Graver’s patented Powdex® condensate polishing system is a precoat filter demineralizer which provides both suspended solids removal and ion exchange capability in a single unit. The process utilizes powdered ion exchange resin in combination with fiber materials to form a precoat on specially designed filter septa. This Powdex® precoat provides excellent filtration performance and rapid ion exchange kinetics that can be optimized to meet changes or upsets in cycle chemistry. The Powdex system is chemical-free, uses ion exchange resin for a single use and subsequently disposed off without the temperature constraints of typical deep bed polishers. The result is the perfect system to ensure fast starts and long term steam cycle operation by meeting the effluent quality needed to satisfy the high demands of today’s utility and industrial applications.

Advantages of Condensate Polishing

- Elimination and control of harmful impurities, both dissolved and insoluble resulting in increased thermal efficiency, turbine protection from deposits and increased overall plant efficiency
- Quicker startups decrease the time necessary for the plant to achieve full generating capacity
- Extension of the boiler lifetime due to exposure to “cleaner” water
- Backup protection in the case of suspended solids or dissolved contamination from a condenser tube leak or rupture
- Decrease/elimination of blow-down resulting in decreased makeup water requirements and increased thermal efficiency
- Reduced maintenance on the turbine/boiler system from both a labor and cleaning chemical usage
- Reduced or elimination of blowdown during normal operation

Typical Applications:

- Used in power (nuclear and fossil): Condensate treatment, heat recovering steam generators, and combined cycle plants especially with air cooled condensers
- Used in petrochemical and chemical steam generation: Condensate treatment for industrial boilers

Powdex Features

- Superior suspended solids and corrosion by-product removal
- Filtration and ion exchange in a single unit
- Elimination of chemical handling
- Reduced generation of wastewater
- Lower overall system cost (capital + operating)
- Smaller equipment footprint compared to deep bed + Filtration
- Low ΔP (Pressure drop)
- Protection of steam loop assets such as Boiler, Turbine, Condenser, etc
**Powdex® Condensate Filter Demineralizer**

![South West Isometric View](image_url)

<table>
<thead>
<tr>
<th>Powdex Service Vessel</th>
<th>Nominal Pipe Size</th>
<th>Utilities</th>
<th>Dimensions - Ft.</th>
<th>Shipping Weights - lbs</th>
<th>Operating Weights - lbs</th>
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<tbody>
<tr>
<td>GP-24-0238-X-C-3</td>
<td>24</td>
<td>428</td>
<td>4 x 2 x 3</td>
<td>27 x 600</td>
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<td>951</td>
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<td>16 x 8 x 10</td>
<td>439 x 8900</td>
<td>704 x 5616</td>
</tr>
</tbody>
</table>

Notes:
(1) For X digit substitute N=nylon, P=polypropylene, M=316SS; for C digit substitute design pressure in psig.
(2) Average design flow rate is typically 75% of maximum but can be restricted to 50% for high loading rates.
(3) Drain pipe size represents discharge pipe size to customers open gravity drain.
(4) One hold pump per Powdex vessel.
(5) Backwash water required at 25 psi. Rates based on air surge type backwash for 238 ft2 units and larger.
(6) Air surge makeup rate based on one minute recovery time. Divide by recovery time to obtain required rate at 80 psi.
(7) Overhead clearance includes provision for element replacement.

**Contact Us**

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