MAXITUBE™

AQC SOURCE CAPTURE EQUIPMENT

BAGHOUSE DUST COLLECTOR WITH COMPRESSED AIR PULSE CLEANING

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

Superior technology generating substantial operating savings

AQC
DUST COLLECTION & SOURCE CAPTURE

MAXITUBE™

High-Productivity Innovative Products

Baghouse with automatic air jet cleaning for filtration of high-concentration dust

MAXITUBE is one of our biggest and most efficient baghouse dust collectors. With its unique MPH3 pulsing system and equipped with an injector that regulates and evenly distributes air jets, it is perfect for major dust collecting applications. The system produces alternating shock waves with air jets in the filter rows, cleaning said filters. This technic provides clean filters and enhances filtration performance. This system assures very little maintenance since it can be cleaned daily all while the dust collector is in action. With that being said, it can keep maintenance and operating costs to a minimum.

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.

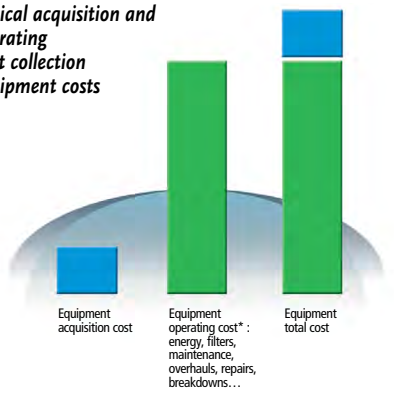
AQC's strength lies in its innovative products designed and developed to generate substantial savings throughout their entire operating life.

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.



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.

MAXITUBE VERTICAL BAGHOUSE COLLECTOR

Most efficient baghouse dust collector

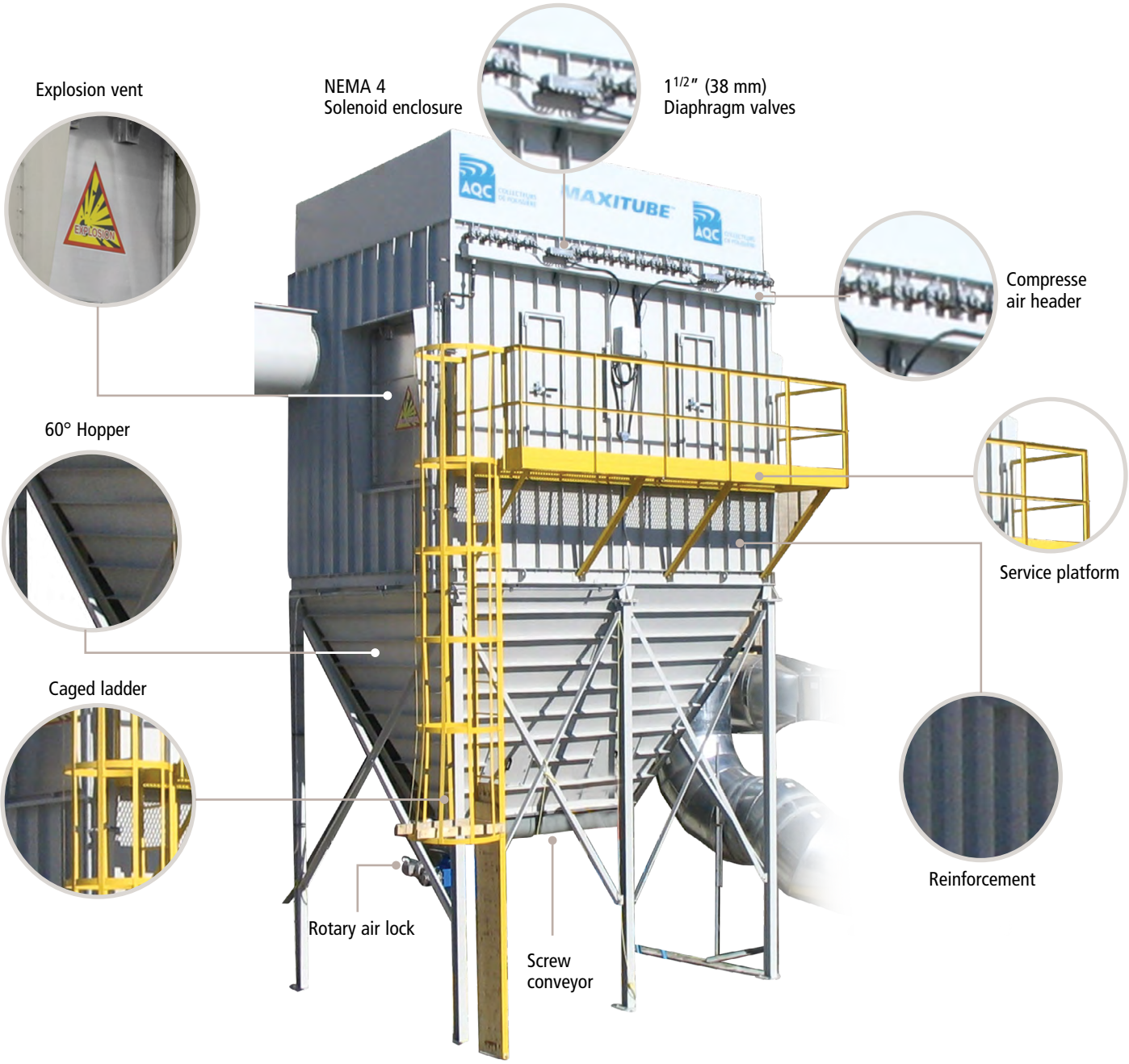
- Quality support cages
- Tube cleaning venturi nozzles
- Wide choice of filter types
- Extended surface pleated filter
- Air inertia reduction chamber
- Inside or top bag removal

