Supplying Clean Air to Industry

MistBuster® 500 Media Installation and Operation Manual



Machine Mountable Mist & Smoke Collector

The MistBuster® family of self-contained mist removal systems is designed to capture mist and smoke from metalworking applications in the industry. Our cutting-edge technology ensures highly efficient and cost-effective solutions for managing oil mist while making your workplace environment healthier.

Original Instruction



Air Quality Engineering, founded in 1973, is proud to offer a continued, superior level of experience in manufacturing complete air filtration systems that provide the highest performance, efficiency, and capacity for the money. Our sales and engineering team's mission is to identify the most cost-effective, high-quality solutions for our customers' needs, whether commercial, industrial or residential.

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INSTALLATION https://www.air-quality-eng.com/installation-mistbusters/

PARTS LIST https://www.air-quality-eng.com/parts-mistbusters

TROUBLESHOOTING https://www.air-quality-eng.com/troubleshooting-mistbusters/



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 CONDI-TIONS ARE CHANGED.

Cabinet – 27.13" L [690mm] x 15" W [381mm] x 17.25"H [438mm] See Fig.1 **DIMENSIONS MB500:**

INLET OPENING: 16.62" [422mm] x 9.08" [231mm]. See Fig. 3

WEIGHT: 58 lbs [26 kg] installed weight; 69 lbs [31 kg] shipping weight

16 gauge steel cabinet with chemical resistant baked enamel, textured finish **CABINET:**

AIRFLOW: 500cfm [850cmh] @ 0.6"wg" [149Pa] top discharge

EFFICIENCY:

1st Stage - 4" aluminum mesh impinger **FILTRATION:**

2nd Stage - 95% efficient MERV 15 pleated filter

OPTIONAL: Final Stage -HEPA filter 99.97% efficiency or ESF Filter or Carbon Module

POWER SUPPLY: Self-regulating, dual voltage, solid-state power supply

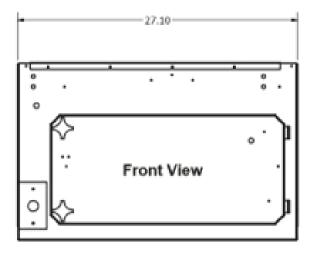
Backward curved, vibration-free, direct drive rated at 710cfm@0"wg **MOTORIZED IMPELLER:** 115 VAC, 60 Hz, 2.5 Amps OR 230 VAC, 60 Hz, 1.25 Amp for MB500 POWER:

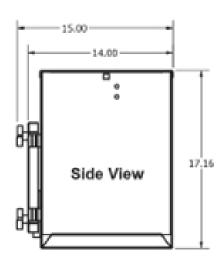
POWER CORD: Ten-foot power cord with standard molded plug

IP RATING 44

NOISE LEVEL: 73.9 Dba (MAX SPEED)

This unit is to be used exclusively for source control in industrial applications in California





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Installation

Inspection

The MistBuster® 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:

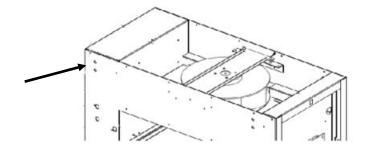
- Reciprocating saw
- Drill
- Screwdriver
- Wrenches
- Fork truck / Crane

Planning the Installation

- The MistBuster® mist collector should be located with consideration for convenience of maintenance and electrical compartment access.
- 2. The filter access door on the MistBuster® should not be obstructed. A minimum of 24" is needed in front of the filter access door.
- The side access covers should also be accessible, if possible. This will make it easier to access the electrical components such as the switches.
- 4. Mount the MistBuster® as far from the chip conveyor opening as possible. This will minimize the amount of clean shop air from being drawn into the enclosure.



Use the upper threaded holes as lifting point to safely hoist the MistBuster® to the mounting location.



Direct Mount To Machine Tool Enclosure

The MistBuster® 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®.

Installation Direct Mount

Remove all filters from the MistBuster®. Carefully position the MistBuster® on the machine tool in the desired location. Refer to Planning the Installation for guidelines in positioning the MistBuster® on the machine tool.

- 1. Use the inlet opening and the mounting hole pattern on the bottom of the MistBuster® 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®. It is recommended that the inlet opening be a minimum of 30 square inches.
- 2. Use a .281"[7mm] diameter drill bit to drill the mounting holes for the 1/4-20 bolts used to secure the MistBuster® to the machine tool.
- 3. There are fourteen mounting holes in the MistBuster®. It is recommended that a minimum of four holes to be drilled to secure the MistBuster® to the machine tool.
- 4. Apply the silicone provided on both sides of the bolt holes. Overlap the gasket on the corners. Carefully position the MistBuster®over the opening and bolt the unit in place.
- 5. The MistBuster® comes complete with a 10'[3048mm] power cord. Plug the unit into the appropriate grounded outlet.
- 6. Replace all filters.



