EM115W0071	EM115W0091
Cooling Capacity						
Nominal Cooling (Btu/h)	18000	24000	30000	36000	30000	30000
Nominal Heating (Btu/h)	/	/	/	/	/	/
Sound Pressure Level dB(A)	59	67	67	68	62	62
Compressor						
RLA	6.2	9.6	13.1/15.3	18.2	12.6	7.1
LRA	38	56	70/62	136	62	36
Condenser Fan Motor						
Horsepower (RPM)	1/6	1/6	1/4	1/4	1/6	1/6
FLA	1	1	1.2	1.2	1.7	1.7
Refrigeration System						
Refrigerant Line Size						
Liquid Line Size (Inch)	3/8	3/8	3/8	3/8	3/8	3/8
Suction Line Size (Inch)	5/8	5/8	3/4	3/4	3/4	3/4
Valve Connection Type	Brazing	Brazing	Brazing	Brazing	Brazing	Brazing
Refrigerant Charge (oz)	74.1	81	95	100.3	95.4	95.4
Electrical Data						
Power Supply (V-HZ-Ph)	208/230V 60Hz 1Ph	208/230V 60Hz 1Ph	208/230V 60Hz 1Ph	208/230V 60Hz 1Ph	230V 50Hz 1Ph	380V 50Hz 3Ph
Min. Circuit Ampacity (A)	8.75	14	22	23.9	18.5	5.8
Max. Overload Protection (A)	15	20	30	40	30	15
Min/Max Voltage (V)	187/254	187/254	187/254	187/254	187/254	342/418
Electrical Conduit Size (Inch)	7/8	7/8	7/8	7/8	7/8	7/8
Dimension						
Outline Dimension (L×W×H)(mm)	546×546×604	546×546×604	546×546×718	546×546×832	610×610×718	610×610×718
Package Dimension (L×W×H)(mm)	573×573×649	573×573×649	573×573×763	573×573×877	651×651×748	651×651×748
Weight						
Net Weight (lbs)	97	101.4	125.7	165.4	136.7	127.9
Gross Weight (lbs)	101.4	105.8	132.3	172	143.3	134.5

Model	HW24L-E	HWR24L-E	HW36L-E	HWR36L-E	HW36L-G	HWR36L-G
Product Code	EM115W0050	EM115W0350	EM115W0170	EM115W0230	EM115W0190	EM115W0210
Cooling Capacity						
Nominal Cooling (Btu/h)	24000	24000	36000	36000	36000	36000
Nominal Heating (Btu/h)	/	24000	/	36000	/	36000
Sound Pressure Level dB(A)	60	60	63	65	63	63
Compressor						
RLA	9.3	9.3	19.3	12.6	7.5	7.5
LRA	49	49	114	62	45	45
Condenser Fan Motor						
Horsepower (RPM)	1/6	1/6	1/4	1/4	1/4	1/4
FLA	1.2	1.2	1.4	1.4	1.4	1.4
Refrigeration System						
Refrigerant Line Size						
Liquid Line Size (Inch)	3/8	3/8	3/8	3/8	3/8	3/8

Suction Line Size (Inch)	5/8	5/8	3/4	3/4	3/4	3/4
Valve Connection Type	Brazing	Brazing	Brazing	Brazing	Brazing	Brazing
Refrigerant Charge (oz)	67	84.7	90	95.3	90	112.9
Electrical Data						
Power Supply (V-HZ-Ph)	230V 50Hz 1Ph	230V 50Hz 1Ph	230V 50Hz 1Ph	230V 50Hz 1Ph	380V 50Hz 3Ph	380V 50Hz 3Ph
Min. Circuit Ampacity (A)	13	15	25	25	11	11
Max. Overload Protection (A)	20	20	40	40	16	16
Min/Max Voltage (V)	187/254	187/254	187/254	187/254	342/418	342/418
Electrical Conduit Size (Inch)	7/8	7/8	7/8	7/8	7/8	7/8
Dimension						
Outline Dimension (L×W×H)(mm)	610×610×604	610×610×604	610×610×718	610×610×718	610×610×718	610×610×718
Package Dimension (L×W×H)(mm)	651×651×629	651×651×629	651×651×745	651×651×745	651×651×745	651×651×745
Weight						
Net Weight (lbs)	101.4	112.5	149.9	149.9	149.9	165.4
Gross Weight (lbs)	110.3	121.3	161	161	161	174.2

Model	HW42L-G	HWR42L-G	HW60L-G	HWR60L-G	HW24L-D	HW42L-D
Product Code	EM115W0110	EM115W0370	EM115W0130	EM115W0330	EM115W0030	CM115W281 CM115W282
Cooling Capacity						
Nominal Cooling (Btu/h)	42000	42000	60000	60000	2400	42000
Nominal Heating (Btu/h)	/	42000	/	60000	/	/
Sound Pressure Level dB(A)	63	63	65	65	60	63
Compressor						
RLA	6.8	6.8	9.3	9.3	9.6	16.5
LRA	42	42	69	69	56	95
Condenser Fan Motor						
Horsepower (RPM)	1/4	1/4	1/3	1/3	1/6	1/5
FLA	1.4	1.4	1.8	1.8	1.2	1.2
Refrigeration System						
Refrigerant Line Size						
Liquid Line Size (Inch)	3/8	3/8	1/2	1/2	3/8	3/8
Suction Line Size (Inch)	3/4	3/4	9/8	9/8	5/8	7/8
Valve Connection Type	Brazing	Brazing	Brazing	Brazing	Brazing	Brazing
Refrigerant Charge (oz)	105.8	134.1	139.4	158.8	1.9	112.9
Electrical Data						
Power Supply (V-HZ-Ph)	380V 50Hz 3Ph	380V 50Hz 3Ph	380V 50Hz 3Ph	380V 50Hz 3Ph	208/230V 60Hz 1Ph	208/230V 60Hz 1Ph
Min. Circuit Ampacity (A)	10	10	13	13	13	25
Max. Overload Protection (A)	16	16	20	20	20	40
Min/Max Voltage (V)	342/418	342/418	342/418	342/418	187/254	187/254
Electrical Conduit Size (Inch)	7/8	7/8	7/8	7/8	7/8	7/8
Dimension						
Outline Dimension (L×W×H)(mm)	610×610×832	610×610×832	710×710×832	710×710×832	610×610×604	710×710×718
Package Dimension (L×W×H)(mm)	651×651×865	651×651×865	773×773×857	773X773X857	651×651×629	713×713×755
Weight						
Net Weight (lbs)	165.4	174.2	191.8	205.1	110	180.8
Gross Weight (lbs)	172	183	200.7	213.9	116.87	189.6

Model	HW48L-D	HW36M-F	HW42M-F	HW60M-F	HWR60M-F	HW60M-D
Product Code	EM115W0150	EM115W0540	EM115W0550	EM115W0011 EM115W0014	EM115W0710	CM115W2101 CM115W2102 CM115W214
Cooling Capacity						
Nominal Cooling (Btu/h)	48000	36000	42000	60000	60000	60000
Nominal Heating (Btu/h)	/	/	/	/	60000	/
Sound Pressure Level dB(A)	63	63	63	65	66	65
Compressor						
RLA	21.3	13.2	13.2	16.6	16.6	24.4
LRA	130	115	115	134	134	149
Condenser Fan Motor						
Horsepower (RPM)	1/5	1/4	1/5	1/3	1/3	1/3
FLA	1.2	1.2	1.3	18	1.8	1.8
Refrigeration System						
Refrigerant Line Size						
Liquid Line Size (Inch)	3/8	3/8	3/8	1/2	1/2	1/2
Suction Line Size (Inch)	7/8	3/4	7/8	9/8	9/8	9/8
Valve Connection Type	Brazing	Brazing	Brazing	Brazing	Brazing	Brazing
Refrigerant Charge (oz)	98.8	102.8	119.7	119.7	133.76	139.04
Electrical Data						
Power Supply (V-HZ-Ph)	208/230V 60Hz 1Ph	208/230V 60Hz 3Ph	208/230V 60Hz 3Ph	208/230V 60Hz 3Ph	208/230V 60Hz 3Ph	208/230V 60Hz 3Ph
Min. Circuit Ampacity (A)	32	17.5	17.5	25	22.5	30
Max. Overload Protection (A)	50	30	30	40	40	50
Min/Max Voltage (V)	187/254	187/254	187/254	187/254	187/254	187/254
Electrical Conduit Size (Inch)	7/8	7/8	7/8	7/8	7/8	7/8
Dimension						
Outline Dimension (L×W×H)(mm)	710×710×718	610×610×830	710×710×718	710×710×832	710×710×832	710×710×832
Package Dimension (L×W×H)(mm)	773×773×755	651×651×865	773×773×755	773×773×857	773×773×857	773×773×857
Weight						
Net Weight (lbs)	180.8	165.4	154.4	183.0	198.5	200.7
Gross Weight (lbs)	191.8	174.2	165.4	194.0	209.5	211.7

NOTE:

Tested and rated in accordance with ARI210/240-2008.

4.2 Operation Range

Mode	Range of Outdoor Temperature ℃ (℉)
Cooling	19.4—46.1
Heating	8.3—23.9

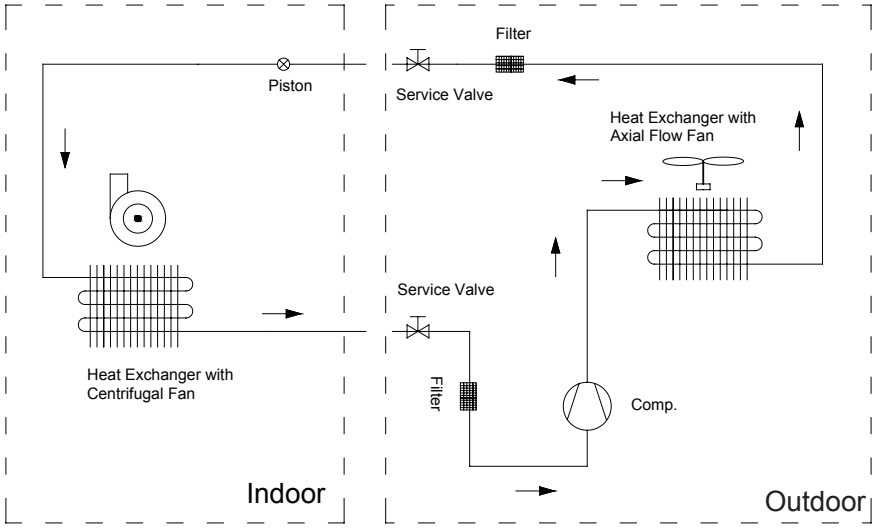
4.3 Electrical Data

Model	Compressor				Fan Motor		Max. Fuse Breaker Size (Indoor/Outdoor)	Min. Disconnect Size (Indoor/Outdoor)
	Power Supply	Qty.	RLA	LRA	Condenser Fan Motors	Supply Fan Motor	Amperes	Amperes
	V, Hz, Ph	—	Each	Each	FLA Each	FLA Each		
HW18M/A-D	208/230V, 60Hz , 1Ph	1	6.2	38	/	1	15	8.75
HW24M/A-D	208/230V, 60Hz, 1Ph	1	9.6	56	/	1	20	14
HW30M/A-D	208/230V, 60Hz, 1Ph	1	13.1/15.3	70/62	/	1.2	30	22
HW36M/A-D	208/230V, 60Hz, 1Ph	1	18.2	136	/	1.2	40	23.9
HW30M-E	230V, 50Hz, 1Ph	1	12.6	62	/	1.2	30	18.5
HW30M-G	380V, 50Hz, 3Ph	1	7.1	36	/	1.2	15	5.8
HW24L-E	230V, 50Hz, 1Ph	1	9.3	49	/	1.2	20	13
HWR24L-E	230V, 50Hz, 1Ph	1	9.3	49	/	1.2	20	15
HW36L-E	230V, 50Hz, 1Ph	1	19.3	114	/	1.4	40	25
HWR36L-E	230V, 50Hz, 1Ph	1	12.6	62	/	1.4	40	25
HW36L-G	380V, 50Hz, 3Ph	1	7.5	45	/	1.4	16	11
HWR36L-G	380V, 50Hz, 3Ph	1	7.5	45	/	1.4	16	11
HW42L-G	380V, 50Hz, 3Ph	1	6.8	42	/	1.4	16	10
HWR42L-G	380V, 50Hz, 3Ph	1	6.8	42	/	1.4	16	10
HW60L-G	380V, 50Hz, 3Ph	1	9.3	69	/	1.8	20	13
HWR60L-G	380V, 50Hz, 3Ph	1	9.3	69	/	1.8	20	13
HW24L-D	208/230V, 60Hz, 1Ph	1	9.6	56	/	1.2	20	13
HW42L-D	208/230V, 60Hz, 1Ph	1	16.5	95	/	12	40	25
HW48L-D	208/230V, 60Hz, 1Ph	1	21.3	130	/	1.2	50	32
HW36M-F	208/230V, 60Hz ,3Ph	1	13.2	115	/	1.2	30	17.5
HW42M-F	208/230V, 60Hz, 3Ph	1	13.2	115	/	1.3	30	17.5
HW60M-F	208/230V, 60Hz, 3Ph	1	17.5	134	/	1.8	40	23.5
HWR60M-F	208/230V, 60Hz, 3Ph	1	16.6	134	/	1.8	35	20.7
HW60M-D	208/230V, 60Hz ,1Ph	1	24.4	149	/	1.8	50	32.2

Notes:
RLA: Rated load amperes
LRA: Locked rotor amperes
FLA: Full load current

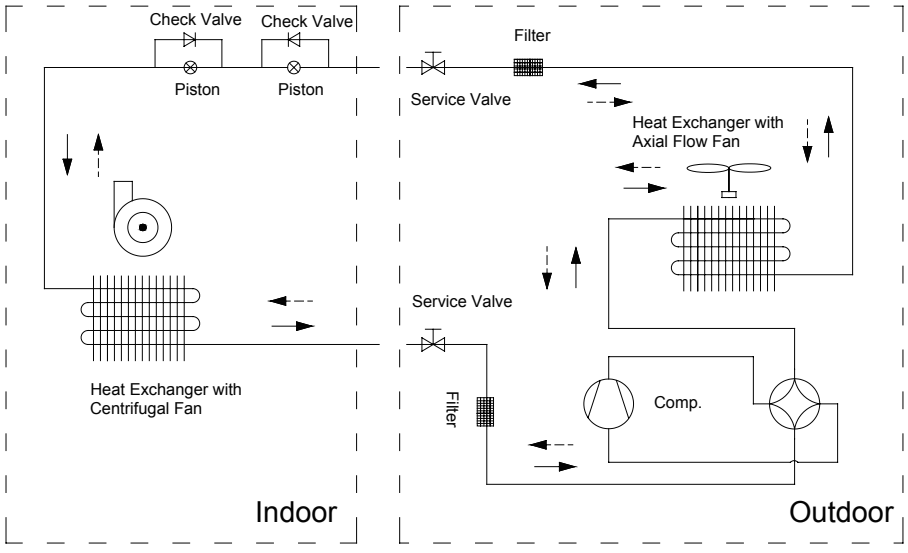
5 PIPING DIAGRAM

5.1 Cooling Only



→ The direction of Cooling

5.2 Heat Pump



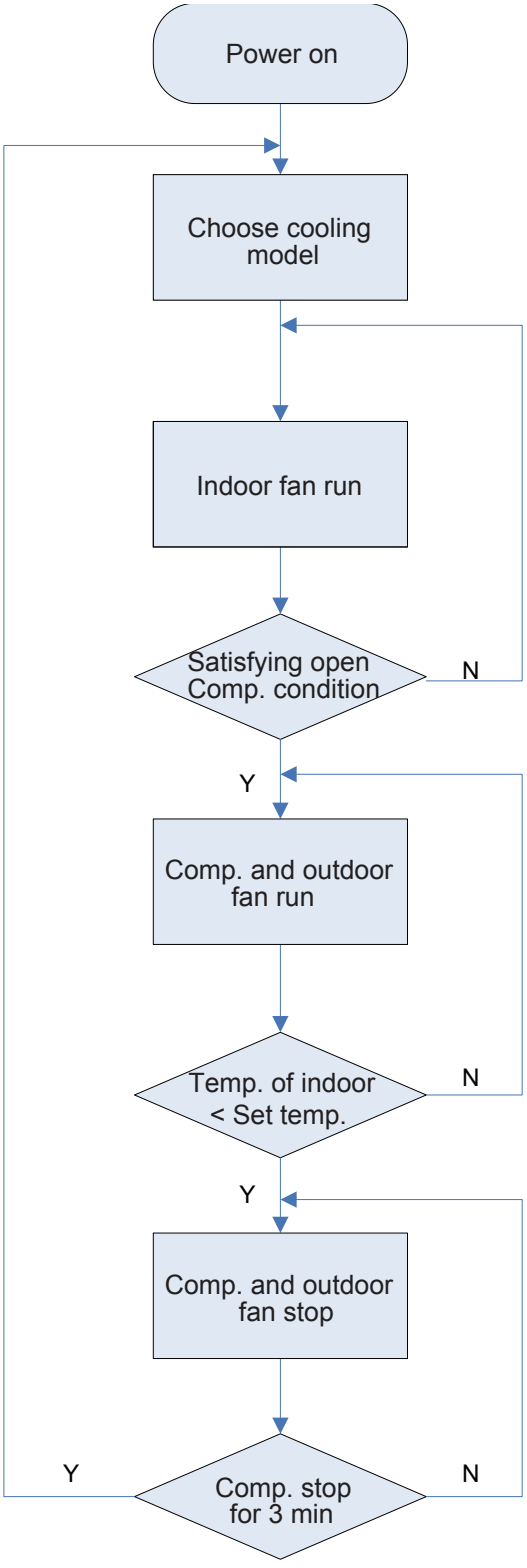
→ The direction of Cooling
⇢ The direction of Heating

