Cartridge Type Grinding Dust Collection For Cast Polymer Applications

Any shop making cast polymer products will have a dust collection issue. Historically, Gruber Systems offered a HEPA Grinding Booth or a Baghouse Grinding Booth to isolate and capture dust generated during the grinding process. In recent years, a new type of Grind Booth Filtration System has become available – the cartridge type dust collection system. Here is a comparison of the grinding booths with these types of dust collection:

<table>
<thead>
<tr>
<th></th>
<th>HEPA</th>
<th>Baghouse</th>
<th>Cartridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter Media</td>
<td>32 Prefilters</td>
<td>Baghouse Filter Sock Qty 100 Socks</td>
<td>6 Cartridge And 6 Final Filters</td>
</tr>
<tr>
<td></td>
<td>32 Pocket Filters</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 Hepa Filters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footprint</td>
<td>Small 15’ x 12’</td>
<td>Large 23’ x 14’</td>
<td>Small 15’ x 14’</td>
</tr>
<tr>
<td>Maintenance</td>
<td>High Clean Filters</td>
<td>Low Shake Socks Empty Barrels</td>
<td>Low Empty Dust Trays Trays</td>
</tr>
<tr>
<td>Parts Availability</td>
<td>Easy</td>
<td>Difficult Vendor Out Of Business</td>
<td>Easy</td>
</tr>
<tr>
<td>Initial Cost</td>
<td>Medium +$20,000</td>
<td>High +$30,000</td>
<td>High +$30,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Obsolete Not Available Anymore</td>
<td></td>
</tr>
<tr>
<td>Recurring Cost</td>
<td>High $2,500-$3,500</td>
<td>Low Sock Replacement Thru Alternate Vendor $400-$600 After Several Years</td>
<td>Low Filter Replacement After Several Years $950 - $1,050</td>
</tr>
<tr>
<td>Adaptability</td>
<td>No</td>
<td>No</td>
<td>Yes Cartridge Dust Collector Can Be Sold Separately; Customer Can Build Enclosure</td>
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</tbody>
</table>
Based on this comparison, we believe the best value for our customers is a Cartridge Type Dust Collection System.

**Cartridge Type Dust Collection**

The Cartridge Type Dust Collection system provides an extremely effective method of dust collection. The Cartridge Type Dust Collection unit is designed with a cartridge-style filtration system that captures the grinding dust, allowing clean air to recirculate back into your plant. Cartridge Type Dust Collection units are ideal for heavy dust generation applications. The cartridge filters are automatically cleaned by a high velocity reverse-pulse jet cleaning system. The pulse cycles are controlled by timer and sequence card. The automatic system maintains optimum filter efficiency for a longer filter life. The collector has vertically mounted cartridge filters removing 99.8% of air-borne sub-micron powder particulate which exceeds current OSHA and EPA permissible exposure levels. The Cartridge Type Dust Collection unit can be provided with a sheet metal enclosure (Cartridge Type Grinding Booth) or as a standalone unit that can be incorporated into an enclosure built by the user.
Cartridge Type Dust Collection Unit / Cartridge Type Grinding Booth Features

**Cartridge Dust Collection Unit**
- Six vertically mounted cartridge filters 16” dia x 34” long capable of removing 99.8% of airborne sub-micron dust particles; Six 20” x 25” x 1” final filters.
- The cartridge filters and final filters allow the filtered air from the booth to be discharged back into the shop.
- Air to cloth ratio = 3.6 To 1.0; 11,000 CFM @ 3.5 static pressure; 100 FPM through front opening.
- 15 HP 230/460V 3-Phase motor.
- Outside dimensions 9'-10” wide x 10'-1” high x 3'-0” deep.

**Automatic Reverse Pulse-Jet Cleaning System**
- Cartridge filters are automatically cleaned by a high-velocity reverse pulse-jet cleaning system.
- Dust particulate is captured in trays at the bottom of the cartridge type dust collection unit.
  The trays are pulled out and dumped in the garbage.
- The pulse cycles are controlled by a timer and sequence card.
- The timer can be adjusted to change the pulse interval timing.
- The automatic system maintains optimum filter efficiency and longer filter life.
- Magnehelic pressure gauge monitor the pressure drop.

**Control Panel**
- NEMA 12 enclosure containing motor starter, Photohelic switch, sequential pulse valve kit, Push button start/stop, indicator lights, control transformer, and main disconnect switch.
- Magnehelic gauge is built into control panel to monitor the final filters.
- All electrical components and latching devices are UL/ETL listed.

**Booth Enclosure**
- 18-gauge galvanized steel pre-punched on 6” centers; Heavy duty 12-gauge base angle.
- Interior dimensions: 14'-0" wide x 7'-9" high x 10'-0" deep.
- Outside dimensions: 14'4" wide x 11'9" high x 13'2" deep.
- Easy nut and bolt assembly.
- Optional conveyor openings and pneumatic door assembly.
- Optional 6” wide vinyl strip curtain.

**Lighting**
- Two 4-tube fluorescent fixtures; Rear hinged access; 3/16” tempered glass.
- Option for two additional lighting fixtures for a total of four fixtures.
- Option for LED lighting fixtures.