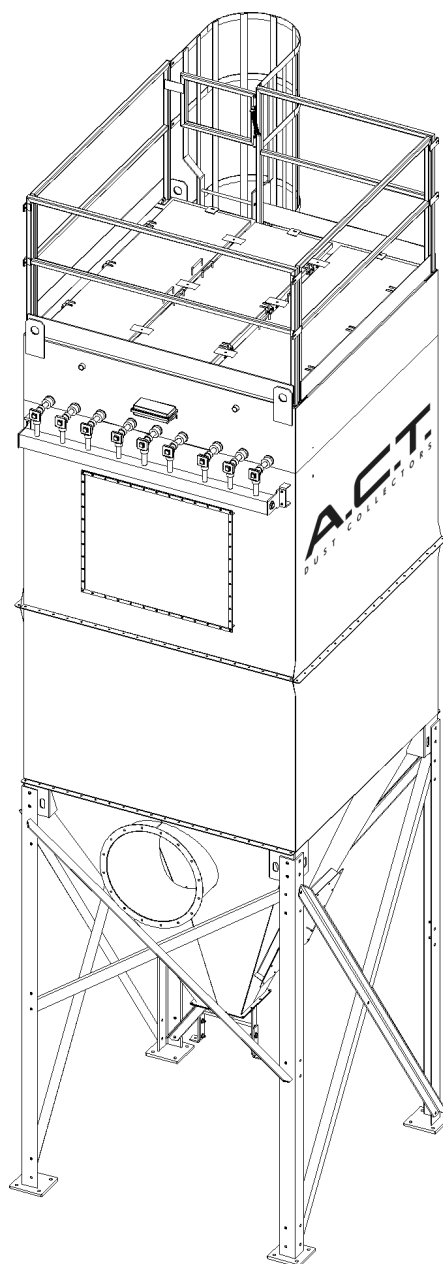
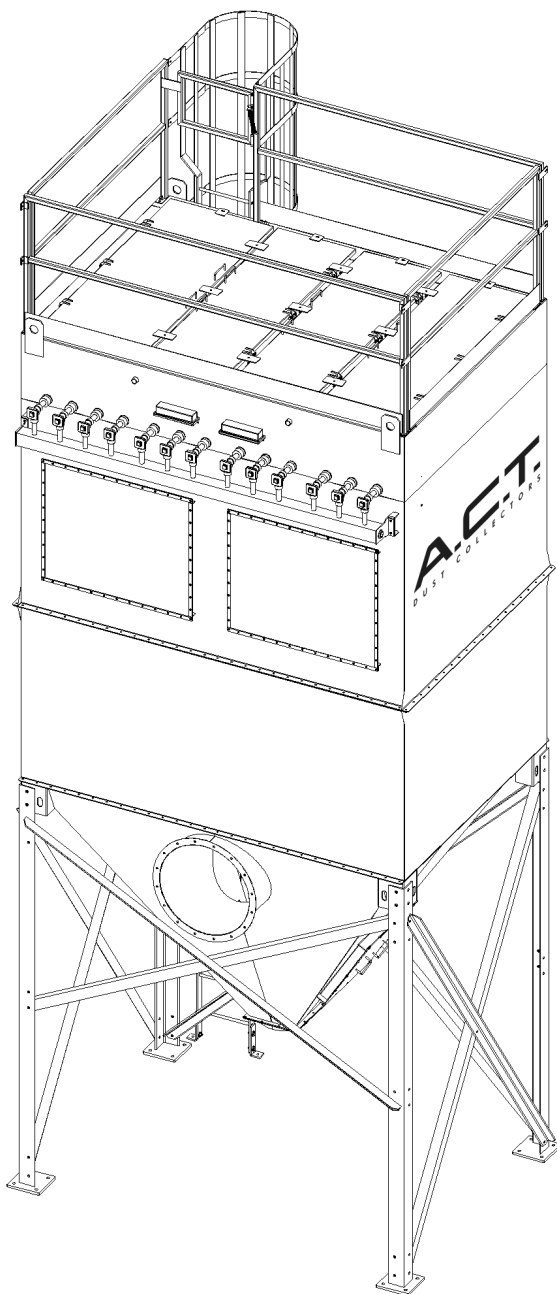




TLM Modular Baghouse

Installation and Operation Manual



ACT Dust Collectors

13310 Industrial Park Blvd. Suite 195 • Plymouth, MN 55441
Phone: 800-422-1316 / 763-557-7162 • Fax: 763-557-9731

CAUTION!

Accidents happen, be careful and always follow all local and federal regulations!

Fires and explosions do occur in dust collectors. Many items in a dust form can become very flammable and/or explosive. It is very important that when installing a dust collector to check with and abide by all local and federal regulations. Precautions such as spark traps, detectors, and extinguishers are always recommended when sparks or explosive danger is present. Never throw any burning objects into the duct work or dust collector. There is no way to guarantee 100% prevention of fires. However, the methods mentioned above will greatly reduce your risk. ACT Dust Collectors will not be responsible in any way for any loss or damage associated with fires or explosions in your dust collector.

If your dust collector came with explosion vents or if explosive dusts are present, it is the owner's/operator's responsibility for full compliance with all authorities having jurisdiction. It is recommended that the NFPA codes be studied and applied, including, but not limited to 68, 69 and 654. Included in the NFPA standards is the issue of isolating your dust collector. Please contact us or an expert in the area regarding isolation of your dust collector in the event of an explosion. Unless a Kst test was performed, and we were provided with the results, the size of the explosion vents may be inaccurate and you may not be in compliance. It is the owner/operators responsibility to verify the Kst and Pmax values. We recommend that your process be evaluated regularly to make sure that you remain in compliance and the vent area is sufficient. ACT Dust Collectors will not be responsible for ANY loss whatsoever resulting from an explosion associated with an ACT dust collector.

Dust collectors are tall and top heavy. Always be careful when handling them. Make sure your equipment is capable of making the lifts and moves you are trying to make. Be sure the foundation for the dust collector is proper and secure.

All plumbing and electrical should be performed by certified professionals and meet all codes and regulations.

Never open any doors or access panels while the machine is in operation.

Always shut down the unit prior to service and lock out all disconnects.

Always wear proper safety equipment when working on or around your dust collector and follow all local and federal codes.

Product Datasheet

Dust Collector

Model: _____ Serial Number: _____

Filters: _____ Ship Date: _____

Option/Accessories: _____

Fan Blower

Manufacturer/Model: _____ Serial Number _____

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Introduction

Thank you for your purchase of an ACT dust collector. Our goal is to provide you with a product of best quality, service, and pricing in the industry.

This manual is to provide general instructions in assisting you with your installation, operation, and maintenance of your equipment. It is the user's responsibility to ensure that the equipment is correctly installed and operated. It is also the user's responsibility to ensure and provide qualified personnel for the installation, operation, and maintenance of the equipment and to adhere to all applicable federal and local building and safety codes and regulations.