CONTROL

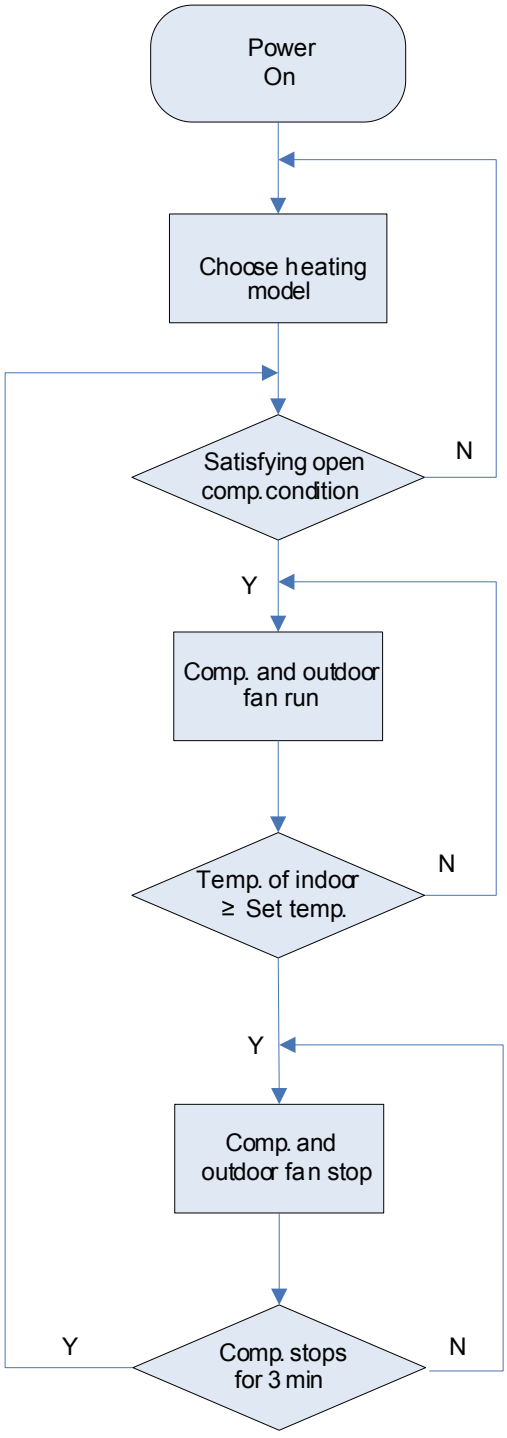
UNITS CONTROL

1 OPERATION FLOWCHART

1.1 Cooling/Dry Operation



1.2 Heating Operation



2 MAIN LOGIC

2.1 Cooling Mode

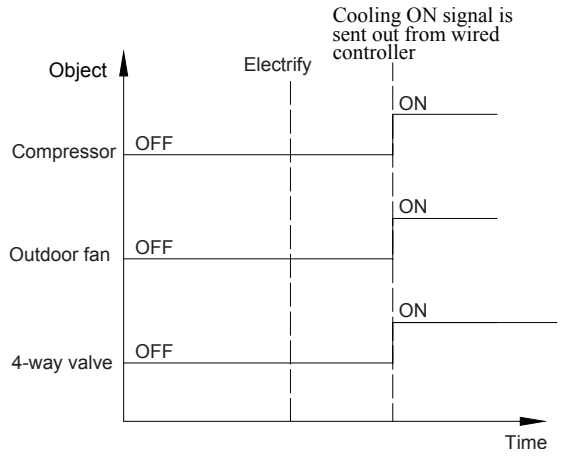
The temperature of condensing unit is set at the wired controller.

When the defrosting board of the outdoor unit detects the ON signal from wired controller, it will enter cooling ON sub mode, and compressor, outdoor fan and 4-way valve will start running synchronously.

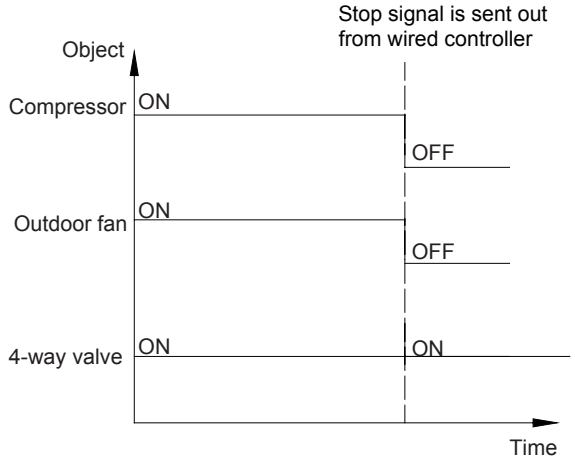
When defrosting board detects the Stop signal from wired controller, it enters cooling Stop sub mode and the compressor and outdoor fan stop synchronously.

When defrosting board detects the OFF signal from wired controller, it enters the cooling OFF sub mode and compressor and outdoor fan stop synchronously.

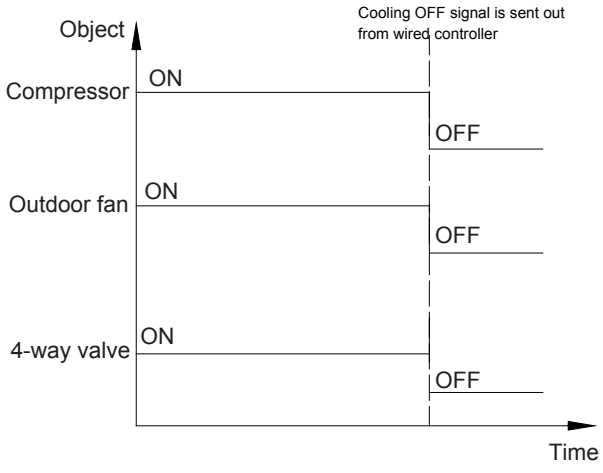
Cooling ON Sub Mode Flowchart:



Cooling Stop Sub Mode Flowchart:



Cooling OFF Sub Mode Flowchart:



2.2 Heating Mode

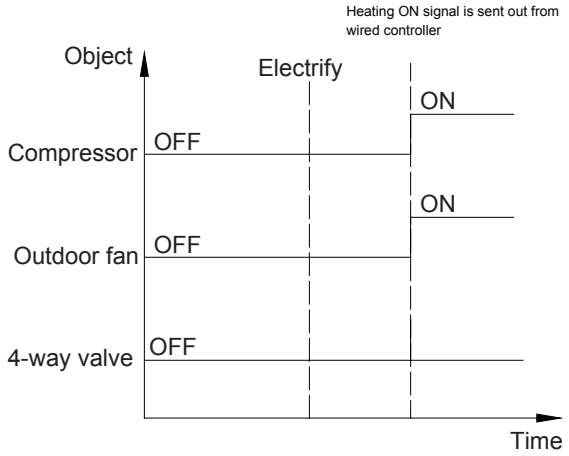
The temperature of condensing unit is set at the wired controller.

When the defrosting board detects the heating ON signal from wired controller, it will enter heating ON sub mode. Compressor and outdoor fan starts and 4-way valve stops synchronously.

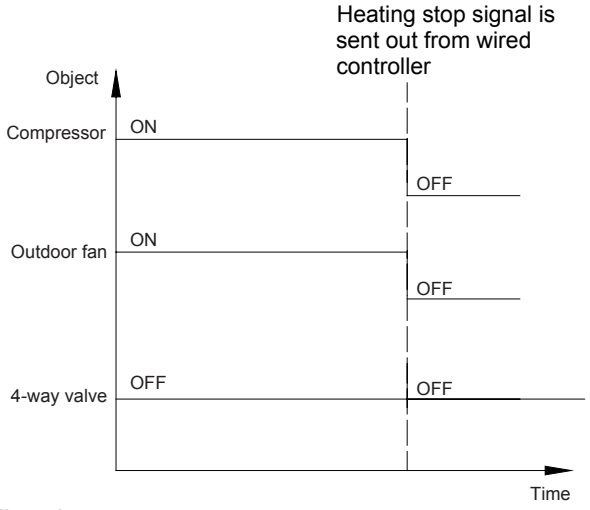
When defrosting board detects the heating Stop signal from wired controller, it enters heating Stop sub mode and the compressor and outdoor fan stop synchronously.

When defrosting board detects the heating OFF signal from wired controller, it enters the heating OFF sub mode and compressor, outdoor fan stop synchronously.

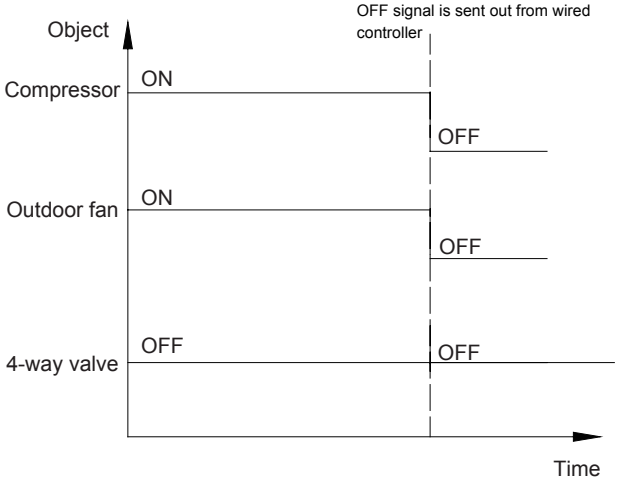
Heating ON Sub Mode Flowchart:



Heating Stop Sub Mode Flowchart:



Heating OFF Sub Mode Flowchart:



2.3 Defrosting

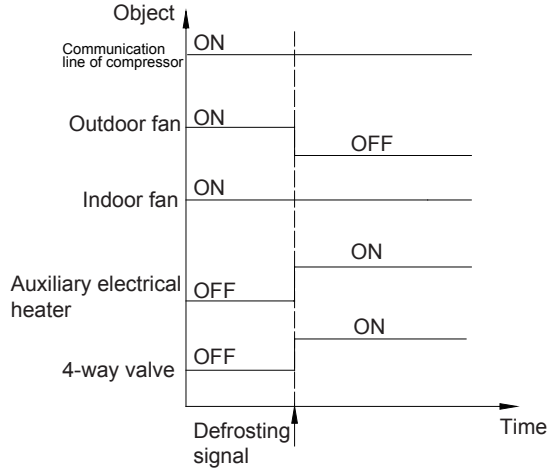
Inside Setting Parameter:

- Accumulated Running Time of Compressor: t
- Temp. of defrosting enter: T1
- Temp. of defrosting exit: T2

Code	000	001	010	011
t	30	44	60	90
T1	0	-2	0	0
T2	20	20	20	20

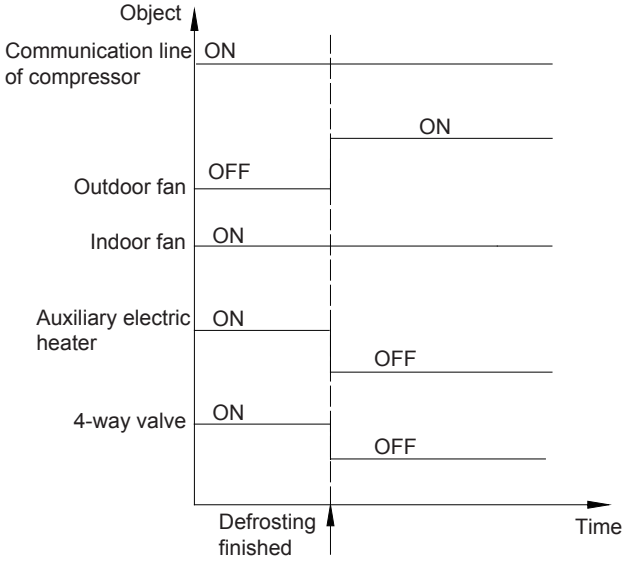
In heating mode, when compressor has been accumulatively running for t minutes, once defrosting board detects that the temperature of temp. sensor for outdoor defrosting is less than or equal to T1℃ , or press the force defrosting button, the system will enter defrosting. At that time, energization of 4-way valve and indoor auxiliary electric heater as well as the stop of outdoor fan will be performed synchronously.

Defrosting Sub Mode Flowchart:



When defrosting has been performed for 15min or T condensing ≥ T2 ℃ is detected for continuous 1 second, the defrosting end sub mode will be activated. In the mode, deenergization of 4-way valve, operation of outdoor fan and the running of indoor auxiliary electric heater according to the setting of wired controller will be performed synchronously.

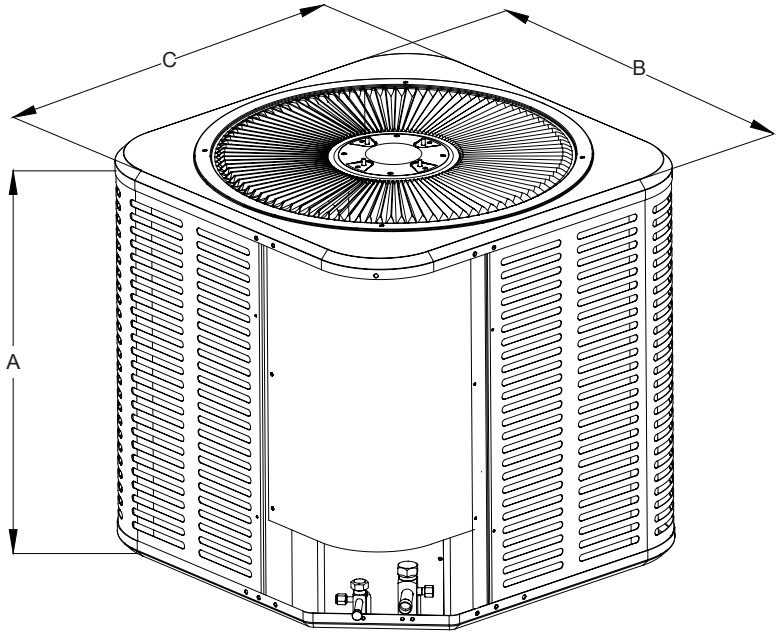
Defrosting End Sub Mode Flowchart:



INSTALLATION

UNITS INSTALLATION

1 DIMENSION DATA



Unit: mm

Model	A	B	C
HW18M/A-D	604	546	546
HW24M/A-D	604	546	546
HW24L-E	604	610	610
HWR24L-E	604	610	610
HW24L-D	604	610	610
HW30M/A-D	718	546	546
HW30M-E	718	610	610
HW30M-G	718	610	610
HW36M/A-D	832	546	546
HW36L-E	718	610	610
HWR36L-E	718	610	610
HW36L-G	718	610	610
HWR36L-G	718	610	610
HW36M-F	832	610	610
HW42L-G	832	610	610
HWR42L-G	832	610	610
HW42L-D	718	710	710
HW42M-F	718	710	710
HW48L-D	718	710	710
HW60L-G	832	710	710
HWR60L-G	832	710	710
HW60M-D	832	710	710
HW60M-F	832	710	710
HWR60M-F	832	710	710

2 INSTALLATION CLEARANCE DATA

Ensure the installation site is well ventilated and there is sufficient space for maintenance. It is shown as follow

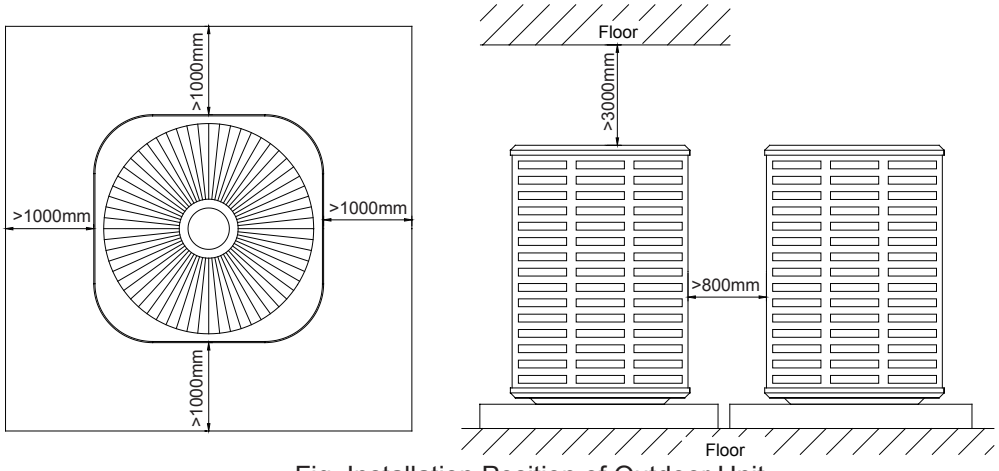


Fig. Installation Position of Outdoor Unit

3 UNITS INSTALL

3.1 Installation Position of Condensing Units

● Outdoor unit must be fixed on stable and solid surface of floor.

