

# AIRTECH

## EC-MAC

### Equipment instruction manual



The content of this manual is written for standard equipment, but it is also applicable to related equipment.

1.	Preface .....	3
2.	Receiving notice .....	3
3.	Safety instructions .....	3
3-1	Marking description .....	3
3-2	Precautions during installation .....	4
3-3	Precautions when using .....	5
3-4	Precautions when abnormal .....	6
4.	Functions and specifications .....	7
4-1	Process of air cleaning and filtering ....	7
4-2	Parts description .....	7
5.	Installation method .....	8
5-1	MAC-EC51(E)/101(E)/201(E) .....	8
5-2	Precautions .....	8
6.	Control Panel Specifications .....	9
6-1	button description-There are two types of control panel .....	9
7.	Operation .....	10
7-1	Wiring instruction-Type 1 .....	10
7-2	Wiring instruction-Type 2 .....	11
8.	Troubleshooting .....	12
9.	Maintenance .....	13
9-1	Main filter (HEPA &ULPA Filter) .....	13
9-2	Pre filter .....	13
10.	Contact information .....	14

## **1.** *Preface*

Thank you for purchasing our company's EC-MAC.

- Please read the manual carefully and use the product correctly. Improper operation will cause serious accidents.
- Please make sure to appoint the operation and management personnel of this equipment. If any abnormal accident occurs, please report to the manager immediately.
- Do not tear off the specification label on the device.
- This manual is written for standard equipment, but for special specifications, it can also be used as a reference.





## **2.** *Receiving notice*

- Please check carefully and confirm whether the product is damaged due to the shipping process.
- Please confirm whether the product is consistent with the content of the order.
- Our company's products are strictly controlled from production, inspection, packaging to shipment. If there is any problem with this product, please contact us within 3 days of arrival. If the product is improperly used or modified, it won't be covered by our warranty.

## **3.** *Safety instructions*





### **| 3-1 Marking description**

- Please read the "safety instructions" carefully before using the product, and use the product correctly.
- Be sure to follow the precautions described here.
- The markings and descriptions are shown in the figure below.


Marking	Description
 <b>Danger</b>	If you do not comply, there is a high possibility of serious harm to life or body and mind.
 <b>Cautions</b>	If you do not comply, it may cause minor injuries or malfunction of the machine.
 <b>Forbidden</b>	Prohibited matters
 <b>Follow</b>	Indicates to matters that need to be enforced.

## 3-2 Precautions during installation

### **Danger**

-  It is forbidden to install in an environment prone to fire or explosion.
  - This equipment is not explosion-proof.
  - It is forbidden to install in an environment prone to fire and full of explosive gas.
-  Wiring work should be performed by professionals.
  - There may be a risk of electric shock.
-  Install at a place where the base plate has sufficient strength.
  - Please install at a place that can bear the weight of the equipment.
-  Install the equipment before connecting the power line.
  - Avoid electric shock.
  - Be sure to ground it.

### **Cautions**

-  Please do not use it in the following places to avoid malfunction of the machine.
  - Places with low or high temperatures.
  - Places with heavy moisture or moisture is prone to occur.
  - Places that are likely to cause dust accumulation.
  - An outdoor space that is exposed to wind and rain.
  - If you want to install in a special environment, please contact our company to discuss for more details.

- ❗ Install the device in a stable position.
  - If the device is installed in an unstable position and tilted, it may cause problems with the operation of the blower.
- ❗ Do not block the return air vent.
  - Blocking will reduce the return air volume, and thus reduce the performance of the equipment.
- ❗ Plan maintenance work area.
  - The filter must be replaced regularly, and maintenance work such as the blower and electrical wiring must be maintained.
- ❗ Confirm the voltage specification.
  - Please confirm whether the input power is the same as the equipment specifications to avoid the risk of fire and combustion of parts.

### | 3-3 Precautions when using

---

#### ⚠ Danger

- ❗ Please cut off the power supply before checking.
  - Sudden operation of the equipment may cause electric shock.
- ❗ When replacing the pre-filter, please stop the blower first.
  - To prevent the blower from inhaling objects or causing personal injury.

