

# StaticSmart™

## HepaClean 3000

### Filtered Ionized Air Parts Cleaning System



The HepaClean 3000 is a stainless steel closed loop parts cleaning system that employs three proven cleaning tools—static neutralization, high velocity compressed air and advanced HEPA filtration—in a single unit that occupies just over three square feet of valuable bench space. It is the only self-contained cleaning system available that allows you to clean parts in a clean room with little risk of contaminating the surrounding environment.

The HepaClean 3000 is a 1.6 Cubic Foot Clean Room in a package seven cubic feet, weighing less than 100 pounds, and occupying just over three feet of valuable bench space. It is most commonly used in Medical Packaging applications and whenever there is a requirement for scrupulously clean parts. Contaminated and electrostatically charged parts placed inside the cleaning chamber are instantly and simultaneously cleaned and neutralized. The HepaClean 3000 is used both outside and inside certified Clean Rooms. It is the only self-contained cleaning system available that enables the user to clean parts inside a Clean Room with little risk of contaminating the surrounding environment.

#### INSTALLATION

Compressed air (or nitrogen) and electricity are required to power the HepaClean 3000. The standard unit comes with a 1/4 x 1/4 NPTF pipe coupling enabling the user an option to plumb it permanently or to a "quick disconnect" on an air hose. Both a good pressure regulator and air filter placed ahead of the air inlet are essential to maximize the performance of the HepaClean 3000.

From the air in-feed connection, air is directed to a stainless steel tube in the upper section of the cleaning chamber. Up to 100 psi can be safely introduced to the system; however, far less pressure is adequate for most applications. Some trial is required to determine the minimum pressure needed to clean the part adequately.

It will require less pressure to clean a part with a simple shape than a complex shape with corners and valleys where contamination can hide. *Only clean dry compressed air (or nitrogen) must be introduced into the HepaClean 3000.*

Electrically, the unit operates on house current, nominally 115 volts 50/60 Hz. It is equipped with a molded, detachable three-pronged plug at the end of a six ft. cord. *Caution: Do not remove the ground prong. Insert the plug only into a receptacle with a known ground. Proper grounding of the unit is essential for the safety of the operator and performance of the equipment.*

Place the HepaClean 3000 on a sturdy bench or table at a height most convenient for the standing or seated operator. Although the HepaClean 3000 is a stand-alone cleaning unit it should be placed in the cleanest environment possible. The "Class" of clean inside the cleaning chamber will always be cleaner than the environment surrounding it. For example, measuring the cleaning chamber of an activated HepaClean 3000, installed in a Class 1000 clean room, may show a reading of less than 500.

#### OPERATION

There are two function switches on the cabinet: a light switch turns the light on and off and the other activates the system. The system switch has three positions: off, on, and auto.

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When the system switch is in the auto position, the HepaClean 3000 is activated when the operator introduces a part into the cleaning area breaking the photoelectric beam inside the cabinet. In this mode, the HepaClean 3000 turns on and off each time something enters and exits the cleaning area. Although it takes a few seconds for the HepaClean 3000 to wind up and wind down, most operators prefer working in the auto mode.

In the "on" position, the system overrides the photoelectric cell keeping the HepaClean 3000 running until the switch is changed to off or to auto. Keeping the HepaClean 3000 running eliminates the on/off dwell time but it does increase the use and cost of air and electricity.

When the HepaClean 3000 is activated and a part enters the cleaning chamber, a knife-like sheet of high-pressure air passes downward in front of a pair of air ionizing bars creating a static neutralizing turbulent wind to separate particulate from the part. Grasp the part firmly and thrust it into the cleaning chamber; turn the part to expose all sides to the activated ionized air. (The particles are then pulled and trapped inside the prefilter and HEPA filter resulting in a clean and "neutralized" part.) Remove the part from the cleaning chamber and cover it. The time it takes to clean the part will vary according to the nature of part and contamination as well as size and configuration. Normally, it will take just a few seconds.

## CLEANING AND MAINTENANCE

### Filters

Turn off the power to the HepaClean 3000 when cleaning the interior of the unit.

Replace pre-filters every 30 days or 650 hours of operation; whichever comes first. Change the pre-filter element more frequently if contamination is seen accumulating on the pre-filter element prior to the regularly scheduled replacement.

