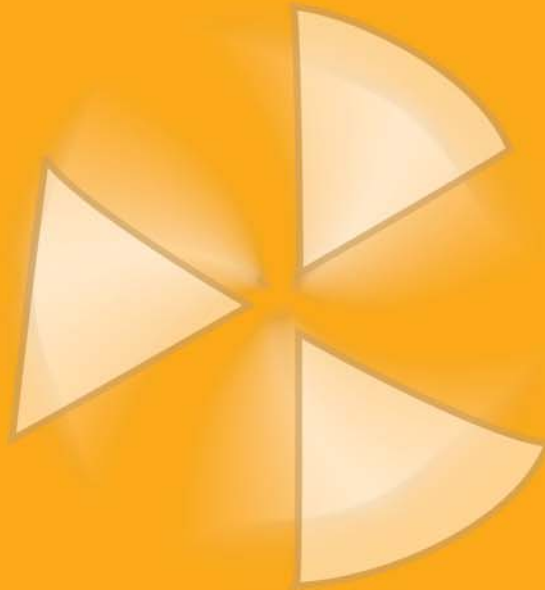


# High Plume Exhaust Solutions



Dedicated to detail, precision and quality control



## **Welcome to M.K. PLASTICS CORPORATION**

Founded in 1963, MK Plastics is a global leader in the production of corrosion resistant industrial and commercial blowers, fans, and ventilation systems. Patented in several countries, our products are AMCA Certified for Air and Sound Performance.

### **Our Mission**

We offer the broadest and most complete line of quality industrial and commercial corrosion-resistant fans and blowers. Our innovative ventilation technologies are recognized world wide.

### **Our Commitment**

Certified for excellence in performance and noise reduction, we are devoted to providing:

- The highest quality corrosion resistant fans and systems available
- Superior engineering support for our equipment
- Industry leading technology and experience.
- Highly skilled application engineering associated with the equipment and systems we manufacture.

### **Our Facilities**

We design and manufacture complete ventilation systems in our own facilities as we have done for two generations, assuring quality, and reliability and constant innovation. Our dedicated engineering and R&D team designs, refines, and tests all of our fans and blowers in our 70,000 sq. ft. manufacturing facility and performance test laboratory in Montréal, Québec, Canada.

## Our Products

For over 46 years, M. K. Plastics has been engineering, designing, and fabricating thermoplastic and FRP ventilation components and systems for institutional and industrial applications. Founded in 1963, today M. K. Plastics has facilities and offices in Montréal, Québec, Canada; Spiez, Switzerland; Troy, OH and Mooers, NY, USA. M.K. Plastics has technical sales representatives that are in major cities throughout the globe.

## INNOVATIVE DESIGNS

The Canadian Plastics Industry Association - Québec Section has recognized the innovative design and construction of the Axijet High Plume Dilution Blower at the 2004 Galea Awards.

## PRODUCTS SUPPLIED BY M.K. PLASTICS

Axijet® High Plume Dilution Fan  
Axijet® LEADLAG™ Exhaust Fan Control System  
KVC High Plume Fan  
Venturi Perchloric Acid Exhaust System  
DHK Medium Pressure Centrifugal Fan  
DHK-NW High Pressure Centrifugal Fan  
CNW Centrifugal Fiberglass Fan  
PRVS High Pressure/Low Volume Centrifugal Blower  
VHPC Very High Pressure Centrifugal Blower  
RBK Roof Upblast & Sidewall Centrifugal Fiberglass Exhaust Fan  
AXT Axial Tubular Fan  
AXTC Centrifugal In-Line Fan  
AXB Axial Bifurcated Fan  
AXPR Axial Panel Fan  
FRP & PVC Control Dampers & Gravity Backdraft Dampers  
FRP & PVC Ducting and Fittings  
Mist Eliminators



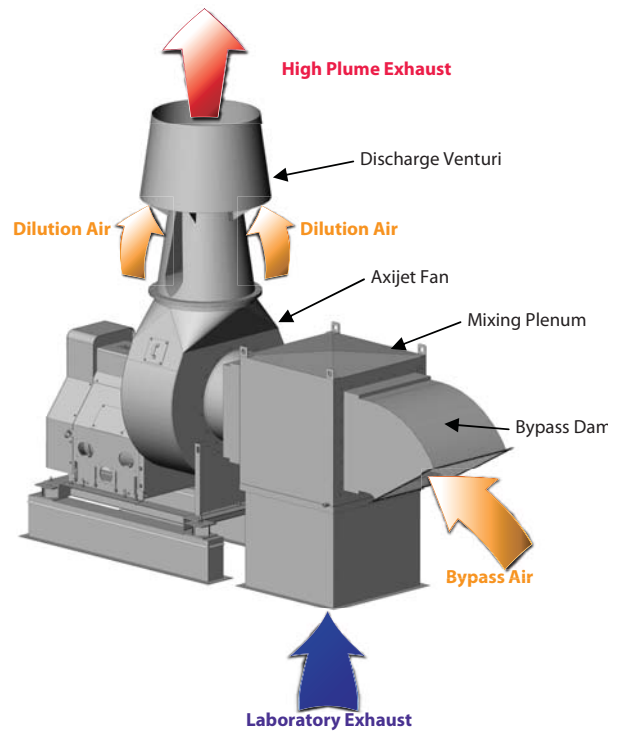
# High Plume Exhaust Systems

## How the Axijet® High Plume Exhaust System Works...

The Axijet is an induced flow fan that is used to extract laboratory, process, or fume hood effluent air and dilute the effluent with outside ambient air. Because of the nozzle design, the exhausted effluent is displaced high into the atmosphere at a constant high discharge velocity.

The Axijet fan extracts the laboratory effluent from the mixing plenum, where it has been diluted with outside air from the bypass damper (optional). The exhausted effluent is then forced through the fan discharge venturi (stack), at high velocity where further outside induced dilution air is introduced. This induced air plus the laboratory exhaust is then discharged into the atmosphere at high velocity.

