



## OWNER'S MANUAL

### Diversitech Environmental Booth Module Series



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# Diversitech Environmental Booth Module Series

## Important!!!

Due to the nature and variety of dusts/fumes/smoke, it is impossible to list all potential hazards related to dust/fume/smoke control equipment or systems. Additionally, it is impossible to list all potential hazards involved with installation/operation/servicing a dust/fume/smoke collector system. It is assumed that the installer/operator/servicer will follow ALL local, state, and national codes/laws/regulations, as well as, accepted practices by the industry. This manual serves as a guide for the installation/operation/servicing of the system. If any aspect of the installation/operation/servicing is not addressed or fully explained to the satisfaction of the installer/operator/servicer, then the installer/operator/servicer is encouraged to contact their Diversitech distributor. It is strongly recommended that this manual be read in its entirety by the installer/operator/servicer prior to beginning any work on the system!

- **INSTALLATION**
- **OPERATION**
- **SERVICE**

### UNIT IDENTIFICATION

Model Number \_\_\_\_\_  
Serial Number \_\_\_\_\_  
Ship Date \_\_\_\_\_  
Installation Date \_\_\_\_\_  
Customer Name \_\_\_\_\_  
Customer Address \_\_\_\_\_  
\_\_\_\_\_  
Distributor Name \_\_\_\_\_  
Distributor Address \_\_\_\_\_  
\_\_\_\_\_

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# 1. PRECAUTIONARY STATEMENTS

## APPLICATION OF DIVERSITECH ENVIRONMENTAL BOOTH MODULES

**Process owners/operators (“responsible party”) are ultimately responsible for ALL installation, operation, and servicing of this unit.**

1.1 Due to potential fire hazards, do not mix combustible substances with material that would be a potential source of ignition.

1.11 Examples of Combustible Materials:

- Wood Dust
- Paper Dust
- Lint from fabric or buffing wheels
- Grinding dust from painted surfaces
- Aluminum or magnesium dusts

1.12 Examples of Potential Ignition Sources:

- Grinding dust from ferrous metals
- Hot ash or sparks from any source

1.2 Additionally, some substances can auto-ignite or spontaneously combust. Therefore, it would be prudent on behalf of the “responsible party” (lawyer term) to conduct a thorough research on their material to identify any known hazards (keeping in mind, some hazards are unknown).

1.3 Unless the equipment was originally designed for collection of explosive material and proper disclaimer on record, this equipment must not be used for the collection of any materials where there is a risk of explosion. Pressure relief vents or explosion vents must not be applied to the equipment or adjoining systems.

1.4 Equipment location, installation and operation must comply with all local, state, and National Fire Codes. If unsure contact the appropriate authorities.

1.5 The electrical installation must conform to all local and state codes, as well as, the National Electric Code.

1.6 Events in industry have demonstrated that fires are NOT uncommon in some collection systems. Therefore, the overall design of the system, including: placement of the unit, fire detection/suppression, sparks mitigation efforts, and maintenance, should be fashioned with a mindset of “when a fire occurs”, NOT “if a fire occurs”. Fire detection/suppression systems, as well as, spark prevention measures are **STRONGLY** recommended. The smoke detection/fire suppression systems (if so equipped) should be installed by qualified individuals, and in accordance with any local and state codes (if any).

1.7 Painting, machining, grinding, sanding, deburring or any process to further manufacture or finish any **volatile** or potentially **volatile** material, liquid or solid, is strictly prohibited.

1.8 The air supply system should be installed by qualified individuals, and in accordance with any local and state codes (if any).

1.9 Workers and operators are to be instructed to keep burning objects, such as cigarettes, safely away from inlets leading to the equipment.

1.10 All personnel involved with the use of this equipment must comply with the statements pertaining to worker safety as noted in this manual.

## **2. INTRODUCTION**

2.1 DIVERSITECH Environmental Booth Modules (EBM) are designed to improve the air quality in a relatively, confined space, and at the same time inhibit welding smoke/fumes and dust from degrading the air quality in a larger area (such as the plant). The collectors for the EBM's come in a 4, 6, and 8 cartridge size, with a corresponding air flow rate of 3000, 4500, and 6000 cfm, respectively. Multiple collectors can be placed within a booth to provide almost any reasonable air flow rate for the booth. The EBM's provide a relatively safe work station; however, given the combustible nature of welding fume/smoke and the inherent generation of sparks from grinding, prudent operation of the system and periodic maintenance is essential. Spark baffles and spark mesh are offered as an option on these units and are **STRONGLY** recommended.