#### ⚠ Cautions

- ⊘ Be careful of electric shock.
  - Do not operate the device with wet hands, as this may cause electric shock.
- ⊘ Do not switch the power switch multiple times within one minute.
  - Switching the power switch repeatedly in short period of time may cause the blower or electric control parts to burn out.
- ⊘ Do not touch the electronic control parts.
  - Do not touch the electric control parts inside the device. If you have to, please cut off the power first.

- ⊘ Do not damage the power cord.
  - Do not place heavy objects on the power cord or arbitrarily place it.
  - Damage to the power cord may cause accidents such as fire or electric shock.
- ⊘ Do not modify the equipment.
  - It may cause electric shock, fire, and equipment performance degradation.
- ⊘ It is forbidden to use volatile oil or thinner to clean the equipment.
  - Do not use volatile oil or thinner to clean the equipment to avoid the fading and peeling of the coating.
- ⓘ Please clean and replace the filter of this equipment regularly.
  - Please clean and replace the filter according to the operation method described later.

### | 3-4 Precautions when abnormal

---

#### ⚠ Danger

- ⊘ It is forbidden to disassemble and repair by yourself.
  - Improper handling may cause accidents such as electric shock and fire. Please hand over to our company for disassembly and repair.

#### ⚠ Cautions

- ⊘ Do not use when abnormal.
  - Operating under abnormal conditions may cause accidents such as electric shock or fire.
  - In the event of an abnormality, please stop the operation immediately. Cut off the main power supply and contact our customer service staff.

## 4. *Functions and specifications*

### 4-1 Process of air cleaning and filtering

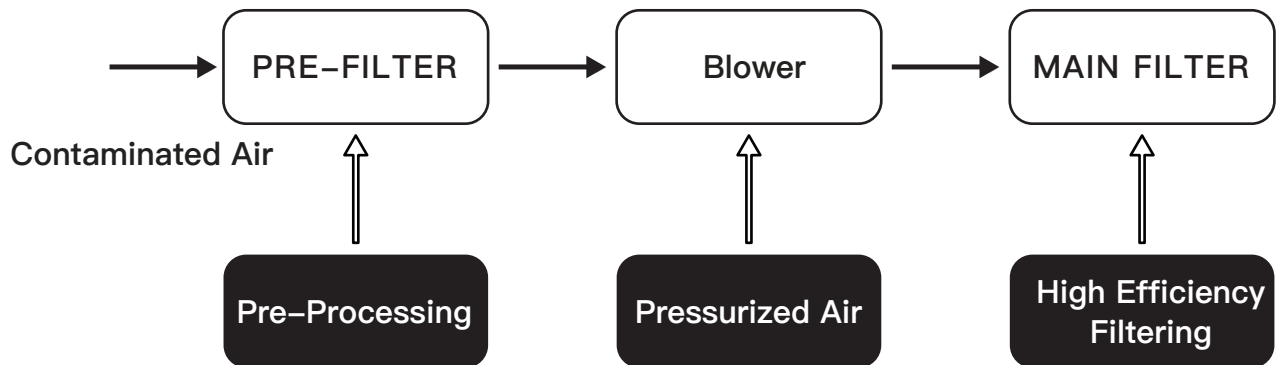


Figure 1

### 4-2 Parts description

a. Pre-Filter

It is made of Nylon and the purpose is to prevent the large particles from falling in. This filter can be reused after washed with water or vacuumed.

b. Blower

This fan features low noise and low vibration. The fan wheel is made of aluminum. The whole blower is an exclusive development of this company.

c. MAIN FILTER

With the HEPA Filter (High Efficiency Particulate Air Filter), the filtration efficiency is at 99.99% (0.3um). ULPA FILTER (Ultra Low Particulate Air Filter) is another option. The filtration efficiency is at 99.999% (0.1um).

NOTE: please refer to the detailed specifications of the parts in the drawings.

## 5. Installation method

### 5-1 MAC-EC51(E)/101(E)/201(E)

- Please refer to below chart for the hole-opening size and use the screws to fasten the equipment to the fixing base.

