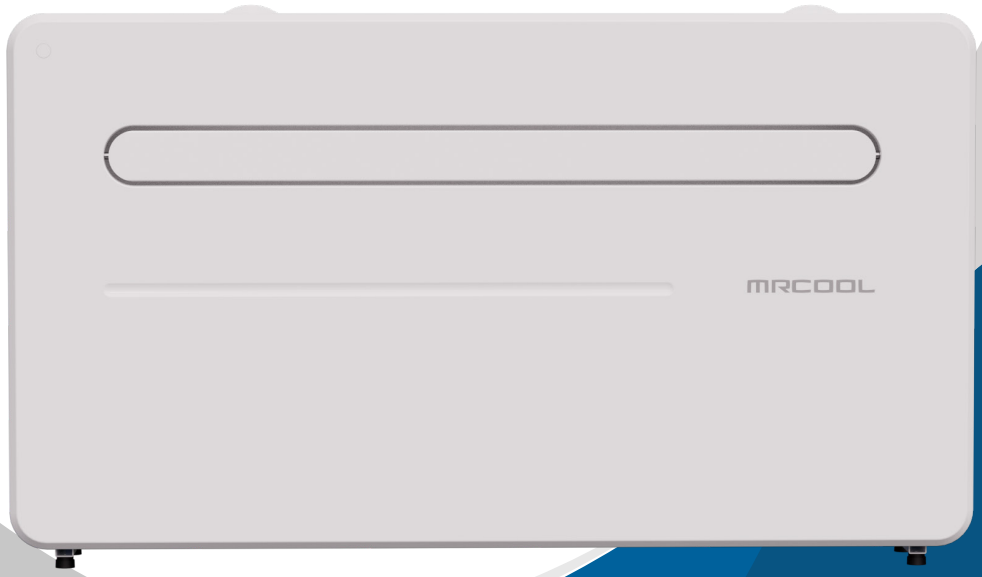
This product utilizes **R-32** *refrigerant*

Monoblock MTHP Series

SERVICE MANUAL

MODELS:

MDM10115D



Read this manual carefully before installation and keep it where the operator can easily find it for future reference.

Due to updates and constantly improving performance, the information and instructions within this manual are subject to change without notice.

Version Date: April 28, 2026

Please visit www.mrcool.com/documentation to ensure you have the latest version of this manual.

MRCOOL®

COMFORT MADE SIMPLE

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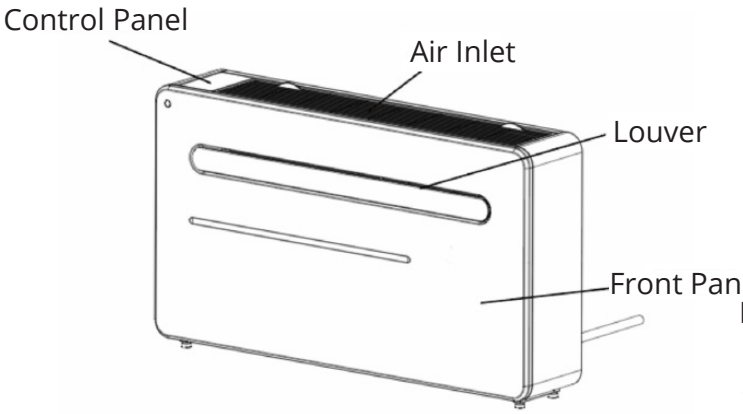
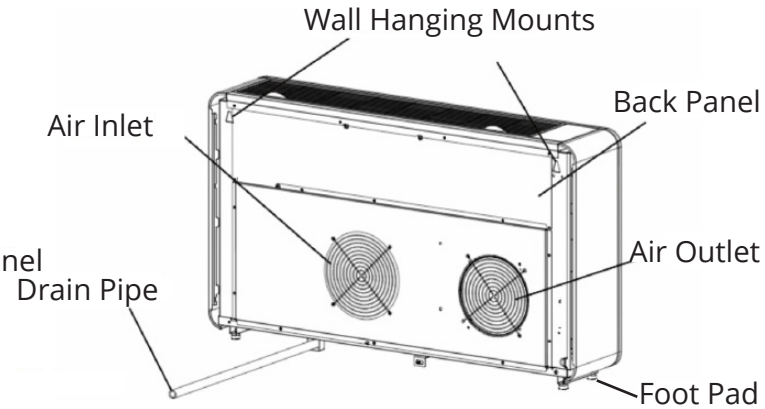
1.1 Product Overview

Front



Back



1.2 Disassembly

Top Disassembly

1. Lift the tabs (as shown in the picture) to remove the air filter.

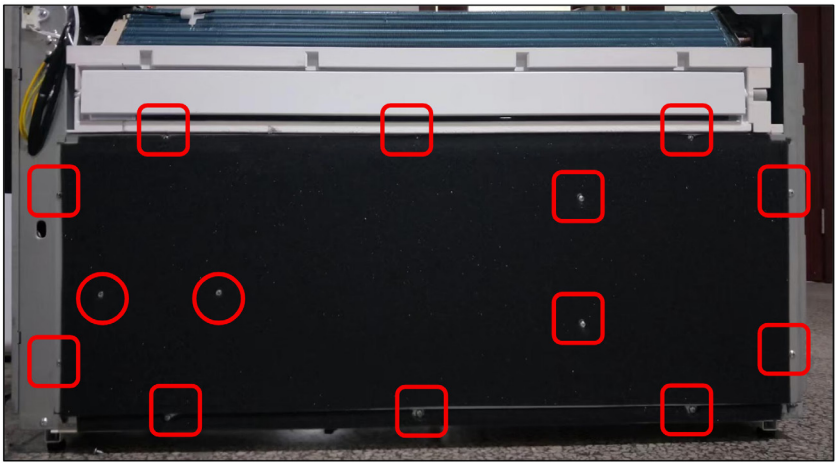
2. Use a Phillips screwdriver to remove the screws (as shown in the image). After doing so the decorative cover an be removed. Note: the screw size is ST3.9x12.

Front Cover Disassembly

• Use a Phillips screwdriver to remove the four screws (as shown in the image). After doing so the front panel can then be removed.

Note: The screw size is ST3.9x10.

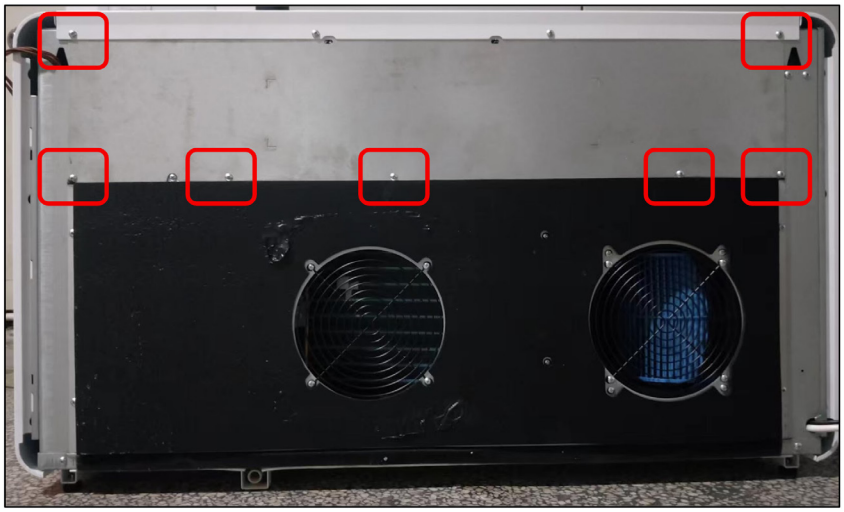
Front Cover Disassembly



1. Use a Phillips screwdriver to remove the 14 screws (as shown in the image), then the front cover can be removed.

Note: The screw size is ST3.9x10 (the 12 that are shown with a square in the image). The screw size is ST3.9x16 (the 2 that are circled in the image).