2.2 Installation is complete after:

- The collector unit is positioned appropriately (fires are NOT uncommon)
- The booth (and curtain, if equipped) is assembled and connected to the collector
- Electrical power is connected (appropriately)
- Fire detection/suppression systems connected (appropriately – and if so equipped).
- Compressed air is connected (appropriately)

**2.3 MOST FILTERING MEDIA IS COMBUSTIBLE EVEN WHEN IT IS TREATED WITH FLAME RETARTANT MATERIALS. PRECAUTIONS SHOULD BE TAKEN TO PREVENT BURNING MATERIAL FROM COMING INTO CONTACT WITH THE FILTERING MEDIA.**

**2.4 FIRE OR SMOKE DETECTION DEVICES AND APPROPRIATE EXTINGUISHING SYSTEMS MAY BE REQUIRED DEPENDING ON LOCAL CODES AND AUTHORITIES. PLEASE VERIFY WITH THE APPROPRIATE AGENCIES WHICH MAY INCLUDE, BUT MAY NOT BE LIMITED TO THE FIRE DEPARTMENT, YOUR INSURANCE COMPANY AND LOCAL, STATE OR FEDERAL AUTHORITIES. SHOULD YOU HAVE ANY QUESTIONS, PLEASE CONTACT THE MANUFACTURER OR HER/HIS REPRESENTATIVE PRIOR TO OPERATING THE EQUIPMENT.**

**2.5 It is imperative that the equipment be verified, cleaned and properly maintained on a continual basis to ensure proper and safe operation. This maintenance can usually be performed on a contract basis if necessary. Contact your Distributor for details.**

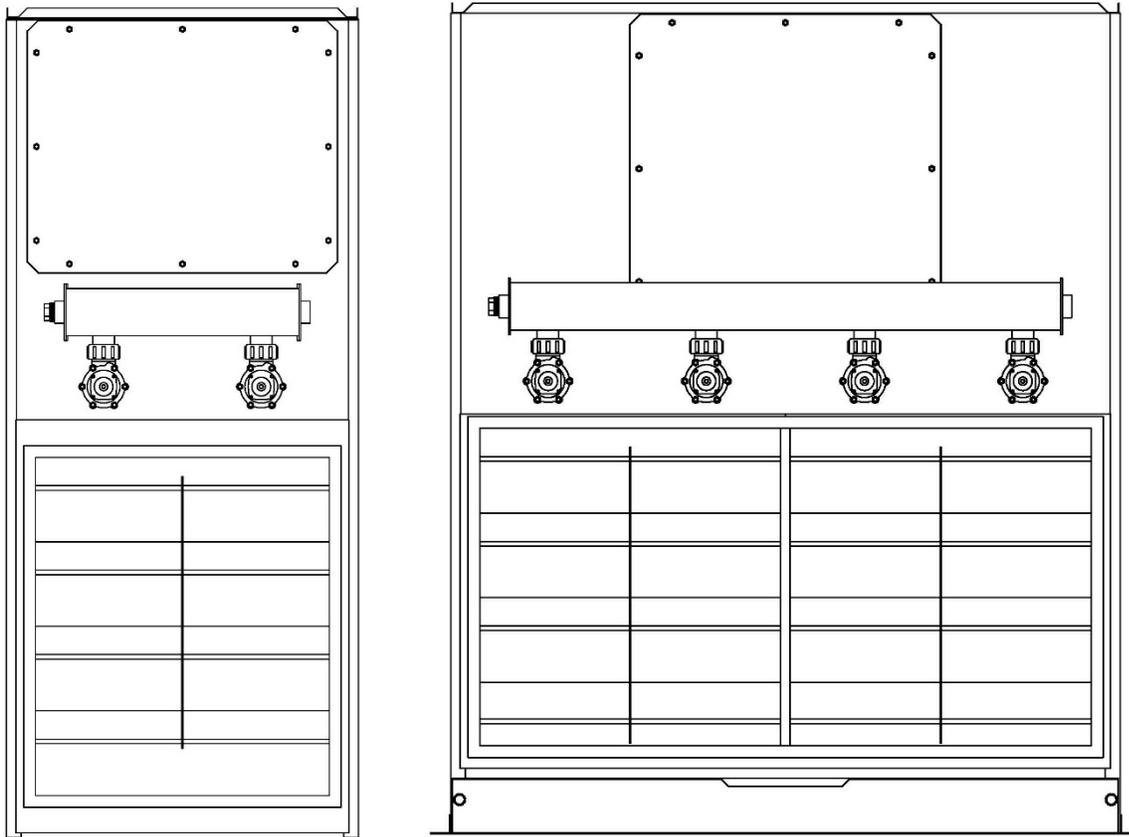
**2.6 All employees should be familiar with the on/off controls. No burning, torches or cutting should be carried out in direct proximity to the unit. Where welding, cutting or grinding being performed, a suitable fire extinguisher(s) should be accessible.**

