

ENVIROVENT



PULSE-JET BAGFILTERS

Engineered Solutions for Cleaner Industrial Air

DESIGNERS & SUPPLIERS OF COMPLETE PLANTS FOR
VENTILATION, DUST AND FUME EXTRACTION.

ENVIROVENT is a leading provider of engineered air pollution control solutions for the mining, mineral processing, bulk materials handling and industrial sectors. We specialise in the design, manufacture, installation and commissioning of complete ventilation, dust and fume extraction systems, supported by experienced engineers, skilled technicians and comprehensive after-sales service.

Our solutions are developed to address a wide range of industrial air pollution challenges, including dust control, fume extraction and product recovery. Every system is engineered to suit the specific application, delivering reliable performance, efficient operation and long-term value for our customers.

MODEL 3C PULSE-JET BAGFILTERS

The Envirovent Model 3C Pulse-Jet Bagfilters are among our most widely used filtration systems for high-capacity industrial dust collection. Combining high pulse energy, low compressed air consumption and a compact modular cylindrical design, the Model 3C delivers reliable, high-efficiency dust collection and allows for future expansion through the addition of modular cylindrical filter units.

CHARACTERISTICS

✓ Mechanically Activated Scavenging System

The Model 3C incorporates a mechanically activated low-pressure scavenging system, providing dependable filter cleaning with high pulse energy and low compressed air consumption.

✓ Primary Cleaning Method

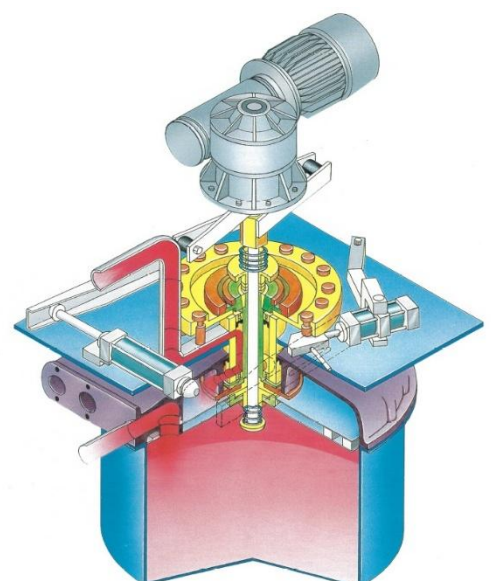
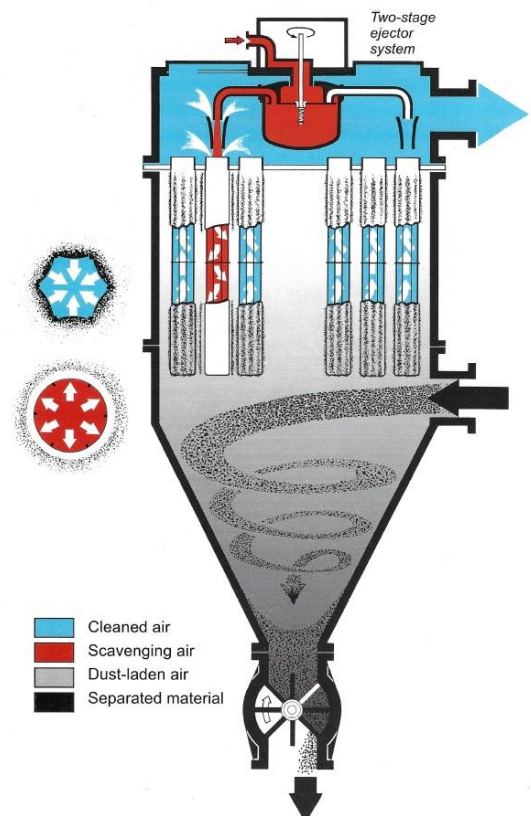
The low-pressure pulse system transfers high energy directly to the filter bags, creating a uniform shock wave that effectively dislodges accumulated dust while maintaining efficient continuous filtration.