● Don't install outdoor unit under window or between buildings to prevent the operation noise from getting into room.

● There should be no obstructions at both air inlet and outlet of indoor and outdoor units for maintaining well air ventilation.

3.2 Matters need Attention

● Before installation, make sure that the power supply complies with nameplate and check the security of the power supply.

● Do not use or place combustible and explosive gas or liquid near the air conditioner.

● Do not attempt to install air conditioner by yourself to avoid damage to the unit.

● In the event of malfunction (burning smell, etc.), please stop operation immediately and turn off the power switch.

● Do not insert fingers or objects into the outlet or inlet grilles.

● Do not check or repair the air conditioner when it is running.

● Do not sprinkle water on the air conditioner or operate it with wet hands.

● Do not climb or place objects on the air conditioner.

● When removing the outdoor unit, two ropes are needed to hang the unit along the four ways. In order to avoid the excursion, the angle between the ropes should be less than 40°.

It is shown as follow:

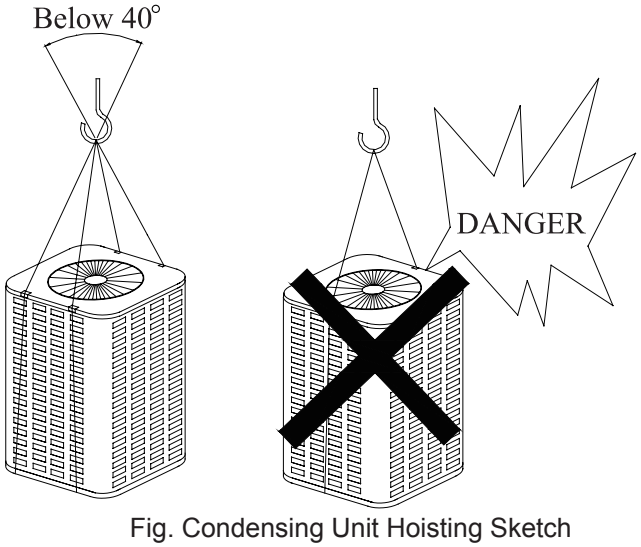


Fig. Condensing Unit Hoisting Sketch

4 REFRIGERATION PIPING WORK

4.1 Specification of Connection Pipe

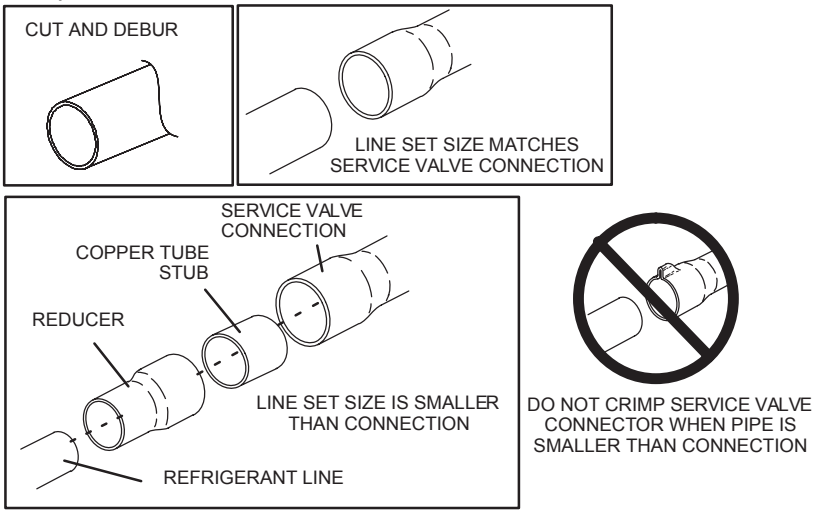
Model	External Diameter (Inch)		Maximum Length of Connection Pipe (m)	Maximum Difference in Height between Outdoor and Indoor Unit (m)	Additional Charge of Refrigerant (g/m)
	Gas Pipe	Liquid Pipe			
HW18M/A-D HW24M/A-D HW24L-E HWR24L-E HW24L-D	5/8"	3/8"	30	15	60
HW30M/A-D HW30M-E HW30M-G	3/4"	3/8"	30	15	60
HW36M/A-D HW36L-E HWR36L-E HW36L-G HWR36L-G HW36M-F	3/4"	3/8"	30	15	60
HW42L-G HWR42L-G	3/4"	3/8"	30	15	60
HW42L-D HW42M-F	7/8"	3/8"	30	15	60
HW48L-D	7/8"	3/8"	30	15	60
HW60L-G HWR60L-G HW60M-D HW60M-F HWR60M-F	9/8"	1/2"	30	15	120

4.2 Installation Procedure

Connection of Pipeline

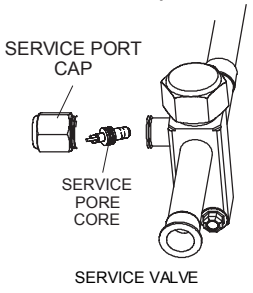
1. The pipeline should be selected based on the model of the unit. (see 4.1)
2. Cutting and Deburring.

Cut ends of the refrigerant lines square (free from nicks or dents) and debur the ends. The pipe must remain round. Do not crimp the end of the line.



3. Cap and core removal

Remove service cap and core from both the suction / vapor and liquid line service ports.



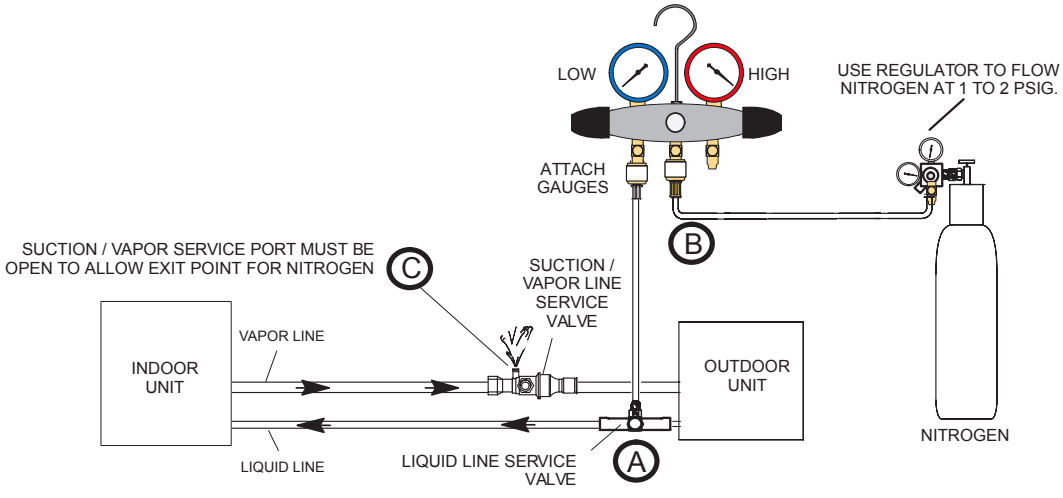
4. Attach the manifold gauge set for brazing liquid and suction / vapor line service

Flow regulated nitrogen (at 1 to 2 psig) through the low−side refrigeration gauge set into the liquid line service port valve, and out of the suction / vapor line service port valve.

A. Connect gauge set low pressure side to liquid line service valve (service port).

B. Connect gauge set center port to bottle of nitrogen with regulator.

C. Remove core from valve in suction / vapor line service port to allow nitrogen to escape.



5. Wrap service valve

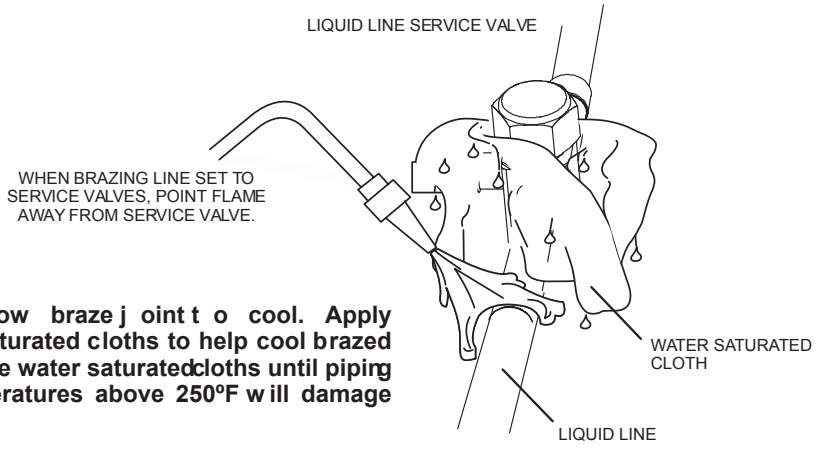
To help protect service valve seals during brazing, wrap water saturated cloths around service valve bodies and copper tube stubs. Use additional water saturated cloths underneath the valve body to protect the base paint.

6. Flow nitrogen

Flow regulated nitrogen (at 1 to 2 psig) through the refrigeration gauge set into the valve stem port connection on the liquid service valve and out of the suction / vapor valve stem port. See steps 3A, 3B and 3C on manifold gauge set connections.

7. Braze line set

Wrap both service valves with water saturated cloths as illustrated here and as mentioned in step 4, before brazing to line set. Water saturated cloths must remain water saturated throughout the brazing and cool−down process.



IMPORTANT — Allow braze j oint t o cool. Apply additional water saturated cloths to help cool brazed joint. Do not remove water saturatedcloths until piping has cooled. T emperatures above 250ºF w ill damage valve seals.

8. Preparation for next step

After all connections have been brazed, disconnect manifold gauge set from service ports. Apply additional water saturated cloths to both services valves to cool piping. Once piping is cool, remove all water saturated cloths. Refer to the unit installation instructions for the next step in preparing the unit.

Caution:

1. When connecting the indoor unit with the connecting pipe, do not pull big and small joints of the indoor unit forcefully, so as to prevent the capillary of the indoor unit and other pipes from breaking and leaking.

2. The connecting pipe shall be supported by proper bracket. The weight of the pipe shall not be withstood by the unit.

Caution:

When brazing the outdoor unit with the connecting pipe,please make sure that the valve are wrapped with wet cloth for cooling.

Caution:

Please note that heat exchanger inside is pressurized for leak test.

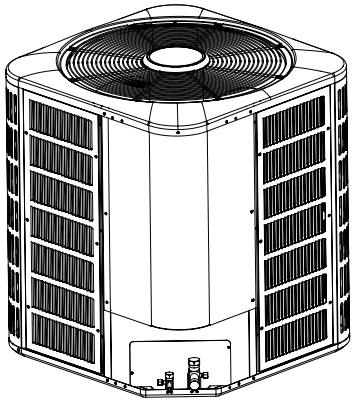
Installation of protective layer of connecting pipe

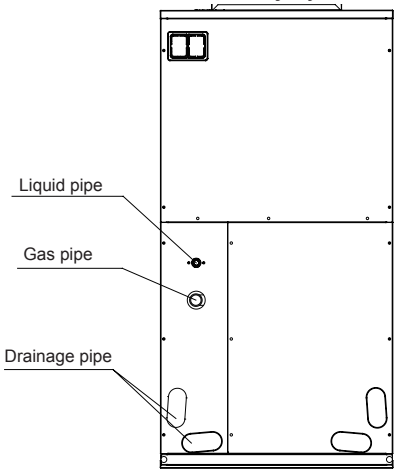
1. During the installation, we should carry out the heat preservation for two pieces of water drainage pipe.

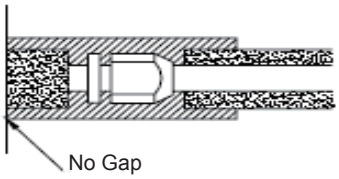
2. To avoid generation of condensate on the connecting pipe and avoid leakage, the big pipe and the small pipe of the connecting pipe must be covered by thermal insulation materials, be bundled by adhesive tape, and be isolated from air.

3. The joint connecting to the indoor unit must be wrapped by thermal insulation material. There shall be no gap between the connecting pipe joint and the wall of the indoor unit.

4. Due to there is protective pressure refrigerant in the indoor unit, when loosening the nuts on the installing site, please pay more attention on the pressure, in order to avoid the injury.







Caution:

After the pipes are wrapped by protective materials, never bend the pipes to very small angle, and otherwise the pipes may crack or break.

Use adhesive tape to wrap the pipes

1. Use adhesive tape to bundle the connecting pipe and the cables together. To prevent condensate from overflowing out from the drainage pipe, separate the drainage pipe from the connecting pipe and the cables.

2. Use thermal insulation tape to wrap the pipes from the bottom of the outdoor unit to the upper end of the pipe where the pipe enters the wall. When wrapping thermal insulation tape, the later circle of tape must cover half of the front circle of tape.

3. Wrapped pipe must be fixed to wall with pipe clamps.

Caution:

1. Do not wrap the protective tape too tight, and otherwise the efficiency of thermal insulation may be decreased. Ensure that the condensate drainage flexible tube is separate from the bundled pipes.

2. After the protective work is completed and the pipes are wrapped, use seal material to block the hole in the wall, so as to prevent rain and wind from the room.

4.3 Matters of Attention

Refrigerant charging is for 7.5m pipe. If the pipe is longer than 7.5m, please refer to the following table and to charge refrigerant additionally

Outer diameter of liquid pipe (mm)	Additional supplement refrigerant for increasing every 1.5m long pipe(g)
9.5	90
12.7	180

5 ELECTRIC WIRING WORK

5.1 SPECIFICATION OF POWER CORD & AIR SWITCH

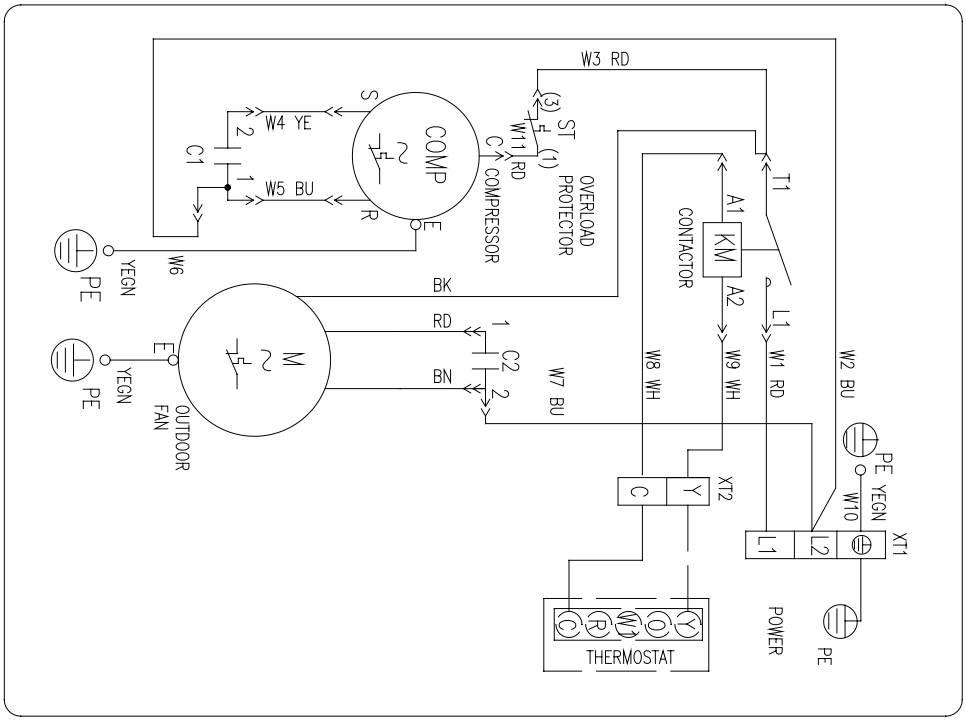
Model	Power Supply	Capability of Air Switch(A)	Minimum Sectional Area of Earth Wire (mm^2)	Minimum Sectional Area of Power Cord (mm^2)
HW30M-E	230V 1Ph 50Hz	30	2.1	2.1
HW24L-E	230V 1Ph 50Hz	20	2.1	2.1
HW36L-E	230V 1Ph 50Hz	40	3.3	3.3
HWR24L-E	230V 1Ph 50Hz	20	2.1	2.1
HWR36L-E	230V 1Ph 50Hz	40	3.3	3.3
HW30M-G	380V 3Ph 50Hz	15	2.1	2.1
HW36L-G	380V 3Ph 50Hz	16	2.1	2.1
HW42L-G	380V 3Ph 50Hz	16	2.1	2.1
HW60L-G	380V 3Ph 50Hz	20	2.1	2.1
HWR36L-G	380V 3Ph 50Hz	16	2.1	2.1
HWR42L-G	380V 3Ph 50Hz	16	2.1	2.1
HWR60L-G	380V 3Ph 50Hz	20	2.1	2.1
HW60M-D	208/230V 1Ph 60Hz	50	8.4	8.4
HW18M/A-D	208/230V 1Ph 60Hz	15	2.1	2.1
HW24M/A-D	208/230V 1Ph 60Hz	20	2.1	2.1
HW30M/A-D	208/230V 1Ph 60Hz	30	3.3	3.3
HW36M/A-D	208/230V 1Ph 60Hz	40	3.3	3.3
HW24L-D	208/230V 1Ph 60Hz	20	2.1	2.1
HW42L-D	208/230V 1Ph 60Hz	40	3.3	3.3
HW48L-D	208/230V 1Ph 60Hz	50	5.7	5.7
HW36M-F	208/230V 3Ph 60Hz	30	2.1	2.1
HW42M-F	208/230V 3Ph 60Hz	30	2.1	2.1
HW60M-F	208/230V 3Ph 60Hz	40	3.3	3.3
HWR60M-F	208/230V 3Ph 60Hz	35	3.3	3.3

