LC-Series bottom bag removal

V-Series top bag removal for larger dust collection

ULTRA-FLOW™

Advanced Technology High-Ratio Pulse Jet Baghouse Dust Collectors

V-Series for all dust collection jobs

LC-Series; small cost sensitive jobs

ULTRA-FLOW is the latest generation of an advanced technology discovered in 1979, using basic physics and much field testing. There are thousands of successful installations worldwide. These baghouses are the most efficient and lowest cost to operate/ maintain available on the market today. These dust collectors are backed up by the most qualified technical support, design and applications engineers in the industry.

Eliminates dry dust **for woodworking, welding, grinding and polishing, laser/plasma cutting, powder coating, cement plants, automotive, rubber recycling, grain dust, smelting furnaces.**

Unique Features

- Performance guarantee that no one else can or will offer, **see page 2.**
- **Only collector that will pay back the purchase cost with operating savings;** lowest power consumption of 30 to 50% less to operate the blower. Maintenance and service cost slashed by 50 to 80%.
- Unmatched efficiency; 99% to 1 micron, no “puffing” dust penetration during cleaning pulses.
- High side inlet with dropout box, wide bag filters spacing; eliminates can velocity with true down flow pattern through the collector. Allows very high filter ratio (18:1) regardless of the application.
- Smallest footprint; lower shipping and install cost.
- Runs at extremely low pressure drop of 1.5 to 2.5 inches WC, no restricting venturies.
- Most advanced pulse cleaning system, cleans entirely on-line 100% of the filters and gentle on the media extending filter life by 3 to 5 times over conventional designs.
- Filter media selected to provide most effective and maintenance free filtration.
- Custom engineered to fit any application.

Standard Construction

- Heavy duty industrial 12 gauge HRS welded construction, reinforced to +/- 20 (in WG)
- Most advanced self-cleaning system with solid state pulse timer, continuous on-line pulse cleaning pre-wired to NEMA4 enclosure
- Exclusive supersonic nozzles on pulse pipes for 1/4 compressed air use and 1/3 cleaning frequency
- Differential pressure gauge with dust trap to prevent clogging of pneumatic tubing
- 60^{O} sloped hopper with square flanged discharge to ensure material slides easily to the recipient

Custom Options

- On-demand pulse jet cleaning controller
- High temperature customizing
- 304, 316 and specialized stainless steel construction
- Anti-corrosion and anti-abrasion finishes
- OSHA caged ladders, top handrails, platforms
- Automatic manifold heater and drain valve
- Explosion vent panels, spark arrestors
- Rotary airlocks
- Computer selected blower, with noise silencer

Manufactured by; QAM, 11312 US 15-501 North, Suite 107-182, Chapel Hill, NC, 27517
Phone 1-800-267-5585 toll-free; WWW.QAMANAGE.COM

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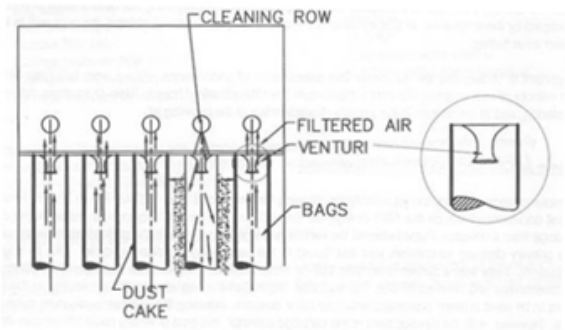
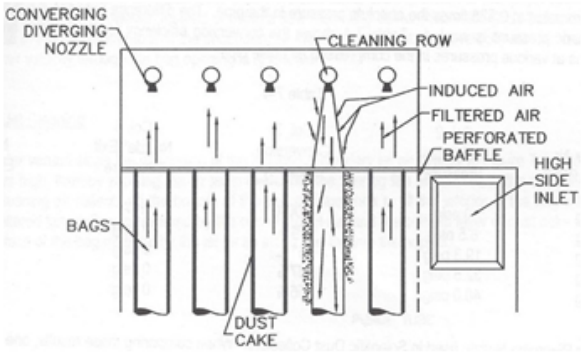
Conventional Design



- 85-90% of the market, sold by all the big guys.
- Handle most dust loadings, high temperature.
- Circa 1963; compressed air powered cleaning by rows of bags, venturi accelerated the jet to project to bottom of bag. Filter ratio 10:1 or less, dependent on application. Dust penetration (puffing) unacceptable for re-circulation to the work area.
- Circa 1971; "generic" design, modified to use 10-foot bags. Major design flaws led to selection strictly by filter ratio. Most operated at 4-6:1 ratio. Pressure drop is 6-8"wc. High compressed air consumption with higher cleaning frequency.
- High velocity dust impinges on adjacent bags which are too close together.
- The entire industry copied the same design and very little has changed to this day.