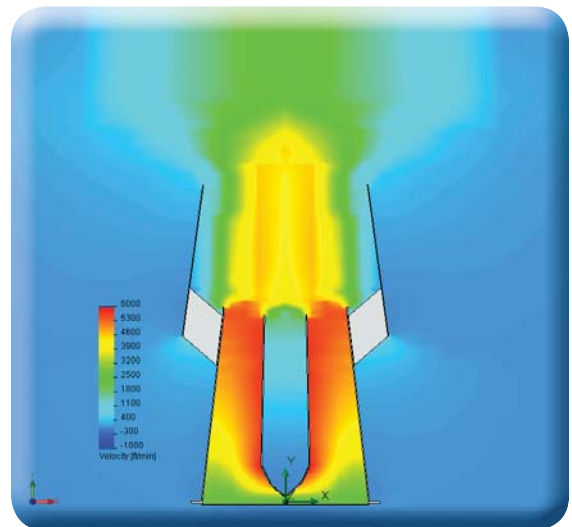
As a result, the Axijet has greater exhaust dilution, higher discharge velocity, greater exhaust mass, and a greater plume height than conventional blowers and fans.



## Innovative Design

M.K. Plastics uses state of the art CFD analysis and testing to achieve optimum performance out of our Axijet line of fans. Over 46 years of engineering design and manufacturing expertise have contributed to the most cost effective and energy efficient High Plume Exhaust System on the market.

Axijet is a 'registered trademark', patent numbers: 5439349, 7018287 B2, 7077627 B2, 2515747, 7077739 B2, 2140163. 'EZ-4' direct drive 2515747 (Canada), LeadLag Control System 682365



# High Plume Exhaust Systems

Many applications such as laboratory or process effluent are hazardous and must be safely exhausted to ensure the safety of those working in close proximity to the source of the removed fumes.

Safety concern is extended to not only those in the immediate area where the fumes are generated, but also to others located in the building, as well as the occupants in surrounding areas.

Improperly designed exhaust systems that ineffectively discharge high concentrations of effluent can result in reentrainment of the hazardous or noxious exhaust into the building make-up air conditioning system, contaminating the fresh building air.

In applications where the exhaust is heavier than air and also corrosive, the use of Axijet high plume fans effectively displace the exhaust away from the building roofing system and other roof mounted equipment, eliminating costly corrosion caused by the exhausted vapors.

## Normally two methods are used to obtain high plume heights:

- Tall exhaust stacks: Usually architects do not like tall stacks as they are difficult to incorporate into an architectural design. Moreover, typically they require guy-wires and additional bracing due to windloading forces. Sometimes this is difficult to achieve on roof tops with a lot of other equipment around the fan.
- High Plume Dilution Exhaust Systems: These systems are designed to have high discharge velocities and dilution by inducing fresh air through the stack. A combination of volume and velocity contributes to a high plume exhaust while diluting hazardous exhaust concentrations.

### Effective Discharge Height

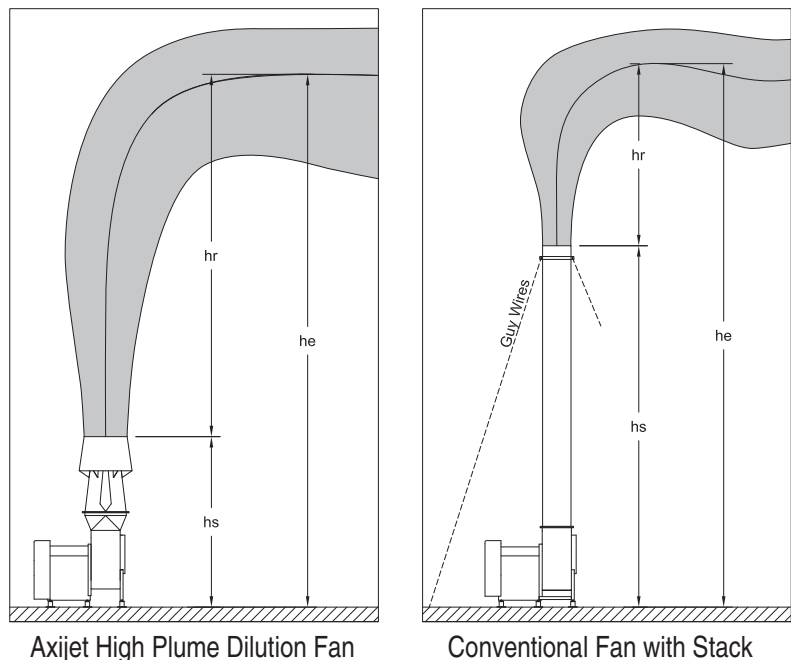
When studying laboratory exhaust design issues, it is important to consider effective stack height. This is the physical height of the equipment plus the plume height. The following explains how this is calculated.

$$h_e = h_r + h_s$$

$$h_e = [3.0 \times V \times d / U] + h_s$$

- $h_e$  = effective plume rise [ft]
- $h_s$  = equipment height
- $h_r$  = plume height [ft]
- $V$  = stack discharge velocity [fpm]
- $d$  = effective stack diameter [ft]
- $U$  = cross wind velocity [fpm]

Plume rise calculation is taken from ASHRAE Laboratory Design Guide, Equation 9-2. Plume rises shown in this catalog are based on 10 mph crosswind.



### Increasing Effective Discharge Height

This is achieved by increasing the volume of air through the discharge nozzle. Speeding up the fan by changing the drive pulleys or using variable frequency drives will boost the volume capacity. This additional capacity can either come from an increase of lab exhaust, or through the addition of a bypass damper. Using bypass air is preferred as it increases both mass and dilution, therefore displacing the exhaust even higher from the building.