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Installation

Ducted Installation

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

Ducted installation option will require a plenum. The MistBuster[®] plenum has duct inlets on three sides and comes standard with two covers and one six inch inlet collar on the MistBuster[®] 500.

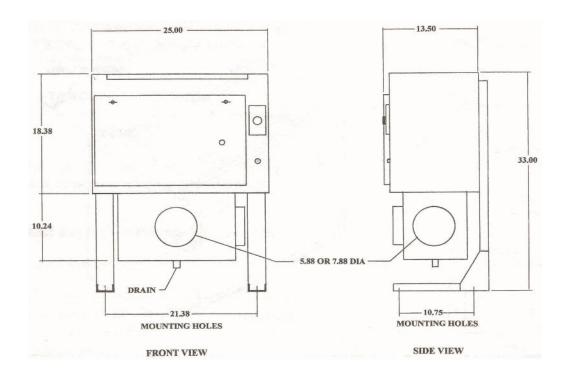
Although we recommend direct mounting when possible and minimizing duct length when ducting is necessary, the MistBuster[®] can be connected to two machine tools. Additional ports can be ordered in 6" [152mm] and 8" [203mm] diameters.

Plenum Installation

- 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[®] 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.

Machine Mount Stand Installation

- Remove the six 1/4" bolts on the back of the MistBuster[®] and install the two L-brackets.
- Carefully drill the required four holes in the machine tool to attach the L-brackets from the machine mount stand using a 13/32" [10mm] drill bit.
- Use a crane or fork truck to lift the assembled MistBuster[®] onto the machine tool. <u>CAUTION: Make sure the MistBuster[®] is secured to the crane or forklift to avoid personal injury or damage to the unit.</u> Bolt the MistBuster[®] to the machine tool using the supplied 3/8" nuts, bolts and lock washers.



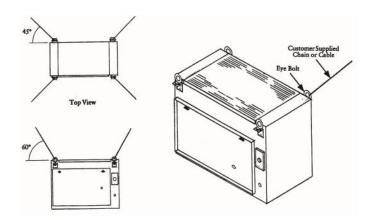


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Installation



WARNING

The overhead structure must be strong enough to support the weight of the MistBuster®, plenum and ductwork.

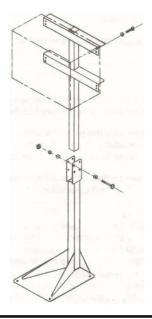
Risk of severe injury could result from improper installation.

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.

Ceiling Mount Installation

- 1. Attach the four angle brackets to the front and back of the MistBuster® using the eight supplied bolts and lock washers. Fasten the four 3/8" eyebolts to the four brackets using the supplied hardware.
- 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® 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® 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® 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.
- Level the MistBuster® in all directions.



Pedestal Stand Installation

- 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® is assembled to the stand. Anchor bolts must extend 1 1/2" [38mm] 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"[90mm] 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"[90mm] long bolts from the lower part of the stand and slide the upper section of the desired height. Do not adjust the top of the stand over 120" [3251mm] high. Tighten the bolts to create enough tension to secure the stand in place.
- 4. Remove the bolts and lock washers from the back of the MistBuster®. Remove the filters from the MistBuster® and lift the unit up to the pedestal stand. Align the MistBuster® and insert and tighten the bolts with lock washers to secure the MistBuster® to the pedestal stand. Install the plenum per the instructions in the Installing the Plenum section.
- **5.** Re-check all bolts to make sure they are securely fastened.

WARNING

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

Do not extend the top of the stand over 128"[3251mm].

Level the stand before securing the anchor bolts.



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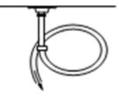
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DRAIN INSTALLATION

The MistBuster® 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"[230mm] Dia. Loop

Electrical Installation

WARNING

All electrical work must be done by a qualified electrician and with accordance to local codes and regulations.

Be certain that the power source is compatible with the model ordered. See the rated voltage on the inside of the filter access door.

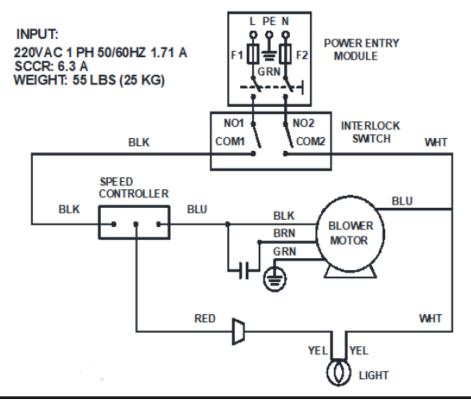
Proper grounding of the MistBuster is essential for safety and operation.

