MAXIFLO-VC™

AQC DUST COLLECTING SYSTEMS

VERTICAL DOWNFLOW PLEATED CARTRIDGE DUST COLLECTOR WITH COMPRESSED AIR PULSE CLEANING

- Vertical felt or pleated cartridge for maximum efficiency
- Micronic dust size filtration
- Filtered air recycled back in premises for energy savings
- Large amount of dust storage capacity

Superior technology generating substantial operating savings

AQC
DUST COLLECTION & SOURCE CAPTURE

MAXIFLO-VC™

High-Productivity Innovative Products

Vertical Cartridge Collector

The vertical cartridge type dust collectors have been added to the line of cartridge collectors. This product will serve in higher concentrations of dust applications with larger particulates. The vertical arrangement of the cartridges makes for a more efficient cleaning of the filters when large particles are filtered.

The vertical cartridge removal system, which is accesible by sealed doors, makes changing cartridges easy by sliding them in and out on a rail and securing them with locking handles.

A Leading-Edge, High-Performance Company

The AQC Dust manufacturer fabricates a full range of safe, industrial dust collectors, as well as dust and smoke capture equipment and high pressure industrial dampers at the leading edge of air control technologies based on more than 30 years of experience in the field.

AQC's strength lies in its innovative products designed and developed to generate substantial savings throughout their entire operating life.

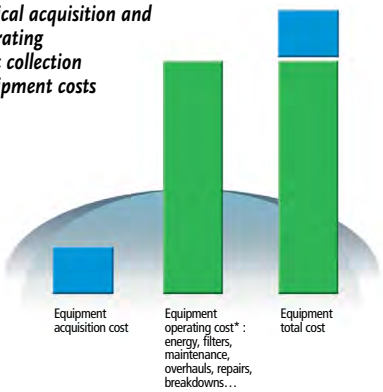
AQC is renowned for its technological innovation, safe and sophisticated equipment design, as well as its robust and precise product manufacturing. AQC stands out with its unique design of the baffles inside dust collectors making filter cleaning easy and a cartridge holder design that provides maximum filter surface, which enhances filter performance. The ultra-smooth concept inside AQC fume arms makes them maintenance-free and the durability of the heavy duty industrial dampers exceed expectations.

In short, AQC equipment is designed and built to generate substantial operating savings in terms of time, money and energy. This translates to major reductions in operating costs – from 10 to 20% – throughout the equipment's operating life. This scale of savings can represent a significant portion of the equipment's total purchase price. Companies looking to maximize their profitability should factor in these savings when purchasing equipment.

The unique design and manufacturing of AQC equipment generates significant savings for various reasons :

- Substantial increase in the duration of filters.
- Lower energy consumption during years of use.
- Significantly less maintenance (easy to clean, robust manufacturing, a minimum number of more reliable and durable parts).
- Reduced operating costs (less frequent overhauls, lack of or minimum down time, etc.).
- Lower administrative costs (coordination, follow-ups, supervision) due to much less frequent breakdowns.
- Safe design can prevent serious or even fatal accidents.
- Increased comfort and productivity of personnel.

Typical acquisition and operating dust collection equipment costs



The acquisition cost is just one part of the equation. It's the total cost including the operating cost ***throughout the life cycle of the equipment** that must be kept low. This is what AQC delivers. The advanced technology, design, robustness, durability and safety of AQC products generate major savings during the equipment's entire life cycle.

MAXIFLO-VC VERTICAL CARTRIDGE DUST COLLECTOR

Solve all your dust problems

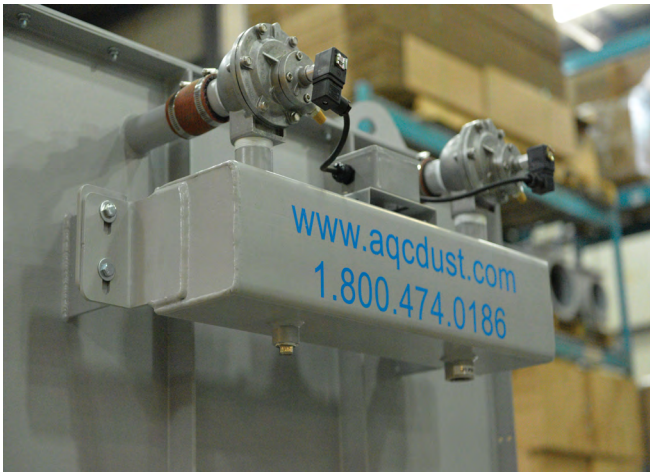
- Quality locking mechanism
- Tube cleaning venturi nozzles
- Wide choice of filter types
- Extended surface pleated filters
- Air inertia reduction chamber
- Inside or top cartridge removal

