MAC Semco, Inc.

Pneumatic Conveying and Air Filtration,
System Design, Installation, Parts and Service

MEDIUM-PRESSURE CONTROLLED-CLEANING

MCF Dust Filters

Most Energy Efficient Cleaning Mechanism on the Market.

Save Up to 50% of Your Energy Costs Over Conventional High Pressure Pulse Jet or Reverse Air Cleaning Systems.

Running Hard for Over 30 Years • www.macequipment.com

Medium-Pressure Controlled-Cleaning Dust Filters combine superior cleaning performance with major energy savings.

The MAC Medium-Pressure Controlled-Cleaning Dust Filter (MCF) is the most efficient and versatile bag filter made. It's built to handle heavy dust loads and comes in sizes and configurations to fit most industrial air quality applications – from milling to mining. Capacities range to over 250,000 CFM. Over a dozen filter media options are available, designed for operating temperatures up to 500°F.

You cannot buy a self-cleaning dust collector that uses less energy. MCF's patented Controlled-Cleaning system runs on medium-pressure air (only 7-9 psig) and requires less horsepower than any other bag filter in the industry. You save on operating costs and don't have to tap into plant air. Yet the MCF offers you high collecting efficiency and unmatched bag cleaning in all low-maintenance models – with over 23,000 square feet in total filter area.

Let MAC engineers solve your filtration problems. We can do an on-site analysis and even send in a complete design-build team for turnkey installation.

Metal grinding and polishing filtration at a metal components manufacturer showing high-entry inlet.

Unequaled efficiency

Engineered for demanding applications

- Grain milling
- Composite board manufacturing
- Process dust collection
- Chemical processing
- Food processing
- Mining
- Metals processing
- General woodworking
- Coal transfer

Easy maintenance

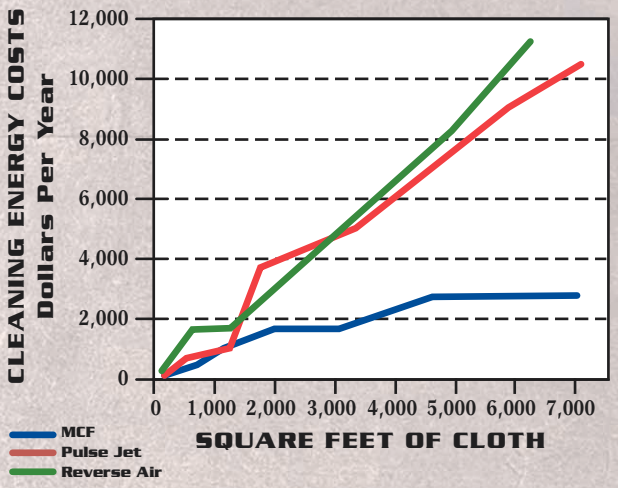
No plant air required

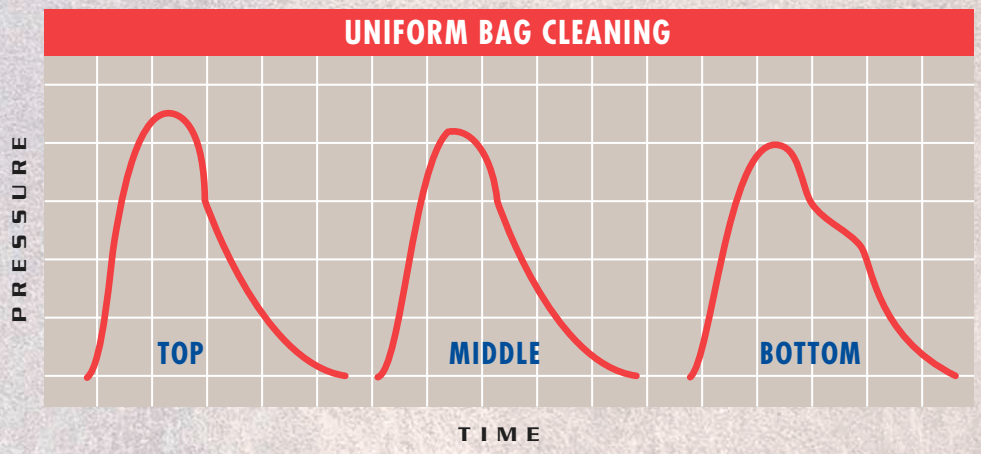
Easy, topside bag replacement cuts downtime.

Just pinch the snap-band as you lower the bag into the tubesheet... and release. Then slide the cage in and press down. No tools. No bolts. No awkward clamps to fasten.

