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S U P P L Y I N G   C L E A N   A I R   T O   I N D U S T R Y

## MistBuster<sup>®</sup> Infinity

# Vertical Oil Mist Collector



*The new MistBuster<sup>®</sup> Infinity from Air Quality Engineering, Inc., is a self-contained media air cleaning system designed for source capturing coolant mist applications in industry. The MistBuster<sup>®</sup> Infinity will effectively remove a broad range of contaminants including mist, smoke, soot, vapors, VOC's and more at a rate of up to 1000 cfm.*



**AIR QUALITY  
ENGINEERING**

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**TOLL FREE:** 1-800-328-0787

Air Quality Engineering Inc., has a policy of continuing product improvement and reserves the right to make changes in design and specification without notice.

Before you get started please review the following:

Purchase Date: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Type of oil / coolant collected: \_\_\_\_\_

Type of filter and AQE P/N: \_\_\_\_\_

### Customer Technical Support:

To contact Air Quality Engineering use:

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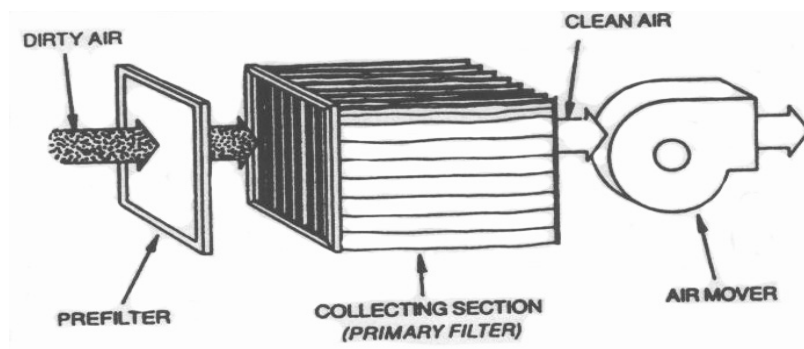
Specifications are subject to change without notice.

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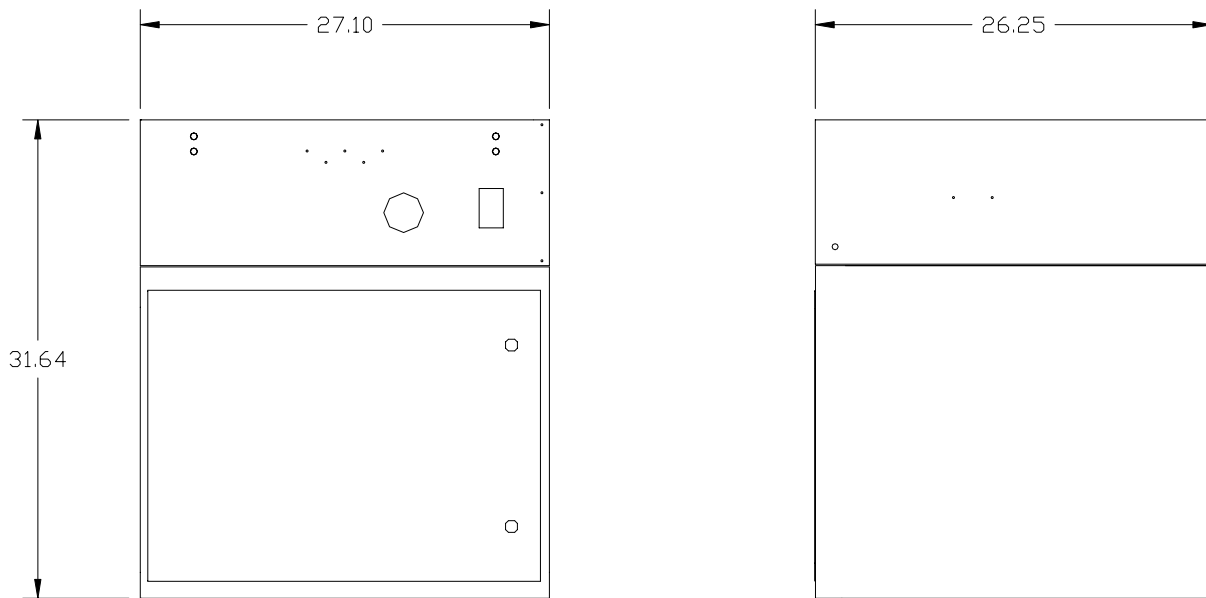
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## HOW AIRBORNE CONTAMINATION IS REMOVED

Dirty air passes through the impinger. The impingers remove large mist droplets. The primary filter then captures the remaining smaller particulate. As the contaminant load on the filters increases, the filters become more efficient in capturing the smaller particles. At the same time, however, the dirty filter allows less particle collection and a decrease in the overall effectiveness of the air cleaner.