# Axijet Centrifugal High Plume Dilution Fan

## Axijet Design Features:

- Applications for variable or constant volume systems
- Roof or interior mounted with easy access to drive components for ease of maintenance
- Centrifugal, backward inclined, airfoil impeller that allows for stability to efficiently exhaust large volumes of air at medium to high pressures
- Low radiated sound levels
- Stable operation throughout operating curve
- Non-overloading power characteristics
- Greater airflow capacity per fan
- High pressure capabilities

## Choice of Materials of Construction:

- Heavy gauge, continuously welded steel construction with corrosion resistant electrostatically applied powder coating
- AMCA C or B spark resistant construction
- Stainless steel
- 100% FRP (Fiberglass Reinforced Plastic), for extra corrosion resistance to the exhaust, (AMCA A spark resistant construction)
- 'FSW' - Fiberglass construction with coated steel impeller

## Belt Drive Configurations:

- Available in arrangements #1, #9 and #10
- Allows air handling capacity of the fan to match system requirements
- Allows for field adjustment of flow and pressure for future requirements
- Ease of maintenance to the drive components without contact of the contaminated exhaust
- Drives are sized for 150% of the motor horsepower
- Fan bearings are sized for an L10 life of 200,000 hours

## Bypass Air Plenums:

- Inlet mixing plenum in either coated steel, stainless steel or FRP
- Available in either single wall or double wall insulated construction
- Bypass and Isolation Dampers -
  - ▷ Motorized control or gravity operated
  - ▷ Available in coated or anodized finish aluminum, FRP or stainless steel
  - ▷ Factory mounted electric or pneumatic actuators
- Roof mounted equipment designed to withstand wind loads up to 125 mph without the need of guy-wires

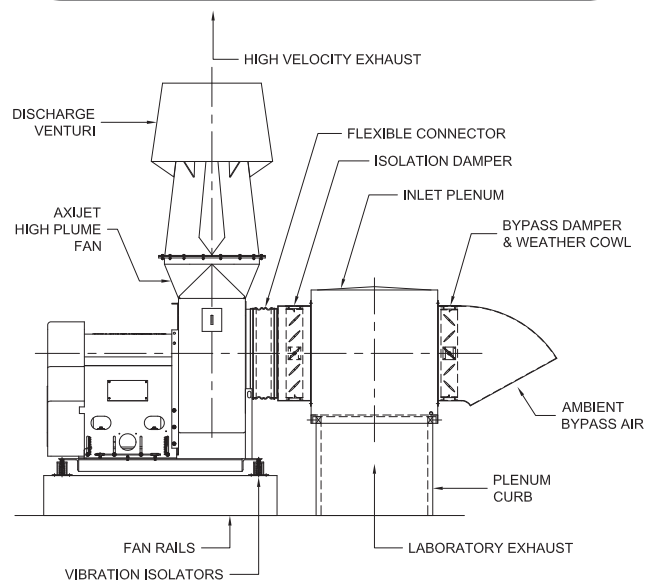




**M.K. Plastics Corporation** certifies that the centrifugal Axijet-F 1225 and 1500 and Axijet-S 1825 to 7300 models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and 311 and comply with the requirements of the AMCA Certified Ratings Program.



**M.K. Plastics Corporation** certifies that the centrifugal Axijet-F 1825 to 6000 models shown herein are licensed to bear the AMCA Seal. The AMCA Certified Ratings Seal applies to Induced Flow Fan Air and Sound Performance (AMCA Standard 260).

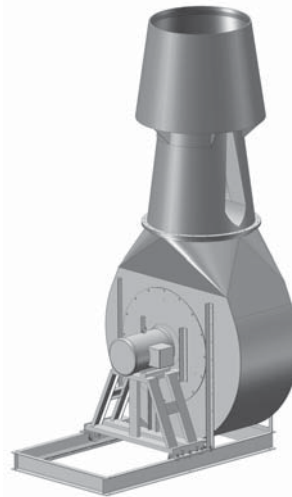


## Direct Drive Configurations:

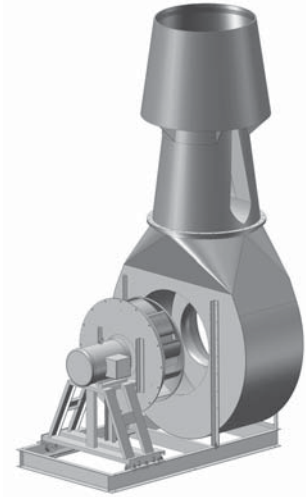
Arrangement #4 and direct coupled arrangement #8

### Direct Drive Option 'EZ-4':

- Direct Drive 'EZ' Motor Arrangement #4 is a Patented fan assembly designed for easy maintenance or replacement of the motor or fan wheel, without removal of the entire fan from the exhaust system.
- Removal of the motor or fan wheel is accomplished by unbolting the fan backing plate and unbolting the motor base sub-assembly from the blower base. The motor base subassembly (consisting of the motor and blower wheel assembly) is then slid on the fan base, back from the fan housing.
- Available for Axijet-F and Axijet-FSW models only.



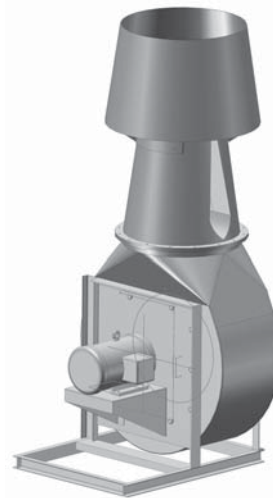
EZ-4° Motor/Impeller Assembly Closed



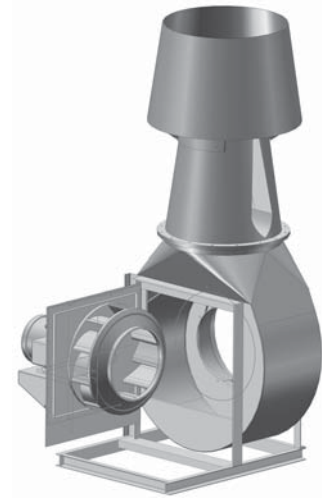
EZ-4° Motor/Impeller Assembly Open

### Direct Drive Option 'Swingout':

- The 'Swingout' direct drive Arrangement #4 fan assembly is designed for easy maintenance or replacement of the motor or fan wheel, without removal of the entire fan from the exhaust system.
- Heavy duty flanged ball bearing hinge system provides door support without the need for a track
- Door handle have extra heavy T-handles to lock doors for a tight seal
- Available for Axijet-S models only.