MCF cleans for about one-third the cost.

MAC saves energy costs yet gives you more consistent cleaning than other bag filter systems. Studies indicate that users can meet safety and regulatory requirements for approximately one-third the cost of running pulse-jet filters. The graph at your right illustrates how much you could save on cleaning energy costs per year using the MCF versus pulse-jet or reverse-air systems built by competitors.





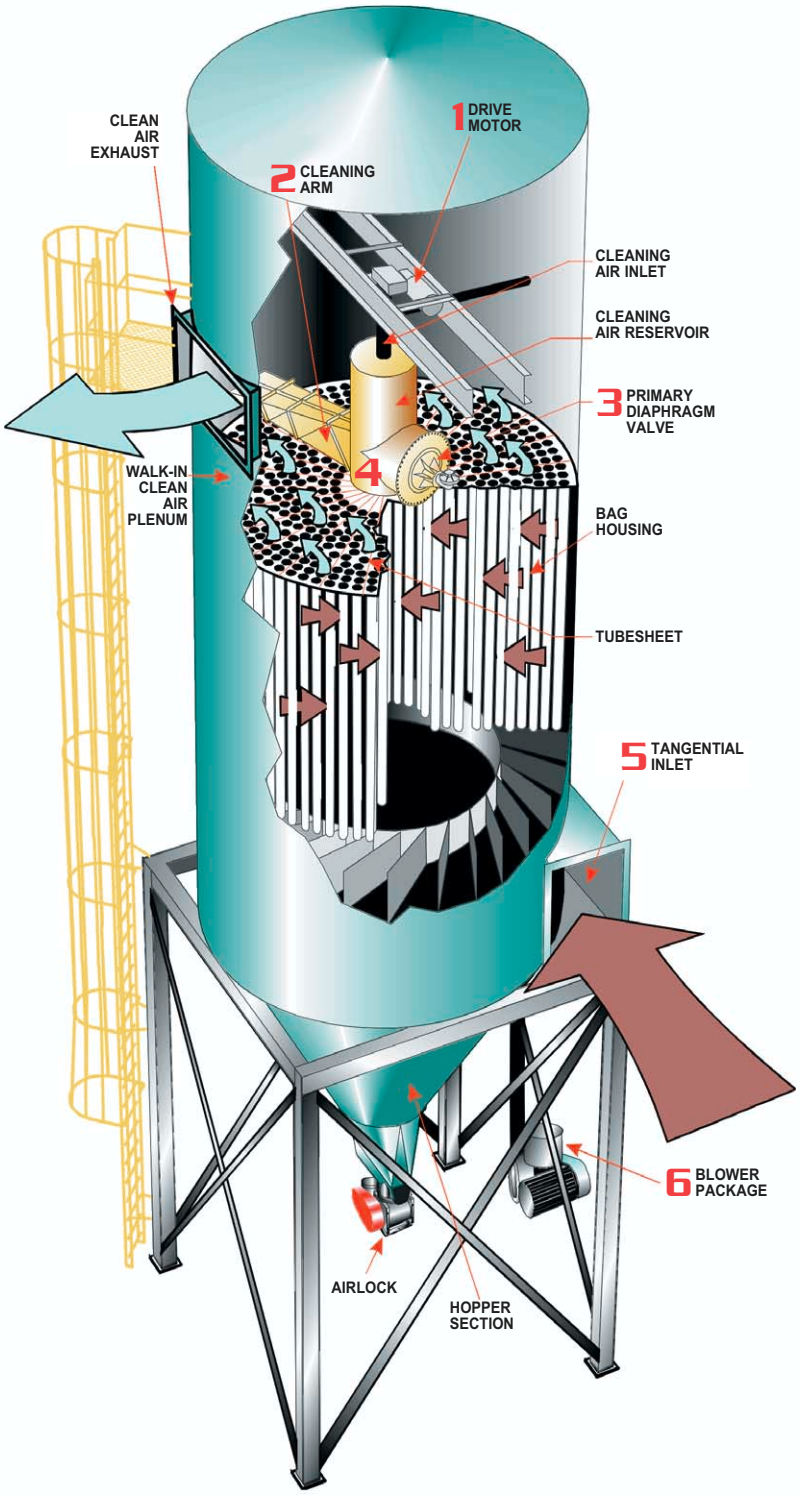
In the MCF, each filter bag is cleaned once and only once per cycle to optimize bag life and pressure drop. The use of round filter bags contributes to the exceptionally uniform cleaning achieved.

Uniform cleaning extends bag life.