Cord Connected

The MistBuster is equipped with a 10-foot [3048mm] power cord with a standard molded (15 amp rated) plug. There must be a standard grounded outlet provided within 10 feet [3048mm] of the MistBuster. 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 operation.

Conduit Connected

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





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Start up/ Operation

⚠ WARNING

ROTATING PARTS & LINE VOLTAGE DISCONNECT ELECTRICAL POWER TO THE UNIT BEFROE SERVICING INTERNAL PARTS.

MOTOR MIGHT HAVE AUTO RESET TERMAL PROTECTION. IF ENERGIZED IT WILL START AUTOMATICALLY AFTER COOLING FROM OVERLOAD

THIS PRODUCT IS NOT EXPLOSION PROOF, DO NOT USE IN EXPLOSIVE ATMOSPHERES.

TO MAINTAIN OPTIMUM PERFORMANCE THIS EQUIPMENT SHOULD BE INSPECTED AND CLEANED REGULARLY. EXCESSIVE DIRT ACCUMULATION COULD RESULT IN FIRE DAMAGE TO ORDER REPLACEMENT FILTERS CALL 1-800-328-0787

- 1. Start the MistBuster® by rotating the control knob clockwise. Turning the switch clockwise from the "off" position will vary the blower speed from "high" to "low".
- The performance indicator light should be on during normal operation.

Note: This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

3. The MistBuster[®] is equipped with a variable motor speed controller. Set the blower speed at the minimum setting that will maintain proper negative pressure. This will reduce noise and maintenance, and will increase efficiency. In most cases, the three o'clock setting on the speed controller will provide enough airflow to maintain negative pressure.

Interlock Guard

The Mistbuster utilizes an interlock guard that is integrated into the filter door. The interlock guard prevents access to live parts while preforming maintenance. When the filter door is open, the interlock will disconnect power to all components accessible in the filter compartment. The interlock guard will restore power when the door knobs are fully tighten. If the filter door is open or the door knobs are not fully tightened, the unit will not function. This is a safety devise to prevent human contact to hazards within the machine.

Routine Maintenance

CAUTION

- When cleaning the impingers, be sure to wear appropriate protective gear, especially goggles and gloves. Skin contact with alkaline detergent solution should be avoided. See detergent warning label.
- The main media filter must be handled with care to avoid damage.

The direct mount MistBuster® captures mist droplets from machine tools using either petroleum or synthetic machining fluids. The collected fluids drain directly back into the machine tool through the inlet opening. This draining process helps to keep the impingers and main media filter clean.

The mist impingers will need to be cleaned periodically and the main media filter will need to be replaced periodi- 2. cally. The exact maintenance interval is determined by each specific application. Water soluble and synthetic machining fluid applications will require more frequent cleaning than petroleum machining fluids.

During the first few months of operation, inspect the impingers and main media filter. When you have an excessive buildup on the mist impingers, cleaning will be required. It is very likely that the mist impingers will require multiple cleanings before the main media filter must be replaced, since the mist impingers are the first stage of cleaning.

*The main media filter can be gently washed with detergent and water. However, in most applications the filter will not be sufficiently cleaned, therefore requiring replacement.

Parts Washer Method

The mist impingers can be cleaned with a parts washer. The cleaning fluid used should be aluminum safe and the maximum pressure should not exceed 60 psi [8.7kPa].

Manual Cleaning Method

- Fill the wash tub with cell cleaning detergent and hot water per the detergent's instructions.
- Immerse impingers in solution for five minutes.
- Thoroughly rinse with very hot water. Make certain no residue remains.

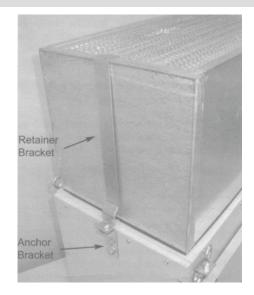


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Hepa Filter Option

NOTICE

- Handle the HEPA filter carefully to avoid damage to the filter media.
- The HEPA filter weighs 25 lbs for MB500 and MB850; 40 lbs for MB2000 clean and adds an additional 12" [305mm] to the height of the MistBuster.
- Install the two anchor brackets to the center of both sides of the MistBuster cabinet. Remove the two bolts/washers (on each side of the MistBuster) and position the anchor bracket and bolt into place using the same bolts /washers.
- 2. Center the HEPA filter on top of the MistBuster exhaust grille with gasket side down. NOTE: Airflow arrow points up towards ceiling.
- 3. Install the HEPA retainer brackets by hooking one end to the filter frame and bolting the other end to the anchor brackets



Install the HEPA retainer brackets by hooking one end to the filter frame and bolting the other end to the anchor bracket.

