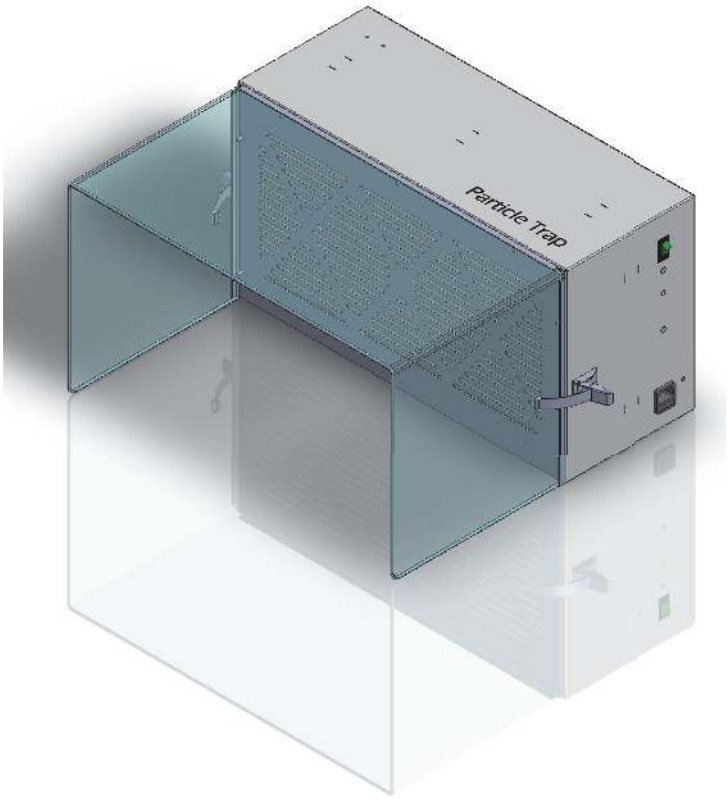
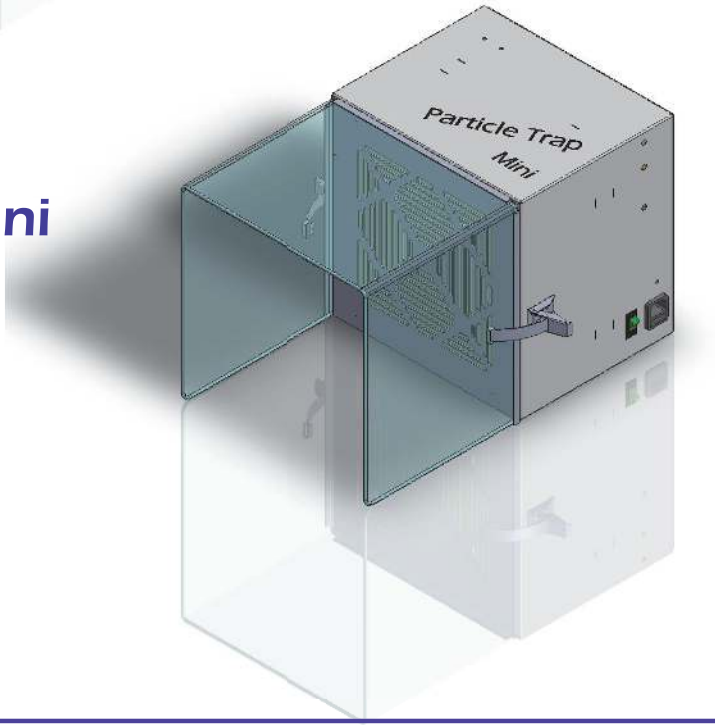
Particle Trap Operation Manual



PT6000

PT-Mini



Static Clean

Introduction

Why use the Particle Trap

When trying to dislodge particles from various substrates, especially plastic parts and trays, the use of ionizing air guns, ionizing nozzles and air knives are commonly used devices that not only aid in getting the contaminants off the product, but the fact that they control the static electricity means that the particles are not re-attracted to the newly cleaned materials. Where do the particles go? The problem is that they either fall to the floor, onto a workstation or to personnel, which means that they stay around and could eventually be the cause of rejects and poor yields. The problem is solved by using a blow-off device within the hood of the Particle Trap which utilizes a reverse fan to pulls ambient air into the cabinet that is supported by a pre-filter and HEPA-filter system so that the exit air is free of unwanted contaminants. The quick change pre-filter makes the Particle Trap the ideal system to enhance the process and increase yields that translate into higher profits.