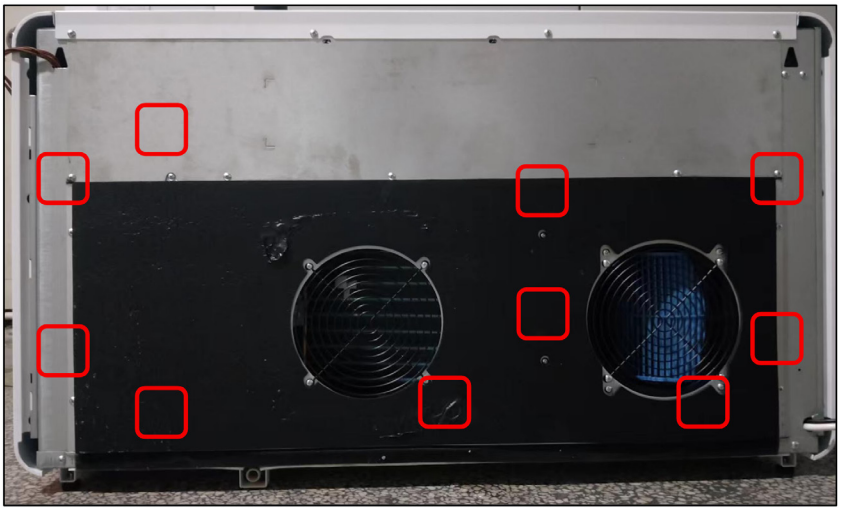
Back Upper Panel Disassembly



1. Use a Phillips screwdriver to remove the 7 screws (as shown marked in the image), then remove the back piece.

Note: The screw size is ST3.9x10.

Rear Lower Cover Disassembly



1. Use a Phillips screwdriver to remove the 10 screws (as shown in the image) then you can remove the rear cover and the lower airway.

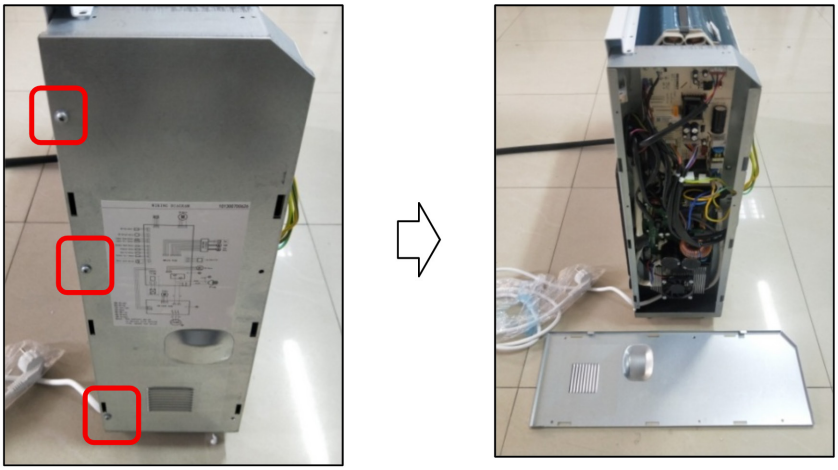
Note: The screw size is ST3.9x10.

Right Panel Disassembly

• Use a Phillips screwdriver to remove the 5 screws (as shown in the image) then you can remove the right support plate.

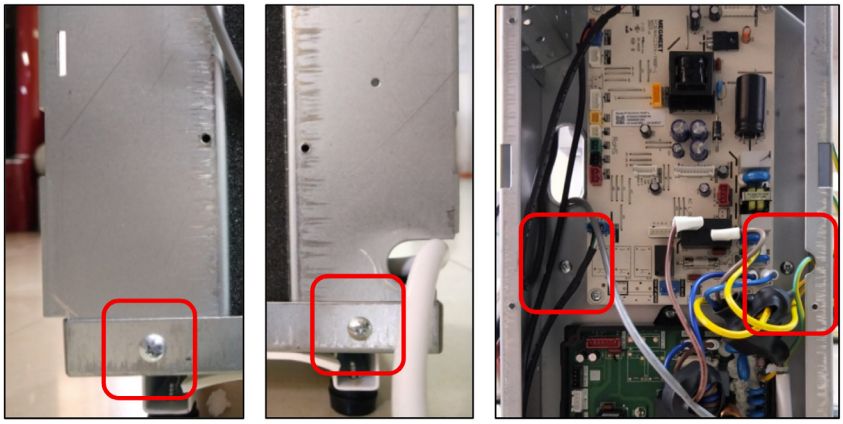
Note: The screw size is ST3.9x10.

Left Panel Disassembly



1. Use a Phillips screwdriver to remove the 3 screws (as shown in the image) then you can remove the electronic control box cover.

Note: The screw size is ST3.9x10.



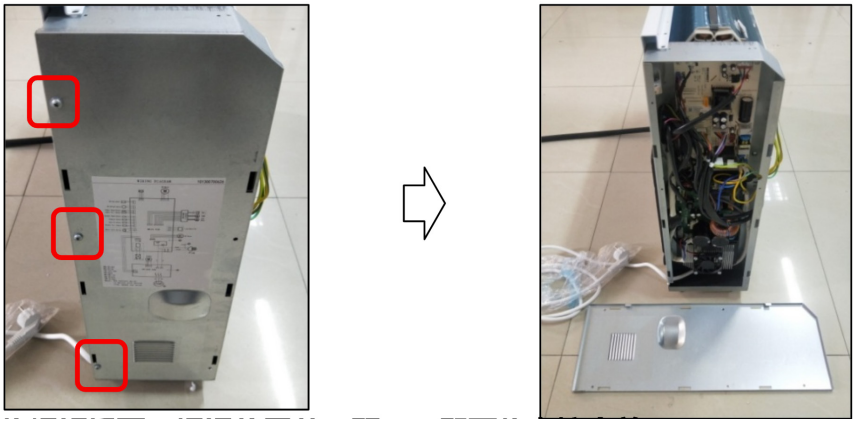
2. Remove the plug.

Note: Some parts can be plugged in (WiFi plug, fan plug, power cord, control board connection line).

3. Use a Phillips screwdriver to remove the 4 screws (as shown in the image), then the control board can be removed.

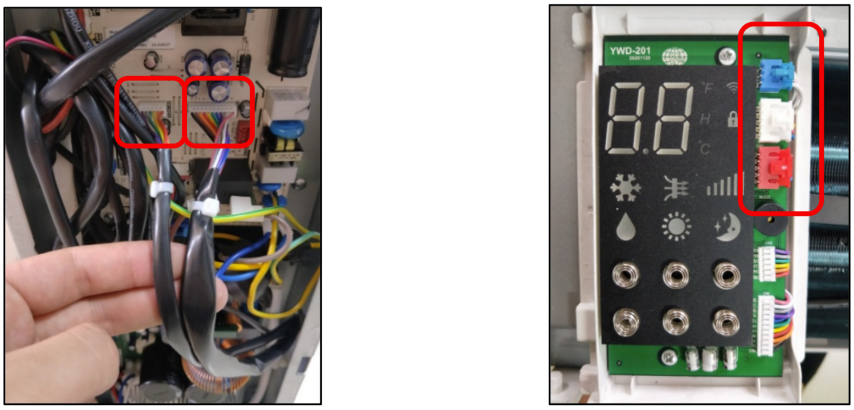
Note: The screw size is ST3.9x10.

Display Board Disassembly



1. Use a Phillips screwdriver to remove the 3 screws (as shown in the image) then you can remove the electronic control box cover.

Note: The screw size is ST3.9x10.

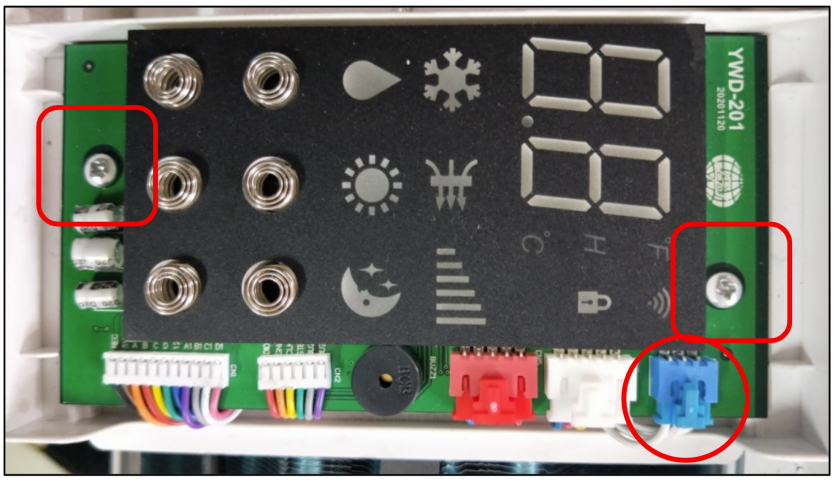


2. Unplug the harness (there are 5 marked positions).

3. Use a Phillips screwdriver to remove the 2 screws (as shown in the image), then the display board can be removed.

Note: The screw size is ST2.9x8.