**2.7 Good judgment should be utilized at all times. If you are unsure about the system components or function, please contact your Distributor.**

**2.8 THINK SAFETY FIRST!**

### 3. TYPICAL DRAWINGS OF ENVIRONMENTAL BOOTH MODULES

(Dual EBM-6 collectors inside a booth are on the cover, EBM-4 and EBM-8 collectors are shown below)



### 4. INSPECTION

4.1 Upon receipt of unit, the Diversitech Environmental Booth collector, booth walls/ceilings, and any optional components must be checked for damage or potential loss incurred during shipping. Damage must be noted on the bill of lading and a claim filed with the carrier immediately. Diversitech should be notified within 2 weeks of receipt of unit, regarding any missing/lost items/components/parts.

### 5. THEORY OF OPERATION

5.1 The Diversitech Environmental Booth Module features (usually) a custom designed booth and a factory assembled collector. The system is designed to enhance the air quality both for a relatively confined area (where an individual/s can performing welding or grinding or other dust generating procedures) and the area surrounding the booth. During normal operation, air flows into the collector, through the (optional) metal baffles and (optional) metal mesh filters. The air then moves between the cartridge filters and towards the blower. A portion of the dust will collect on the surface of the cartridge media as the air passes through the filter media, and into the blower. The dust that collects on the cartridge media will periodically be dislodged by the reverse jet pulse cleaning system. This system is either manual (push button) or electronically (optional) controlled and is usually configured to monitor the differential pressure between across the filter media. When the differential pressure reaches the adjustable set point, a brief burst of compressed air will be released into the core of the cartridge filter to dislodge the dust from the filter surface. The dislodged dust gradually migrates towards the settling chamber (dust pan or hopper), for subsequent manual removal through the dust pan or hopper.

## 6. FEATURES

### 6.1 Standard

6.1.1 DUST TRAY –The dust tray provides an area where dust can accumulate and easily be removed.

6.1.2 FIRE RETARDANT CARTRIDGE FILTERS –The filters have been treated with a chemical to “retard” against chemical combustion; however, the cartridge filters are NOT “fire proof”, that is, under certain the filters will combust.

6.1.3 MANUAL PUSH BUTTON REVERSE PULSE CLEANING – The collector has a reverse pulse cleaning system, whereby when the valve is manually actuated (by pushing the button), a blast of air is injected inside the filter cartridge (opposite to the normal air flow), which helps dislodge accumulated material on the outside of the filters.

### 6.2. Optional

6.2.1 AFH/AFS - After filter housings are available with either HEPA or Safety filters. HEPA filters are 99.97% efficient at specified flow/pressure rates and Safety filters are 95% efficient at specified flow/pressure rates.

6.2.2 CASTERS – The 5” casters enable the backdraft bench to be moved, relatively with ease. Electrical and compressed air lines would need to allow for movement.

6.2.3 EXPLOSION VENT - An Explosion Vent is designed to relieve rapid pressure build up, as is experienced from an explosion within the dust collector. If your explosion vent should experience a burst, then contact your DIVERSITECH Distributor to order a replacement.

6.2.4 FIRE SUPPRESSION – Fire suppression is available in a variety of technologies. Fire suppression systems should be installed by qualified individuals and in accordance with any local, state, or national codes/regulations/laws (if any).

6.2.5 HOPPER – The hopper and leg accessory increases the dust storage capability of the unit.

6.2.6 LIGHTS – A 2 or 4 foot long “VaporTite” fluorescence light kit is available to provide supplemental lighting for the work area (bulbs are not included – due to probability of breakage during shipment).

6.2.7 MAGNEHELIC GAGE – The Magnehelic gauge option is usually chosen when the manual push button reverse pulse cleaning is used. The Magnehelic gauge measures the differential pressure across the cartridge filters, which can also be utilized to determine when the filter has reached “end of life”. The Magnehelic gauge can also be used to measure the differential pressure across the HEPA filters.

6.2.8 METAL MESH FILTERS – The metal mesh filters provide a durable surface for the deposition of welding smoke/fume. Filters should be periodically removed and cleaned (soap and water).

6.2.9 PNEUMATIC VALVE KIT - A pneumatic valve kit includes a pressure regulator, coalescing filter, and pressure gage. This kit helps insure that clean dry air is being supplied to the pulse valves at the proper air pressure. NOTE: The coalescing filter requires periodic maintenance/replacement (life span is a function of supplied air quality).

