



High Efficiency Barrier Filters

For Turbomachinery Air Intake Systems
90-95% and 60-65% Efficiencies

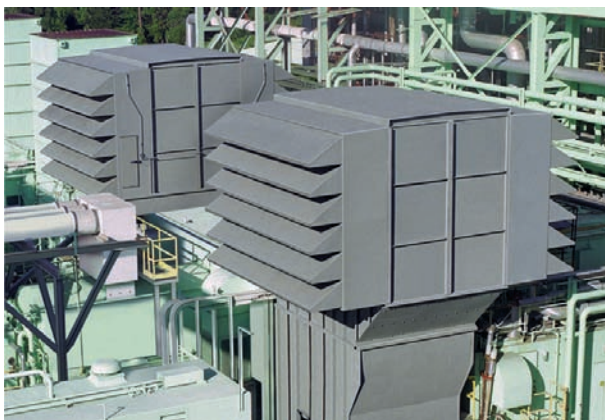
** Prevent Fouling and Erosion of Turbine Blades
Maintain Like-new Operating Efficiency*



Duraflow XL



Vari+Plus GT-R



Vari+Plus GT-R filters installed on a gas turbine at a cogeneration plant.

Protects Sensitive Turbomachinery:

- **Gas Turbines**
- **Compressors**
- **Turbocharged Engines**
- **Fans, Blowers**

Vari+Plus GT

High Efficiency, High Capacity Barrier Filters
Mini-pleat Media Pack Construction

- Best Value for**
- Durability
 - Low Resistance
 - Long Service Life

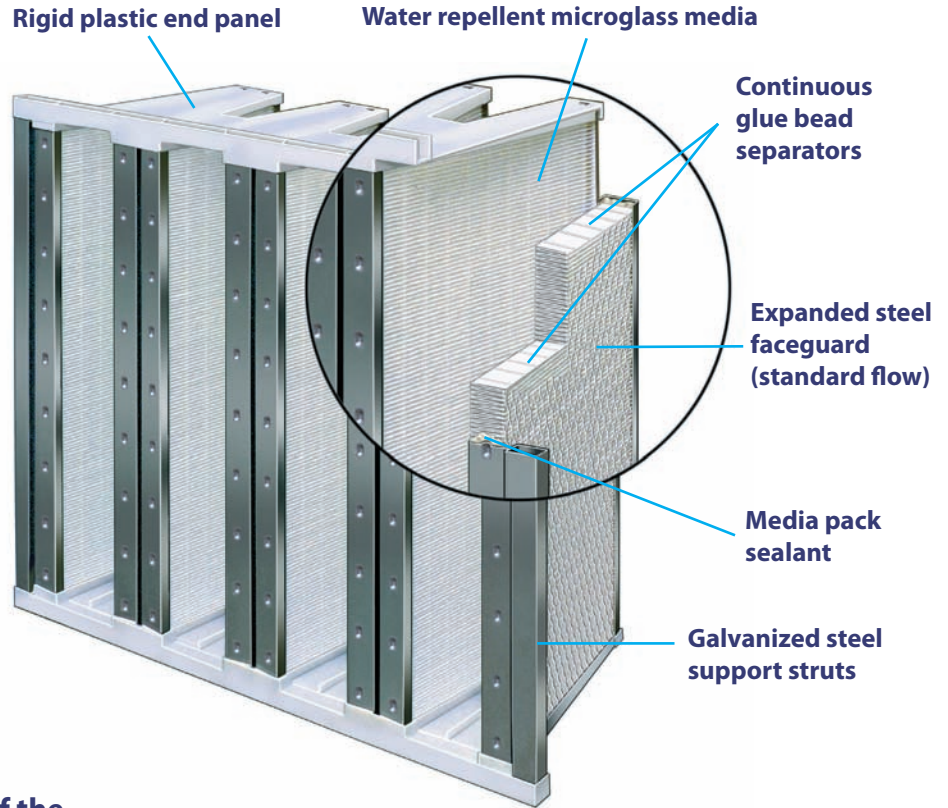
Lowest Operating Resistance Produces Enormous Energy Cost Savings

Filter resistance has a significant impact on the power cost associated with operating a gas turbine. Vari+Plus GT has the lowest pressure drop of any high efficiency barrier filter which translates to thousands of dollars in energy cost savings.