Remote Receiving Board Disassembly



1. Use a Phillips screwdriver to remove the 2 screws (as shown in the image).

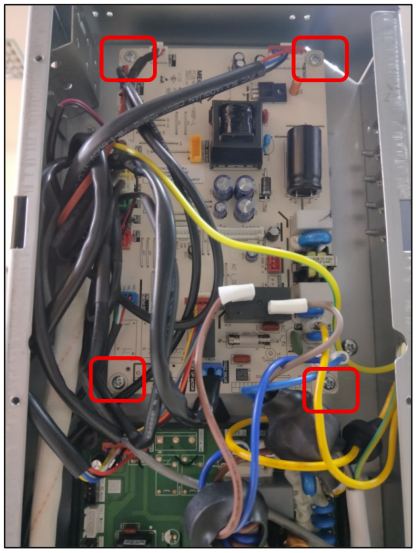
Note: The screw size is ST2.9x8.

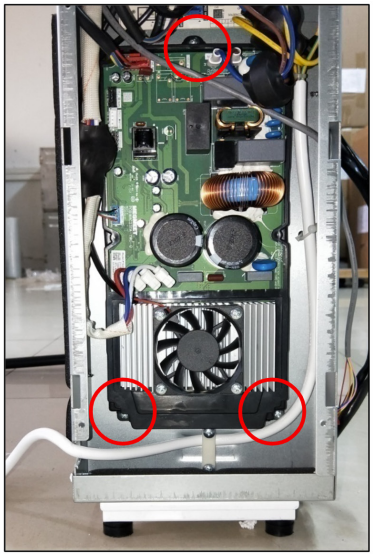
2. Pull out the plug-in end (the ones that are circled).

3. Use a Phillips screwdriver to remove the one screw (as shown in the image), then the remove receiving board can be removed.

Note: The screw size is ST2.9x8.

Control Board Disassembly

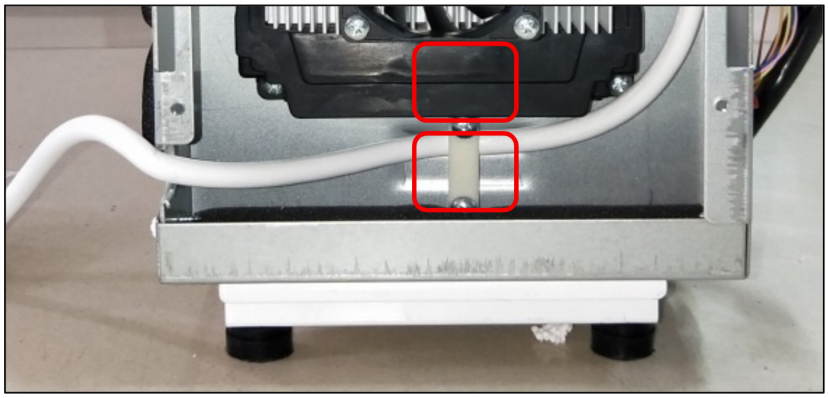




• Use a Phillips screwdriver to remove the 4 screws (as shown square in the image), then the control board can be removed.

Note: The screw size is ST2.9x10.

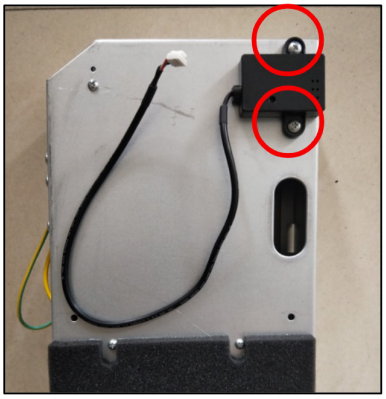
Power Cord Removal



• Use a Phillips screwdriver to remove the 2 screws (as shown in the image), then the power cord can be removed.

Note: The screw size is ST3.9x16.

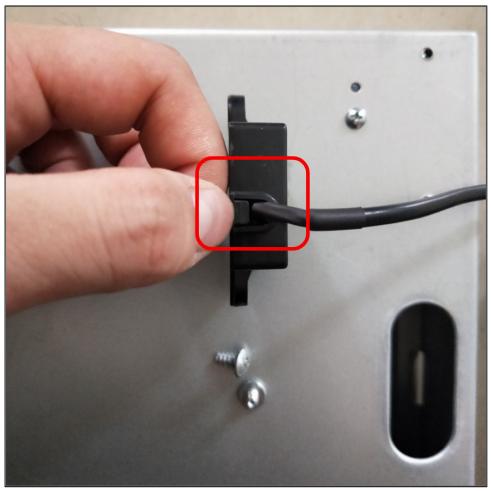
Disassembly of WiFi Module



1. Unplug the connector end show in the first image.

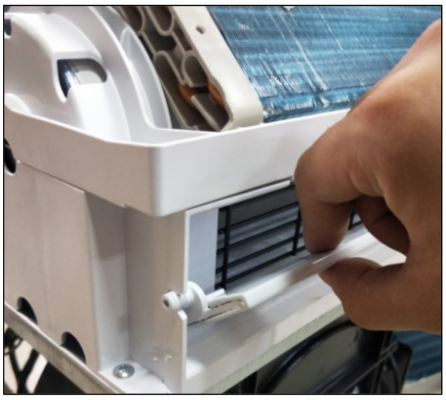
2. Use a Phillips screwdriver to remove the 2 screws shown in the second image. Then the WiFi box can be removed.

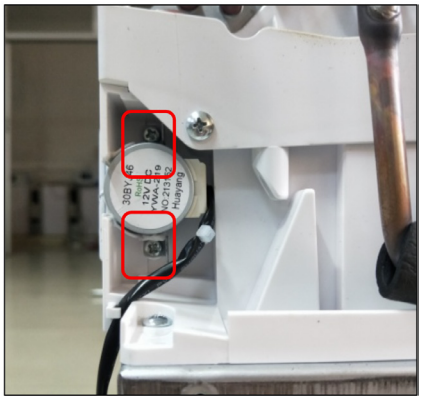
Note: The screw size is ST3.0x10.



3. Remove the WiFi box cover by tilting the position shown in the image, then the WiFi module can be taken out.

Stepper Motor Disassembly



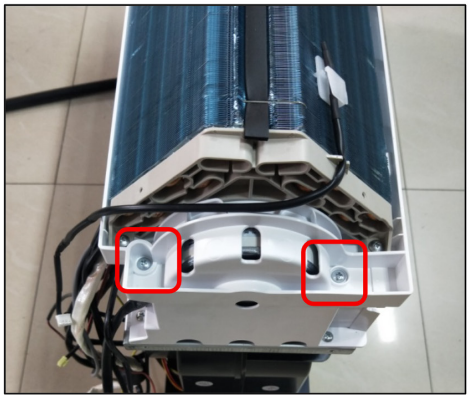


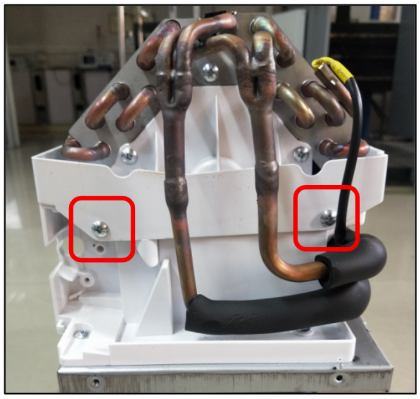
1. Rotate the louver (as shown in the first image) and pull it out from the end to remove.