TYPICAL APPLICATIONS FOR THE MAXITUBE

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

OUTSTANDING MAXITUBE FEATURES

SBR Side Access-Long Hopper



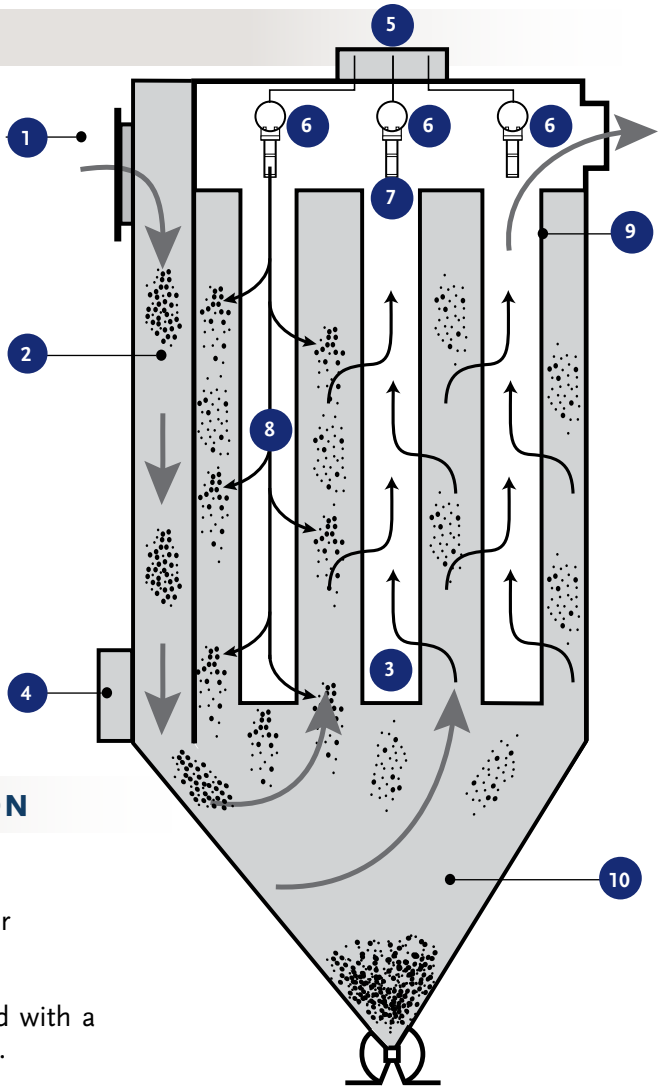
DESCRIPTION

The MAXITUBE dust collector is a hight dust concentration bag house type dust collector featuring a large selection of alternative filter bags or pleated bags capable of solving any specific dust application. 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 filter 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 bags to the outside forcing the accumulated dust cake to be blown away and fall into the hopper, all this while the collector is in operation.