6.2.10 SILENCER - Silencers are manufactured from 11 and 14 gauge carbon steel. The silencers are lined with a minimum of 3” of a sound damping material. When installing a rectangular silencer, install on the flange side of the motor can. When installing a round silencer, install on top of the motor can (this may require a supplied cone to install)

6.2.11 SMOKE DETECTION – Smoke detectors are available in a variety of models. Smoke detectors should be installed by qualified individuals and in accordance with any local, state, or national codes/regulations/laws (if any).

6.2.12 SPRINKLERS - Unless otherwise requested, the sprinklers discharge at 165°F. Sprinklers must be connected to the plant’s main sprinkler system and in accordance with any local, state, or national codes/regulations/laws (if any).

6.2.13 SPUNBOND WASHABLE FILTERS – The spunbond filters are 100% polyester, therefore, washing with mild soap and water is possible. Typically, the filters can be washed 3 to 4 times before degradation of the material occurs. This is an attractive feature for cost conscious organizations.

6.2.14 TURBO DIGITAL PULSE CONTROL – This electronic device constantly monitors the differential pressure across the cartridge filters and, when the programmable set point is met, automatically reverse pulse cleans the cartridge filters. The unit also offers a cycle down feature, whereby the filters are cleaned on shutdown.

## 7. INSTALLATION

### 7.1 Initial Considerations

7.1.1 The location of the unit(s) must be planned to maximize effective operation and simultaneously afford access for service/maintenance, while keeping safety considerations at the forefront. Explosions and fires in collection systems are not uncommon; therefore, systems should be designed and placed with those two aspects in mind and in accordance with any local, state, or national fire/safety codes/regulations. Thought should also be given to electrical and compressed air sources, keeping in mind that the collector will need to be connected with electricity, compressed air, and fire detection/suppression systems (optional). Should additional questions arise or assistance is needed consult your DIVERSITECH distributor.

7.1.2 After the installation, access/clearance must be available to service the following components:

1. Filters
2. Fan
3. Valves
4. Controls
5. Dust drawer

### 7.2 Mechanical

**NOTE: All of the mechanical installation must be performed by a qualified installer and in accordance with local, state, and national codes/regulations/laws (if any).**

7.2.1 The Diversitech Environmental Booth Module is a (usually) custom built booth coupled with a factory assembled dust collector. Placement/movement of the unit inside the factory/building is usually the major concern. Ensure you have enough room in front of the access doors and/or dust drawers for easy filter access as well as all around the unit for access in the event of maintenance or emergency.

7.2.2 After placement, the collector (and booth) should be secured to the floor using tapered anchor bolts.

**NOTE: Should questions arise concerning total weight, consult your DIVERSITECH Distributor or DIVERSITECH Factory.**

### 7.3 Electrical

**NOTE: All of the electrical installation must be performed by a qualified electrician and in accordance with local, state, and national codes/regulations/laws (if any).**

7.3.1 The blower motor is typically configured to operate with 208-230/460 volt, 60 cycles, and 3 phase electrical power, unless specified otherwise with the equipment order. A magnetic motor starter with over load protection is attached to the unit. The voltage for which the starter control (and motor) is configured should be labeled on the starter control box. The electrical connections to the box (and wiring) must be sized and selected in accordance with local, state, and national codes.

7.3.2 Nominal Full Load Amperes are as follows:

Horse Power	Voltage			
	208V	230V	460V	575V
3	10.0	8.0	4.0	3.5
5	15.00	13.0	6.5	5.0
7.5	20.0	18.0	9.0	7.0
10	30.0	24.0	12.0	10.0
15	40.0	37.0	18.5	15.0

7.3.3 The blower is designed to rotate clock wise when viewed from the motor side (top of blower). If the blower is running in reverse, the air volume will be approximately 50% of the designed air volume and excessive noise will be generated. Therefore, once the motor is wired, check motor rotation by energizing the blower motor for a brief instant (“JOG”). If direction is reversed, then correct. Switching two (2) of the 3-phase connections on the output side will reverse the direction of rotation.

7.3.4 If your unit is equipped with the “Turbo Digital Pulse Control”, then this feature will need to be connected to a 120 volt power source. Power consumption is less than 50 Watts.

7.3.5 If your unit is equipped with a “light kit”, then this feature will need to be connected to a 120 volt power source.

7.3.5 If your unit is equipped with any optional electrical features, then these will need to be connected to the appropriate power source.