Although the systems works best when incorporating an ionized air device to neutralize static electricity, as a stand-alone process tool, the Particle Trap can also be positioned near a critical point in the process. The Particle Trap will act as a vacuum to attract particle into the filters of the unit and away from particle-sensitive products typically found in Medical Device Manufacturing, Optics, Coatings, Electronics and other applications that require clean parts.

Optional

If you wish to convert the Particle Trap to an Ionized Air Cleaning System, simply mount one of our Ionizing Air Knives to the front of the Particle Trap above the entrance or use an Ionizing Air Gun and perform the cleaning action within the workspace of the clear view Lezan hood**.**

Pictured is the Static Clean ZappPLUS Ionizing Nozzle - this hands-free blow-off nozzle gives the operator the versatility and flexibility to mount and position the nozzle at a desired spot for high-impact cleaning;

Specifications	PT6000	PT-Mini
Width	21 inches (not with latches)	11 inch
Height	12 inches	11 inch
Depth Total	20 inches	18-1/2 inch
Depth Cabinet	9 inches	9-1/2 inch
Depth Hood	11 inches	9 inch
Weight	36 pounds	21.5 pounds
Max. Current	0.88 Ampere	
Nominal Current	0.60 Ampere	
Fuse	2 Ampere	
Input Power	115 VAC 50/60Hz	
Sound	62 dba	
Face Velocity	110 feet per minute	
Volume Flow	192 cubic feet per minute	92 cfpm
Sound, away	63 dba @ 3 feet front	
Cabinet	Welded steel	
Paint	Epoxy Powder Coat thermally processed	
Fan	Plastic PA6, fiberglass reinforced Thermal Overload Protector wired internally.	
Bearing	Sealed Ball Bearings	
Conforming To Standard	EN60335-1; CE	
Approval	UL507; CSA C22.2	

Specifications

Mains-Input Fusing
removable 5x20mm 2AG fuse-holder cartridge (externally accessible on side panel)
Operating Temperature
0C to 40C / 32°F to 104°F ambient
Mains-Input Connection
IEC-320 receptacle
Input Ratings
120VAC @ 50/60Hz nom. ±10%, 3ARMS max.
Thermal Protection
shutdown internal fan (over-temperature)

The HEPA-Filter is a custom made pleated media, aluminum frame, sealed unit.

	PT6000	PT-Mini
Efficiency	99.99 at 0.3 micron	
WG	0.81 at 100 fpm	
Width	20 inch	9-1/8 inch
Height	10 inch	9-1/8 inch
Depth	2-1/2 inch	3 inch

The Medical Grade Pre-Filter is a custom selected pleated media, all plastic framed unit.

	PT6000	PT-Mini
MERV-11	ASHRE Std. 52,2 1999	
WG	2.0 at 100 fpm	
Width	20 inch	10 inch
Height	10 inch	10 inch
Depth	1 inch	1 inch

Installation

CHOOSING A SUITABLE LOCATION
Location impacts the nature and extent of external airflow disturbances, which may affect performance of the cabinet when it is exposed to these disturbances.

When installing the cabinet, it should be located as far away as possible from sources of airflow disturbance and in an orientation which optimally shields the cabinet's airflow from all external airflow disturbances. Please note that the cabinet should not be placed in front of another cabinet.

Please follow these guidelines when choosing a suitable location for your cabinet:

The location must be far away from :
a. personnel traffic flows
b. air vents (in and out)
c. door and window
d. any other sources of disruptive air currents or air drafts
If drafts or other disruptive air currents exceed the face velocity of the filter, the potential exists for contaminated air to enter the work zone of the cabinet.

- A minimum distance of one foot from the rear is recommended for exhaust air flow.
- A clearance of six feet in front of cabinet is strongly advised in order to maintain proper airflow.