Code 設備	A	B	C	D
EC-51(E)	470	470	370	485
EC-101(E)	580	580	480	595
EC-201(E)	1190	580	400	595

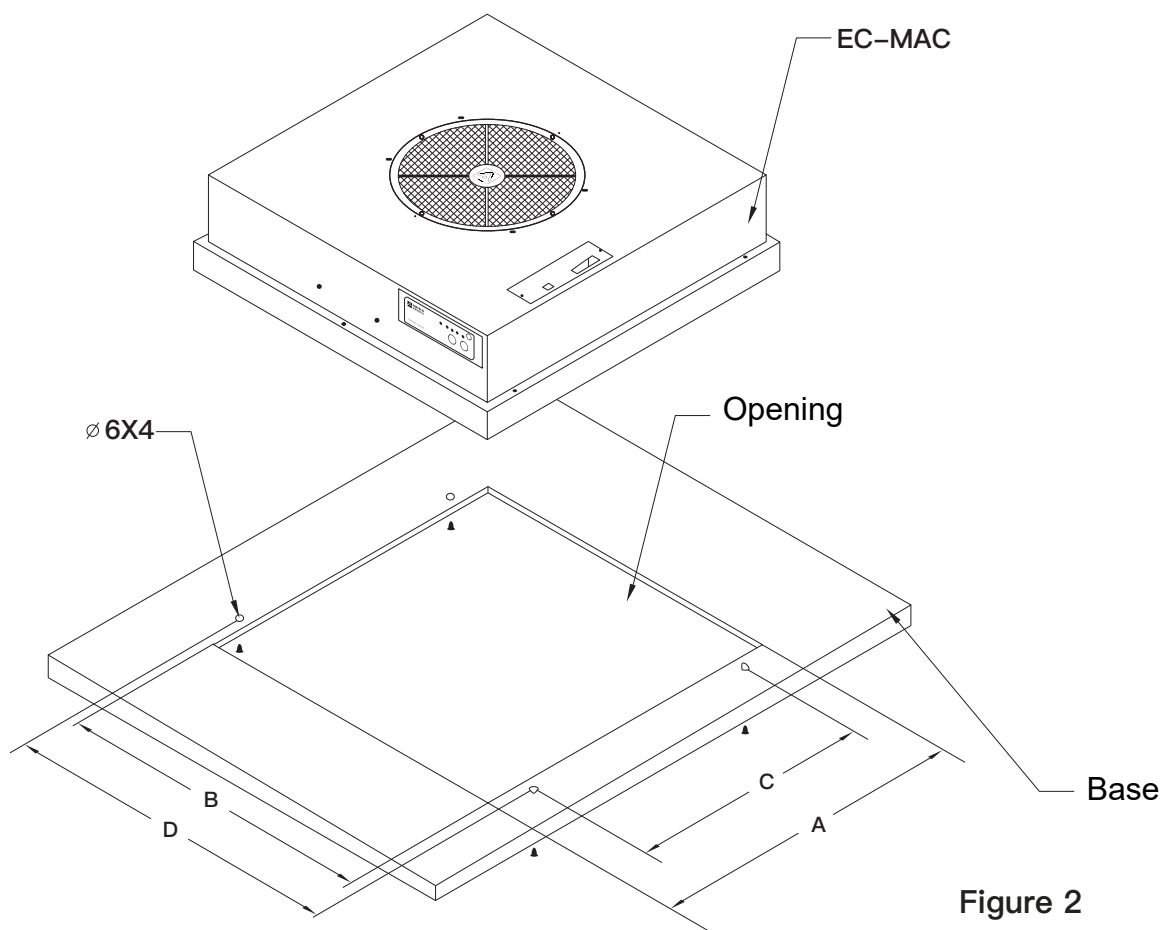


Figure 2

### 5-2 Precautions

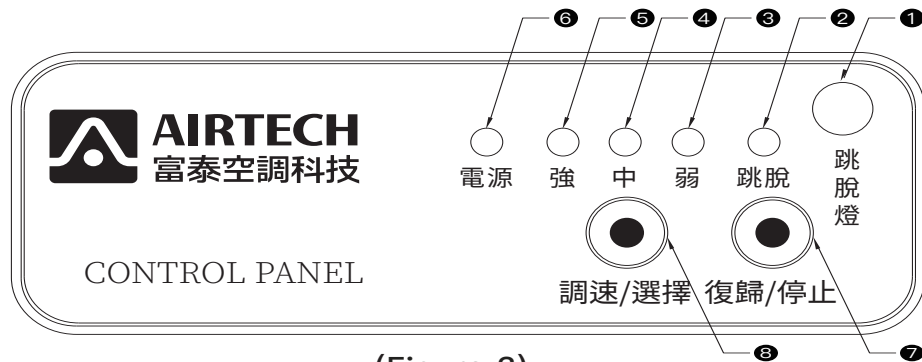
- Please connect the power supply to the terminal block of the equipment according to the voltage shown in the specifications and be sure to be grounded.
- This product uses a DC motor, and the steering direction will not change due to the phase sequence of the power supply wiring.



## 6. Control Panel Specifications

### 6-1 button description—There are two types of control panel

- Type 1 : The Chip-type PCB control panel is as above Figure 3.



(Figure 3)

- (1) Big Trip Light (When motor is overloading, easier to be seen)
- (2) Small Trip Light (When motor is overloading)
- (3) Low Air Velocity (On when selecting Low Air Velocity)
- (4) Medium Air Velocity (On when selecting Medium Air Velocity)
- (5) High Air Velocity (On when selecting High Air Velocity)
- (6) Power (On when the equipment is working)
- (7) Stop or Reset Button
- (8) Speed Adjustor

- Type 2 : Simple-type PCB control panel is as above Figure 4.

