

PulseJet Air Intake Filter System

FOR TURBO COMPRESSORS AND ROTATING EQUIPMENT



Dollinger was founded in 1921, introducing the "Protectomotor," an air intake filter designed to extend the life of tractor engines. Over the past century Dollinger has expanded on this success with products that have led to our reputation for quality, reliability, and low life-cycle costs. Industries worldwide are using SPX Dollinger brand air intake systems and process filtration to enhance the performance of compressors, blowers, and turbines, dramatically reducing operating cost by removing contaminants at the intake and critical process points.

Based in Charlotte, North Carolina, SPX Corporation (NYSE: SPW) is a global, multi-industry manufacturing leader with approximately \$5 billion in annual revenue, operations in more than 35 countries and over 14,000 employees. The company's highly-specialized, engineered products and technologies are concentrated in Flow Technology and energy infrastructure. Many of SPX's innovative solutions are playing a role in helping to meet rising global demand for electricity and processed foods and beverages, particularly in emerging markets. The company's products include food processing systems for the food and beverage industry, critical Flow components for oil and gas processing, power transformers for utility companies, and cooling systems for power plants. For more information, please visit www.spx.com.

The Dollinger Solution

As the pioneer in air intake filtration, Dollinger has been solving the most demanding filtration problems for over 90 years. Today, the protection of turbo machinery is measured in microns—one reason the world's leading manufacturers continue to rely on Dollinger's high-efficiency filtration products to meet demanding filtration requirements.

SPX supplies a complete range of filter housings to meet a diverse set of environmental conditions including offshore, coastal, tropical, desert, arctic, rural, and industrial.

INTRODUCING THE PULSEJET AUTOMATIC SELF-CLEANING SYSTEMS

PulseJet is a fully automatic self-cleaning air filtration system specifically designed for medium to large volume applications such as gas turbines, diesel engines and large compressors.

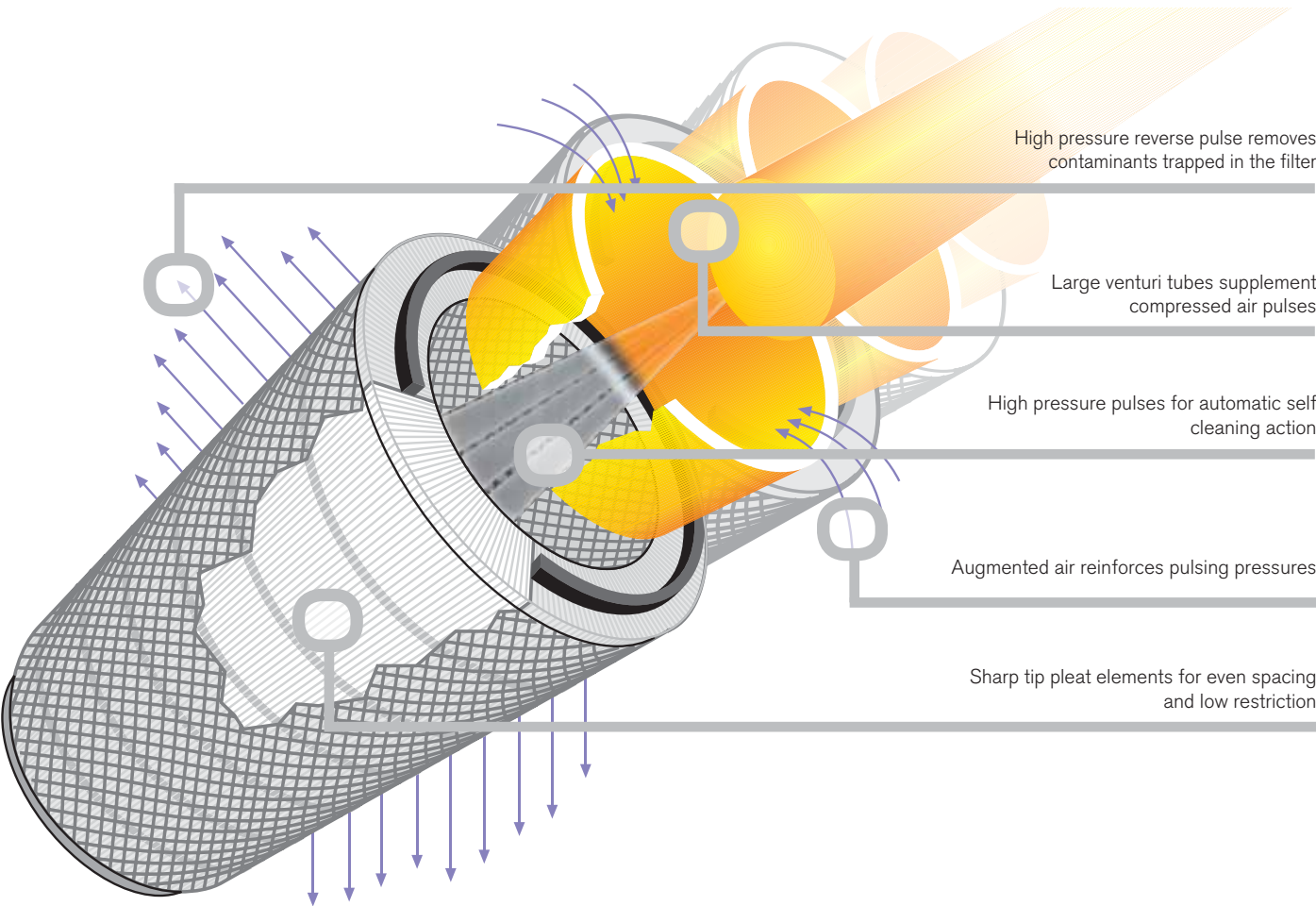
Engineered and manufactured by SPX, the PulseJet system embodies significant refinements and improvements. The result is a self-cleaning filtration system capable of meeting the highest performance standards required by industry - performance that translates into efficiency, reliability and durability.