Advanced Technology



- Ultra-Flow by QAM, circa 2003, are the 6th evolution of the advanced technology.
- Circa 1979; "Advanced Technology" first appeared. Proven technology but little known.
- 95% less dust emissions, allows for re-circulation to work area.
- 25-40% lower power consumption.
- 50-80% lower operating and maintenance cost.
- 30-40% smaller footprint.
- No venturi to restrict flow, low velocity - high volume jet = gentle but powerful cleaning pulses = no penetration & complete cleaning. 200% increased bag filter life & uses half as many bags.
- High, side inlet eliminates "can velocity".
- Supersonic nozzles; ¼ compressed air consumption.
- Runs at 18-24:1 filter ratio, independent of process & dust loading.
- Runs at 1.5- 3"wc(max) pressure drop.

Compare Dust Collectors

20,000 CFM	ULTRA-FLOW	COMPETITION
Dust emissions	10 x10^{-5} gr/ft^3	800 x10^{-5} gr/ft^3
Blower/motor	50 HP	75 HP
Filter life	6-10 years	1-4 years
# of bag filters	84	256
Foot print	72"x135"	115"x135"
Weight	7700 lbs	9480 lbs
Pressure drop	1.5- 2.5 inch WC	4-8 inch WC
Compressed air	4-5 SCFM	8 SCFM
Height w/hopper	222"	240"

Performance Guarantee

(Exclusive to ULTRA-FLOW)

Unmatched Efficiency; 99% efficiency down to 1 micron particle size, and, pressure drop will not exceed 4 inches WC across filter elements. Dust penetration will not exceed 0.01 grains per cubic foot (and as low as 0.002 gr/ft^3 vs conventional designs at 0.08 gr/ft^3) with inlet dust loading of 10 grains per cubic foot. It will meet and exceed OSHA, Ministry of Labor, EPA and Department of the Environment standards now and in the future.

Unlimited Filter Bag Life; in the range of 7-10 years is not uncommon. In general we expect and can guarantee filter bag life will be at least 18 months and up to 5 years in most applications, 3 to 4 times longer than any conventional baghouse designs.

For a detailed performance guarantee including limitations, refer to our Engineering Bulletin, "Performance Guarantee".

Manufactured by; QAM, 11312 US 15-501 North, Suite 107-182, Chapel Hill, NC, 27517
Phone 1-800-267-5585 toll-free; WWW.QAMANAGE.COM
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MODEL	Rated Volume (CFM)	Filter Area (SFT)	Qty Bags Length(in)	Compressed Air (SCFM)	Inlet GxH	Std Outlet	Dust Drawer (cu.ft.)	A	B	C	D	E	F	Weight (lbs)	MODEL
6LC–H	500	29	6/48	0.19	5"dia.	5"dia.	–	21	21	98	25	16	21	483	6LC–H
6LC–L	500	29	6/48	0.19	5"dia.	5"dia.	2.5	21	21	77	–	16	21	483	6LC–L
9LC–H	720	43	9/48	0.28	6"dia"	6"dia"	–	27	21	102	25	16	21	554	9LC–H
9LC–L	720	43	9/48	0.28	6"dia"	6"dia"	3	27	21	77	–	16	21	554	9LC–L
12LC–H	960	57	12/48	0.37	7"dia	7"dia	–	27	27	122	45	20	22	778	12LC–H
12LC–L	960	57	12/48	0.37	7"dia	7"dia	4	27	27	77	–	20	22	778	12LC–L
18LC–H	1440	85	18/48	0.56	12x6"	12x6"	–	27	39	133	45	17	24	1093	18LC–H
18LC–L	1440	85	18/48	0.56	12x6"	12x6"	6	27	39	82	–	17	24	1093	18LC–L
30LC–H	2400	142	30/48	0.94	18x6"	18x6"	–	39	39	157	45	16	20	1880	30LC–H
30LC–L	2400	142	30/48	0.94	18x6"	18x6"	8.5	39	39	107	–	16	20	1880	30LC–L
30LC8–H	4800	283	30/96	2.55	35X8"	35X8"	–	39	39	183	45	22	35	2679	30LC8–H
30LC8–L	4800	283	30/96	2.55	35X8"	35X8"	8.5	39	39	133	–	22	35	2679	30LC8–L