Troubleshooting

WARNING

The following instructions are intended for qualified service personnel only. Dangerous line voltage circuits are exposed during this procedure. Disconnect power at fuse before servicing the unit.

Indicator light is on and motor does not run

- 1. Inspect the motor by checking to see if the motor spins freely by hand. If the motor does not spin freely by hand check for obstructions or replace motor as necessary.
- 2. If the motor spins freely by hand try spinning the motor clockwise or counterclockwise then with the motor spinning turn the unit on. If the motor runs and the fan speed can be adjusted by the speed controller replace the motor capacitor.
- 3. Try bypassing the speed controller by hooking the supply voltage going into the speed controller directly to the wire that goes from the speed controller to the motor (see schematic). If the motor works with the speed controller bypassed replace the speed controller.

Indicator light is off and the motor does not run

- 1. Make sure the unit is getting power and is getting the correct voltage.
- 2. Check to make sure the interlock switch is working properly. Make sure there is voltage passing through the interlock switch when the button for the interlock switch is depressed. With the power disconnected to the unit an ohm meter can be used to check if the interlock switch has continuity when the switch is depressed. The interlock switch has two sets of contacts that are individually switched and will not have continuity between the two separated contacts. If there is no continuity replace interlock switch as needed.
- With the unit on, check to see if the power supply and motor are getting voltage. If the interlock is functioning properly and there is no power reading to the power supply or motor, check wiring and replace the speed controller as needed.



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Parts List

DESCRIPTION	PART #
Aluminum Mesh Impingers, 2" [51mm] thick, 2 req.	41205
MERV 14 Filter Polypropylene	41249
Aluminum Mesh Impingers, 1" [25mm] thick, 1 req.	41050
Speed Controller	10253
Indicator Light	10097
Motor / Impeller	40091
Capacitor	40134
Interlock Switch	10106-1**
Machine Mount Stand	07180*
Plenum, includes 2 covers, 6" [152mm] port	07175*
Pedestal Stand	07176*
Hepa Option Kit, includes hepa filter	07178
Hepa Replacement Filter	41142
Ceiling Mount Kit	07186
Dacron Prefilter Option	41215
Diffuser	22183
½" [13mm] Male Elbow	30709
½" [13mm] Tubing	67139
4" [102mm] Port	05554*
6" [152mm] Port	05537*
8" [203mm] Port	05538*
4" [102mm] Hose	07252
6" [152mm] Hose	07228
8" [203mm] Hose	07229
4" [102mm] Hose Clamp	30774
6" [152mm] Hose Clamp	30684
8" [203mm] Hose Clamp	30033
Detergent	45008

^{*} Specify color when ordering.

Note: Custom mounting and Installation kits available please contact sales representative for further details.



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^{**}Safety Related Replacement Part

LIMITED THREE-YEAR WARRANTY

Air Quality Engineering, Inc., (AQE) warrants the MistBuster Air Cleaner to be free from defects in workmanship or materials, under normal use and service, for a period of three (3) years from date of purchase by the consumer. If, at any time during the warranty period, the product is defective or malfunctions, AQE shall repair or replace it (at AQE's option) within a reasonable period of time.

If the product is defective:

- return the unit or defective component, with a bill of sale or other dated proof of purchase, to the retailer from which you purchased it, or
- package the unit or component, along with proof of purchase (including date purchased) and a short description of the malfunction, and mail or ship, postage or freight prepaid, to the following address:

AIR QUALITY ENGINEERING, INC. Warranty/Return Goods Department 7140 Northland Drive North Minneapolis, Minnesota 55428 USA

The repaired or replaced part or unit will be shipped by AQE to the purchaser, freight collect, with the purchaser to be responsible for all freight charges. The warranty on any repaired or replacement part shall be for a duration of time no longer than the remaining or unexpired term of the original warranty. This warranty does not cover any labor or other service charges incurred by the purchaser.

This warranty shall not apply if it is shown by AQE that the defect or malfunction was caused by damage, which occurred while the product was in the possession of the consumer.

AQE'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 WAR-RANTY, 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.

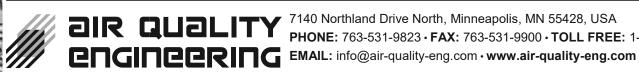
THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND THE WARRAN-TIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED BE-YOND THE THREE-YEAR DURATION OF THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above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

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