2. Use a Phillips screwdriver to remove the 2 screws (shown in the second image), then the stepper motor can be removed.

Note: The screw size is ST3.9x8.

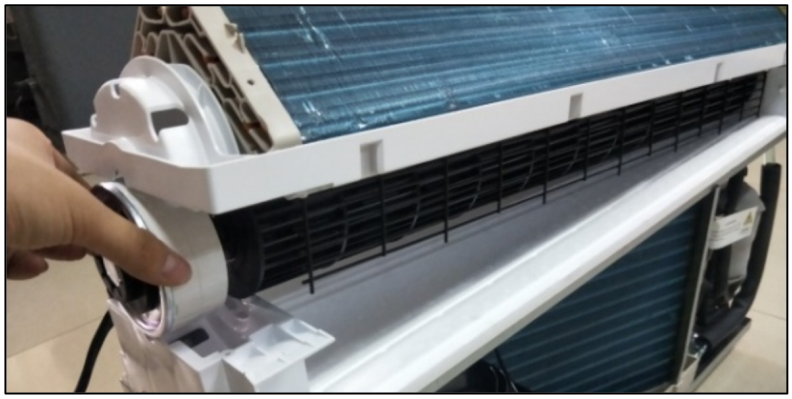
Blower Disassembly



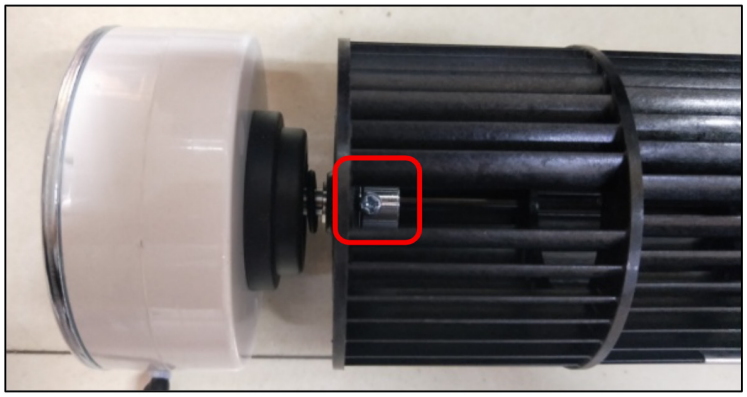


1. Use a Phillips screwdriver to remove the 4 screws (as shown in the image).

Note: The screw size is ST3.9x12.



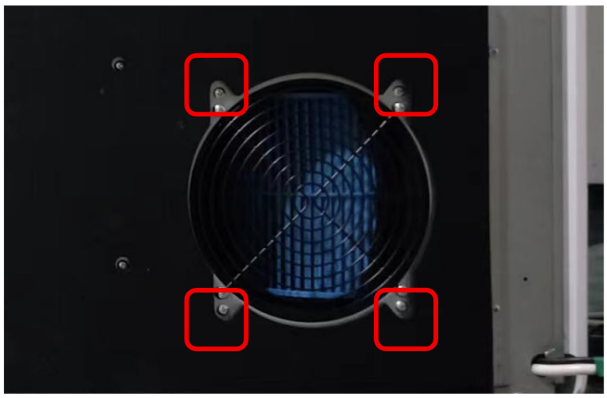
2. After the drain pan is lifted, pull out the blower motor and wheel.



3. Use a Phillips screwdriver to remove the 1 screw (as shown in the image), then the blower motor can be removed.

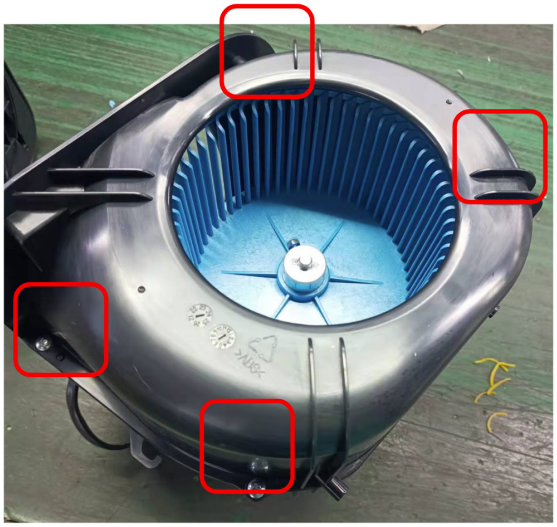
Note: The bolt size is M4x8.

Condenser Fan Motor Disassembly



1. Use a Phillips screwdriver to remove the 4 screws (as shown in the image) to remove the air duct.

Note: The screw size is ST3.9x16.

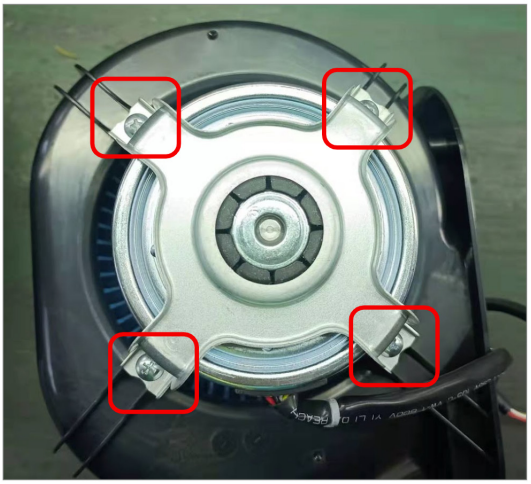


2. Use a Phillips screwdriver to remove the 4 screws (shown in the image) to remove half of the wheels shell.

Note: The screw size is ST3.9x16.

3. Use a wrench to remove the 1 bolt to take off the wheel.

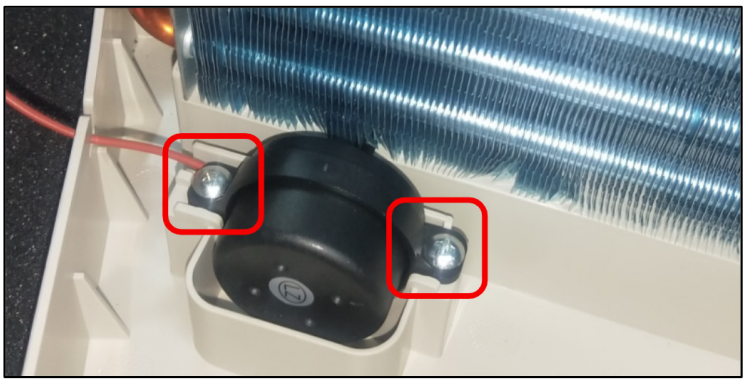
Note: The size of the bolt is M6x8.

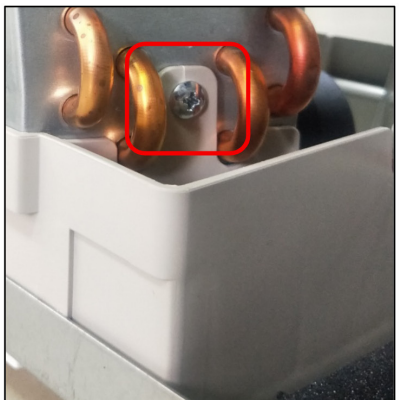


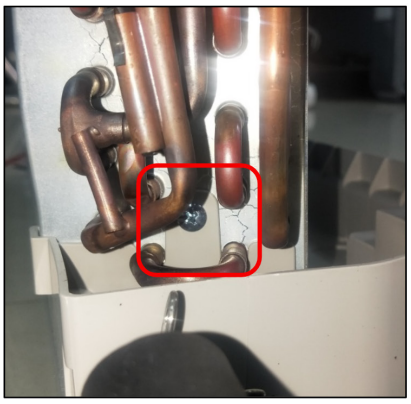
4. Use a Phillips screwdriver to remove the 4 screws (shown in the image), then the motor can be removed.

Note: The screw size is ST3.9x16.