Cleaning

Turn off the power to the Particle Trap when cleaning the interior of the unit.
Periodic cleaning of all Lexan® polycarbonate sheet products can be accomplished easily and without the need for specialized cleaning agents. However, as is the case with all thermoplastic materials, certain chemicals can cause structural as well surface damage and precautions need to be taken to avoid any aggressive cleaning agents.

The basic cleaning agent for all Lexan® polycarbonate products is a solution of lukewarm water with mild soap or household detergent, using a soft cloth or sponge to loosen any dirt and grime. All surfaces are then rinsed with cold water and dried with a soft cloth to prevent water spotting. However, in some cases this may not be sufficient and certain solvent cleaners may be needed to remove stubborn stains, graffiti etc. In these cases the following list of cleaning agents are approved for use at room temperature:

Methyl alcohol, Ethyl alcohol, Butyl alcohol, Isopropyl alcohol, White spirit, Heptane, Hexane

Maintenance

The Particle Trap Product Line requires very little maintenance other than routine replacement of the Pre-Filters and Hepa-Filter at various intervals. The Pre-Filter should be replaced on a monthly Preventive Maintenance (PM) schedule or by visual inspection for earlier replacement if the need dictates. 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 1 to 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. Like most Hepa-Filters, the life expectancy is between one and three years depending on usage and environment. For Cleanroom environments the Hepa-Filter can last closer to three years, but in low level cleanroom or general production environments, the Hepa-Filter will have a lower lifespan.

The Pre-filter element is replaced by releasing the draw latches on each side and removing the Lexan Hood, which releases the front grill with the incorporated Pre-Filter channels. Slide the old filter out and the new filter in, (see the illustration on page 8)

NOTICE; the wire support mesh built into each Pre-Filter should be “downstream” facing inside the cabinet. If you can see the wire after reassembly from the operators view - the filter is installed backward.

Pre-Filters are available as a case of six filters, ordered under part number;

PT6000	680-0006CASE	per case of 6. Pre-Filter, Medical Grade
PT-Mini	680-0007CASE	per case of 12, Pre Filter, Medical Grade

⚠ *Safety Precaution: Hepa-Filter access.*

The power source must be disconnected from the mains when accessing the Hepa-Filter, the internal fan blades are exposed and do not have a guard. Unplug the power cable to be certain power cannot be applied.