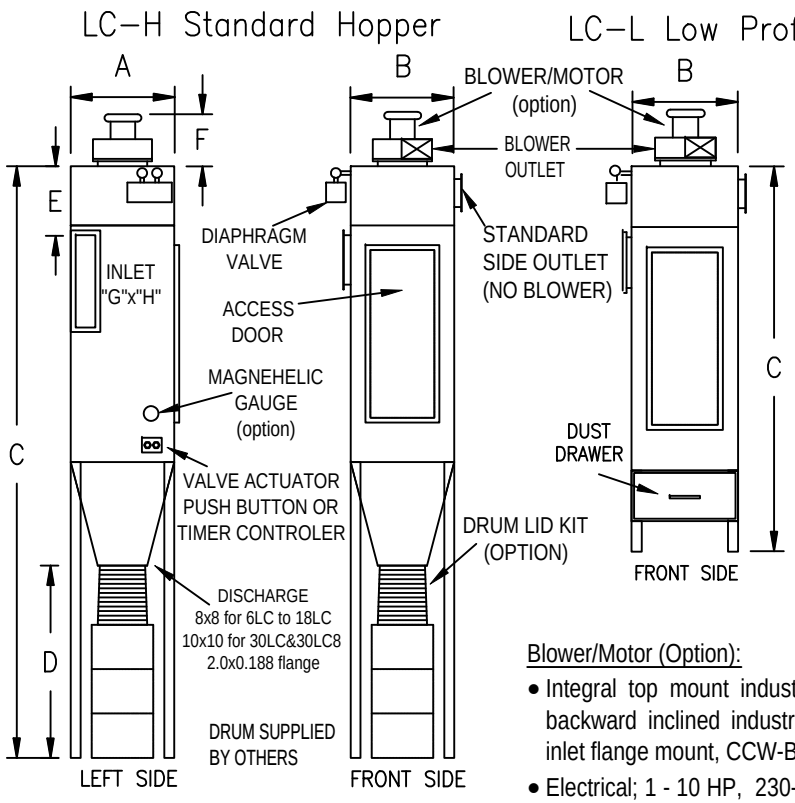
FAN PERFORMANCE	CFM @ In. WC, external pressure 0	1	2	4	6	Motor HP	Noise, dBA	Weight (lbs)
6LC	560	500	460	280	N/A	1	96(1)	57
9LC	840	790	710	570	320	2	95(1)	96
12LC	1100	1000	920	700	390	2	95(1)	137
18LC	1570	1480	1420	1220	980	5	98(1)	183
30LC	2750	2600	2400	1800	N/A	5	87(2)	215
30LC8	5200	5000	4800	4100	3400	10	93(2)	371

Higher static pressure blowers also available

(1) Noise level is rated at 3 feet from fan outlet.
(2) Noise level is rated at 5 feet from fan outlet.
The environment for each fan installation influences its measured sound value, therefore dBA levels cannot be guaranteed.

Hopper and Stand; 6LC-H & 9LC-H sized for 5 gallon pail,
12LC-H to 30LC8-H sized for 45 (55 US) gallon drum.

All dimensions in inches



- **Built to; ISO 9001-2008 and CWB certified**
- 12 gauge hot-rolled steel welded construction, to withstand +/- 20" WG,
- High inlet leads to large drop out section where the air makes a 90deg turn into the filter section. This prevents abrasion and forces most of the dust to drop directly to the collection hopper, no "can" velocity issues..
- 60° Pyramidal hopper provided for dust collection. Optional drum lid adapter available, **drum supplied by others**.
- Large access door to bag filter compartment with easy to open/close hand knobs.
- Inlet/outlet; round collar for slip connection, or, flanged rectangular. *See specifications table.*
- SSPC-SP3 power-tool cleaned, epoxy primed and exterior finish coat of Terra Brown (RAL8028) paint, good to 250°F
- Automatic self-cleaning, advanced technology "high-ratio" reverse jet pulse, requiring no shutdown for after-pulse cleaning. Pulse sequencer supplied in NEMA 4 enclosure. No need to shutdown the collector during a cleaning cycle.
- Diaphragm valves rated at 125% of required flow to ensure proper back-flush volume.
- Optional differential pressure gauge with connecting hardware, to monitor filter condition.
- One full set of bottom removal filter bags and wire cages.
- Built to North American compliance with EPA, OSHA NFPA standards. Compliance with local codes and standards are the responsibility of the purchaser.