✓ Secondary Cleaning Method

The large scavenging air volume penetrates deep into the filter media, removing embedded dust particles. This dual cleaning action enables the Model 3C to handle difficult, non-agglomerating dust while maintaining lower differential pressures than conventional pulse-jet systems.

✓ Low Differential Pressure Operation

The efficient low-pressure scavenging system maintains low differential pressure across the filter media, reducing fan energy consumption, extending filter bag life and contributing to lower particulate emissions.



APPLICATION

The Envirovent Model 3C Pulse-Jet Bagfilter is designed for continuous industrial dust collection in high-capacity applications where low emissions, dependable operation and long-term reliability are essential. Its modular cylindrical design makes it ideal for mining, minerals processing, cement, power generation and bulk material handling industries, particularly where large gas volumes are handled and future plant expansion is anticipated.

LOW-PRESSURE SCAVENGING SYSTEM

The Model 3C utilises a low-pressure scavenging system that delivers high pulse energy while minimising compressed air consumption. A dry-running rotary compressor supplies clean, oil-free scavenging air at approximately 0.7 bar, providing reliable filter cleaning, eliminating the risk of oil contamination associated with conventional compressed air systems. The efficient cleaning process maintains a consistently low differential pressure across the filter media, extending filter bag life while reducing fan power requirements.

CONTROL SYSTEM

The Model 3C is equipped with a fully automatic control system that manages the low-pressure scavenging cycle for efficient and reliable filter cleaning. The system continuously monitors operating conditions and automatically adjusts the cleaning sequence to maintain optimum filtration performance while sustaining a low differential pressure across the filter media. Alarm and status monitoring ensure dependable operation with minimal operator intervention.

KEY BENEFITS

- ✓ Individual low-pressure cleaning of each filter bag
- ✓ Maximum utilisation of the available filter area
- ✓ Reduced compressed air consumption
- ✓ High dust loading capability
- ✓ Extended filter bag life
- ✓ Reliable continuous operation



MODEL 4T PULSE-JET BAGFILTERS

The Envirovent Model 4T Pulse-Jet Bagfilters feature compact and robust cylindrical designs, operating on the proven co-current filtration principle to provide efficient industrial dust collection, product recovery and emission control. High collection efficiencies are achieved through the cylindrical filter modules, while filter bags up to 11 metres in length provide a large filtration area within a compact installation footprint. The mechanically activated low-pressure scavenging system continuously cleans the filter bags during operation, maintaining low differential pressure, continuous, reliable performance and extended filter bag life. Designed for demanding industrial applications, the Model 4T offers a cost-effective solution with robust construction, dependable operation and long-term reliability.

CHARACTERISTICS

✓ Compact Cylindrical Design

The Model 4T features a compact cylindrical configuration that provides a large filtration area within a minimal installation footprint.

✓ Efficient Inlet Design

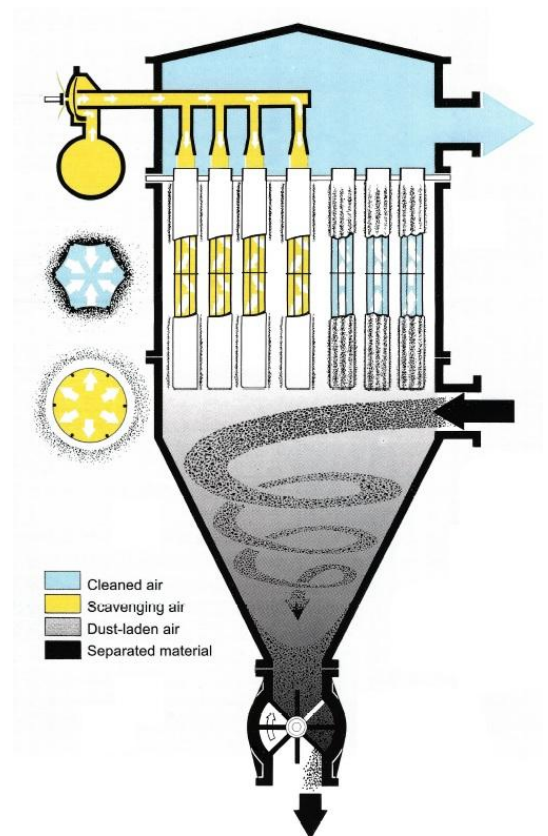
The specially designed inlet section promotes smooth distribution of both coarse and fine dust particles throughout the filter chamber, ensuring uniform loading of the filter bags, reduced wear and improved filtration efficiency.