**NOTE: Instructions that detail the operation of Turbo Digital Pulse Control is available under separate cover. A copy of the instructions should have been supplied with the unit.**

**NOTE: The digital reverse jet pulse controller with “Pulse on Shut down” feature must be wired with a continuous 115 volt supply. The control must not be wired in parallel with the fan motor starter. (Exception is when using a Diversitech combination motor starter with disconnect as this has a dedicated 115V transformer.)**

## 7.4 Compressed Air

**NOTE: The compressed air installation should be performed by a qualified installer and in accordance with local, state, and national codes/regulations/laws (if any).**

7.4.1 Compressed air is used to clean the dust coated cartridge filters with a high pressure reverse jet pulse. A one inch diameter dedicated supply with a minimum of 80 PSI and a maximum of 100 PSI is recommended. An air regulator may be necessary to step down the supply air if the plant pressure is above the recommended rating. NOT complying will result in component damage.

7.4.2 The air supply line to the accumulator tank **must** include water, oil and particulate filtration. Water and especially oil in the compressed air will significantly reduce the effectiveness of the reverse jet pulse cleaning by contaminating the cartridge filters and causing excessive differential pressure across the filters, which results in greatly reduced air flow along with premature filter replacement.

7.4.3 A 160 PSI gage has been pre-installed to monitor air pressure. Prior to the final connection of the air line to the collector manifold, the air line should be purged. This will remove debris that could damage the valves and block the nozzles in the blow pipes.

**NOTE: The compressed air source must be free of oil (and water). Oil (and water) will cause premature failure of the cartridge filters.**

## 7.5 Smoke Detection/Fire Suppression (OPTIONAL)

**NOTE: All of the smoke detection/fire suppression installation must be performed by a qualified technician and in accordance with local, state, and national codes/regulations/laws (if any).**

7.5.1 Smoke detection and fire suppression is an important aspect of the installation procedure. Fires are a common occurrence in dust collection systems and the comprehensive collection system should be designed for when a fire occurs, not if. Various systems are available for smoke detection and an even greater list of fire suppression technologies exist. Fire sprinkler systems for collectors **MUST** be properly connected. In most cases, this is the closest building’s fire sprinkler system. ALL smoke detection/fire suppression systems should be periodically inspected and maintained.

## 7.6 HEPA FILTERS (OPTIONAL)

**NOTE: All of the smoke detection/fire suppression installation must be performed by a qualified technician and in accordance with local, state, and national codes/regulations/laws (if any).**

7.6.1 The Environmental Booth Modules with HEPA filter assembly option are general shipped with the HEPA filter assembly (including top plate of the collector) as a separate component. Therefore, to install complete the following steps:

- Locate the collector, the top outlet panel (attached to the HEPA assembly), and supplied bolts.
- Apply silicon sealant to the top portion of the down draft table (where the top outlet panel/HEPA assembly attaches).
- Place the top outlet panel/HEPA assembly on top of the main unit (align the bolt holes).
- Insert and hand tighten the supplied bolts to secure the assembly.
- After all bolts have been “hand tightened”, then “snug” the bolts. **DO NOT OVER TIGHTEN!**

## 8. PRE-START UP

8.1 If not already verified in the electrical section, check rotation of fan by turning “ON” for a brief instant (JOG) and verifying rotation. Rotation must be clockwise when viewed “OVER THE MOTOR” from the discharge side. If the rotation is correct, start the motor.

8.2 It is suggested that new filters be properly pre-conditioned with pre-coat before start up. Please contact your DIVERSITECH Distributor for assistance.

8.3 Check the compressed air system for leaks. Confirm 80 PSI minimum air pressure (maximum 100 PSI).

**Warning: Compressed air pressure higher than 100 PSI can damage the filters and the dust collector’s structural integrity.**

8.4 Check that the compression couplings of the pulse valves are tight.

8.5 Manually activate (if so equipped) the reverse cleaning valves.

8.6 Check each valve for leaks. NOTE: It is normal for the bleed air port to release a burst of air at each pulse.

8.7 Check the adequacy of air supply by assuring no less than 35% drop in pressure during pulse.

## 9. START UP

9.1 Apply compressed air to the manifold.

9.2 Energize (push the START button) for the main blower.

9.3 Energize the Turbo Digital Pulse Control (reverse jet pulse control), if so equipped.

9.4 Energize the lighting, and other auxiliary equipment, as required.

9.5 COMMENTS REGARDING FILTER DIFFERENTIAL PRESSURE DURING OPERATION:

9.5.1 Depending on operating conditions, reaching equilibrium for filter differential pressure may vary from a few hours to several weeks. Low dust loading will normally develop 2-3”w.g., normal loading typically generates 3-6”w.g., and high loading varies from 6 - 10”w.g.

