



PULSTAR 'Crossflow' INTAKE FILTER SYSTEM

**State of the art in
Turbine Intake Filtration**



B E T T E R A I R I S O U R B U S I N E S S ®

AAF
INTERNATIONAL

CROSSFLOW

Self Cleaning Intake Filter System

The CROSSFLOW Self-Cleaning Intake System is a development of the proven PULSTAR filtration system providing clean air for gas turbines and other smooth intake flow machinery.

The CROSSFLOW Intake System provides a constant flow of filtered air. The self-cleaning filtration system eliminates the necessity for short term filter changeout, a characteristic of most barrier filtration systems. Because of the self-cleaning feature, the CROSSFLOW Intake System can operate continuously without shutdown providing prolonged periods of uninterrupted service before filter changeout.

OPERATION

In normal airflow operation (see figure 1), dust laden air enters the CROSSFLOW Intake System and is cleaned by passing through the canister filter elements. The clean filtered air exits into the clean air plenum and on to the turbine intake.

Upon reaching a preset differential pressure loss, or time interval, the automatic self cleaning system is initiated. The reverse air cleaning cycle is controlled by a solid state printed circuit timer which is housed in a control panel assembly. The timer sequentially energises the solenoid valves that

activate diaphragm valves to discharge sharp bursts of compressed air through horizontal blowpipes located in the clean air plenum. Venturis in the blowpipes direct the compressed air vertically through the venturis into the filter chamber.

This momentary pressurisation and reversal of air flow dislodges the accumulated particles from the filter elements, automatically reconditioning the filter for continued, uninterrupted service. The dislodged dust then falls away from the canister down to the base of the unit.

CONSTRUCTION

The CROSSFLOW Intake System consists of a steel housing, containing; canister filters, self-cleaning mechanism and a control system.

The housing is made of hot rolled steel with all welded construction. The canister filters incorporate a uniformly pleated synthetic/cellulose media, encapsulated in a galvanised steel frame.

The cleaning mechanism includes an external reservoir tank. Air regulators, filters and pressure gauges are standard. All valves and controls are easily accessible from the normal service area.

FEATURE

- Factory assembled
- Contributes to acoustic attenuation
- Low operating pressure drop compared to conventional filters
- Self-cleaning
- Solid state controls
- Fewer canisters compared to typical self-cleaning filters.

BENEFIT

- Reduces installation time and expense
- Eliminate or reduce requirements for additional intake silencing.
- Reduces fuel consumption at given output
- Allows continuous uninterrupted operation for prolonged time periods.
- Can operate automatically with minimal operator supervision.
- Reduces filter down time at change out.