The PulseJet air filtration system will provide an uninterrupted supply of clean air, even in the most severe conditions - in hot or cold climates.



Ammonia Plant, Russia,
Single Stage, st.st Unit – 85,000 m³/hr

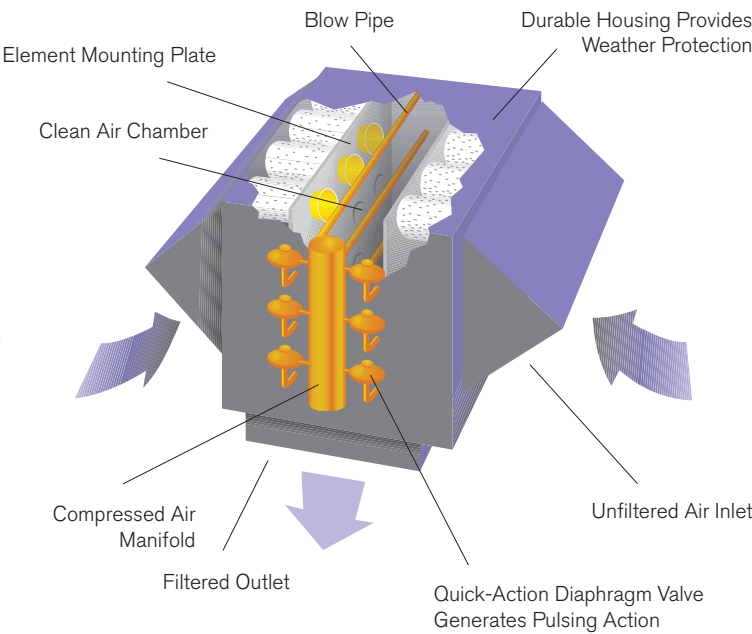
How it Works



Lasting Performance

PulseJet Air Filtration modules feature rugged steel construction with a choice of tough protective coatings. As expected, you'll find all filter elements mounted air tight, eliminating bypass of contaminants. You'll also find durable metal venturi tubes. These are attached directly to the filter mounting plate, not with spot welds, but with a continuous weld around the entire circumference of each venturi.

All hardware, valves, electronic components and controls incorporated in the PulseJet system are rated for heavy duty industrial applications. The entire system is built to endure, in any environment.



