



Dry Ice Cleaning Process

To make sure all the products made and shipped by Best Technology have a clean surface, beautiful appearance and without any debris, contaminates and soldering residue, we have introduced advanced dry ice cleaning machine to meet the demands of customers better. Below is Dry ice cleaning machine in our SMT line:



Before



After

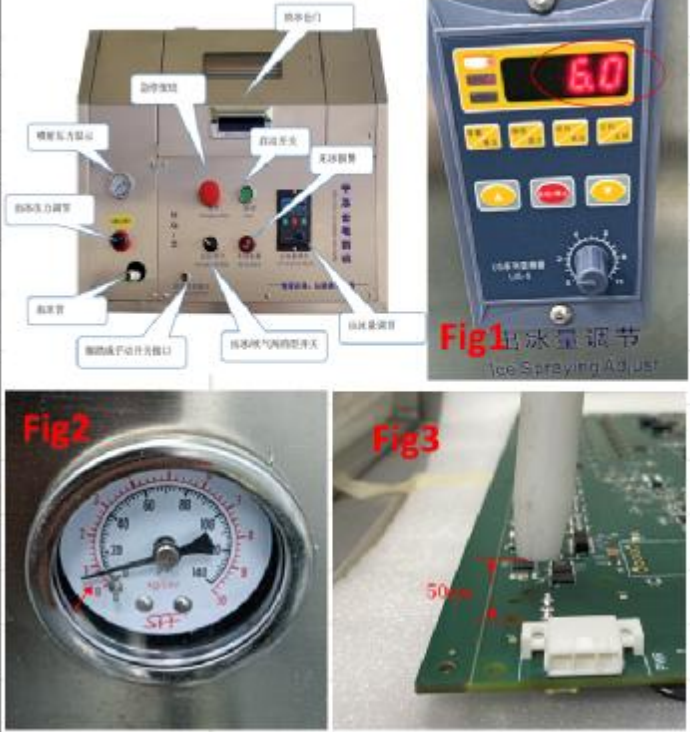
Working Principle of Dry Ice Cleaning Machine

The principle of using dry ice for deburring/cleaning involves propelling dry ice particles at high speed onto the surface with burrs under the influence of compressed air. Dry ice undergoes rapid fragmentation and sublimation, absorbing a significant amount of heat. Due to the different thermal expansion coefficients (CTE) between the burrs and the substrate, makes the burrs quickly crack and dry ice particles enter the cracks. As a result of dry ice's vaporization, its volume expands nearly 800 times in an instant. This creates a "micro-explosion" at the impact points, causing the burrs to rapidly detach and achieving optimal cleaning effectiveness.

Working Process of Dry Ice Cleaning Machine

1. Check whether the air source and power are connected
2. Check whether the emergency stop is released
3. Check whether the power is on
4. Check whether the speed of the ice adjustment button is adjusted to the appropriate index, it is recommended that more than 10 (can be driven step up).
5. Check that the working pressure indication is within the working conditions.
6. Open the door of the freezer and check whether the freezer and cutter are clean.
7. Put in the dry ice, close the freezer door, press the "start" button, green light will flash.
8. Press the manual button, when the ice can be produced evenly, then put into production.
9. When a piece of ice is run out of, the alarm indicator will turn to red color, indicating that the ice has been used up.
10. Open the door to pick up the remaining tail material, and the machine enters the automatic blowing cleaning mode.
11. Check that the dry ice room has been cleaned, take a new ice and put it into the bunker.
12. Close the warehouse door, step on the foot or press the handle button to produce ice evenly.

SOP of Dry Ice Cleaning Machine in Best Technology

Dry Ice Cleaning SOP	File No.: WI-PD-57 Made by: Mr. Liao Approver: Mr. Liang	Rev. A/0 Date: 2022-8-09		
Discription of Content	Illustrations			
!!!Must wear good earplugs, anti-static gloves, protective glasses to work!!!				
Operate Specification:				
1. Must wear protective gloves when adding dry ice.				
2. If components spec<D402 around solder point- parameters of dry ice should be: Ice Spraying=6.0, Press<1.3, see fig1 & 2.				
3. If components spec>D603 around soldering point, or when there is no other material on the solder joint surface, ice spraying should be 7.0 (max 8.0)				
4. If LED or glass fragile component around solder joint, must confirm with engineer or manager. Do NOT clean before approval!!!				
5. Making confirmation with QC after cleaning 1-2pcs, and then batch cleaning once get approval.				
6. The distance between the nozzle and the solder joint shouldn't more than 50mm (fig3). Too close will damage components.				
(Warning: During the working process, the nozzle must not blow at people!!!)				

Best