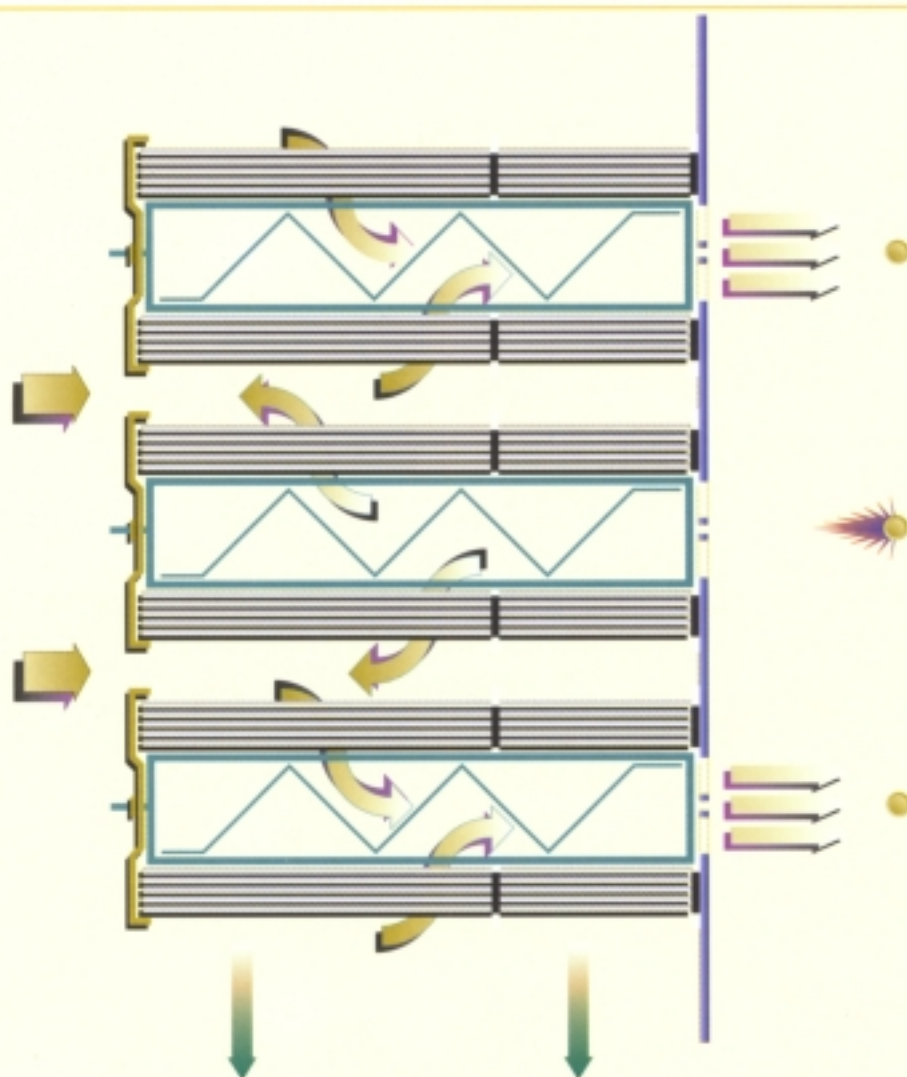


Figure 1

The cleaning mechanism controls are factory installed. All factory wiring of the controls conforms to applicable electrical codes.

ACOUSTIC ATTENUATION

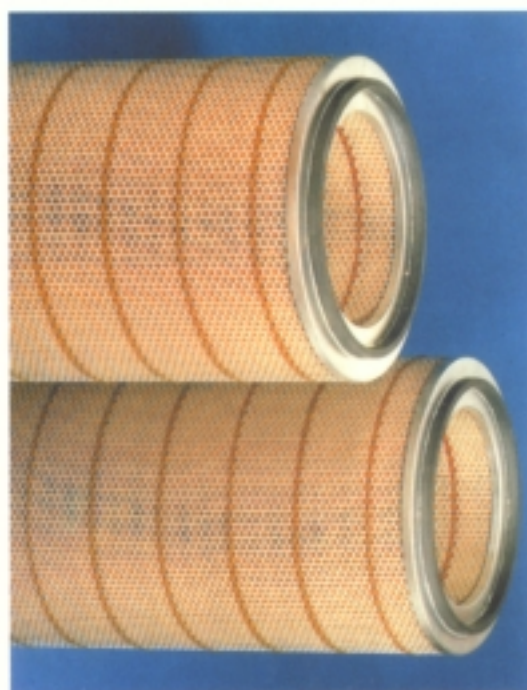
The fibrous nature and density of media packs in conjunction with the deep "tubular" formation provides acoustic attenuation which matches the spectral characteristics of Gas Turbine intake noise. This results in exceptional acoustic performance on Gas Turbine intake systems (at least 20 dB(A) reduction) thus

reducing, or even eliminating the intake silencer requirements.