PRINCIPLE OF OPERATION

During operation, dusty air 1 enters the collector from the side, air velocity is immediately reduced, large particles fall in the hopper and take a down flow air pattern 2. Smaller dust particles are filtered as they penetrate into the bags 3 clean filtered air is drawn 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 releases 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 dust collectors use approximately 8 to 12 SCFM per pulse. Recommended compressed air pressure for proper cartridge cleaning is 90 p.s.i.

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

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

The 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.

Recommended duct velocities for particles

CHART 1

Type of dust	F.P.M. / meter per second
Welding smoke	2500/12.7
Flour type dust	3800/19.3
Metal dust	4200/21.3
Heavy metal dust	5000/25.4

Note: Other particle velocities may be required. Refer to industrial ventilation handbook for more details or contact AQC.
Note: Installation must be made according to local building codes and regulations.

SELECTION OF A DUST COLLECTOR

There are many applications where baghouse dust collectors can be used. Choosing the appropriate filter bag media is important for the overall efficiency of the dust collection system. With so many different applications, the process of selection mostly becomes a matter of common sense and experience rather than an exact science.

A reliable selection may be made knowing the application and the different properties of each filter media. The purpose of this folder is to guide you to consider the factors which contribute to the selection of the filter bag media. These are :

1. Type of dust
2. Concentration
3. Size and shape of dust
4. Temperature of dust/gas stream
5. Abrasive characteristics of dust
6. Chemical composition of dust/gas stream
7. Moisture content of dust/gas stream

In addition, it is advisable to answer questions that consider other dust characteristics such as :

1. How easily does the dust cake release ?
2. How much restriction to airflow does the dust cake provide ?
3. Does the dust have agglomerative tendencies ?
4. Is the dust explosive ?
5. Will the dust have a chemical reaction to certain conditions ?

To select a filter media using these factors as guides, compare characteristics of the application with the media choices. Depending on the requirements of the applications, prioritize the most desired characteristics. Then, select the appropriate filter bag type based on its performance characteristics. Keep in mind that most medias are applicable for many conditions and that one may work just as well as another.

Often it is not necessary to over qualify an application selection. For normal, dry process, it would be advisable to use a standard media such as polyester felt with or without finishing. It can be used in many applications, is reliable in many different conditions, and is quite cost effective.

AQC baghouse collectors can be built to cover any dust application in the industry, from high concentration loadings to dry, stringy and sticky dust types.

AQC builds two types of cartridge collectors:

A- Conventional flat filter tubes held in cages for a combination of large and small particles

B- Pleated filters with extended surface area for smaller particles

Designer should be aware to not design a dust collector where the can velocity is greater than 345 FPM. This has a direct effect on the dislodged pulsed dust that while coming down, will be drawn back up into the filters because of excessive velocity.

Can velocity = Air volume / Dust collector area.

Conventional flat filter dust collectors can be used in any dust application, especially with high concentrations of large particles of dust. The flat filter permits the easy release of dust during pulsing and offer a variety of materials depending on the kind of dust.

Long pleated filters offer a greater surface area and an immediate high filtering effect. These filters are ideally suited to lower concentrations of small and medium dust particles. Contrary to cartridge collectors, the pleats are much wider, providing an easy release of caked dust when pulsing. Pleated filters are particularly easy to service as top removal while not having support cages.

Dust Collector types

CHART 2

Type	Square or rectangular
SBR-S	Side Bag Removal
TBR-T	Top Bag Removal
TBR-TP	Top Bag Removal -Plenum

Maximum operating temperature: 500 °F. (260 °C.)
Note: MAXITUBE maximum air volume capacity is rated as per the filtration area. For best results and longer cartridge life expectancy, air to cloth ratio (filtration surface) should be as low as possible.

Note 2: Air volume capacities indicated per MAXITUBE selection is more or less a 10 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 different air to cloth ratio in certain applications. Contact factory for details.