Swingout Motor/Impeller Assembly Closed



Swingout Motor/Impeller Assembly Open

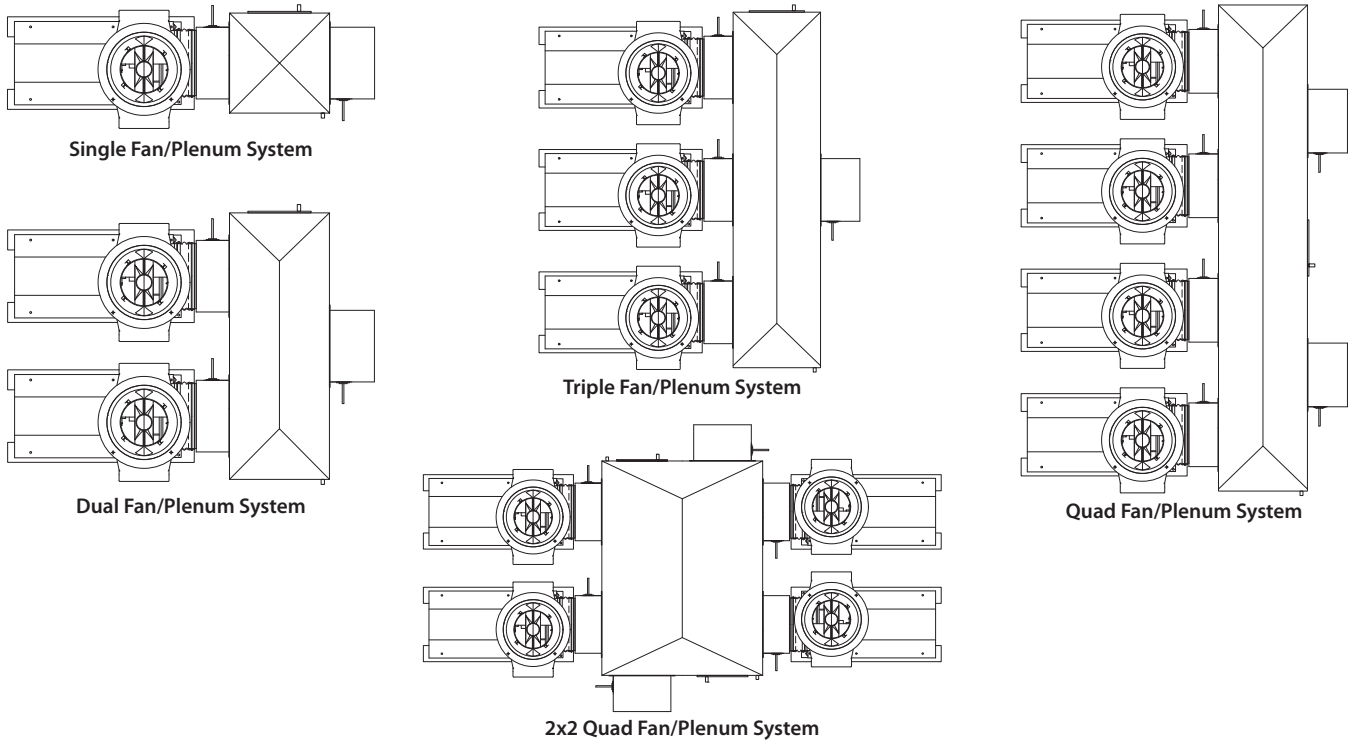
### AMCA arrangement #8

With a flexible coupling that connects the motor shaft to the impeller fan shaft. Motor removal is achieved without removing the fan impeller and without contacting the contaminated exhaust. Available for Axijet-S, Axijet-F and Axijet-FSW models.



### Centrifugal Axijet Arrangements:

Various system configurations are available for the Axijet-S and Axijet-F fans. Certified layouts and dimensions are available.



### Centrifugal Axijet Abridged Performance:

Fan Size		Inlet CFM	Outlet CFM	Effective Discharge Height [FT]
1225	Max	2,800	5,000	25
	Min	1,200	2,400	14
1500	Max	3,600	6,400	28
	Min	1,600	3,100	16
1825	Max	6,300	11,200	31
	Min	2,700	5,200	18
2225	Max	9,300	16,600	37
	Min	4,100	7,900	22
2450	Max	11,300	20,100	41
	Min	4,900	9,500	24
2700	Max	13,800	24,600	45
	Min	6,000	11,600	27
3000	Max	17,000	30,300	50
	Min	7,300	14,100	29
3300	Max	20,600	36,700	55
	Min	8,900	17,100	32

Fan Size		Inlet CFM	Outlet CFM	Effective Discharge Height [FT]
3650	Max	25,300	45,000	61
	Min	10,900	21,000	36
4025	Max	30,700	54,600	67
	Min	13,200	25,400	40
4450	Max	37,500	66,800	74
	Min	16,100	31,000	43
4900	Max	45,500	80,900	81
	Min	19,500	37,700	48
5425	Max	55,800	99,200	90
	Min	23,900	46,300	52
6000	Max	68,400	121,600	101
	Min	29,300	56,800	59
6600	Max	77,000	137,100	111
	Min	33,000	64,000	66
7300	Max	95,000	169,100	123
	Min	40,500	78,600	74

Performance certified is for installation Type C, Ducted Inlet, Free Outlet.  
 Power rating (BHP) does not include transmission losses.  
 Performance ratings do not include appurtenances (accessories).

**NOTES:**

- Inlet CFM = Laboratory Exhaust + Ambient Bypass Air
- Outlet CFM = Inlet CFM + Induced Flow
- Effective Discharge Height is at 10 mph cross wind, and is from the base of the unit.
- Minimum Inlet CFM based on ANSI Z9.5, minimum stack velocity of 3,000 fpm.

For complete performance ratings, dimensions, and accessory details, please contact your local M. K. Plastics Sales Representative, or refer to the M. K. Plastics selection software available at [www.mkplastics.com](http://www.mkplastics.com).



