MARINE AIR CONDITIONNERS SERVICE MANUAL

T1/R410A/50Hz&60Hz (GC201202-I)

GREE ELECTRIC APPLIANCES, INC.OF ZHUHAI

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PRODUCT

PRODUCT
1 MODELS LIST

Model	Product Code	Capacity		Refrigerant	Power Supply	Appearance
		Cooling (Btu/h)	Heating (Btu/h)			
CYR5/Na-A	EY10000200	5600	6000	R410A	115V~ 1Ph 60Hz	
CYR9/Na-A	EY10000210	8900	9500			
CYR12/Na-A	EY10000220	11900	13000			
CYR16/Na-A	EY10000230	15700	16200			
CYR5/Na-T	EY10000410	4950	5850		220-240V~1Ph 50Hz	
		5600	6000		230V~1Ph 60Hz	
CYR9/Na-T	EY10000390	8000	8700		220-240V~1Ph 50Hz	
		8900	9000		230V~1Ph 60Hz	
CYR12/Na-T	EY10000420	11600	11900		220-240V~1Ph 50Hz	
		11900	13000		230V~1Ph 60Hz	
CYR16/Na-T	EY10000400	12800	13600		220-240V~1Ph 50Hz	
		15300	16200		230V~1Ph 60Hz	
CYR7/Na-K	EY10000130	7200	7500		220-240V~ 1Ph 50Hz	
CYR9/Na-K	EY10000110	8900	9500			
CYR12/Na-K	EY10000100	11900	13000			
CYR16/Na-K	EY10000120	15700	16200			
CYR5/NaB-A	EY10000240	1600	1750		115V~ 1Ph 60Hz	
CYR9/NaB-A	EY10000250	2600	2800			
CYR12/NaB-A	EY10000260	3500	3800			
CYR16/NaB-A	EY10000270	4400	4750			
CYR5/NaB-T	EY10000440	4800	5800		220-240V~1Ph 50Hz	
		5600	6000		230V~1Ph 60Hz	
CYR9/NaB-T	EY10000450	8000	8700		220-240V~1Ph 50Hz	
		8900	9000		230V~1Ph 60Hz	
CYR12/NaB-T	EY10000460	11600	11900		220-240V~1Ph 50Hz	
		11900	13000		230V~1Ph 60Hz	
CYR16/NaB-T	EY10000470	12600	13000		220-240V~1Ph 50Hz	
		15000	15700		230V~1Ph 60Hz	
CYR20/Na-T	EY10000480	17400	17400		220-240V~1Ph 50Hz	
		19800	20000		230V~1Ph 60Hz	
CYR24/Na-T	EY10000430	21800	22700		220-240V~1Ph 50Hz	
		25600	25900		230V~1Ph 60Hz	
CYR24/Na-A	EY10000280	24500	24900		115V~ 1Ph 60Hz	

2 NOMENCLATURE

C Y	__	__	__	/	__	__	—	__
1	2	3	4		5	6		7

NO.	Description	Options
1	Unit Series Type	CY: marine air conditioner
2	The Type of the Unit	Cold/Hot Air Default; Cold/Hot Water S
3	Function Characteristics	Heat Pump R; Heat Pump with Auxiliary Electric Heater Rd; Cooling-only Default
4	Nominal Cooling Capacity	5=5000 Btu/h 7=7000Btu/h 9=9000 Btu/h 12=12000 Btu/h 16=16000 Btu/h 24=24000 Btu/h
5	The Type Of Refrigerant	R22 Default Na:R410A
6		Generation 1 Default; B: Generation 2
7	Power Supply	A:1Ph,115V~,60Hz D:1Ph,208-230V~,60Hz K:1Ph,220-240V~,50Hz M:3Ph,380-415V~,50Hz F:3Ph,208-230V~,60Hz T: 208-230V~ 60Hz,220-240V~50Hz

3 FUNCTION

Function	Description
Applied Sites	It is applied for all kinds of ships.
Compact design	It can be installed in incapacious place, like the space under the closet and seats of the ship, which affects the outlook of the ship and is coordinate with the ambience.
Rust prevention and rot-proof	Corrosion-resistant material and the special technics- spray coating on the complete unit are adopted, which enable the unit to be durable.
Unique Structure Design	The angle of supplying air of indoor fan can be 0°.90°.180°.270°,which is convenient for connecting duct.
Two Exhaust Outlets	The condensate can be drained in time no matter how ship shakes.

4 PRODUCT DATA

Product Data at Rated Condition

Model			CYR5/Na-A	CYR9/Na -A	CYR12/Na -A	CYR16/Na -A	CYR24/Na -A
Product Code			EY10000200	EY10000210	EY10000220	EY10000230	EY10000280
Cooling	Nominal Capacity	W	1650	2600	3500	4600	7200
	Running Current	A	4.80	7.20	10.00	11.20	17.50
	Power Input	W	540	780	1100	1250	1900
Heating	Nominal Capacity	W	1750	2800	3800	4750	7300
	Running Current	A	5.20	7.80	10.00	12.80	18.00
	Power Input	W	540	840	1100	1350	1950
Power Supply		—	115V~ 60Hz				
Compressor Type		—	Rotary				
Refrigerant Control		—	Capillary				
Refrigerant	Type	—	R410A				
	Charge	kg	0.35	0.45	0.55	0.66	1
Condenser	Type	—	Coaxial heat exchanger				
	Pipe Diameter	mm	22.2			25.4	
Evaporator Type		—	Aluminum fin-copper tube				
Filter		—	PP				
Fan	Type	—	Centrifugal fan				
	Drive Type	—	Direct				
	Quantity	—	1	1	1	1	2
	Diameter-Height	Inch	Φ5.67×3.07	Φ5.67×3.07	Φ7.76×2.99	Φ7.76×3.61	Φ7.76×2.99
Sound Pressure Level		dB(A)	58				
Unit Dimensions	width	mm	408	408	438	454	595
	depth	mm	285	380	380	450	529
	high	mm	295	310	330	330	386
Net weight		kg	24	27	33	34	58

Model			CYR5/Na -T		CYR9/Na -T		CYR12/Na -T	
Product Code			EY10000410		EY10000390		EY10000420	
Cooling	Nominal Capacity	W	1650	1450	2600	2350	3500	3400
	Running Current	A	2.40	2.90	3.70	4.20	4.60	5.1
	Power Input	kW	0.54	0.50	0.84	0.79	1.10	0.97
Heating	Nominal Capacity	W	1750	1720	2650	2550	3800	3500
	Running Current	A	2.40	2.80	3.70	4.20	5.00	5
	Power Input	kW	0.54	0.48	0.84	0.79	1.1	1.04
Power Supply		—	230V-60Hz-1Ph	220-240V-50Hz-1Ph	230V-60Hz-1Ph	220-240V-50Hz-1Ph	230V-60Hz-1Ph	220-240V-50Hz-1Ph
Compressor Type		—	Rotary compressor					
Refrigerant Control		—	Capillary tube					
Refrigerant	Type	—	R410A					
	Charge	kg	0.35				0.55	
Condenser	Type	—	Coaxial heat exchanger					
	Pipe Diameter	mm	22.2					
Evaporator Type(Material)		—	Aluminum fin-copper tube					
Filter		—	PP					
Fan	Type	—	Centrifugal fan					
	Drive Type	—	/					
	Quantity	—	1					
	Diameter-Height	Inch	Φ6.59×3.07				Φ7.48×3	
Sound Pressure Level		dB(A)	58					
Unit Dimensions	width	mm	408		408		438	
	depth	mm	285		380		380	
	high	mm	295		310		330	
Net weight		kg	24		27		33	

Model			CYR16/Na -T		CYR20/Na-T		CYR24/Na -T	
Product Code			EY10000400		EY10000480		EY10000430	
Cooling	Nominal Capacity	W	4500	3750	5800	5100	7500	6400
	Running Current	A	5.60	5.70	7.40	10.50	8.00	6.80
	Power Input	kW	1.25	1.05	1.65	1.56	1.80	1.45
Heating	Nominal Capacity	W	4750	4000	5850	5200	7600	6650
	Running Current	A	5.60	5.70	7.50	10.70	9.30	8.20
	Power Input	kW	1.25	1.05	1.70	1.65	2.10	1.75
Power Supply		—	230V-60Hz-1Ph	220-240V-50Hz-1Ph	230V~60Hz-1Ph	220~240V-50Hz-1Ph	230V-60Hz-1Ph	220-240V-50Hz-1Ph
Compressor Type		—	Rotary compressor					
Refrigerant Control		—	Capillary tube					
Refrigerant	Type	—	R410A					
	Charge	kg	0.66		0.85		0.95	
Condenser	Type	—						
	Pipe Diameter	mm	25.4		25.4		25.4	
Evaporator Type		—	Coaxial heat exchanger					
Filter		—	22.2					
Fan	Type	—	Aluminum fin-copper tube					
	Drive Type	—	PP					
	Quantity	—	1		2		2	
	Diameter-Height	Inch	Φ7.48×3		Φ7.48×3		Φ7.48×3	
Sound Pressure Level		dB(A)	58					
Unit Dimensions	width	mm	454		595		595	
	depth	mm	450		529		529	
	high	mm	330		386		386	
Net weight		kg	34		55		60	

Model			CYR7/Na-K	CYR9/Na-K	CYR12/Na-K	CYR16/Na-K
Product Code			EY10000130	EY10000110	EY10000100	EY10000120
Cooling	Nominal Capacity	W	2100	2600	3500	4600
	Running Current	A	2.60	3.50	4.60	5.80
	Power Input	W	580	760	950	1200
Heating	Nominal Capacity	W	2200	2800	3800	4750
	Running Current	A	3.1 0	3.90	5.0 0	6.70
	Power Input	W	680	850	1100	1400
Power Supply		—	220-240V~ 50Hz			
Compressor Type		—	Rotary			
Refrigerant Control		—	Capillary			
Refrigerant	Type	—	R410A			
	Charge	kg	0.39	0.40	0.51	0.60
Condenser	Type	—	Coaxial heat exchanger			
	Pipe Diameter	mm	22.2			25.4
Evaporator Type		—	Aluminum fin-copper tube			
Filter		—	PP			
Fan	Type	—	Centrifugal fan			
	Drive Type	—	Direct			
	Quantity	—	1	1	1	1
	Diameter-Height	Inch	Φ6.59×3.07	Φ6.59×3.07	Φ7.48×3	Φ7.76×3.60
Sound Pressure Level		dB(A)	58			
Unit Dimensions	width	mm	413	413	468	494
	depth	mm	380	380	380	450
	high	mm	330	330	330	355
Net weight		kg	26.5	29	32.5	38

Model			CYR5/NaB-A	CYR9/NaB-A	CYR12/NaB-A	CYR16/NaB-A
Product Code			EY10000240	EY10000250	EY10000260	EY10000270
Cooling	Nominal Capacity	W	1600	2600	3500	4400
	Running Current	A	4.70	7.70	9.70	11.70
	Power Input	W	550	860	1110	1450
Heating	Nominal Capacity	W	1750	2800	3800	4750
	Running Current	A	4.50	7.30	10.90	11.00
	Power Input	W	500	840	1260	1370
Power Supply		—	115V~ 60Hz			
Compressor Type		—	Rotary			
Refrigerant Control		—	Capillary			
Refrigerant	Type	—	R410A			
	Charge	kg	0.35	0.45	0.55	0.66
Condenser	Type	—	Coaxial heat exchanger			
	Pipe Diameter	mm	22.2			25.4
Evaporator Type		—	Aluminum fin-copper tube			
Filter		—	PP			
Fan	Type	—	Centrifugal fan			
	Drive Type	—	Direct			
	Quantity	—	1	1	1	1
	Diameter-Height	Inch	Φ6.59×3.07	Φ6.59×3.07	Φ7.48×3	Φ7.76×3.6
Sound Pressure Level		dB(A)	58			
Unit Dimensions	width	mm	428	435	448	480
	depth	mm	295	390	390	460
	high	mm	295	310	330	330
Net weight		kg	24	28	34	35

Model			CYR5/NaB-T		CYR9/NaB-T	
Product Code			EY10000440		EY10000450	
Cooling	Nominal Capacity	W	1650	1400	2600	2350
	Running Current	A	2.40	2.90	3.70	4.20
	Power Input	kW	0.54	0.52	0.84	0.80
Heating	Nominal Capacity	W	1750	1700	2650	2550
	Running Current	A	2.40	2.80	3.70	4.20
	Power Input	kW	0.54	0.50	0.84	0.79
Power Supply		—	230V~60Hz-1Ph	220~240V-50Hz-1Ph	230V~60Hz-1Ph	220-240V-50Hz-1Ph
Compressor Type		—	Rotary compressor			
Refrigerant Control		—	Capillary tube			
Refrigerant	Type	—	R410A			
	Charge	kg	0.35		0.44	
Condenser	Type	—	Coaxial heat exchanger			
	Pipe Diameter	mm	22.2			
Evaporator Type(Material)		—	Aluminum fin-copper tube			
Filter		—	PP			
Fan	Type	—	Centrifugal fan			
	Drive Type	—	/			
	Quantity	—	1			
	Diameter-Height	Inch	Φ5.67×3.07			
Sound Pressure Level		dB(A)	58			
Unit Dimensions	width	mm	309		411	
	depth	mm	440		457	
	high	mm	324		324	
Net weight		kg	26		28	

Model			CYR12/NaB-T		CYR16/NaB-T	
Product Code			EY10000460		EY10000470	
Cooling	Nominal Capacity	W	3500	3300	4400	3700
	Running Current	A	4.60	5.10	5.60	5.70
	Power Input	kW	1.15	1.00	1.25	1.05
Heating	Nominal Capacity	W	3700	3500	4500	3800
	Running Current	A	5.00	5.30	5.60	5.70
	Power Input	kW	1.10	1.04	1.25	1.20
Power Supply		—	230V~60Hz-1Ph	220~240V-50Hz-1Ph	230V~60Hz-1Ph	220~240V-50Hz-1Ph
Compressor Type		—	Rotary compressor			
Refrigerant Control		—	Capillary tube			
Refrigerant	Type	—	R410A			
	Charge	kg	0.55		0.69	
Condenser	Type	—	Coaxial heat exchanger			
	Pipe Diameter	mm	22.2			
Evaporator Type(Material)		—	Aluminum fin-copper tube			
Filter		—	PP			
Fan	Type	—	Centrifugal fan			
	Drive Type	—	/			
	Quantity	—	1			
	Diameter-Height	Inch	Φ7.76×3.61			
Sound Pressure Level		dB(A)	58			
Unit Dimensions	width	mm	409		478	
	depth	mm	458		488	
	high	mm	370		365	
Net weight		kg	35		41	

Note:Fluctuation of the current and voltage can't be beyond ±10%

a. Test Condition of Nominal Cooling Capacity: Indoor side-dry/wet bulb temp: 27/19.5℃ ; Water-in temp: Temp difference is 5℃ and static pressure is 0Pa;

b. Test Condition of Nominal Heating Capacity: Indoor side-dry/wet bulb temp: 20/15 ℃ ; Water-in temp: 15℃ ; Flow is as the test of nominal cooling capacity and static pressure is 0Pa;

c. Noise Measurement shall comply with JB/T4330-1999.

d. Input power excludes that of user's water pump.

e. Specification will change with the revision of the product. Parameter on nameplate of the unit is the standard.

4.1 Operation Range

Rated Test Condition				
Item	Air Side		Water Side	
	DB Tem(℃)	WB Tem(℃)	Inlet Tem(℃)	Outlet Tem(℃)
Cooling	27	19.5	25	30
Heating	20	15	15	/
Note: Water flow is rated on heating operation				
Operation Range of Unit	Item		Water Side(℃)	
	Cooling		10~40 ℃	
	Heating		4~25 ℃	

4.2 Electrical Data

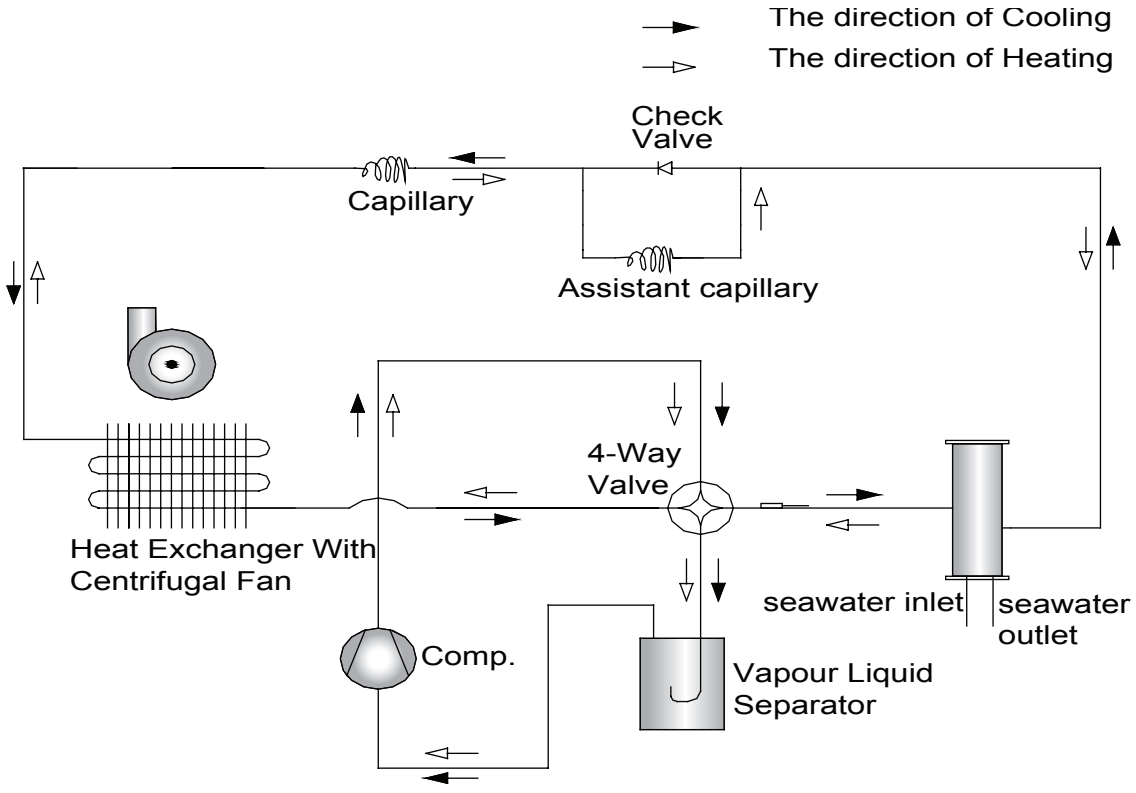
Model	Compressor						Supply Blower Motor
	Power Supply	Qty.	RLA		LRA		
	V, Ph, Hz	—	Each		Each		Each RLA
CYR5/Na-A	115V~ 1Ph 60Hz	1	4.35		21.0		1.27
CYR9/Na-A			6.80		34.0		1.7
CYR12/Na-A			10.70		47.0		1.34
CYR16/Na-A			11.70		60.0		2.1
CYR24/Na-A		2	20		97		1.34
CYR5/Na-T	230V~ 1Ph 60Hz 220-240V~ 1Ph 50Hz	1	2.5(60Hz)	2.72(50Hz)	13(60Hz)	16(50Hz)	0.55
CYR9/Na-T			3.8(60Hz)	4(50Hz)	17(60Hz)	20(50Hz)	0.86
CYR12/Na-T			5.5(60Hz)	5.8(50Hz)	27(60Hz)	29(50Hz)	0.7
CYR16/Na-T			5.85(60Hz)	5.98(50Hz)	35(60Hz)	38(50Hz)	0.7
CYR20/Na-T		2	9.1		44		0.7
CYR24/Na-T			10.5		52		0.7
CYR7/Na-K	220-240V~ 1Ph 50Hz	1	3.05		12.4		0.64
CYR9/Na-K			4.05		19.6		0.86
CYR12/Na-K			5.55		25.0		0.59
CYR16/Na-K			6.80		32.0		0.85
CYR5/NaB-A	115V~ 1Ph 60Hz	1	4.35		21.0		1.27
CYR9/NaB-A			6.80		34.0		1.7
CYR12/NaB-A			10.70		47.0		1.34
CYR16/NaB-A			11.70		60.0		2.1
CYR5/NaB-T	230V~ 1Ph 60Hz 220-240V~ 1Ph 50Hz	1	2.5(60Hz)	2.72(50Hz)	13(60Hz)	16(50Hz)	0.55
CYR9/NaB-T			3.8(60Hz)	4(50Hz)	17(60Hz)	20(50Hz)	0.86
CYR12/NaB-T			5.5(60Hz)	5.8(50Hz)	27(60Hz)	29(50Hz)	0.7
CYR16/NaB-T			5.85(60Hz)	5.98(50Hz)	35(60Hz)	38(50Hz)	0.7

Notes:

RLA:Rated load amperes.

LRA:Locked rotor amperes.