TYPICAL APPLICATIONS FOR THE MAXIFLO-VC

- Sand blast rooms
- Wood transformation shops
- Chemical industries
- Mines
- Metal industry
- Food / pharmaceutical

Explosion vent

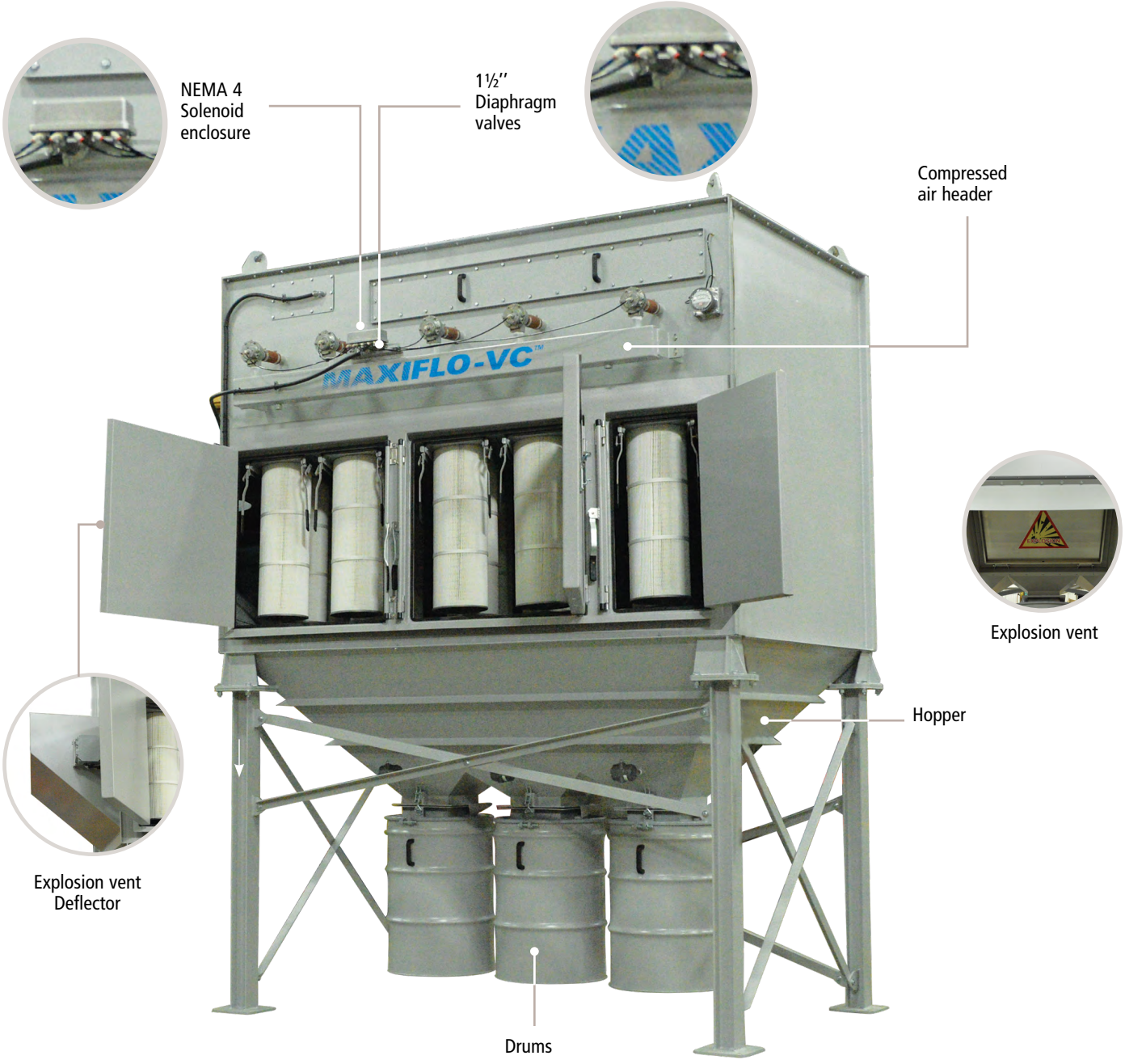
Auto purge system



Vertical cartridge removal system

Cartridges Access

OUTSTANDING MAXIFLO-VC FEATURES



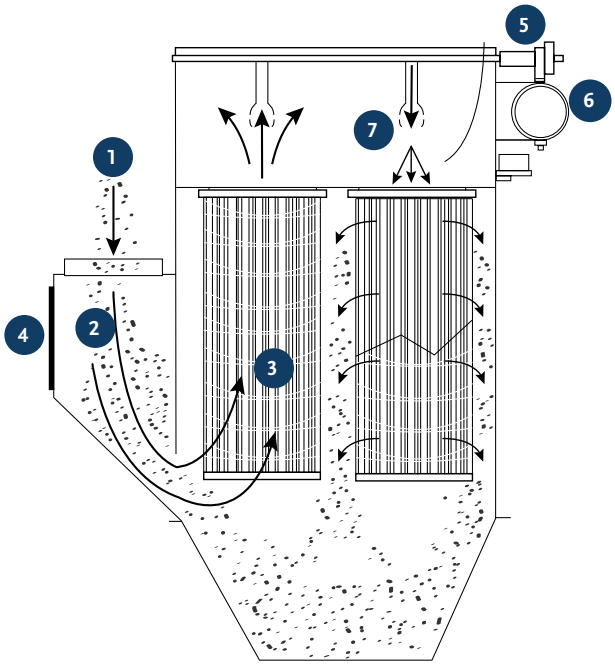
DESCRIPTION

The MAXIFLO-VC dust collector is a vertical cartridge type dust collector featuring a large selection of alternative cartridges capable of solving any dust problems. Dust particles are drawn into a velocity reduction chamber adjacent to the filter section where large particles separate from the airstream to fall directly into the hopper; smaller particules are then drawn into the cartridge section and are filtered. Maintenance is greatly reduced since the electronic pulse control sends a cascading signal to air valves pulsing compressed air from the inside of the cartridges to the outside forcing the accumulated dust to be blown away and fall into the hopper, all while the collector is in operation.

OUTSTANDING MAXIFLO-VC FEATURES

During operation, dusty air 1 enters the collector from the side, air velocity is immediately reduced, large particles fall in the hopper and takes a down flow air pattern 2. Dust particles are filtered as they penetrate into the cartridges 3 and clean filtered air is drawin into the clean air plenum.

An electronic sequencer panel 4 sends a signal at different intervals to the solenoid valve kit 5 and then to the diaphragm valves 6 which release a regulated amount of compressed air from the compressed air reservoir into the venturi cones 7. The shockwave 8 created by the acceleration of the compressed air pushes the dust away from the cartridges 9. Gravitational effect takes over and the contaminants fall downward to the hopper and dust storage system 10.



COMPRESSED AIR CLEANING INFORMATION

MAXIFLO-VC dust collectors use approximately 8 to 12 SCFM per pulse. Recommended compressed air pressure for proper cartridge cleaning is 90 psi.

Air line feeding the MAXIFLO-VC collector should be equipped with a filter, regulator and dryer for longer life expectancy of valves.

MAXIFLO-VC collectors installed outside in cold climates should be equipped with a solenoid heating element.

Standard panel includes programmable timer to pulse at intervals of 1 to 180 seconds. Optimal panel includes differential pressure controller (DPC) regulating air pulses by pressure sensors or manually programmed from 1 to 255 seconds.