Bag selection 6" (152 mm) diameter

CHART 3

Type	Qty	Area ft^2	A/C ratio
FLAT + CAGE	16 to 196	392 to 3007	6 to 12 FPM
PLEATED	16 to 196	1216 to 14.896	2 to 4 FPM

Quick reference chart

CHART 4

	Polyester	Polypropylene	Acrylic	Nomex®	PTFE (Teflon®)
FILTRATION PROPERTY	E	G	G	E	E
RESISTANCE TO ACIDS	G	E	G	F	E
RESISTANCE TO ALKALIES	F	E	F	G	E
TENSILE STRENGTH	E	E	G	E	E
ABRASION RESISTANCE	E	G	G	E	E
RESISTANCE TO MOISTURE	F	E	E	G	E

Code : P = Poor; F = Fair; G = Gook; E = Excellent

SHAKER TYPE CLEANING

Ideal for various air volume and dust applications

- Powerful 1 HP motor for shaker mechanism
- Low or high profile dust storage system
- Dust inlet with abrasion resistance
- Choice of interior or exterior installation
- Minimal field assembly required

TYPICAL APPLICATIONS FOR THE MAXIVIBE

- Wood shops, making
- Training centers and vocational schools
- Grinding, sanding or buffing applications
- Plastic and composite shops
- Metal transforming facilities
- Food / pharmaceutical powders

TYPICAL APPLICATIONS FOR THE MAXIVIBE

Most natural and industrial dusts contain particles having a wide range of sizes. Years ago, AQC personnel found that size distribution followed the laws of probability. This led to the usage, now widespread, of the log-probability graph method shown in Figure 1. The engineering simplicity of the essentially straight line curves is self evident.

Micron Efficiency curves, similar to Figure 1, are published by AQC for all collector types. They show, for all particle sizes, the specific collection efficiency. By combining these inputs, overall Collection Efficiencv can be calculated. For example, assuming the Sawdust of Fig. 1 and the Cyclone Collector of Fig. 2. the following typical calculations result:

CHART 5

Micron size range	% Less than (Fig. 1)	% in range	Median size	Cyclone eff. (Fig. 2)	Catch %
0 -3	1.5	1.5	<1	Say .10	.15
3 - 5	4	2.5	4	.65	1.62
5 - 10	11	7	7.5	.80	5.60
10 - 30	38	27	20	.98	26.46
30 - 50	53	15	40	.99	14.85
50 - 100	75	22	75	1.00	22.00
>100	All	25	100	1.00	25.00
		TOTAL : 100%			TOTAL : 95.68%

Thus for this example, the overall efficiency would be 95.68%. Similar calculations for Fabric Collectors of Cyclone After Filters confirm efficiencies typicallv exceeding 99.9%. Hence the wide application of AQC Collectors recirculating cleaned air inside industrial plants.

FIGURE 1

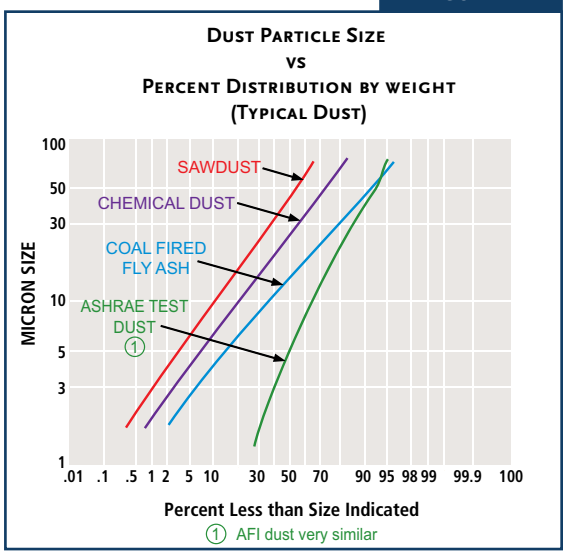
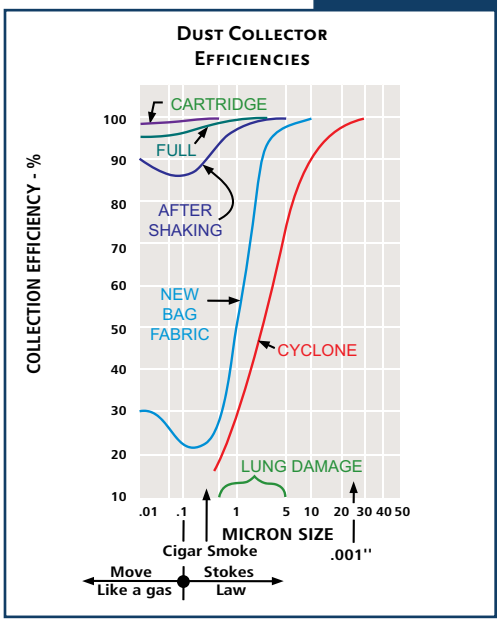
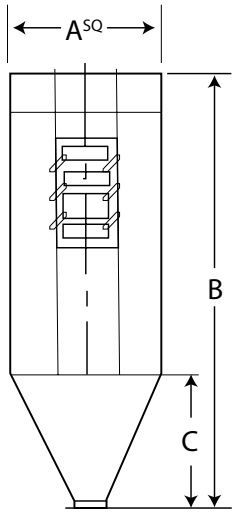