✓ Explosion Venting Option

Where applicable, the Model 4T can be supplied with explosion vent panels to provide explosion pressure relief in accordance with project requirements and applicable explosion-protection standards.

✓ Modular Construction

The modular design provides excellent flexibility, allowing systems to be configured to suit a wide range of process requirements while simplifying installation, maintenance and future expansion.



APPLICATION

The Envirovent Model 4T Pulse-Jet Bagfilter is designed for continuous industrial dust collection and product recovery in applications requiring a compact, high-efficiency filtration system. It is ideally suited to dry particulate processes where reliable operation, low emissions and long-term performance are essential.

LOW-PRESSURE SCAVENGING SYSTEM

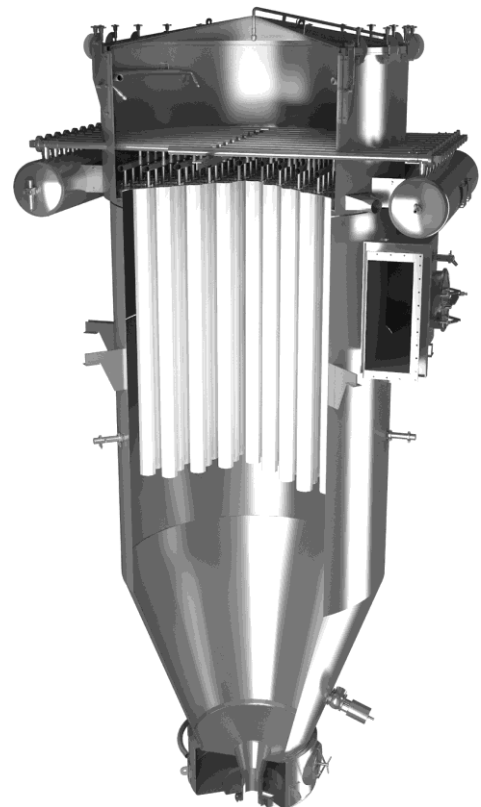
The Model 4T utilises a low-pressure scavenging system incorporating solenoid-operated diaphragm valves mounted on the compressed air reservoir. During the cleaning cycle, the control system sequentially actuates each valve, delivering a short, high-energy pulse of compressed air to the filter bags. The pulse and cleaning intervals are automatically adjustable to suit the operating conditions, ensuring efficient filter cleaning, low differential pressure and reliable continuous operation.

CONTROL SYSTEM

The Model 4T is equipped with an automatic control system that continuously monitors the pressure drop across the filter bags and optimises the cleaning cycle to suit the operating conditions. Differential pressure monitoring automatically adjusts the cleaning frequency to maintain optimum filtration performance while minimising compressed air consumption. The control system also provides alarm, system status indication and remote monitoring capabilities for reliable operation and simplified plant integration.

KEY BENEFITS

- ✓ Compact cylindrical design
- ✓ Large filtration area within a compact footprint
- ✓ Low-pressure scavenging system
- ✓ Suitable for high vacuum applications
- ✓ Low maintenance requirements
- ✓ Reduced compressed air consumption



SPOT PULSE-JET BAGFILTERS

The Envirovent Spot Pulse-Jet Bagfilters are compact, equipment-mounted dust collection systems designed for efficient localised dust extraction at the source. Their modular construction allows installation directly on conveyors, bucket elevators, transfer points and other process equipment, providing reliable continuous filtration while allowing collected material to return directly to the process. Available with an integral fan or for connection to a central extraction system, the Spot Filter offers a flexible, low-maintenance solution for decentralised dust collection.