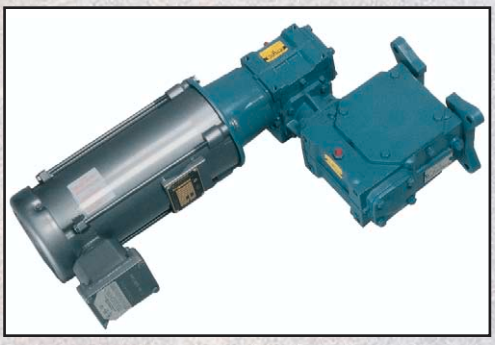
The MCF system cleans every bag the same number of times with the same amount of air. Some competing filters needlessly clean the inside rows of bags more often than the outside rows, resulting in wasted energy and uneven bag wear. Our system achieves exceptionally uniform media cleaning by pulsing each bag once each cycle and by using an integrated tank, valve, and cleaning head to minimize pressure losses and provide maximum cleaning energy directly to the bags. The use of round filter media, instead of the oval bags found on other collectors, also contributes to the even cleaning highlighted in the three pressure graphs shown at the left.

The MCF

what it is

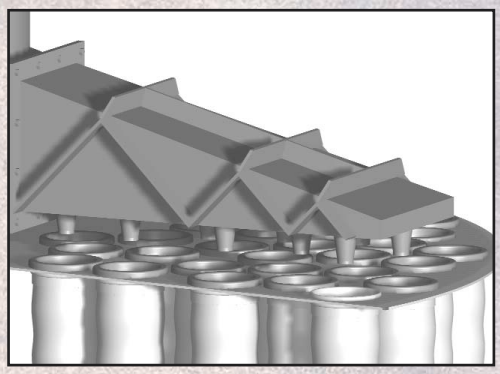


how it works



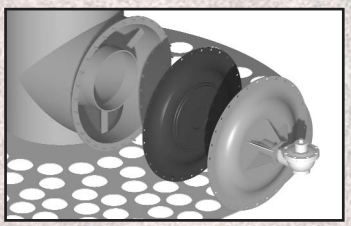
1 Main Drive uses rugged electric motor

The Main Drive Assembly represents the only electronic component used inside the filter housing. Except for this motor and the external air blower package, the MCF is pneumatically operated for added safety and reliability. Direct Drive. No chains or belts to maintain.



2 Cleaning Arm directs air flow

When the cleaning arm and bag segments are correctly aligned, air nozzles fire directly into the bags. So there's no wasted air. No bleed. None of the wasted energy you pay for on every cycle with conventional random-cleaning and reverse-air systems. MAC invented and patented this Never-Miss™ Controlled-Cleaning System to maximize cleaning efficiency.

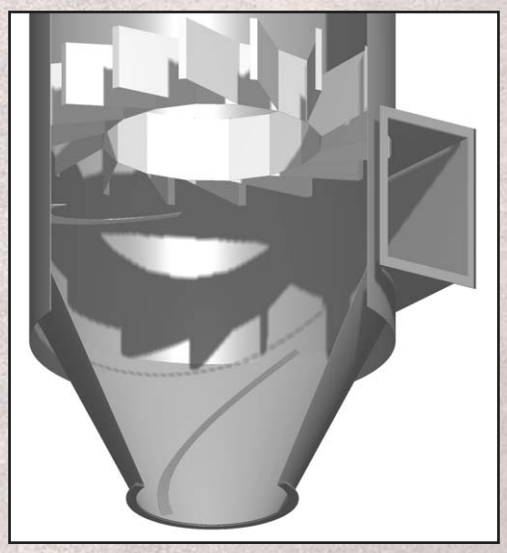


3 Diaphragm Valving Assemblies minimize recovery time

Primary and Secondary Valves are located close to the air reservoir and cleaning arm to maintain cleaning pressure. These two valves do the work of ten to thirty diaphragm valves and solenoids on conventional pulse-jet filters.

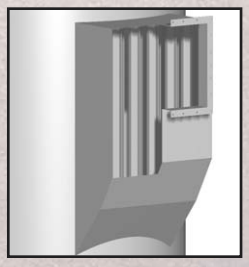
4 Index Assembly ensures reliable cleaning

The MCF Position-Sensing Index Assembly and Cleaning Control are ruggedly built to keep nozzles properly positioned and air pulses correctly timed for optimum media cleaning. The timing sprocket is laser cut and self-aligning. The Sensing Assembly and Control are direct-drive, mechanically linked components. They have no chains or belts to break, wear out, or go out of adjustment – no electronic circuits to fail. We've designed them to operate reliably for years in abrasive and corrosive environments – with virtually no maintenance.



