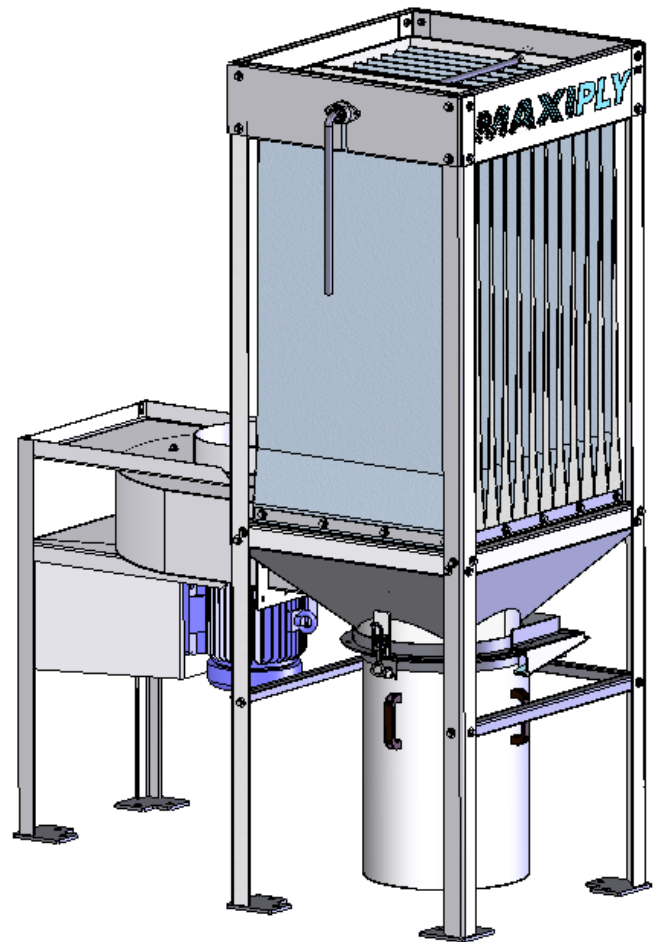




DUST
COLLECTING
SYSTEMS

Installation, operation and
maintenance manual



MAXIPLY™

**DMP-170, DMP-170S, DMP-270,
DMP-270S, DMP-350, DMP-350S,
DMP-450 & DMP-450S**

This manual is the property of the owner. Leave with unit when set-up and start-up are complete. A.Q.C., Inc, reserves the right to change design and specifications without prior notice.

Introduction

This manual refers to the *MaxiPLY* dust collector and its shaker cleaning system. It includes important information on the installation, function and maintenance of your dust collector. You must read this manual thoroughly and apply all directives. You must also inform the personnel using the dust collector about the safety measures and maintenance instructions.

Important notification

The use or type of dust to be filtered may require a spark suppressing system. Dust collectors are not automatically equipped with such a device unless stated when ordered. Contact A.Q.C. Inc. if you have any doubt as to the use of your dust collector.

Warning: Injuries or property damages may occur if the directives if the directives are not applied and/or followed

Information on the dust collector

Model :	_____	Serial number :	_____
Delivery date :	_____	Date of installation :	_____
Name of customer :	_____		
Address :	_____		
Type of filter :	_____		
Accessories :	_____		
Other :	_____		

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Presentation

The *MaxiPLY* unit is an open type dust collector with filter envelope. It is mostly designed for industrial usage, educational or for applications requiring 5000 CFM or less.

The *MaxiPLY* unit is equipped with a manual shaker system which cleans the entire filter surface without the use of compressed air or electrical motor.

The *MaxiPLY* unit may have between 170 to 450 sq. ft of filter depending on the model selected.