9.5.2 Low dust loading typically shows a steady level of differential pressure with very little fluctuations once equilibrium is reached. By contrast, heavy loading can produce significant “Ups and Downs” in operating differential pressure.

9.5.3 If your unit is equipped with the programmable pulse control, then it is usually necessary to gradually (over a period of weeks or months) raise the high and low set points to reflect the normal buildup on the filters.

## 10. PRE-COAT

10.1 The pre-coat is a specially formulated conditioner that enhances the performance of filter cartridges. It creates a highly permeable, protective layer on the surface of the filter media. Pre-coat applied to new filters forms a protective barrier on the surface of the filter media that stops fine particles from becoming trapped in the media structure. By keeping particulate on the surface, away from the media, the media remains open over a longer period of time and this means longer filter life. This feature also improves cake release as surface-loaded dust releases more easily during pulse cleaning.

10.2 When replacing cartridge filters, the new filters need to be pre-coated with silica based cellulose or other acceptable pre-coat material available on the market. The following steps should be taken to introduce the pre-coat to the cartridges:

- Remove the exhaust inlets on the front of the unit (the filter cartridges are now visible)
- Power up the fan
- Slowly introduce (1/2 lb. per cartridge) the pre-coat
- Try to coat the cartridges evenly

10.3 Pre-coat can be obtained through your distributor or from Diversitech.

## 11. SHUTDOWN

11.1 De-energize (push the STOP button) the blower motor. The digital reverse pulse cleaning systems are equipped with an “Off Line Cleaning” feature which activates the reverse jet pulse cleaning. This element will clean the filter cartridges while the unit is off line, for a preset number of pulses. Once the cleaning cycle is complete the collector is ready to be energized when needed.

11.2 Secure power to the digital reverse pulse control.

11.3 Secure power to the lights, and other auxiliary equipment.

**CAUTION: Off line cleaning can cause pressure waves to feed back through system. Precautions may be necessary to prevent dusting.**

## 12. Maintenance

### 12.1 Procedures

12.1.1 Dust Drawer or hopper: The dust drawers (or hopper contents) should be checked and emptied periodically. The frequency of this step will depend on the number of shifts operating and conditions in the plant; however, it is a good practice to frequently remove residue build up.

12.1.2 HEPA Filters: The HEPA filters (if so equipped) are located on top of the unit (inside the HEPA filter assembly). Periodically, these filters should be inspected and replaced. Condition of the HEPA filter will generally be a function of the Magnehelic gage (for the HEPA filters – NOT the cartridge filters) reading. To examine:

- Remove the two wing nuts for each filter
- Lift off the filter “tie down” bar
- Remove HEPA filters
- Install new HEPA filters
- Install HEPA filter “tie down” bar
- Install the two wing nuts for each filter.

12.1.3 Metal Mesh Filters: The metal mesh filters (if so equipped) should periodically be inspected and cleaned. Any buildup of material in the filters can lead to fires. To examine:

- Remove the access panel
- Pull out both metal mesh filters
- Wash with soap and water, and air dry
- Replace both metal mesh filters
- Replace the access panel.

12.1.4 Spark Baffles: The spark baffles (if so equipped) are located underneath the grating and should be periodically cleaned with mild soap and water. To examine:

- Remove the access panel
- Pull out both spark baffles
- Wash with soap and water, and air dry
- Replace both spark baffles
- Replace the access panel.

12.1.5 Cartridge Filters: The cartridge filters will need to be replaced periodically. The frequency varies from a few weeks to a few years, depending on factors such as density of fumes/dust, particle size, humidity of air, oil or grease contents of matter, etc... To change out:

- Remove any device that would prevent the cartridges from being removed (cartridges are located underneath the valves)
- Pull both cam lock levers towards (you) (the filter guide bars should drop down)
- Remove cartridge filters (they should slide out)
- Slide the new filters into the unit (be sure to push the first installed filter, as far back as possible)
- Push both cam lock levers away (from you) (the filter guide bars should rise)
- Replace the access door.

12.1.6 Drain Valve: Periodically open the drain valve attached below the tank to drain the liquid build-up in the air tank.