Splash Motor Disassembly







1. Use a Phillips screwdriver to remove the 2 screws shown in the first image.

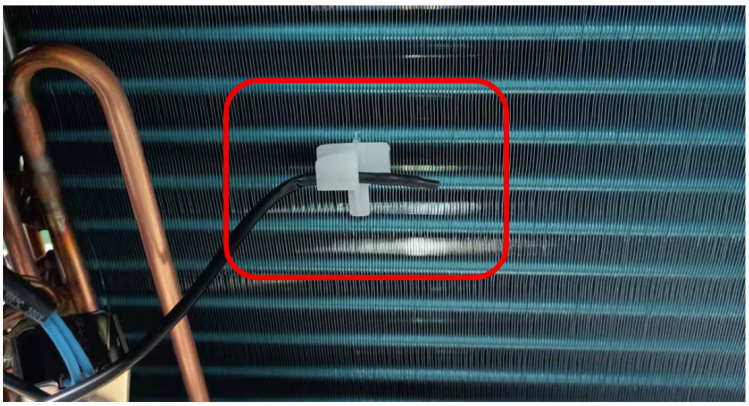
Note: The screw size is ST3.9x12.

2. Use a screwdriver to remove the 2 screws shown in the bottom images.

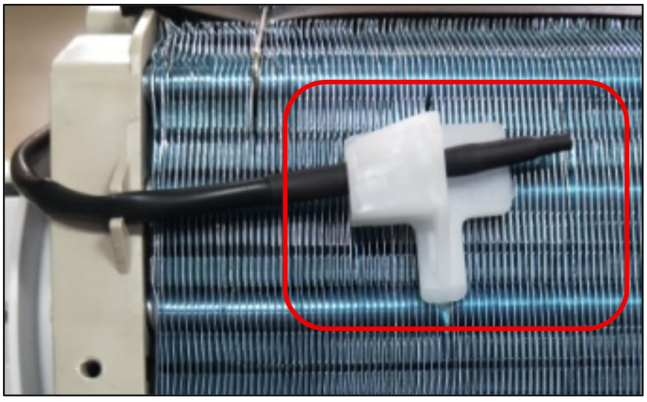
Note: The screw size is ST3.9x12.

3. Lift the upper part of the water pump motor to take out the water splash motor.

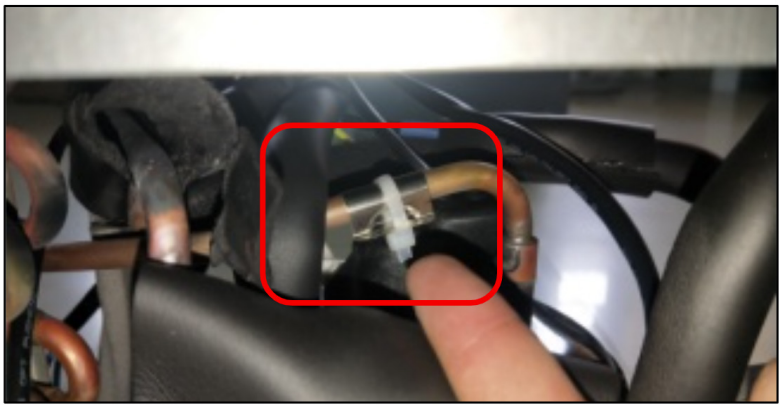
Sensor Removal



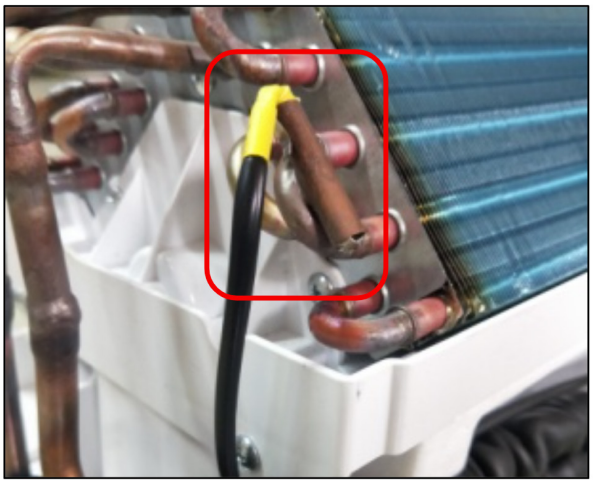
1. The image shown above is for the outdoor temperature sensor.



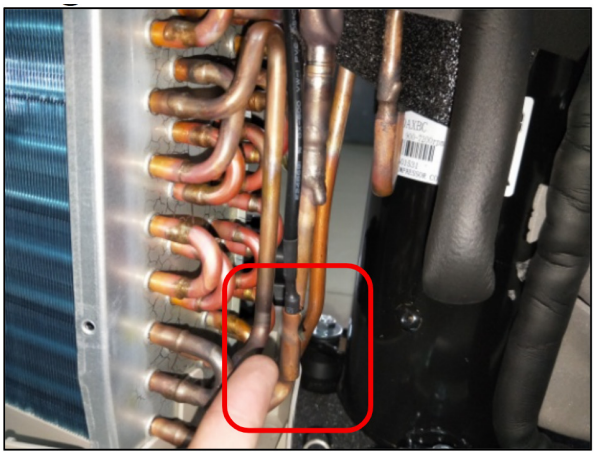
2. The image shown above is for the indoor temperature sensor.



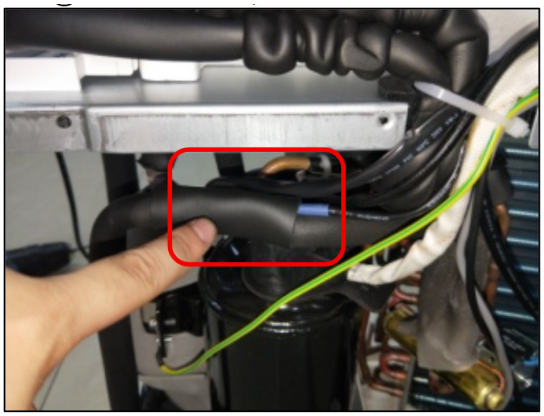
3. The image shown above is for the exhaust pipe temperature sensor. To remove use snips to cut the zip tie then take off.



4. The image shown above is for the evaporator temperature sensor.

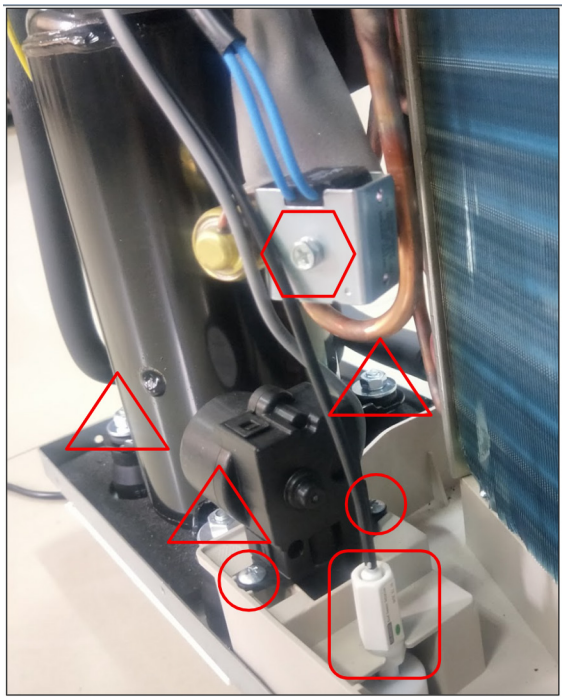


5. The image shown above is for the condenser temperature sensor.



6. The image shown above is for the suction pipe temperature sensor.

Other Electronic Disassembly



1. Use a Phillips screwdriver to remove the 2 screws (shown circled), then the drain valve assembly can be removed.

Note: The screw size is ST3.9x12.

2. Use a Phillips screwdriver to remove the bolt (shown in the hexagon), then the four-way valve coil can be removed.

Note: The bolt size is M5x10.