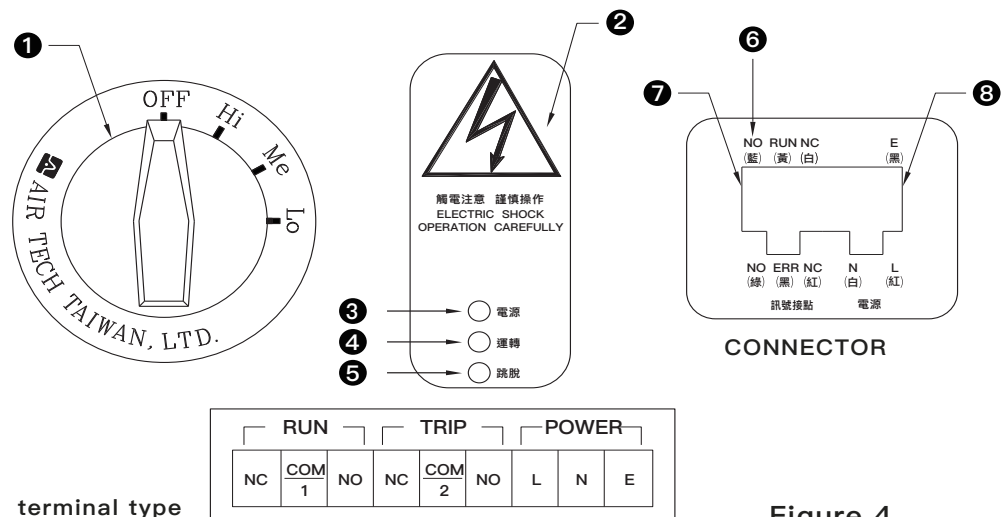


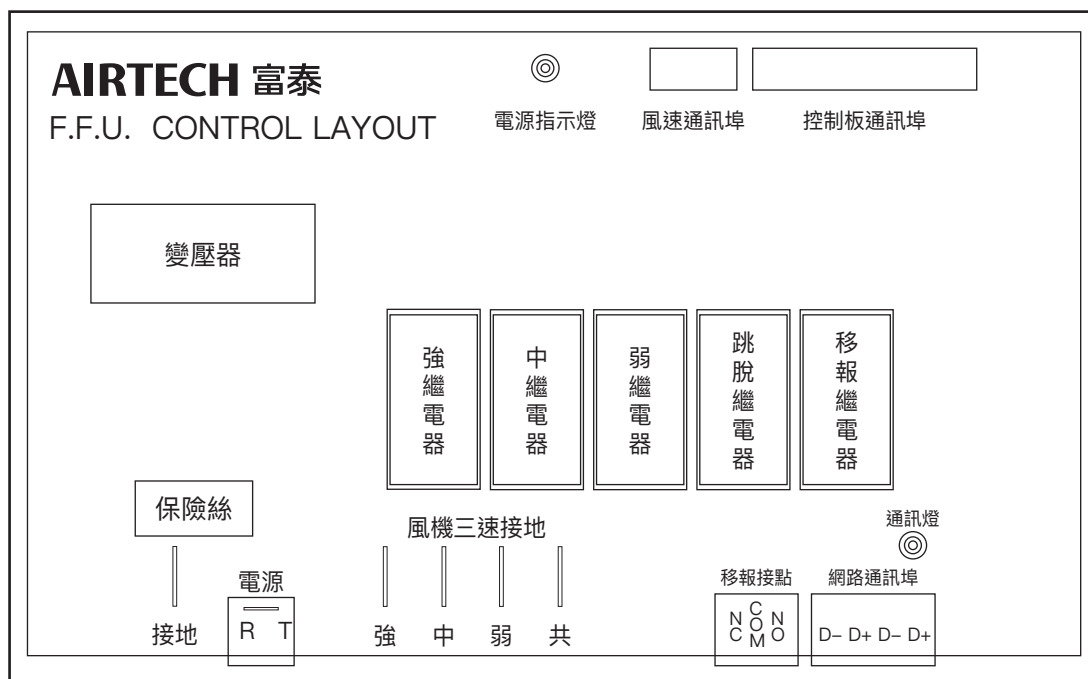
Figure 4

- (1) Speed Adjustor
- (2) Operation Nameplate
- (3) Power Light (On when the equipment is connected to power—yellow light)
- (4) Operation Light (On when the equipment is working—green light)
- (5) Trip Indicator (On when tripped—red light)