## Axijet-VM and Axijet-VC High Plume Dilution Fan

The Axijet-V is a vertical, inline High Plume Dilution Fan that combines the benefits of axial flow and centrifugal fans, with a high plume dilution stack and windband. The Axijet-V has the advantage of a compact design and straight-through airflow where roof space is limited.

### Axijet-VM and Axijet-VC Design Features:

- Applications for variable or constant volume systems
- Mixed Flow impellers (Axijet-VM) for low to medium pressures, or straight-line centrifugal (Axijet-VC) for medium to higher pressures
- Available in belt drive arrangement # 9 for easy inspection and maintenance of drive components
- Stable operation throughout operating curve
- Non-overloading power characteristics
- Greater airflow capacity per fan
- High pressure capabilities

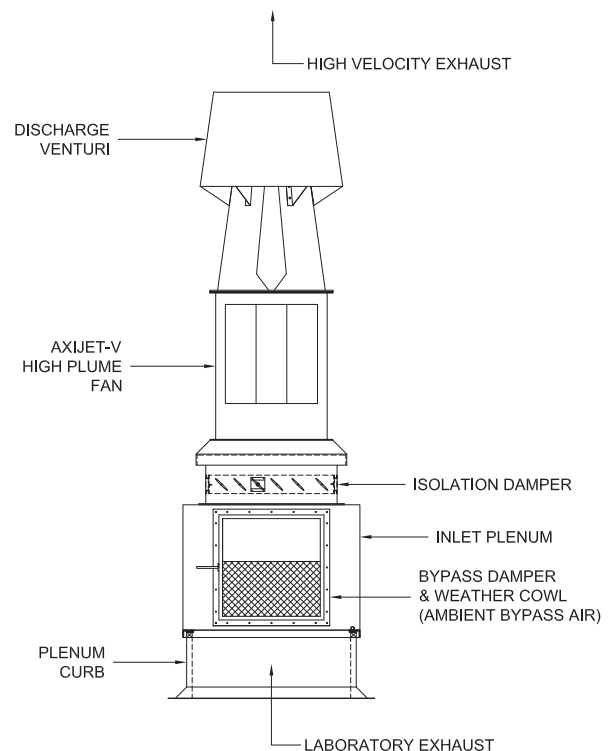
### Choice of Materials of Construction:

- Heavy gauge, continuously welded steel construction with corrosion resistant electrostatically applied powder coating
- AMCA A, B or C spark resistant construction
- Choice of materials of construction offered are chemical resistant coated steel, or stainless steel
- Custom colors available
- Weather cover completely encloses the motor and V-belt drive from the elements. Provided with slots for ventilation, the cover is easily removable for inspection and maintenance



### Bypass Air Plenums:

- Inlet mixing plenum in either coated steel or stainless steel
- Available in either single wall or double wall insulated construction
- Bypass and Isolation Dampers—
  - ▷ Motorized control or gravity operated
  - ▷ Available in coated or anodized finish aluminum, FRP or stainless steel
  - ▷ Factory mounted electric or pneumatic actuators
- Roof mounted equipment designed to withstand wind loads up to 125 mph without the need of guy-wires



## Axijet-VM and Axijet-VC Abridged Performance

Fan Size		Inlet CFM	Outlet CFM	Effective Discharge Height [FT]
1225	Max	2,700	6,300	27
	Min	1,200	2,300	18
1500	Max	3,600	8,300	33
	Min	1,600	3,700	20
1825	Max	5,900	13,600	42
	Min	2,500	5,800	24
2225	Max	10,800	24,900	56
	Min	4,700	10,900	31
2450	Max	16,800	38,700	72
	Min	7,200	16,600	39
2700	Max	16,800	38,700	72
	Min	7,200	16,600	39
3000	Max	27,100	43,400	73
	Min	11,700	18,800	41

Fan Size		Inlet CFM	Outlet CFM	Effective Discharge Height [FT]
3300	Max	31,400	50,300	79
	Min	13,500	21,600	44
3650	Max	34,300	54,900	83
	Min	14,700	23,600	46
4025	Max	42,300	68,000	86
	Min	18,100	29,000	48
4450	Max	52,500	84,000	96
	Min	22,600	36,200	54
4900	Max	63,400	101,500	112
	Min	27,300	43,700	61
5425	Max	77,000	123,200	134
	Min	33,000	52,800	70

Performance is for installation Type A, Free Inlet, Free Outlet.  
Power rating (BHP) does not include transmission losses.  
Performance ratings do not include appurtenances (accessories).

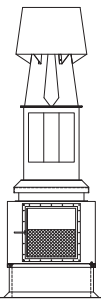
### NOTES:

- Inlet CFM = Laboratory Exhaust + Ambient Bypass Air
- Outlet CFM = Inlet CFM + Induced Flow
- Effective Discharge Height is at 10 mph cross wind, and is from the base of the unit.
- Minimum Inlet CFM based on ANSI Z9.5, minimum stack velocity of 3,000 fpm.

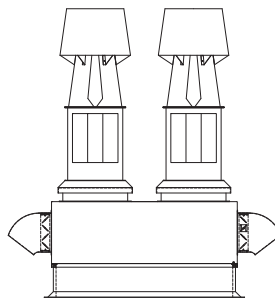
For complete performance ratings, dimensions, and accessory details, please contact your local M. K. Plastics Sales Representative, or refer to the M. K. Plastics selection software available at [www.mkplastics.com](http://www.mkplastics.com).

### Axijet-V Arrangements:

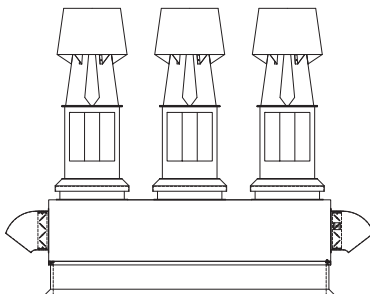
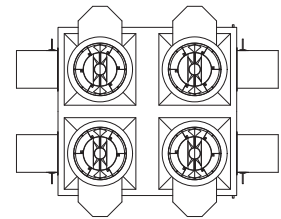
Various system configurations are available for the Axijet-VM and Axijet-VC fans.  
Certified layouts and dimensions are available.