APPLICATION

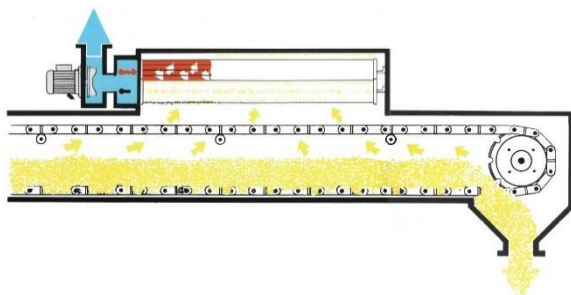
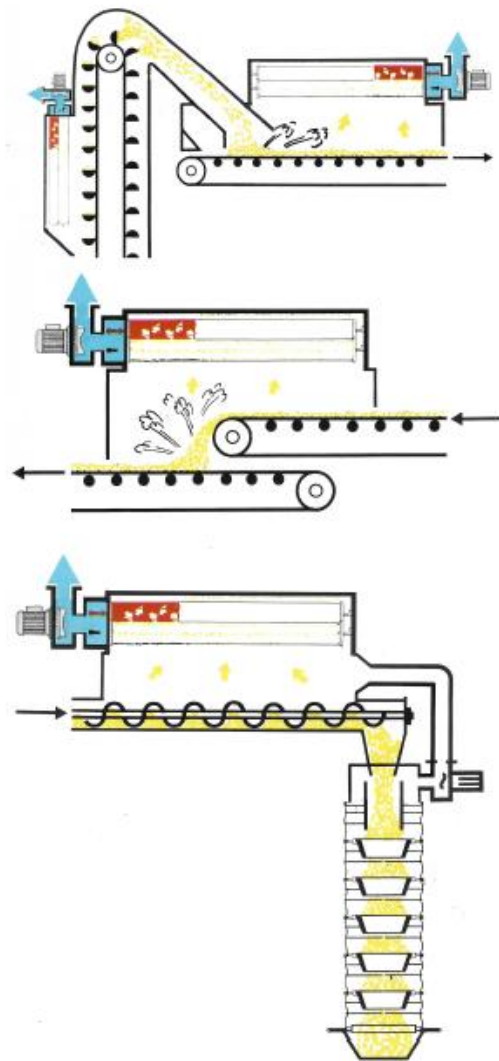
The Spot Pulse-Jet Bagfilter is designed for localised dust collection on individual process equipment where a compact, self-contained filtration system is required. Typical applications include conveyors, bucket elevators, transfer points, crushers, screens, enclosed process equipment and material handling systems.

OPERATING PRINCIPLE

Dust-laden air is drawn directly into the Spot Pulse-Jet Bagfilter at the point of dust generation. Dust particles are collected on the filter bags while clean air passes through the filter media and is discharged by the integral fan or connected extraction system. The automatic pulse-jet cleaning cycle periodically removes accumulated dust, allowing collected material to return directly to the process while maintaining continuous filtration.

KEY BENEFITS

- ✓ Compact equipment-mounted design
- ✓ Low inlet velocity to minimise dust turbulence
- ✓ Automatic pulse-jet cleaning
- ✓ Easy filter bag replacement
- ✓ Integral fan or central extraction system connection
- ✓ Low maintenance requirements



PIT PULSE-JET BAGFILTERS

The Envirovent Pit Pulse-Jet Bagfilters are modular dust collection systems engineered for high-volume intake aspiration at bulk material unloading facilities. Designed for both new installations and retrofit applications, the modular filter wall can be configured to suit virtually any intake pit size while providing efficient dust collection without the need for conventional dust transport equipment.