PulseJet Filter Element

PulseJet Filter Element with Nanofyne Technology®

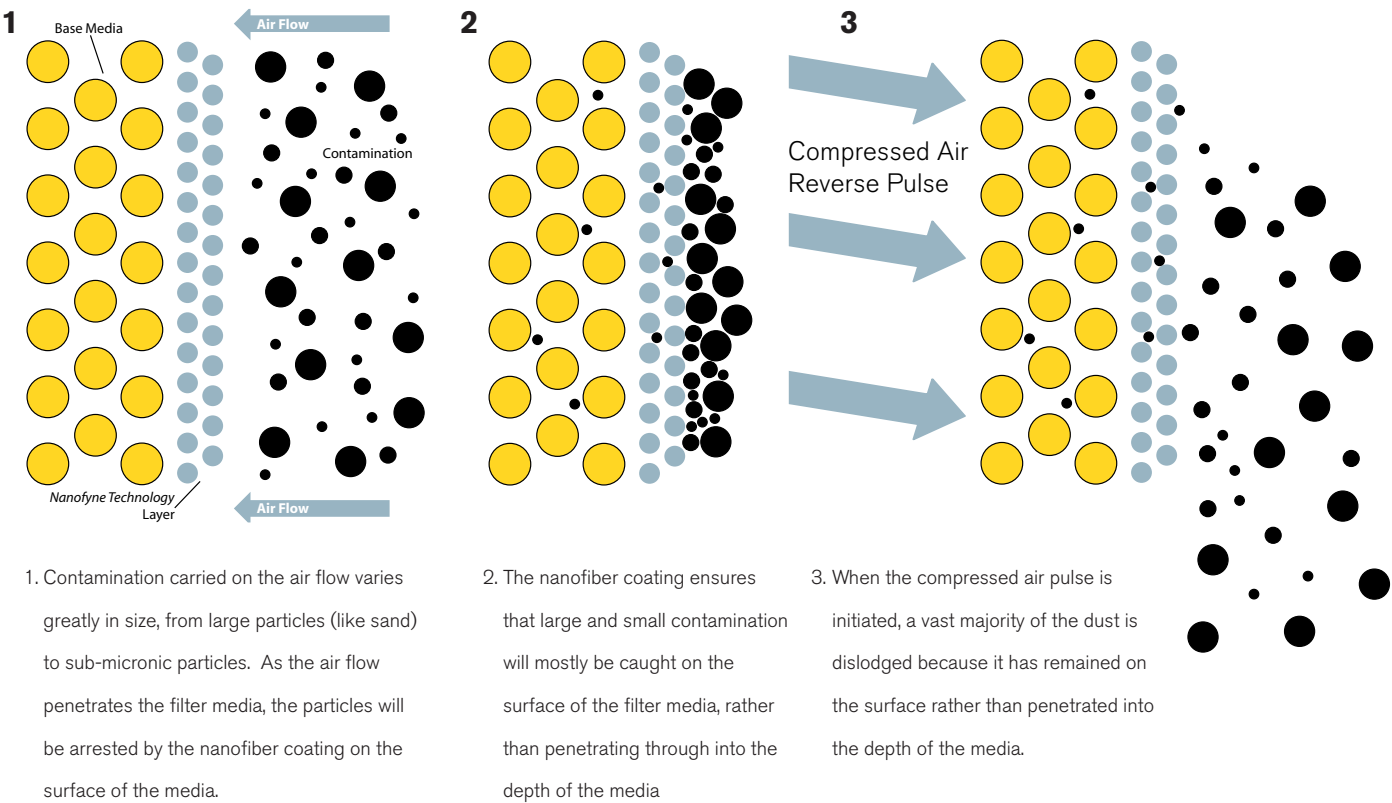
A new standard in air filter technology is available through Nanofyne Technology® from SPX. Building on an extensive knowledge of filter manufacturing gained since the 1920s, Nanofyne Technology® places a microscopic coating of extremely small diameter fibres (nanofibres) onto the surface of synthetic/cellulose filter media. The layer of fibres (invisible to the human eye) provides an extra layer of protection to the filter. Particularly suited to pulse action, self-cleaning filters, Nanofyne Technology® ensures that sub-micronic particles do not penetrate the base media, but rather stay on the surface with the larger particles and are subsequently dislodged during the pulsing cycle. The filter remains clean for longer, as well as preventing the small particles from penetrating through to the turbine. These smaller (sub-micronic) particles are known to be responsible for compressor fouling.



THE NANOFYNE TECHNOLOGY® DIFFERENCE

With traditional cellulose or mixed fibres, although large particles may be arrested at the surface, the smaller contamination travels into the depth of the media (or even through the media and downstream of the filter). The Nanofyne Technology® coating traps both the small and large particles at the surface, making the pulse clean action much more effective.