NANO QUALITY CARTRIDGES

AQC installs NANO type cartridges to provide better efficiency systems that have better cleaning, lower filter pressure drop and longer life. The fibers that form a NANO cartridge mesh range from 0.07 to 0.15 micron, this is 1000 times smaller than a human hair.

80/20 media has a standard efficiency of 85% on particles ranging from 3 to 10 microns or MERV 10. NANO cartridges rated MERV 15 capture 85% of particles from 0.3 to 1 micron and 90 to 100% larger particles.

AQC NANO cartridges are efficient and work at peak efficiency at the very beginning of its service life, and will maintain peak efficiency through repeated compressed air pulses.

SPECIFICATIONS

Cartridge dust collector with pulse compressed air cleaning

Construstion

The dust collector housing and the hopper are built from 10 and 12 ga sheet steel with reinforcement capable of withstanding 20 in. H_2O pressure differential. The 1/4" tube sheet is reinforced and continuously welded. The hopper is designed with a 60° angle to facilitate the flow of dust and is finished with a flange. A solid square tube structure with bracings form a solid support structure.

Sequencer

Pulse cleaning is achieved by an electronic sequencer with timer adjustment capabilities of the pulse frequency and duration. This control can be used with a pressure module type control, the pulse sequence will begin only when the high pressure limit setting is reached, and will stop when the low pressure limit is achieved.

Cleaning

The air to cloth ratio is the most critical variable that can influence the cost of a dust collector and it's efficiency. The higher the air to cloth ratio, the less expensive the dust collector will be. MAXIFLO-VC dust collectors equipped with high volume nozzles insure that a strong air jet will travel evenly within each cartridge from top to bottom throughout the pulsed row. This great benefit makes MAXIFLO-VC a better collector.

Filtration fabrics

High filtration efficiencies are reached by the meticulous choice of the filter fabrics, and the air to cloth ratio. MAXIFLO-VC offers a selection of the best filtration fabrics for different applications. The chart 3 on the next page describes these specifications.

APPLICATIONS

The MAXIFLO-VC is an upflow enclosed type dust collector. MAXIFLO-VC dust collectors are ideal for many types of dust, they can be used with different dusts such as welding smoke, metal sanding, grinding or buffing, plasma or laser downdraft cutting tables, sandblast room operations, light to medium sized dry powders, food and pharmaceutical plants, or plastic and composite fabricating shops.

SAFETY RULES AND REQUIREMENTS

Reactive metals application

The National Fire Protection Agency (NFPA) standard 484 defines aluminum, magnesium, tantalum, titanium and zirconium as reactive metals so it is imperative that NFPA 484 standard be observed at all times and that the collector be installed outside of the facility or premises with all required safety devices. Reactive metals listed above shall not be mixed in the same MAXIFLO-VC collector. Individual dust collectors shall be use for each reactive dust.

The MAXIFLO-VC dust collector should include a sign indicating **CAUTION** when used with explosive dusts.

The MAXIFLO-VC dust collector should include a sign indicating **WARNING** when used with aluminum dusts advising danger of mixing with other dusts.

SELECTION OF A DUST COLLECTOR

Dust collector selection is achieved by applying an air to cloth ratio, this ratio is based on the type and concentration of dust that is filtered.

Concentration of dust

CHART 1

Microns	Type of dust	High concentration ratio	Low concentration ratio
Fine : lower than 5	Dust that is fine, sticky, in low concentrations and up to 5 microns in size Carbon black, smoke, powdered milk, talc, paint pigments, chemical drying dust	1 to 1	2 to 1
Coarse : More than 5	Dust more than 5 microns Ceramic, pigments, coal, rock dust, sugar, cement gypsum, foundry dust	0.5 to 1	2 to 1

Note : Overbag should be used with large particles such as sawdust; cardboard; gravel; sand; tobacco; perlite; asbestos.

Maximum operating cartridge temperatures are: 120 to 180 °F (50 to 80 °C.) Other filter medias are available such as teflon coated cartridges for high heat usage, contact your AQC representative for details.

Note: MAXIFLO-VC maximum air volume capacity is rated as per cartridge filtration surface. For best results and longer cartridge life expectancy, air to cloth ratio should not exceed 3 to 1 for collectors used for ambiant air filtration and 2 to 1 with source capture equipement.