Typical Vari+Plus Energy Cost Savings

Vari+Plus Resistance Advantage (In. W.G.)	* Annual Energy Cost Savings
.20"	\$61,320
.30"	\$91,980
.50"	\$153,300

* 100 MW turbine, \$.07 per KWH, 24-7 operation



Compare Design and Construction of the Vari+Plus GT for Meeting the Demanding Requirements of High Efficiency Barrier Filters

Design Feature	Vari+Plus GT Advantage	Performance Benefit
Mini-Pleat Media Packs (Continuous glue bead separators, 8 packs per filter)	Maximum media area. High ratio of media to filter face area.	Low resistance. Low energy cost. Low operating cost. Maximum power generation yield.
Dual Density Media	Depth loading of media.	High dust holding capacity. Long service life. Low operating cost.
Water Repellent Binder	Unaffected by intermittent exposure to humidity, moisture.	Durability, reliability in wet operating conditions.
Pleat Packs Sealed to End Panels, Support Struts	Prevents leakage.	Contaminant free inlet air. Prevents fouling, erosion of blades.
Adhesive Bonded/ Mechanical Fastening of Components	Totally unitized construction.	High burst strength - up to 30" W.G.
Expanded Metal Faceguards on Downstream Side of each Pleat Pack	Supports media packs.	Maintains media pack structural integrity.
No Rivets or Screws	No loose parts to penetrate downstream.	Eliminates risk of serious equipment damage
Vari+Pad Prefilter (Custom Fitted Pocket Filter)	Mounts directly onto V-bank mini-pleat media packs (reverse flow).	Increases dust holding capacity with low resistance. Extends life of Vari+Plus GT. Saves in line space (No frame needed).

Vari+Plus GT Standard Flow Model (Reverse flow models also available)



Severely damaged turbine blades seriously affect power output.

Particle Size (Microns)	Problem	Affect	Vari+Plus GT/ Duraflow efficiency @625FPM	
			90-95%	60-65%
10 um and greater	Erosion of turbine blades	Permanent damage to blades	99+%	96%
5 um and smaller	Causes deposits on blades	Fouling affects air handling characteristics. Reduces output efficiency	96% (1-3 microns)	64% (1-3 microns)
			99% (3-5 microns)	91% (3-5 microns)

Duraflow

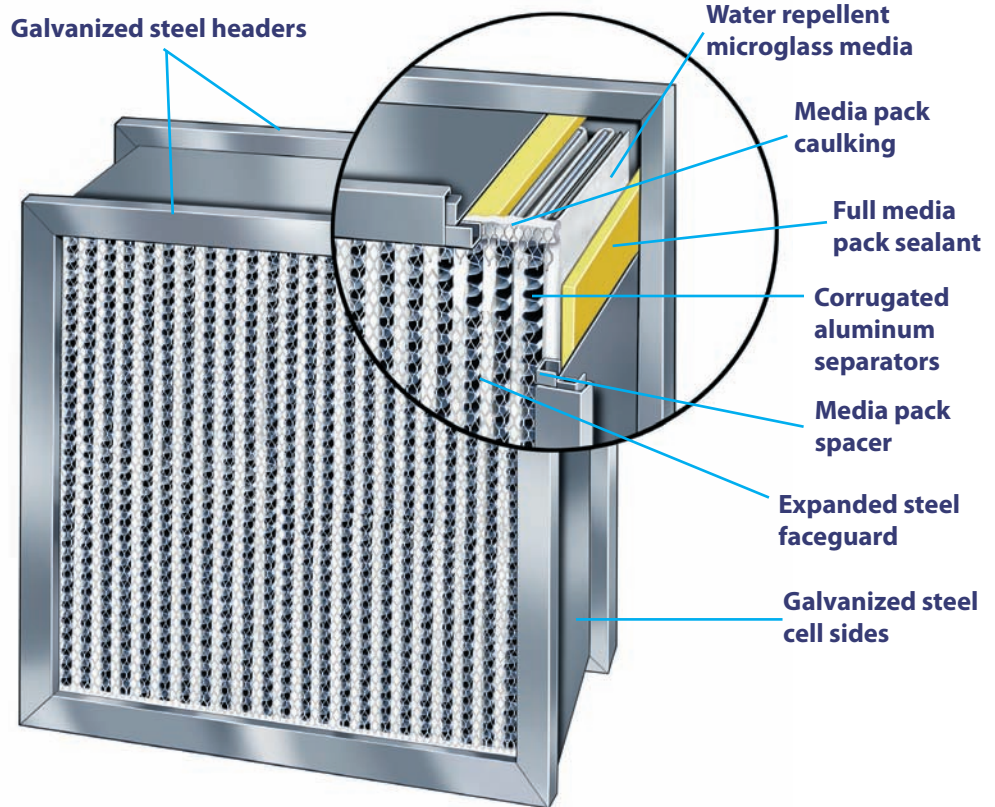
High Efficiency, Heavy Duty Barrier Filters

Corrugated Separator Style Media Pack Construction

Built Tough for Turbomachinery Applications

Vari+Plus GT and Duraflow filters are engineered to provide rated efficiency and maintain structural integrity under the extreme operating conditions experienced by turbomachinery applications:

- High Velocity
- Turbulence
- Surges
- Heavy Dirt Loading
- Rain/ Snow/ Sleet



**Double Header Style
Duraflow XL-90**

Compare Duraflow's Rugged Reliability for All Rotating Machinery Intake Applications

Select from Two Models

(Both models available with single header or double header construction.)

