

NEXT GENERATION AIR INTAKE SYSTEMS

NG-128-V

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DOLLINGER – AN INTRODUCTION

Enjoying a century long history Dollinger is an established and well-known brand within its industry. Through our superior engineering capabilities, we have been able to develop and manufacture cutting-edge filtration and separation technology that dramatically improves fluid quality. We can thereby ensure that pipework, turbines, compressors and blowers are not damaged, or their moving parts fouled, by the presence of harsh contaminants. This has made us a vital partner to companies involved in industry sectors like oil/gas, petrochemical, chemical, power generation.

Our diverse range of solutions include in-line filtration, process filtration and air intake filtration, which span a broad range of different flow-rate and pressure parameters. Another important area for us is exhaust filters that enable the recovery of oil mist emissions.

By specifying Dollinger, our customers can extend the operational life of their systems, avoid costly downtime occurrences and improve return on investment. In addition, the greater power efficiency levels offered by our solutions can markedly reduce day-to-day running costs and raise customers' environmental credentials.



THE NEED

Contaminants at the intake of compressors, blowers and turbines dramatically affect the cost of supplying compressed air.

Inefficient intake filtration permits contaminants to corrode, erode and foul internals, effecting a reduction in performance and component service life. Contamination increases repair, maintenance and downtime of rotating equipment. Contaminants not effectively removed by the air intake filter will also migrate downstream in compressed air piping, to system controls, instrumentation, tools and other production processes.

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.

For "world-class" competitiveness, today's industrial strategies must include management of the high cost of process intake contamination.

THE CHALLENGE

If not removed, dirt, moisture, oils, hydrocarbons, gases and bacteria will dramatically affect the service life, performance and cost of repair and maintenance of critical machinery such as compressors and blowers.

EFFECTS OF CONTAMINANTS

CORROSION

Permanent damage to high speed internals through chemical reactions between moisture, gases and dirt.

EROSION

Permanent damage to high speed internals due to large particles, 10 micron and greater, impacting on components and casings.

FOULING

Loss of Power-Output – Intake contaminants will foul rotating parts. Contaminants will adhere and cake. When blade and rotor profiles are altered by contaminant build-up, mechanical efficiency and output are reduced. Eventually power decreases and rotating masses tend towards out of balance.

Unplanned downtime, extensive cleaning and repair are the consequences.

Loss of Heat Exchanger Efficiency – Heat Exchanger efficiency is reduced due to contaminated surface areas.

Pneumatic Production Process – Product spoilage processes such as controls, instruments, chemical mixing, spraying, painting, blanketing, and transporting are affected by contaminants that enter the compressor or blower intake.

THE SOLUTION

A DOLLINGER “SYSTEM” APPROACH

It is important to understand the types of contaminants and particulate distribution in order to determine efficient and effective intake filtration.

Selection of Filter Types: For good engineering design, this table provides a general guide to a selection when related to machine type.

It is important to furnish your Dollinger engineer with details specifics to your compressor intake site. Any potential airborne contaminant should be reviewed and evaluated; dust, soot, flyash and rain, sleet, snow and other potential localized contaminants that may be industry related. Dollinger Engineering can assist with sampling, and conduct particle size and distribution testing in our R&D laboratories.

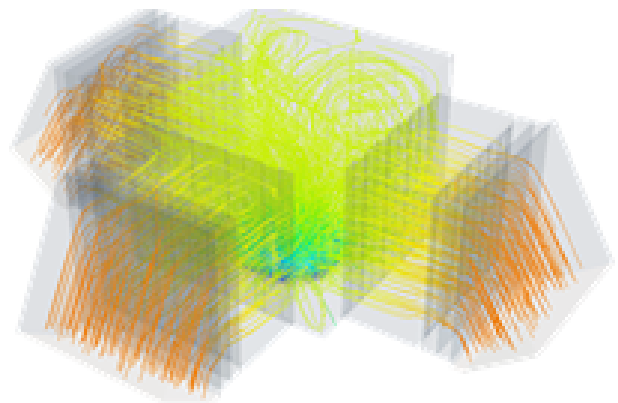
TYPE	FLOW CHARACTERISTICS	RECOMMENDED FILTRATION
Centrifugal/Axial	Smooth	0.3 - 2.0 Micron
Rotary Screw	Semi-Smooth	2.0 - 10 Micron
Most Blowers	Smooth	10 Micron

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NG-128-V SYSTEM DETAILS

Optimized Housing Design – The NG-128-V housing has been optimized through Computational Fluid Dynamics [CFD] to reduce the restriction to flow resulting in minimal pressure drop and reduced operating costs.

Engineered for optimal performance, the NG-128-V incorporates a “Transition Zone” that reduces turbulent flow between the Primary & Final stage filter panels to ensure the lowest possible pressure drop over the full operating range of your compressor.



NG-128-V “Optimized Design”
Through the use of Computational Fluid Dynamics, the NG-128-V is designed to perform under the most demanding operating conditions.



To facilitate panel element change out, the NG-128-V incorporates a “Passive Clamp” system with a unique single-latch design to allow for faster and safer replacement of the Primary and Final State panels, compared to the typical 6-latch design found on most filter housings.





Prefilter Element: MAXUM Primary



Final Stage Element: MAXUM



THE SYSTEM

PREFILTER ELEMENT

The prefilter is designed to remove the larger size and volume of particulate. The prefilter protects and extends the life of the more efficient final filter which is protecting the equipment internals.

Dollinger introduces the newest prefilter, the MAXUM Primary

Panel which offers lower initial pressure drop and energy costs than other panel elements.

FINAL STAGE ELEMENT

This revolutionary final stage MAXUM Multiple Vee Panel design uses a new concept to create eight (8) panels in a “Vee Formation”, that greatly increases usable media area, resulting in lower initial pressure drop, increased dirt holding capacity, longer service life resulting in the overall reduction in operating costs.

A proprietary water resistant microglass media presents a “dual-layer” barrier to particles which penetrate the prefilters.

The MAXUM panel utilizes a rugged Polystyrene frame that is not only light weight, but corrosion proof and fully incinerable.

The features and benefits of this new technology are:

- Superior Performance – 99.97% removal of 2 microns and over 90% removal of 0.4 microns protects the performance and life of rotating equipment.
- Sealing – Incorporates a pre-mounted “foamed in place” polyurethane foam gasket that ensures positive seal, eliminating chance of particulate by-pass.



EXTENDED ELEMENT LIFE

More available surface area with the MAXUM Primary design doubles dirt holding capability, extending element life and reducing element replacement costs.

SIZING FLEXIBILITY

The MAXUM is capable of flowing up to 3000 SCFM rather than the standard 2500 SCFM. That is a 20% increase in capacity without penalty of added pressure drop. This sizing flexibility allows for a smaller housing and lower first cost.



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| SPEED
| EXCELLENCE
| PARTNERSHIP

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