Note:

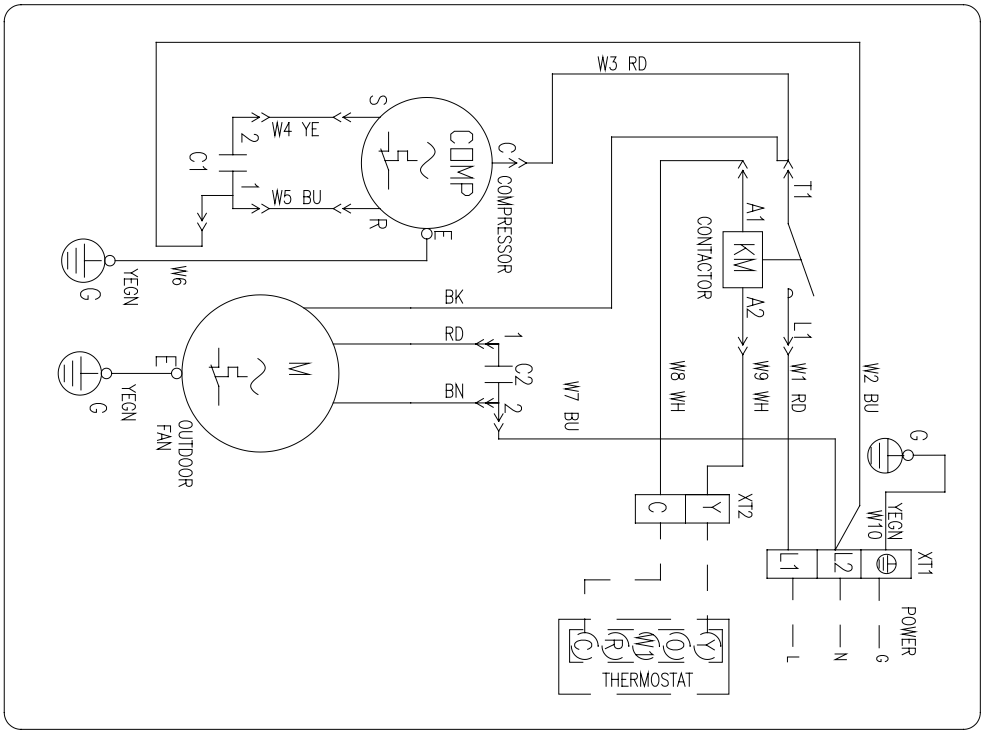
① Seasonal Energy Efficiency Ratio; Tested per ARI 210/240@80°F/67°F/95°F.
② Energy Efficiency Ratio@80°F/67°F/95°F.
③ TVA Rating: Btu/h@75°F/63°F-95°F.
④ HSPF=Heating Seasonal Performance Factor.

5.2 WIRING DIAGRAM

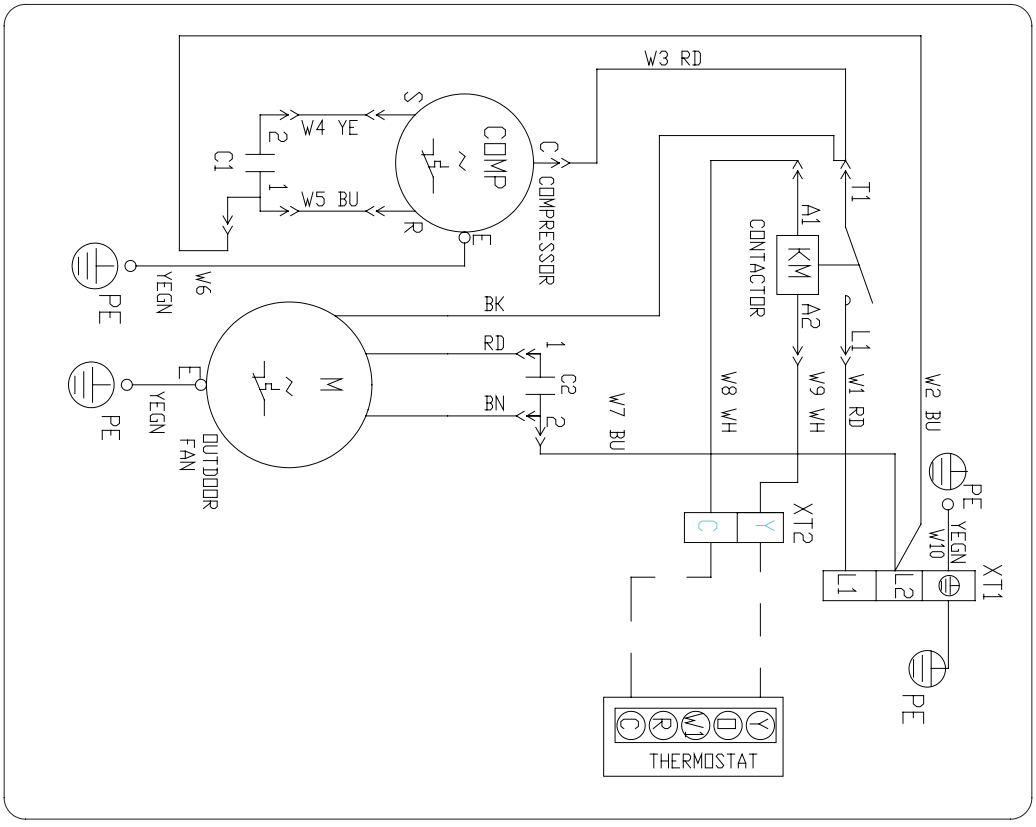
Model: HW18M/A-D



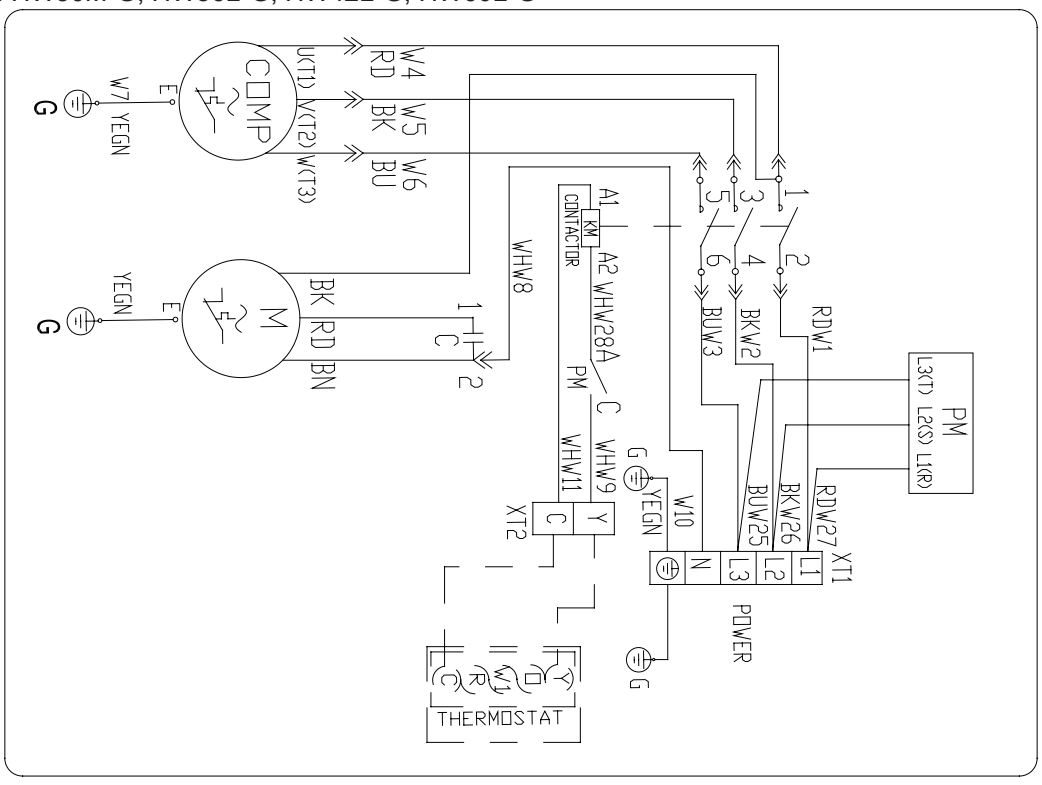
Model: HW24L-D, HW48L-D, HW24M/A-D, HW30M/A-D, HW36M/A-D



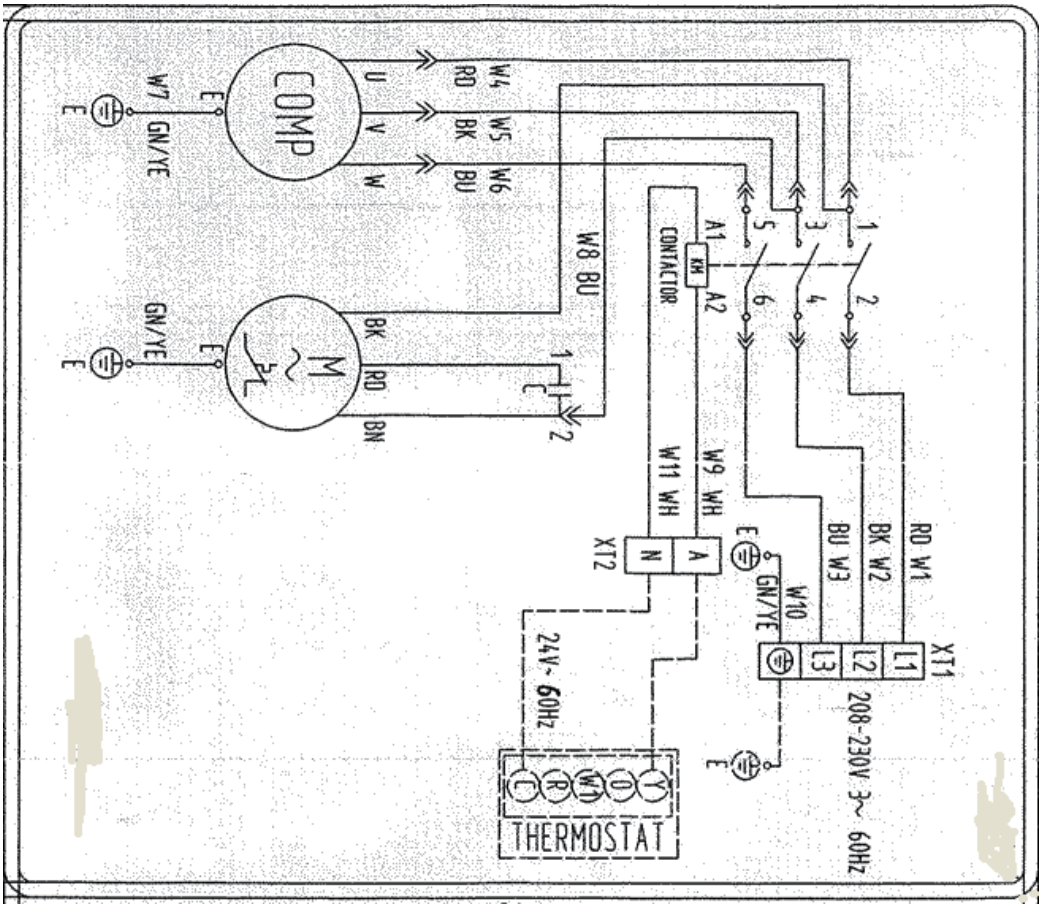
Model: HW24L-E, HW36L-E, HW30M-E



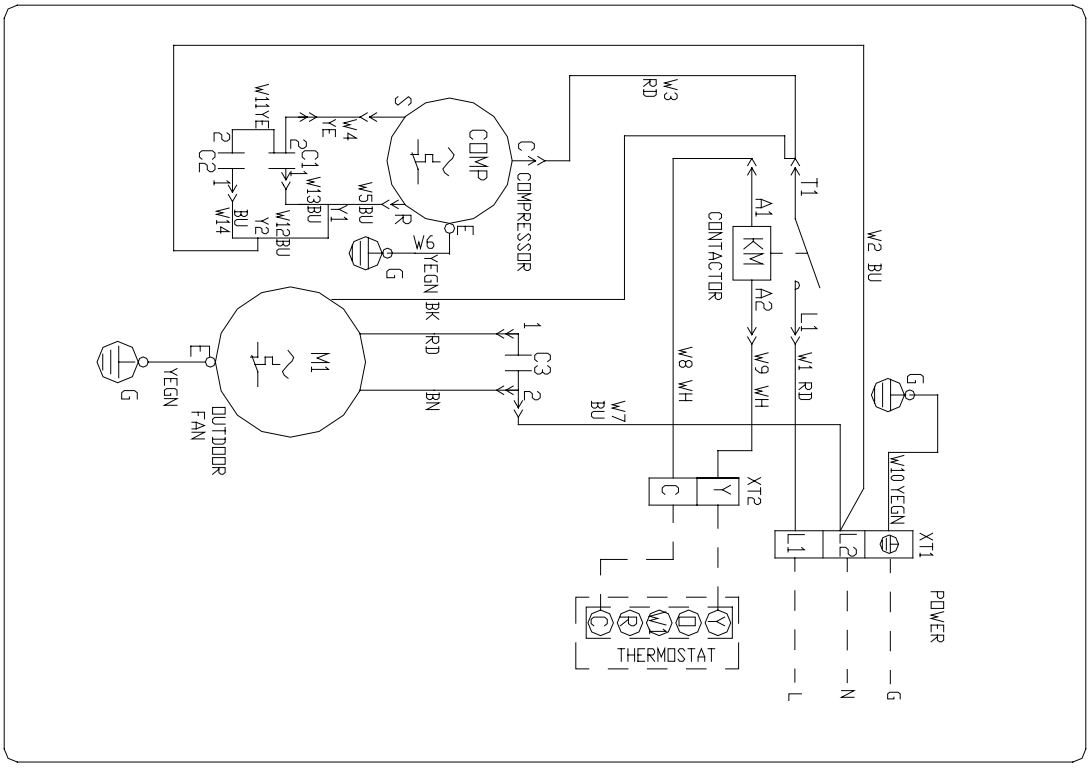
Model: HW30M-G, HW36L-G, HW42L-G, HW60L-G