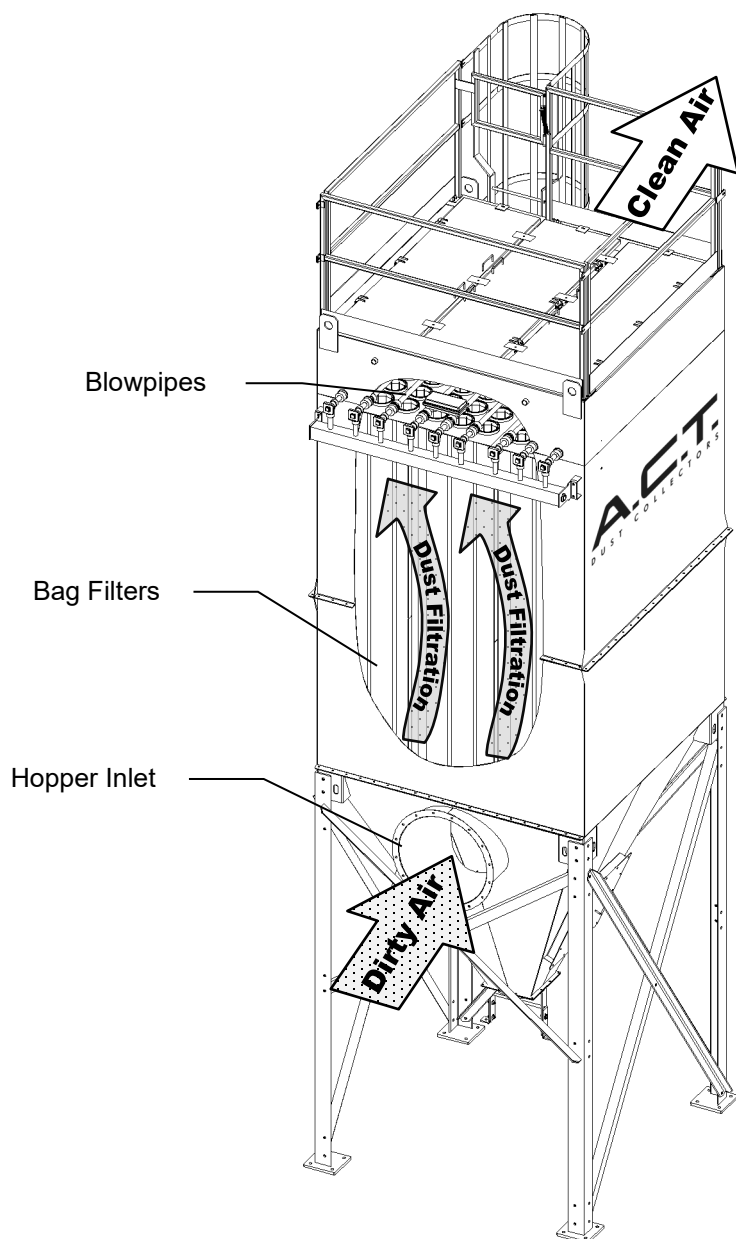
Any special instructions and certified drawings accompanying this equipment shall supersede this manual.

Keep this manual along with any special instructions and drawings necessary for assembly, operation, and maintenance with the equipment.

Operation Principle

The TLM baghouse is a pulse-jet, fabric filter, air cleaning device that removes the particulates from dust-laden air and allows clean air to be exhausted. As air enters through the hopper inlet, the particulates experience a reduction of velocity, which causes the heavier particulates to fall down into the hopper. The remaining dust is directed upward towards the filter bags where the dust is collected on the filters, allowing clean air to be exhausted. As the dust accumulates on the filters and forms a dust cake, the efficiency of the filter bags increases.

To remove excess dust buildup, a timer board is used to sequentially open the solenoid and diaphragm valves that release a pulse of compressed air through the blowpipes and downward into the filter bags. This pressure pulse releases the excess dust on the filters, allowing it to drop down into the hopper.



Shipping and Receiving

All products from ACT Dust Collectors are carefully inspected for quality and order completion prior to shipment.

Prior to unloading, inspect all components for any shipping damage and missing parts. Report and file a claim immediately with the carrier for any damage or missing items. Once filed, contact your ACT Dust Collectors representative to notify them of your issue(s).

Any repairs to components with minor damage from transit must be approved in writing by the manufacturer.

Handling

Handling should be performed by trained, able, and qualified personnel and be consistent with safe handling practices outlined by OSHA and local codes.

Review this manual and any additionally supplied certified drawing(s) to familiarize yourself with the lift points of each of the components.

Verify the integrity and lift capacity of all handling equipment/components.

When handling the housing, it is recommended to utilize spreader bars to prevent any deformation during lifting.

All lifting points are to be used.

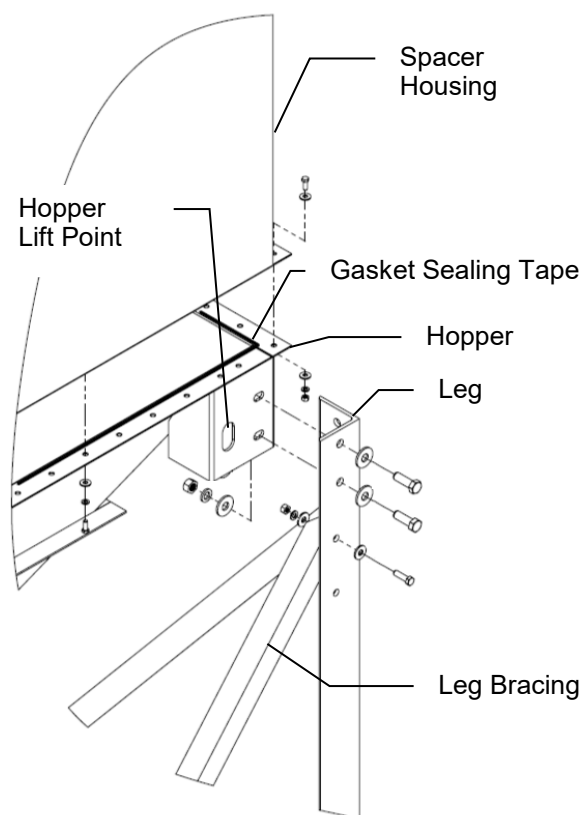
Table 1 - Recommended SAE Torque Table

Bolt Size	SAE Grade 5 Torque (ft-lb), dry
1/4-20	8.4
5/16-18	17.4
3/8-16	31
7/16-14	49
1/2-13	75
5/8-11	150
3/4-10	267

