



**Donaldson**  
FILTRATION SOLUTIONS

Gas Turbine System

**GDX™**

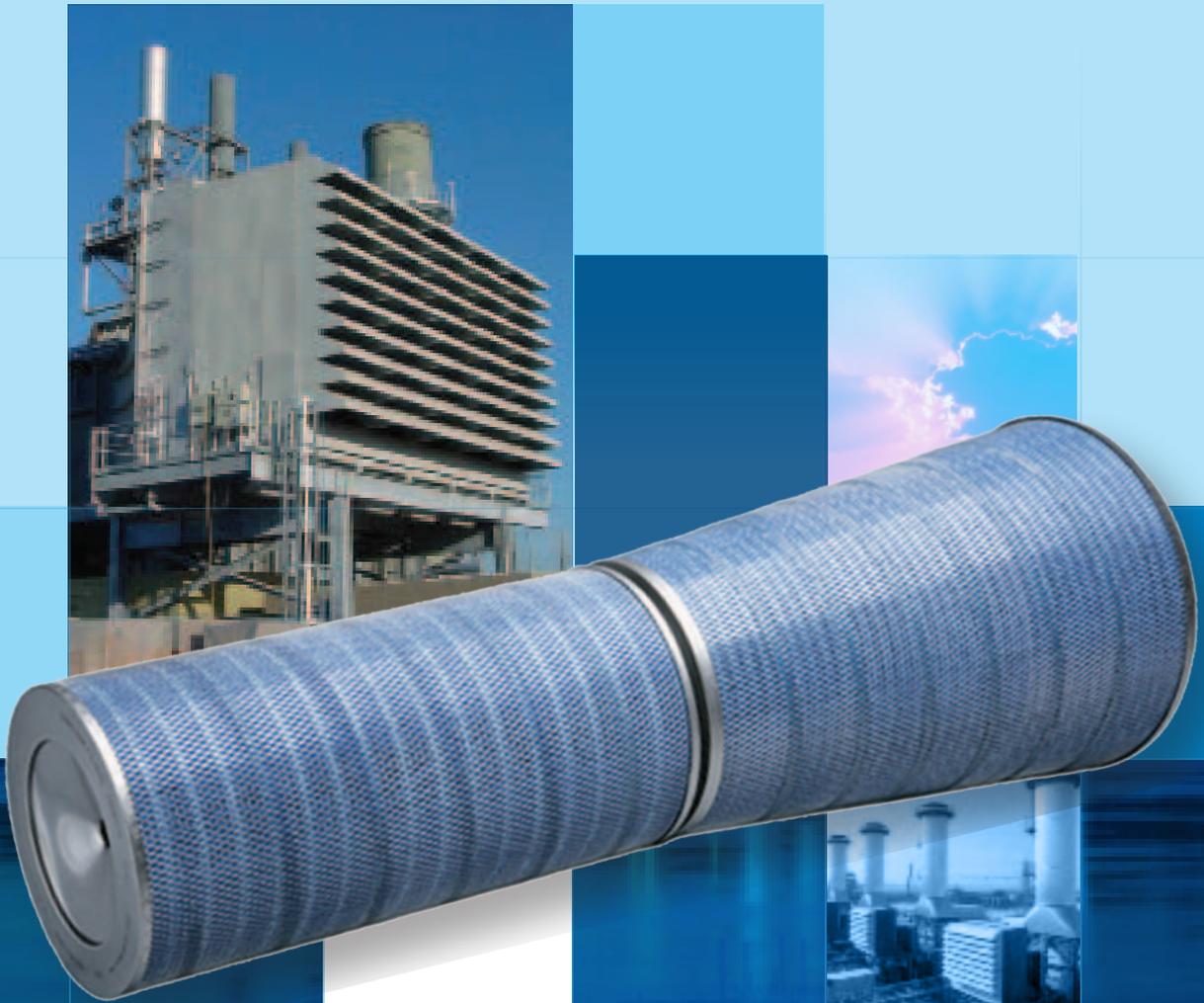
**Designed to Exceed  
your Expectations**



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# GDX™ Self-Cleaning Pulse Filter System

To protect your gas turbine and industrial compressor around the world



Donaldson designs and manufactures a full line of replacement filter elements, for Donaldson systems, as well as for other brands.



Donaldson's GDX Air Inlet Filtration System is currently the defacto standard self-cleaning filter for gas turbines around the world.



## SELF-CLEANING FILTER

The GDX downflow airflow design, combined with patented Spider-Web® filter media technology, enhance the pulse cleaning performance:

- Minimum filter service requirements.
- Low filter operating pressure drop over the life of the filter.
- Featuring Donaldson high efficiency media like Spider-Web®, Spider-Web XP®, membrane filter media ... for high performance and long life.

## VERSATILE

GDX is ideally suited for protecting turbines from a wide variety of environments:

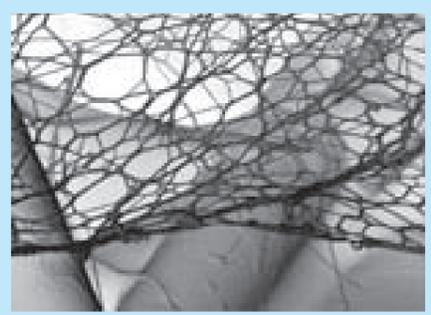
- Remote locations that need long filter service life.
- Environments with high dust concentrations.
- Desert and arctic climates.
- Suitable for power generation, oil & gas and industrial applications.

