



## Sonic ensures Dust free static neutral blow-off for Clean Room Assembly of Medical Cables

### Customer:

**Kirwan Surgical Products**  
Marshfield, MA

### Sonic Sales Partner:

Hamer Engineering  
Foxboro, MA

### Application:



No where else is cleanliness more important than in the medical field. To remove impurities, bacteria, chemicals, metals and odor, drinking water is filtered down to 0.4 Microns. The air cleanliness required for pre-packaging for most medical

devices is 0.3 microns, comparably. Not only is the blow-off of dust and debris critically important but the collection of these airborne materials is equally as important as not to contaminate any other process also being performed in the Clean Room. So how does an Air Knife system provide blow-off in a clean room application?

The Thermoplastic Rubber (TPR) Bipolar cords are manually run through an Air Knife system. By utilizing the air knives impact velocities, coupled with the ionized air stream releases the surface tension and neutralizes the charge of the dust and debris. By installing a vacuum collection system below the point of blow-off, Sonic was able to maintain the cleanliness of the environment as well have a central collection system for all stations.

### Background:

Kirwan Surgical Products Inc., a leading manufacturer for demanding microsurgical specialties such as neurosurgery, ophthalmology, ear, nose and throat, plastic and reconstructive surgery, and orthopedic surgery. They are an innovator in the field of electrosurgery, and hold a number of patents on groundbreaking product designs and manufacturing techniques associated with the field. When Kirwan introduced its new disposable irrigation bipolar cord it had resounding success. Made of clear plastic, the cord is unsurpassed in flexibility. When unpackaged, the cord's suppleness which allows it to uncoil easily and lay flat.

An issue arose during processing and handling which was that dust and debris tended to adhere to the cords, placing contaminants into the final packaging. They required a system to blow-off and neutralize while also collecting the released particles. They realized that by blowing on the product that they could remove some of this material, but a portion was still statically charged.

Hamer Engineering, the Sonic Air New England sales rep, scheduled a visit and demo with the customer. The test consisted of a single 6" knife with an ionizing bar to remove the dust and then passed under the air knife. The test proved to be successful and the project went into the design phase.

### The Sonic "Engineered" Solution:

The Sonic Air Knife system was designed to operate in a Clean Room environment while producing a high velocity air stream to remove and collect the remaining particulates from the outer surfaces of the 12'L x 1/4" diameter wrapped cord, manually passed between Sonic's "push-pull" air system.

The high velocity ionized air stream impacts the surface of the cables liberating contaminates. The ionized air neutralizes the product eliminating the re-attractive force of static electricity. Then the Sonic vacuum manifold vacuums away the debris

A Sonic 100 Blower was supplied to power (4) 18" middle inlet air knives for (4) separate packaging tables within the clean room. The middle inlet to each air knife provides the least intrusive piping arrangement. A manifold was installed below the knife to vacuum away the dislodged particulates. Since the application is set in a clean environment, the blower and dust collector are mounted externally. The Blower air is then directly coupled to a HEPA filter to provide cleanliness to the 0.3 micron.

They found an answer for all three issues with a single solutions provider. Sonic Air Systems incorporated an air knife and blower combination along with an ionizing function and a vacuum system as the collection unit.