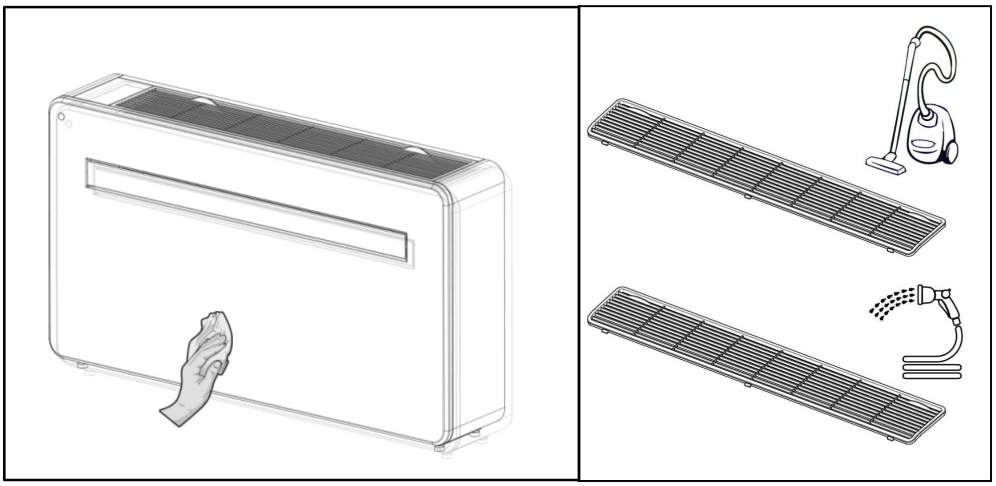
3. Use a wrench to remove the 3 nuts (shown in the triangle), then the compressor can be removed.

Note: The nut size is M8.

4. Manually rotate the plastic column (shown in the square) counterclockwise to remove the float assembly.

1.3 Maintenance

Air Filter Cleaning



1. Be sure to turn off the unit and pull out the plug before cleaning.
2. Take precautions when cleaning the inside of the unit.
3. Use a semi-damp cloth or a neutral detergent to clean the surface. Do not use chemical solvents such as benzene, gasoline, alcohol, etc. to clean the unit.

1.4 Troubleshooting

Issue	Possible Causes	Solutions
The unit does not work	There is no power.	Check that the unit is plugged in and the outlet has power.
	The ambient temperature is too low/high.	Only use the unit in a room with a temperature between 45°F~95°F (7°C~35°C).
	In Cooling mode, the room temperature is lower than the desired temperature. In Heating mode, the room temperature is higher than the desired temperature.	Adjust to the desired set point.
	In dehumidification (Dry) mode, the ambient temperature is low.	Make sure that the room temperature is above 63°F (17°C).
	There is direct sunlight.	Use curtains to reduce heat exposure from the sun.
The cooling or heating performance is poor	Doors or windows are open; there are a lot of people in the space; or in Cooling mode, there are other sources of heat.	Close doors and windows.
	The filter is dirty.	Clean the filter.
	The air inlet or outlet is blocked.	Clear obstructions; make sure the unit is installed as per the instructions.
The unit is leaking	The unit is not straight.	Use a level to check that the unit is horizontal. If not, remove the unit from the wall and straighten.
	The drain pipe is blocked.	Check the drain pipe to ensure that it is not blocked or constricted.
The compressor is not working	Overheat protection is operating.	Wait for 3 minutes until the temperature has lowered, then restart the machine.
The remote control is not working	The remote control is not aligned with the direction of the remote control receiver.	Move the remote control closer to the unit and make sure that the remote directly faces the units remote control receiver.
	Dead batteries.	Replace the batteries.

Note: If the recommended solutions do not work, please contact a technician or MRCOOL® at 270-366-0457 or at support@mrcool.com