Note: Air volume capacities indicated per MAXIFLO-VC selection is with a air to cloth ratio of about 3 to 1. The purpose of this ratio is to extend filter life and lower static pressure. AQC may agree to a 4 and 4.5 to 1 air to cloth ratio in certain applications. Contact factory for details.

Cartridge selection

CHART 2

Media	Filtration surface ft^2/m^2	Application	Efficiency
PTFE	130/12	Smoke, fumes Fine powders Light concentration	MERV 16
Polyester	130/12	Smoke, fumes, fibrus dust, Fine dust Medium concentration	MERV 11
Nanofiber	260/24	Smoke, fumes, non fibrus dust Fine dust Light concentration	MERV 15
Fire retardant	260/24	Smoke, fumes, non fibrus dust Fine dust Light concentration	MERV 15
Antistatic	130/12	Smoke, fumes, fibrus dust Fine dust Medium concentration	MERV 11

Maximum operating temperature: 120 °F to 180 °F. (49 °C to 82 °C).
Other filter media is available such as teflon coated cartridges for high heat usage. Contact AQC or representative for details.

Note 1: MAXIFLO maximum air volume capacity is rated as per cartridge filtration area. For best results and longer cartridge life expectancy, air to cloth ratio (filtration area) should not exceed 3 to 1 for collectors used for ambiant air filtration and 2 to 1 with source capture equipment (fume arms or equivalent).

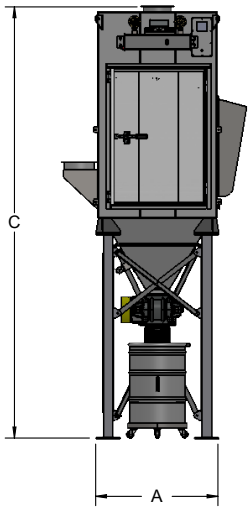
Note 2: Air volume capacities indicated per MAXIFLO selection is more or less a 2 to 1 air to cloth ratio. The purpose of this ratio is to extend filter life and lower static pressure. AQC may agree to a 3 or 4 to 1 air to cloth ratio in certain applications. Contact factory for details.

SPECIFICATIONS AND FEATURES

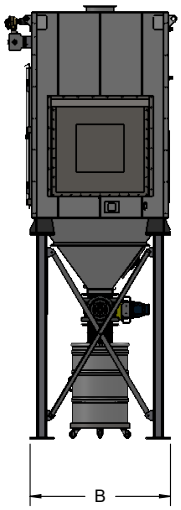
- All welded carbon steel construction
- Housing rated for -30" W.C.
- Dirty air plenum primed
- Outside cabinet primed and painted epoxy grey
- Cartridges factory installed
- Air consumption of 2.5 ft2 of compressed air at 90 PSI
- NEMD 4/12 electrical enclosure