Optional High-Entry Inlet controls light dusts

High-Entry Inlet minimizes turbulence and upflow problems associated with light dusts – like starch and fine silicates.



5 Tangential Inlet controls heavy dust loads

Vortex Breakers built into the MCF housing even out the distribution of particulate-laden air coming from the tangential inlet for improved collection. Competing collectors with involute inlets use up to 3 times more energy. The Vortex Breakers also create an area at the center of the housing where the air has no upward velocity and where dust particles cleaned from the bags can flow downward. A Spiral Ridge Plate traps centrifuged particles and drives them into the hopper.

6 Medium-Pressure Blower Package saves energy

The positive displacement pump uses a liquid-filled pressure gauge for precise control and powers cleaning with 7-9 psig air for economical operation and longer bag life. Medium-pressure air virtually eliminates cold weather freeze-ups that cause higher-pressure pulse-jets and other filters to fail.

MCF Specifications

- Rugged steel construction *10-gauge or heavier*
- Factory assembled ladder, safety cage, and service platform
- Walk-in clean air plenum with lifting lugs
- Gasketed and hinged service door measures 60″ x 32″ for easy access
- Direct-drive rotating surge tank, diaphragm valves, and distribution arm powered by an explosion-proof (NEMA 9) motor
- Pneumatically controlled cleaning mechanism discharges air directly over filter bags
- Topside cage and snap-band bag removal *No tools required*
- 60-degree hopper with 40″ diameter flange
- Self-contained positive displacement pump package supplies all required air
- Aluminum Explosion Vents *Standard*

MCF Options

- Rotary Airlock *Select from several types and sizes of rotary airlocks depending on the application and pollutants collected.*
- Live Bottom Discharge *This option is recommended for applications where the rotating auger can aid in handling difficult to discharge materials.*
- Flanged and Bolted Construction *These construction options are used for installations where there may not be adequate space to erect an all-welded unit.*
- Over a Dozen Filter Media *Choose from conventional bag and cage and washable POLIPLEET™ Pleated Filters.*
- 304 or 316 stainless steel construction
- Sand-blast finish *for high-temperature applications.*
- Accessories *Baghouse Wizard,™ Sprinkler taps, broken bag detector, level probes, hopper access ports, structural supports.*
- Explosion Rupture Panels *This option complies with NFPA68 guidelines.*

Engineered for easy installation

SECTIONAL • FLANGED • FULLY WELDED

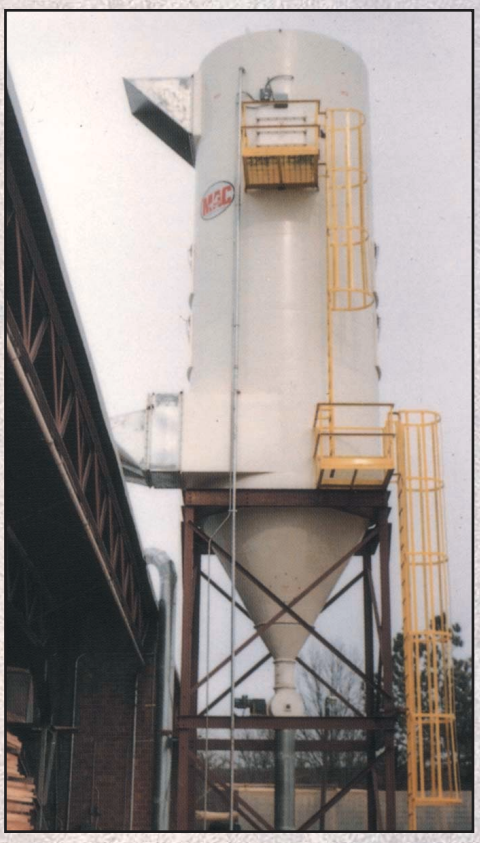
Our specially outfitted tractor trailer can transport all components to your construction site – ready to erect. MCF Filters are contractor friendly. Ladders, cages, and platforms are factory assembled. Where adequate construction space is available, the MCF housing, plenum, and hopper are shipped fully welded so that the complete filter assembly can simply be lifted onto the cross-braced angle-iron support structure.

MCF dust filters fit a wide range of applications.

RIGHT Filtration at a furniture plant.

FAR RIGHT Installation collecting dust from a grinding and buffing operation in North Carolina.