Operating Requirements:

For best cleaning, both the process air and compressed air must be maintained at least 15°F above the dew point. Compressed air must be below a maximum temperature of 180°F at 85 psig. For the protection of the pneumatic valves and controls, compressed air for this equipment must be clean and have a refrigerant or desiccant dryer at the collector having a low enough dew point to meet conditions of operation.

Blower/Motor (Option):

- Integral top mount industrial pressure blowers, or, backward inclined industrial fans, arrangement 4V, inlet flange mount, CCW-BH (outlet to the right side).
- Electrical; 1 - 10 HP, 230-460-575 / 3 phase / 60 Hz Volts, TEFC.

Selecting a collector based on Fitler ratio
is an engineering mistake.
See Technical Bulletin E-002.

Quality Air Management reserves the right to change design and specifications without notice.

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ALL DIMENSIONS ARE IN INCHES UNLESS STATED OTHERWISE

REV. No.	REV. DATE.	REVISION DESCRIPTION.
3	8/29/2019	new hopper dimensions
2	8/16/19	new fan specifications
1	9/17/18	Add PISG designation

PROJECTION:

TITLE: LC– series Baghouse Dust Collector (imperial)
PAGE: 1 of 1
DATE: 9/22/2017
SCALE: NOT TO SCALE
DWG.No. LC–001–1

Engineering Bulletin

Filter Ratio (or air-to-cloth); A Gross Engineering Mistake

QUALITY AIR MANAGEMENT
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(as a governing specification in cylindrical bag pulse jet dust collectors)

The History of Reverse Jet and Pulse Jet Design and Development must be reviewed to determine proper selection of collectors.

The first pulse jet collector was developed by Pulverizing Machinery of Summit New Jersey in the early 60's, to collect dust from their Pulverizers. They had tried to use the Blow-ring design but they could not handle the dust (powder) loads as their grinder Pulverizers became bigger. The typical load to the collectors from the Pulverizers were between 150 and 300 grains per cubic foot. The collector design was based on the same blow-ring filtering velocities at these loads. The cages were based on available designs from shipping pulverizer shafts. The pulse valves selected were diaphragm valves that were the fastest and the lowest cost valve available. This valve happened to be a ¾ inch diaphragm pilot operated valve. They decided to use several valves in a collector and pulse them with an electronic timer. It was found the hole sizes and venturi formed an air ejector design that had the same jet velocity that the blow-ring collector was using. But the big breakthrough came with the realization that the dust was ejected from the bag during the first 4 or 5 milliseconds of the valve opening. The valves were operated as fast as the mechanical design allowed. The operation was completed in less than 0.10 seconds. It became apparent that the frequency of cleaning was a function of the load to the collector. For instance, for loadings of 300 grains, the collectors would operate at a filtering velocity of between 7 and 9 ft per minute. At material handling facilities such as quarries, the collector would run at velocities of 14 to16 feet per minute. The typical pressure drop in these collector designs were about 3.5 inches WC pressure for the high loads and 2.0 inches WC for the lower dust loads. The typical compressed air usage, on the high loads, was 1 to 2 SCFM per 1000 CFM of filtered air. For loads under 10 grains per cubic foot, the air usage was 0.2 to 0.8 SCFM per 1000 CFM of filtered air.

Determining the filter velocity (then referred to as filter ratio) became a rather complicated procedure. The ratio presumably was determined by dust load, fineness of the dust, temperature of process gas stream, and other factors.
The hopper inlet was a carry over design from both the blow-ring collector and the previous mechanical shaker collectors.

By 1969, there were over 10,000 collectors in operation. Almost all of them were installed on process exhaust from Pulverizers or in foundries. Pulverzing Machinery changed their name to Mikropul and licensed FlexKleen to also build and Market collectors. The collectors for MikroPul had 4 ½ inch diameter bags 72 inch long and the FlexKleen units had 5 inch bags 102 inches long. Bag life was 3-5 years on Pulverizer applications and over eight years on low loading applications.