# DIMENSIONS



METRIC CONVERSION	FORMULA
Ins. to mm	Ins. x 25.4

# SPECIFICATIONS

## - IMPORTANT -

**THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. ALSO, THIS PRODUCT IS TESTED AND CALIBRATED UNDER CLOSELY CONTROLLED CONDITIONS AND SOME MINOR DIFFERENCES IN PERFORMANCE CAN BE EXPECTED IF THOSE CONDITIONS ARE CHANGED.**

### SPECIFICATIONS

- Dimensions: 27.10"W x 26.25"L x 31.64" tall
- Weight: 185 Lbs. installed weight
- Cabinet: 16 gauge welded steel cabinet with a powder coat finish.
- Standard Blower: Backward curved, vibration-free, direct drive rated at 1400 cfm @ 0" wg.
- Instrumentation: Dirty Filter Gauge – Factory installed pressure gauge designed to determine filter replacement cycle.
- Power Input: 1.08 kW motor, 120V, 60 Hz, single phase, 9.4 amps
- Impinger: Two 24" x 24" x 2" aluminum mesh grease impingers.
- Primary Filter: One 95% DoP (288 square feet of media) oil long life mist filter

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# AIR CLEANING BACKGROUND

## INTRODUCTION

Clean air is the subject of numerous laws and regulations. Typical requirements in the United States are those put out by the Occupational Safety and Health Administration (OSHA). Private groups, such as the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), have also published numerous recommendations.

Normally, clean air is defined in regulations and recommendations as air having a limited amount of contaminant in it, commonly expressed as parts

per million or milligrams per cubic meter.

Approved counteractions are intended to lower or eliminate the amount of contaminants in the air. One of the more common methods of achieving this goal is through the use of media air cleaners.

At no time should a media air cleaner be placed where there is a potential for explosion due to the presence of explosive dusts, gases or vapors. Contact the nearest Air Quality Engineering, Inc., representative for assistance in determining the correct application of a media air cleaner.

# INSTALLATION AND ASSEMBLY

## - CAUTION -

Do NOT connect the power source until after the air cleaner is completely assembled.

If the air cleaner must be turned on for an electrical check, be extremely careful in avoiding electrical shock. Also, take care to avoid the air cleaner's moving parts.

### INSPECTION

The MistBuster® Infinity air cleaner should be checked for any shipping damage that may have occurred during shipping. Any damage should be noted and the carrier notified immediately.

### TOOLS & EQUIPMENT REQUIRED

The following is a list of tools that would be needed for typical installations:

- Reciprocating saw
- Drill
- Screwdriver
- Fork truck / Crane

### PLANNING THE INSTALLATION

1. The MistBuster® Infinity mist collector should be located with consideration for convenience of maintenance and electrical compartment access.
2. The filter access door on the MistBuster® Infinity should not be obstructed. You need a minimum of 26" clear in front of the filter access door.
3. Mount the MistBuster® Infinity as far from the chip conveyor opening as possible. This will minimize the amount of clean outside shop air from being drawn into the enclosure.

The MistBuster® Infinity can be mounted directly to the enclosure on a machine tool. The collected mist droplets simply drain back into the machine tool through the air inlet of the MistBuster® Infinity.

### INSTALLATION DIRECT MOUNT

Remove all filters from the MistBuster® Infinity. Carefully position the MistBuster® Infinity on the machine tool in the desired location. Refer to [Planning the Installation](#) for guidelines in positioning the MistBuster® Infinity on the machine tool.

1. Use the inlet opening and the mounting hole pattern on the bottom of the MistBuster® Infinity as a template to mark the inlet opening and holes to be drilled into the machine tool enclosure. **If the machine tool enclosure has been designed with a provision for mist collection, you may not need to cut an inlet opening. NOTE: The inlet opening in the machine tool does not need to be as large as the inlet of the MistBuster® Infinity. It is recommended that the inlet opening be a minimum of 80 square inches.**
2. Use a .437 diameter drill bit to drill the mounting holes for the 3/8-16 bolts used to secure the MistBuster® Infinity to the machine tool.
3. There are four mounting holes in the MistBuster® Infinity. It is recommended that a minimum of four holes be drilled to secure the MistBuster® Infinity to the machine tool.