5 PIPING DIAGRAM

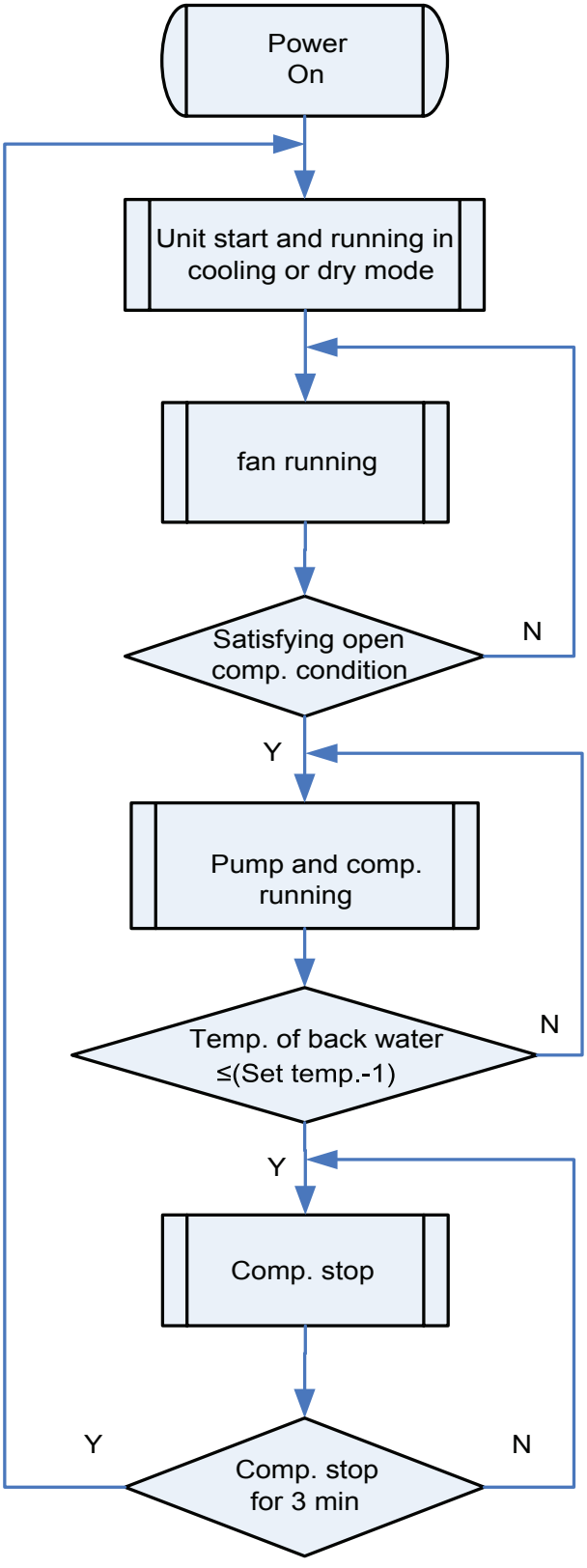


CONTROL

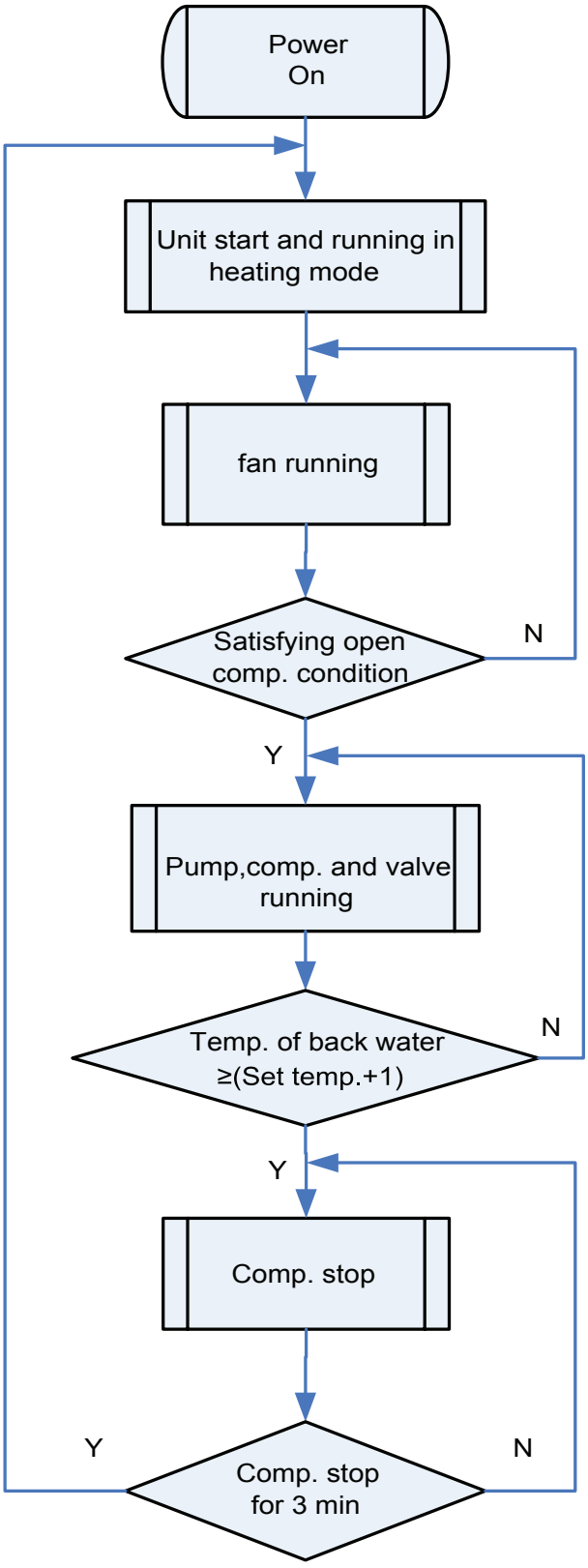
CONTROL

1 OPERATION FLOWCHART

1.1 Cooling/Dry Operation



1.2 Heating Operation



2 MAIN LOGIC

2.1 Cooling/Dry Mode

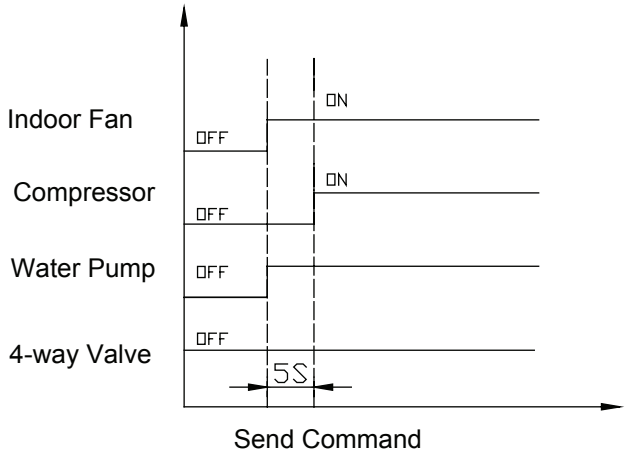
2.1.1 Cooling ON

Condition: Compressor ON: Tamb≥Tset ＋ 1 ℃ and no error at the same time. When cooling is entered (they are just conditions for compressor ON, if they can't be met, only indoor fan is running when startup of the unit while water pump and compressor are not running.

Description

a.Water pump starts up after the cooling command is sent.
b.After indoor fan has been running at high speed for 5s, it turns to low speed.
c.Compressor is ON after water pump has started up for 5s
d.4-way valve closes.

Sequence Chart



2.1.2 Betweenness of Cooling

Condition: Tset － 1℃＜ Tamb ＜ Tset ＋ 1℃

Description

a.Indoor fan keeps the original status.
b.Water pump keeps the original status.
c.Compressor keeps the original status.
d.Other loads don't need to work,

2.1.3 Cooling OFF

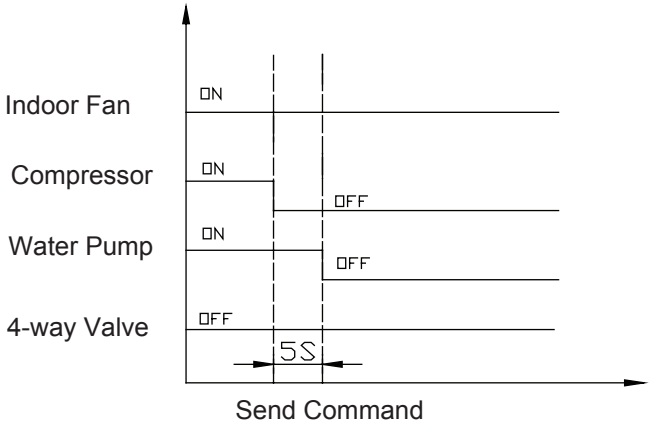
Condition:

Tamb≤Tset － 1℃ and no error at the same time (if there is error, handle it according to troubleshooting sequence).

Description

a.Indoor fan is running at setting speed.
b.Compressor stops
c.Water pump stops after the compressor has stopped for 5s.

Sequence Chart

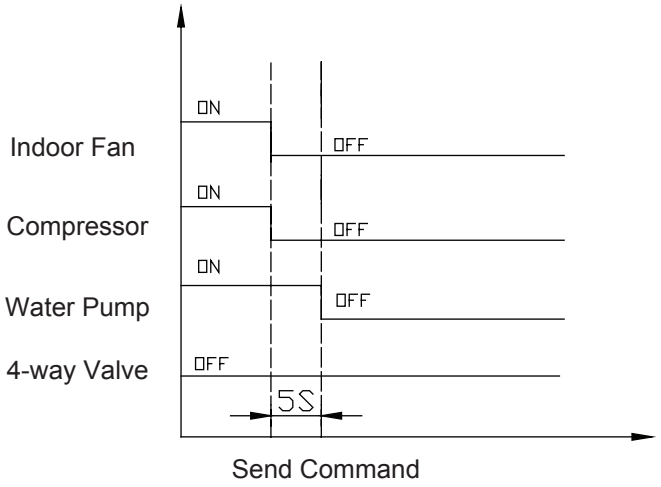


2.1.4 Cooling OFF

Description

a.After the command is sent, the compressor stops.
b.Indoor unit and indoor fan stop at the same time.
c.5s later water pump stops.

Sequence Chart



2.2 Heating Mode(Defrosting/ Auxiliary Electric Heater)

2.2.1 Heating ON

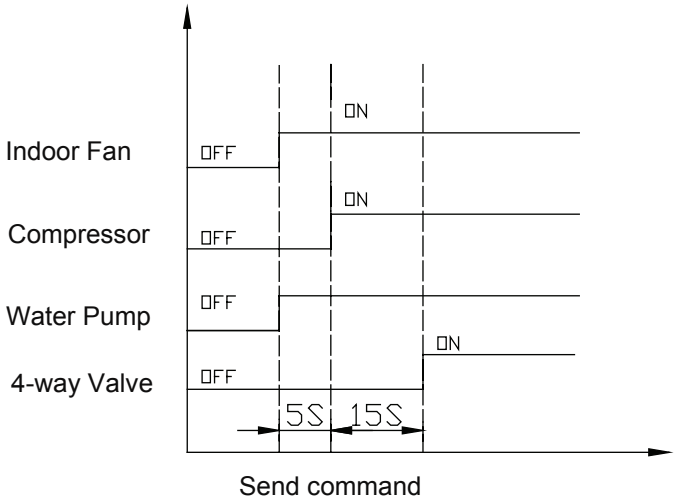
Condition:

Compressor ON: if Tamb≤Tset － 1℃ and there is no error at the same time, the heating will be entered.

Description

a.The indoor unit starts up when the command has been sent.
b.Water pump starts up at the same time.
c.Compressor starts up when the water pump has started up for 5s.
d.When compressor firstly starts up for 15s, 4-way valve is energized.

Sequence Chart



2.2.2 Betweenness of Heating

Condition:

Tset － 1℃＜ Tamb ＜ Tset ＋ 1℃ and no error at the same time((if there is error, handle it according to troubleshooting sequence).

Description

a.Indoor fan keeps original status.
b.Water pump keeps original status.
c.Compressor keeps original status.
d.4-way valve keeps original status.

2.2.3 Heating OFF

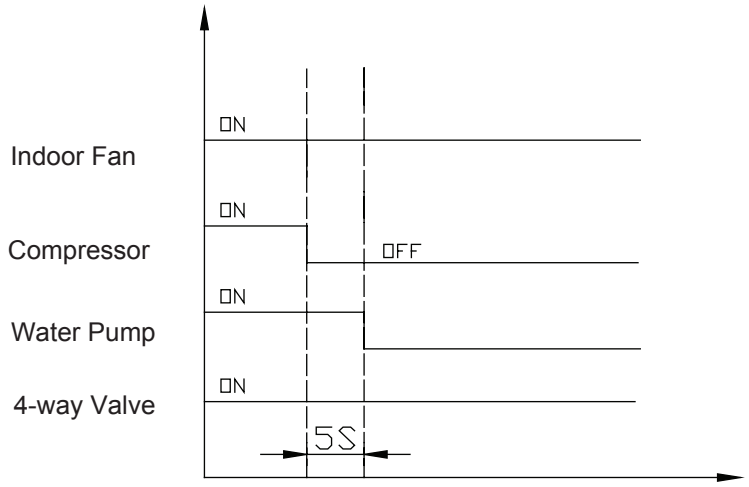
Condition

Tamb≥Tset ＋ 1 ℃ and and no error at the same time((if there is error, handle it according to troubleshooting sequence).

Description

a.Indoor fan is running at setting speed.
b.Compressor stops.
c.5s later, water pump stops.
d.4-way valve keeps being energized.

Sequence Chart



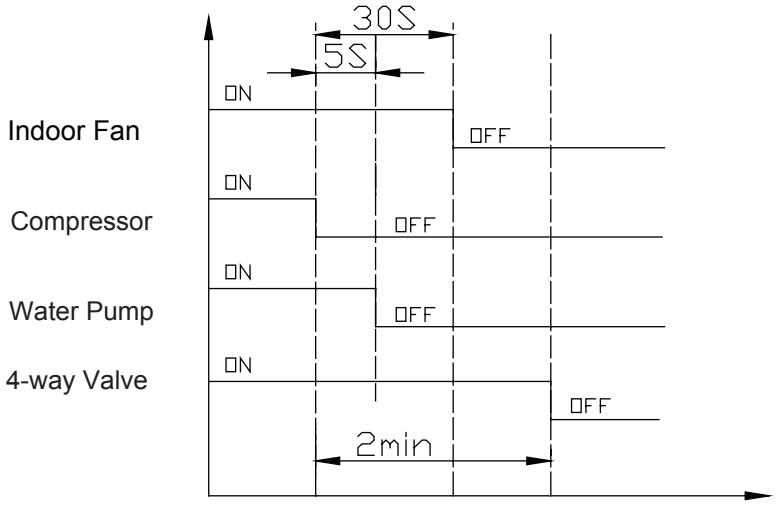
Send command

2.2.4 Heating OFF

Description

a.Compressor stops after command is sent.
b.5s later, water pump stops.
c.30s later after the stop of compressor, indoor fan stops.
d.4-way valve is deenergized after the compressor has stopped for 2min.

Sequence Chart



Send command

2.3 Fan Mode

Indoor fan is running at setting speed and there are three options for the speed.

Auto Air Speed

a.Heating

If Tamb≥Tset, it is automatically set to be low speed.
If Tset － 2℃ <Tamb<Tset, it is automatically set to be mediate speed.
If Tamb≤Tset － 2℃ , it is automatically set to be high speed.
During this course, there must be 30s delay at least.

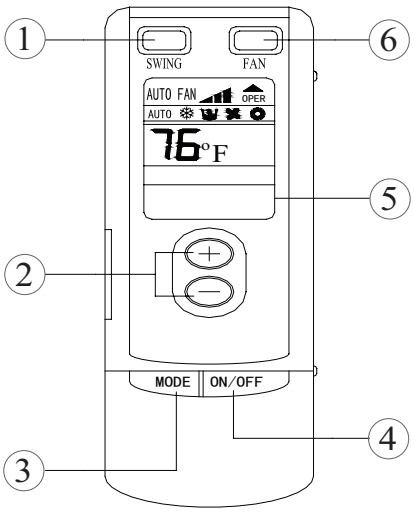
b.Cooling

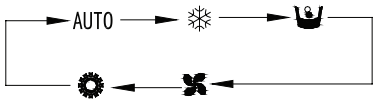
If Tamb≤Tset℃ , it is automatically set to be low speed.
If Tset<Tamb<Tset+3℃ it is automatically set to be mediate speed.
If Tamb≥Tset ＋ 3℃ it is automatically set to be high speed.

3 REMOTE CONTROLLER

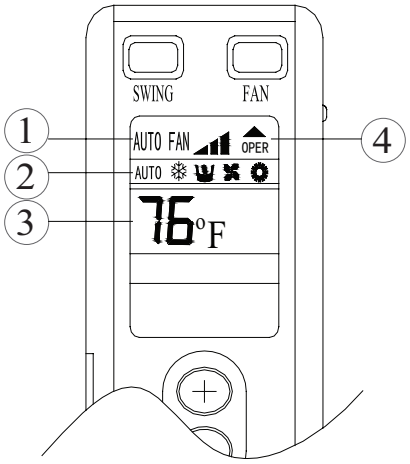
3.1 Wireless Remote Controller

3.1.1 Operation View



NO.	Name	Function description
①	SWING button	There is no swing function in this A/C unit.
②	TEMP button	TEMP. increase 1° by pressing ⊕ button once, and decreases 1° by pressing ⊖ button once. COOL MODE SET Temp. 61 ℉ -86 ℉ or 16℃ -30℃ HEAT MODE SET Temp. 61 ℉ -86 ℉ or 16℃ -30℃ DEHUMIDFY MODE 61 ℉ -86 ℉ or 16℃ -30℃
③	MODE button	Press this button to change the operation mode in order of  Note: the cooling only without ☼ mode.
④	ON/OFF button	Press this button to turn on or turn off the unit.
⑤	LCD	It shows all the setting contents. Note: Cover remove will not change the display contents.
⑥	FAN button	Press this button to change the fan speed: 

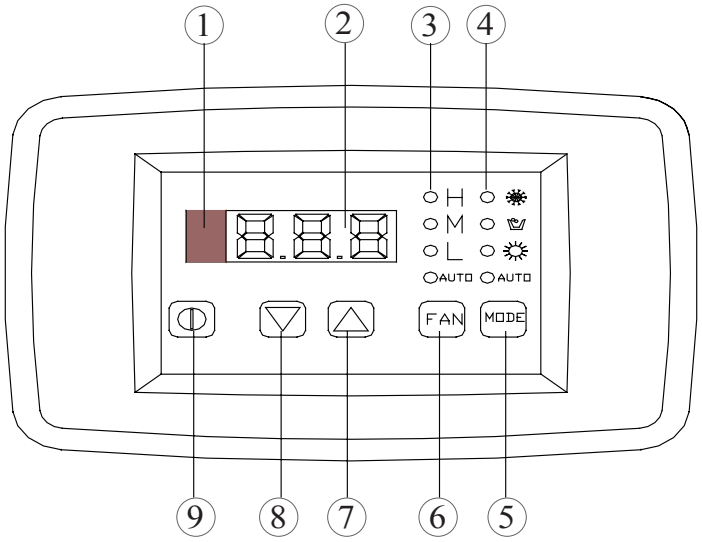
3.1.2 Display View



NO.	Display	Function description
1	Fan speed display	HIGH-MID-LOW and AUTO speed
2	Display of mode operation	AUTO:Run automatically; :Cooling; :Dry; :Only fan run; :Heating Cooling only type without heat mode
3	Digital display	Display of set temperature
4	Display of ON/OFF	/

3.2 Wired Remote Controller

3.2.1 Operation View



NO.	Name	Function description
①	Remote receiver	Receive the signal from the mainboard
②	Digital display	Display of set temperature
③	Fan speed display	Display of HIGH-MID-LOW or AUTO speed

④	Display of mode operation (COOL-DEHUMIDIFY-HEAT and AUTO)	In “COOL” mode, the LED marked will be light if the set temperature is lower than room temperature. If set temperature is higher than room temperature, only the fan will run. In “DEHUMIDIFY” mode, the LED marked will be light and fan will work at low speed within a certain temperature range. Dehumidifying is more efficient than in cooling mode and it will save energy. In “HEAT” mode, the LED marked will be light when the set temperature is higher than the room temperature. When the setting temperature is lower than the room temperature, it will not run. In “FAN” mode, the room temperature will be displayed and the temperature cannot be set. In “AUTO” mode, the LED marked AUTO will be light and the room temperature will be displayed. The temperature cannot be set, as the system will run automatically in the appropriate mode according to the contrast between room temperature and set temperature.
⑤	Mode button	Press this key to change the operation mode in order of →COOL⟶ DEHUMIDIFY ⟶FAN⟶HEAT⟶AUTO⟶
⑥	Fan control button	Press the FAN button, the fan speed will change in the following order: → HIGH ⟶ MID ⟶ LOW ⟶ AUTO ⟶ In “DEHUMIDIFY” mode, the fan will work at low speed automatically.
⑦	Temp. Setting button (Increasing)	To increase in 1o increments
⑧	Temp. Setting button (Decreasing)	To decrease in 1o increments
⑨	ON/OFF button	Press ON/OFF button to turn the unit on Pressing the ON/OFF button a second time will turn the unit off

3.3 Display Fahrenheit or Centigrade

Pressing the ▲ and ▼ key simultaneously, will switch between Fahrenheit and Centigrade modes.

3.4 Key Lock

- Press ▼and FAN key simultaneously, all keys are locked. Press ▼and FAN key simultaneously again, to unlock the keys.
- When keys are locked, the controller is locked out of system operation. “EE” will be displayed.