Assembly

Hopper and Legs

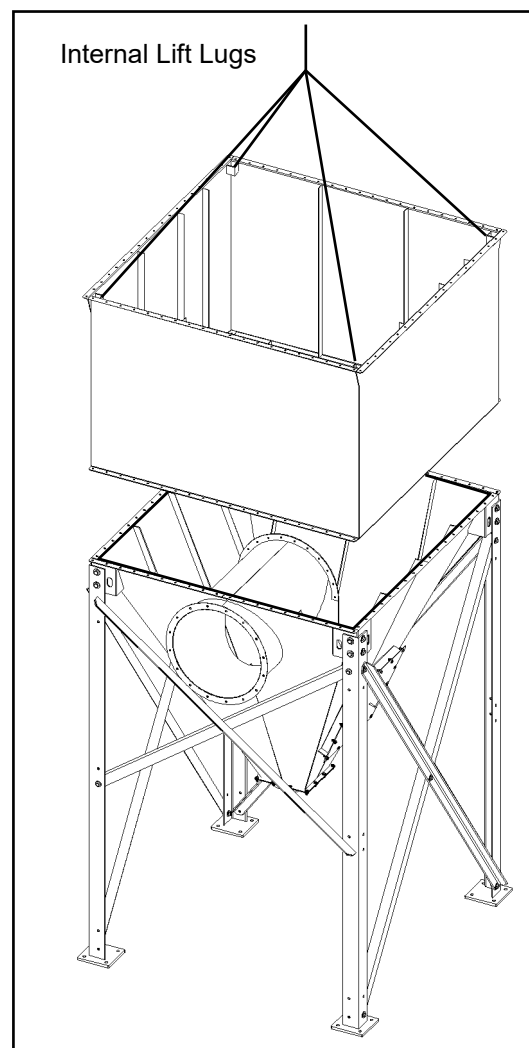
1. Lift the hopper using a crane along its four lift points.
2. Locate and fasten the legs along the corners of the hopper with the supplied hardware. Hand tighten the hardware while keeping the hopper supported with the crane.
3. Locate and fasten the leg bracings to the legs. Hand tighten the hardware.
5. Fasten the middle of the leg bracings that cross one another.
6. Install 3/4 inch diameter anchor bolts with a minimum 1 3/4 inch extension above the foundation.
7. Once the hopper and legs have been assembled and anchored, tighten all of the fasteners to the recommended SAE torque per Table 1.



Middle Housing - Hopper - Legs Assembly

Filter Housing - Middle Section

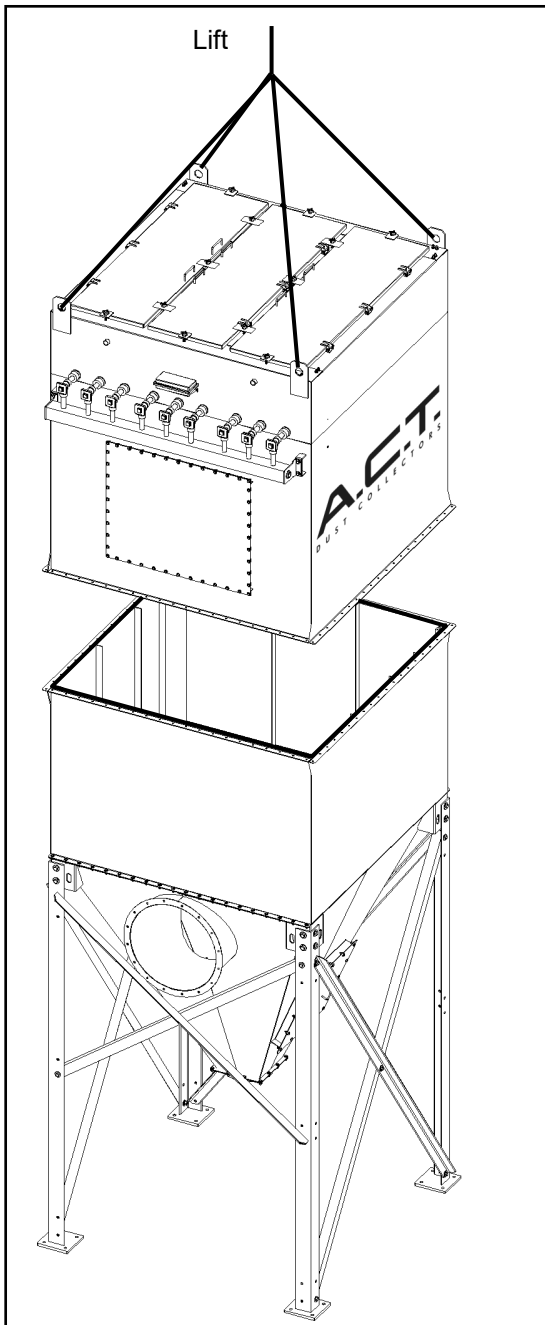
1. Apply the supplied gasket sealing tape to the hopper flange on to the inner side of the bolt pattern.
2. Lift the filter housing middle section with a crane along its four internal lift points and align it to the hopper flange (It is recommended to utilize spreader bars to prevent any deformation).
3. Fasten the housing to the hopper. Hand tightening only.
4. Once all fasteners are installed and the middle section is properly aligned, tighten all fasteners.



Middle Filter Housing

Filter Housing - Top Section

1. Apply the supplied gasket sealing tape to the middle filter housing flange on to the inner side of the bolt pattern.
2. Lift the filter housing top section with a crane along its four lift points and align it to the middle filter flange (It is recommended to utilize spreader bars to prevent any deformation).

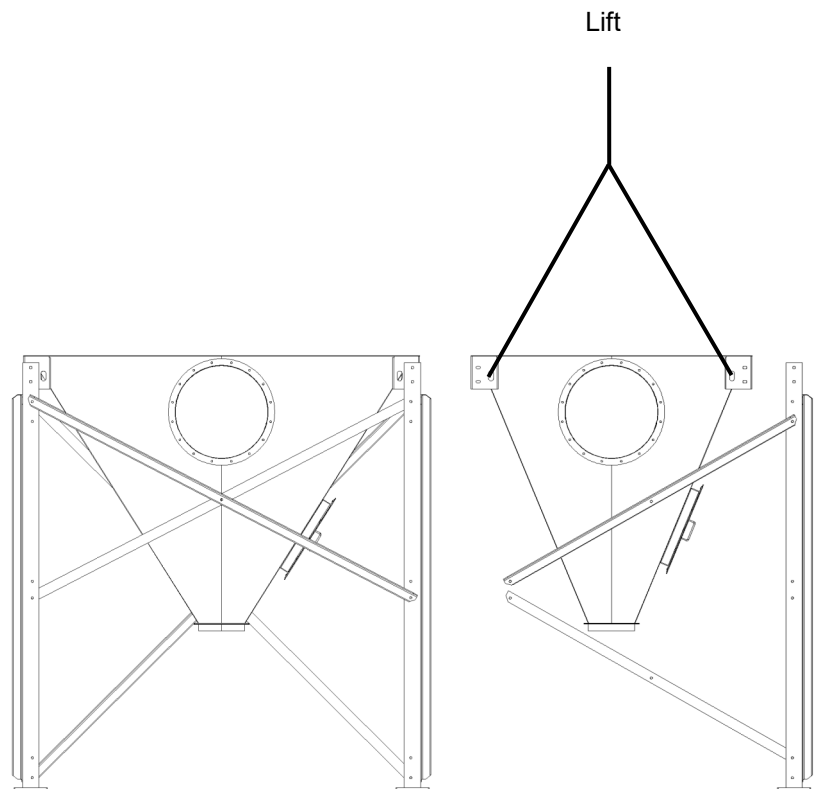


Top Filter Housing

3. Fasten the top housing section to the middle section. Hand tightening only.
4. Once all fasteners are installed and are properly aligned, tighten all fasteners.