- (6) Pin Connection Nameplate
- (7) Signal Pin indicator (6P)
- (8) Signal Pin Indicator (4P)

## 7. Operation

### 7-1 Wiring instruction-Type 1 : The Chip-type PCB

- Type 1 : The Chip-type PCB wiring instruction is as above Figure 5.

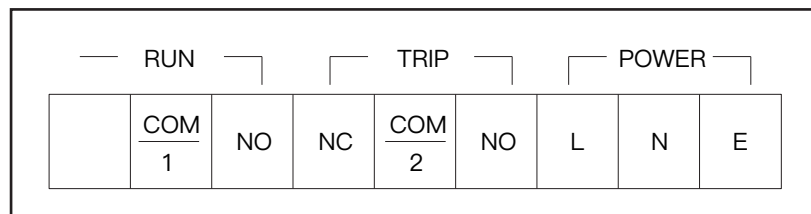
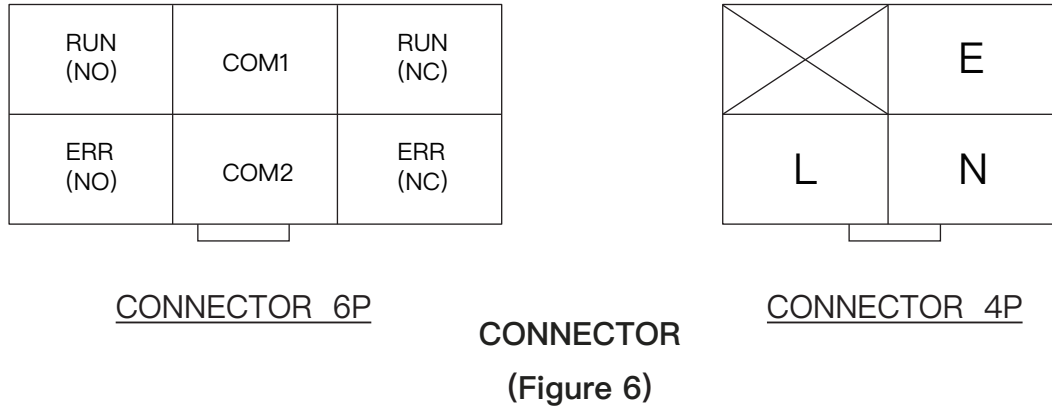