FIGURE 2

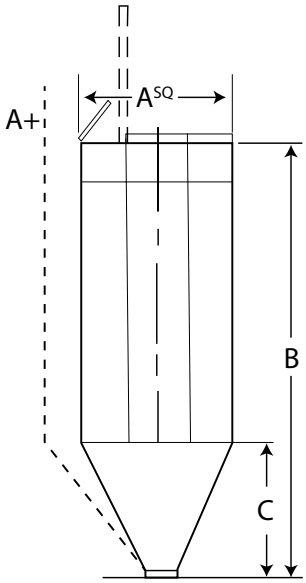


TYPICAL DIMENSIONS AND SPECIFICATIONS (SQUARE)



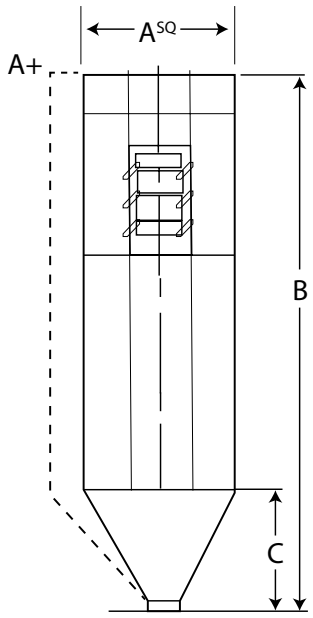
SBR series S

Side Removal
Models 25 Thru 196



TBR series TK

Top Bag Removal
Models 25 Thru 196



TBR-P series TB

Top Bag Removal with Plenum
Models 49 Thru 196

Dimensions

CHART 6

Model	filter area ft²			Height Dimensions "B" In											
				Side entry				Top bag removal (no walk-in)				Top bag removal walk-in plenum			
				SBR Series S				TBR Series TK				TBR-P Series TB			
	8 ft	10 ft	12 ft*	A	A+	B	C	A	A+	B	C	A	A+	B	C
25	314	392	471	40	-	173	33	40	-	-	-	-	-	-	-
36	452	565	678	48	-	173	33	48	-	173	33	-	-	-	-
49	615	769	923	56	-	191	51	56	74	173	33	-	-	-	-
64	804	1005	1206	64	82	191	51	64	82	191	51	64	82	272	51
84	1017	1272	1583	72	90	191	51	72	90	191	51	72	90	272	51
100	1256	1570	1885	80	98	219	72	80	98	191	51	80	98	272	51
121	1520	1900	2280	88	106	239	92	88	106	239	92	88	106	338	92
144	1890	2260	2714	96	114	239	92	96	114	239	92	96	114	338	92
169	2123	2653	3185	104	122	263	104	104	122	263	104	104	122	338	92
196	2462	3007	3694	112	130	263	104	112	130	263	104	112	130	338	92

Note 1: Dimensions "A" represent a square collector with dirty air inlet in the hopper. For side inlet collectors, dimensions are A x A+ with inlet on side in. Dimension "B" is from the top of the collector to the bottom of the hopper.

Note 2: Can velocity should not exceed 345 FPM.

