

# Static Controls

## Hurricane 300B

### Balanced Ionizing Air Blower

#### Troubleshooting

The Hurricane 300B is designed to neutralize static electricity by creating a field of positive and negative ions. When the electrostatically charged material is exposed to the field of bipolar-ionized air, the material will attract the polarity required and become neutralized. If static electricity is the cause of a process problem, the problem can be brought under control, most of the time, with the proper choice, installation and use of ionization equipment. If you find the Hurricane 300B does not significantly reduce or eliminate the problem, after it has been properly installed, please check the following:

- Is the female end of the line cord properly secured into the receptacle on the Hurricane 300B?
- Is the fuse intact? (It is located on the receptacle at the female end of the line cord)
- Is the three-prong male end plugged securely into a proper mating receptacle with ground?

- Is there continuity between the known ground and the H300B chassis?
- Is AC-mains power present or available, and connected to the H300B electrical input?
- Does the power being supplied match the ratings specified on the nameplate?
- Is the H300B properly placed and securely mounted?
- Is there free air (with no close-by solids or surfaces) surrounding the target material as described earlier?
- Are installed foam filters (on H300B air inlets) clogged or is inlet/outlet airflow restricted in any way? **Note: all servicing internal to the H300B enclosure must be performed ONLY by qualified service personnel.**

Call *Static Clean International* and speak with one of the customer service or technical field representatives for further assistance. (781) 229-7799

#### About Static Clean International

At *Static Clean*, we've been providing Static and Contamination Control Solutions to clients worldwide since 1973. We capitalize upon this wealth of experience to service our customers in a variety of ways. Whatever their needs, our comprehensive approach to controlling static / contamination translates into a much lower total cost of ownership solution for them.

#### Industrial Applications

For our customers, we provide a line of Static and Contamination Control industrial products including static bars, power supplies, ionizers and WebVacs that we manufacture ourselves. These exceptional products address a host of common process problems including mis-feeds, poor lamination, jogging and stacking problems, shock to operators, jammed injection molds, particle contamination, fires and explosions.



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The H300B (Hurricane 300B) extended-range ionizing blower is designed to cover a wide target area up to 10' away and may be used in web applications, especially those in which it is not feasible to mount ionizing-electrodes (static) bars in close proximity to the web. The H300B also includes proprietary ion-emissions balancing circuitry and construction (U.S. Pat. 9,648,770) to minimize or null the electric potential on the target, making it a good choice for more sensitive applications such as some medical or electronics products.

The blower motor 3-speed selector switch provides a range of air velocity and delivery rate from the dual centrifugal fans, with low emissions to eliminate conductive interference with other electronic equipment.

#### Balance Adjustment

**Early-life balance:** An adjustment located on the bottom panel of the blower provides compensation for early-life drift of ionizing electrode efficiency. Adjustments should be performed with installed unit under application conditions and settings (e.g. fan speed), with user-interface adjustment set from "0" to "5" (potentiometer shaft rotated fully counter-clockwise to half-way-clockwise).

**User-interface balance:** An adjustment located on the user-interface panel of the blower provides compensation for later-life drift of ionizing electrode efficiency. This adjustment should be performed once bottom-panel potentiometer position is at zero-scale (fully clockwise, from bottom).

#### General Guidelines

- Keep the unit clean and free of water, oil, grease and other contaminants that may cause short circuits, reduced efficiency, and shortening of the useful life of the unit.
- Clean the ionizing-emitter points routinely to maintain optimum performance. **WARNING: See "Maintenance" section on p. 3 herein for cleaning instructions.** For all other servicing of H300B equipment contact Static Clean.