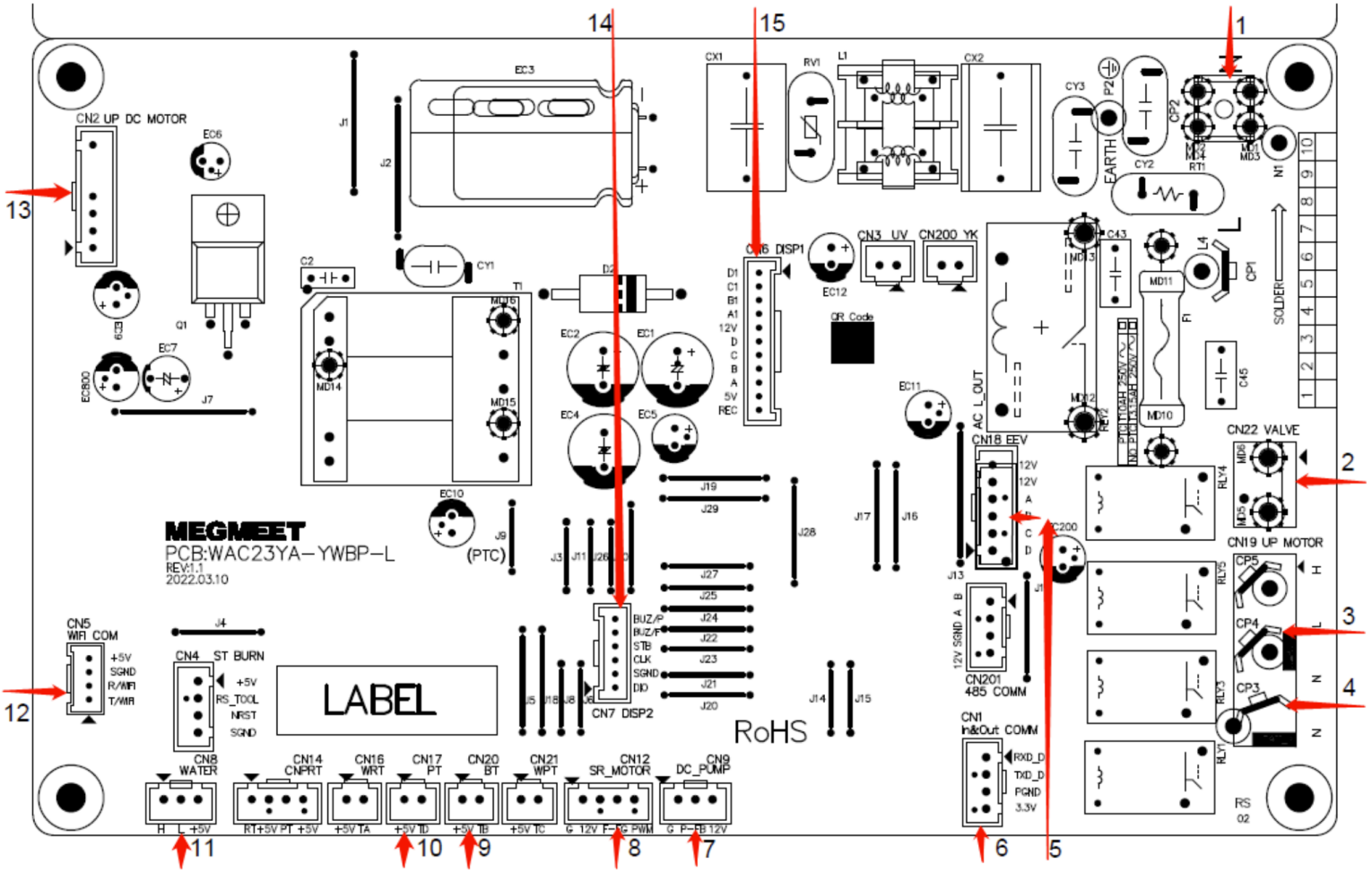
1.5 Error Codes

Fault Code	Description	Solution
F1	Compressor IPM error	1. Check if the fan works properly and the compressor wiring is correct. 2. Replace the main control board.
F2	PFC/IPM error	1. Check if the fan works properly and if the compressor wiring is correct. 2. Replace the main control board.
F3	Compressor start error	1. Check if the compressor wiring is correct and confirm the compressor is in good condition. 2. The unit will automatically recover when the protection is released. 3. Replace the main control board.
F4	Compressor running out of step	1. Excessive system load; check heat dissipation and record system pressure. 2. The unit will automatically recover when the protection is released. 3. Replace the main control board first. 4. If the fault remains, replace the compressor.
F5	Location detection loop failure	1. Check if the compressor wiring is correct and confirm the compressor is in good condition. 2. Replace the main control board first. 3. If the fault remains, replace the compressor.
F6	PCB communication error	1. Check if the indicator panel cable is securely connected. 2. Replace the display board first. 3. If fault remains, replace the main control board.
F7	Coil sensor error (outdoor)	1. Check if the sensor terminal is securely connected. 2. Replace the sensor.
F8	Sensor on suction pipe error	1. Check if the sensor terminal is securely connected. 2. Replace the sensor.
FA	Phase current overcurrent protection	1. Excessive system load; check heat dissipation and record system pressure. 2. The unit will automatically recover when the protection is released.
FE	EE error (outdoor)	1. Outdoor EE is damaged. 2. Replace the main control board.
FL	Water-full protection	1. Abnormal drainage of the system. 2. Check if the drain pipe is obstructed or if the float is stuck. 3. If fault remains, replace the main control board.
P1	Overheat protection on top of the compressor	1. Check if the outdoor air inlet/outlet is blocked. 2. Check if the voltage is too low or too high. 3. Remove the blockage and use a regulated power supply.
P2	DC bus voltage undervoltage protection	1. Check if the power supply is within the rated range. 2. The unit will automatically recover when the protection is released. 3. Use a regulated power supply.
P3	AC input voltage protection	1. Check if the power supply is within the rated range. 2. The unit will automatically recover when the protection is released. 3. Use a regulated power supply.
P4	AC overcurrent	1. Check if the power supply is within the rated range. 2. The unit will automatically recover when the protection is released. 3. Use a regulated power supply.
P5	AC undervoltage protection	1. Check if the power supply is within the rated range. 2. The unit will automatically recover when the protection is released. 3. Use a regulated power supply.

Fault Code	Description	Solution
P6	Coil tube overload protection (indoor)	1. Check if the system is low on refrigerant and if the indoor fan is working properly. 2. The unit will automatically recover when the protection is released.
P7	Defrost protection on coil tube (indoor)	1. Check if the system is low on refrigerant and if the indoor fan works properly. 2. The unit will automatically recover when the protection is released.
P8	Zero-crossing fault detection (indoor)	1. Check if the fan motor is operating. 2. Replace the fan motor.
PA	Return air sensor temperature abnormal protection	1. Check if the sensor terminal is securely connected. 2. Replace the sensor.
PC	Coil tube overload protection (outdoor)	1. Check if the system is low on refrigerant and if the system is dissipating heat properly. 2. Power off the system for 1 minute then restart to clear the error.
PE	Abnormal refrigerant circulation	1. Check if the system is low on refrigerant. 2. Find, fix leak, evacuate, and recharge.
PH	Exhaust temperature protection	1. Check if the system is low on refrigerant and if the system is dissipating heat properly. 2. Power off the system for 1 minute then restart to clear the error.
E0	Sensor on suction pipe error	1. Check if the sensor terminal is securely connected. 2. Replace the sensor.
E1	Temperature sensor error (indoor)	1. Check if the sensor terminal is securely connected. 2. Replace the sensor.
E2	Sensor error on indoor coil tube	1. Check if the sensor terminal is securely connected. 2. Replace the sensor.
E3	DC fan feedback failure (indoor)	1. Check if the motor terminal is securely connected. 2. Replace the motor.
E4	Communication error	1. Check if the communication cable is securely connected. 2. Replace the communication cable.
E5	Water-splash motor error	1. Check if the water pump motor is stuck. 2. Replace the water pump motor.
E6	Temperature sensor error (outdoor)	1. Check if the sensor terminal is securely connected. 2. Replace the sensor.
E7	Fan motor error (outdoor)	1. Check if the motor terminal is securely connected. 2. Replace the motor.
E8	Fan feedback fault	1. Check if the motor terminal is securely connected. 2. Replace the motor.
EE	EE error (indoor)	1. The indoor EE is damaged. 2. Replace the main control board.
EA	Reversing valve fault	1. Check if the four-way valve is securely connected. If not reconnect harness. 2. If connected and error remains, replace the four-way valve.
Eb	Fluoride deficiency protection	1. Check cooling/heating air output. 2. Check for leaks, replace eat exchanger or copper pipe, evacuate and recharge refrigerant.

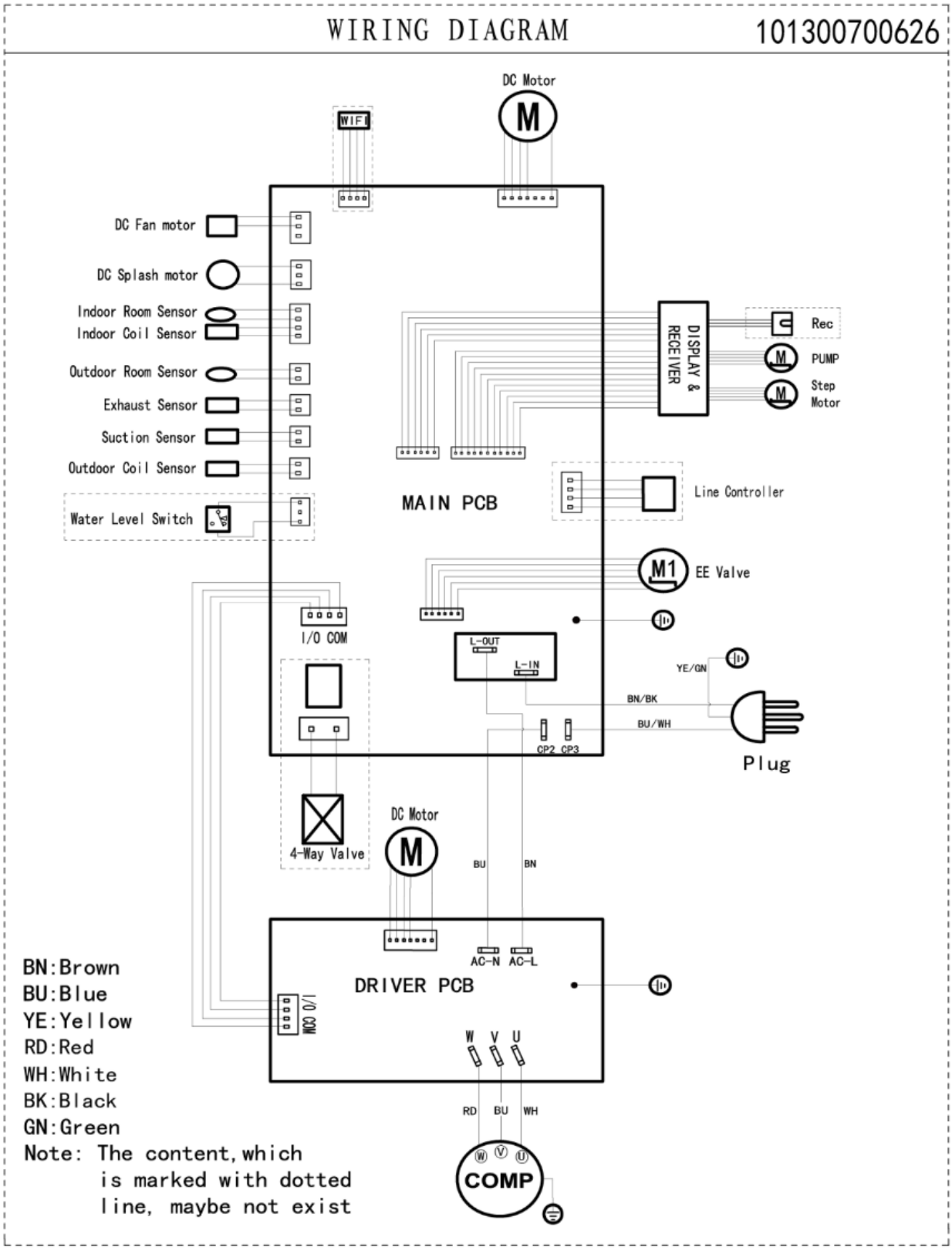
Note: When the heating light flashed, it means the unit is in defrost mode and is normal.