3.5 Starting Interval Setting

- If there are several A/C units in a yacht, you can set starting time interval between one by one.
- When the manual controller power on, and there isn’t any operation, to press
- the ▲ button and fan speed button simultaneously, the starting interval can be set, the nixie tube will flash a number in every 0.5s, then pressing ▼ and ▲ buttons to set up, after the setting, to press the ▲ button and fan speed button simultaneously, to confirm the set up value; if not to press▲ button and fan button again simultaneously, the figure will flash 10s,and then the controller will quit from starting interval setting, the setting number is not available.
- The value be displayed by nixie tube is the figure of interval time, each interval time is 20s, for example the set up value is 128, it means that the actual setting interval time should be 128×20=2560s.
- When the value be displayed by flashing nixie tube, then to shield each signal of wireless remote controller, excepting to press the ▲ button and fan speed button at the same time, and to shield other buttons.
- After manual controller powered on, if there is wireless remote controller or at the same time to press other buttons except the ▲ button and fan speed button simultaneously, and then press the ▲ button and fan speed button simultaneously, it will display the figure of interval time for 5s. During the period, if there is wireless remote controller or other remote controller signal, it will directly quit the display interface of starting interval time.
- The new setting starting interval time would be executed after manual controller re-powered on.
- The setting range of starting interval value is 0-255; accordingly, the setting range of starting interval

time is 0-5100s(85min).

- If there is malfunction happened, cannot set up or display the time of starting interval.

3.6 Auto –off function of the manual controller

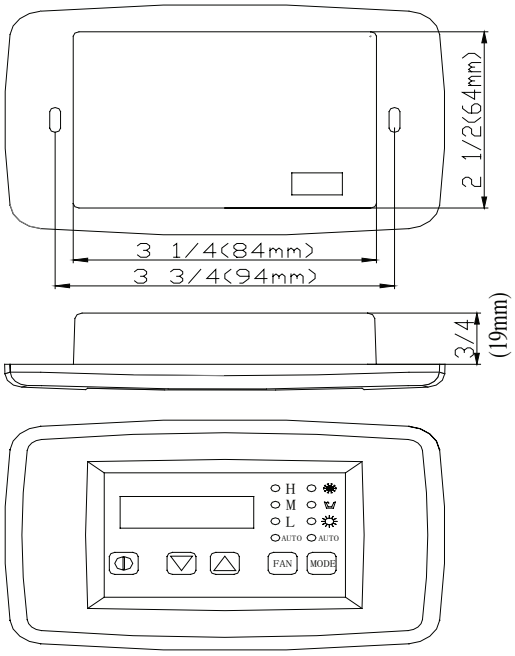
The display of ambient temperature will automatically blank in 5-minute lag if there is no operation on the manual controller.

a.After receiving the signal from the manual controller, the indicator will light on automatically, in which case, the unit will not operation at all and the manual controller can be active after it lights on.

b.After receiving the signal from remote controller, the display of temperature on the manual controller will light on; meanwhile, the unit carries out corresponding operation.

- After the unit stops, there is no display on the manual controller.
- Powered on again if the unit status is on before power off, temperature indicator and mode indicator of the manual controller will light on automatically.
- If the unit receives the stop signal, it will directly blank off the temperature indicator and mode indicator of the manual controller.

3.7 Dimension



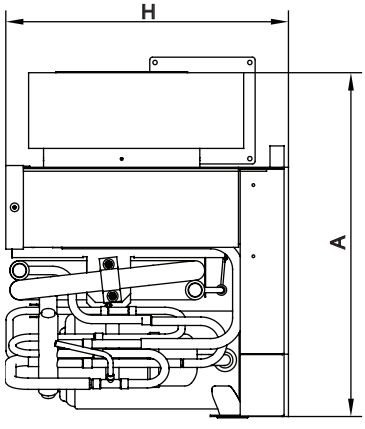
3.8 Installation

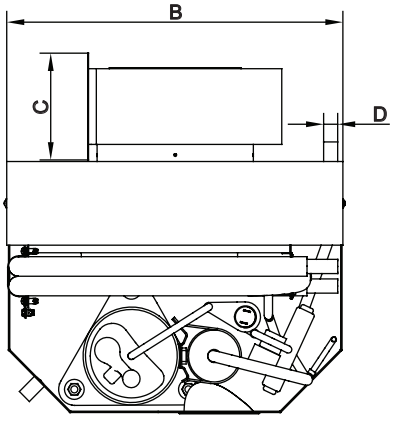
Before mounting the manual controller, consider the location. The manual controller should be mounted on an inside wall, slightly higher than mid-height of the cabin. The cut out size for the manual controller is 2 1/2” (64mm) wide by 3 5/16” (84mm). Do not mount the manual controller in direct sunlight, near any heat producing appliances or in a bulkhead where temperatures radiating from behind the panel may affect performance. Do not mount the manual controller in the supply air stream. Do not mount the manual controller above or below a supply or return air grille. Do not mount the manual controller behind a door, in a corner, under a stairwell or any place where there is no freely circulating air. Mount the manual controller within display cable length (custom lengths available) of the air conditioner. Plug the display cable into the circuit board in the electric box and into the back of the manual controller.

INSTALLATION

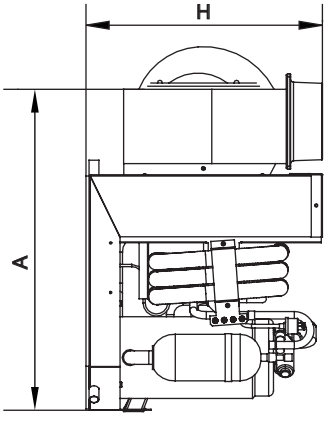
INSTALLATION

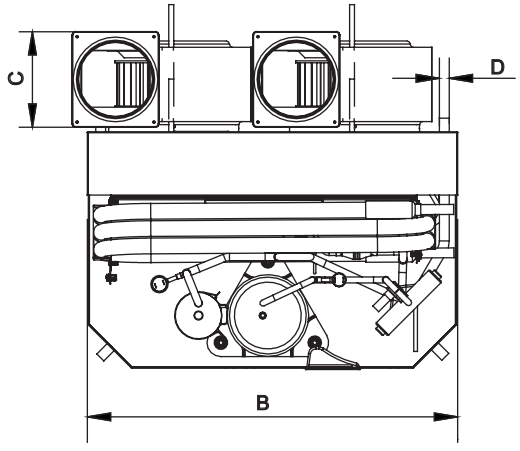
1 Dimension Data



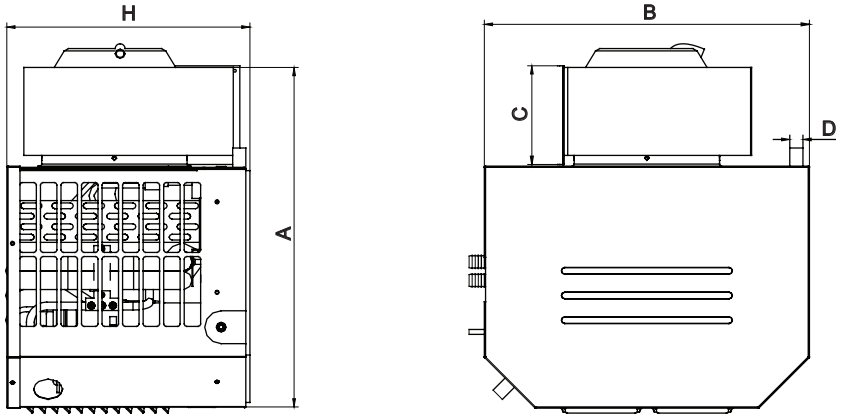


NO.	Model	A	B	C	D	H
1	CYR5/Na-A	408	285	120	16	295
2	CYR9/Na-A	408	380	120	16	310
3	CYR12/Na -A	438	380	150	16	330
4	CYR16/Na -A	454	450	150	16	330
5	CYR5/Na-T	408	285	120	16	295
6	CYR9/Na-T	408	380	120	16	310
7	CYR12/Na -T	438	380	150	16	330
8	CYR16/Na -T	454	450	150	16	330
9	CYR7/Na-K	413	380	120	16	330
10	CYR9/Na-K	413	380	120	16	330
11	CYR12/Na -K	468	380	150	16	330
12	CYR16/Na -K	494	450	150	16	355



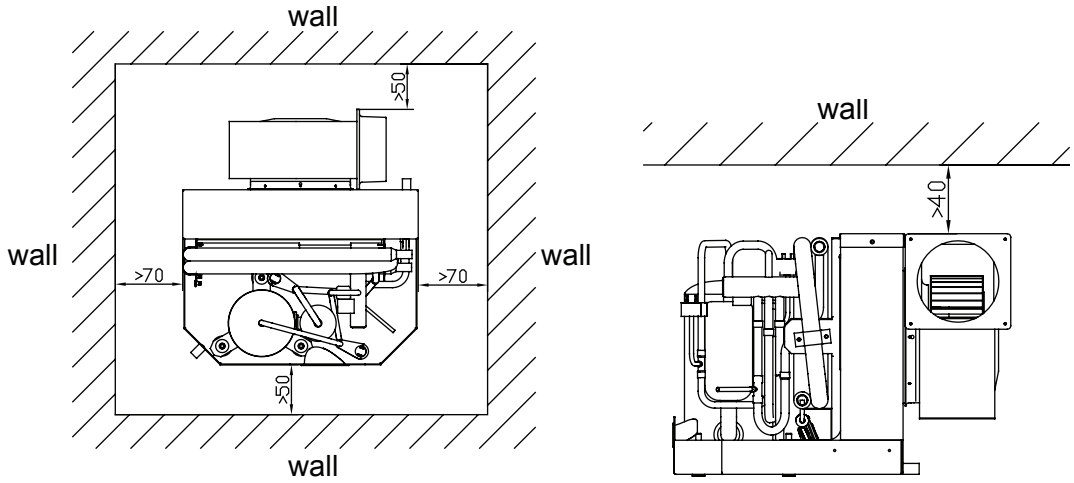


NO.	Model	A	B	C	D	H
1	CYR24/Na -A	529	595	150	16	382
2	CYR20/Na -T	529	595	150	16	382
3	CYR24/Na -T	529	595	150	16	382



NO.	Model	A	B	C	D	H
1	CYR5/NaB-A	428	295	120	16	295
2	CYR9/NaB-A	435	390	120	16	295
3	CYR12/NaB -A	448	390	150	16	330
4	CYR16/NaB-A	480	460	150	16	330
5	CYR5/NaB-T	440	309	120	16	324
6	CYR9/NaB-T	457	411	120	16	324
7	CYR12/NaB -T	458	409	150	16	370
8	CYR16/NaB-T	488	478	150	16	365

2 Installation Clearance Data



Note: Air outlets on bottom and both sides shall be away from the ceiling for 40mm at least; Air outlet shall be away from the ceiling for 100mm at least.

Drain Piping Work

The condensate drain pan is 2” (50mm) high with two drain locations. During conditions of high humidity, condensate may be produced at a rate of approximately 1/2 gallon per hour (1.9 liters per hour). Please pay more attention, it is important to route condensate drains downward to a sump pump. It is not recommended to route condensate drains to the bilge. After the condensate drain installation is complete, test the installation by pouring water into the pan and checking for good flow.

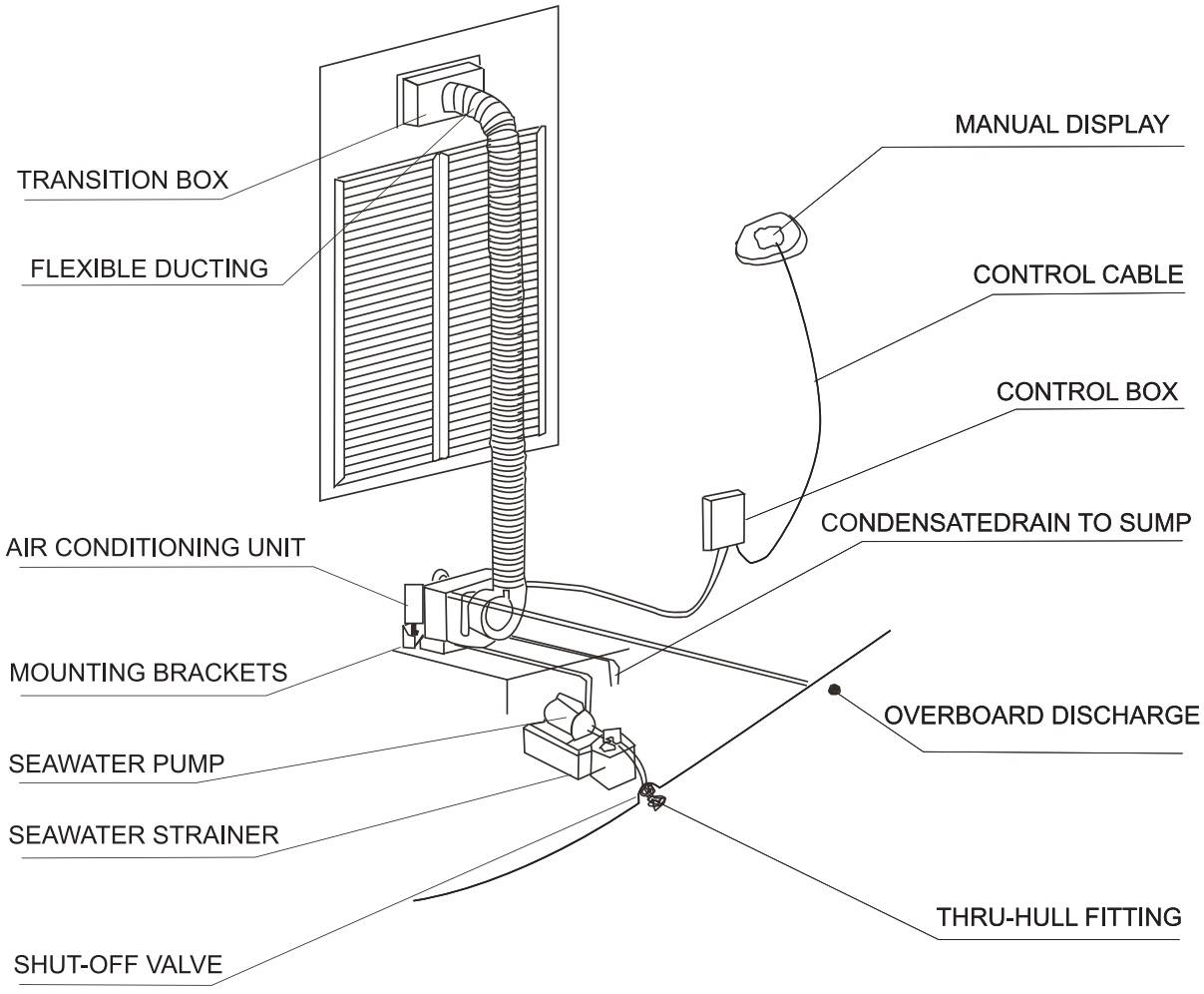
For installation of the condensate drain:

- Attach a 5/8” I.D. reinforced hose to the hose barb and secure with stainless steel hose clamps.
- Install the condensate drain hose downhill from the unit and aft to a sump.
- Two drain fittings may be used and the hoses (teed) together using a tee fitting provided there is a minimum 2" drop from the bottom of the base pan to the tee connection.

Do not terminate condensate drain line within three 3’ (914mm) of any outlet of engine, generator exhaust systems, compartment housing an engine or generator, nor in a bilge, unless the drain is connected properly to a sealed condensate or shower sump pump. Seal all condensate hose penetrations.

3 Unit Installation

Selecting a good location for your air conditioner is the most important part of your preparation. Be sure to consider the size of the area you are cooling, the air distribution needs, and the size of the unit you have chosen. Keeping in mind that cool air has a tendency to fall; it is highly recommended that you locate the supply air grille as high as possible in the cabin. See diagram below.



the unit should be installed as low as possible, but never in the bilge or engine room areas, ensure that the selected location is sealed from direct access to bilge and/or engine room vapors. installing the unit as low as possible (such as under a v-berth, dinette seat or bottom of a locker) and ducting the supply air as high as possible, creates an ideal airflow condition. this type of installation will prevent short or premature cycling.

The unit should be positioned on a firm, level, horizontal surface and the condensate drain line should run downward from the unit to a suitable drain location. Plan all Connections, which must be made including ducting, condensate drain, and seawater in and out, electrical power connections, location of control, and seawater pump placement, to assure easy access for routing and servicing.

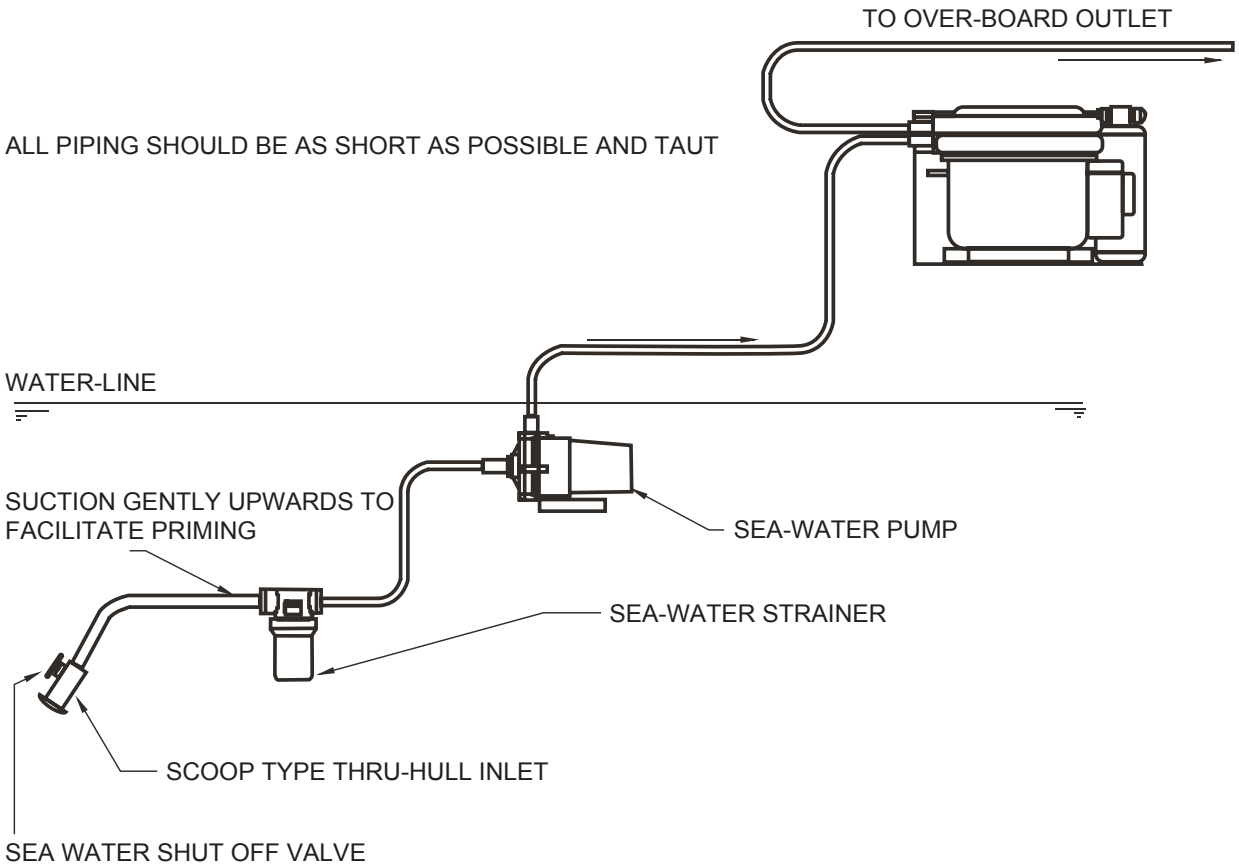
4 Water System Installation

Several guidelines should be followed during the installation of the seawater system. Since the circulation pump is centrifugal and not self-priming, it must be mounted so that it is always at least 1’ (305mm) below the water line regardless of which tack the vessel is on. Pump may be mounted horizontally or vertically, however, the discharge must always be above the inlet. Pump head should be rotated toward the direction of water flow. Install the seawater speed scoop intake as far below the water line and as close to the keel as possible in any application, but especially on a sailboat, to keep the intake in the water when the boat heels over so that air does not get into the system. The speed scoop intake must face forward and not be shared with any other pump. A seawater strainer is mandatory between the shut off valve (seacock) and the pump to protect the pump from any foreign matter. Failure to install a seawater strainer will void the pump warranty. The seawater system should be installed with an upward incline from the speed scoop & seacock, through the strainer, to the inlet

of the pump, next to the inlet of the a/c unit's condenser coil. The discharge from the a/c unit should run to the seawater outlet thru-hull fitting that should be located where it can be visually inspected for water flow as close to the waterline to reduce noise. All hose connections shall be secured using double/reversed stainless steel hose clamps. Use Teflon tape on all threaded connections.