(Figure 5)

- (1) Power set : This is a single-phased product. Please follow R.T.E to connect the wires. (Please also pay attention to the product voltage)
- (2) Communication/Trip set : This connection point is for the communication /trip notice. If this function is unnecessary, just skip this step.
  - ① Communication Pin :  
Connect NC(Red) 、COM(Black) as normal close.  
Connect NO(Green) 、COM(Black) as normal open.
  - ② Trip Pin : Connect NC(White) 、COM(Yellow) as normal close.  
Connect NO(Blue) 、COM(Yellow) as normal open.
- (3) Internet Connection : Insert the Single Core Insulated Cable to D- and D+.  
The other set is for connecting to the next station.  
This port is for systematic use and shall be connected to PC or HMI. Therefore, we normally do not use this port.
- (4) Running : Once the cables are connected, please refer to the button (8) in Figure 3. Press once will activate High speed, second press would be Medium speed, and the third press would be Low speed.

## 7-2 Wiring instruction-Type 2 : Simple-type PCB

- Type 2 : The Simple-type PCB wiring instruction.



- (1) Power : This is a single-phased product. The connector is 4P, and please follow the location of the CONNECTOR 4P in Figure 6; For the terminal type, please follow Figure 7 and fasten the terminal to L 、 N 、 E. (Please also pay attention to the product voltage)
- (2) Signal connection : The signal connection is 6P, please follow the location of the CONNECTOR 6P in Figure 6.
- (3) Running : Once the cables are connected, please follow the (1) in Figure 4. OFF means STOP, turn the knob clockwise for 1 gap will be High Speed, for another gap would be Medium Speed, and the other gap would be Low Speed.

## 8. Troubleshooting

- If there is any abnormality, please refer to the following table to do the inspection.  
When the cause of the malfunction is unknown, or if you have any problems with its use, please contact us.