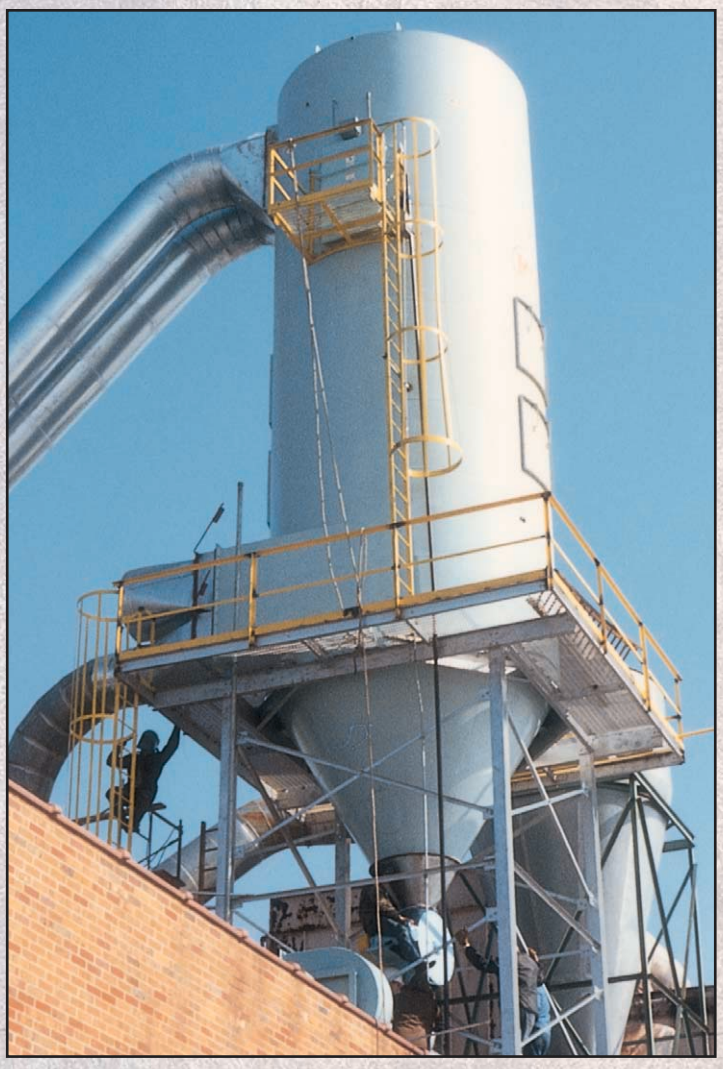
BELOW Two MCFs filtering exhaust from a hammermill at a corn processing facility.



RIGHT This major primary gold processing facility uses over 20 MCFs to achieve nearly one million CFM filtration.

MCF Filters can be shipped fully welded to simplify and speed installation.

Let our engineers design one for you.



ABOVE Installation at a furniture plant in Virginia.

RIGHT Fugitive coal dust collection at a coal-fired utility company.

ABOVE
Refuse-derived fuel installation with high-entry inlets and wide bag spacing designed for lightweight material.

MAC Test Center

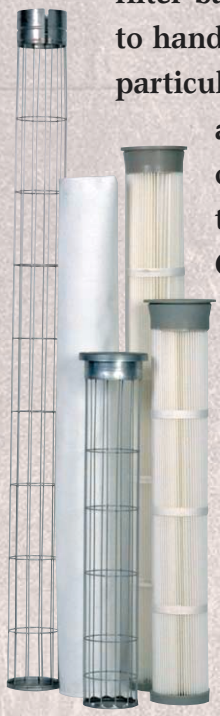
Get a detailed air quality analysis. Let MAC engineers find the most cost-effective solution to your dust collection problem. At our state-of-the-art MACLab, they analyze particle

characteristics and distribution to design the optimal filtration system for each application. You're invited to watch our Particle Emissions Test machine in action and see for yourself how MAC can meet your air quality goals.

MAC Service Center

Maintain top performance. Call on our Service Center representatives when you need spare parts, filter media, or accessories. In-stock items are shipped within 24 hours. Dial 1-888-821-2476 Toll-Free for Service.

Select filter media matched to your application. We stock filter bags in nine fabrics to handle a variety of particulate characteristics and to withstand operating temperatures up to 500°F. Our POLIPLEET™ line of pleated, washable polyester filter elements provides filtration superior to conventional media.



Order MAC Airlocks. We offer a complete line of Heavy Duty, High Efficiency, No Shear, and Fabricated Airlocks – plus a matching line of MAC Airlock Accessories.

Control Panels. Control panel delivery is coordinated with filter delivery, typically shipping on a common truck. This helps to eliminate installation delays associated with separate deliveries.

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