Multiple Modules - Hopper

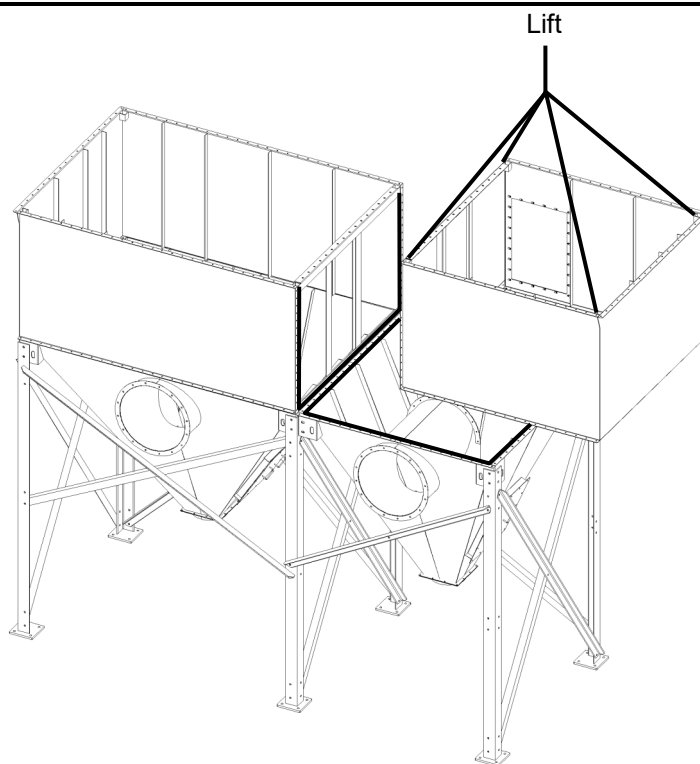
1. Completely assemble one hopper so that it is self-supporting.
2. Lift the second hopper to be installed next to the first hopper.
3. Fasten the second hopper to the first hopper along the mating side so that they share one leg.
4. Complete the leg assembly for the second hopper.



Multi - Hopper Assembly

Multiple Modules - Middle Filter Housing

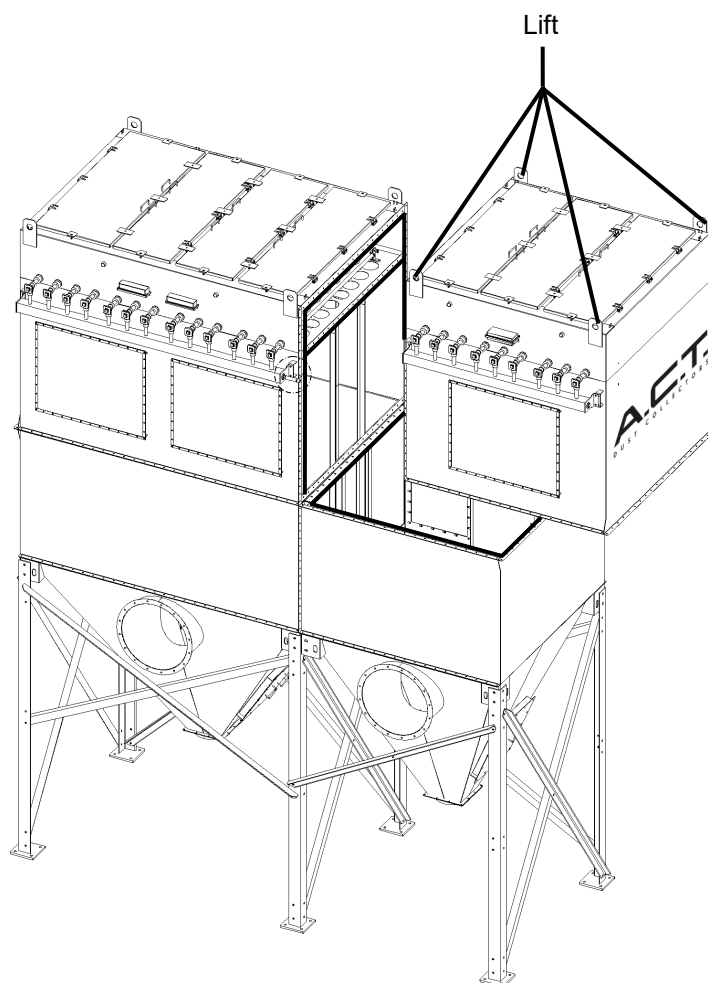
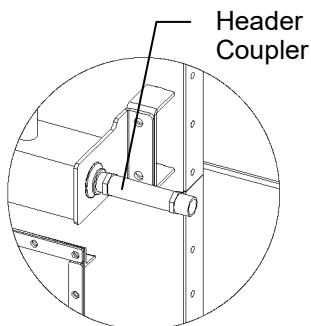
1. Apply the supplied gasket sealing tape to the hopper flange and the mating flange of the middle filter housing. Locate gasket to the inner side of the bolt pattern.
2. Lift the filter housing middle section with a crane along its four internal lift points and align it to the hopper flange (It is recommended to utilize spreader bars to prevent any deformation).
3. Fasten the housing to the hopper.
4. Lift the second middle section and align it to its respective hopper and to the mating side flange of the previous section.
5. Fasten the second middle section to the hopper and previous middle section.



Filter Housing Middle Module Assembly

Multiple Modules - Top Filter Housing

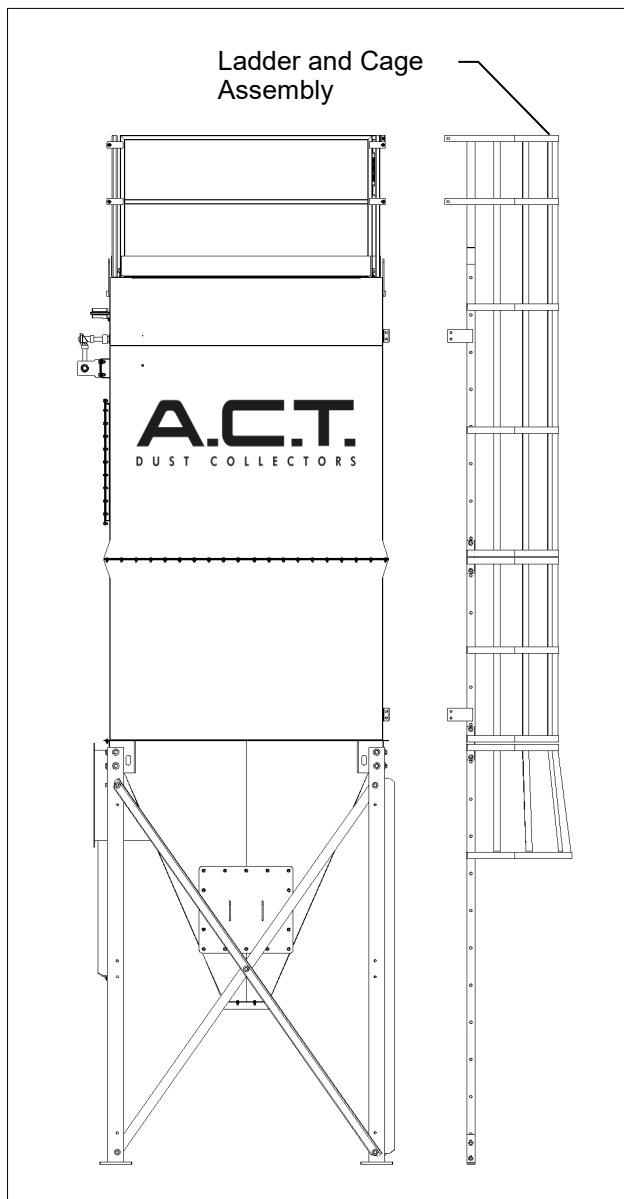
1. Apply the supplied gasket sealing tape to the middle filter housing flange and the mating flange of the top filter housing. Locate gasket to the inner side of the bolt pattern.
2. Lift the filter housing top section with a crane along its four lift points and align it to the middle filter flange (It is recommended to utilize spreader bars to prevent any deformation).
3. Fasten the top housing section to the middle section.
4. Lift the second top section and align it to its respective middle section and to the mating side flange of the previous section. While in this process of alignment, the 1" NPT header coupler should be installed to connect both header assemblies.
5. Fasten the second top section to its middle section and previous top section.