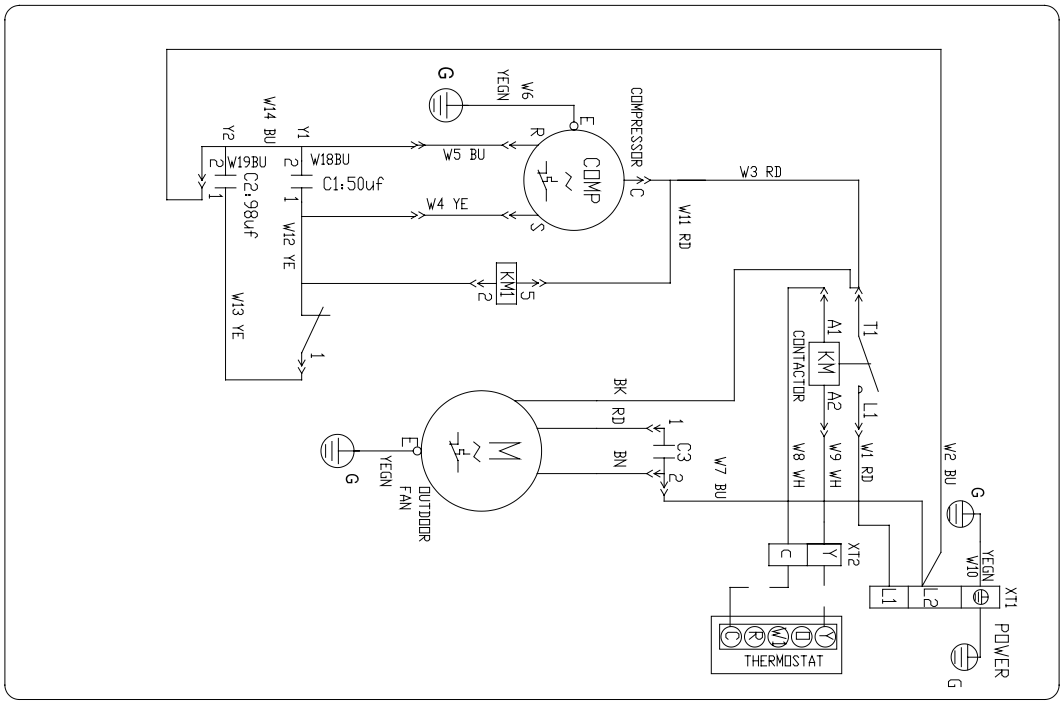
Model: HW36M-F, HW42M-F



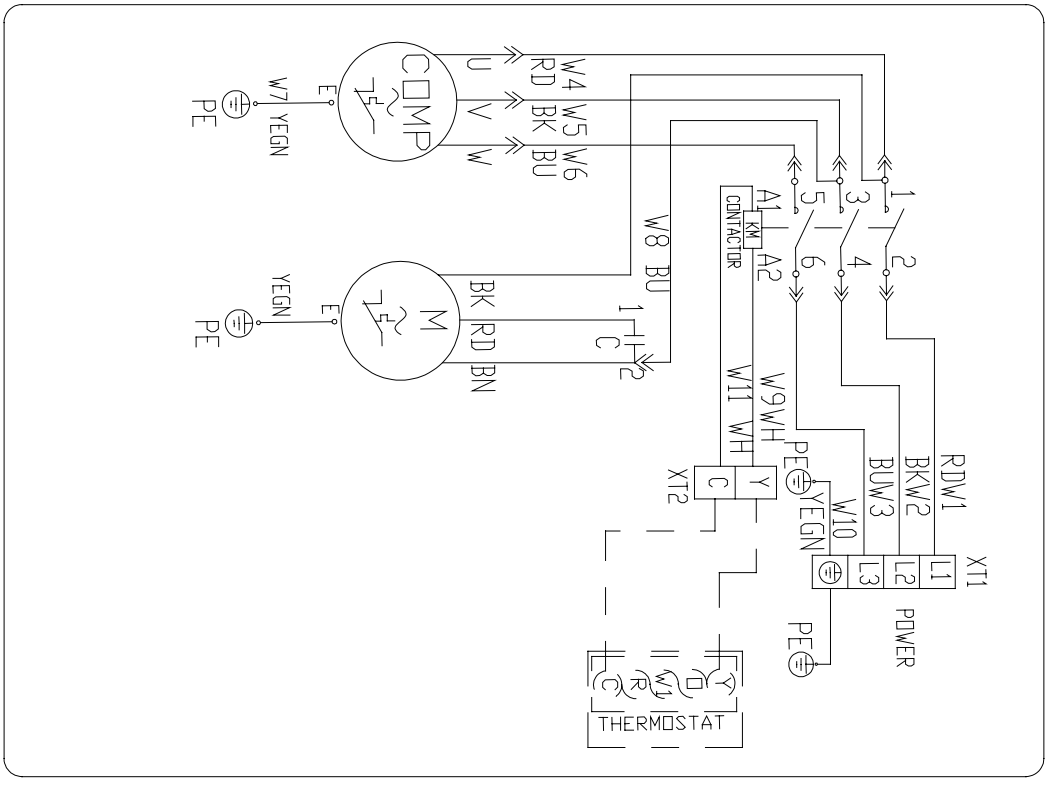
Model: HW60M-D



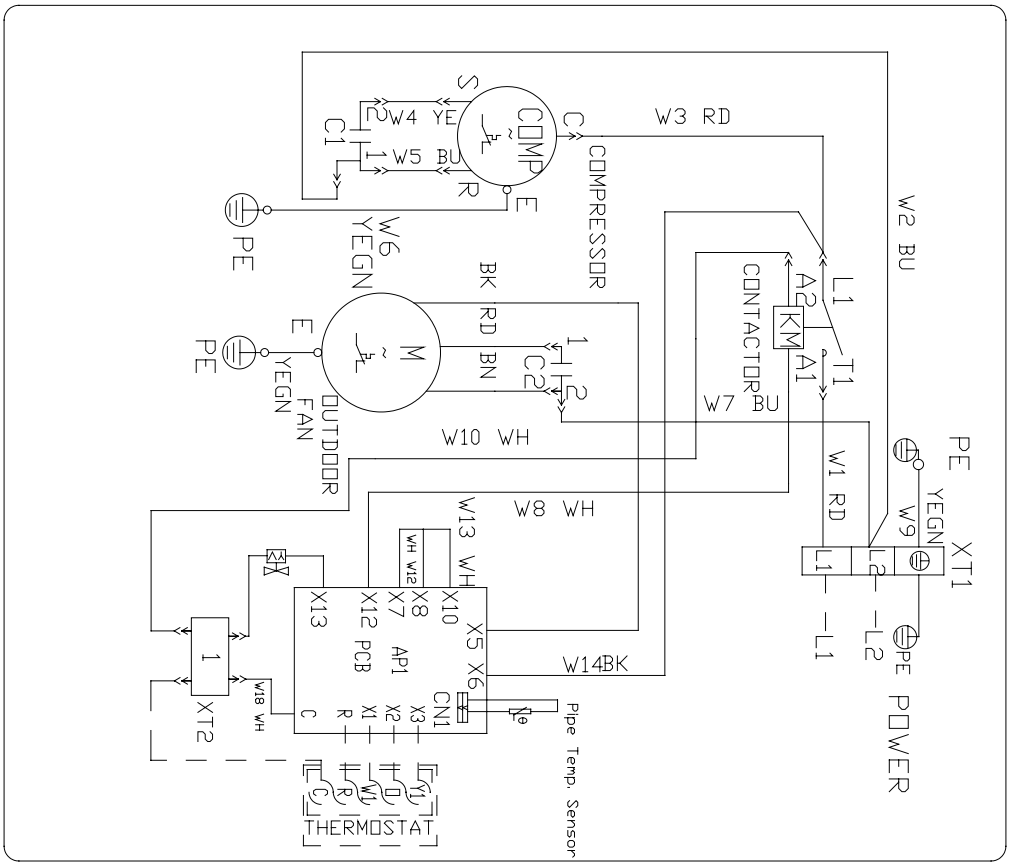
Model: HW42L-D



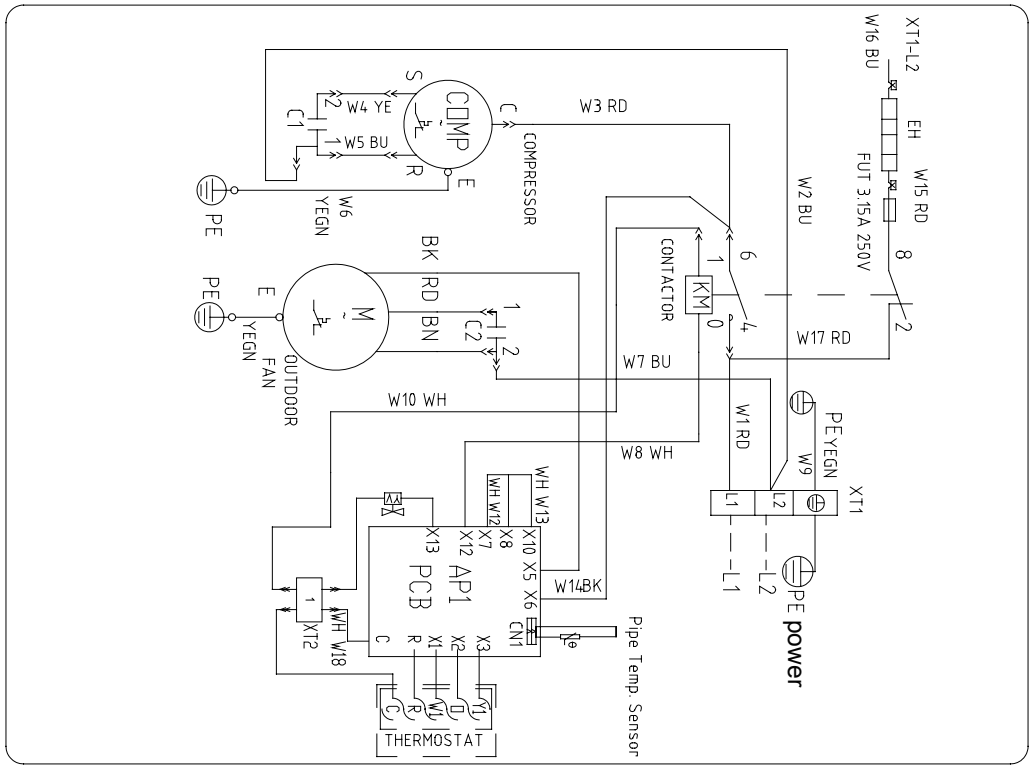
Model: HW60M-F



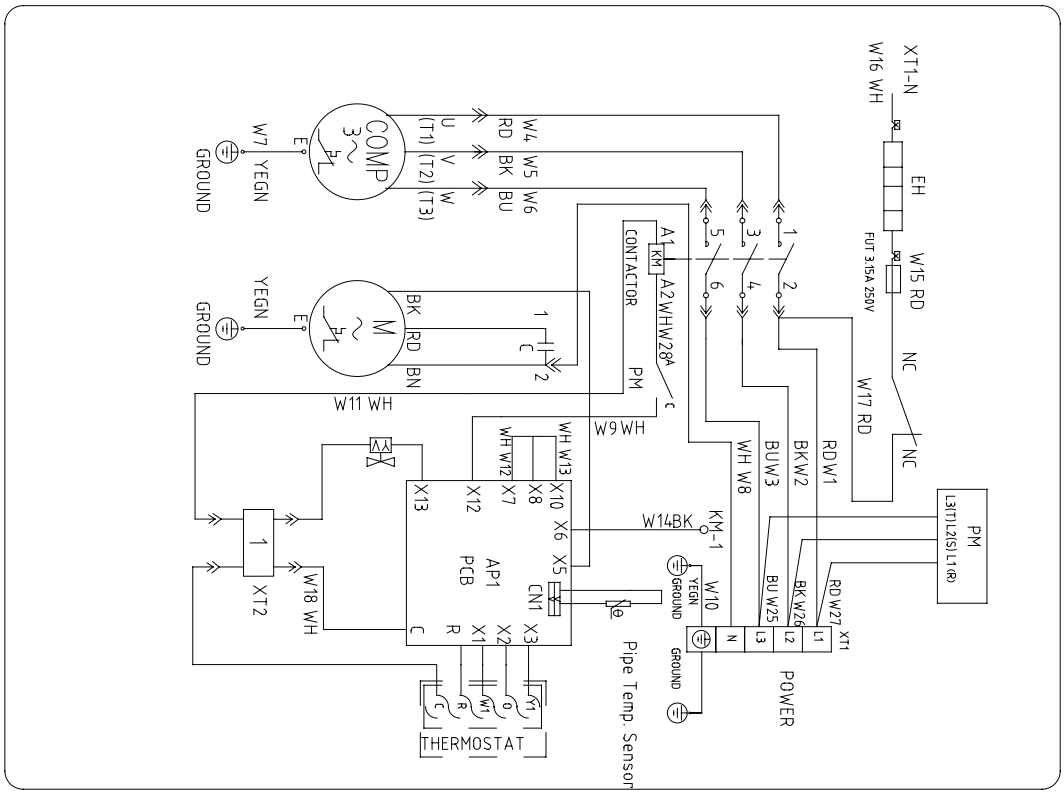
Model: HWR24L-E



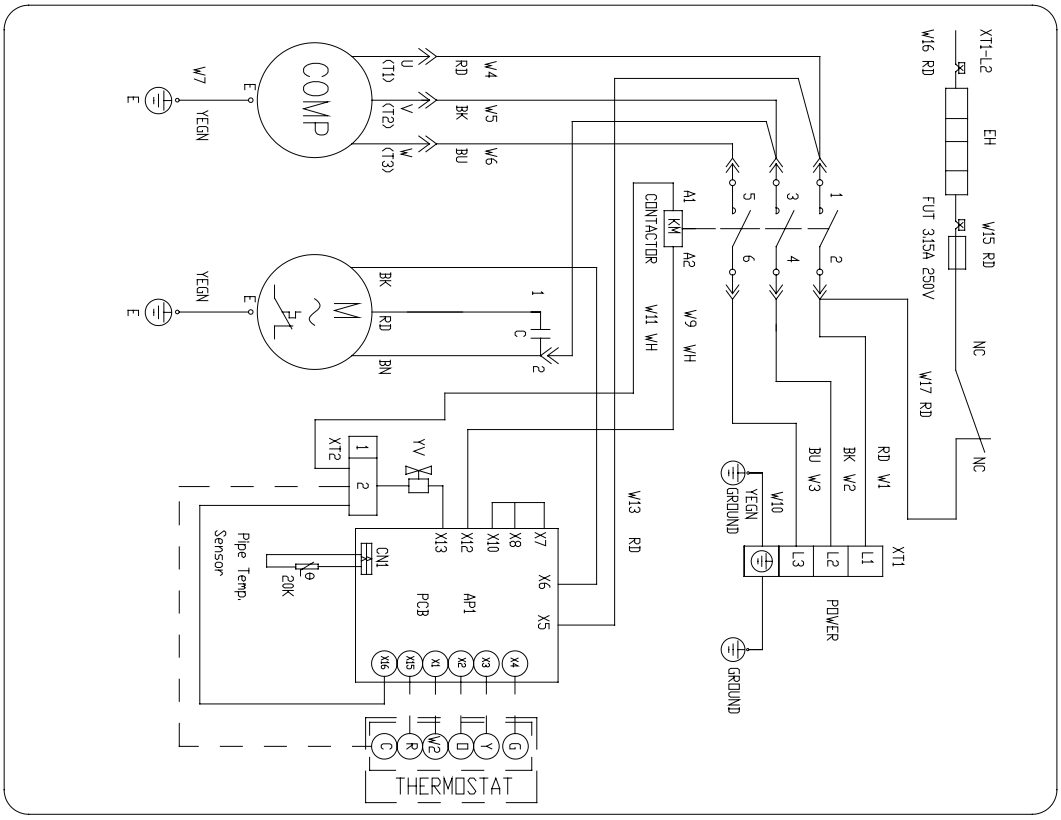
Model: HWR36L-E



Model: HWR36L-G, HWR42L-G, HWR60L-G



Model: HWR60M-F



5.3 Wiring Principle

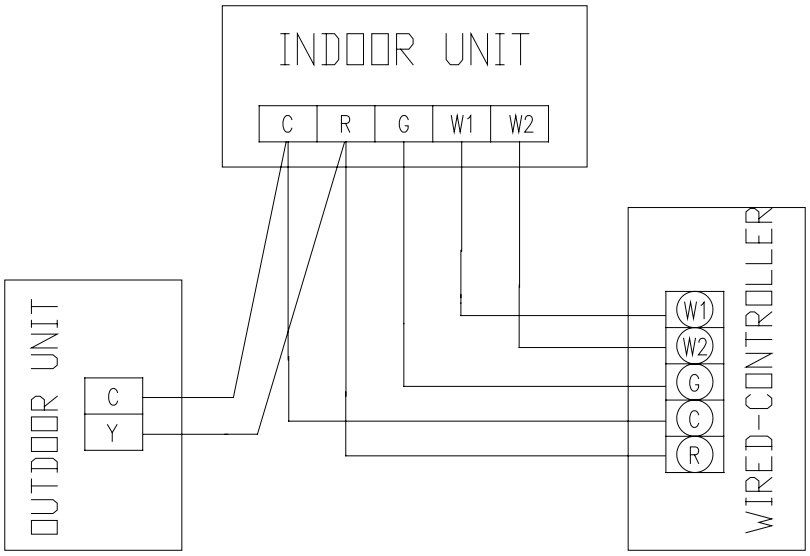
1. The signal line of the wired controller must be separated from the power line and the connecting line between the indoor unit and the outdoor unit.