Nanofiber Protection



COMMON FEATURES	
Pleat Separation	Dimple pleated to ensure consistent pleat spacing & maximum media utilization. Hot melt beading is provided with special purpose machine to maintain adequate pleat spacing and air passage between pleats.
Inner & Outer Liner	Zinc plated cold rolled carbon steel expanded metal with 72% opening area
End Caps	Galvanized cold rolled carbon steel
End Sealing Adhesive	Thermosetting PVC compound
Gasket	Seamless neoprene or EPDM rubber
Initial Pressure Drop at Rated Flow	< 20 mm wc
Arrestance on AC fine test dust as per EN 779 / ASHRAE 52.2 - 1999	> 99.9%
NaCl capture efficiency	> 99.95%
Particle Count Efficiency at stabilized condition	> 99.6% at 1 micron
Element Type	Cylindrical and conical designs

Second Stage Filtration - Optional

Providing the maximum protection from the finest dust, TURBO KLEEN HP™ air filters have been selected by rotating machine operators across the world.

- Rugged, high burst pressure design

FILTER MEDIA

High efficiency media maximizes turbine output by removing microscopic particles which can foul stators and other vital turbine components.

Strong reinforced glass fiber media guarantees reliable filtration, even under high velocity and turbulent operating conditions, with no media shedding.

A highly permeable filter media that operates at low pressure drops resulting in improved turbine performance and fuel efficiency.

The TURBO KLEEN HP™ media features a graded pore structure, which maximizes dust-holding capacity and extends the time between filter changes, even under high dirt loading conditions.

The filter frame is a 100% polymeric and lightweight design that's totally corrosion resistant and disposable by incineration.



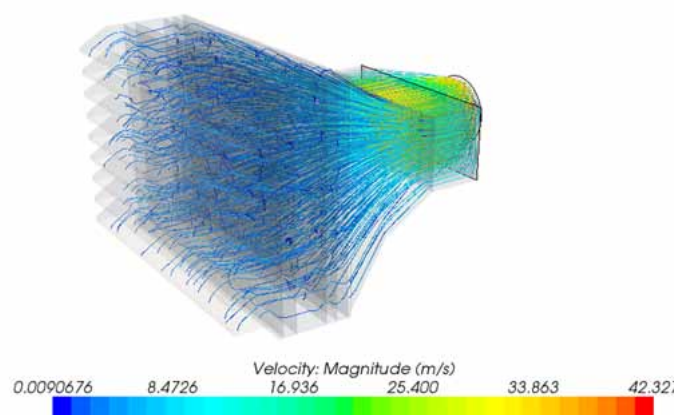
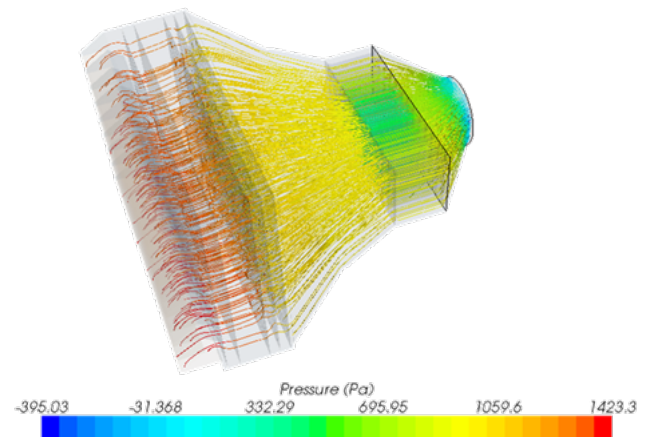
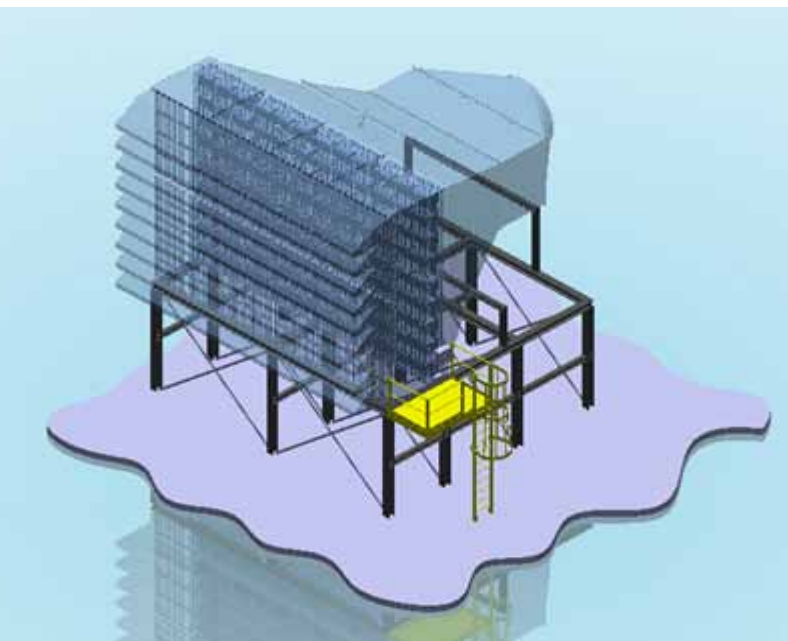
Characteristics	
Filter Media	Glass fiber
Frame Material	Ultra-violet and heat resistant plastic construction
Maximum Continuous Operating Temperature	160°F (70°C)