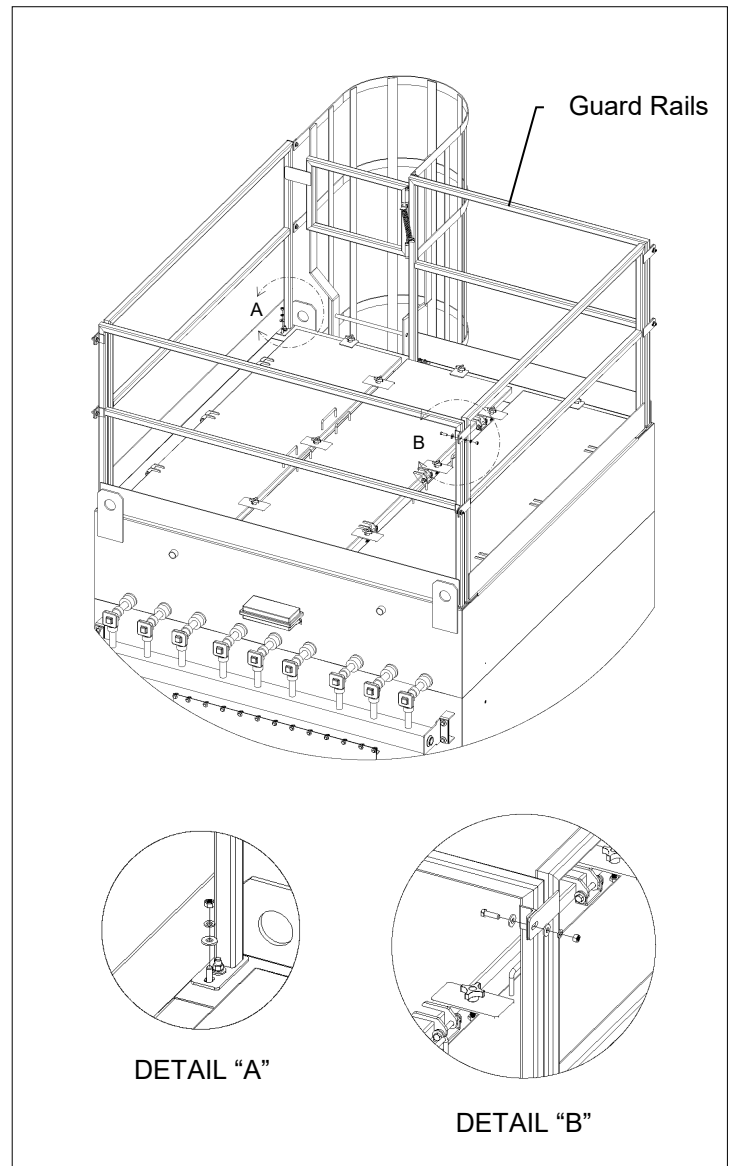
Filter Housing Top Module Assembly

Ladders and Railings

1. Ensure that the filter housing, hopper, and legs are securely tightened prior to ladder and railing installation
2. Locate, mount, and hand fasten the guard rails to the collector.
3. Fasten the guard rails together.
4. Once all guard rails have been mounted, install the ladder and cage.
5. Tighten all fasteners to the proper SAE torque.