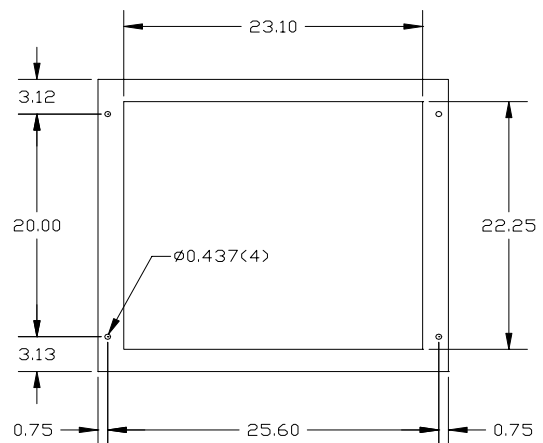
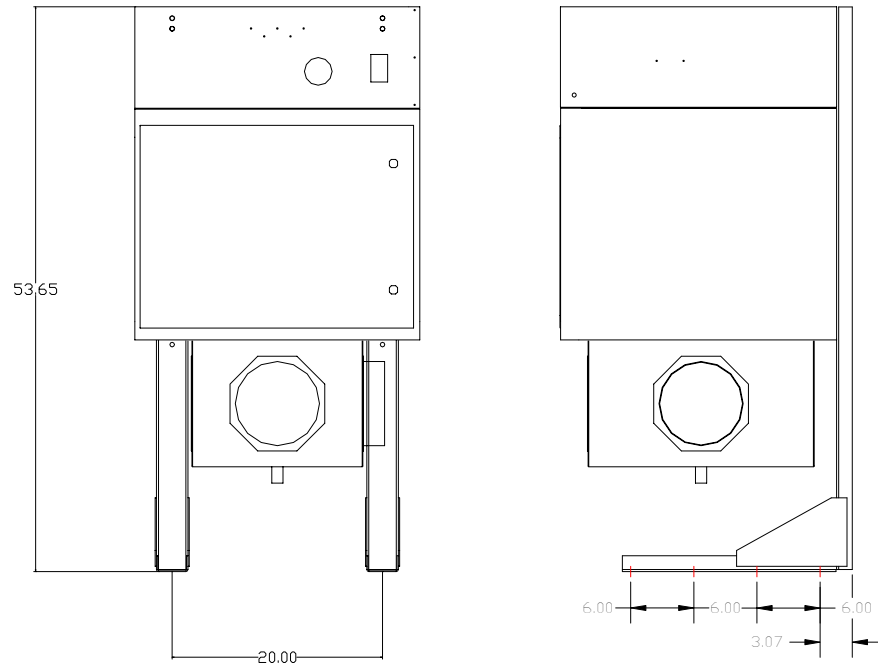


Figure 2

4. Apply the gasket material provided on the outside of the bolt holes. Overlap the gasket on the corners. Carefully position the MistBuster® Infinity over the opening and bolt the unit in place.

5. The MistBuster® Infinity comes complete with a 10' power cord. Plug the unit into an appropriate grounded outlet.
6. Replace the mesh impingers and the main filter. Please make sure the arrows on the filters are pointing up.



**Figure 3**

### INSTALLATION DUCTED

When direct mounting the MistBuster® Infinity is impossible or not desired, the MistBuster® Infinity can be installed with a plenum and ducting.

Ducted installation options will require our standard plenum. The MistBuster® Infinity plenum has holes on three sides and comes standard with two covers and one eight-inch inlet collar.

Although we recommend direct mounting when possible and minimizing duct length when ducting is necessary, the MistBuster® Infinity can be connected to multiple machine tools. Additional ports can be ordered in 6" and 8" diameters.

### INSTALLING THE PLENUM

1. Install the supplied covers and collar to the plenum using the supplied silicone sealant and #8 screws.
2. Attach the plenum to the inlet opening on the MistBuster® Infinity using the supplied silicone

sealant and 1/4-20 bolts and nuts. Note that the plenum may be rotated 180° for the desired port orientation.