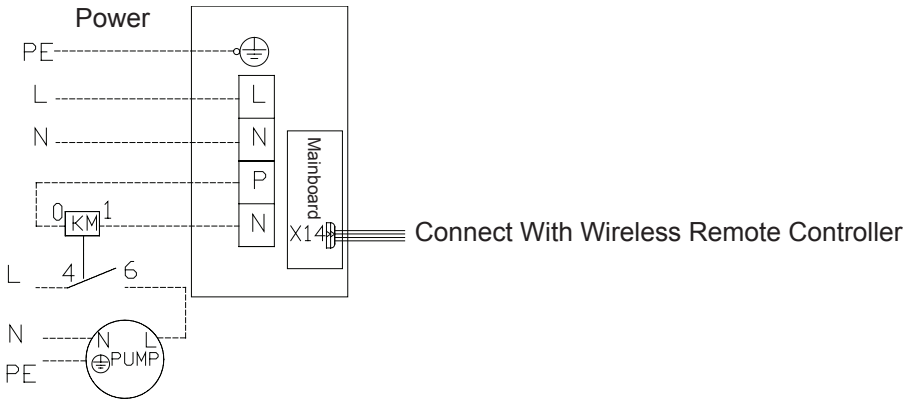
Summary of the seawater system installation:

a. Install the speed scoop thru-hull inlet as close to the keel and as far below the water line as possible, facing forward. Bed the scoop with a marine sealant designed for underwater use.
b. Install a bronze, full flow seacock on the speed scoop thru-hull inlet.
c. Install a seawater strainer below the level of the pump with access to filter.
d. Mount the pump above the strainer and at least 1' (305mm) below the waterline.
e. Connect the seacock and strainer with an uphill run of 5/8" reinforced marine grade hose.
f. Connect the discharge from the pump uphill to the bottom inlet of the a/c unit's condenser coil with 5/8" hose. Connect the discharge from the condenser coil to the overboard discharge thru-hull fitting with 5/8" hose.
g. Avoid loops, high spots or the use of 90° elbows with seawater hose (each 90° elbow is equivalent to 2.5' (762mm) of hose and a 90° elbow on the pump outlet is equivalent to 20' (6.1m) of hose).
h. Double clamp all hose connections with stainless steel clamps, reversing the clamps.
i. Use Teflon tape on all threaded connections.
j. Connect all metallic parts in contact with seawater to the vessel's bonding system including the speed scoop inlet, strainer, pump and the air conditioner. Failure to do so will void warranty.



5 ELECTRIC WIRING WORK

5.1 Electric Wiring Design



5.2 Specification of Power Supply Wire and Air Switch

Model	Power Supply	Capability of Air Swith	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
	V Ph Hz	(A)	(mm^2)	(mm^2)
CYR5/Na-A	1PH 115V~ 60Hz	10	1.5	1.5
CYR9/Na-A		16	2.5	2.5
CYR12/Na-A		16	2.5	2.5
CYR16/Na-A		25	6.0	6.0
CYR24/Na-A		32	6.0	6.0
CYR5/Na-T	1PH 230V~ 60Hz 1PH 220-240V~50Hz	6	1.0	1.0
CYR9/Na-T		6	1.0	1.0
CYR12/Na-T		10	1.5	1.5
CYR16/Na-T		10	1.5	1.5
CYR20/Na-T		16	2.5	2.5
CYR24/Na-T		16	2.5	2.5
CYR7/Na-K	1PH 220-240V~50Hz	6	1.0	1.0
CYR9/Na-K		6	1.0	1.0
CYR12/Na-K		10	1.5	1.5
CYR16/Na-K		10	1.5	1.5
CYR5/NaB-A	1PH 115V~ 60Hz	10	1.5	1.5
CYR9/NaB-A		16	2.5	2.5
CYR12/NaB-A		16	2.5	2.5
CYR16/NaB-A		25	6.0	6.0
CYR5/NaB-T	1PH 230V~ 60Hz 1PH 220-240V~50Hz	6	1.0	1.0
CYR9/NaB-T		6	1.0	1.0
CYR12/NaB-T		10	1.5	1.5
CYR16/NaB-T		10	1.5	1.5

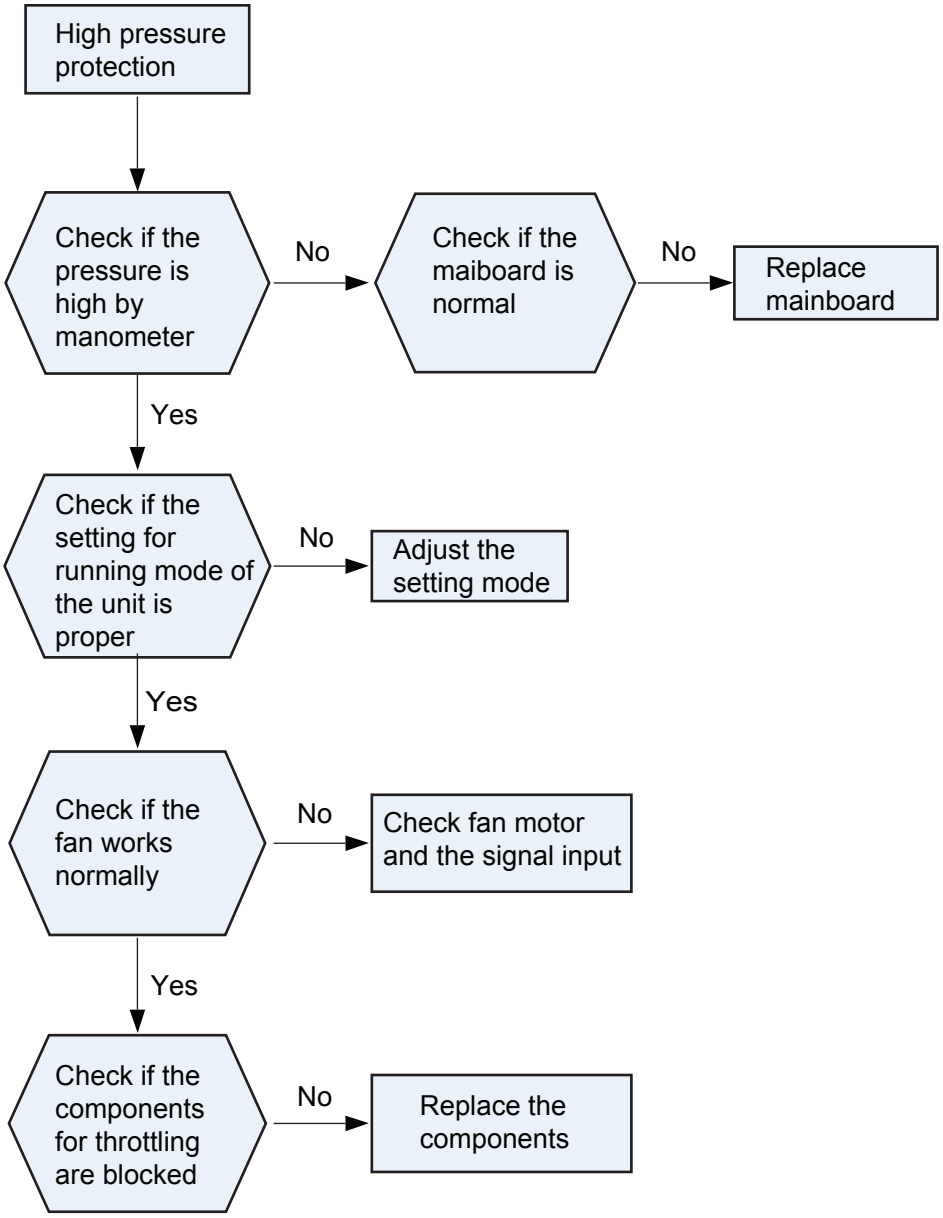
MAINTENANCE

MAINTENANCE
1 TROUBLE TABLE

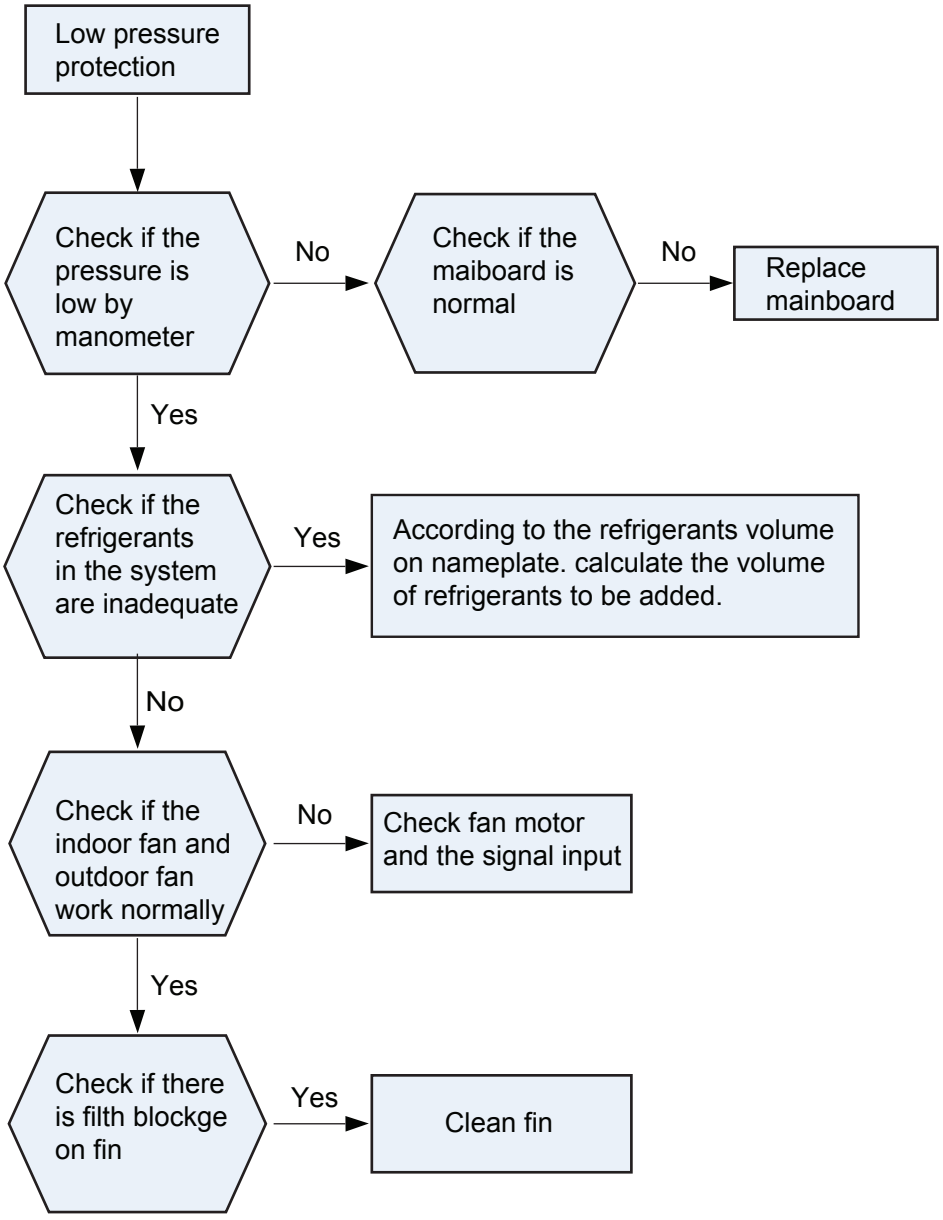
Trouble Code	Trouble Name	Origin of Trouble Signal	Control Description
E1	High Pressure Protection of Compressor	High Pressure Switch	When high pressure is detected for continuous 3s, turn off the system(4 way-valve is excluded when heating), and “E1” will be displayed. It cannot be recovered. “E1” is cleared by pressing button “ON/OFF”. Press ON/OFF again to resume running.
E2	Indoor Antifreezing Protection	Temp Sensor	Under Cool or Dry mode, after the compressor has been running for continuous 15min, if Teva <-2℃ is detected for continuous 3min, compressor will stop, fan will keep original status, nixie display indicator will display “E2”. When Teva ≥10 ℃ for continuous 1s, it will recover and system will work normally.
E3	Low Pressure Protection of Compressor	Low Pressure Switch	After 4min startup of compressor, detection for low pressure is executed. When detect that the low pressure switch breaks for 30s, the system is turned off (4-way valve is excluded when heating and indoor fan stops after the compressor has stopped for 30s.), E3 is displayed and buzzer is warning. It can’t recover automatically. Press ON/OFF to clear the warning of voice.
E6	Communication Error Protection	Communication malfunction	When communication error has been detected for 1min, system is turned off 94-way valve is excluded when heating and indoor fan stops after the compressor has stopped for 30s.)and E6 is displayed. After the communication turns to normal, system resumes running and error code is cleared.
F0	Indoor Ambient Temp Sensor Error	Temp Sensor	When detect that AD value is greater than 250 (short circuit) or less than 5 (open circuit) for continuous 5s, it is believed that the temp sensor is error. If detect that the AD value is between 5 and 250 for continuous 5s, it is believed that the temp sensor recovers. When there is error of temp senor, system is turned off (4-way valve is excluded when heating and indoor fan stops after the compressor has stopped for 30s) and F0 is displayed. It can resume running when the error is cleared. Under air supply mode, only error code is displayed and the fan works normally. The error code will disappear when the error is cleared.
F1	Evaporator Temp Sensor Error	Temp Sensor	When detect that AD value is greater than 250 (short circuit) or less than 5 (open circuit) for continuous 5s, it is believed that the temp sensor is error. If detect that the AD value is between 5 and 250 for continuous 5s, it is believed that the temp sensor recovers When there is error of temp sensor, the system is turned off (4-way valve is excluded when heating and indoor fan stops after the compressor has stopped for 30s.) and F1 is displayed. After the error is cleared, it resumes running. Under air supply mode, only error code is displayed and fan works normally. When error is cleared, error code will disappear.

2 FLOW CHART OF TROUBLESHOOTING

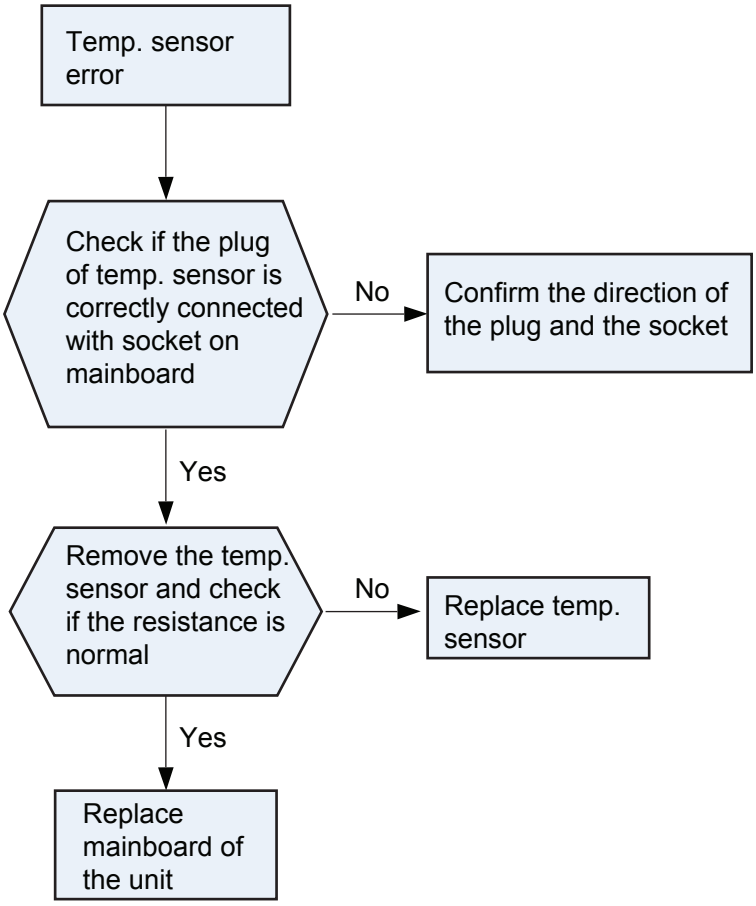
2.1 High Pressure Protection



2.2 Low Pressure Protection



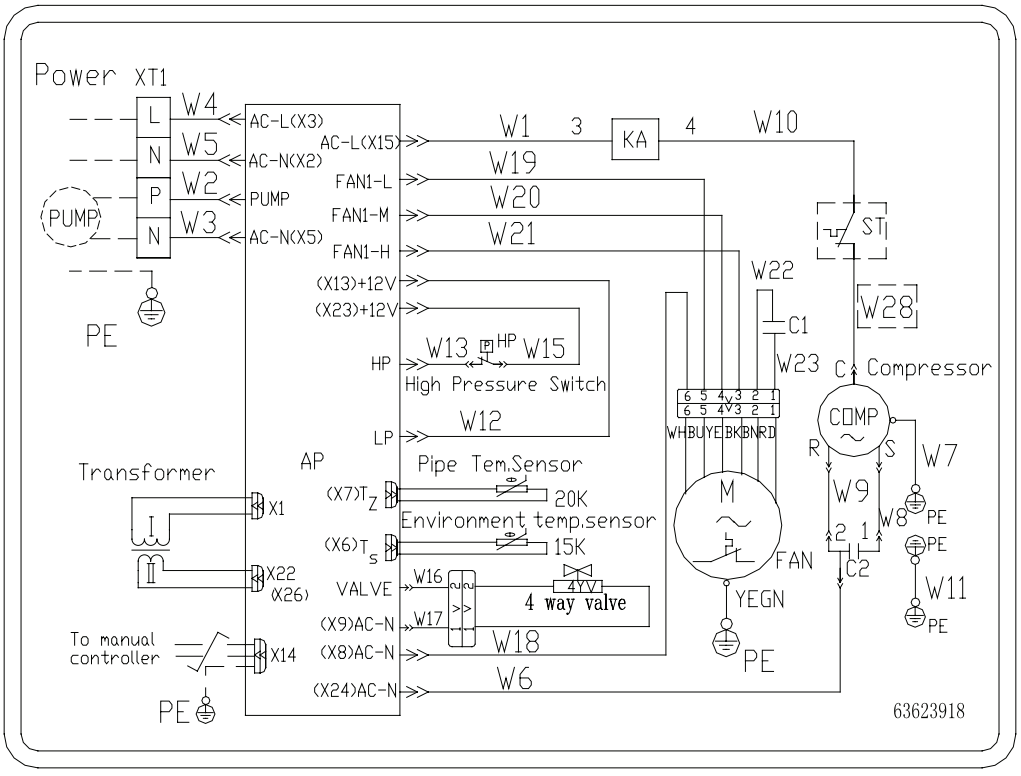
2.3 Temp Sensor Error



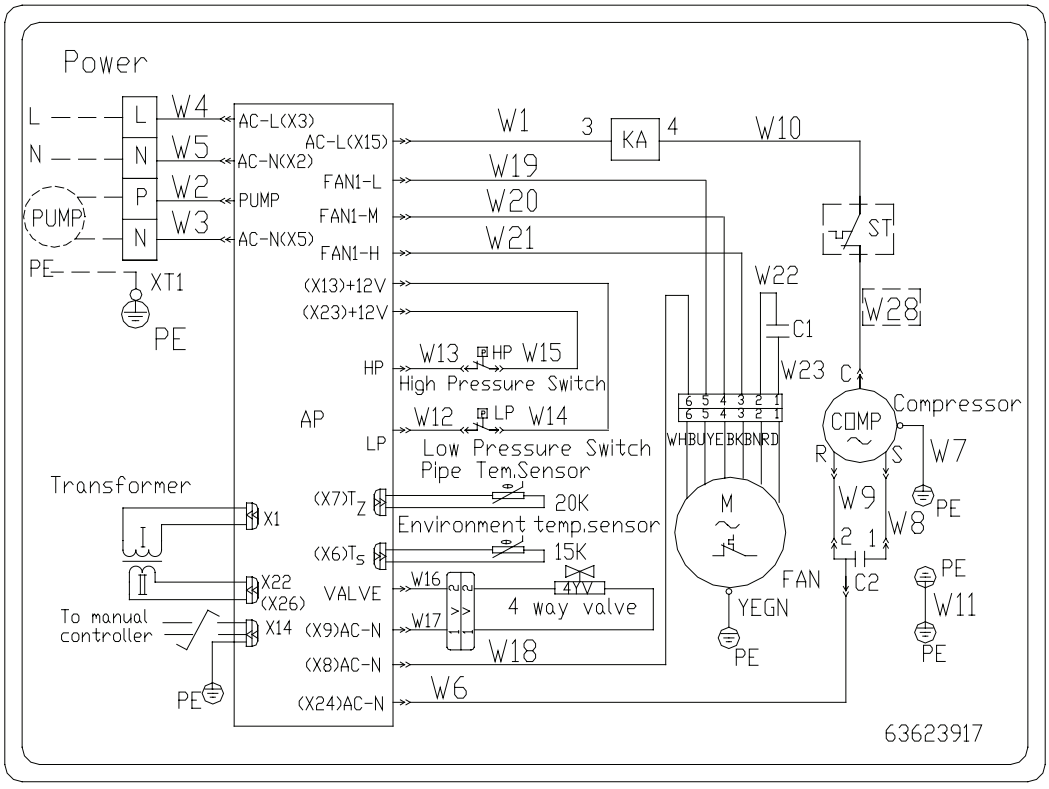
3 WIRING DIAGRAM

The following electric diagram is for reference only. Please refer to diagram sticked on the unit as the latest version.