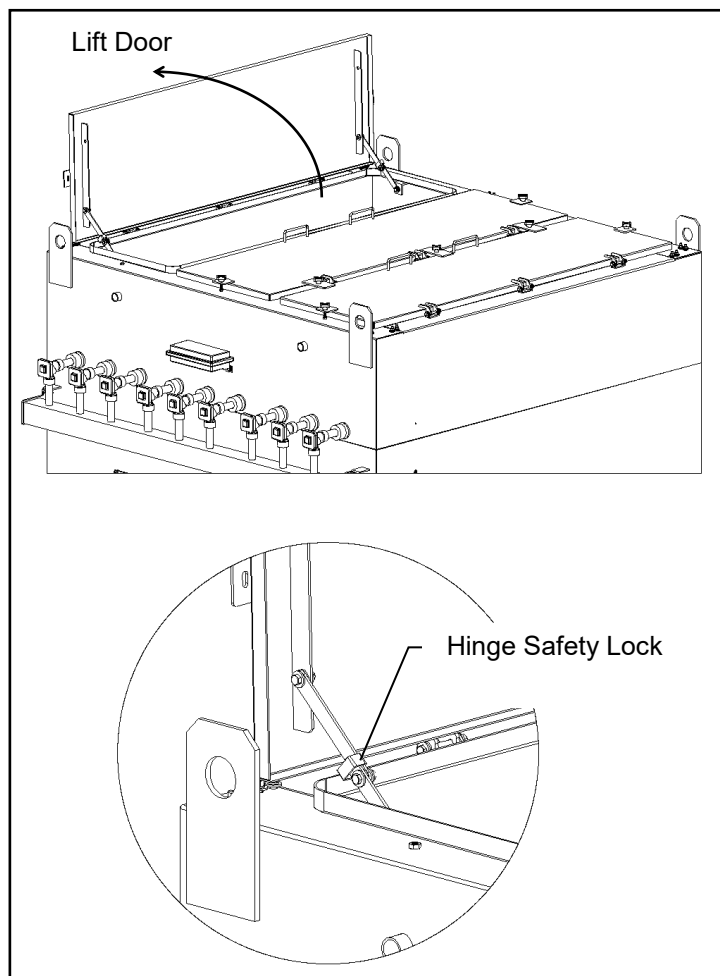
Ladder Assembly



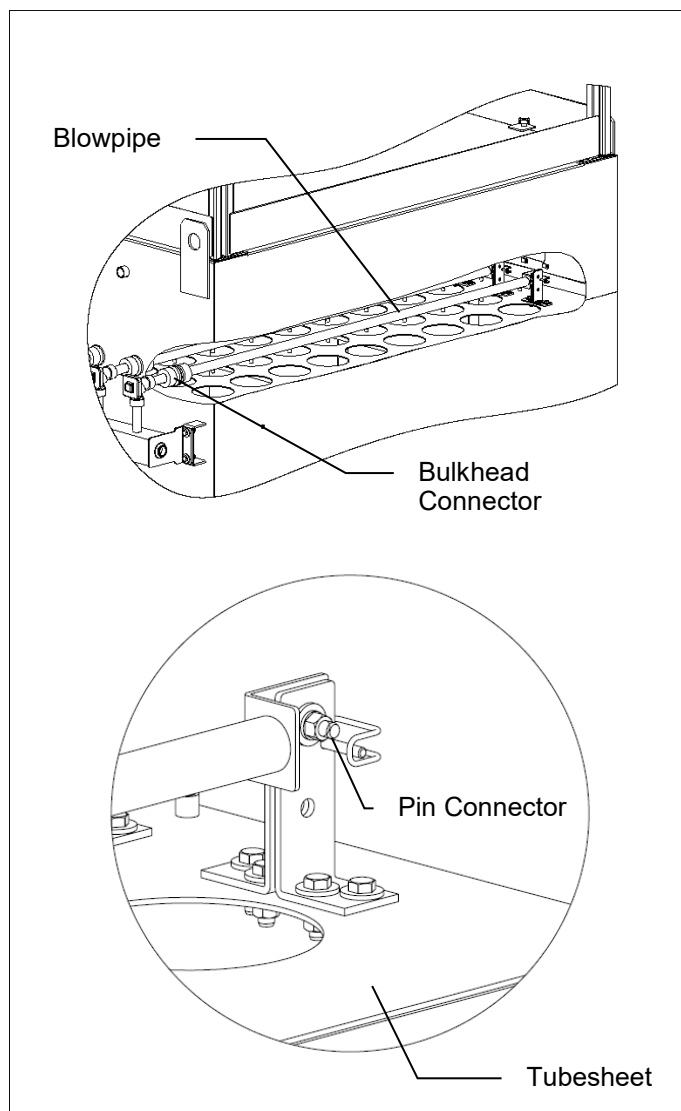
Safety Railings

Bag and Cage Installation Blowpipe removal

1. The blowpipes are installed prior to shipping and must be unfastened and pin-locked in the upright position for bag and cage installation.
2. Open the filter access doors to gain access to the clean air plenum by unfastening the knobs by hand.
3. Carefully raise the door up and secure the hinge by engaging the lock.
4. Carefully step down onto the tubesheet.
5. Loosen by hand the dresser nut on bulkhead connector from the inside
6. Undo the pin connector on the opposite end of the blowpipe.
7. Once the blowpipe is loosened, slide it back and out of the bulkhead connector and raise it up 90 degrees. Re-insert the pin connector to hold the blowpipe in its upright position.



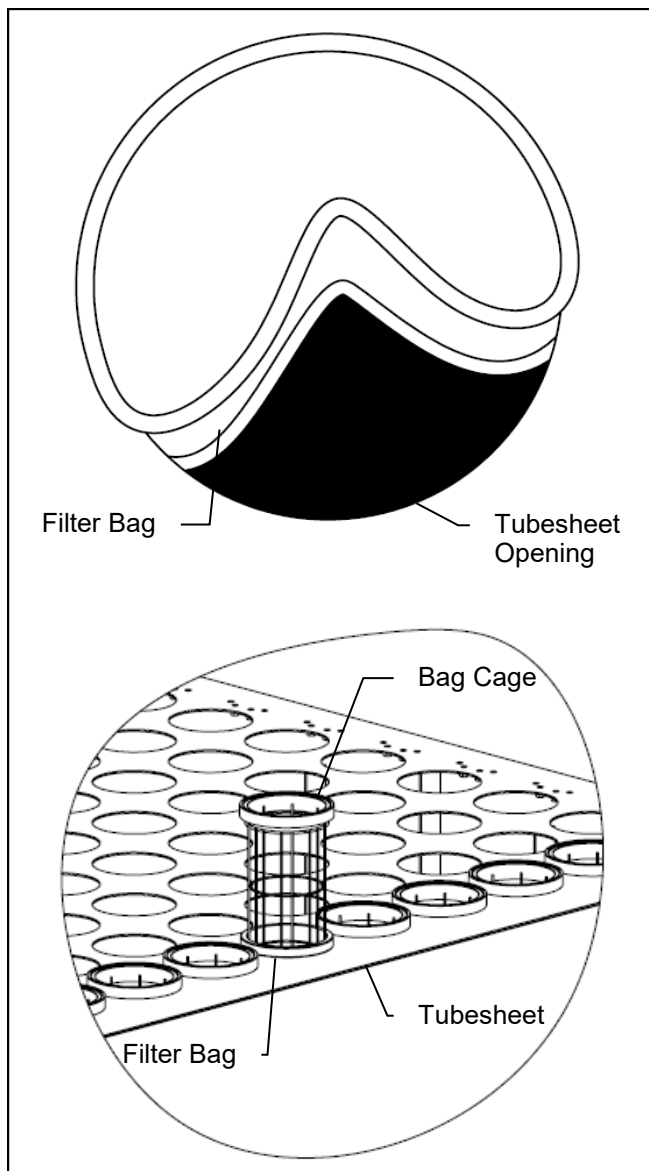
Opening and Securing
Filter Access Doors



Blowpipe Removal/Installation

Bag and Cage Installation Continued

1. Insert the filter bag into the tubesheet hole.
2. Manipulate the snap band end of the filter bag into the shape of a half moon as you insert the bag onto the tubesheet such that the tubesheet is located between the two ridges of the snap band.
3. Center the filter bag in the tubesheet hole.
4. Insert the cage into the filter bag and firmly press down to secure it.
5. Reinstall the blowpipes and secure the filter access doors



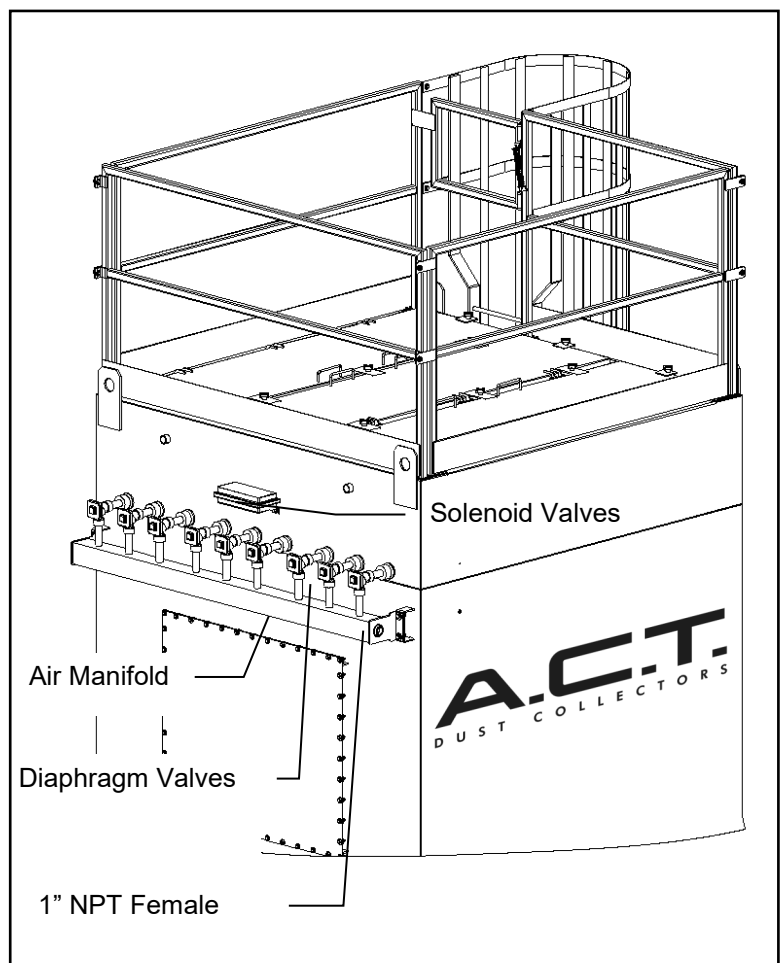
Filter Bag and Cage

Compressed Air

The supplied compressed air must be clean, dry, and oil-free. Set the compressed air pressure levels to 90-100 psi. Do NOT exceed 100 psi as damage may occur to the components.