Design & Engineering Capabilities

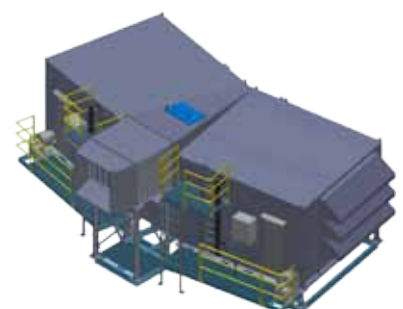
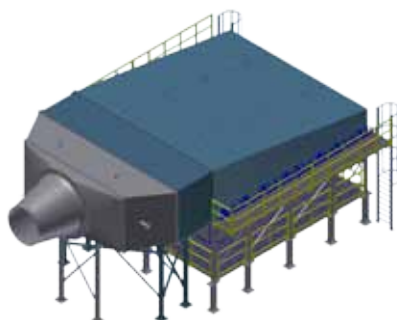
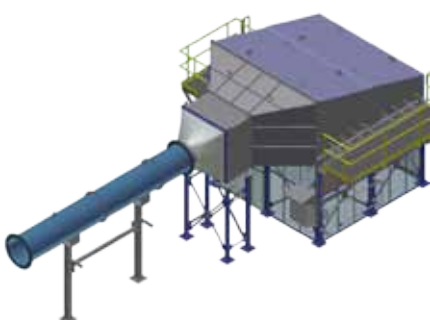
FLUID DYNAMIC ANALYSIS

For critical applications SPX engineers use the latest in engineering design tools such as Computational Fluid Dynamics to ensure the performance of air intake filter systems in the most demanding applications. Using Structural analysis tools, we can also design support structures suitable for various wind & seismic loading.



TECHNICAL DRAWING

We have the ability to create 2-D and 3-D AutoCAD drawings, as shown below



System Features

- Low intake velocities
- Low initial differential pressure
- Heavy duty construction
- Easy filter installation & maintenance
- Carbon steel & stainless steel housing construction
- Vertical configuration
- Customized layouts to suit clients requirements
- Outlet connections to suit the clients requirements

Optional Features

- Second stage TURBO KLEEN HP™ filter elements to achieve an improved filtration efficiency (E13)
- Russian Certification
- Anti-Icing Systems, a range of pre-heater systems available
- Silencer to achieve noise reduction requirements
- Support structures with access service platforms
- ARAMCO compliance
- IEC ATEX EX "e"
- IEC ATEX EX "d"
- CSA compliant
- Class 1, Div 1 & Class 1, Div 2
- PLC based control system
- Special finishes (Marine and Inland conditions)
- Compliance to customer specific wind & seismic requirements
- Low temp (down to -40°C)
- Horizontal configuration

PROJECT REFERENCES



Air Separation Plant
Single Stage Unit – 46,000 Nm³/hr



Air Separation Plant
Two Stage Unit – 17,000 Nm³/hr



Oil Refinery Complex
Single Stage Unit – 46,000 Nm³/hr

Approved to:

9COM 6000013953; Complete Filter Unit,
Self-Cleaning PulseJet Air Intake
System for Centrifugal Air Compressors
(32-SAMSS-006) with Filter Elements
complying to 32-SAMSS-016

Certification

Certified to Product & Filtration standards:

- ARAMCO
- EN779
- ASHRAE 52.2

Pulse Jet Air Intake Filtration Systems



Global locations

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SPX reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit www.dollinger-spx.com and www.spx.com.

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