1.6 PCB Layout

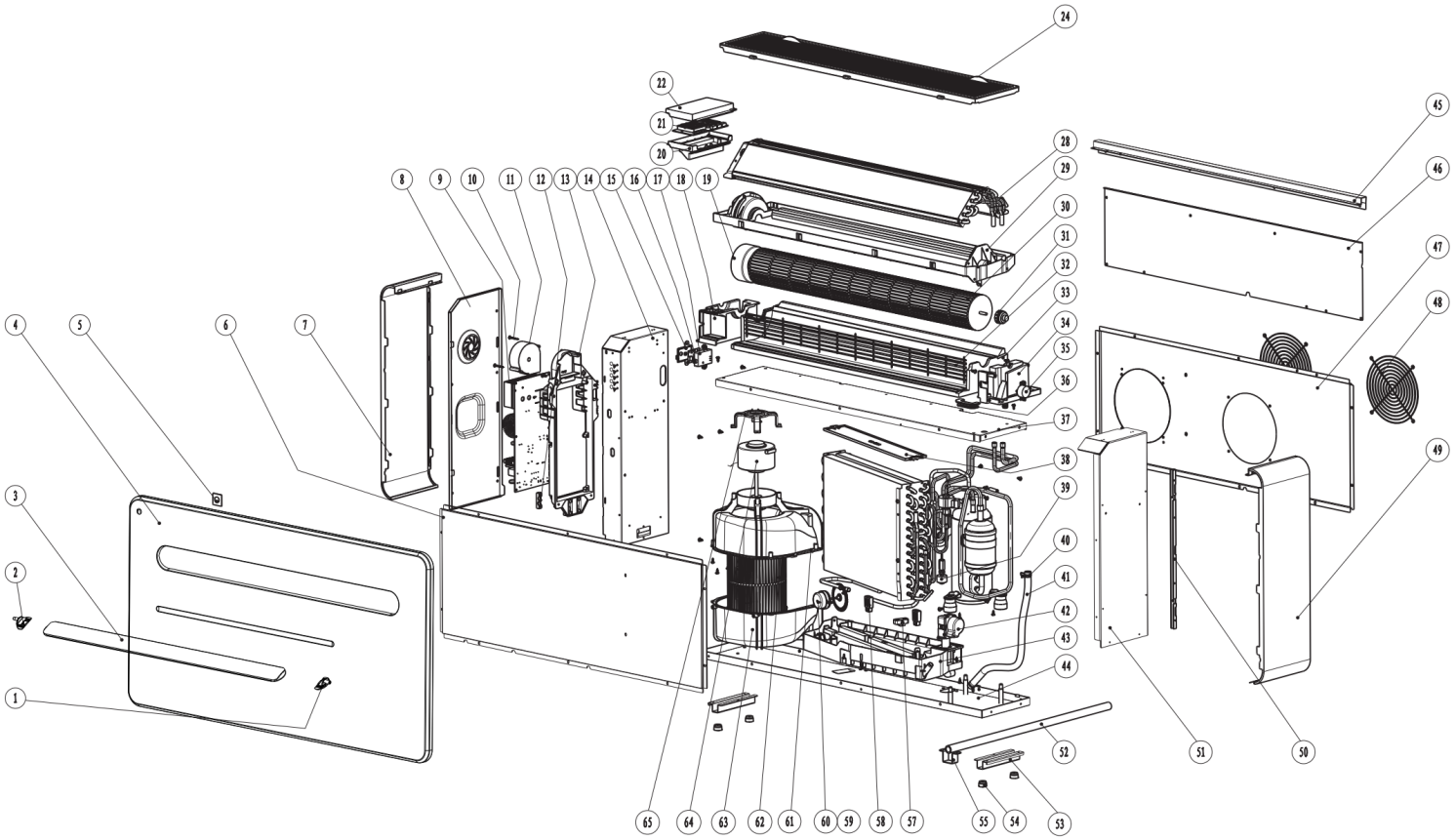


#	Name
1	N Line
2	Four-Way Valve Connector
3	L Line of Heater
4	N Line of Heater
5	Electronic Expansion Valve
6	Communication Line
7	Water Splash Motor Connector
8	Heat Elimination Fan
9	Return-Air Duct
10	Exhaust-Air Duct
11	Water Level Switch
12	Wifi
13	Indoor Fan Motor
14	Display Connector 1
15	Display Connector 2

1.7 Wiring Diagram



1.8 Parts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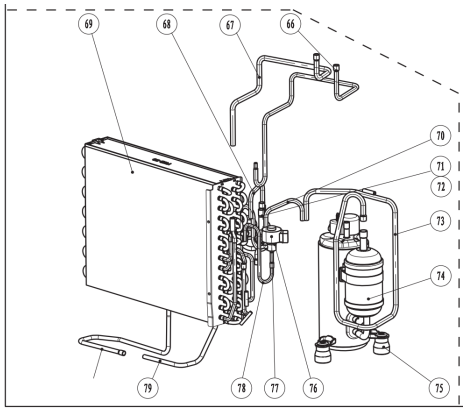
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#	Name	Part #	#	Name	Part #	#	Name	Part #
1	Louver Guide Vane	N/a	29	Water Pan	N/a	57	Rubber Support Block 2	N/a
2	Louver Support	N/a	30	Air Distributor	N/a	58	Rubber Support Block 1	N/a
3	Louver	N/a	31	Rotor Shaft Sleeve	N/a	59	Water Wheel	N/a
4	Front Panel	1000132586	32	Outlet Guard	N/a	60	DC Water Pump	N/a
5	Remote Control Receiver	N/a	33	Air Duct Foam	N/a	61	Lower Air Duct 1	N/a
6	Front Cover	N/a	34	Right Base	N/a	62	Fan Exhaust Wheel	N/a
7	Left Cover	N/a	35	Stepper Motor	1000071083	63	Lower Air Duct 2	N/a
8	Electronic Control Box	N/a	36	Middle Partition Seal	N/a	64	DC Brushless Motor	1000109783
9	Main Board	1000153132	37	Partition	N/a	65	Motor Bracket	N/a
10	Screw	N/a	38	Condenser Cover	N/a	66	Electronic Expansion Valve Tube 1	N/a
11	Cooling Fan	N/a	39	Water Level Switch	N/a	67	Four Way Valve Connection 2	N/a
12	Wire Press Board	N/a	40	Torsion Spring	N/a	68	Four Way Valve Connection 1	N/a
13	Variable Frequency Drive Plate	N/a	41	Drain Pipe	1000072795	69	Condenser Assembly	N/a
14	Left Support Plate	N/a	42	Water Release Switch Assembly	N/a	70	Compressor Discharge Pipe	N/a
15	WiFi Protection Box Cover	N/a	43	Water Pans	N/a	71	Four-Way Valve	N/a
16	WiFi Module (1000145079)	1000145079	44	Base	N/a	72	Four Way Valve Coil	N/a
17	WiFi Protective Box	N/a	45	Support Bar	N/a	73	Compressor Suction Pipe	N/a
18	Left Base	N/a	46	After Cover Plate	N/a	74	Compressor	N/a
19	DC Brushless Motor (1000109782)	1000109782	47	Back Panel	N/a	75	Compressor Footing	N/a
20	Display Panel Mounting Box	N/a	48	Rear Protection Filter	N/a	76	Electronic Expansion Valve Coil	N/a
21	Display Board	1000111784	49	Right Left Cover	N/a	77	Electronic Expansion Valve	N/a
22	Panel Mirror	N/a	50	Right Link Bar	N/a	78	Electronic Expansion Valve Tube 2	N/a
23	N/a	N/a	51	Light Support Plate	N/a	79	Heating Tube 1	N/a
24	Air Filter	N/a	52	Drain Pipe	N/a	80	Heating Tube 2	N/a
25	N/a	N/a	53	Chassis Stents	N/a	-	Ducting Sheet	1000132614
26	N/a	N/a	54	Rubber Feet	N/a	-	Spring & Chain	1000132634
27	N/a	N/a	55	Water Card	N/a	-	Remote	1000154272
28	Evaporator Assembly	N/a	56	N/a	N/a	-	Wall Template	1000154456

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