Prior to installation, purge the compressed air lines of any dirt or buildup.

1. Install the pipe line to the air manifold. Use thread sealant tape or compound on all connections.
2. It is recommended to install a shut-off valve, pressure regulator, safety exhaust valve, and filter along the pipe line leading to the manifold.



Pulse-Jet Cleaning System

Electrical

All wiring should be done by a certified electrician and in accordance with all local and federal codes.

Refer to the job specific electrical drawing(s) located in the panel and manual binder for detailed instructions.

Fan and timing board/solenoid wiring are to be in separate conduits.

1. Fan

- Verify fan rotation by observing motor rotation from the motor end and comparing it to the rotation arrow on the fan. Another indication is poor fan performance or a lack of air movement.

2. Timer Board

- Locate the timer board as close to the dust collector as possible.
- To wire the timer board, please refer to the wiring diagram located inside the timer board enclosure.
- Once the timer board has been installed, the pressure gauge must be connected to the dust collector using customer supplied ¼" tubing (clean air plenum = " - ", dirty air plenum = " + "). If the dust collector is installed outside, the tubing should UV resistant.
- **IMPORTANT:** Prior to operating the dust collector or adjusting the settings, ensure that the down time clean feature has been properly wired. This feature will allow the dust collector to clean itself during shut down, which will aid in prolonging the life of the filters.

Timer Board Programming

Familiarize yourself with the timer board manual before programming the timer board. The table below summarizes the recommended settings. Consult with ACT Dust Collectors for specific applications.

Table – Recommended Timer Board Settings

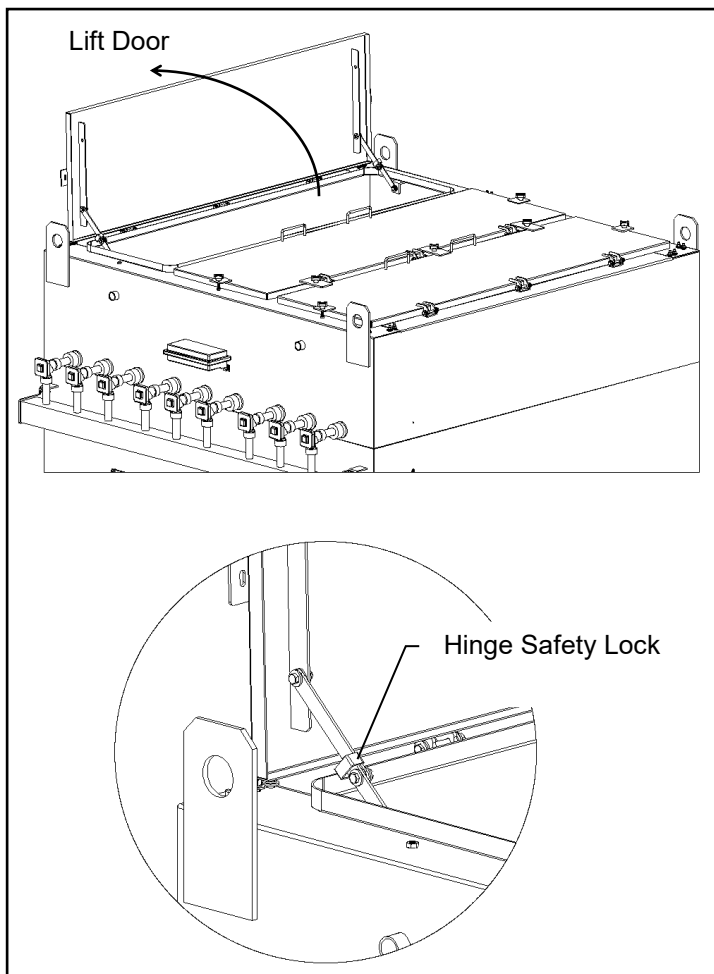
Feature	Settings
Process	Current pressure drop
Last Output	The highest output terminal value that has a wire installed in it. Terminal outputs have a range from 1-22 and are found near the bottom of the timer board.
Time Off	10
Time On	100
High Limit	1.50" above initial pressure drop (Contact Manufacturer for Questions)
Low Limit	1" below high limit
High Alarm	10 (Unless alarm is installed - Consult Manufacturing)
Low Alarm	0 (Unless alarm is installed - Consult Manufacturing)
Cycle Delay	0
Down Time Cycles	10
Auto Alarm Reset	Unless notified, leave at factory setting of 5.

Maintenance

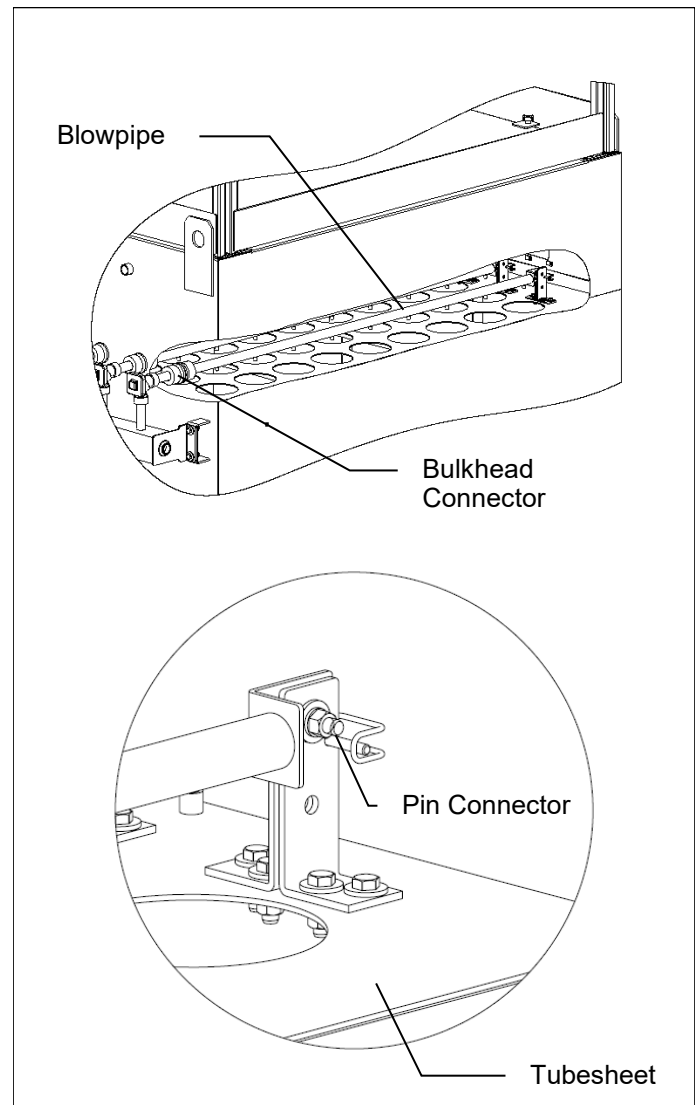
Bag and Cages Replacement Blowpipe removal

1. Prior to maintenance, lock out and tag all electrical connections.
2. Open the filter access doors to gain access to the clean air plenum by unfastening the knobs by hand.
3. Carefully raise the door up and secure the hinge by engaging the lock.
4. Carefully step down onto the tubesheet.
5. Loosen by hand the dresser nut on bulkhead

- connector from the inside
6. Undo the pin connector on the opposite end of the blowpipe.
7. Once the blowpipe is loosened, slide it back and out of the bulkhead connector and raise it up 90 degrees. Re-insert the pin connector to hold the blowpipe in its upright position.