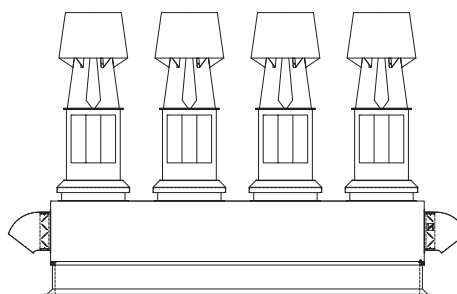
Single Fan Plenum System



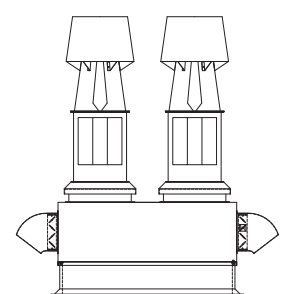
Dual Fan Plenum System



Triple Fan Plenum System



Quad Fan Plenum System



2x2 Quad Fan Plenum System

## Axijet Energy Recovery Systems:

M.K. Plastics Axijet energy recovery systems for energy transfer between exhaust and supply air streams to reduce laboratory operating costs, and to prevent cross contamination between exhaust and supply. Axijet 'ERS' systems offer the following -

- Corrosion resistant energy recovery coils
- Acoustic and Thermal resistance flexibility for all applications: 2 ½", 3" and 4" wall thicknesses, with complete No-Through Metal at all locations, including base frame, floors, walls and roof panels.
- Outdoor units are equipped with an absolute Weatherproof Roofing System: a standing seam clad roof is completely independent from the air pressure seal.
- Cabinet materials: G-90 coated galvanized steel, aluminum and 304 or 316 stainless steel
- Cabinet insulation is available in a variety of Fiberglass densities or Zero Ozone Depletion polyurethane foam
- UL approved membrane air-seal requiring no caulking on the exterior of the unit
- Stainless Steel drain pans with 1½" schedule 40 drain connections
- Cabinet insulation is available in a variety of Fiberglass densities or polyurethane foam

## Acoustical Sound Attenuation:

Where HVAC sound is a concern, Axijet fans can be supplied with aerodynamically designed discharge stack, fan inlet and bypass damper silencers engineered to meet the specific sound requirements for the job, at the lowest pressure drop and lowest overall cost. Standard construction features -

- Circular Dissipative stack silencers with acoustic grade glass fiber as the principal sound-absorbing mechanism
- Coated galvanized steel or stainless steel
- Stitch welded and sealed casings for class II construction or continuously welded for class III construction
- When acoustical media in the airstream is of concern, film lined (Mylar) silencers or no-media (packless) silencers are available
- Rectangular silencers or acoustical louvers with sound absorbent blades for bypass dampers



## High Temperature Diesel Exhaust:

Axijets are the perfect choice for diesel generator exhaust for hospitals and healthcare facilities. High temperature steel Axijets can safely reduce the diesel exhaust temperature and disperse it high enough away from the building, preventing possible re-entrainment into air intakes.

- For high temperature applications up to 1,200°F primary diesel exhaust
- Rigid steel fan construction with high temperature corrosion resistant epoxy paint
- Mixing bypass plenum & damper introduces outside ambient air to cool primary diesel exhaust and increase total discharge effective stack height to get the air up and away from the building, preventing re-entrainment



## Kitchen Exhaust:

Modified Axijet version for exhausting grease-laden air from kitchen, cooking and dishwasher hoods. Built in compliance with UL 762 standards.

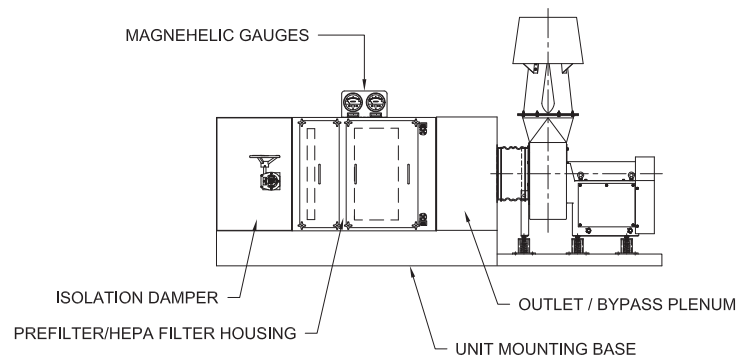
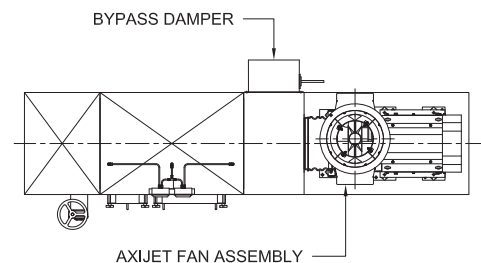
- Mixing bypass plenum & damper to increase total discharge effective stack height of grease-laden exhaust
- Cleanout doors and 2" drains on both fan and plenum for periodic washdown
- Available in stainless steel or high temperature coated steel
- Built in accordance with the Standard of the National Fire Protection Association for the installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment, NFPA 96

## Self Contained Filtration Systems:

M. K. Plastics Axijet induced flow fans for critical exhaust are available packaged with HEPA filters. Efficiencies to 99.9% on 0.3 micron. Standard replacement or BIBO for radioisotope or biological applications.