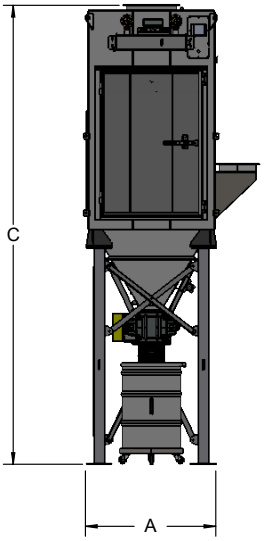
CHART 3

Model	Dimensions in/mm			Number of cartridges	Filtration area (Cellulosic/ cartridges) ft^2/m^2	Filtration area (Polyester cartridges) ft^2/m^2
	A	B	C			
2MCV1-2	42/1067	21/533	163/4140	2	806/75	403/34
2MCV2-4	42/1067	42/1067	163/4140	4	1612/150	640/59
3MCV3-6	42/1067	63/1600	181/4597	6	2418/225	960/89
4MCV2-8	84/2134	42/1067	198/5029	8	3224/300	1260/117
5MCV2-10	106/2692	42/1067	217/5512	10	4030/375	1525/142
6MCV2-12	126/3200	42/1067	234/5944	12	4836/450	1890/175
8MCV2-16	168/4267	42/1067	198/5029	16	6448/600	2520/234
6MCV3-18	126/3200	63/1600	234/5944	18	7254/674	2835/263
8MCV3-24	168/4267	63/1600	198/5029	24	9672/899	3780/351
4MCV4-16	84/2134	84/2134	198/5029	16	6448/599	2520/234
5MCV4-20	105/2667	84/2134	216/5486	20	8060/749	3150/293
6MCV4-24	126/3200	84/2134	234/5944	24	9672/899	3530/328
8MCV4-32	168/4267	84/2134	198/5029	32	12896/1198	5040/468
10MCV4-40	210/5334	84/2134	216/5486	40	16120/1498	6300/585
16MCV4-64	336/8534	84/2134	270/6858	64	25792/2396	10080/936
6MCV5-30	126/3200	105/2667	234/5944	30	12090/1123	4725/439
8MCV5-40	168/4267	105/2667	216/5486	40	16120/1498	6300/585
8MCV6-48	168/4267	126/3200	234/5944	48	19344/1797	7560/702
10MCV6-60	210/5334	126/3200	234/5944	60	24180/2246	9450/878
12MCV6-72	252/6401	126/3200	234/5944	72	29016/2696	11340/1053

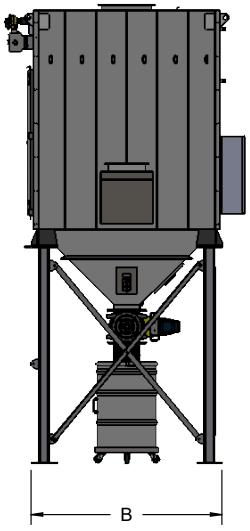


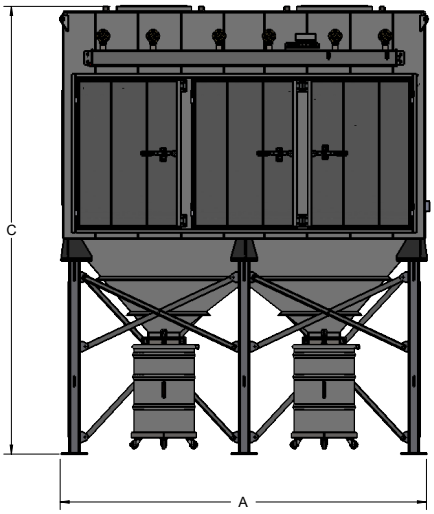
2MCV2-4



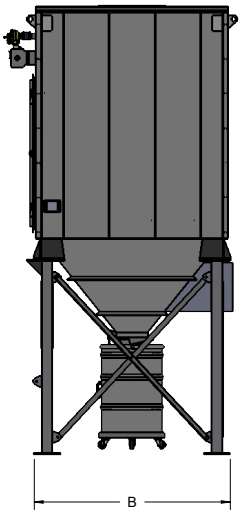


2MCV3-6





6MCV4-24



SHIPPING

In order to facilitate shipping and installation, AQC usually ships the hopper and support structure fully assembled ready for cabinet mount. Larger models may require more extensive field assembly.

Optional equipement such as dampers or silencers are shipped separately and require field assembly. Explosion venting doors are factory installed on the dust collector cabinet.

OPTIONAL ACCESSORIES AND DESCRIPTION

Explosion venting doors

Requirement by NFPA for reactive material such as wood dusts and chips, aluminum and/or magnesium collection.

Fan outlet silencers

Sound attenuators for high velocity discharge of air.

Micro switches

Current sensors connected to shop equipment for automatic fan starter.

Rotary airlock

Rotary airlock for constant dust discharge.

Slide / blast gates

Used for shutting off air vacuum on specific equipment.

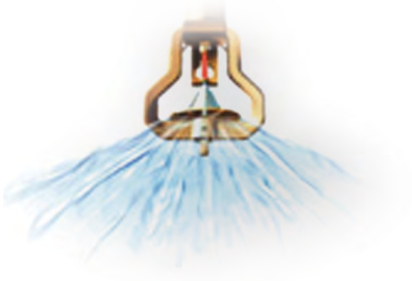
Blowback dampers

Safety device preventing flames or explosion in dust collector from coming back into the building.