2. In case the unit is installed in a place which is vulnerable for electromagnetic interference, it is better to use shielded cable or double-twisted cable as the signal line of the wired controller.

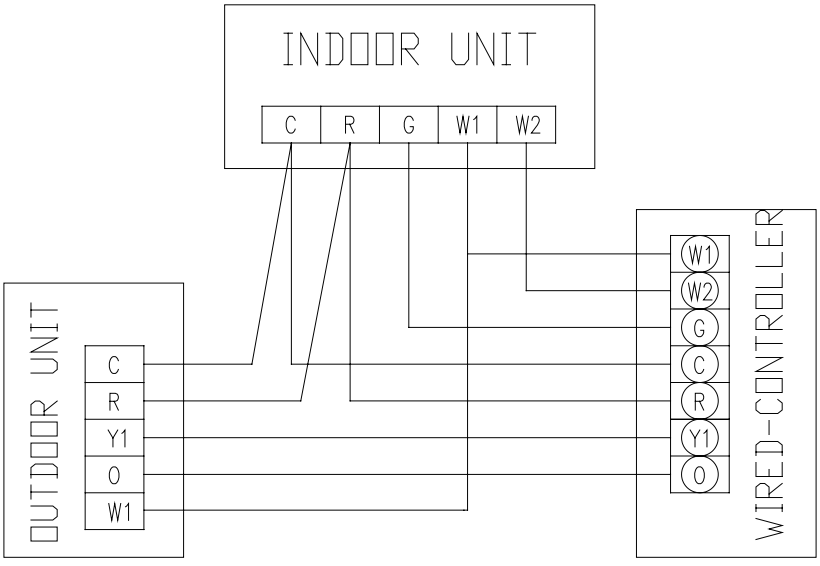
3. A separate air switch must be furnished for the external power supply of the unit, otherwise it would cause damage to the unit or injury or even death.

5.4 Electric Wiring Design

Model: HW18M/A-D, HW24L-D, HW48L-D, HW24M/A-D, HW30M/A-D, HW36M/A-D, HW24L-E, HW36L-E, HW30M-E, HW30M-G, HW36L-G, HW42L-G, HW60L-G, HW36M-F, HW42M-F, HW42L-D, HW60M-D, HW60M-F



Model: HWR24L-E, HWR36L-E, HWR36L-G, HWR42L-G, HWR60L-G, HWR60M-F

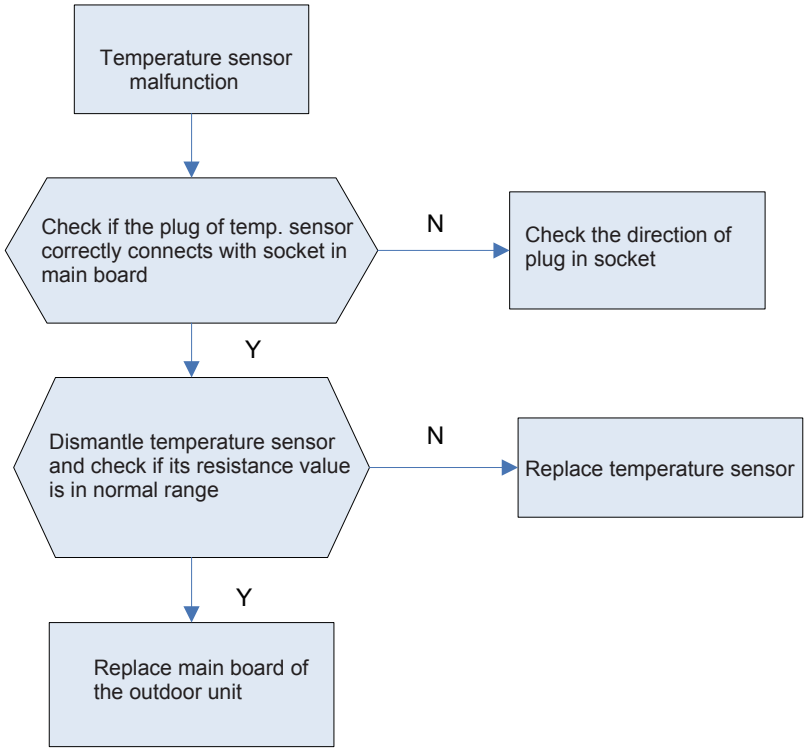


MAINTENANCE

UNITS MAINTENANCE

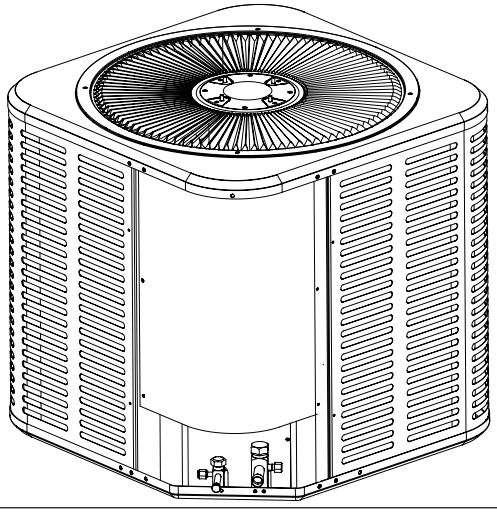
1 FLOW CHART OF TROUBLESHOOTING

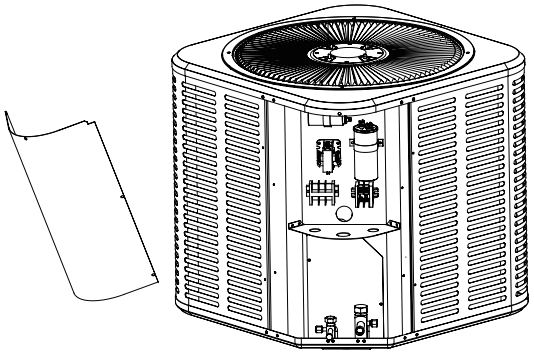
Temperature Sensor Protection



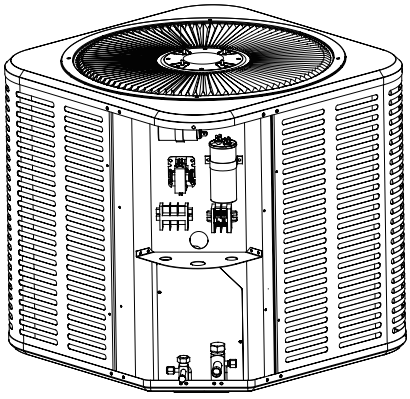
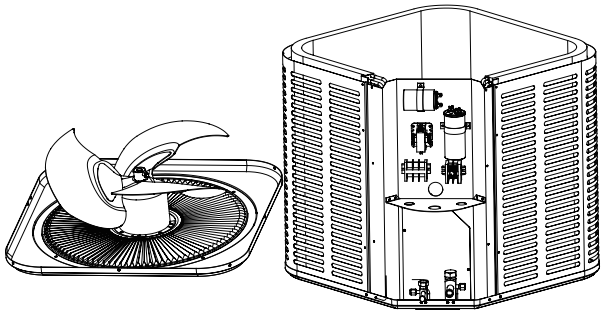
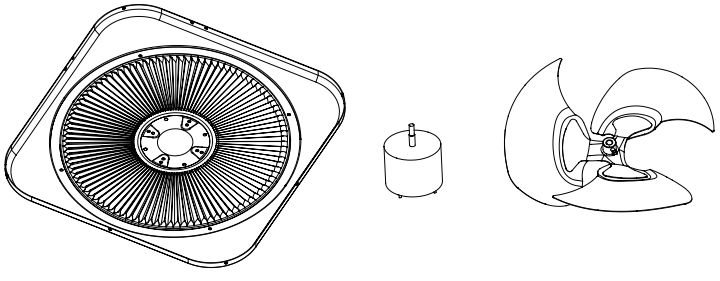
2 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

2.1 Electrical Parts Box

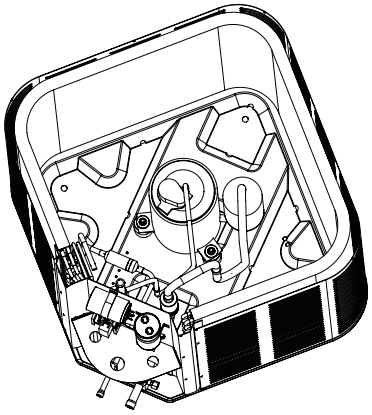
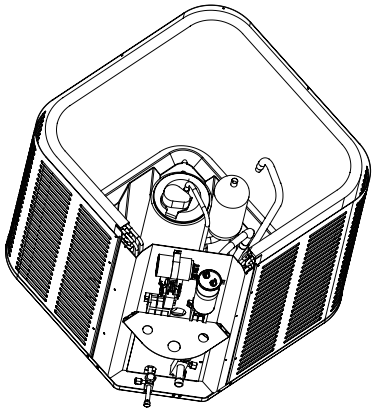
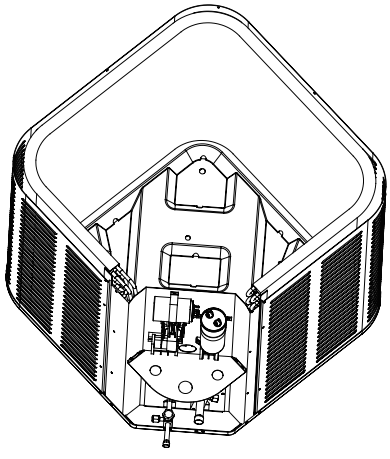
Disassembly and Assembly of Electrical Parts Box		
Notice: Cut off the power supply before disassembling the electric box.		
Process	Dirgrams	Operating Introductions
1. Dismantle fixed screw of electric box cover.		Unscrew the fixed screw of electric box with a screwdriver.

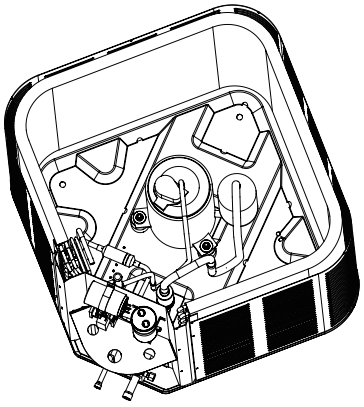
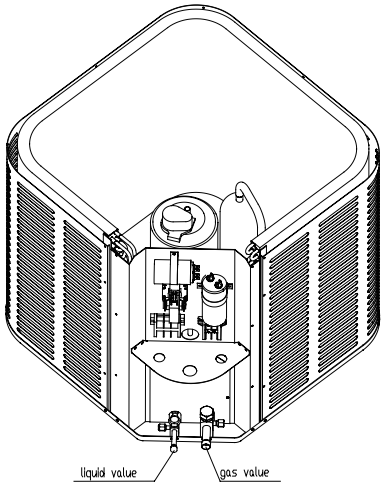
2. Remove the cover plate of electric box		Remove the cover plate of electric box

2.2 Fan and Fan Motor

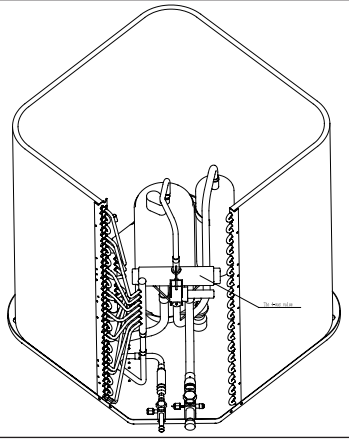
Disassembly and Assembly of Fan and Fan Motor		
Notice: Before removing the fan blades and motor, please confirm the power supply has been cut off		
Process	Dirgrams	Operating Introductions
1. Dismantle power cord of fan		Dismantle power cord of fan Note: Mark the power cord with the code of relevant terminal to avoid mixture when recovering wiring.
2. Remove the top cover.		1. Unscrew each screw on the top cover. 2. Unplug terminals of connected electric components. 3. Remove the whole top cover sub-assy and place top cover downwards.
3. Dismantle fan blade and motor.		1. Dismantle fixed bolts of fan blade to remove it. 2. Unscrew the bolts which connect the motor and top cover to remove the motor.

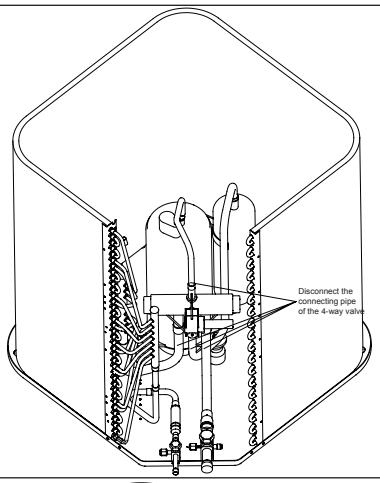
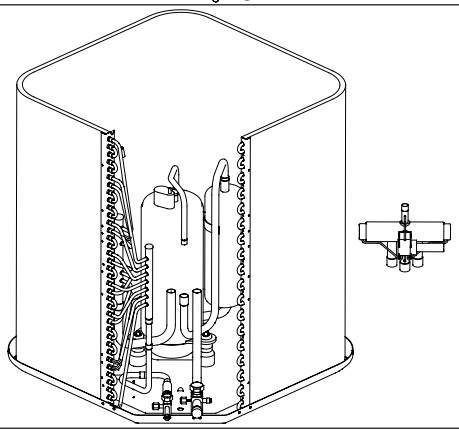
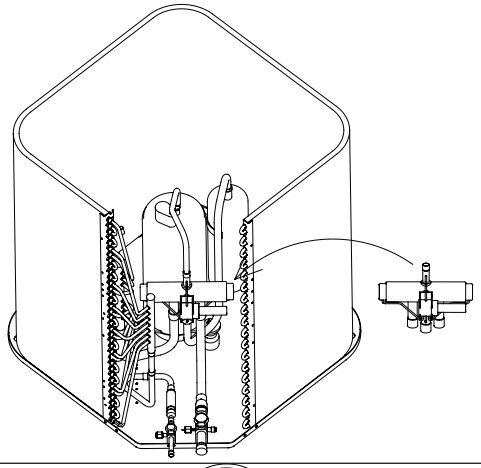
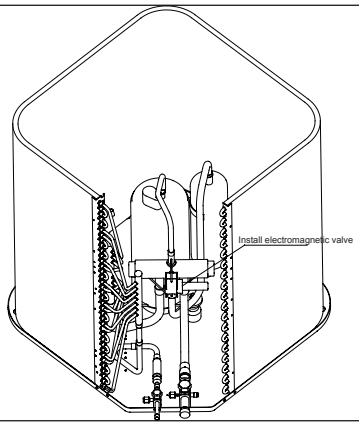
2.3 Compressor

Disassembly and Assembly of Compressor		
Remark : Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the compressor.		
Process	Dirgrams	Operating Introductions
1. Dismantle connecting wire of power supply for compressor.		1. Unscrew the fixed screw of power cord with a screwdriver. 2. Unplug the power cord.
2. Dismantle the discharge pipe and the suction pipe of compressor.		1. Charge nitrogen with the pressure of 0.5±0.1kgf/cm^2 (relative pressure) from the gas valve for protection. 3. Unsolder the suction inlet and the discharge outlet with blowtorch. 4. Heating with caution in case the surroundings get burned due to high temperature.
3. Remove compressor		1.Unscrew retaining screws of the compressor with box spanner. 2. Lift compressor out of the unit.

4.Fix the new compressor on base plate		1. Lift new compressor into the unit and fix it on base plate with box spanner 2. Charge nitrogen with the pressure of 0.5±0.1kgf/cm^2(relative pressure) from the gas valve for protection, and braze the suction pipe and discharge pipe with the compressor respectively. 3. Heating with caution in case the surroundings get burning due to high temperature.
5. Creation of vacuum and charge refrigerant.		1. Vacuum from the gas valve and liquid valve at the same time. 2. Charge refrigerant from the liquid valve and the refrigerant charge should conform to the nameplate.

2.4 The 4-way valve

Disassembly and Assembly of the 4-way Valve		
Remark : 1. The disassembly procedure of 4-way valve is only applicable to heat pump unit. 2. Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of 4-way valve.		
Process	Dirgrams	Operating Introductions
1.Dismantle electromagnetic valve.		1.Dismantle electromagnetic valve with a spanner. 2.Remove electromagnetic valve from 4-way valve.