Available features include:

- Belt or direct drive fan selected for minimum discharge velocity of 3,000 FPM and 10' discharge height (ref. ANSI Z 9.5)
- Skid mounted fan, plenum and filter
- For constant or variable air volume, with or without bypass damper section
- Fan isolation damper and flex connector
- Prefilter section (standard or BIBO)
- Bubble seal type isolation damper on clean side of HEPA cabinet
- Programmable VFD to set fan RPM for specified air performance and increase fan speed as pressure across filters increases
- Trans filter pressure taps and sensors (gauges)
- Air sample ports
- Decon ports
- Replacement filters, bags, and safety straps



## KVC High Plume Fans:

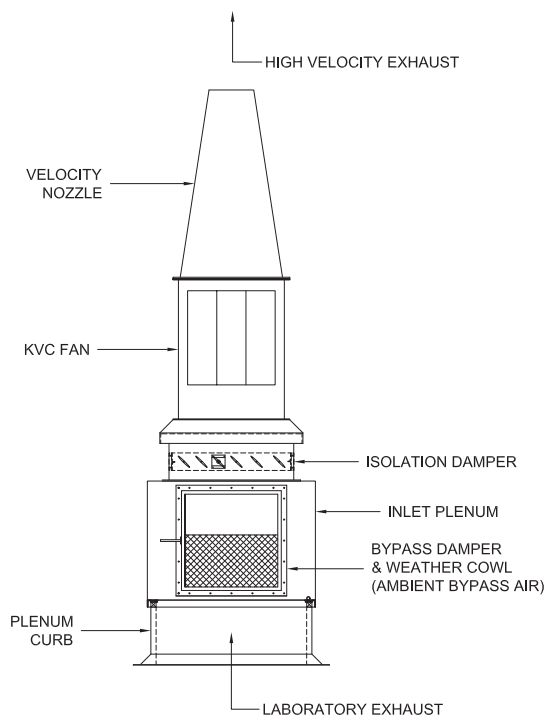
Similar in design to the Axijet-V, the KVC High Plume Laboratory Exhaust Fan is a more cost effective solution for lab exhaust applications. The KVC is a straight-line, vertical centrifugal flow fan that incorporates a tapered discharge velocity nozzle that removes exhaust fumes high enough away from the building roof.

### KVC Design Features:

- Applications for variable or constant volume systems
- Straight-line centrifugal for low/medium to higher pressures
- Available in belt drive arrangement # 9 for easy inspection and maintenance of drive components
- Meets ANSI Z9.5, NFPA 45 and ASHRAE guidelines
- Non-overloading power characteristics
- Greater airflow capacity per fan
- High pressure capabilities
- Either bypass plenum or curb mounted

### Choice of Materials of Construction:

- Heavy gauge, continuously welded steel construction with corrosion resistant electrostatically applied powder coating
- AMCA A, B or C spark resistant construction
- Choice of materials of construction offered are chemical resistant coated steel, or stainless steel
- Custom colors available
- Weather cover completely encloses the motor and V-belt drive from the elements. Provided with slots for ventilation, the cover is easily removable for inspection and maintenance



### Bypass Air Plenums:

- Inlet mixing plenum in either coated steel or stainless steel
- Available in either single wall or double wall insulated construction
- Bypass and Isolation Dampers—
  - ▷ Motorized control or gravity operated
  - ▷ Available in coated or anodized finish aluminum, FRP or stainless steel

KVC fans use an efficient conical outlet 'velocity' nozzle to achieve a high velocity, displacing the exhaust high above the roof. The abridged performance table gives typical effective discharge heights based on 3,000 fpm discharge velocity.

M.K. Plastics offers different size outlet area nozzles to achieve greater velocities and discharge stack heights. For full range of performances with higher discharge velocities, please contact the factory.

### KVC Abridged Performance

Fan Size		Inlet CFM	Effective Discharge Height [FT] *(3000 fpm)
1225	Max	3,100	24
	Min	450	16
1500	Max	5,450	28
	Min	680	18
1825	Max	10,910	35
	Min	1,340	21
2225	Max	13,920	38
	Min	1,790	23
2450	Max	16,830	42
	Min	2,200	24
2700	Max	20,380	45
	Min	2,920	26
3000	Max	25,200	49
	Min	3,560	28
3300	Max	30,480	53
	Min	4,680	30
3650	Max	37,320	57
	Min	5,370	32

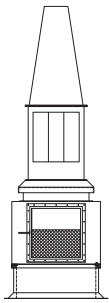
### KVC Arrangements:

Various system configurations are available. Certified layouts and dimensions are available.

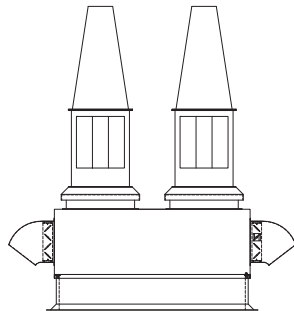
**NOTE:**

\*All Effective Discharge Height values are based on 3,000 fpm minimum discharge velocity per ANSI Z9.5 plume rise calculation at 10 mph crosswind, per ASHRAE Applications Handbook.

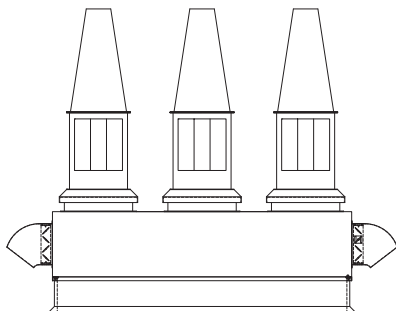
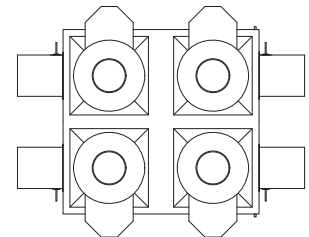
**For complete performance ratings, dimensions, and accessory details, please contact your local M. K. Plastics Sales Representative, or refer to the M. K. Plastics selection software available at [www.mkplastics.com](http://www.mkplastics.com).**