Replace the HEPA filter every 3 years or 6200 hours of operation; whichever comes first. *Failure to properly maintain and replace the pre-filter may shorten the effective life of the HEPA filter.*

### Static Bars

Two BR2200 Static Bars (air Ionizers) are mounted at the top inside the cleaning chamber, right and left, just

above the air tube. Each static bar has a series of "emitter" pins (or points) protruding from a length of black plastic extrusion encased in a rectangular aluminum extrusion. It is important to keep the emitter pins clean and sharp in order to maintain maximum efficiency. Clean the Bars monthly, when cleaning the pre-filters, or whenever contaminants are visible on the pins. Cleaning options are a soft brush, blow-off gun, vacuum, or clean, non-particulating, damp cloth or wipe. *Do not use harsh and or abrasive chemicals.*

### Cabinet-Interior and Exterior

Periodic cleaning of the exterior and interior cabinet walls, around the cleaning chamber, and especially the perforated stainless steel work surface on the bottom of the chamber is necessary to capture any particulate that may have not yet been trapped in the pre-filter or HepaClean 3000 filter. To clean these surfaces, use a Clean Room grade cloth dampened with 70% isopropyl alcohol and water solution or any other Clean Room acceptable mild cleaning agents.

### Pre-filter

The pre-filter is a polymer mesh that traps large to moderate size particles dislodged from parts cleaned in the cleaning chamber. Failure to keep the pre-filter clean could result in its clogging which can reduce air flow through the HEPA filter, and cause particles to bounce back up into the cleaning chamber.

*To replace the pre-filter:* Turn the HepaClean 3000 off. Lift the perforated stainless steel work surface exposing the pre-filter. Remove the pre-filter from the base of the unit. Properly dispose the pre-filter. Clean the surfaces surrounding the pre-filter, especially the surface below, to remove any particles dislodged during the removal process. Use a non-particulating cloth lightly dampened with a 70% isopropyl alcohol / water or other mild cleaning solution.

Place the new filter in the base of the cleaning chamber. The metal filter support should be below the filter itself. Replace the perforated stainless steel work surface. Clean the work surface with the cloth and solutions described above.

### HEPA Filter

The HEPA Filter is in the top of the HepaClean 3000. It removes the smallest particulate from the air prior to its entry into the cleaning chamber. With proper pre-filter maintenance, the HEPA Filter will function effectively for

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several years but eventually, it will become contaminated and need replacement.

*To replace the HEPA Filter:* Remove the top rear panel from the HepaClean 3000. Loosen the hex nuts that secure the filter in place. Carefully slide the HEPA filter out from its shelf. Properly dispose of the filter.

Slide the new filter on to the shelf making certain that it is properly aligned. The arrows on the side of the filter housing should point towards the top of the HepaClean 3000. Secure the new filter with the hex nuts. Reattach and snugly secure the back panel.

Adjusting the Photoelectric cell in the cleaning chamber:

*Before* adjusting the cell be sure that the perforated stainless steel work surface on the floor of the cleaning chamber is in place and properly seated *and* that the cell is facing straight downward. If not, the cell will not perform properly or may not perform at all.

*To adjust the eye:*

- Turn the system switch to the automatic position.
- Use a small eyeglass screwdriver to turn the sensitivity adjustment screw (on the cell) counter clockwise all the way. The green LED on the cell should not be illuminated at this time. Make sure neither your hand nor any other object is obstructing the face of the cell while you slowly turn the sensitivity adjustment screw clockwise just enough until the green LED lights up. Stop there.
- Check this adjustment by putting your hand under the cell; this should activate the system and set it up for maximum sensitivity.
- Next, adjust the time delay to a setting that would enable the operator sufficient cleaning time and shut off after a reasonable idle time. (1second to 30 seconds)

#### SPECIFICATIONS

	Exterior	Cleaning Chamber
Width:	14 inches	14 inches
Height:	26 inches	10 inches
Depth:	33 inches	20 inches
Weight:	approximately 95 pounds	
Max. Current:	3 amperes	
Input Power:	115 VAC 50/60Hz	

#### SPARE PARTS

- 7.5Kv Power Supply item # 2224
- Static Bar item # 4402
- Blower item # 1230
- Blower Capacitor item # 3089
- Blower Inlet Guard item # 3091
- Pre-filter Assembly item # 4212
- HEPA Filter item # 1231
- Photoelectric cell item # 1229
- Fluorescent Light assembly item # 2537

#### Features:

- Stainless Steel Construction
- HEPA filter (99%efficient at 0.3 micron)
- Multi-layered pre-filter
- Direct drive high velocity air blower with balanced impeller for quiet operation
- Lighted rocker switch
- Fluorescent Interior work light
- Perforated stainless steel work surface
- Motion sensor for automatic operation
- Solenoid valve for automatic operation
- Removeable side panels for pass through operation; can also be mullioned together

**Julie Industries**  
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