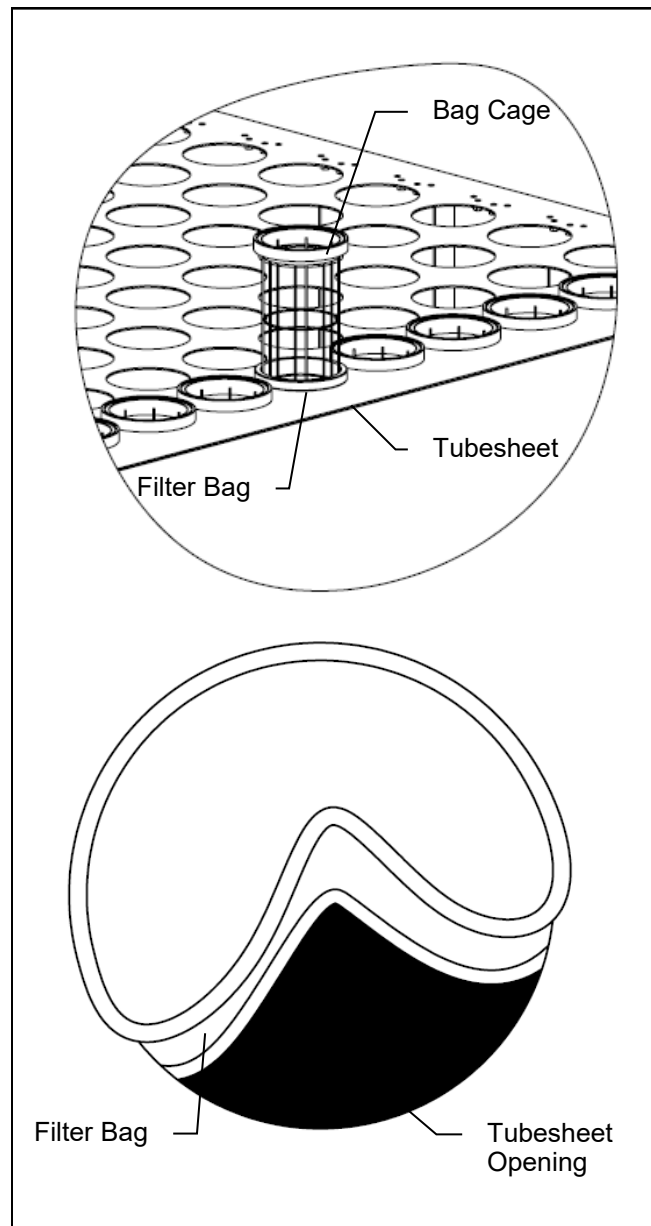
Opening and Securing
Filter Access Doors



Blowpipe Removal/Installation

Bags and Cages Replacement Continued

1. Lift the cage up and out of the filter bag
2. Manipulate the snap band end of the filter bag into the shape of a half moon and release the filter from the tubesheet until it falls down into the hopper.
3. Remove the dirty bags from the hopper through the hopper access door.
4. From the clean air plenum, insert the filter bag into the tubesheet hole.
5. Manipulate the snap band end of the filter bag into the shape of a half moon as you insert the bag onto the tubesheet such that the tubesheet is located between the two ridges of the snap band.
6. Center the filter bag in the tubesheet hole.
7. Insert the cage into the filter bag and firmly press down to secure it.
8. Reinstall the blowpipes and secure the filter access doors



Filter Bag and Cage

Troubleshooting

Problem	Probable Cause	Solution
Poor performance - not enough suction or air movement	Fan rotation in wrong direction	Rewire three phase wires to change fan rotation
	Closed damper or obstruction in airstream	Slowly open damper or remove obstruction
	VFD	Verify settings and operating speed
	System design	Verify fan performance to fan curve with airflow, static pressure, and amperage readings
		Re-evaluate system design to verify that the fan is properly sized for the application or nothing has changed since product selection (i.e. added a new weld station)
	System effects	Check along the duct system to ensure that there is no abrupt changes in airflow (i.e. inlet box with no turning vanes, mitered elbow with no vanes, etc.)
	Filters at end of life	Replace filters
High differential pressure	Not enough compressed air	Verify that the pressure is high enough for effective cleaning (set to 90-100 psi)
	Dirty filters	Activate cleaning by reducing the "high limit" or manually pulse by following the instructions in timer board manual
		Replace filters near end of life
	Not enough compressed air	Verify that the pressure is high enough for effective cleaning (set to 90-100 psi)
	Defective cleaning system	Verify solenoids, diaphragm valves, and timer board are functioning and properly wired
Motor over-amping	Fan design	Overloading radial-bladed fans may require a damper to reduce the horsepower requirements
	Electrical	Verify correct motor supply voltage
	Fan/motor sized incorrectly	Confirm system requirements with airflow measurements
		Replace fan with larger unit

Troubleshooting Continued

Problem	Cause	Solution
Zero differential pressure reading	Wrong pressure high/low pressure tubing connection	Swap the connections of the pressure reading plastic tubing on the side of the collector
	Pressure reading tubing kink or leakage	Inspect tubing for kinks or leakage
	Filters/Bypass	Verify filters are installed and that there is no bypass of dust
	Defective timer board	Replace board. (1-800-422-1316)
Cleaning system not pulsing	Solenoid	Listen for clicking noise to verify solenoids are opening/closing. Replace if defective.
		If located in frigid outdoors temperatures, a solenoid heater may be required
	Diaphragm Valve	Replace worn diaphragms. (1-800-422-1316)
	Timer board	Manually pulse by following instructions in timer board manual. Verify it is correctly installed.
		Defective. Replace board. (1-800-422-1316)
No down-time cleaning	Timer board	Verify settings on timer board
	Electrical	Call A.C.T. to verify electrical drawings and specifications. (1-800-422-1316)
Dust discharging from outlet	Filter damage	Inspect filters for tears along filter media and gaskets.
	Pulse pressure set too high	Decrease compressed air pressure.

Warranty

Air Cleaning Technology, Inc. warrants the equipment to be free from defects in materials and workmanship for a period of 10 years from the date of purchase. This warranty does not cover any damage due to normal wear and tear including, but not limited to, corrosion, abrasion, elements, and modifications. This warranty covers parts only. This warranty covers only the parts manufactured exclusively for Air Cleaning Technology, Inc. All other parts will be covered by individual manufacturer's warranty.

**For Questions and Replacement Parts
Call Toll-Free 800-422-1316**



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