APPLICATION

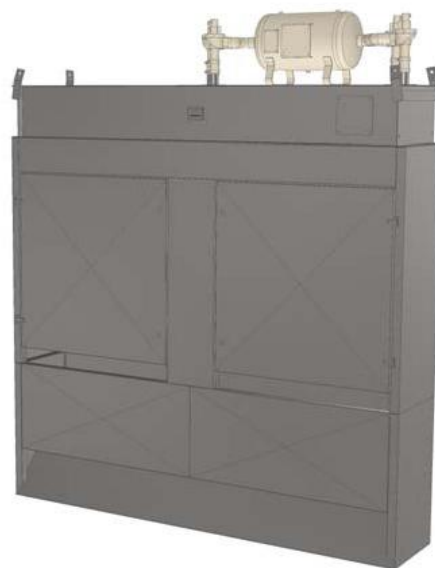
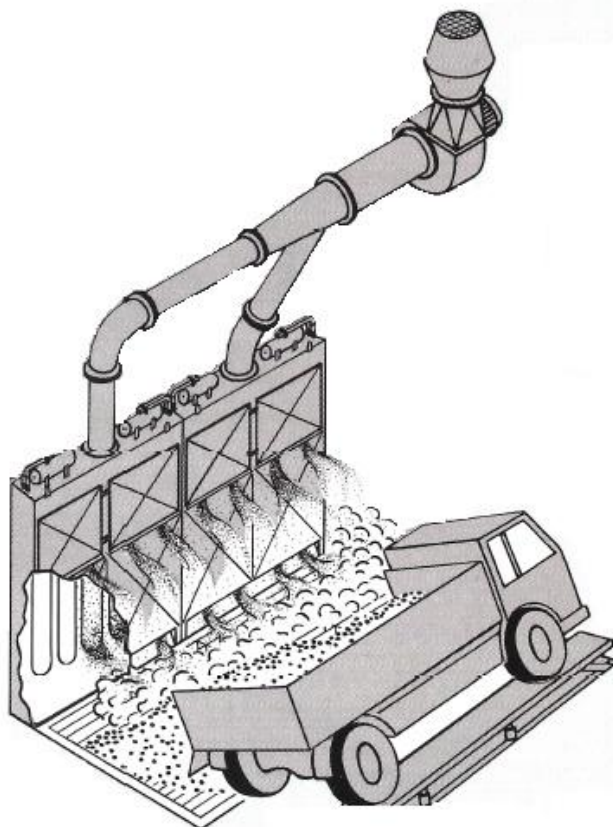
The Pit Pulse-Jet Bagfilter is ideally suited for truck, rail wagon and ship unloading facilities where efficient intake pit aspiration is required. Typical applications include mining, minerals processing, grain handling, ports, bulk terminals and other bulk material handling operations.

OPERATING PRINCIPLE

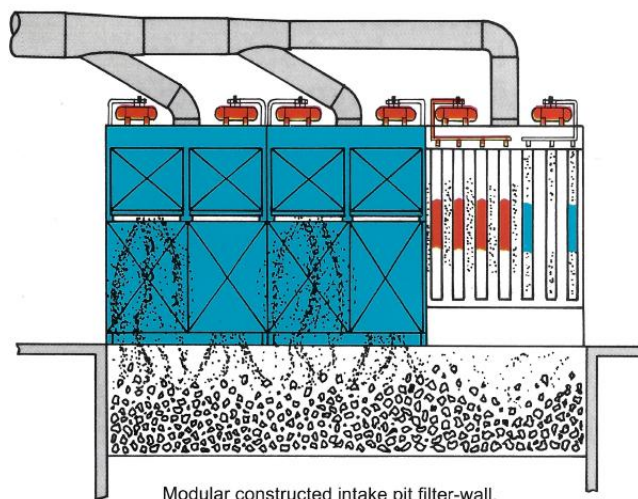
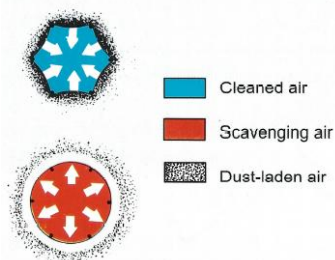
Dust-laden air generated during material unloading is drawn through the double-slot intake into the intake pit, where airborne dust is captured by the filter bags while heavier material settles naturally into the pit. Automatic pulse-jet cleaning periodically removes accumulated dust from the filter bags, allowing collected material to fall directly back into the intake pit for continuous, low-maintenance operation.