### INSTALLING MACHINE MOUNT STAND

1. Remove the six 3/8-16 bolts on the back of the MistBuster® Infinity and install the two L-brackets.
2. Carefully drill the required six holes in the machine tool to attach the L-brackets from the machine mount stand using a 7/16" drill bit.
3. Use a crane or fork truck to lift the assembled MistBuster® Infinity onto the machine tool.

**- CAUTION -**  
**Make sure the MistBuster® Infinity is secured to the crane or forklift to avoid injury or damage to the unit.**

4. Bolt the MistBuster to the machine tool using the supplied 3/8" nuts, bolts and lock washers.

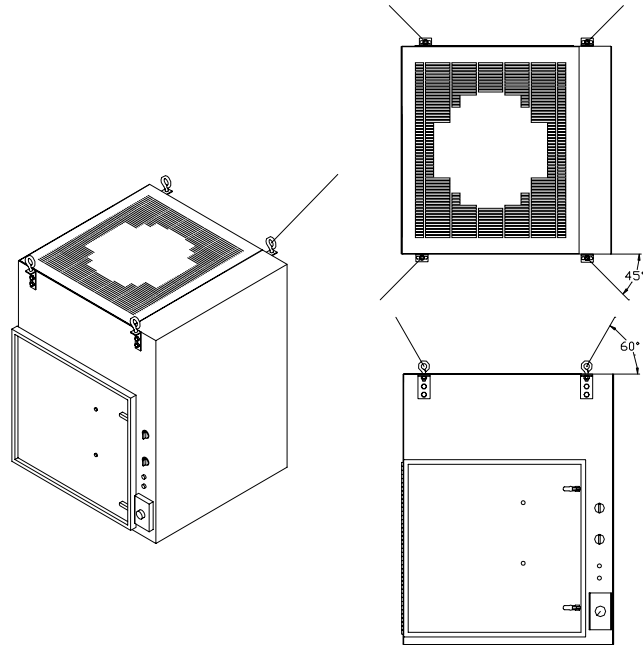


Figure 4

## INSTALLING CEILING MOUNT

### - CAUTION -

**The overhead structure must be strong enough to support the weight of the MistBuster® Infinity, plenum and ductwork. Make sure that whenever using a fork truck, hoist or lift that the MistBuster is properly secured to prevent tipping. Use caution not to damage the MistBuster or plenum with the fork truck, hoist or lift.**

1. Attach the four angle brackets to the front and back of the MistBuster® Infinity using the eight supplied 3/8-16 bolts and lock washers. Fasten the four 3/8" eyebolts to the four brackets using the supplied hardware.
2. Install the supplied covers and collar to the plenum using the supplied silicone sealant and #8 screws. Attach the plenum to the inlet opening on the MistBuster® Infinity using the supplied silicone sealant and 1/4-20 bolts and nuts. Note that the plenum may be rotated 180° for the desired port orientation.
3. Install the MistBuster® Infinity using cable or chain to suspend the unit from each eyebolt. Make sure that the cable or chain is rated for the appropriate weight of the MistBuster® Infinity and accessories. Position the chains or cables so that they form a 60° angle with the top of the unit and a 45° angle from the side surfaces. This will make the unit more stable.
4. Level the MistBuster® Infinity in all directions.



## INSTALLATION PEDESTAL STAND

### - CAUTION -

The pedestal stand must be anchored to the floor before it is assembled to the MistBuster® Infinity.

Do not extend the top of the stand over 128".

Level the stand before securing the anchor bolts.

1. Slide the upper part (T-section) of the pedestal stand into the lower section (lower section contains the base which bolts to the floor).
2. Secure the base of the pedestal stand to the floor using four 1/2" anchor bolts (not supplied). Anchor bolts must be secured before the MistBuster® Infinity is assembled to the stand. Anchor bolts must extend 1 1/2" above the floor to ensure adequate length.
3. Assemble the upper and lower pieces together by inserting the four 3/8-16 x 3.5 inch long bolts through the flat washers, lower section of the stand and lock washers as pictured below. To adjust the height of the pedestal stand, loosen the four 3/8-16 x 3.5 inch long bolts from the lower part of the stand and slide the upper section to the desired height. **Do not adjust the top of the stand over 128" high.** Tighten the bolts to create enough tension to secure the stand in place.
4. Remove the 3/8-16 bolts and lock washers from the back of the MistBuster® Infinity. Remove the electronic cell and impingers from the MistBuster® Infinity and lift the unit up to the pedestal stand. Align the MistBuster® Infinity and insert and tighten the 1/4-20 bolts with lock washers to secure the MistBuster® Infinity to the pedestal stand. Install the plenum per the instructions in the Installing Plenum section.
5. Re-check all bolts to make sure they are securely fastened.