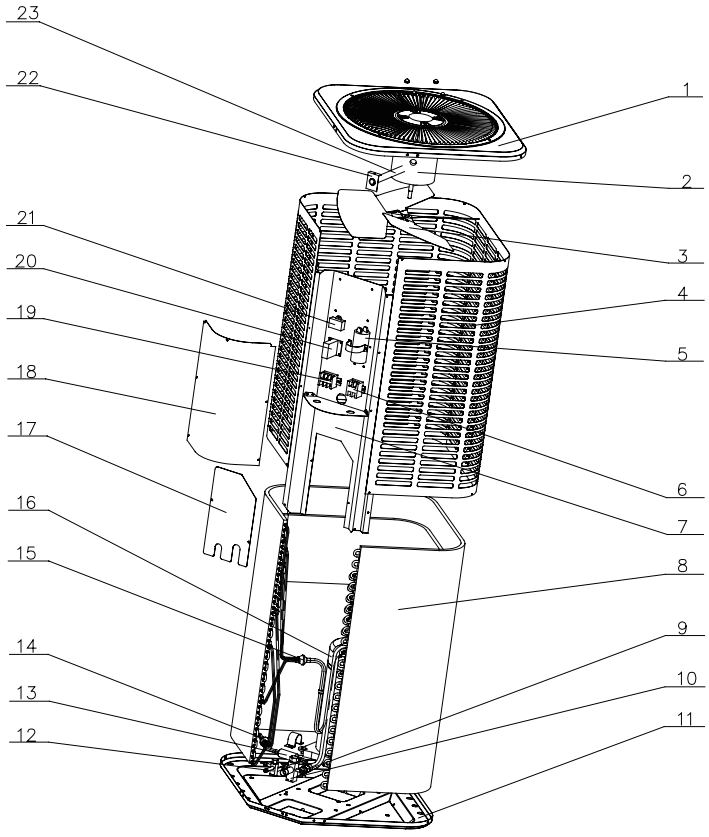
2.Dismantle 4-way valve.		1. Heating connecting pipe of 4-way valve by gas welding and then unplug 4-way valve. 2.Nitrogen-fill protection shall be conducted on welding joint and the pressure of nitrogen is 0.5±0.1kgf/cm^2 (relative pressure) 3. Record the direction of 4-way valve and the position of each vent before removing 4-way valve.
3. Remove 4-way valve		Remove old 4-way valve from pipeline.
4. Install a new 4-way valve.		1. Install the new 4-way valve in correct position and connect it with pipeline correctly. 2. Wrap the valve with wet cloth when welding to prevent the slide block inside the valve from burning and prevent water from piping. 3. Charge nitrogen to weld and the nitrogen pressure is 0.5±0.1kgf/cm^2 (relative pressure)
5.Install electromagnetic valve.		Install the electromagnetic valve in new 4-way valve.
6. Inspect the system and charge refrigerant.		Vacuumize and charge refrigerant after confirm there is no leakage of the system.

3 EXPLODED VIEWS AND PART LIST

3.1Explosive view for cooling only unit

Whole side panel structure

Model:HW30M-E, HW24L-E, HW36L-E, HW30M-G, HW36L-G, HW42L-G, HW60L-G, HW60M-D, HW60M-D, HW18M/A-D, HW24M/A-D, HW36M/A-D, HW24L-D, HW48L-D, HW36M-F, HW42M-F, HW30M/A-D HW42L-D, HW60M-F



HW30M-E

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	15018254	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01308239	1
5	Capacitor CBB65	33000039	1
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388235	1
8	Condenser Sub-Assy	01108229	1
9	Gas Tube Filter	07210037	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	012082281	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	07228233	1
15	Atmolysis Pipe Sub-Assy	04672122	1
16	Compressor and fittings	00100085	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01408271	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1

21	Capacitor CBB61	33010064	1
22	Fixer	01842252	1
23	Ripple Pipe	05012140	1

HW24L-E

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	15018254	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01308226	1
5	Capacitor CBB65	33000001	1
6	Terminal Board	42011145	1
7	Connection Sheet Sub-Assy	01388214	1
8	Condenser Sub-Assy	01138214	1
9	Gas Tube Filter	07212121	1
10	Cut-off Valve	07138234	1
11	Chassis Sub-assy	01208228	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	04322151	1
15	Atmolysis Pipe Sub-Assy	03438211	1
16	Compressor and fittings	00100131	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010064	1
22	Fixer	01722121	1
23	Ripple Pipe	05012140	1

HW36L-E

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	15018006	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01308239	1
5	Capacitor CBB65	33000039	1
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388235	1
8	Condenser Sub-Assy	01138217	1
9	Gas Tube Filter	07212402	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01208230	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232135	1
15	Atmolysis Pipe Sub-Assy	03812112	1
16	Compressor and fittings	00100068	1
17	Tube-exit Plate	01388210	1

18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010014	1
22	Fixer	01722121	1
23	Ripple Pipe	05012140	1

HW30M-G

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	15018254	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01308239	1
5	Capacitor CBB65	——	——
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388235	1
8	Condenser Sub-Assy	01108229	1
9	Gas Tube Filter	07212402	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01208230	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232135	1
15	Atmolysis Pipe Sub-Assy	03812112	1
16	Compressor and fittings	00100067	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011257	1
20	AC Contactor	44010255	1
21	Capacitor CBB61	33010064	1
22	Fixer	01722121	1
23	Ripple Pipe	05012140	1

HW36L-G

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	15018006	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01308239	1
5	Capacitor CBB65	——	——
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388235	1
8	Condenser Sub-Assy	01108229	1
9	Gas Tube Filter	07212402	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01208230	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232135	1

15	Atmolysis Pipe Sub-Assy	03812112	1
16	Compressor and fittings	00120043	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011257	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010014	1
22	Fixer	01722121	1
23	Ripple Pipe	05012140	1

HW42L-G

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	15018004	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01318207	1
5	Capacitor CBB65	——	——
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01188203	1
8	Condenser Sub-Assy	01138218	1
9	Gas Tube Filter	07212402	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01202107	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	04322307	1
15	Atmolysis Pipe Sub-Assy	04632244	1
16	Compressor and fittings	00120043	1
17	Tube-exit Plate	01388208	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011257	1
20	AC Contactor	44010255	1
21	Capacitor CBB61	33010014	1
22	Fixer	01722121	1
23	Ripple Pipe	05012140	1

HW60L-G

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258210	1
2	Fan Motor	15018620	1
3	Cross-flow Fan	10518201	1
4	Side Plate	01308236	1
5	Capacitor CBB65	——	——
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388219	1
8	Condenser Sub-Assy	01138219	1
9	Gas Tube Filter	07219056	1
10	Cut-off Valve	07138236	1
11	Chassis Sub-assy	01208270	1

12	Cut-off Valve	07138235	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232107	1
15	Atmolysis Pipe Sub-Assy	03638266	1
16	Compressor and fittings	00100331	1
17	Tube-exit Plate	01388208	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011257	1
20	AC Contactor	44010255	1
21	Capacitor CBB61	33010014	1
22	Fixer	——	——
23	Ripple Pipe	05278205	1

HW60M-D for CM115W2101

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258210	1
2	Fan Motor	15702103	1
3	Cross-flow Fan	10358211	1
4	Side Plate	01308236	1
5	Capacitor CBB65	33010743	1
6	Terminal Board	420111451	1
7	Connection Sheet Sub-Assy	01388219	1
8	Condenser Sub-Assy	01138215	1
9	Gas Tube Filter	07219056	1
10	Cut-off Valve	07138236	1
11	Chassis Sub-assy	01208220	1
12	Cut-off Valve	07138235	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232107	1
15	Atmolysis Pipe Sub-Assy	0343821301	1
16	Compressor and fittings	00205221	1
17	Tube-exit Plate	01388208	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011242	1
20	AC Contactor	44010253	1
21	Capacitor CBB61	33010014	1
22	Fixer	——	——
23	Ripple Pipe	05278205	1

HW60M-D for CM115W214

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258210	1
2	Fan Motor	15702103	1
3	Cross-flow Fan	10358211	1
4	Side Plate	01308236	1
5	Capacitor CBB65	33010743	1
6	Terminal Board	42011145	1
7	Connection Sheet Sub-Assy	01388219	1
8	Condenser Sub-Assy	01138215	1

9	Gas Tube Filter	07219056	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01208220	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232107	1
15	Atmolysis Pipe Sub-Assy	0343821301	1
16	Compressor and fittings	00120133	1
17	Tube-exit Plate	01388208	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011242	1
20	AC Contactor	44010253	1
21	Capacitor CBB61	33010014	1
22	Fixer	——	——
23	Ripple Pipe	05278205	1

HW18M/A-D for EM115W0250

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01252113	1
2	Fan Motor	15018254	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01302127	1
5	Capacitor CBB65	33010743	1
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388237	1
8	Condenser Sub-Assy	01138231	1
9	Gas Tube Filter	072190511	1
10	Cut-off Valve	07138234	1
11	Chassis Sub-assy	01202102	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232164	1
15	Atmolysis Pipe Sub-Assy	03812169	1
16	Compressor and fittings	00100234	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01398247	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010064	1
22	Fixer	01748220	1
23	Ripple Pipe	05012140	1

HW24M/A-D for EM115W0270

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01252113	1
2	Fan Motor	15018254	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01302127	1
5	Capacitor CBB65	33000012	1

6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388237	1
8	Condenser Sub-Assy	01138231	1
9	Gas Tube Filter	072190511	1
10	Cut-off Valve	07138234	1
11	Chassis Sub-assy	01202104	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232164	1
15	Atmolysis Pipe Sub-Assy	03812169	1
16	Compressor and fittings	00100150	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01398247	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010064	1
22	Fixer	01748220	1
23	Ripple Pipe	050121403	1

HW36M/A-D

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258228	1
2	Fan Motor	15018004	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01318243	1
5	Capacitor CBB65	33000001	1
6	Terminal Board	420111451	1
7	Connection Sheet Sub-Assy	01388239	1
8	Condenser Sub-Assy	01138232	1
9	Gas Tube Filter	07210037	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01202105	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232168	1
15	Atmolysis Pipe Sub-Assy	03812170	1
16	Compressor and fittings	00205219	1
17	Tube-exit Plate	01388208	1
18	Electric Box Cover Sub-Assy	01398247	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010014	1
22	Fixer	01748220	1
23	Ripple Pipe	05012140	1

HW24L-D

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	15018254	1

3	Cross-flow Fan	10358203	1
4	Side Plate	01318211	1
5	Capacitor CBB65	33000012	1
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388214	1
8	Condenser Sub-Assy	01138214	1
9	Gas Tube Filter	07212121	1
10	Cut-off Valve	07138234	1
11	Chassis Sub-assy	01208229	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	04322151	1
15	Atmolysis Pipe Sub-Assy	03438211	1
16	Compressor and fittings	00100150	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	0140827101	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010064	1
22	Fixer	01842252	1
23	Ripple Pipe	05012140	1

HW48L-D

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258285	1
2	Fan Motor	15702102	1
3	Cross-flow Fan	10358211	1
4	Side Plate	01318212	1
5	Capacitor CBB65	33000001	1
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388222	1
8	Condenser Sub-Assy	01138220	1
9	Gas Tube Filter	07212402	1
10	Cut-off Valve	07138237	1
11	Chassis Sub-assy	01208271	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232107	1
15	Atmolysis Pipe Sub-Assy	03438212	1
16	Compressor and fittings	00205220	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01408271	1
19	Terminal Board	42011242	1
20	AC Contactor	44010253	1
21	Capacitor CBB61	33010037	1
22	Fixer	01842252	1
23	Ripple Pipe	05278205	1

HW36M-F

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258250	1
2	Fan Motor	1501800401	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01318215	1
5	Capacitor CBB65	——	——
6	Terminal Board	420111451	1
7	Connection Sheet Sub-Assy	01188203	1
8	Condenser Sub-Assy	01152109	1
9	Gas Tube Filter	07210037	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01202108	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	04322131	1
15	Atmolysis Pipe Sub-Assy	04632108	1
16	Compressor and fittings	00202104	1
17	Tube-exit Plate	01388208	1
18	Electric Box Cover Sub-Assy	01408271	1
19	Terminal Board	42011043	1
20	AC Contactor	44010255	1
21	Capacitor CBB61	33010014	1
22	Fixer	01842252	1
23	Ripple Pipe	05012140	1

HW42M-F

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258285	1
2	Fan Motor	1570210203	1
3	Cross-flow Fan	10358211	1
4	Side Plate	01318212	1
5	Capacitor CBB65	——	——
6	Terminal Board	420111451	1
7	Connection Sheet Sub-Assy	01388222	1
8	Condenser Sub-Assy	01138220	1
9	Gas Tube Filter	07210037	1
10	Cut-off Valve	07138237	1
11	Chassis Sub-assy	01208271	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232107	1
15	Atmolysis Pipe Sub-Assy	03438212	1
16	Compressor and fittings	00202111	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01408271	1
19	Terminal Board	42011043	1
20	AC Contactor	44010255	1
21	Capacitor CBB61	33010037	1

22	Fixer	——	——
23	Ripple Pipe	05278205	1

HW30M/A-D for EM115W0292

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01252113	1
2	Fan Motor	15018004	1
3	Cross-flow Fan	10358203	1
4	Side Plate	01302125	1
5	Capacitor CBB65	33000001	1
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388241	1
8	Condenser Sub-Assy	01138233	1
9	Gas Tube Filter	07210037	1
10	Cut-off Valve	07138233	1
11	Chassis Sub-assy	01202104	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232167	1
15	Atmolysis Pipe Sub-Assy	03812171	1
16	Compressor and fittings	00202105	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01398247	1
19	Terminal Board	42011242	1
20	AC Contactor	44010250	1
21	Capacitor CBB61	33010014	1
22	Fixer	01748220	1
23	Ripple Pipe	050121403	1

HW42L-D for CM115W281

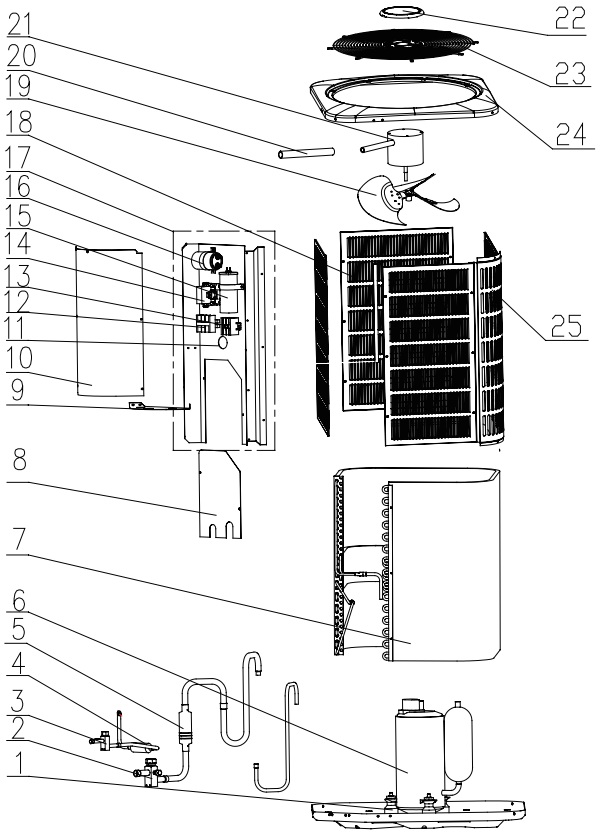
No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258285	1
2	Fan Motor	15702102	1
3	Cross-flow Fan	10358211	1
4	Side Plate	01318212	1
5	Capacitor CBB65	33000001	1
6	Terminal Board	420111453	1
7	Connection Sheet Sub-Assy	01388222	1
8	Condenser Sub-Assy	01138220	1
9	Gas Tube Filter	07219051	1
10	Cut-off Valve	07138237	1
11	Chassis Sub-assy	01208271	1
12	Cut-off Valve	07138232	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	03232107	1
15	Atmolysis Pipe Sub-Assy	03438212	1
16	Compressor and fittings	00120131	1
17	Tube-exit Plate	01388210	1
18	Electric Box Cover Sub-Assy	01408271	1

19	Terminal Board	42011242	1
20	AC Contactor	44010253	1
21	Capacitor CBB61	33010037	1
22	Fixer	——	——
23	Ripple Pipe	05278205	1