Engineering Disaster 1971

In 1971, the patent was challenged and the Pulverizing Machinery patent was declared invalid. The market changed radically because Air Pollution Control Regulations also became effective at the same time. Many new suppliers entered the market. In order to compete, Mikropul changed their design. They went from 6 foot to 10 foot bags. They increased their pulse pipe holes by the same ratio. The whole industry followed and copied the new design for hole size and venturi throat diameter. At the time, Mikropul had 40,000 venturies in stock and kept the same venturi sizes. This increased the jet velocity of the cleaning jet by 66 per cent.

This was when the dust collector market was growing at a 20% annual rate. With the new designs:

(1) pressure drop increased to 4 ½ to 6 ½ inches WC
(2) Compressed air consumption increased by over 50% for similar applications.
(3) Bag life was reduced by over 50%.
(4) In reaction to these problems the filter ratios were reduced to between 4 & 6 on almost all applications.

Reasons for Disaster

What happened was no one at that time realized what might have been a rather obvious truth, that the velocity with which the dust is ejected from the bag during cleaning is proportional to the velocity of the cleaning jet. At the new velocities, dust is driven toward adjacent rows of bags in the filter mode. Depending on the dust density, the dust will be driven through the adjoining cake into the clean side of the bags. The cake becomes more dense and the pressure drop increases until the process stabilizes which takes 16-100 hours. Even after the equilibrium, the dust still penetrates and bag wear is high. With low filter ratios it takes longer for the bag to wear out and require longer times between replacements.

Today's Conditions

This disastrous design continues to be employed by most of the pulse jet collector suppliers in the world.

New Advanced Technology eliminates design flaws; allows for High Ratio Operation

In 1981 a new technology was developed, a pulse jet collector that basically changed the cleaning system design. The key to this design was to change the jet velocity to a fraction of the existing designs. New Technology eliminated the penetration of dusts from the row of cleaning bags to the adjoining row in a filtering mode.

This allowed pulse jet collectors to operate at:

(1) lower pressure drops (1 - 3 inches WC),
(2) lower compressed air consumption for cleaning (50 - 75% less)
(3) 3 to 4 times longer bag life
(4) filter ratios of over 14:1 on any application
(5) decrease dust penetration by up to 90%.

There have been several suppliers building and selling these New Technology collectors since 1982. In fact the patents have now expired. **There are over 4000 installations worldwide.**

Why is this New Technology not accepted by all the major suppliers?

1) If you produced 40,000 collectors after the development of the new technology was published over 20 years ago, you might be subject to legal action for poor judgment and causing the public to be overcharged for their dust collection.
2) They do not have the engineering expertise to build these new technology collectors.
3) People using the old obsolete technology control over 90% of the market world-wide.
4) The suppliers of valves and filter elements would have their markets cut in half.
5) Air compressor sales and service for pulse jet collectors would be cut by 60%

Modifying existing collectors with almost no risk to the purchaser.

We can supply new bags, pulse pipes and bag plugs to alter performance to high technology low pressure drop, reduced air consumption, lower penetration (immediately noticeable) and long bag life (it takes some time to verify that but it should be obvious from the other indications). The modifications take only a few hours and if a customer is not satisfied, he can return pipes and cages for credit and re-install the old components. **If this was not an absolute certainty customers would not pay for the equipment.**

Testimonial from Mei-West

November 1, 2012

Quality Air Management
240 Camille Crescent
Waterloo, On N2K 3B7

Subject: Ultra-Flow model 60VS-8 and 72VS-8 bag house dust collectors

To whom it concerns,

Since Spring 2011, we have been setting up a new grass seed processing plant. These plants produce a lot of very fine dust. To create a dust free environment in a temperature controlled building we started looking for a filter system that is compact enough to fit inside the building without wasting too much valuable space.

We were quoted different systems by a number of dust collector suppliers. Yours impressed me the most from its unique and seemly very advanced technical standard. However, the tipping point is that the two collectors were small enough to fit inside our building, which is what we wanted. All the others were far too large and would have had to go outside. Also, the motor horsepower was only 20 and 30 HP. The others were around 50 HP or more.
All the so-called experts told me that I was being fooled, because these smaller dust collectors could never do the job. I always like a challenge and to be the innovator and ignored these warnings. We've run these bag houses for a while now and they are running amazingly well and at only 1 – 3.5 inch pressure drop. You recommended that we reduce the cleaning frequency even more and run the collectors at around 2 inch pressure drop, to save even more on operating cost and reduce wear and tear on the filter bags. I'm impressed and delighted.

No one else seemed to match your technical expertise and that assures us of success in our application of these dust collectors.

Yours Truly,

Heinz Nolting
Mei-West Ent.
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