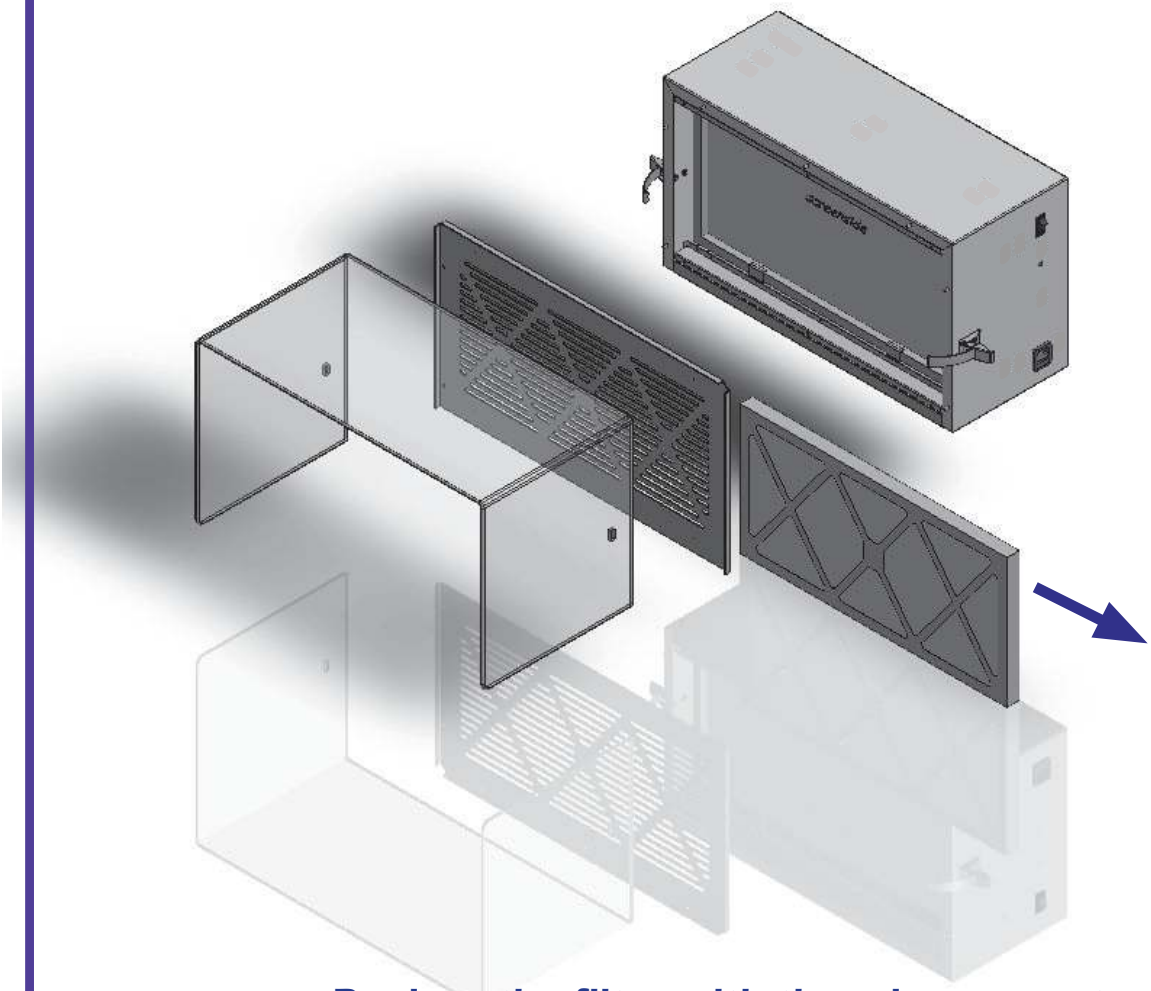
The HEPA-Filter is accessed by removing the rear panel that it is attached to.
Remove the front hood and place the cabinet on a table lying face down. Remove the #8 screws (see the illustration on page 9). Loosen and rotate, or completely remove the four Filter Straps. The HEPA Filter may be stuck to the rear panel and require significant persuasion to break free. The filter housing has a gasket on one face, the gasket must engage the rear panel and be compressed, when placing the new filter on the rear panel be mindful of the perimeter flanges, they must seat inside the filter metal frame.

Procedure; At re-install, lay the rear panel on a work surface with flanges up-facing; place the HEPA Filter onto the rear panel with the gasket down-facing and centered on the opening; engage (4) clips then tighten slightly as you carefully align the HEPA filter so the flanges fit inside the HEPA filter frame. tighten all (4) clips to seal gasket to rear panel.

HEPA Filters are available individually, ordered as part number;

PT6000	680-0001	sold as each.
PT-Mini	680-0005	sold as each.

Flip the toggle clamps open to remove the Lexan Hood and the Front Grill. Slide the filter out toward the right.