KEY BENEFITS

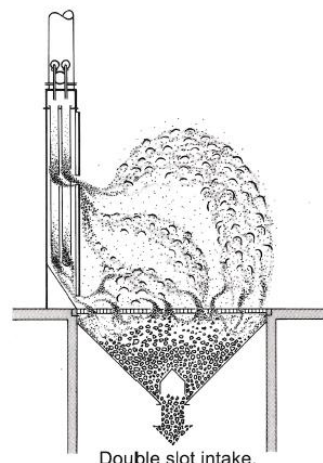
- ✓ Modular filter wall design
- ✓ Adaptable to new and existing intake pits
- ✓ Automatic pulse-jet cleaning
- ✓ No dust transport equipment required
- ✓ Low pressure loss
- ✓ Low maintenance requirements



Compressed-air scavenging of filter bags:



Modular constructed intake pit filter-wall.



Double slot intake.

INSERTABLE PULSE-JET BAGFILTERS

The Envirovent Insertable Pulse-Jet Bagfilters are compact modular filtration units designed for direct installation into process equipment where efficient localised dust collection is required. The insertable design provides effective dust separation with continuous pulse-jet cleaning, making it an economical solution where reliable dust collection is required within a compact installation footprint.

APPLICATION

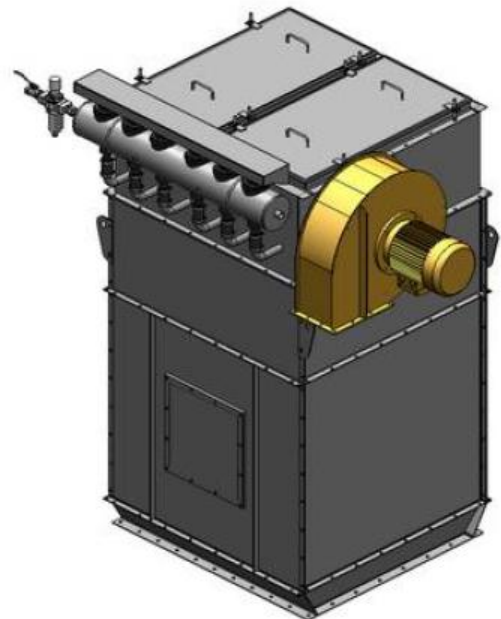
The Insertable Pulse-Jet Bagfilter is designed for installation directly into process equipment such as bucket elevators, conveyors, enclosed transfer points, hoppers, process vessels and other enclosed process equipment. Its compact design makes it ideal where installation space is limited while maintaining high filtration efficiency and reliable continuous dust collection.

OPERATING PRINCIPLE

Dust-laden air enters the Insertable Pulse-Jet Bagfilter through the base of the unit and is evenly distributed across the full filter area to ensure efficient utilisation of the entire filtration area. Dust particles are collected on the filter media while clean air passes through the bags and is discharged through the clean air outlet. The automatic pulse-jet cleaning system periodically removes accumulated dust from the filter bags during operation, maintaining continuous filtration efficiency, low differential pressure and dependable long-term performance.

KEY BENEFITS

- ✓ Compact installation
- ✓ Easy integration into existing equipment
- ✓ Continuous pulse-jet cleaning
- ✓ High vacuum resistance
- ✓ Low maintenance requirements
- ✓ Cost-effective filtration solution



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At Envirovent, we believe every application deserves the right solution—not simply the biggest solution. We work closely with our clients to develop engineered solutions that deliver cleaner industrial air through practical, reliable and cost-effective air pollution control systems.

Contact our engineering team to discuss an air pollution control solution tailored to your application.

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