#### Specifications: Hurricane 300B

Input: 120 V, 60 Hz, 1A  
Size: 16½" w x 10½" h x 14½" d  
Weight: 17½ lb  
Air Delivery: 100 to 300 cfm  
Effective Coverage: 2' x 10' area  
Voltage Offset<sup>1</sup> (after full balance adjustment): ±10V @ 2' (fan speed MED)

Discharge Times<sup>1</sup> ( 5000V...500V, long-term balance set to minimum compensation ):

Distance	Fan Low	Fan Medium	Fan High
1 ft	0.6 sec	0.5 sec	0.5 sec
2 ft	1.3 sec	1.2 sec	1.0 sec
3 ft	2.3 sec	1.9 sec	1.7 sec
4 ft	3.2 sec	2.6 sec	2.3 sec

Discharge Times<sup>2</sup> ( 1000V...100V, long-term balance set to minimum compensation ):

Distance	Fan Low	Fan Medium	Fan High
1 ft	0.7 sec	0.6 sec	0.5 sec
2 ft	1.3 sec	1.1 sec	0.9 sec
3 ft	1.7 sec	1.5 sec	1.3 sec
4 ft	2.2 sec	1.8 sec	1.6 sec

Notes 1, 2: per ANSI/ESDTM 3.1



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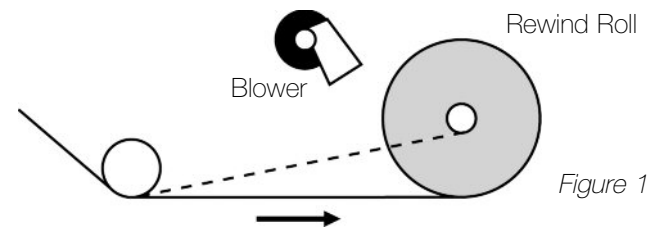
## Hurricane 300B

### Installation

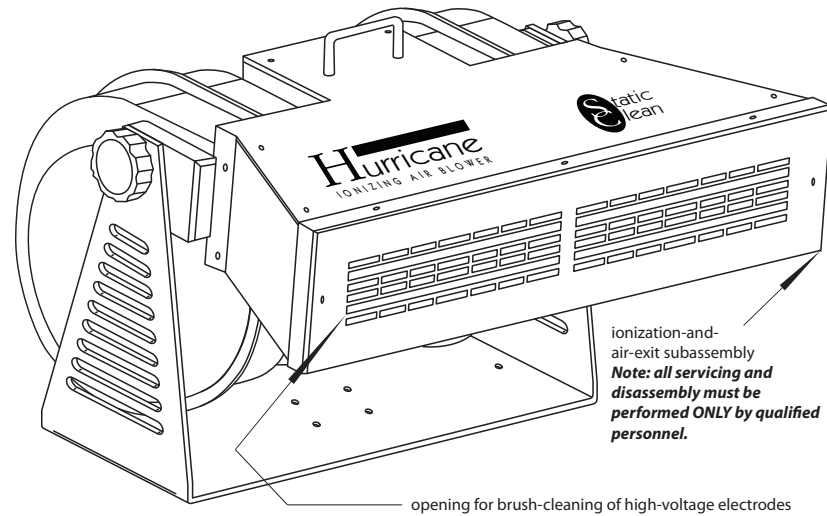
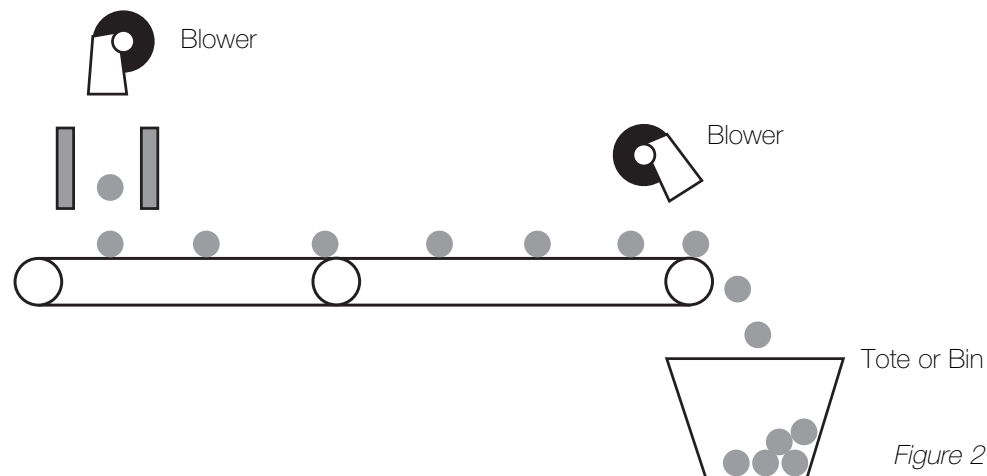
#### Initial Setup and Positioning

Proper location and positioning of the H300B is essential to satisfactory performance and to the life of the equipment. Because each application is unique, careful thought should be given to establish the best location and installation.