OPTIONS

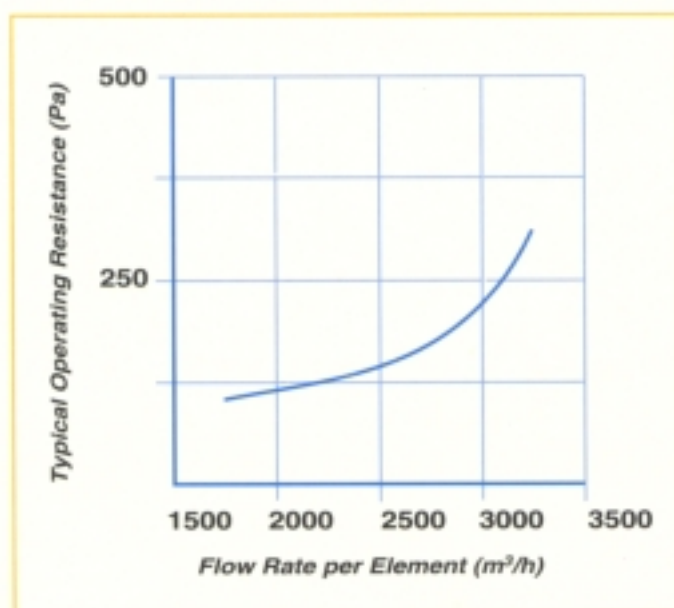
The horizontal orientation of the CROSSFLOW Intake System mean that it is possible to combine it with additional forms of air treatment such as:-

- Rain or snow hoods
- Evaporative cooling
- HEPA (High Efficiency, Particulate Arrestance) or other very high efficiency barrier filters.

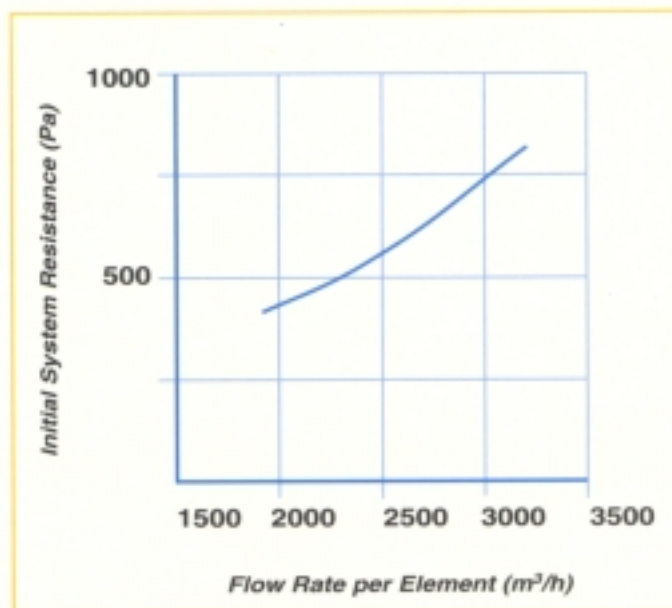


Crossflow filter elements.

TECHNICAL INFORMATION



Primary resistance versus intake volume (m³/h) per canister filter.



The typical operating resistance is the operating differential pressure of for the Pulstar Intake System after the canister filters become "loaded". The time required to reach the operating resistance will vary depending on the site conditions, dust load and dust type.

FILTER ELEMENTS

The CROSSFLOW filter elements are sturdily constructed with a galvanised steel framework encapsulating the media packs.

The high efficiency media is a blend of synthetic and cellulose fibres specially treated to provide exceptional resistance to high humidity conditions. The media is uniformly corrugated and pleated to ensure even spacing and fixed in position

by thixotropic glue lines and sealed with a fire retardant epoxy resin. This media pack construction supports and separates the pleats to ensure evenly distributed airflow.

To provide additional support,

canisters have a perforated liner both internally and externally.

Each canister filter element is supported on a steel mandrel to ensure rigidity and complete & effective sealing.

All canisters are supplied with a moulded gasket fitted to the air leaving face, which guarantees a positive airtight seal every time the filter is changed.

Technical Data

Initial Resistance (typical)	130Pa
Weight Arrestance (AC Fine test dust)	99.7%
Average Dust Spot Efficiency	90%
Media area each element	33.0m²
Dimensions (nominal)	406mm Ø x 876mm and 560mm long
Weight each element	10kg (large) 6.5kg (small)
Operating temperature	60°C

Acoustic - Performance Data

Frequency Hz	125	250	500	1000	2000	4000	8000
Dynamic Insertion Loss	6	11	10	29	28	28	29

We have a policy of continuous product research and improvement and reserve the right to change design and specifications without notice.



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