Spark detection/ extinguishing systems

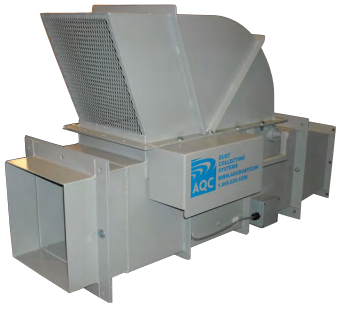
Recommended safety device for highly abrasive metal or wood transforming applications.

Sprinklers



Safety device to extinguish possible fires in dust collectors.

Abort dampers



Safety device preventing a possible explosion in a dust collector from coming back into the building and exhausting pressure into the atmosphere.

Safety device and equipment notes: Design built and engineered dust collecting equipment may require different safety devices as described above. Refer to NFPA rules and regulations for appropriate devices. AQC or it's representative may also guide you in the proper selection of equipment as per the application. It is highly recommended to refer to local building laws and safety requirements prior to selecting or installing any type of dust collecting equipment.

Installation note: It is recommended to allow 36'' (0.9 meter) work and access space around the collector for installation and possible maintenance.

Vertical cartridge dust collector with automatic pulse cleaning

MAXIFLO-VC™

YOUR MAXIFLO-VC FILTRATION UNIT SPECIFICATION

1. Unit:

10 and 14 gauge polyurethane painted with epoxy; aluminum primer steel cabinet; high efficiency pleated cartridges with gasketed access doors and turn knobs; air venturis for proper pulse cleaning action on cartridges; heavy duty support yokes for cartridges; Magnehelic pressure gauge; dust hopper and dust storage drums with grab handle; flexible hose connection from hopper to dust bin; electronic control panel with adjustable timer for pulse cleaning in NEMA 4 enclosure; 1" NPT compressed air connection to air tank; diaphragm valves with solanoids; cabinet lift lugs; painted steel support structure with cross braces and pre-drilled holes for floor anchoring (seismic rating zone 4).

2. Cartridges:

- a) Fire retardant Nano fiber 260 ft² (24 m²) each ☐
- b) Polyester 130 ft² (12 m²) each ☐
- c) Anti-static polyester 130 ft² (12 m²) each ☐
- d) Overbag for primary filtration ☐

3. Fan performance:

_____CFM@_____" S.P.
(Ex: 5000 CFM@ 6"S.P.)
_____L/s@_____pa S.P.
(Ex: 2360 L/s @ 1500 pa S.P.)

5. Drum dust storage unit substituted for:

- a) 10" high dust drawers ☐
- b) 20" high dust drawers ☐
- c) quick dumping bin system ☐

6. Dirty air inlet should be located at :

- a) Top of dust collector ☐
- b) Front of dust collector ☐

7. Clean air outlet should be located at :

- a) Top rear of dust collector ☐
- b) Bottom rear of dust collector ☐
- c) Left rear of dust collector ☐
- d) Right rear of dust collector ☐

8. Unit to be equipped with :

- a) NFPA explosion relief vent ☐
- b) Sprinkler head ☐
- c) Abort damper ☐
- d) Blowback damper ☐
- e) Spark detection/extinguishing system ☐
- f) Cartridge access doors tamper proof bars ☐
- g) Rotary airlock ☐
- h) Slide gate at drum/hopper connection ☐
- i) Differential pressure controller for automatic pulse cleaning ☐
- j) Fan outlet silencer ☐
- k) Safety after-filter cabinet with primary 30% pleated filters and secondary 85% polyester cartridge filters ☐
- l) Support structure and hopper enclosure with access door ☐
- m) Access ladder and service platform for high profile dust collectors ☐
- n) Drum dollies with casters ☐
- o) Drum covers ☐

9. Unit designed for :

- a) Interior installation ☐
- b) Exterior installation ☐
- c) Exterior installation in cold climate ☐

Note: Specifications listed above may be modified to suit application. Contact AQC or representative for information.

Your AQC representative is:

AQC DUST COLLECTION & SOURCE CAPTURE

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