**NOTE: Electrical power and compressed air supply MUST be disconnected before beginning the filter installation.**

**NOTE FOR NON-WASHABLE (PAPER FILTER) FILTER CARTRIDGES:**

**Do not wet or clean the cartridge filters with any liquid as it may form unwanted blockage on the filter media.**

## 12.2. Maintenance Schedule

### 12.2.1 Daily Inspection

12.2.1.1 Check exhaust for visible dust, refer to troubleshooting.

12.2.1.2 Check compressed air system for air leakage (low pressure); repair as necessary.

12.2.1.3 Empty dust drawers.

### 12.2.2 Weekly Inspection

12.2.2.1 Inspect metal mesh filters. Clean if necessary.

### 12.2.3 Monthly Inspection

12.2.3.1 Check filter cartridges for leaks and proper fastening; repair or replace as necessary.

12.2.3.2 Check spark baffles and clean as necessary.

12.2.3.3 Open the air tank drain cock located under the air tank to expel any condensation.

12.2.3.4 Check the compressed air line regulator, dryer, and filter for proper operation. (by others)

### 12.2.4 Three Months

12.2.4.1 Check the filter cartridges.

12.2.4.2 Check all electrical apparatus for proper operation.

12.2.4.3 Check discharge air condition for signs of dust.

### 13. Troubleshooting

Perform troubleshooting of the collector in accordance with the following:

<b>Troubleshooting Chart</b>		
<b>TROUBLE</b>	<b>POSSIBLE CAUSE(S)</b>	<b>CORRECTIVE ACTION</b>
Visible dust from outlet	1 – Cartridge is improperly installed. 2 – Cartridges too loose. 3 – Damaged cartridges. 4 – Damaged gaskets. 5 – Leakage at tube sheet level.	1 – Check cartridge installation; repair as necessary. 2 – Re-install filters. 3 – Replace damaged cartridge. 4 – Replace gasket or cartridge. 5 – Check tube sheet joints repair as necessary.
Cartridge filtering action rapidly impaired.	1 – Inadequate cleaning air supply. 2 – Improper solenoid valve operation.  3 – Defective pulse controller. 4 – Excessive moisture entering collector and blinding cartridges.  5 – Incorrect air flow (too high or too low).  6 – Incorrect cartridge filters media for air composition. 7 – Air temperature higher than specification. 8 – Static electricity build-up in collector.	1 – Check air supply. 2 – Check solenoid valves; steady rush of air indicates open valve; no air pulse indicates a plugged valve; possibly due to electrical failure; repair as necessary. 3 – Replace pulse controller. 4 – Check collector for excessive moisture or high relative humidity; either will seriously affect collector operation; correct moisture level in air stream. 5 – Check fan rotation, fan speed, damper position, outlet cfm; correct as necessary to obtain specified air flow. 6 – Replace with cartridges of proper media for type of air. 7 – Check air temperature; correct reason for overheat condition. 8 – Ground collector and its components.
Air flow through system below design rating	1 – Incorrect fan rotation	1 – Check fan rotation; correct if wrong. Switching two of the 3-phase connections will reverse the direction of rotation of the motor.
Filter cartridge deteriorate rapidly.	1 – High collector temperature. 2 – Chemical composition of air stream incompatible with cartridge material. 3 – Moisture in air stream.  4 – Incorrect cartridge installation. 5 – Abrasion by impingement of high velocity particles.	1 – Check reason for high temperature; correct if possible. 2 – Check composition of air; consult with factory on compatibility of cartridge material with air stream. 3 – Eliminate moisture from air; replace cartridge. 4 – Check cartridge for damage from over clamping. 5. Check for impingement.

## 14. WARRANTY STATEMENT

### DIVERSITECH TWO YEAR LIMITED WARRANTY

ITEMS NOT COVERED BY THIS WARRANTY ARE DUCTWORK, WIRING AND INSTALLATION WHICH IS NOT PERFORMED BY DIVERSITECH. DIVERSITECH WARRANTS THAT ALL NEW DIVERSITECH DUST COLLECTORS/AIR CLEANERS ARE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE. DIVERSITECH WILL REMEDY ANY SUCH DEFECTS IF THEY APPEAR WITHIN TWO YEARS FROM THE DATE OF SHIPMENT, SUBJECT TO THE TERMS AND CONDITIONS OF THIS LIMITED 2 YEAR WARRANTY AS STATED BELOW.