## ENHANCEMENT FEATURES

- **Noise treatment:** Inlet silencing systems and noise attenuation hoods.
- **Power augmentation:** evaporative coolers & chiller coil systems are easily compatible to GDX design.
- **Inlet heating:** downstream the GDX for control of icing and NOx emissions.
- **High humidity conditions:** variety of moisture separation devices and coalescers are available.
- **Dust:** evacuation and disposal systems.

## HIGH EFFICIENCY, LONG-LIFE FILTERS — MADE WITH PATENTED DONALDSON NANOFIBER MEDIA, SPIDER-WEB OR SPIDER-WEB® XP

Spider-Web® is Donaldson's proprietary filter media treatment. A fine, even web of nanofibers bonded upstream a filter media substrate (either purely synthetic or a natural/synthetic blend). This nanofiber web increases filtration efficiency, thus reducing compressor fouling. The enhanced surface loading improves the effectiveness of the pulse cleaning. Spider-Web® XP carries the nanofiber both upstream and downstream the media substrate.



This photo from the scanning electron microscope @ 2500X magnification shows the larger fibers of the substrate under the web of fine fibers.

## HOW IT WORKS

### STEP 1

- **Weather protection:** Air is drawn into the GDX system through inlet hoods that protect the filters from the effects of rain, snow and sun.
- **Downflow:** These inlet hoods contain deflectors that direct the incoming air downward.

### STEP 2

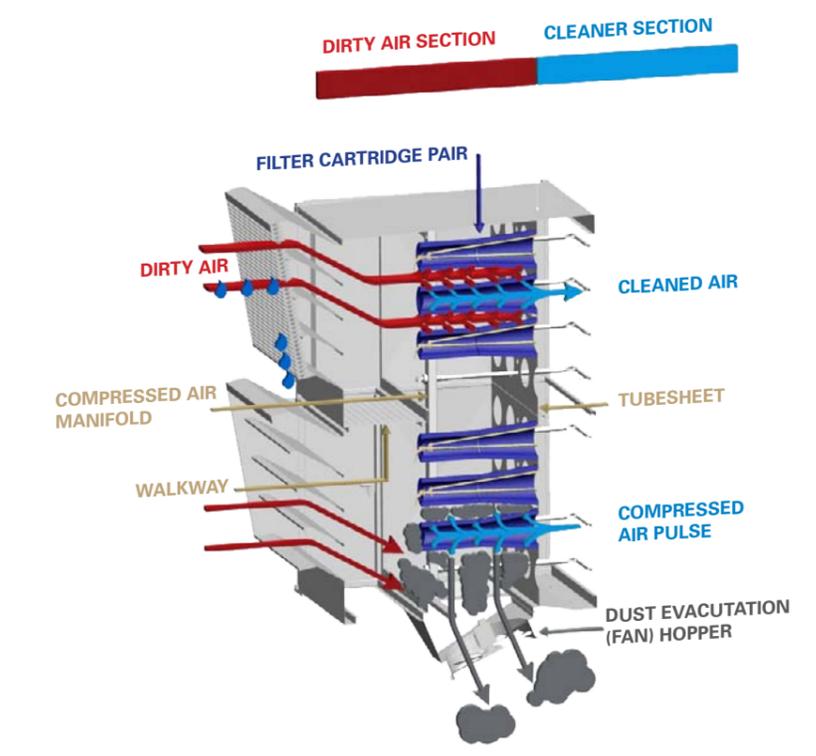
- **Fine Filtration:** The air passes through the Donaldson high efficiency filter media packaged into pairs of filters cartridges installed horizontally against a tube sheet. Clean air then passes to the turbine.
- **Pulse Cleaning:** When the pressure drop across the filters reaches a certain point, monitoring devices trigger a strong, brief reverse blast of air, which removes the accumulated dust off the filters surface. Filter elements are cleaned from top to bottom of the filterhouse.
- **Dust evacuation:** The downflow effect moves the dust towards the bottom of the filterhouse. The dust extraction system evacuates the dust load outside the filterhouse.

### OPTIONAL DOWNSTREAM STAGES

- **Ultra fine filtration:** Where even higher efficiency is required, the GDX can be equipped with an additional final stage of ultra fine filtration efficiency media.
- **Power augmentation** through cooling (Evaporative or Coil systems).

## DESIGNED FOR HIGH FILTRATION EFFICIENCY, LOW OPERATING ΔP AND EXTENDED LIFE-TIME

Thanks to the automatic pulse cleaning design, the GDX operates almost maintenance free, making GDX the best choice even for remote or difficult-to-access locations. And, because the pulse cleaning operation keeps system pressure drop (ΔP) low, the turbine can run at peak efficiency to maximize power output.



## WHY SELECT GDX?

- Unique and proprietary pulse cleaning mechanism.
- Exclusive media from Donaldson specially developed for pulse systems.
- Proven down-flow concept and optimum dust evacuation.
- Easy and low maintenance filter.
- Unique cartridge fixation and locking system.
- Special designed hoods incorporating unique moisture removal panels.
- Tailor-made to exceed your expectations.

## MODULAR DESIGN

- Custom designs to fit any turbine and any particular site specifications.
- Efficient on-site erection.

## HEART OF THE SYSTEM

To maximize filtering area, conical and cylindrical elements are paired and mounted horizontally. The blue color of the media indicates Spider-Web®, our patented nanofiber technology that yields best protection for turbines.

## GLOBAL CAPABILITY

Donaldson Gas Turbine Systems has developed a network of qualified vendors to complement Donaldson's worldwide production and engineering capabilities. Donaldson has the ability to meet local content requirements through the combination of the vendor network and own facilities located throughout the world.



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