# POE MANUFACTURING: Professional PCBA Cleaning Solutions & Superior Advantages

## Common Cleaning Methods for PCBA at POE

1. Aqueous Cleaning
2. Solvent Cleaning
3. Dry Ice Cleaning
4. Ultrasonic Cleaning

POE PCBA Cleaning:
**Precision Cleaning for Unmatched Reliability.**

**WHY CHOOSE US**

*At POE, we go beyond simple surface cleaning: we deliver targeted, engineered cleaning solutions that enhance product reliability, optimize electrical performance, and support the stable operation of even the most demanding electronic applications.*

## PCBA Cleaning Solutions:
## Highlighting the Advantages of POE

In the complex and precise field of electronics manufacturing, the post-assembly quality and reliability of Printed Circuit Board Assemblies (PCBA) directly determine the performance and service life of end products.

Following soldering and assembly, residual flux, ionic contaminants, dust, oil and other residues pose hidden risks that may cause short circuits, signal interference, material corrosion, and even premature failure of electronic devices.

For industries with extremely high demands for stability and durability — including medical, automotive, aerospace and military electronics — thorough and professional PCBA cleaning is not an optional process, but a critical step to ensure product safety and long-term reliability.

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## Our Multimodal Expertise:
## The Right Solution for Every Challenge

We recognize that different PCBAs, components, fluxes and production environments demand tailored cleaning strategies. A one-size-fits-all approach often results in incomplete cleaning or potential damage to delicate components.

Therefore, POE adopts a technology-agnostic and customized service model. We evaluate key factors including product type, assembly density, component sensitivity, flux type and required cleanliness standards, then integrate multiple cleaning technologies to develop the most optimal solution. Our goal is to achieve thorough contaminant removal while safeguarding the structural integrity and functional stability of the PCBA.

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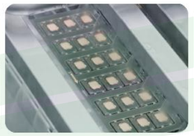
## Common Cleaning Methods for PCBA at POE

### 1. Aqueous Cleaning

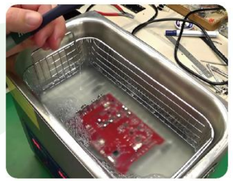
This method utilizes deionized water and environmentally friendly surfactants to dissolve and emulsify polar contaminants, such as ionic residues and water-soluble flux. The contaminants are then removed by high-pressure water flow. It is widely applied in mid-to-high-end reliability products, including automotive electronics, medical devices, and consumer electronics that demand high safety and environmental performance.



**Advantages:** Environmentally friendly, safe, non-flammable, non-explosive, and compatible with most components.
**Disadvantages:** Limited effectiveness on non polar contaminants like rosin and heavy grease.

### 2. Solvent Cleaning

Organic solvents such as alcohols and hydrocarbons can rapidly dissolve non-polar contaminants, including rosin flux, grease, and oily residues. These contaminants detach from the substrate and are removed via evaporation or solvent flow. This method is ideal for precision electronics used in aerospace, military, and high-end industrial applications, particularly for assemblies employing rosin-based fluxes.

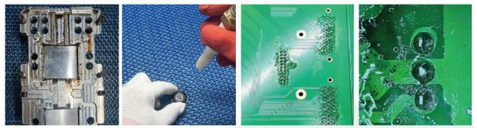



**Advantages:** Strong dissolving power for organic contaminants, fast-acting, leaves no water marks, and penetrates tiny gaps.

**Disadvantages:** Some solvents carry safety and environmental risks; strong solvents may damage plastics, labels, or coatings.

### 3. Dry Ice Cleaning

Dry ice particles are accelerated and sprayed onto the surface, using low-temperature embrittlement and instantaneous sublimation expansion to physically strip away contaminants without liquid waste or chemical residues. It is commonly used for offline cleaning of molds and fixtures, dust and oxide removal from bare boards, and surface cleaning of encapsulants and heat sinks, and is compatible with most circuit board materials.



Fixture cleaning | Burr cleaning | Flux cleaning | Tin slag cleaning

**Advantages:** No secondary waste, no chemical pollution, non-abrasive, and does not harm base materials.
**Disadvantages:** Poor performance on hidden areas and ionic chemical residues; only removes loose physical contaminants.

### 4. Ultrasonic Cleaning

Ultrasonic waves generate cavitation bubbles in the cleaning solution, creating micr-jets that impact and clean deep gaps, blind holes, and areas under components. It excels at cleaning high-density assemblies such as BGA and QFN boards, where contaminants are difficult to reach with conventional methods.


**Advantages:** Excellent for deep gaps, component undersides, and blind holes, with high cleaning thoroughness.
**Disadvantages:** Requires a liquid medium; improper power settings may damage fragile components.

## Precision cleaning solutions build reliable quality

## — POE safeguards the stable operation of high-end electronic applications.

With years of industry experience and a flexible multimodal cleaning system, POE continues to provide safe, efficient, and reliable PCBA cleaning solutions. We help manufacturers reduce failure risks, extend product life, and meet strict international reliability standards. For every critical electronic assembly, POE delivers cleaning precision you can trust.

POE MANUFACTURING
YOUR GLOBAL TECHNOLOGY PARTNER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