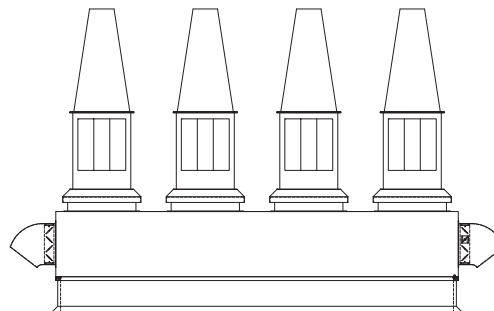
Single Fan Plenum System



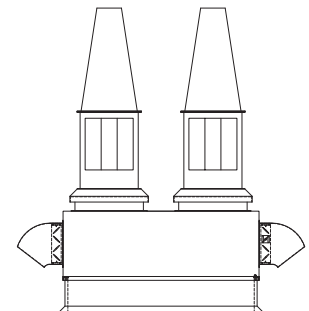
Dual Fan Plenum System



Triple Fan Plenum System



Quad Fan Plenum System



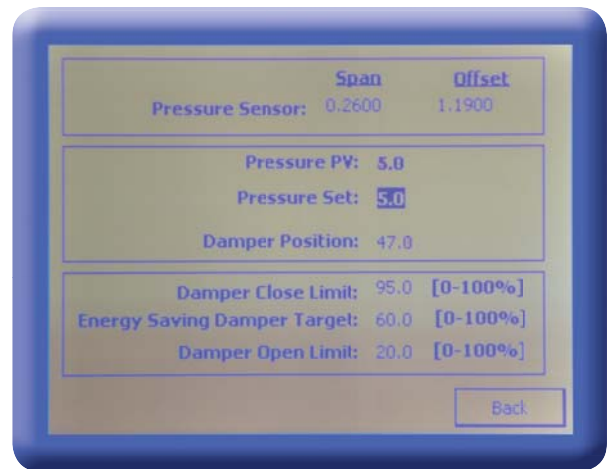
2x2 Quad Fan Plenum System

## Axijet® LeadLag™ Exhaust Fan Control System:

For laboratory exhaust systems that utilize multiple fans in an N + 1 design, the Leadlag™ controller can sequence the standby fan in order to prevent bearing and drive damage due to stagnancy. The Leadlag™ controller has an energy saving feature that will turn off additional fans as the system requirement decreases. During this, or any other sequencing, the static pressure will not vary for more than +/- 10% of the system setpoint and last no longer than 30 seconds. Energy savings are therefore achieved by cycling fans as required to handle the actual exhaust load at specific times. The Leadlag Control System not only manages operation, but also informs the end user of what is going on.

### Control System Features –

- PLC Control Panel Unit (NEMA 1 enclosure), located inside the building, that controls the functioning of the Leadlag operation through a microprocessor.
- Auxiliary Actuator Pressure Control Unit (NEMA 3R enclosure), mounted outside and is linked to the PLC Control Panel Unit. The unit receives and sends signals for pressure control, damper actuator operation, fan motor starters and optional devices such as vibration failure.
- Static pressure control can include pressure sensors in the following locations –
  - ▷ Static pressure sensor in the bypass air plenum
  - ▷ Remote static pressure location
  - ▷ Remote static pressure location with multiple inputs (lowest point or average reading)
  - ▷ Static pressure in plenum + ductwork location + remote location (static pressure reading will be combined total)
- Compatibility with fans controlled by Variable Frequency Drives (VFD) , and can be used to reduce fan speed before opening the bypass damper
- Energy Saving Mode: With Energy Saving Mode enabled, the PLC will monitor the bypass damper(s) position and if it is determined that the system is receiving too much bypass air, the PLC will shut down a fan. System static pressure will then be maintained by reducing and modulating the bypass air. Note, the system will shut down all but one fan in this mode. If the system static pressure is reduced, the PLC will engage one of the Lag fans
- Emergency Fire & Smoke Mode: Fans on or off (depending on State or Local Authority Codes)
- BACnet IP communication option compatible for the Building Automation Control Networks
- Network IP for internet connection to facilitate M.K. Plastics to monitor the functioning of the system remotely
- Alarm Modes –
  - ▷ Fan flow rate alarm: Failure of air to be exhausted out of the fan discharge (standard)
  - ▷ Isolation damper alarm: No exhaust reaching the fan inlet (standard)
  - ▷ Vibration limit (optional)
  - ▷ Bearing temperature (optional)



## Piezometer Airflow Measuring Ring:

Available as an accessory for Axijet-S, Axijet-VM and Axijet-VC fans, the system consists of a Piezometer ring mounted at the throat and a static pressure tap on the face of the inlet cone. With the optional differential pressure transducer and digital display, the exhaust flow can accurately be measured verifying the exhaust control system.

## LIMITATION OF WARRANTY AND LIABILITY

M.K. Plastics will not be responsible for the damage to equipment or materials through improper installation, storage, improper servicing, or through attempts to operate it in excess of its rated capacity or recommended use, intentional or otherwise. We will not be responsible for consequential damage.

Based on the fact that M.K. Plastics Corp. has no direct control over the actual handling and use of its products in the field, M.K. Plastics Corp. does not assume any liability for any loss of customer or any personnel or any physical damages claimed by anyone due to a failure or cause attributed to the use of its products. In no event shall M.K. Plastics Corp. be responsible for consequential damages of any such defective material or workmanship, including but not limited to the buyer's loss of material or profit, increased expense of operation, downtime or reconstruction of the work and in no event shall M.K. Plastics Corp. obligation under this warranty exceed the original contract price of the defective item.

M.K. Plastics Corp. warrants its equipment, products and parts, to be free from defects in workmanship and material under normal use and service for one (1) year after delivery to the first user. Our obligation under this warranty being limited to repairing or replacing, at our option, without cost at our factory any part, or parts which shall, within such warranty period, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been defective.

M.K. Plastics Corp. will not be responsible for the cost of removal of a defective product or parts or the installation of a replaced product or parts, or for costs due for its removal, crating or shipping.

On account of variables including but not limited to, vibration, system noise characteristics, motor overloading or change in voltage conditions, the specifics of customer application of equipment or other system conditions, M.K. Plastics Corp. does not expressly warrant its equipment for any specific purpose.

The customer and its agents are responsible for the selection and application of M.K. Plastics Corp. products, including their fitness for the purpose and performance intended. Consequently, the customer on behalf of its agents assumes all liability related to the use/misuse, application and selection of the M.K. Plastics equipment.



### DIGITAL MEDIA

The information contained within is also available on the M. K. Plastics Electronic Catalog (CD ROM). This CD includes information on all of the M. K. Plastics fans, exhaust systems and their components, and is available from your technical sales representative or M. K. Plastics directly.

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**M.K. Plastics**  
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