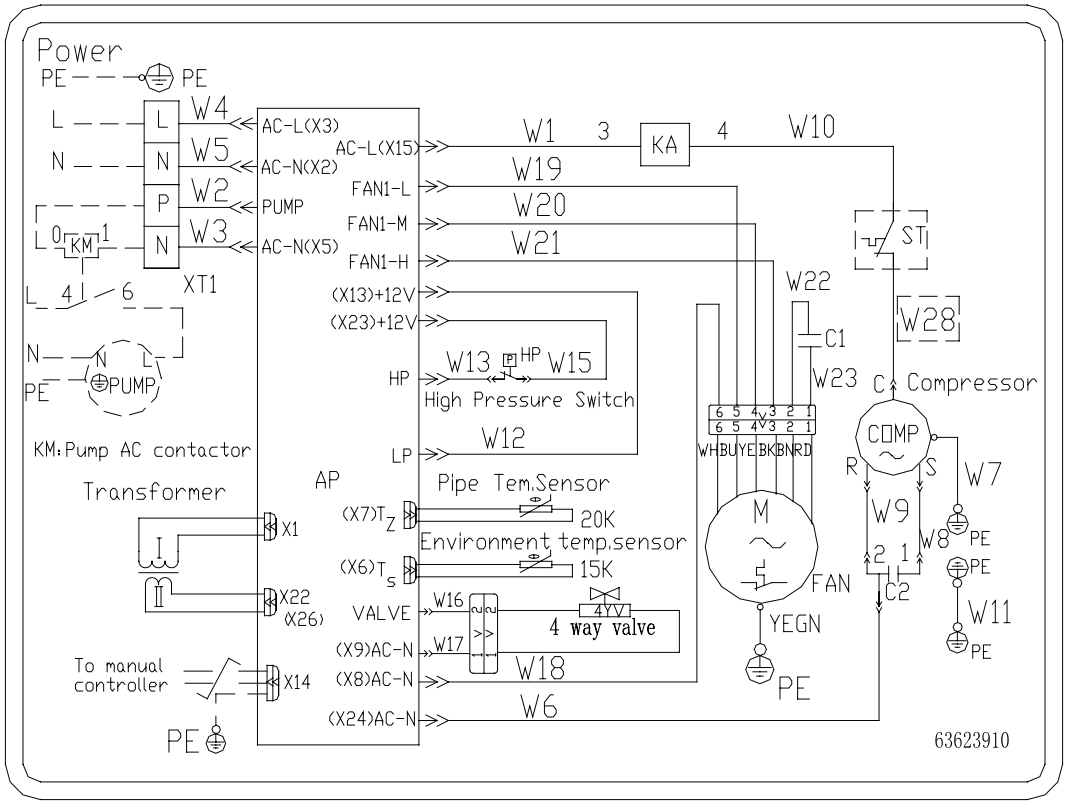
CYR5/Na-A ,CYR9/Na-A ,CYR5/Na-T, CYR9/Na-T,CYR5/NaB-A,CYR9/NaB-A,CYR5/NaB-T,CYR9/NaB-T



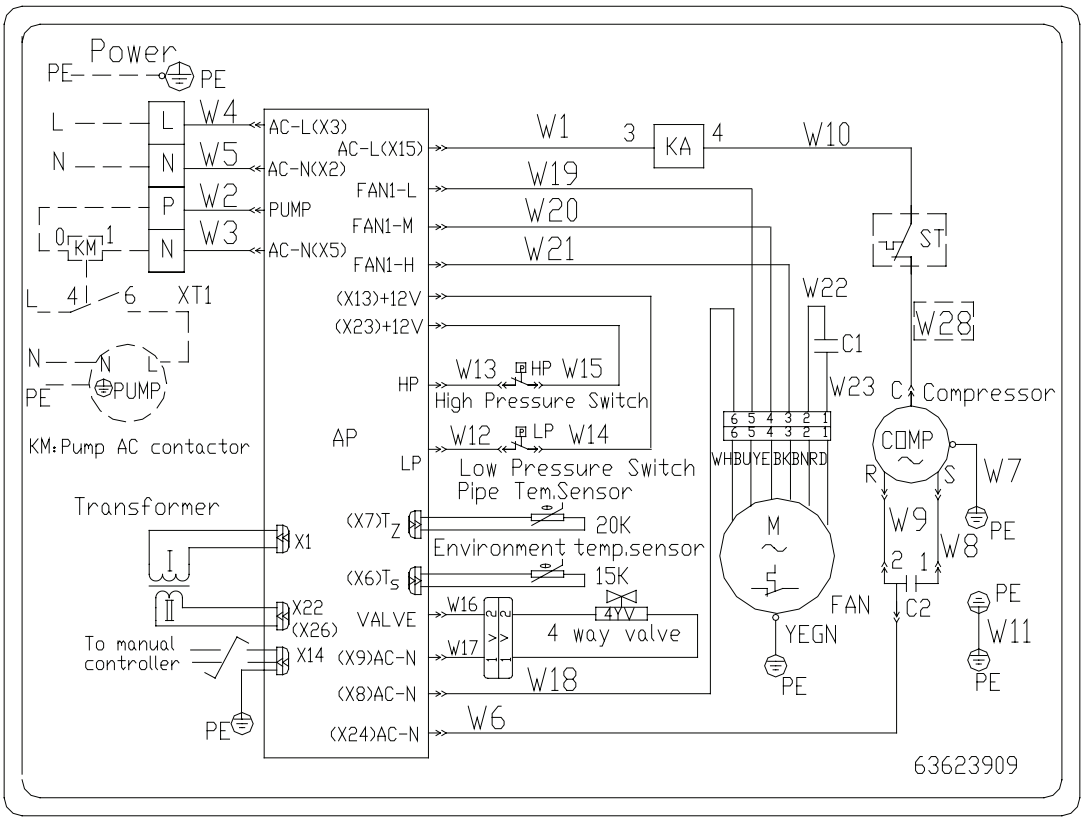
CYR12/Na-A,CYR16/Na-A,CYR12/Na-T,CYR16/Na-T,CYR20/Na-T,CYR12/NaB-A,CYR16/NaB-A,CYR12/NaB-T,CYR16/NaB-T.



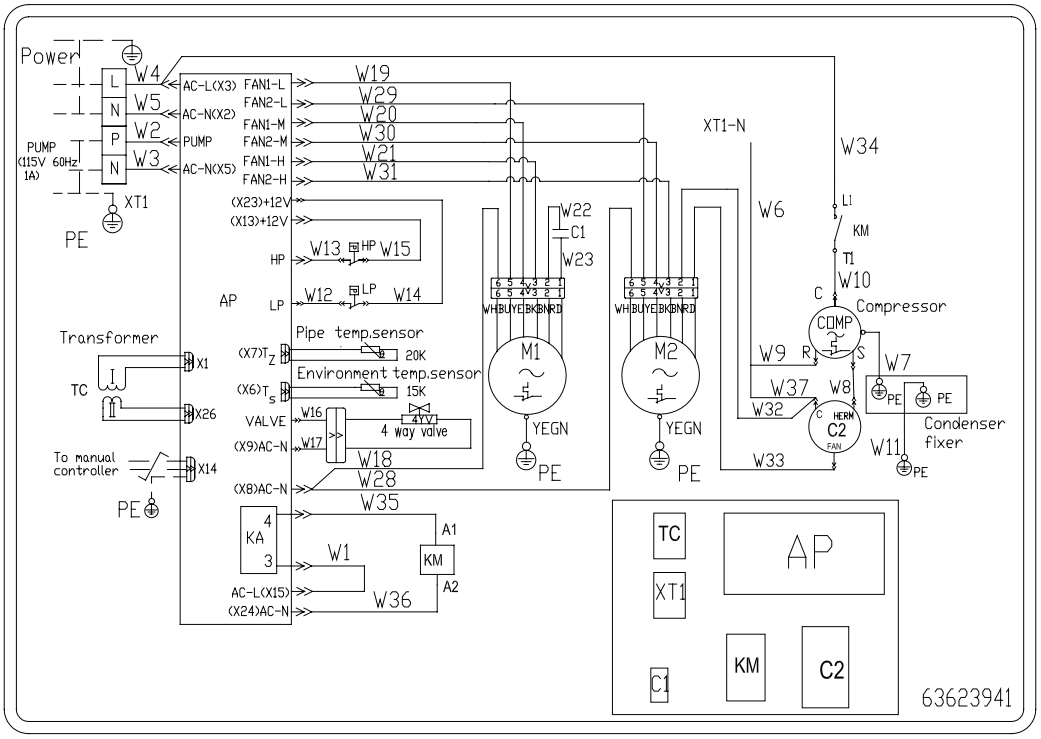
CYR7/Na-K,CYR9/Na-K



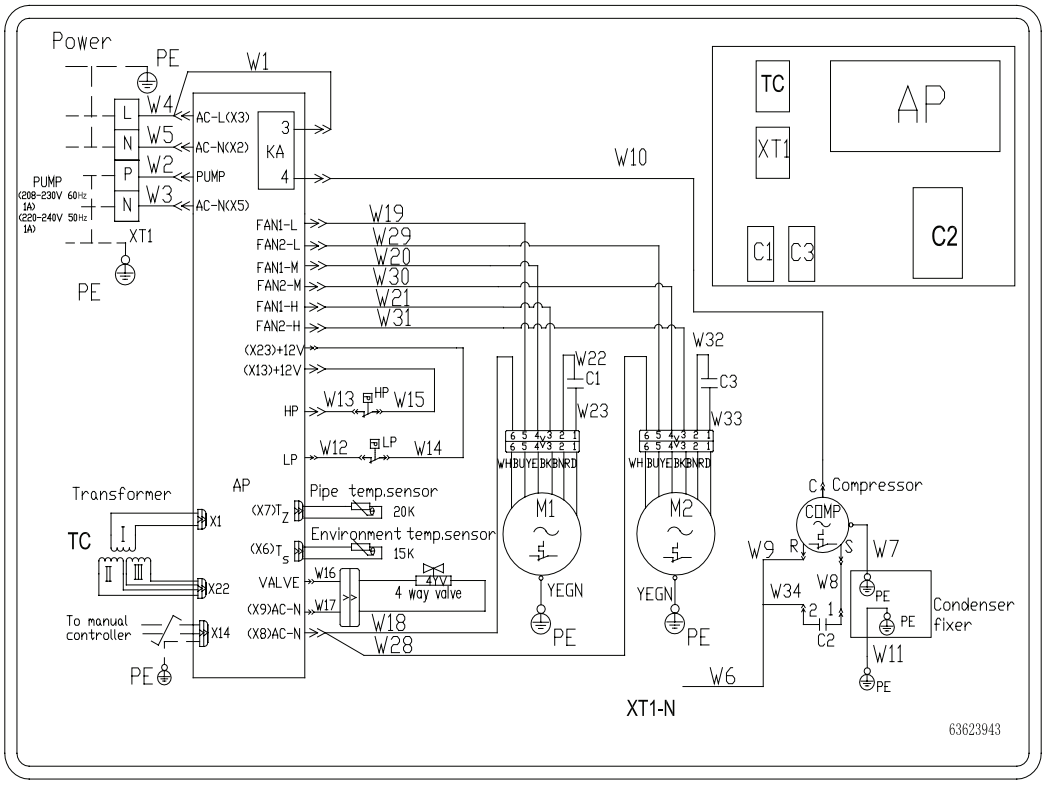
CYR12/Na-K,CYR16/Na-K



CYR24/Na-A

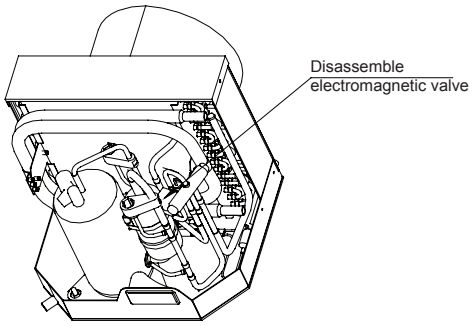
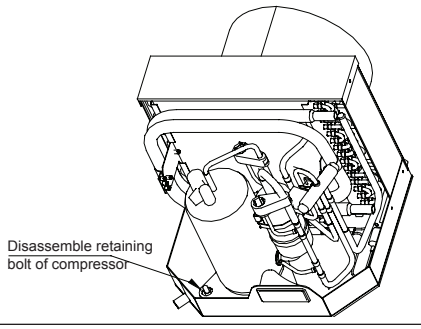
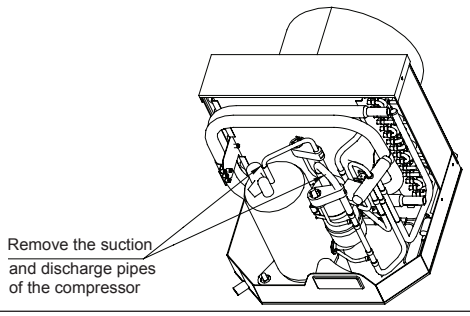
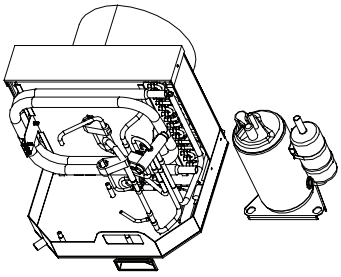
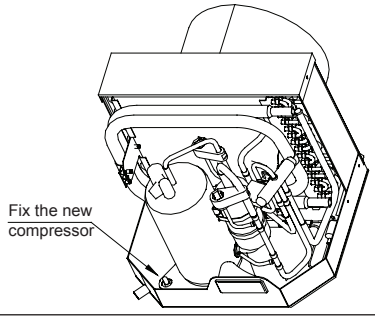


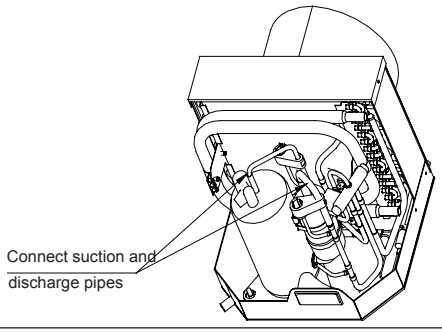
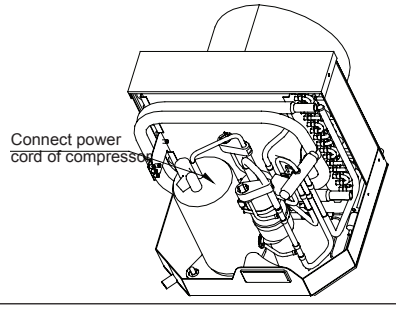
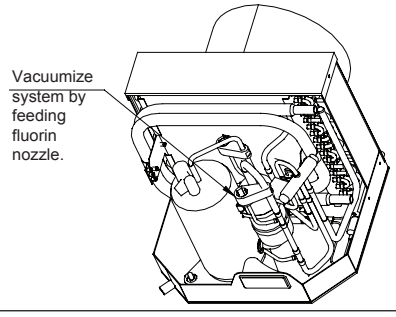
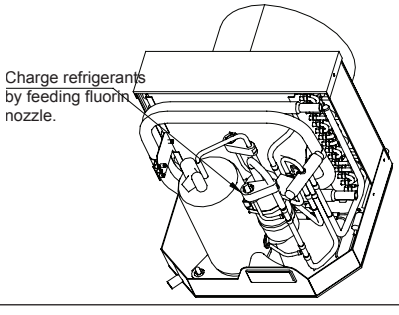
CYR24/Na-T



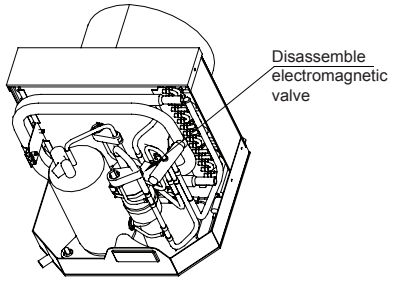
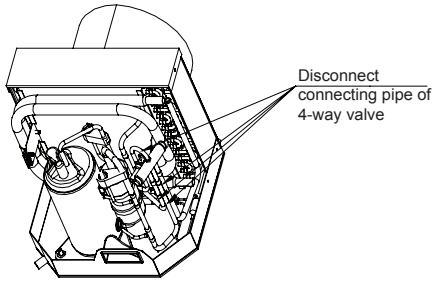
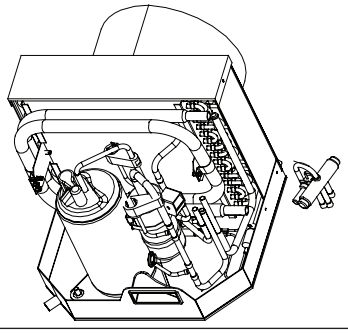
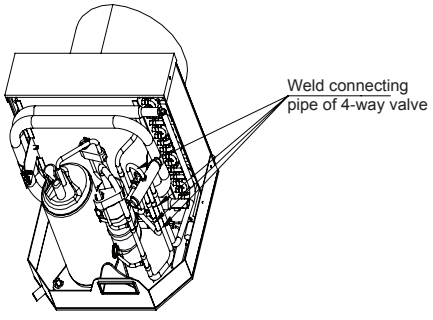
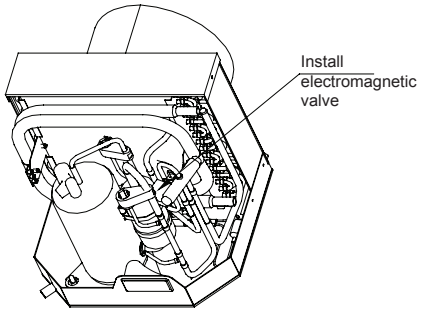
4 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

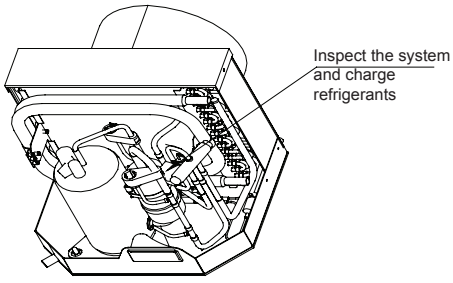
4.1 Compressor

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	Pictorial View	Handling Description
1. Disconnect the power cord		●Unscrew the retaining screw of power cord with screwdriver. ●Unplug the power cord.
2.Disassemble retaining nut		●Unscrew retaining nut by screwdriver.
3.Disassemble the discharge pipe and the suction and discharge pipe of compressor.		●Heating uction and discharge pipe by acetylene welding and then unplug them from compressor. ●Conduct nitrogen-fill protection on process pipe and the pressure of nitrogen is 0.5±0.1kgf/c㎡ (relative pressure). ●Heat it with caution in case the surroundings get burnt due to high temperature
4.Remove compressor		● Remove the compressor from chassis.
5.Fix the new compressor on chassis.		●Place the new compressor on the accurate position ●Screw up retaining bolts of compressor ●Don't inversely place the compressor

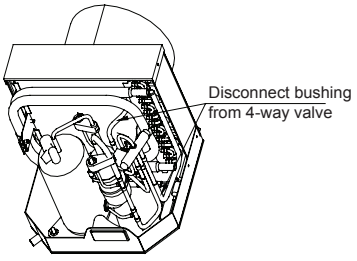
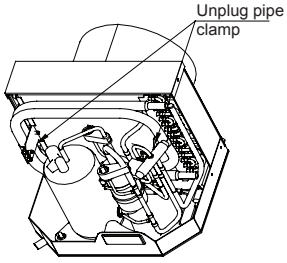
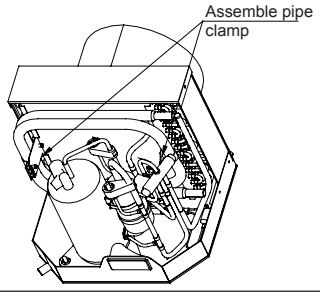
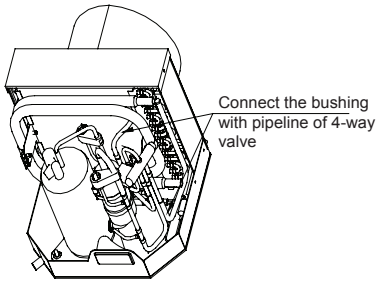
6. Connect the inlet and outlet of compressor with pipeline of system.		●Weld suction and discharge pipe by acetylene welding ●Conduct nitrogen-fill protection on process pipe and the pressure of nitrogen is 0.5±0.1kgf/c ㎡ (relative pressure). ●Heat it with caution in case the surroundings get burnt due to high temperature
7.Connect power cord of compressor		●Connect the power cord to retaining bolts according to disassebly sequence. ●Screw the bolts tightly.
8.Vacuumize system by feeding fluorin nozzle.		●Vacuumize system by feeding fluorin nozzle.
9.Charge refrigerants again by feeding fluorin nozzle.		●Charge refrigerants again by feeding fluorin nozzle. ●Charge volume must comply with the nameplate.

4.2 The 4-way valve

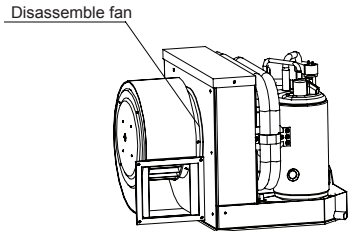
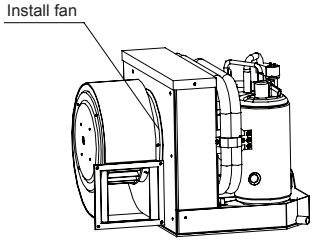
Disassembly and Assembly of the 4-way valve		
Remark : Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the thermal expansion valve.		
Process	Pictorial View	Handling Description
1. Disassemble electromagnetic valve.		●Dismantle electromagnetic valve with spanner. ●Remove electromagnetic valve from 4-way valve.
2. Dismantle 4-way valve.		●Heat connecting pipe of 4 vents of 4-way valve by gas welding and then unplug 4-way valve. ●nitrogen-fill protection shall be conducted on welding joint and the pressure of nitrogen is 0.5±0.1kgf/c ㎡ (relative pressure) ●Record the direction of 4-way valve and the position of each vent before remove 4-way valve.
3. Remove 4-way valve		●Remove old 4-way valve from pipeline.
4. Install new 4-way valve.		●Install the new 4-way valve in correct position and connect it with pipeline correctly. ●Wrap the valve with wet cloth when welding to prevent the slide block inside the valve from burning and prevent water from piping. ●Charge nitrogen to weld and the nitrogen pressure is 0.5±0.1kgf/c ㎡ (relative pressure)
5. Install electromagnetic valve.		●Install the electromagnetic valve in new 4-way valve.

6. Inspect the system and charge refrigerants.		●Vacuumize and charge refrigerants after confirmation that there is no leakage of the system.