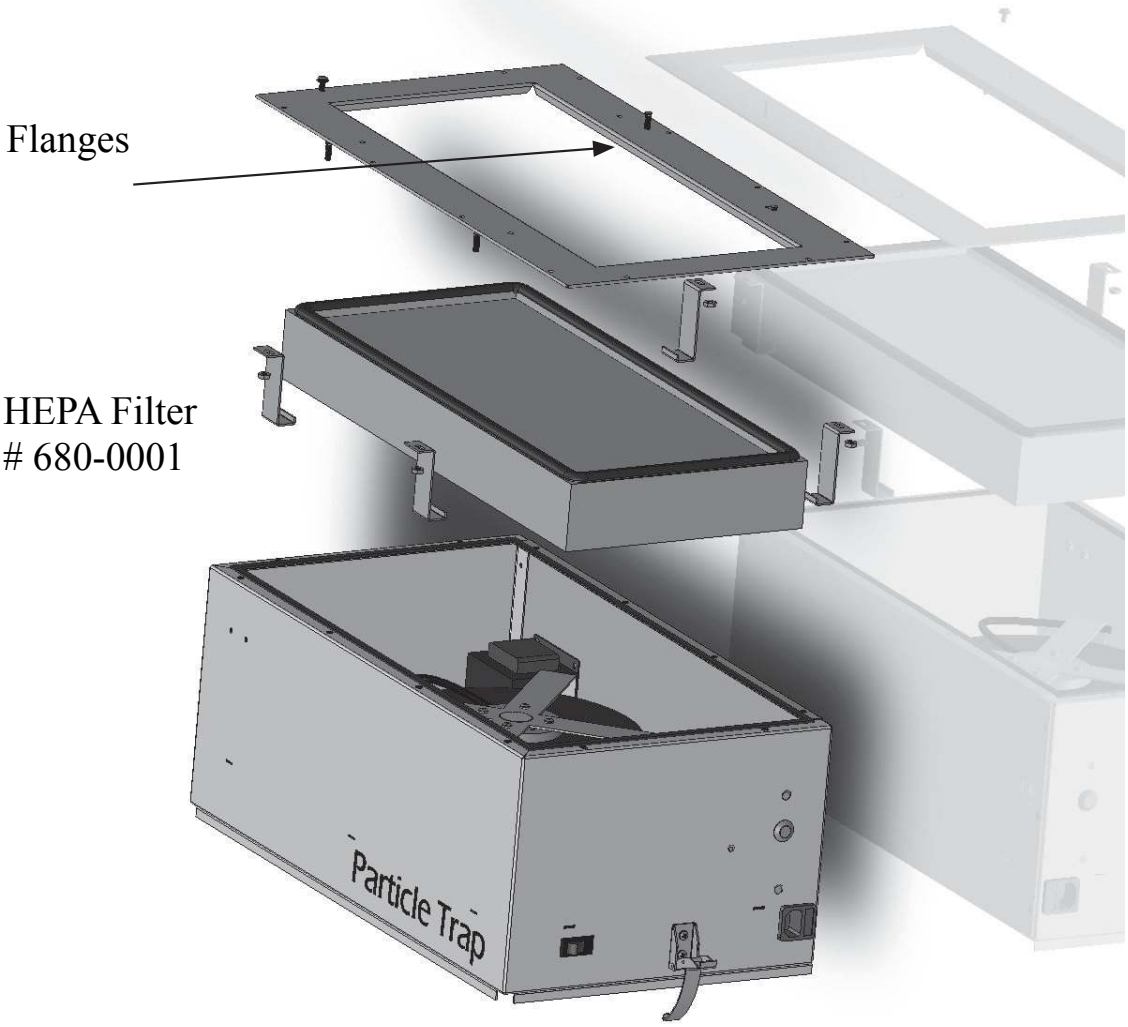


Replace the filter with the wire support side facing inward, toward the blower

Pre-Filter Part Number;
PT6000 #680-0006CASE = Carton of Six, Medical Grade
PT-Mini #680-0007CASE = Carton of Twelve, Medical Grade

Static Clean Particle Trap, pre-filter remove

Remove the Power Cord !
Remove the Hood, place the unit face down
Remove qty=12, #8 rear panel screws
Loosen or remove the Qty=4 filter brackets
Separate the filter from the rear panel



Attach the new filter to the rear panel, the gasket faces the rear panel, be mindful to remain clear of the rear panel flanges (see full instructions)
Tighten the Qty=4 nuts until they bottom snug, this will properly compress the gasket

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Pictured is the Static Clean ZappPLUS Ionizing Nozzle - this hands-free blow-off nozzle gives the operator the versatility and flexibility to mount and position the nozzle at a desired spot for high-impact cleaning;

For more details on the ZappPLUS, please see page 11 & 12 of this manual.

Pictured is the PIEZONIZER AGZIII High Frequency Air Ionizer.
The AGZIII is a compact lightweight Ionizing air gun that eliminates static electricity with excellent Ion Balance and Fast Static Decay Rates that make it ideal for most applications that require static elimination.
The gun comfortably fits into the hand of an operator, and can be directed at isolated areas where other devices fail or can not effectively deliver ionization.

Call Static Clean for a Data Sheet and Technical Specifications.