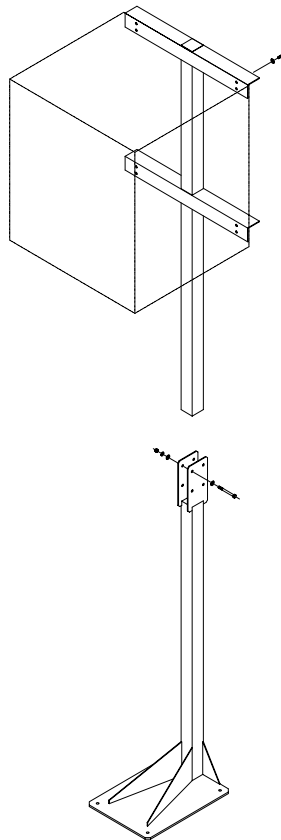
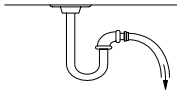


Figure 6

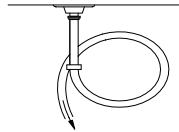
## DRAIN INSTALLATION

The MistBuster® Infinity plenum has a 1/2" female pipe fitting drain that requires a P-trap and a drain hose to return the metalworking fluid to the machine tool.

Prime the P-trap with the metalworking fluid that will be collected to avoid air being drawn through the plenum drain.



Pipe Trap



Coil Hose Trap  
Minimum 8" Dia. Loop

**Figure 7 – P-TRAP OPTIONS**

## ELECTRICAL INSTALLATION

### **- CAUTION -**

**All electrical work must be done by a qualified electrician according to local codes. Be certain that the power source is compatible with the model ordered. See the rated voltage on the inside of the filter access door. Proper grounding of the MistBuster® Infinity is essential for safety and operation.**

### **Cord Connected**

The MistBuster® Infinity is equipped with a 10-foot power cord with a standard molded (15 amp rated) plug. There must be a standard grounded outlet provided within 10 feet of the MistBuster® Infinity. Route the power cord so that it is out of the way of the building's occupants and so that it does not interfere with the machine's operation.

### **Conduit Connected**

The MistBuster® Infinity can be hard wired. **All wiring must comply with applicable codes and ordinances. All work must be done by a qualified electrician.**

The wiring compartment is on the right side of the MistBuster® Infinity. Removing the side cover accesses it.

# CHECKOUT AND OPERATION

## - WARNING -

The MistBuster<sup>®</sup> Infinity source capture Media Air Cleaner is not explosion-proof. It must not be installed where there is danger of vapor, gas or dust explosion.

### CHECKOUT

Before operating the MistBuster<sup>®</sup> Infinity, check out the installation using the following procedures:

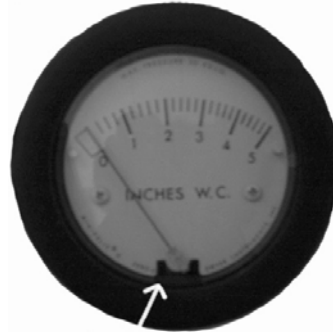
1. Make sure the air cleaner is oriented for good air circulation where it will not interfere with personnel and material traffic. Keep out of fire lanes and away from overhead cranes.
2. Make sure the impinger and the primary filter are properly oriented and the airflow arrows are pointing toward the blower.
3. Make sure the minihelic is at zero inches of water. If not, reference calibration of the minihelic.

### CALIBRATION OF THE SPEED CONTROLLER

1. Make sure power remains to the unit and the filter access door is closed.
2. Adjust the speed of the blower to the lowest setting.
3. Remove the dial by gently pulling it straight off.
4. Slide the plate down or up to see the fine tune adjustment.
5. Locate the fine tune adjustment. It is a small white screw head located near the speed adjustment dial.
6. Using a small flat head screw driver turn this adjustment so the blower is barely turning.