4.3 Tube in tube heat exchanger

Disassembly and Assembly of tube in tube heat exchanger		
Process	Pictorial View	Handling Description
1. Disconnect bushing from 4-way valve		●Heat connecting pipe of bushing and 4-way valve by gas welding and then unplug bushing. ●nitrogen-fill protection shall be conducted on welding joint and the pressure of nitrogen is 0.5±0.1kgf/c ㎡ (relative pressure) ●Heat it with caution in case the surroundings get burnt due to high temperature
2. Unplug pipe clamp		●Unscrew the pipe clamp to disconnect the bushing from side plate of evaporator.
3. Assemble pipe clamp		●Fix the bushing and side plate of evaporator by pipe clamp.
4. Connect the bushing with pipeline of 4-way valve		●Weld bushing by gas welding. ●nitrogen-fill protection shall be conducted on welding joint and the pressure of nitrogen is 0.5±0.1kgf/c ㎡ (relative pressure) ●Heat it with caution in case the surroundings get burnt due to high temperature

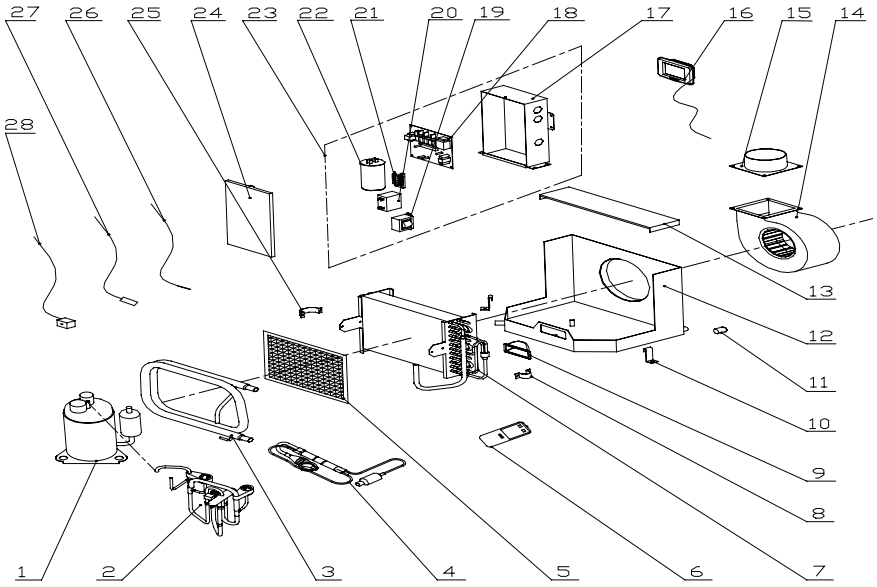
4.4 Fan and Fan Motor

Disassembly and Assembly of Fan and Fan Motor		
Process	Pictorial View	Handling Description
1. Disassemble fan		●Disassemble fan by screwdriver.
2. Install fan		●Fix the fan by screwdriver.

5 EXPLODED VIEWS AND PART LIST

1) Model: CYR5/Na-A

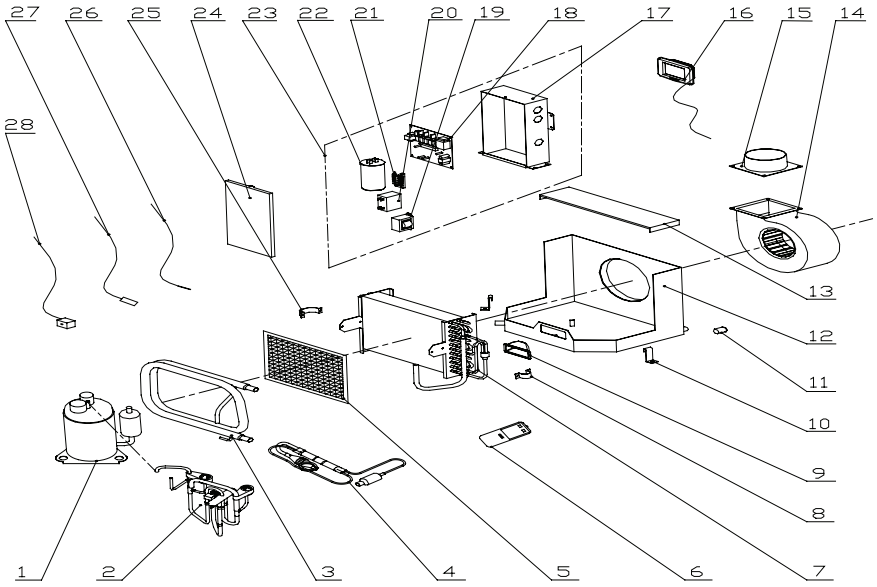
Exploded View:



Parts List:(Product Code:EY10000200)

NO.	Name of part	Part code	Quantity
1	Compressor	00203903	1
2	Reverse valve assy	4143905	1
3	Condenser coil	01139401	1
4	Capillary assy	04103910	1
5	Filter	11129404	1
6	Remote controller	30515028	1
7	Evaporator assy	01023908	1
8	Condenser fixer	21400054	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	01279460	2
12	Base/pan	01283929	1
13	Cover assy	01259401	1
14	Blower assy	15009408	1
15	Duct connecter	06329401	1
16	Display panel	30295002	1
17	Electric box	01419404	1
18	Main PCB	30225306	1
19	Transformer	43110239	1
20	Capacitor	33010010	1
21	Terminal	42010254	1
22	Capacitor	33010044	1
23	Electric Controller Box Assy	01393918	1
24	Electric box cover	01419405	1
25	Condenser fixer	01346002	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

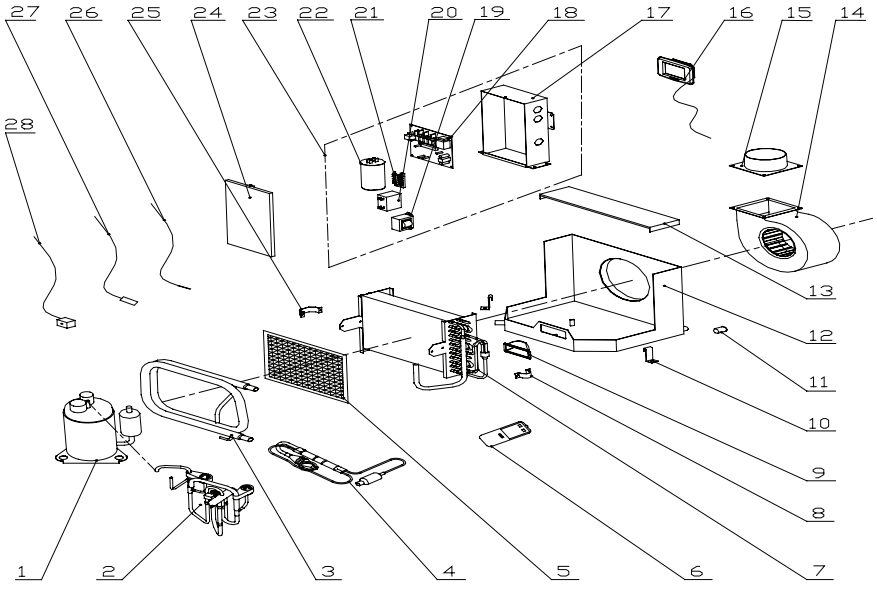
2) Model: CYR9/Na-A
Exploded View:



Parts List:(Product Code:EY10000210)

NO.	Name of part	Part code	Quantity
1	Compressor	00203906	1
2	Reverse valve assy	04143910	1
3	Condenser coil	01139401	1
4	Capillary assy	04103917	1
5	Filter	11129404	1
6	Remote controller	30515028	1
7	Evaporator assy	01023911	1
8	Condenser fixer	02260005	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	04363901	2
12	Base/pan	01283935	1
13	Cover assy	01263930	1
14	Blower assy	15403937	1
15	Duct connecter	06329401	1
16	Display panel	30295002	1
17	Electric box	01423914	1
18	Main PCB	30225313	1
19	Transformer	43110008	1
20	Capacitor	33010069	1
21	Terminal	42010254	1
22	Capacitor	33000001	1
23	Electric Controller Box Assy	01393923	1
24	Electric box cover	01423915P	1
25	Condenser fixer	01343909	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	4300040027	1

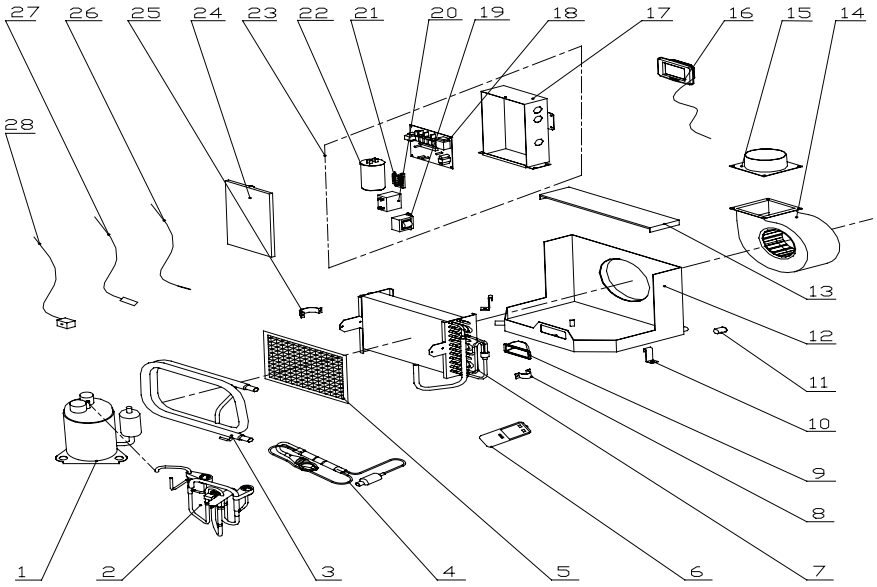
3) Model: CYR12/Na-A
Exploded View:



Parts List:(Product Code:EY10000220)

NO.	Name of part	Part code	Quantity
1	Compressor	00203907	1
2	Reverse valve assy	4143909	1
3	Condenser coil	01139404	1
4	Capillary assy	04103919	1
5	Filter	11129403	1
6	Remote controller	30515028	1
7	Evaporator assy	01023910	1
8	Condenser fixer	02260005	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	04363901	2
12	Base/pan	01283938	1
13	Cover assy	01263930	1
14	Blower assy	15403935	1
15	Duct connecter	06329402	1
16	Display panel	30295002	1
17	Electric box	01423914	1
18	Main PCB	30225313	1
19	Transformer	43110008	1
20	Capacitor	33010069	1
21	Terminal	42010254	1
22	Capacitor	33000001	1
23	Electric Controller Box Assy	01393923	1
24	Electric box cover	01423915P	1
25	Condenser fixer	01343909	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	4300040027	1

4) Model: CYR16/Na-A
Exploded View:

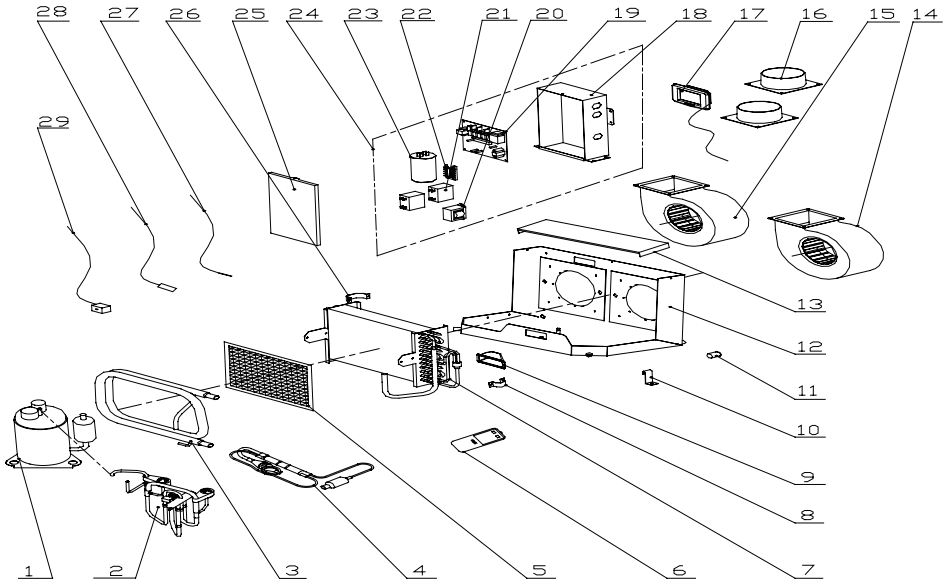


Parts List:(Product Code:EY10000230)

NO.	Name of part	Part code	Quantity
1	Compressor	00203908	1
2	Reverse valve assy	430004032	1
3	Condenser coil	01153913	1
4	Capillary assy	04103920	1
5	Filter	11129402	1
6	Remote controller	30515028	1
7	Evaporator assy	01039405	1
8	Condenser fixer	02263901	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	04363901	2
12	Base/pan	01283941	1
13	Cover assy	01263931	1
14	Blower assy	15403938	1
15	Duct connecter	06329402	1
16	Display panel	30295002	1
17	Electric box	01423914	1
18	Main PCB	30225313	1
19	Transformer	43110008	1
20	Capacitor	33010069	1
21	Terminal	42010254	1
22	Capacitor	33000039	1
23	Electric Controller Box Assy	01393926	1
24	Electric box cover	01423915P	1
25	Condenser fixer	01343911	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	4300040027	1

5) Model: CYR24/Na-A

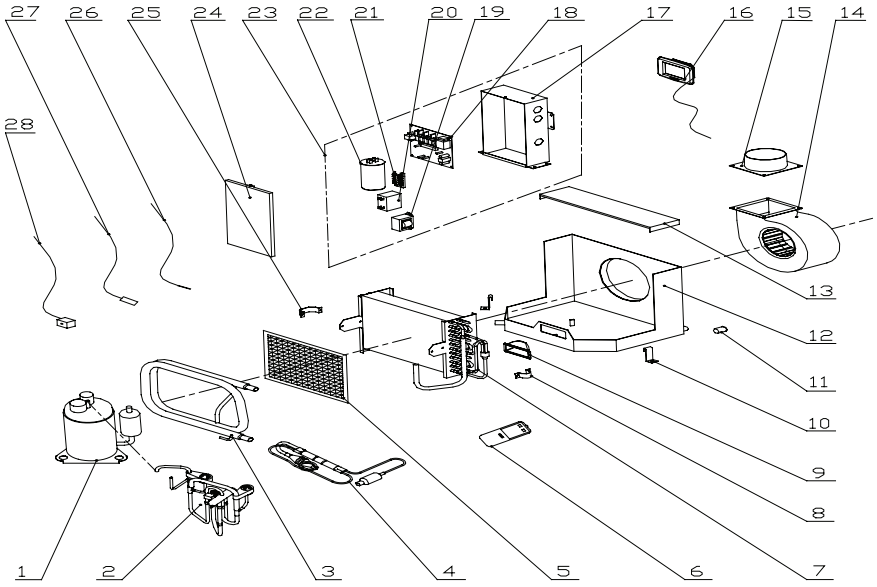
Exploded View:



Parts List:(Product Code:EY10000280)

NO.	Name of part	Part code	Quantity
1	Compressor	00203923	1
2	Reverse valve assy	04143920	1
3	Condenser coil	00903907	1
4	Capillary assy	04103937	1
5	Filter	11723905	1
6	Remote controller	30515028	1
7	Evaporator assy	01023930	1
8	Condenser fixer	02263903	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	04363901	4
12	Base/pan	01284024	1
13	Cover assy	01263972	1
14	Blower assy	15403935	1
15	Blower assy	15403945	1
16	Duct connecter	06329402	2
17	Display panel	30295002	1
18	Electric box	01423933	1
19	Main PCB	30225313	1
20	Transformer	43110008	1
21	Capacitor	33010069	1
22	Terminal	42011043	1
23	Capacitor	3301006901	1
24	Electric Controller Box Assy	01393985	1
25	Electric box cover	01423934P	1
26	Condenser fixer	01343923	1
27	Temperature sensor	3900020720	1
28	Temperature sensor	3900020721	1
29	solenoid coil	4300040027	1

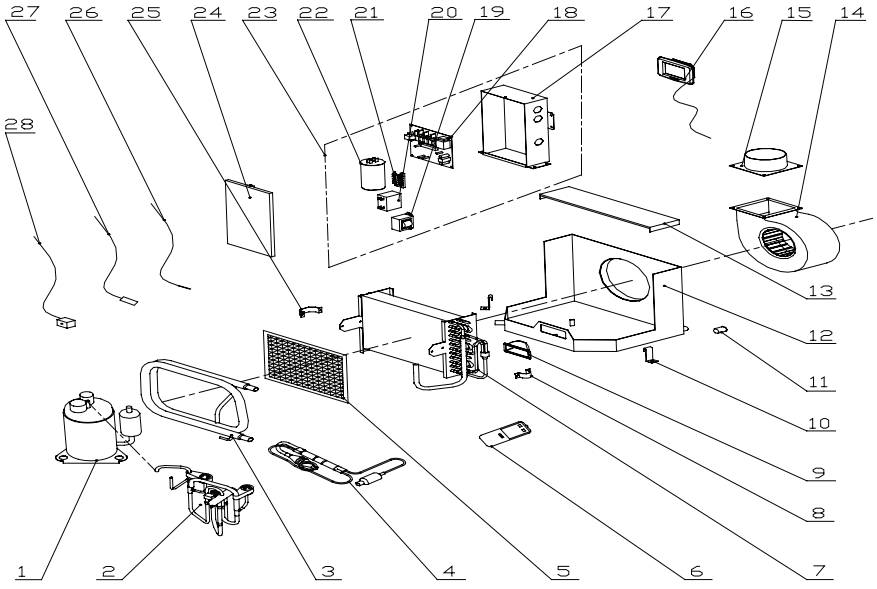
6) Model: CYR5/Na-T
Exploded View:



Parts List:(Product Code:EY10000410)

NO.	Name of part	Part code	Quantity
1	Compressor	00203920	1
2	Reverse valve assy	04143911	1
3	Condenser coil	01139402	1
4	Capillary assy	04103918	1
5	Filter	11129405	1
6	Remote controller	30515028	1
7	Evaporator assy	01023912	1
8	Condenser fixer	021400054	1
9	Handle	26233100	1
10	Clamp	01729602	4
11	Drain pipe	04363901	4
12	Base/pan	01284050	1
13	Cover assy	01263929	1
14	Blower assy	15009412	1
15	Duct connecter	06329401	1
16	Display panel	30295002	1
17	Electric box	01423915	1
18	Main PCB	30225314	1
19	Transformer	43110239	1
20	Capacitor	33010045	1
21	Terminal	42010254	1
22	Capacitor	33010010	1
23	Electric Controller Box Assy	01393965	1
24	Electric box cover	01423915P	1
25	Condenser fixer	01343909	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

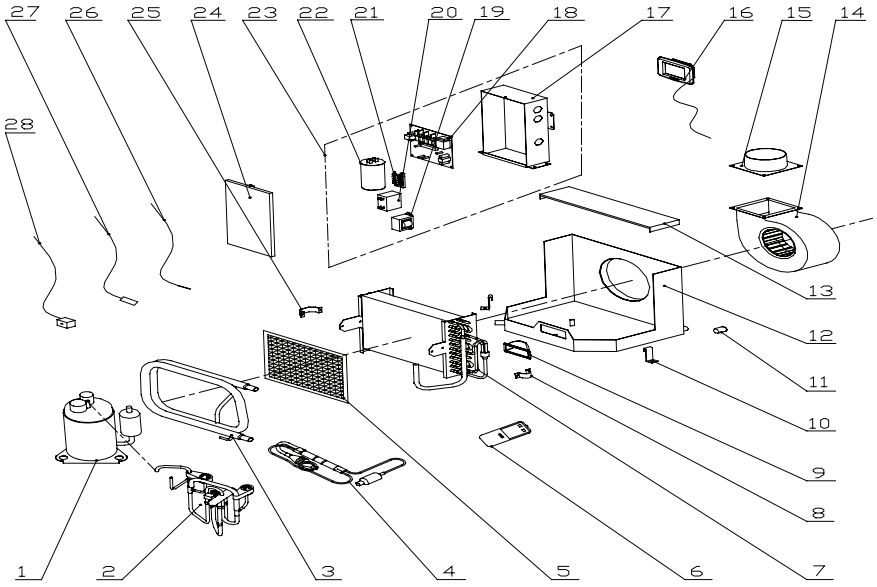
7) Model: CYR9/Na-T
Exploded View:



Parts List:(Product Code:EY10000390)

NO.	Name of part	Part code	Quantity
1	Compressor	00203921	1
2	Reverse valve assy	04143906	1
3	Condenser coil	01139401	1
4	Capillary assy	04103929	1
5	Filter	11129404	1
6	Remote controller	30515028	1
7	Evaporator assy	01039401	1
8	Condenser fixer	021400054	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	04363901	4
12	Base/pan	01283945	1
13	Cover assy	01263930	1
14	Blower assy	15009411	1
15	Duct connecter	06329401	1
16	Display panel	30295002	1
17	Electric box	01423914	1
18	Main PCB	30225314	1
19	Transformer	43110239	1
20	Capacitor	33010013	1
21	Terminal	42010254	1
22	Capacitor	33000017	1
23	Electric Controller Box Assy	01393924	1
24	Electric box cover	01423915P	1
25	Condenser fixer	01343909	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