Most of the time, the best place to install any type of static control equipment is immediately ahead of the problem. For example, if an operator is getting shocked from a rewind roll, then the ionizer should be placed so that the last thing the material passes before it winds onto the roll is the ionizer. The advantage of the Hurricane Air Ionizing Blower is that (unlike a static bar that must be mounted within inches of the material) it can effectively neutralize an electrostatically charged material from a distance of several feet. This means that the material will be in the effective range of a properly mounted Hurricane from the time it starts winding until it is fully wound. (See Figure #1)



Another example would be neutralizing plastic parts as they exit a plastic injection mold and are conveyed to a container/tote. Keeping parts neutralized through this process will prevent them from re-attracting to the mold cavity; prevent them from attracting air borne contamination; allow them to fall freely from the conveyor and into the container, and prevent annoying, uncomfortable shocks to operators. (See Figure #2)



### Balanced Ionizing Air Blower

#### For Operator Safety and Best Performance

- The H300B must be properly grounded to reduce risk of electric shock. It comes equipped with a detachable 3-conductor power cord with a grounding wire and 3-terminal plug. It is essential to the performance of the H300B and to the safety of the operator that this or any other power cord applied be used with compatible 3-terminal power outlet, both of which must include grounding. Do not alter the plug of any power cord to be used with the power outlet.
- Generated static-neutralizing ions may be collected or diverted by conductors (e.g. metal) or solid dielectrics (e.g. insulators) proximate to the target material. Hence air-clearance distance of the targeted area on material (or discrete product) from the nearest solid surfaces should be maximized to achieve best neutralizing results.
- For stationary target materials or product, H300B performance can be effective at distances as large as ten feet. For material velocities of 1000 feet per minute smaller distance to the target is typically required. A range/distance of two to four feet between H300B and target is generally recommended for web applications.
- H300B airflow may be directed onto the target from any direction. Downward-pointing orientation of the emitters, if feasible, is recommended to minimize accumulation of airborne materials onto the ionizing electrodes.
- The U-bracket stand/pedestal of the H300B must be bolted to a mounting surface so as to provide stable positioning of the ionizing blower prior to and during operation.
- Installation of the supplied foam air filters (2 locations) is only recommended for applications that would otherwise require unacceptably frequent emitter cleaning. Performance specifications herein apply only to operation without air filters. Discharge/decay times are increased by air filters or any other restriction of airflow at H300B inlets (2) or outlet. Offset voltage or balance should be adjusted in the application-specific/installation environment.

#### Maintenance

**WARNING:** The H300B generates high voltage internally. Be sure unit is powered off before cleaning.

**RISK OF ELECTRIC SHOCK:** To reduce the risk of electric shock, do not perform any cleaning other than that detailed in the instructions of this document. Contact Static Clean for any other servicing.

The ionizing electrodes (i.e. emitters) may be cleaned using a brush with soft, non-conductive bristles (such as that supplied with H300B) of diameter small enough to pass through the openings in the air-exit grill centered over the emitters, without any disassembly. Metal-bristle brushes must NOT be used. To clean heavy or adherent buildup of foreign material on the emitters servicing at-the-factory may sometimes be required. In this case contact Static Clean to request the required servicing.

Other cleaning of the main chassis and squirrel-cage (i.e. fan) enclosures should be performed using compressed air blown in from outside the unit.

Performance (i.e. offset voltage or balance and decay time) may be affected if the ionizing electrodes are not adequately cleaned and visible accumulation of foreign material is present. Periodic cleaning performed from outside of the unit with the brush provided or with a compressed-air blow gun will maintain optimum performance. Do not open the enclosure. Usually, in the typical manufacturing environment, a quick once-a-month cleaning is sufficient (more often in a dirty environment, less often in a clean one).

If installed (see discussion of performance and airflow restriction above on this page), the two external air filters should be cleaned or replaced as a component of routine maintenance of the H300B.