SPECIFICATIONS

Bag house dust collector with pulse compressed air cleaning

Construction

The dust collector housing and the hopper are built from 10 and 14 ga steel sheets with reinforcements capable of withstanding 20 inH_2O pressure differential. The 1/4" (6 mm) tube sheet is reinforced and continuously welded in place to insure no dust leakage. For ease of service and maintenance, top bag removal is preferable as opposed to walkways installed inside the collector. 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 for the pulse frequency and duration. This control can be used with a Photohelic® type control so that the pulse sequence will begin only when the high pressure limit setting is reached, and will stop when the low pressure limit is attained.

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 A/C ratio, the less expensive the dust collector will be. MAXITUBE dust collectors equipped with MPH3 high volume nozzles assures that a strong air impact will travel evenly within each bag from top to bottom throughout the pulse row. This outstanding feature makes MAXITUBE a better collector.

Filtration fabrics

High filtration efficiencies are reached by the meticulous choice of the filter fabrics, and the air to cloth ratio (see filter fabric table). MAXITUBE offers a selection of filtration fabrics that are the most apt at filtering specific dusts.

APPLICATIONS

The MAXITUBE is an enclosed type dust collector. MAXITUBE dust collectors can be used with different dusts such as welding smoke, metal sanding, grinding or buffing, plasma and laser downdraft cutting tables, sandblast rooms operation, light to medium sized dry powders, food and pharmaceutical plants or plastic and composites 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 MAXITUBE collector. Individual dust collectors shall be use for each reactive dust.

Note 1: The MAXITUBE dust collector should include a sign indicating CAUTION when used with explosive dusts.

Note 2: The MAXITUBE dust collector should include a sign indicating WARNING when used with aluminum dusts advising danger of mixing with other dusts.

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.

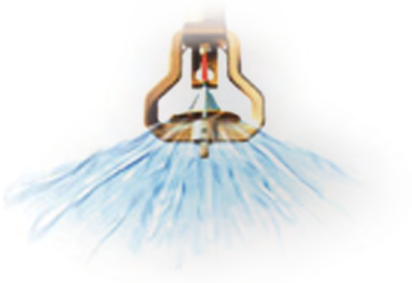
Blowback dampers

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.

YOUR MAXITUBE FILTRATION UNIT SPECIFICATION

1. Unit:

10 and 14 gauge welded and painted steel cabinet, 6 inch cylindrical filter bags hanging vertically on support cages with top bag removal feature. MPH3 pulse nozzles for an even compressed air distribution of each filter in a row. Pulses are energised from an electronic sequencer that controls pulse time duration and interval. Maxitube can be designed to accept different hoppers and dust release to drums or containers using rotary air locks and dust conveyors.

2. Model:

- a) Side entry SBR Series S ☐
- b) Top bag removal TBR Series TK ☐
- c) Top bag removal walk-in plenum TBRP Series TB ☐

3. Filters (polyester):

- a) Flange top for SBR ☐
- b) Snap band ☐
- c) Pleater filter ☐

4. Fan performance:

- a) ____CFM@_____" w.g. S.P. (Ex: 5000 CFM@ 6"S.P.) ☐
- b) ____ ____L/s@_____pa S.P. (Ex: 2360 L/s @ 1500 pa S.P.) ☐

5. Dust storage

- a) 55 us gal drums ☐
- b) Rotary air lock ☐
- c) Dust conveyor screw ☐
- d) Dust conveyor blower ☐

6. Dirty air inlet should be located at:

- a) Side of dust collector ☐
- b) Hopper (note side) ☐

7. Clean air outlet should be located at:

- a) Front of dust collector ☐
- b) Right of dust collector ☐
- c) Left of dust collector ☐
- d) 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) Rotary airlock ☐
- g) Slide gate at drum/hopper connection ☐
- h) Dust level detector ☐
- 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 bag filters ☐
- l) Support structure and hopper enclosure with access door ☐
- m) Access ladder and service platform for high profile dust collectors ☐
- n) Hopper vibrators ☐
- o) Drum dollies with casters ☐
- p) Drum covers ☐

9. Unit designed for:

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

10. Control panel:

Nema 4 casing ☐

11. Detection:

Particle emission ☐

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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