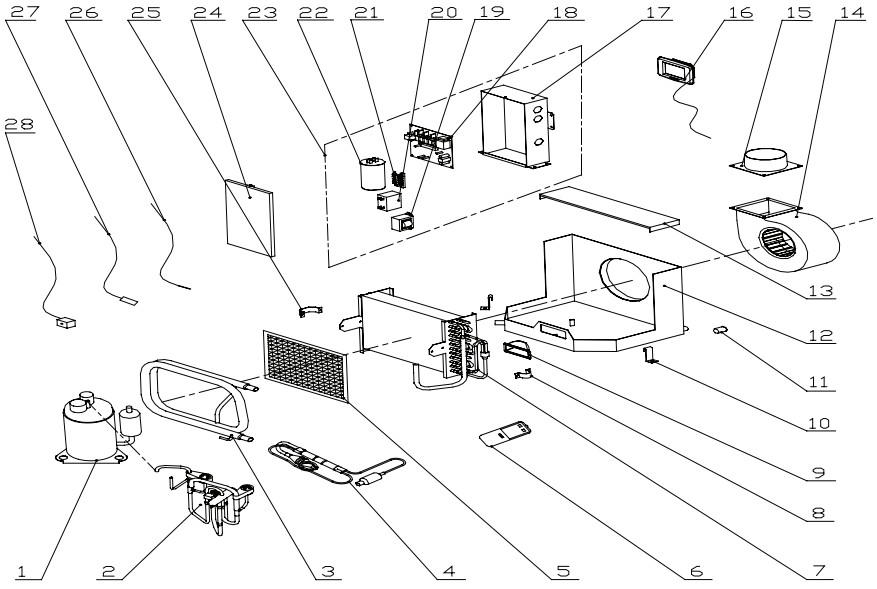
8) Model: CYR12/Na-T
Exploded View:



Parts List:(Product Code:EY10000420)

NO.	Name of part	Part code	Quantity
1	Compressor	00203918	1
2	Reverse valve assy	04143918	1
3	Condenser coil	01139404	1
4	Capillary assy	04103919	1
5	Filter	11129403	1
6	Remote controller	30515028	1
7	Evaporator assy	01023910	1
8	Condenser fixer	02260005	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	04363901	4
12	Base/pan	01283938	1
13	Cover assy	01263930	1
14	Blower assy	15403936	1
15	Duct connecter	06329402	1
16	Display panel	30295002	1
17	Electric box	01423914	1
18	Main PCB	30225314	1
19	Transformer	43110239	1
20	Capacitor	33010010	1
21	Terminal	42010254	1
22	Capacitor	33010743	1
23	Electric Controller Box Assy	01393925	1
24	Electric box cover	01423915P	1
25	Condenser fixer	01343909	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

9) Model: CYR16/Na-T
Exploded View:

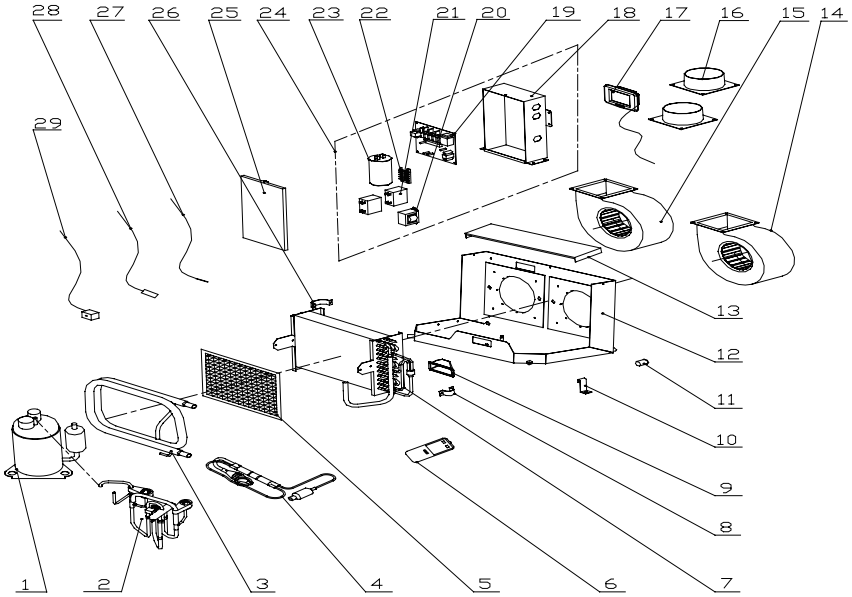


Parts List:(Product Code:EY10000400)

NO.	Name of part	Part code	Quantity
1	Compressor	00203919	1
2	Reverse valve assy	04143919	1
3	Condenser coil	01153913	1
4	Capillary assy	04103920	1
5	Filter	11129402	1
6	Remote controller	30515028	1
7	Evaporator assy	00903909	1
8	Condenser fixer	80050047	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	04363901	2
12	Base/pan	01283941	1
13	Cover assy	01263931	1
14	Blower assy	15403913	1
15	Duct connecter	06329402	1
16	Display panel	30295002	1
17	Electric box	01423914	1
18	Main PCB	30225314	1
19	Transformer	43110239	1
20	Capacitor	33010013	1
21	Terminal	42010254	1
22	Capacitor	33000018	1
23	Electric Controller Box Assy	01393990	1
24	Electric box cover	01423915P	1
25	Condenser fixer	01343911	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

10) Model: CYR24/Na-T

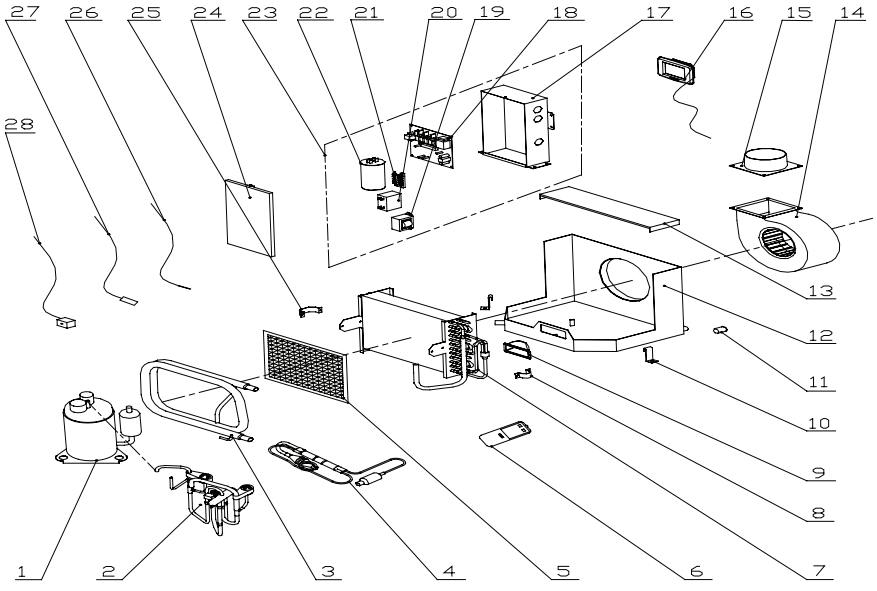
Exploded View:



Parts List:(Product Code:EY10000430)

NO.	Name of part	Part code	Quantity
1	Compressor	00101090	1
2	Reverse valve assy	04143923	1
3	Condenser coil	00903907	1
4	Capillary assy	04103944	1
5	Filter	11723905	1
6	Remote controller	30515028	1
7	Evaporator assy	01023930	1
8	Condenser fixer	02263903	1
9	Handle	26235401	2
10	Clamp	01729602	4
11	Drain pipe	04363901	4
12	Base/pan	01284027	1
13	Cover assy	01263972	1
14	Blower assy	15403943	1
15	Blower assy	15403936	1
16	Duct connecter	06329402	2
17	Display panel	30295002	1
18	Electric box	01423933	1
19	Main PCB	30225314	1
20	Transformer	43110239	1
21	Capacitor	33010010	1
22	Terminal	42010254	1
23	Capacitor	33000012	1
24	Electric Controller Box Assy	01394037	1
25	Electric box cover	01423934P	1
26	Condenser fixer	01343923	1
27	Temperature sensor	3900020720	1
28	Temperature sensor	3900020721	1
29	solenoid coil	4300040038	1

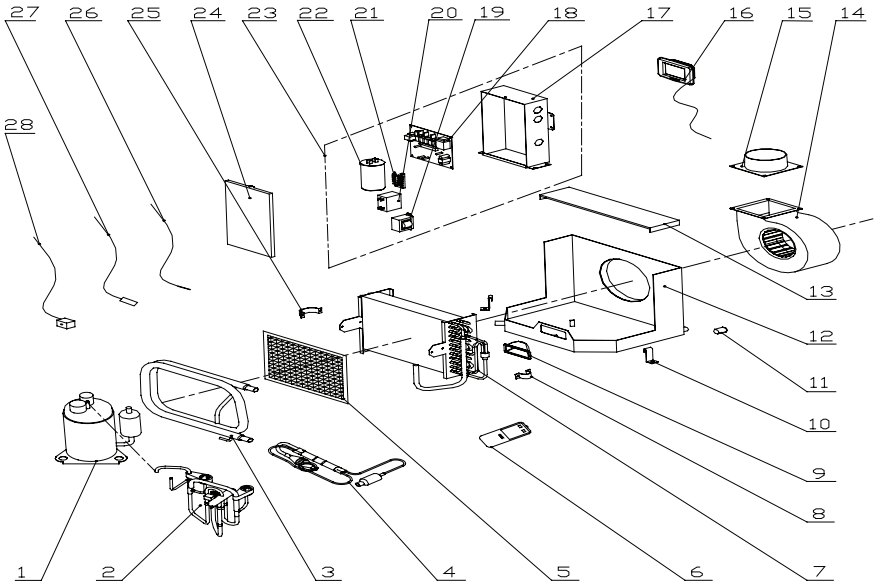
11) Model: CYR7/Na-K
Exploded View:



Parts List: (Product Code:EY10000130)

NO.	Name of part	Part code	Quantity
1	Compressor	00203903	1
2	Reverse valve assy	04143905	1
3	Condenser coil	01139404	1
4	Capillary assy	04103910	1
5	Filter	11129404	1
6	Remote controller	30515028	1
7	Evaporator assy	01023908	1
8	Condenser fixer	021400054	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	01279460	2
12	Base/pan	01283929	1
13	Cover assy	01259401	1
14	Blower assy	15009412	1
15	Duct connecter	06329402	1
16	Display panel	30295002	1
17	Electric box	01409405	1
18	Main PCB	30225306	1
19	Transformer	43110239	1
20	Capacitor	33010013	1
21	Terminal	42010254	1
22	Capacitor	33010044	1
23	Electric Controller Box Assy	01393918	1
24	Electric box cover	01419405	1
25	Condenser fixer	01346002	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

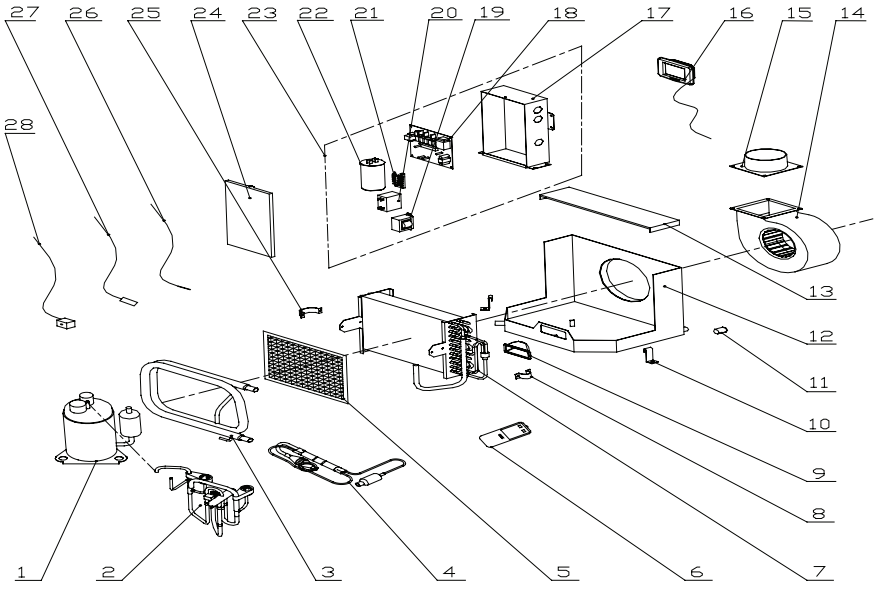
12) Model: CYR9/Na-K
Exploded View:



Parts List: (Product Code:EY10000110)

NO.	Name of part	Part code	Quantity
1	Compressor	00120084	1
2	Reverse valve assy	04143903	1
3	Condenser coil	01139401	1
4	Capillary assy	03009405	1
5	Filter	11129404	1
6	Remote controller	30515028	1
7	Evaporator assy	01009401	1
8	Condenser fixer	021400054	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	01279460	2
12	Base/pan	01283921	1
13	Cover assy	01259401	1
14	Blower assy	15009411	1
15	Duct connecter	06329401	1
16	Display panel	30295002	1
17	Electric box	01409405	1
18	Main PCB	30225306	1
19	Transformer	43110239	1
20	Capacitor	33010013	1
21	Terminal	42010254	1
22	Capacitor	33000018	1
23	Electric Controller Box Assy	01393912	1
24	Electric box cover	01419405	1
25	Condenser fixer	01346002	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

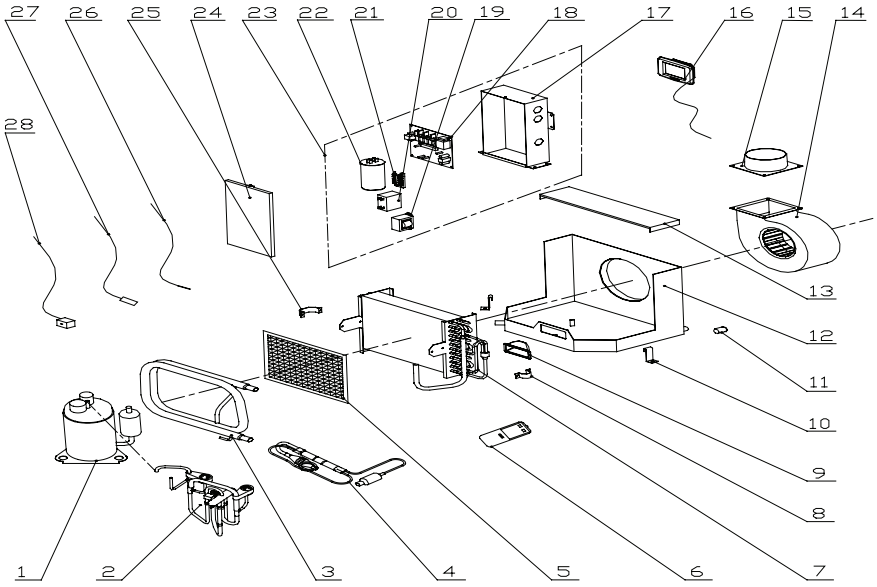
13) Model: CYR12/Na-K
Exploded View:



Parts List:(Product Code:EY10000100)

NO.	Name of part	Part code	Quantity
1	Compressor	00120084	1
2	Reverse valve assy	04143903	1
3	Condenser coil	01139404	1
4	Capillary assy	04103908	1
5	Filter	11129403	1
6	Remote controller	30515028	1
7	Evaporator assy	01023907	1
8	Condenser fixer	021400054	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	01279460	2
12	Base/pan	01283916	1
13	Cover assy	01259401	1
14	Blower assy	15009409	1
15	Duct connecter	06329402	1
16	Display panel	30295002	1
17	Electric box	01409405	1
18	Main PCB	30225306	1
19	Transformer	43110239	1
20	Capacitor	33010010	1
21	Terminal	42010254	1
22	Capacitor	33010743	1
23	Electric Controller Box Assy	01393911	1
24	Electric box cover	01419405	1
25	Condenser fixer	01346002	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

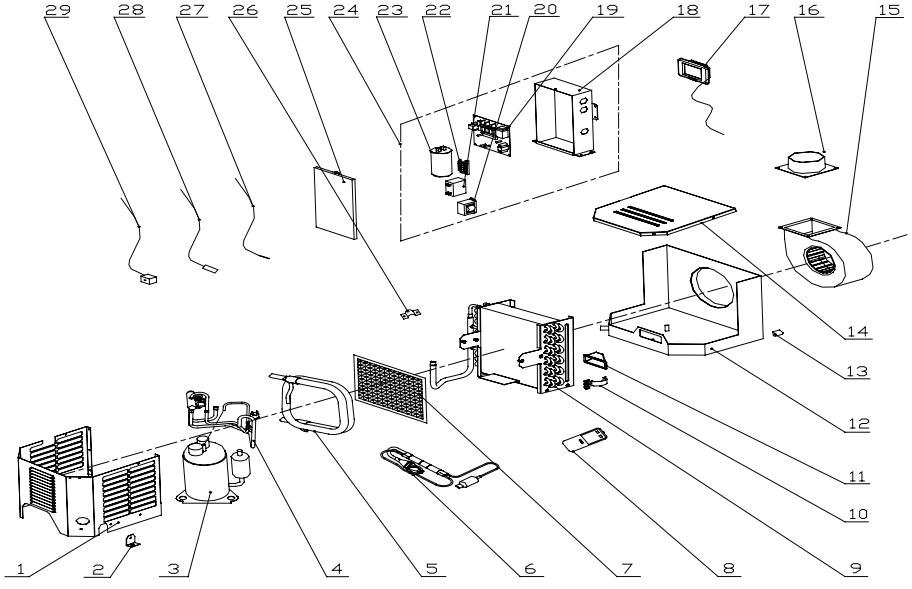
14) Model: CYR16/Na-K
Exploded View:



Parts List:(Product Code:EY10000120)

NO.	Name of part	Part code	Quantity
1	Compressor	00120023	1
2	Reverse valve assy	04143902	1
3	Condenser coil	01139405	1
4	Capillary assy	04103909	1
5	Filter	11129402	1
6	Remote controller	30515028	1
7	Evaporator assy	01039405	1
8	Condenser fixer	021400054	1
9	Handle	26235401	1
10	Clamp	01729602	4
11	Drain pipe	01279460	2
12	Base/pan	01283918	1
13	Cover assy	01259404	1
14	Blower assy	15403913	1
15	Duct connecter	06329402	1
16	Display panel	30295002	1
17	Electric box	01409405	1
18	Main PCB	30225306	1
19	Transformer	43110239	1
20	Capacitor	33010013	1
21	Terminal	42010254	1
22	Capacitor	33010743	1
23	Electric Controller Box Assy	01393914	1
24	Electric box cover	01419405	1
25	Condenser fixer	01346004	1
26	Temperature sensor	3900020720	1
27	Temperature sensor	3900020721	1
28	solenoid coil	430004005	1

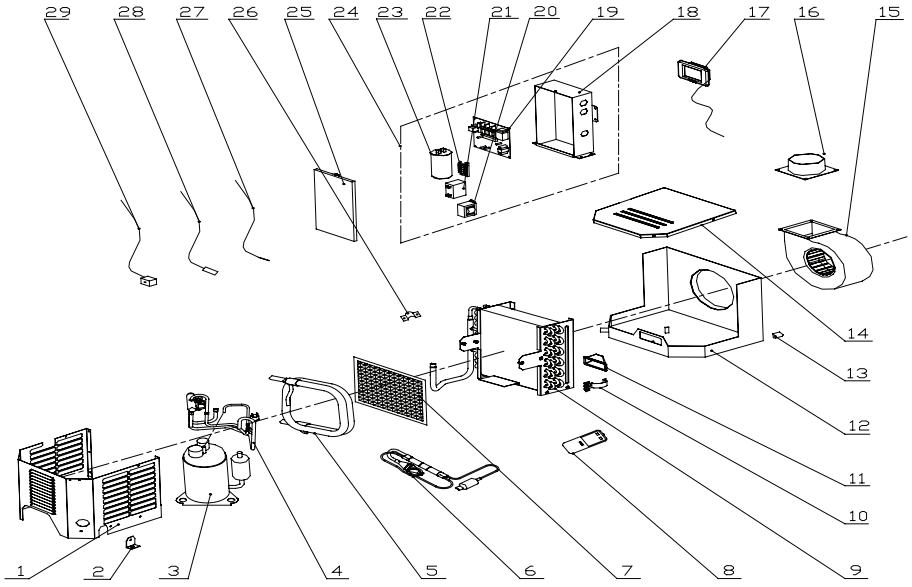
15) Model: CYR5/NaB-A
Exploded View:



Parts List:(Product Code:EY10000240)

NO.	Name of part	Part code	Quantity
1	Outer shell	01513907P	1
2	Clamp	01843916P	3
3	Compressor	00203903	1
4	Reverse valve assy	04144003	1
5	Condenser coil	00903906	1
6	Capillary assy	04103918	1
7	Filter	11129405	1
8	Remote controller	30515028	1
9	Evaporator assy	01053924	1
10	Condenser fixer	01346002	1
11	Handle	26233100	1
12	Base/pan	01284004	1
13	Drain pipe	01279460	2
14	Cover assy	01263958	1
15	Blower assy	15009408	1
16	Duct connecter	06329401	1
17	Display panel	30295002	1
18	Electric box	01409405	1
19	Main PCB	30225313	1
20	Transformer	43110008	1
21	Capacitor	33010069	1
22	Terminal	42010254	1
23	Capacitor	33000045	1
24	Electric Controller Box Assy	01394036	1
25	Electric box cover	01419405	1
26	Condenser fixer	021400054	1
27	Temperature sensor	3900020720	1
28	Temperature sensor	3900020721	1
29	solenoid coil	430004005	1