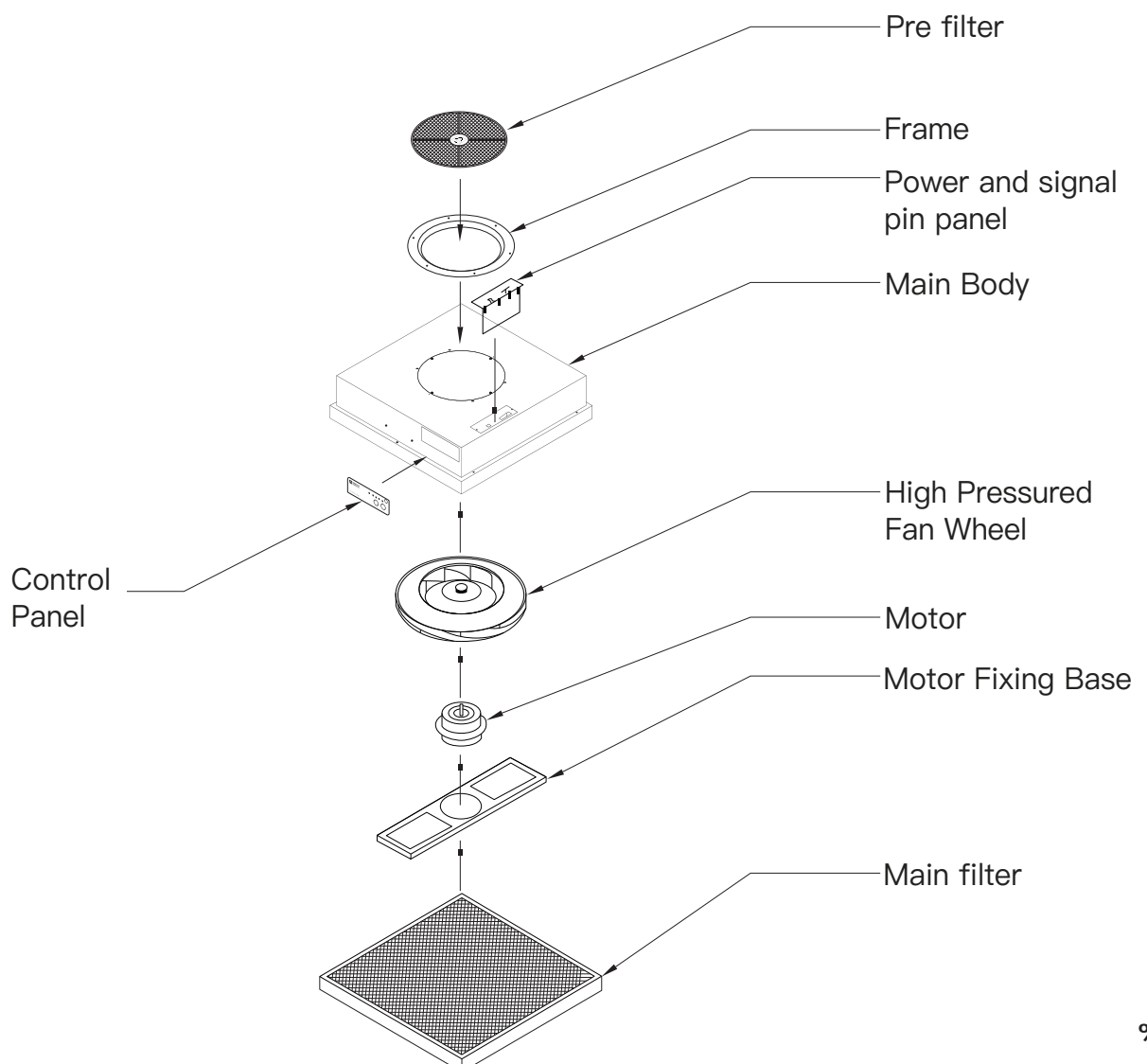
Situation happening	Possible causes	Processing method
The air supply fan cannot be started	No power supply	Check if the power supply is normal
	No fuse switch tripped	Check the line
	Loose terminal or poor contact	
	Abnormal or malfunctioning air supply unit	Restart after power failure
Wind speed is too low during operation	FILTER blockage	Replace FILTER
Burnt odor	Short circuit of the electronic control parts	Please disconnect the power and contact AIRTECH.
	Wire fire caused by overload	

### 9-1 Main Filter (HEPA & ULPA FILTER)

- The wind speed is reduced when the filter is clogged. When the wind is reduced to the half of the original, you need to change the filter. The filter replacement time is also depending on the clean room environment. Please check the wind speed to determine the time to replace it.

### 9-2 Pre Filter

- The pre filter collects a larger quantity of dust, so this filter must be taken out ever 7-15 days. Clean it with water or vacuum cleaner (for Nylon pre-filters only), or replace it with a new one.



## **10. Contact information**

If there are any questions to AIRTECH, please contact us through our website, or call the customer service line for professional service for you.

Contact address :

- HsinChu 1st factory: No.58-1, Guangfu Road., Hsinchu Industrial Park, Hsinchu County
- HsinChu 2nd factory: No.84, Guangfu North Road., Hsinchu Industrial Park, Hsinchu County
- [www.air-tech.com.tw](http://www.air-tech.com.tw)
- TEL:+886-3-6105668
- Fax:+886-3-5972734
- Email:[info@air-tech.com.tw](mailto:info@air-tech.com.tw)

## CONTACT INFORMATION

**AIRTECH** AIRTECH SYSTEM CO., LTD.  
富泰空調科技股份有限公司

303-51 新竹縣新竹工業區光復路58-1號

No.58-1, Guangfu Road, Hsinchu Industrial Park. Hsinchu County 303-51, TAIWAN

**TEL** | +886-3-610-5668 **FAX** | +886-3-597-2734

**E-Mail** | [info@air-tech.com](mailto:info@air-tech.com) **Website** | [www.air-tech.com.tw](http://www.air-tech.com.tw)