1. THIS LIMITED WARRANTY IS GRANTED BY DIVERSITECH, 2500 ALPHONSE GARIÉPY, MONTREAL, QC H8T 3M2.
2. THIS WARRANTY SHALL EXTEND TO ANY OWNER WHO HAS PURCHASED THE EQUIPMENT OTHER THAN FOR THE PURPOSE OF RESALE.
3. ALL COMPONENTS MANUFACTURED BY DIVERSITECH ARE COVERED BY THIS WARRANTY. FILTERS AND COMPONENTS NOT MANUFACTURED BY DIVERSITECH, SUCH AS ELECTRICAL OR ELECTRONIC EQUIPMENT, MOTOR STARTERS, MOTORS, PULSE CONTROLS AND VALVES CARRY A ONE YEAR MANUFACTURERS WARRANTY. THERE IS NO WARRANTY AS TO USEFUL FILTER LIFE, AS THIS DEPENDS ON APPLICATION, HOURS IN USE, ETC.
4. IF WITHIN THE WARRANTY PERIOD ANY DIVERSITECH UNIT OR COMPONENT REQUIRES SERVICE, IT MUST BE PERFORMED BY A DIVERSITECH SERVICE REPRESENTATIVE OR DIVERSITECH DISTRIBUTOR. DIVERSITECH WILL NOT PAY SHIPPING CHARGES OR LABOR CHARGES TO REMOVE OR REPLACE SUCH DEFECTIVE PARTS OR COMPONENTS. IF THE PART OR COMPONENT IS FOUND BY INSPECTION TO CONTAIN SUCH DEFECTS IN MATERIAL AND WORKMANSHIP, IT WILL BE EITHER REPAIRED OR EXCHANGED FREE OF CHARGE AND RETURNED FREIGHT COLLECT.
- 5., IN ORDER TO OBTAIN THE BENEFITS OF THIS 2 YEAR WARRANTY THE OWNER MUST NOTIFY THE DISTRIBUTOR OR DIVERSITECH IN WRITING OF ANY DEFECT WITHIN 10 DAYS OF DISCOVERY.
6. THIS LIMITED WARRANTY DOES NOT APPLIED TO ANY PART OR COMPONENT THAT IS: DAMAGED IN TRANSIT OR HANDLING; HAS BEEN SUBJECT TO MISUSE, NEGLIGENCE OR ACCIDENT; HAS NOT BEEN INSTALLED, OPERATED AND SERVICED ACCORDING TO PROPER INSTRUCTION; HAS BEEN OPERATED BEYOND THE FACTORY RATED CAPACITY; OR ALTERED IN ANY WAY THAT WOULD AFFECT PERFORMANCE. THERE IS NO WARRANTY DUE TO NEGLIGENCE, ALTERATION OR ORDINARY WEAR AND TEAR. DIVERSITECH LIABILITY IS LIMITED TO REPLACEMENT OF DEFECTIVE COMPONENTS AND DOES NOT INCLUDE THE PAYMENT OF THE COST OF LABOR CHARGES TO REMOVE OR REPLACE SUCH DEFECTIVE COMPONENTS OR PARTS.
7. DIVERSITECH WILL NOT BE RESPONSIBLE FOR LOSS OF USE OF ANY PRODUCT, LOSS OF TIME, INCONVENIENCE, OR ANY OTHER INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGE WITH RESPECT TO PERSONAL PROPERTY, WHETHER AS A RESULT OF BREACH OF WARRANTY, NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE EXCLUSION OR LIMITATION IN THE PRECEDING SENTENCE MAY NOT APPLY.
8. THIS WARRANTY PROVIDES SPECIFIC RIGHTS. OWNERS MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.
9. WARRANTY WORK WILL BE PERFORMED WITHIN A REASONABLE TIME, USUALLY WITHIN 60 DAYS AFTER NOTICE OF DEFECT AND DELIVERY OF THE DEFECTIVE PRODUCT TO THE DIVERSITECH FACTORY, SUBJECT TO ANY DELAY BEYOND THE CONTROL OF DIVERSITECH.
10. ANY WARRANTY BY DIVERSITECH OF MERCHANTABILITY, FITNESS FOR USE OR ANY OTHER WARRANTY (EXPRESS, IMPLIED OR STATUTORY), REPRESENTATION OR GUARANTEE OTHER THAN THOSE SET FORTH HEREIN, SHALL EXPIRE AT THE EXPIRATION DATE OF THIS EXPRESSED LIMITED WARRANTY. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE LIMITATION IN THE PRECEDING SENTENCE MAY NOT APPLY.
11. DIVERSITECH RESERVES THE RIGHT TO MAKE CHANGES IN THE DESIGN AND MATERIAL OF ITS PRODUCTS WITHOUT INCURRING ANY OBLIGATION TO INCORPORATE SUCH CHANGES INTO UNITS MANUFACTURED PRIOR TO THE EFFECTIVE DATE OF SUCH CHANGES.
12. USE OF UNAPPROVED FILTERS OR REPLACEMENT PARTS MAY VOID THIS WARRANTY.

## 15. Replacement Parts List

Model Diversitech EBM S/N XXXXXXXXXX

<u>Description</u>	<u>Quantity</u>	<u>Part Number</u>
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**Visit our Website for more  
information on this product  
[www.diversitech.ca](http://www.diversitech.ca)**

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