HW60M-F for EM115W0011

No.	Name of part	Part Code	Quantity
1	Cover Plate Sub-Assy	01258210	1
2	Fan Motor	15702103	1
3	Cross-flow Fan	10358211	1
4	Side Plate	01308236	1
5	Capacitor CBB65	——	——
6	Terminal Board	42011145	1
7	Connection Sheet Sub-Assy	01388219	1
8	Condenser Sub-Assy	01138215	1
9	Gas Tube Filter	07219056	1
10	Cut-off Valve	07138236	1
11	Chassis Sub-assy	01208270	1
12	Cut-off Valve	07138235	1
13	Bidirection Strainer	07220016	1
14	Collecting Liquid Pipe Sub-Assy	01388219	1
15	Atmolysis Pipe Sub-Assy	03438213	1
16	Compressor and fittings	00202208	1
17	Tube-exit Plate	01388208	1
18	Electric Box Cover Sub-Assy	01418231	1
19	Terminal Board	42011043	1
20	AC Contactor	44010255	1
21	Capacitor CBB61	33010014	1
22	Fixer	——	——
23	Ripple Pipe	05278205	1

Four-side disassembly structure
Model: HW60M-D, HW30M/A-D, HW42L-D, HW60M-F, HW18M/A-D, HW24M/A-D



HW60M-D for CM115W2102

No.	Name of part	Part Code	Quantity
1	Compressor Gasket	76710209	4
2	Cut-off Valve	07138236	1
3	Cut-off Valve	07138235	1
4	Bidirection Strainer	07220016	1
5	Gas Tube Filter	0721905601	1
6	Compressor and Fittings	00205221	1
7	Condenser Assy	01138215	1
8	Tube-exit Plate	01388208	1
9	Cabinet	01318206	1
10	Electric Box Cover	01408271	1
11	Cable-cross Loop	76515202	1
12	Terminal Board	420111453	1
13	Terminal Board	42011242	1
14	AC Contactor	44010253	1
15	Capacitor CBB65	33010743	1
16	Capacitor CBB61	33010014	1
17	Electric Box Assy	01392406	1
18	Side Plate	01312251 01312252 01312253	1
19	Cross-flow Fan	10358211	1
20	Wire Conduit	05278205	1
21	Fan Motor	15702103	1

22	Brand Cover	2690221301	1
23	Grill Sub-Assy	01572212	1
24	Cover Plate	01262393	1
25	Supporting Strip	01892200006	1

HW30M/A-D for EM115W0294

No.	Name of part	Part Code	Quantity
1	Compressor Gasket	76812206	3
2	Cut-off Valve	07138233	1
3	Cut-off Valve	07138232	1
4	Bidirection Strainer	07220016	1
5	Gas Tube Filter	07210037	1
6	Compressor and Fittings	00202229	1
7	Condenser Assy	01138233	1
8	Tube-exit Plate	01388210	1
9	Cabinet	01318206	1
10	Electric Box Cover	01398247	1
11	Cable-cross Loop	76515202	1
12	Terminal Board	420111453	1
13	Terminal Board	42011242	1
14	AC Contactor	44010250	1
15	Capacitor CBB65	33000039	1
16	Capacitor CBB61	33010014	1
17	Electric Box Assy	01392287	1
18	Side Plate	01312283 01312285 01312284	1
19	Cross-flow Fan	10358203	1
20	Wire Conduit	050121403	1
21	Fan Motor	15018004	1
22	Brand Cover	2690221301	1
23	Grill Sub-Assy	——	——
24	Cover Plate	01252113	1
25	Supporting Strip	0189224102	1

HW42L-D for CM115W282

No.	Name of part	Part Code	Quantity
1	Compressor Gasket	76710209	3
2	Cut-off Valve	07138237	1
3	Cut-off Valve	07138232	1
4	Bidirection Strainer	07220016	1
5	Gas Tube Filter	07219051	1
6	Compressor and Fittings	00120131	1
7	Condenser Assy	01138220	1
8	Tube-exit Plate	01388210	1
9	Cabinet	01318206	1
10	Electric Box Cover	01408271	1
11	Cable-cross Loop	76515202	1
12	Terminal Board	420111453	1
13	Terminal Board	42011242	1

14	AC Contactor	44010253	1
15	Capacitor CBB65	33010603	1
16	Capacitor CBB61	33010037	1
17	Electric Box Assy	01392407	1
18	Side Plate	01312249 01312248 01312247	1
19	Cross-flow Fan	10358211	1
20	Wire Conduit	0527820501	1
21	Fan Motor	15702102	1
22	Brand Cover	2690221301	1
23	Grill Sub-Assy	01572212	1
24	Cover Plate	01262288	1
25	Supporting Strip	01892200007	1

HW60M-F for EM115W0014

No.	Name of part	Part Code	Quantity
1	Compressor Gasket	76710209	4
2	Cut-off Valve	07138236	1
3	Cut-off Valve	07138235	1
4	Bidirection Strainer	07220016	1
5	Gas Tube Filter	0721905601	1
6	Compressor and Fittings	00202208	1
7	Condenser Assy	01138215	1
8	Tube-exit Plate	01388208	1
9	Cabinet	01318206	1
10	Electric Box Cover	01408271	1
11	Cable-cross Loop	76515202	1
12	Terminal Board	420111453	1
13	Terminal Board	42011043	1
14	AC Contactor	44010255	1
15	Capacitor CBB65	——	——
16	Capacitor CBB61	33010014	1
17	Electric Box Assy	01392466	1
18	Side Plate	01312251 01312252 01312253	1
19	Cross-flow Fan	10358211	1
20	Wire Conduit	05278205	1
21	Fan Motor	1570210302	1
22	Brand Cover	2690221301	1
23	Grill Sub-Assy	01572212	1
24	Cover Plate	01262393	1
25	Supporting Strip	01892200006	1

HW18M/A-D for EM115W0251

No.	Name of part	Part Code	Quantity
1	Compressor Gasket	76710216	3
2	Cut-off Valve	07138234	1
3	Cut-off Valve	07138232	1

4	Bidirection Strainer	07220016	1
5	Gas Tube Filter	072190511	1
6	Compressor and Fittings	00100234	1
7	Condenser Assy	01138231	1
8	Tube-exit Plate	01388210	1
9	Cabinet	01312399	1
10	Electric Box Cover	01398247	1
11	Cable-cross Loop	76515202	1
12	Terminal Board	420111453	1
13	Terminal Board	42011242	1
14	AC Contactor	44010250	1
15	Capacitor CBB65	33010743	1
16	Capacitor CBB61	33000071	1
17	Electric Box Assy	01392464	1
18	Side Plate	01312277 01312279 01312278	1
19	Cross-flow Fan	10432202	1
20	Wire Conduit	050121406	1
21	Fan Motor	15702232	1
22	Brand Cover	2690221301	1
23	Grill Sub-Assy	01572228	1
24	Cover Plate	01262311	1
25	Supporting Strip	01892200005	1

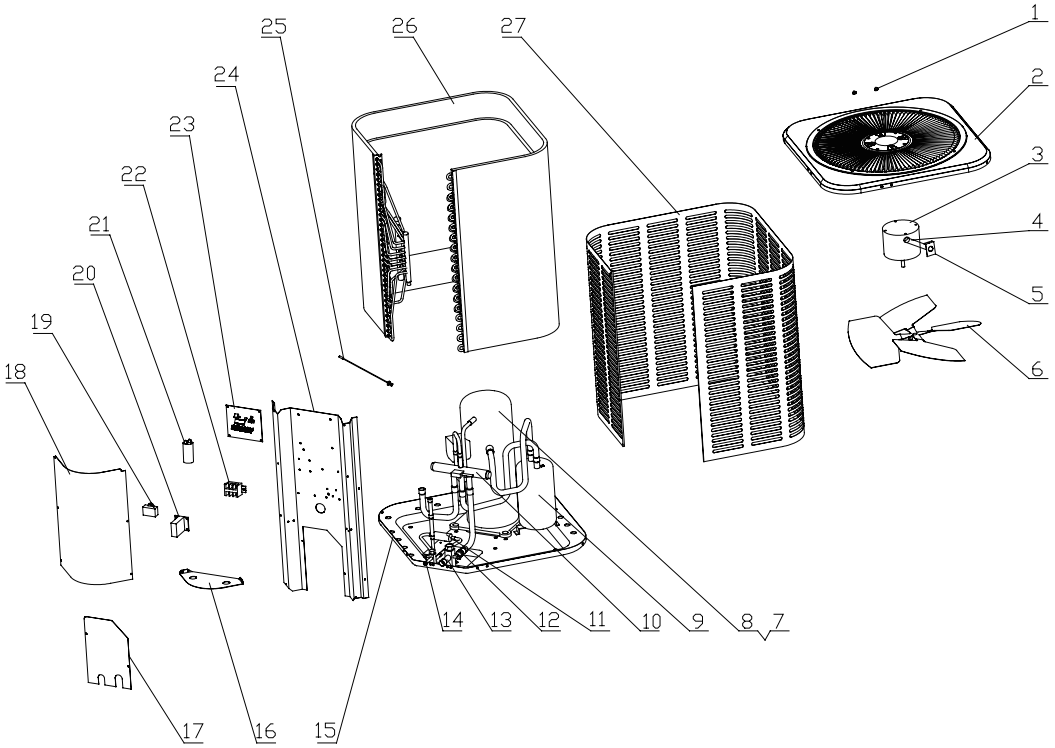
HW24M/A-D for EM115W0271

No.	Name of part	Part Code	Quantity
1	Compressor Gasket	76710202	3
2	Cut-off Valve	07138234	1
3	Cut-off Valve	07138232	1
4	Bidirection Strainer	07220016	1
5	Gas Tube Filter	072190511	1
6	Compressor and Fittings	00100150	1
7	Condenser Assy	01138231	1
8	Tube-exit Plate	01388210	1
9	Cabinet	01302104	1
10	Electric Box Cover	01398247	1
11	Cable-cross Loop	76515202	1
12	Terminal Board	420111453	1
13	Terminal Board	42011242	1
14	AC Contactor	44010250	1
15	Capacitor CBB65	33000012	1
16	Capacitor CBB61	33000071	1
17	Electric Box Assy	01392465	1
18	Side Plate	01312277 01312279 01312278	1
19	Cross-flow Fan	10432202	1
20	Wire Conduit	050121406	1
21	Fan Motor	15702232	1

22	Brand Cover	2690221301	1
23	Grill Sub-Assy	01572228	1
24	Cover Plate	01262311	1
25	Supporting Strip	01892200005	1

3.2 Explosive view for heat pump unit

Model: HWR24L-E, HWR36L-E, HWR36L-G, HWR42L-G, HWR60L-G, HWR60M-F



HWR24L-E

No.	Name of part	Part Code	Quantity
1	Motor fixing nut	70318204	4
2	Cover plate	01258250	1
3	Motor	15018254	1
4	Wire pipe	05012140	1
5	Fixing module (wire pipe)	01842252	1
6	Cross-flow Fan	10358203	1
7	Compressor and componen	00100131	1
8	Electric Heater Band	——	——
9	Gas-liquid Separator	——	——
10	4-way Valve	43000405	1
11	Bidirection Strainer	07220016	1
12	Filter	07224803	1
13	Cut-off valve(gas value)	07138234	1
14	Cut off valve(liquid value)	07138232	1
15	Metal base	01208229	1
16	Supporting board	01318206	1
17	Tube-exit plate	01388210	1
18	Electric box cover	01408271	1
19	Capacitor	33000001	1
20	AC contactor	44010250	1

21	Capacitor	33010064	1
22	Terminal board	42011242	1
23	Main Board	30222103	1
24	Connection board component for condenser	013882331	1
25	Temperature Sensor	3900012125G	1
26	Condenser Assy	01138236	1
27	Side plate	01318211	1

HWR36L-E

No.	Name of part	Part Code	Quantity
1	Motor fixing nut	70318204	4
2	Cover plate	01258250	1
3	Motor	15018006	1
4	Wire pipe	05012140	1
5	Fixing module (wire pipe)	01722121	1
6	Cross-flow Fan	10358203	1
7	Compressor and componen	00100085	1
8	Electric Heater Band	76515407	1
9	Gas-liquid Separator	07228217	1
10	4-way Valve	43000405	1
11	Bidirection Strainer	07220016	1
12	Filter	07212402	1
13	Cut-off valve(gas value)	07138233	1
14	Cut off valve(liquid value)	07138232	1
15	Metal base	012021091	1
16	Supporting board	01318206	1
17	Tube-exit plate	01388210	1
18	Electric box cover	01418231	1
19	Capacitor	33010014	1
20	AC contactor	44010251	1
21	Capacitor	33000039	1
22	Terminal board	42011242	1
23	Main Board	30222103	1
24	Connection board component for condenser	01172111	1
25	Temperature Sensor	3900012125	1
26	Condenser Assy	01138226	1
27	Side plate	01308234	1

HWR36L-G

No.	Name of part	Part Code	Quantity
1	Motor fixing nut	70318204	4
2	Cover plate	01258248	1
3	Motor	15018006	1
4	Wire pipe	05012140	1
5	Fixing module (wire pipe)	01722121	1
6	Cross-flow Fan	10358203	1
7	Compressor and componen	00120043	1
8	Electric Heater Band	76515404	1
9	Gas-liquid Separator	07228217	1

10	4-way Valve	43000405	1
11	Bidirection Strainer	07220016	1
12	Filter	07212402	1
13	Cut-off valve(gas value)	07138233	1
14	Cut off valve(liquid value)	07138232	1
15	Metal base	01202109	1
16	Supporting board	01318206	1
17	Tube-exit plate	01388210	1
18	Electric box cover	01418231	1
19	Capacitor	33010014	1
20	AC contactor	44010255	1
21	Capacitor	——	——
22	Terminal board	42011257	1
23	Main Board	30221401	1
24	Connection board component for condenser	01172111	1
25	Temperature Sensor	3900012125	1
26	Condenser Assy	01138226	1
27	Side plate	01308234	1

HWR42L-G

No.	Name of part	Part Code	Quantity
1	Motor fixing nut	70318204	4
2	Cover plate	01258248	1
3	Motor	15018006	1
4	Wire pipe	05012140	1
5	Fixing module (wire pipe)	01722121	1
6	Cross-flow Fan	10358203	1
7	Compressor and componen	00120043	1
8	Electric Heater Band	76518213	1
9	Gas-liquid Separator	07228217	1
10	4-way Valve	43000405	1
11	Bidirection Strainer	07220016	1
12	Filter	07212402	1
13	Cut-off valve(gas value)	07138233	1
14	Cut off valve(liquid value)	07138232	1
15	Metal base	01202109	1
16	Supporting board	01318206	1
17	Tube-exit plate	01388208	1
18	Electric box cover	01418231	1
19	Capacitor	——	——
20	AC contactor	44010255	1
21	Capacitor	33010014	1
22	Terminal board	42011223	1
23	Main Board	30222103	1
24	Connection board component for condenser	01188203	1
25	Temperature Sensor	3900012125	1
26	Condenser Assy	01108250	1
27	Side plate	01308207	1

HWR60L-G

No.	Name of part	Part Code	Quantity
1	Motor fixing nut	70318204	4
2	Cover plate	01258210	1
3	Motor	15702103	1
4	Wire pipe	05278205	1
5	Fixing module (wire pipe)	10378211	1
6	Cross-flow Fan	10358211	1
7	Compressor and componen	00100331	1
8	Electric Heater Band	76518213	1
9	Gas-liquid Separator	07422203	1
10	4-way Valve	43000407	1
11	Bidirection Strainer	07220016	1
12	Filter	07219056	1
13	Cut-off valve(gas value)	07138236	1
14	Cut off valve(liquid value)	07138235	1
15	Metal base	01208220	1
16	Supporting board	01318206	1
17	Tube-exit plate	01388208	1
18	Electric box cover	01418231	1
19	Capacitor	33010014	1
20	AC contactor	44010255	1
21	Capacitor	42011223	1
22	Terminal board	30222103	1
23	Main Board	01388219	1
24	Connection board component for condenser	3900020610	1
25	Temperature Sensor	072200111	1
26	Condenser Assy	01152235	1
27	Side plate	01308236	1

HWR60M-F

No.	Name of part	Part Code	Quantity
1	Motor fixing nut	70318204	4
2	Cover plate	01258285	1
3	Motor	15702103	1
4	Wire pipe	05278205	1
5	Fixing module (wire pipe)	——	——
6	Cross-flow Fan	10358211	1
7	Compressor and componen	00202208	1
8	Electric Heater Band	76518213	1
9	Gas-liquid Separator	07228212	1
10	4-way Valve	43000405	1
11	Bidirection Strainer	07220016	1
12	Filter	0721905601	1
13	Cut-off valve(gas value)	07138236	1

14	Cut off valve(liquid value)	07138235	1
15	Metal base	01192211	1
16	Supporting board	01318206	1
17	Tube-exit plate	01388208	1
18	Electric box cover	01408271	1
19	Capacitor	——	——
20	AC contactor	44018001	1
21	Capacitor	33010014	1
22	Terminal board	42011043	1
23	Main Board	30222103	1
24	Connection board component for condenser	01342210	1
25	Temperature Sensor	3900012121G	1
26	Condenser Assy	0113821502	1
27	Side plate	01308238	1

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