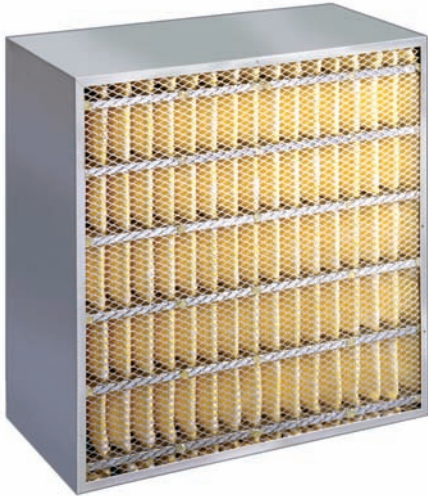
XL Series – Higher media area for normal to extra heavy service conditions, longer life. Heavy duty construction – 90-95%, 60-65% efficiencies. Air flow rating – 625 FPM.

"D" Series – Same heavy duty construction as XL Series with fewer pleats, less media for lighter service conditions. 90-95%, 60-65% efficiencies. Air flow rating – 500-625 FPM.

Design Feature	Vari+Plus GT Advantage	Performance Benefit
Dual Density Media	Collects dirt throughout the entire depth of the media.	High dust holding capacity. Long service life. Low operating cost.
Water Repellent Binder	Unaffected by intermittent exposure to humidity, moisture.	Durability, reliability in wet operating conditions.
Full Media Pack Sealant (high loft media wrapped around entire perimeter of media pack)	Prevents Leakage (Many competitive brands have no sealant or only a layer at the top and bottom of the pack).	Contaminant free inlet air. Prevents fouling, erosion of turbine blades.
Media Pack Caulking (Sealant applied along top and bottom of media pack on air entering side)	Prevents leakage around media pack.	Contaminant free inlet air. Prevents fouling, erosion of blades.
Rolled Edge Corrugated Aluminum Separators	Prevents damage to media.	Prevents unfiltered air from passing through the filter. Minimizes risk of injury to maintenance personnel.
Snap Lock Assembly	High integrity filter assembly method.	Durability over long service life.
Single Rivet Header Construction	Minimizes number of loose parts to penetrate downstream.	Minimizes risk of serious equipment damage.
Expanded Metal Faceguards on Both Sides	Supports media pack.	Maintains media pack structural integrity. High burst strength - up to 25" W.G.
24 Gauge Galvanized Steel Components	Heavy duty construction. Rust resistant.	Maintains structural integrity. Prevents bypass. Prevents rust.

Other Airguard Filters for Turbomachinery Air Intake Systems

High Efficiency Barrier Filters



Vari-Pak GT Rigid Cell Filters

High loft media, fiber glass or synthetic, is pleated with an expanded metal backing. Metal fingers inserted from both sides of the filter stabilize the pleats. Expanded metal faceguards on both sides reinforce the media pack. Rated at 500-625 FPM face velocity. 60%, 80%, 90% efficiencies.

Prefilters

Prefilters are strongly recommended for all turbomachinery applications to extend the life of high efficiency barrier filters



Vari-Pad™ Prefilter for Vari+Plus GT

The Vari-Pad is a custom fitted polyester pocket filter designed for direct mounting on the Vari+Plus GT filters installed in the reverse flow orientation.

The pockets fit smoothly over the four V-bank mini-pleat media packs significantly extending the life of the Vari+Plus GT with minimal resistance. Space savings are also achieved. No need for a separate frame bank.



Type DPGT Pleated Panel Filters - 30-35%, MERV 8

Type DPGT filters in 2" and 4" thicknesses are constructed with a moisture resistant beverage board frame. Die cut fingers separate and stabilize the pleats during pulsation or surge conditions. A welded wire backing holds the pleat shape and prevents vibration during operation.

GT Extra Heavy Duty Fiber Glass Pad

The GT pad is a 4" thick fiber glass media with very heavy high fiber content and an extra heavy application of specially formulated gel adhesive. GT pads are designed for high dust holding capacity operating in very high dirt loading conditions.



A-HEBARRIER-209



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