### CALIBRATION OF THE MINIHELIC

1. Remove the plastic cover by turning it counter-clockwise. One may have to press on the cover as one is turning it.



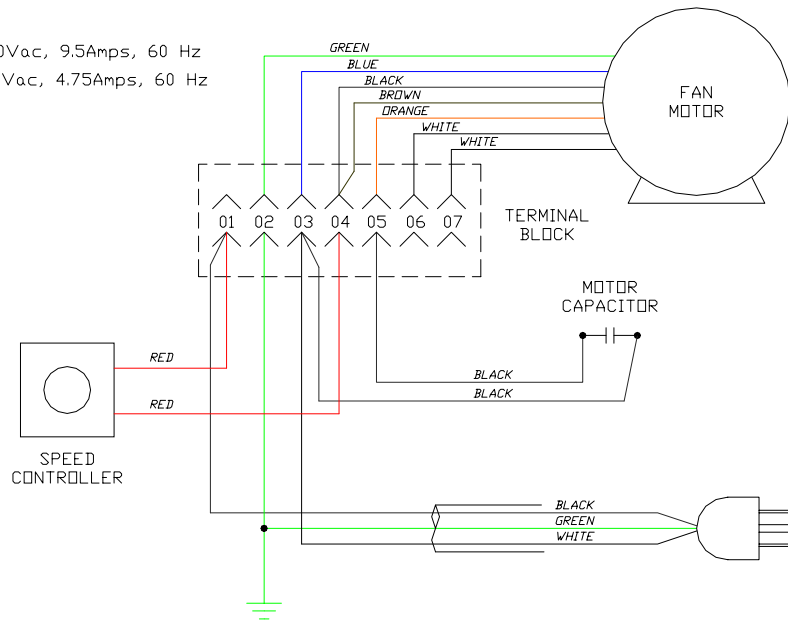
2. With the supplied hex wrench, one can adjust the needle by turning the hex screw at the bottom of the gauge.

### OPERATION

1. Turn on the air cleaner control switch. Make sure the blower is providing a strong air discharge. Please note that the MistBuster<sup>®</sup> Infinity airflow is variable. Turning the dial will change the airflow output.
2. The filter gauge should be level and should read zero when the MistBuster<sup>®</sup> Infinity is turned off.
3. The MistBuster<sup>®</sup> Infinity does not need to be run at full speed. It should be set where it just achieve negative pressure in the machining area.
4. To do this, run the machining center with the MistBuster<sup>®</sup> Infinity on the lowest speed to create some mist. Open the machining center door to see if mist escapes out the door.
5. Turn the dial on the MistBuster<sup>®</sup> Infinity to a higher speed and repeat step 4.
6. Repeat this until no mist escapes out the door.

# ELECTRAICAL SCHEMATIC

Electrical  
Rating: 120Vac, 9.5Amps, 60 Hz  
or 230Vac, 4.75Amps, 60 Hz



# MAINTENANCE

## - CAUTION -

Always disconnect the power to the MistBuster® Infinity before working on or near the air cleaner.

### FILTER MAINTENANCE/REPLACEMENT

Dirty air passes through the impinger. The impinger removes large particulate. The primary filter then captures the remaining particulate.

As the contaminant load on the filters increases, the filters become more efficient in capturing the smaller particles. At the same time, however, the dirty filter allows less air to pass through resulting in less particle collection and a decrease in the overall effectiveness of the air cleaner.

The MistBuster® Infinity Air Cleaner is equipped with a pressure gauge which indicates the restriction to airflow caused by the filters loading with particulate. When a noticeable reduction in

airflow occurs, it is time to clean or replace the impinger and possibly the primary filter.

Turn off the air cleaner. Open up the filter access doors and slide out the impinger.

Replace the impinger and turn on the air cleaner. If no performance improvement is evident after cleaning or replacing the impinger, the primary filter will have to be replaced. In most cases, the impinger can be replaced several times before the primary filter will need to be replaced.

Replace the primary filter with the access door open. The filter then can be removed by sliding it out along the tracks. A new primary filter can be replaced with the process reversed.

When replacing the primary filter this is also a good time to check the blower. Remove the top access cover to the unit. By hand rotate the blower to see if there is anything obstructing rotation.

