GSV Filter Systems
Gas Solids Venturi Pulse Blowback

Application Examples:
- FCC 3rd and 4th stage separators
- FCC catalyst hopper vent filters
- Polysilicon
  - Solar and electronics
  - Batch & continuous processes
- Gasification
  - Fuels, chemicals, power
  - Coal, petcoke, biomass, waste
- Pyrolysis
  - Fuels
  - Biomass
- Catalysts from fluid bed reactors
- Polymers and plastic powders
- Reforming catalysts
- Uranium oxides
- Pipe scale in oxygen, steam, process gases

Benefits:
- Low cost of operation
- Automatic, continuous operation
- Safe with hazardous wastes
- Very high removal levels

Available Porous Metal Element Alloys:
- Stainless steels: 316L, 304L, 310, 347
- Hastelloy® C276, C22, B, X
- Inconel® 600, 625
- Monel® 400
- Alloy 20
- Nickel 200
- Titanium

Factors Affecting Sizing of Filter Systems:
- Gas properties:
  - Density, viscosity, flow rate (peak, normal), dew point
- Allowable pressure drops: clean and dirty
- Solids properties:
  - Concentration: Grams (or grains) per cubic foot
  - Density: Particle, bulk, and cake
  - Particle size
  - Cake permeability: Pressure drop/cake thickness

Why Use Porous Metal?
- High filtration efficiency
- High temperature
- High pressure
- Corrosion resistance
- Structural integrity
- Cleanable and Reusable

Advantages of Mott HyPulse® Filters and Elements:
- Porous metal media
- Dependability
- Durability
- Efficient particle capture
- Corrosion resistance
- Design flexibility
- High temperature capability
- High pressure capability
- Automatic operation
- Cleanable and reusable media

Mott HyPulse® GSV filter systems can remove greater than 99.999% of all solids depending on the application. With the GSV filter, it is not necessary to take the filter offline for a blowback cycle. While the filter continues in forward flow, independent groups of elements are blown back with a short-duration reverse pulse. Separator plates and downflow gas inlet provide for superior dust control.

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process systems

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**HyPulse® GSV filters** are the ideal alternative for applications requiring continuous filter operation. Porous metal elements, which are grouped together, are sequentially pulsed and cleaned while the unit remains on-line. Multiple plenum blowback with separator plates and downflow for dust control offer several distinct benefits over alternate designs:

- Continuous operation
- Superior dust control
- High throughput with minimal backpulse requirements
- Filter areas 2 - 1000+ ft²
- Operating pressures up to 1000+ psi
- Operating temperatures up to 1500°F

GSV Venturi Pulse Blowback Filter

**Filtration Cycle and Cleaning Cycle**

- Filtration Cycle: Clean Gas Out
- Cleaning Cycle: Blowback Gas In

**TUBESHEET**

- Dirty Gas Down-flow
- Dust Solids Down
- Dust Cake Released Downward
- Clean Gas Side Above Tubesheet
- Dirty Gas Side Below Tubesheet