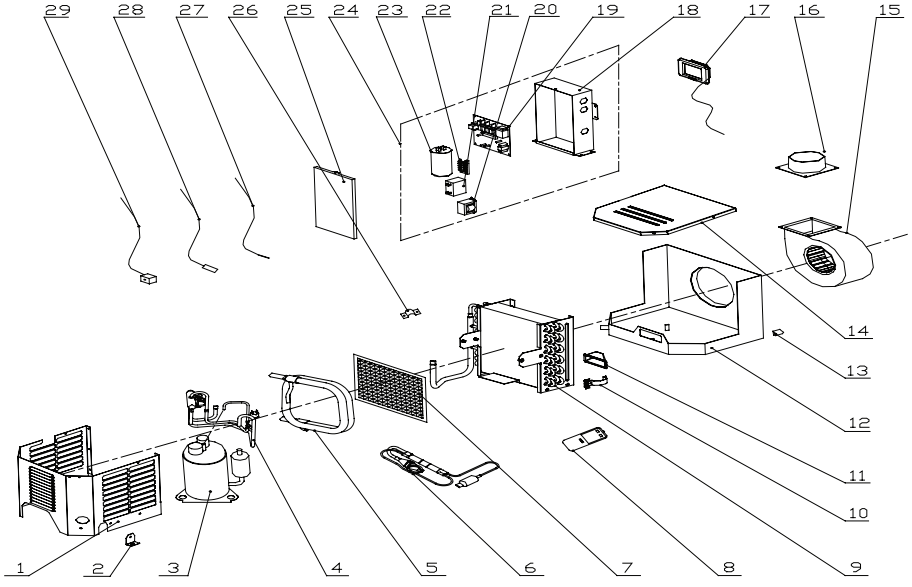
16) Model: CYR9/NaB-A
Exploded View:



Parts List:(Product Code:EY10000250)

NO.	Name of part	Part code	Quantity
1	Outer shell	01513906P	1
2	Clamp	01843916P	3
3	Compressor	00203906	1
4	Reverse valve assy	04143916	1
5	Condenser coil	00903905	1
6	Capillary assy	04103917	1
7	Filter	11129404	1
8	Remote controller	30515028	1
9	Evaporator assy	01053921	1
10	Condenser fixer	01346002	1
11	Handle	26235401	1
12	Base/pan	01283993	1
13	Drain pipe	01279460	2
14	Cover assy	01263956	1
15	Blower assy	15009401	1
16	Duct connecter	06329401	1
17	Display panel	30295002	1
18	Electric box	01409405	1
19	Main PCB	30225313	1
20	Transformer	43110008	1
21	Capacitor	33010069	1
22	Terminal	42010254	1
23	Capacitor	33000001	1
24	Electric Controller Box Assy	01393967	1
25	Electric box cover	01419405	1
26	Condenser fixer	021400054	1
27	Temperature sensor	3900020720	1
28	Temperature sensor	3900020721	1
29	solenoid coil	430004005	1

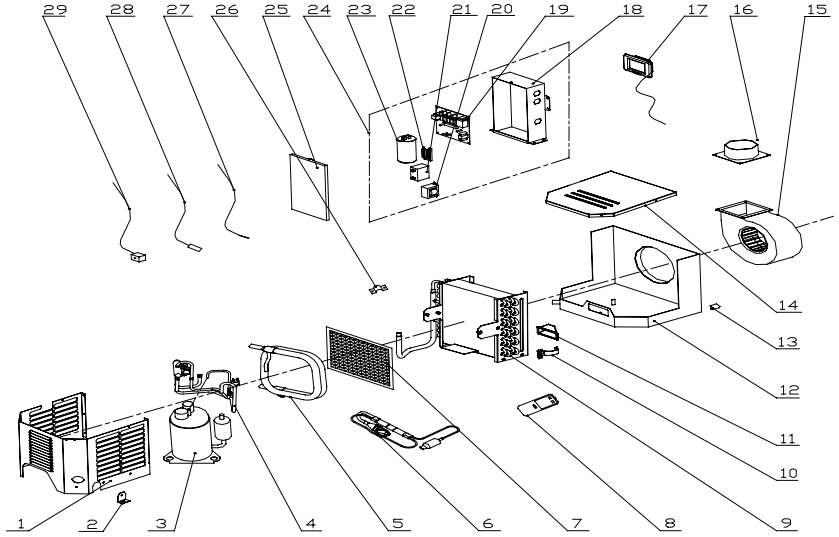
17) Model: CYR12/NaB-A
Exploded View:



Parts List:(Product Code:EY10000260)

NO.	Name of part	Part code	Quantity
1	Outer shell	01513904P	1
2	Clamp	01843916P	3
3	Compressor	00203907	1
4	Reverse valve assy	04143915	1
5	Condenser coil	01153917	1
6	Capillary assy	04103931	1
7	Filter	11129403	1
8	Remote controller	30515028	1
9	Evaporator assy	01053920	1
10	Condenser fixer	01346002	1
11	Handle	26235401	1
12	Base/pan	01283990	1
13	Drain pipe	01279460	2
14	Cover assy	01263954	1
15	Blower assy	15009405	1
16	Duct connecter	06329402	1
17	Display panel	30295002	1
18	Electric box	01409405	1
19	Main PCB	30225313	1
20	Transformer	43110008	1
21	Capacitor	33010069	1
22	Terminal	42010254	1
23	Capacitor	33000001	1
24	Electric Controller Box Assy	01393966	1
25	Electric box cover	01419405	1
26	Condenser fixer	021400054	1
27	Temperature sensor	3900020720	1
28	Temperature sensor	3900020721	1
29	solenoid coil	430004005	1

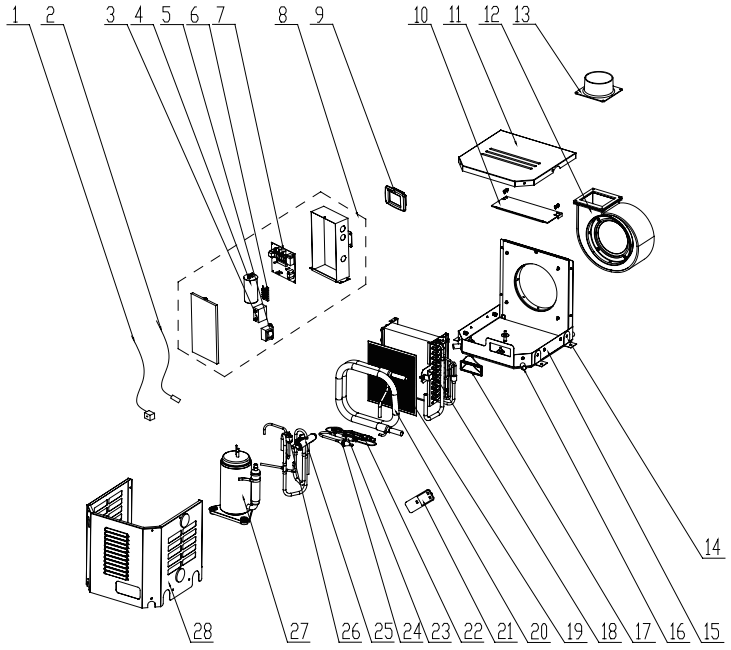
18) Model: CYR16/NaB-A
Exploded View:



Parts List:(Product Code:EY10000270)

NO.	Name of part	Part code	Quantity
1	Outer shell	01513909P	1
2	Clamp	01843916P	3
3	Compressor	00203908	1
4	Reverse valve assy	04143917	1
5	Condenser coil	01153922	1
6	Capillary assy	04103932	1
7	Filter	11129402	1
8	Remote controller	30515028	1
9	Evaporator assy	01053925	1
10	Condenser fixer	01346004	1
11	Handle	26235401	1
12	Base/pan	01283996	1
13	Drain pipe	01279460	2
14	Cover assy	01263960	1
15	Blower assy	15009407	1
16	Duct connecter	06329402	1
17	Display panel	30295002	1
18	Electric box	01409405	1
19	Main PCB	30225313	1
20	Transformer	43110008	1
21	Capacitor	33010069	1
22	Terminal	42010254	1
23	Capacitor	33000039	1
24	Electric Controller Box Assy	01393968	1
25	Electric box cover	01419405	1
26	Condenser fixer	021400055	1
27	Temperature sensor	3900020720	1
28	Temperature sensor	3900020721	1
29	solenoid coil	430004005	1

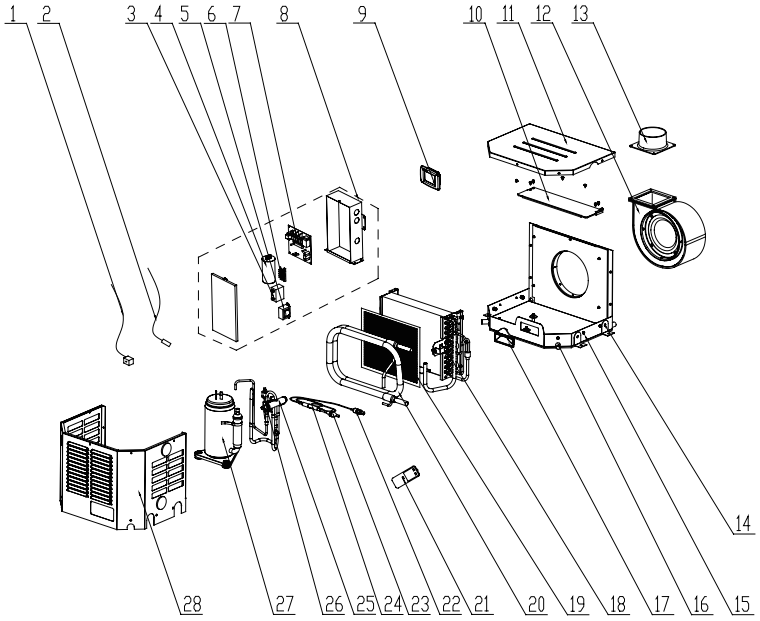
19) CYR5/NaB-T
Exploded View:



Parts List:(Product Code: EY10000440)

NO.	Name of part	Part code	Quantity
1	Magnet Coil	430004005	1
2	Ambient Temperature Sensor	3900020721	1
3	Capacitor CBB61	33010010	1
4	Capacitor CBB65	33010045	1
5	Transformer	43110239	1
6	Terminal Board	42010254	1
7	Main Board	30225314	1
8	Electric Controller Box Assy	01393965	1
9	Display Board	30295000003	1
10	Seal Board Sub-Assy	01343900004	1
11	Cover Plate	01263900002P	1
12	Fan motor Assy	15009412	1
13	Duct Connecter	06329401	1
14	Retaining Plate	01843916P	4
15	Base Frame Assy	01283900009	1
16	Drainage hose	01279460	4
17	Left Handle	26235401	1
18	Evaporator Assy	01023900006	1
19	Filter	11129405	1
20	Double Pipe Condenser	01139402	1
21	Filter	0721302601	1
22	Remote Controller	30515028	1
23	One Way Valve	0713010301	1
24	StrainerA	07210022	1
25	4-Way Valve	430004022	1
26	Pressure Protect Switch	46020006	1
27	Compressor and Fittings	00203920	1
28	Cabinet Sub-assy	01513900004P	1

20) CYR9/NaB-T
Exploded View:

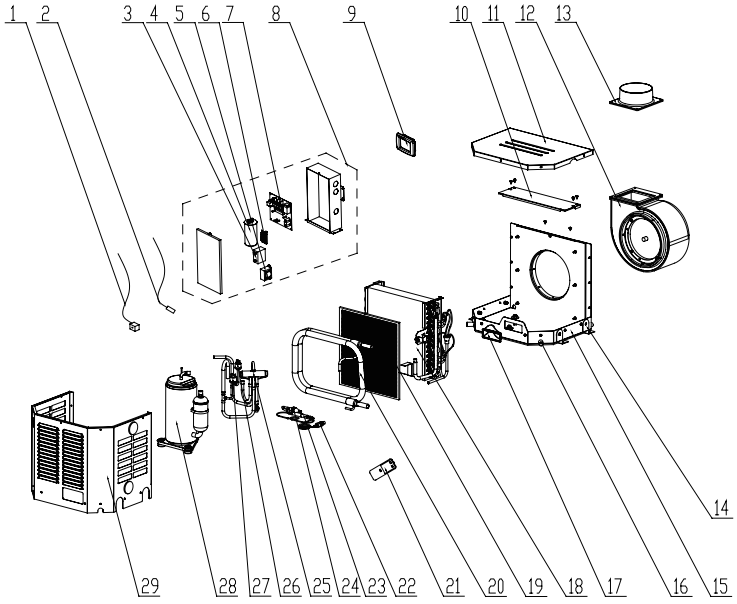


Parts List:(Product Code: EY10000450)

NO.	Name of part	Part code	Quantity
1	Magnet Coil	430004005	1
2	Ambient Temperature Sensor	3900020721	1
3	Capacitor CBB61	33010013	1
4	Capacitor CBB65	33000017	1
5	Transformer	43110239	1
6	Terminal Board	42010254	1
7	Main Board	30225314	1
8	Electric Controller Box Assy	01393924	1
9	Display Board	30295000003	1
10	Seal Board Sub-Assy	01343900008	1
11	Cover Plate	01263900004P	1
12	Fan motor Assy	15009411	1
13	Duct Connecter	06329401	1
14	Retaining Plate	01843916P	4
15	Base Frame Assy	01283900015	1
16	Drainage hose	04363901	4
17	Left Handle	26235401	1
18	Evaporator Assy	01023900005	1
19	Filter	11129404	1
20	Double Pipe Condenser	01139401	1
21	Remote Controller	30515028	1
22	Filter	0721302601	1
23	StrainerA	07210022	1
24	One Way Valve	0713010301	1
25	4-Way Valve	430004022	1
26	Pressure Protect Switch	46020006	1
27	Compressor and Fittings	00203921	1
28	Cabinet Sub-assy	01513900008P	1

21) CYR12/NaB-T

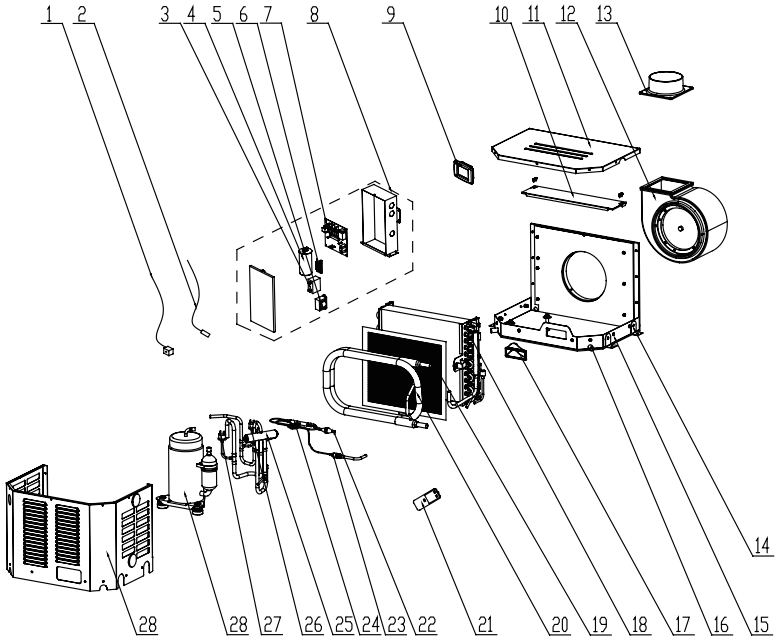
Exploded View:



Parts List:(Product Code: EY10000460)

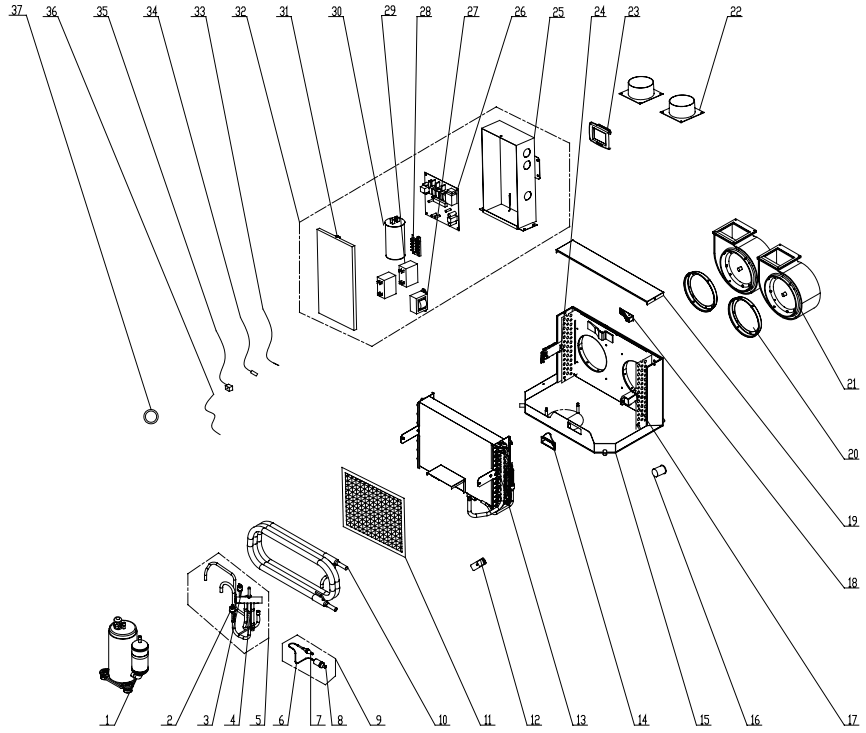
NO.	Name of part	Part code	Quantity
1	Magnet Coil	430004005	1
2	Ambient Temperature Sensor	3900020721	1
3	Capacitor CBB61	33010010	1
4	Capacitor CBB65	33010743	1
5	Transformer	43110239	1
6	Terminal Board	42010254	1
7	Main Board	30225314	1
8	Electric Controller Box Assy	01393925	1
9	Display Board	30295000003	1
10	Seal Board Sub-Assy	01343900001	1
11	Cover Plate	01263900001P	1
12	Fan motor Assy	15403936	1
13	Duct Connecter	06329402	1
14	Retaining Plate	01843916P	4
15	Base Frame Assy	01283900004	1
16	Drainage hose	01279460	4
17	Left Handle	26235401	1
18	Evaporator Assy	01023900004	1
19	Filter	11129403	1
20	Double Pipe Condenser Sub-assy	01139404	1
21	Filter	07213026	1
22	Remote Controller	30515028	1
23	One Way Valve	07130103	1
24	StrainerA	07210022	1
25	4-Way Valve	430004022	1
26	Pressure Protect Switch	46020006	1
27	Pressure Protect Switch	46020007	1
28	Compressor and Fittings	00203918	1
29	Cabinet Sub-assy	01513900002P	1

22) CYR16/NaB-T
Exploded View:



Parts List:(Product Code: EY10000470)

NO.	Name of part	Part code	Quantity
1	Magnet Coil	430004005	1
2	Ambient Temperature Sensor	3900020721	1
3	Capacitor CBB61	33010013	1
4	Capacitor CBB65	33000018	1
5	Transformer	43110239	1
6	Terminal Board	42010254	1
7	Main Board	30225314	1
8	Electric Controller Box Assy	01393990	1
9	Display Board	30295000003	1
10	Seal Board Sub-Assy	01343900006	1
11	Cover Plate	01263900003P	1
12	Fan motor Assy	15403913	1
13	Duct Connecter	06329402	1
14	Retaining Plate	01729602	4
15	Base Frame Assy	01283900012	1
16	Drainage hose	04363901	4
17	Left Handle	26235401	1
18	Evaporator Assy	00903900001	1
19	Filter	11129402	1
20	Double Pipe Condenser Sub-assy	01153913	1
21	Remote Controller	30515028	1
22	Filter	07213026	1
23	StrainerA	07210022	1
24	One Way Valve	07130103	1
25	4-Way Valve	430004032	1
26	Pressure Protect Switch	46020006	1
27	Pressure Protect Switch	46020007	1
28	Compressor and Fittings	00203919	1
29	Cabinet Sub-assy	01513900006P	1



Parts List:(Product Code: EY10000480)

NO.	Name of part	Quantity	Part code
1	Compressor and Fittings	00203900001	1
2	Pressure Switch	46020007	1
3	Pressure Switch	46020006	1
4	4-Way Valve	430004032	1
5	4-Way Valve Assy	04043900001	1
6	Capillary	81020167	1
7	Filter A	07210022	1
8	Filter	0722002902	1
9	Capillary Sub-Assy	04003900001	1
10	Tube in Tube Heat Exchanger	00903910	1
11	Filter Screen	11723905	1
12	Remote Controller	30515028	1
13	Evaporator Assy	01023930	1
14	Left Handle	26235401	1
15	Base Frame Assy	01283900003	1
16	Drain Pipe	04363901	4
17	Wire Clamp	02263903	1
18	Small Handle	26233100	1
19	Cover Plate Assy	01263972	1
20	Diversion Circle	01523902	1
21	Centrifugal Fan Assy	15403950	1
22	Duct Connector	06329402	2
23	Display Board	30295002	1
24	Pressure Plate Sub-Assy	01343923	1
25	Electric Control Box	01423933	1
26	Main Board	30225314	1
27	Transformer	43110239	1
28	Terminal Board	42010254	1

29	Capacitor CBB61	33010010	2
30	Capacitor	3300008102	1
31	Electric Control Box Cover	01423934	1
32	Electric Control Box Assy	01393900003	1
33	Thermistor	/	1
34	Ambient Temperature Sensor	3900020721	1
35	Solenoid Coil	430004005	1
36	Signal Wire	400300412	1
37	Rubber Grommet	76813902	3

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