# PARTS IMAGES



# PARTS LIST

NO.	DESCRIPTION	PART NO.
1	Filter ( 95% Mist Filter 24" x 24" x 12")	41235
2	Impinger (Qty. 2)	41146
3	Impeller MistBuster Infinity	40073
4	MiniHelic 5"	10219
5	Speed Controller	10247
Not shown	Plenum	07241
Not shown	Impinger Assembly	07232
Not shown	M69 Carbon Module 45 lbs.	07092
Not shown	M68 HEPA Module	07091
Not shown	Pedestal stand	
Not shown	Machine Mount stand	

# TROUBLE SHOOTING

## WARNING!

**The following instructions are intended for qualified service personnel only. Dangerous line voltage circuits are exposed during this procedure.**

First, make sure all electrical connections are good and double-check the wiring schematic to the unit wiring.

### ***The MistBuster® Infinity is not moving any air***

Make sure the voltage is making it to the air cleaner.

After that make sure voltage is making it to the Speed Controller. If no voltage is at the Speed Controller check the wiring before the speed controller

If voltage is making it to the speed controller with the speed controller in an on position check to see if voltage is going through the speed controller. If no voltage is on the output side of the speed controller then the speed controller needs to be replaced. Reference the parts list for replacement parts.

If voltage makes it past the speed controller check the motor.

(WARNING: disconnect power before the next step.) Check to see if anything is stopping the blower from rotating. Try rotating it manually.

Make sure voltage is to the motor.

If voltage is to the motor and the motor still does not turn the motor needs to be replaced. Reference the parts list for replacement parts.

### ***The MistBuster® Infinity is not collecting the mist, it allows mist to pass through***

Make sure the MistBuster® Infinity has filters properly installed in the filter tracks. If the filters are installed properly remove the main filter and check the gasket for breaks or rolling. Check the filter media for holes. If the filter needs to be replaced for either of these reasons reference the parts list for replacement.

# CERTIFICATE OF WARRANTY

## THREE-YEAR LIMITED WARRANTY

Air Quality Engineering, Inc. (AQE), warrants to the original purchaser, subject to the conditions below, that if the "Product" covered by this warranty should fail to perform by reason of improper workmanship or material, AQE will during the period of three (3) years from the date of original purchase either (i) replace the product or (ii) provide all necessary parts to repair the product without charge. The decision to replace the product or the necessary parts shall rest solely with AQE. This three-year limited warranty does not apply to main filter elements. AQE will replace without charge the main filter elements during the period of thirty (30) days from the date of original purchase if the main filter elements fail to perform by reason of improper workmanship or material. This warranty is valid only under the following conditions:

### CONDITIONS

1. **REGISTRATION:** The purchaser's completion and mailing of the Registration Card to Air Quality Engineering, Inc., 7140 Northland Drive North, Minneapolis, Minnesota 55428-1520 within 30 days of original purchase.
2. **AUTHORIZATION:** The purchaser will contact AQE at (763) 531-9823 for authorization, returned goods number (RGA) and the shipping address. AQE will direct the purchaser to either return the necessary parts or the product at AQE's option.
3. **PROPER DELIVERY:** The shipping, freight prepaid or delivery of the parts or the product to AQE in either its original carton or in a carton assuring similar protection of the product with the returned goods number (RGA) clearly displayed on the outside of the carton.
4. **UNAUTHORIZED REPAIR:** A showing by the original purchaser that the product has not been altered, repaired or serviced by anyone other than an authorized service technician using genuine AQE parts.
5. **UNAUTHORIZED PARTS:** A showing by the original purchaser that the product has had only genuine AQE parts and filters used in its operation and maintenance.
6. **SERIAL NUMBER INTACT:** A showing by the original purchaser that the serial number has not been altered or removed.
7. **MISUSE:** A showing by the original purchaser that the product has not been involved in an accident, freight damaged, misused, abused or operated contrary to the instructions contained in the Owner's Manual.

Air Quality Engineering, Inc.'s, sole responsibility shall be to repair or replace the product within the terms stated above. AQE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, EXPRESS OR IMPLIED, APPLICABLE TO THIS PRODUCT. Some states do not allow the exclusion or limitation of consequential damages so this limitation may not apply to you.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED BEYOND THE THREE-YEAR DURATION OF THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts so the above limitation may not apply to you.

This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

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MANUFACTURER & WORLDWIDE DISTRIBUTOR OF SMOKEMASTER® AIR CLEANING SYSTEMS

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