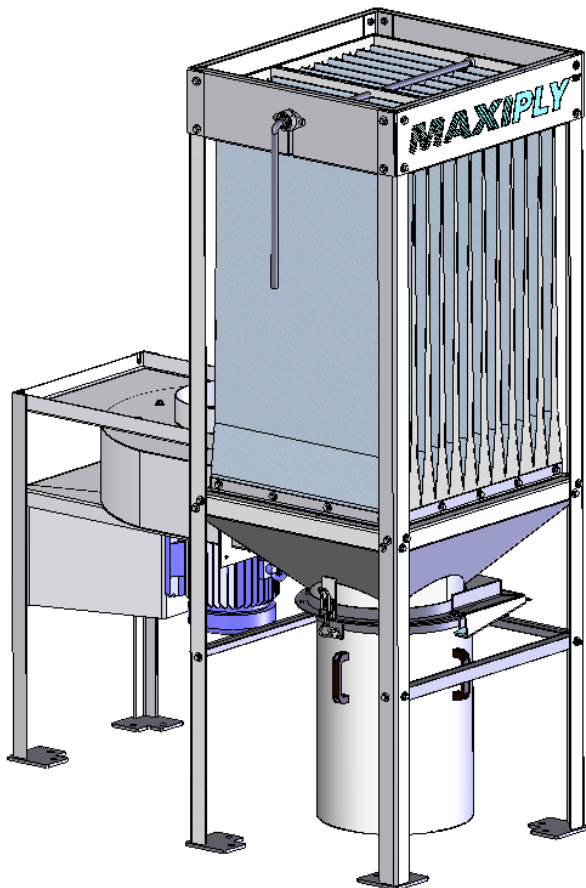


Figure 1 : Presentation DMP-170S

Every *MaxiPLY* unit includes:

- Welded steel hopper.
- 25 gallon dust bin.
- Quick-clip dust bin removal system
- 1 polyester filter envelope having between 170 to 450 sq. ft of filter surface. Maximum air to cloth ratio to be 10:1.
- Various hardware
- Handle for filter shaker cleaning action.
- Aluminum direct drive radial type fan/motor assembly.
- 3 step paint preparation: degreasing, primer and polyurethane base paint final coat.

The *MaxiPLY* unit is shipped partly assembled and some components will require field assembly. This will allow the dust collector to be assembled in an area where the access doors are narrow where fully assembled unit would not fit through the doorway frame.

The electrical connection the fan motor must be performed by a qualified electrician.

Normal usage

The *MaxiPLY* unit is designed to filter harmful dusts from the air resulting from a fabrication process. Each *MaxiPLY* dust collector is built based on the request and information supplied by the customer for a given application and should not be used for any other application unless approved by *A.Q.C., Inc.*

The dust collector should be used at intervals in order for the filter envelope to be cleaned at the end of each cycle of usage.

Warning!

Flammable and /or explosive solids and solvents consist of a fire or explosion hazard within the collector cabinet. Such matters should not be filtered unless the collector is designed to that effect an equipped with a fire extinguishing device. Special care is mandatory when the collector is used for flammable and/or explosive solids and solvents. Any object on fire or bearing a fire hazard such as sparks created by grinding/buffing or smoking material should not be allowed to enter the collector as it may cause a fire or explosion.

Functioning

During normal use, the *MaxiPLY* unit brings dust filled air from the blower toward the collector inlet. The smaller particles are pushed toward the filter envelope and the larger particles fall into the dust storage compartment. The smaller particles are stored into the filter envelope and clean air is exhausted through the four (4) opened sides of the filter cabinet

Cleaning of the filter envelope

When the collector is shut down, the operator must wait until the motor has stopped turning completely. The cleaning is made shaking by hand the pockets of the filter bag.

Manual shaker (optional)

When the collector is shut down, the operator must wait until the motor has stopped turning completely. The cleaning is made by vigorously shaking the handle on the side of the unit.

Installation

Inspection of the material

The *MaxiPLY* unit is shipped on one (1) or multiple skids. Proceed with a visual inspection upon receiving the material for any damages or missing skid(s). **NOTE:** if damages are apparent upon receiving the material, indicate so on receiving slip (freight waybill) and confirm by having the truck driver sign the waybill with any discrepancy. A.Q.C takes photos of material prior to shipping. Generally, shipment includes a skid for the collector cabinet and another one for the dust storage system. Other optional devices are shipped on separate skids.

Area of installation

1. The area chosen to install the collector should be able to support its weight, its accessories, dust storage system and ventilation ducting. The construction of a solid flat surface such as a concrete pad may be needed.
2. Position the dust collector in a way to have access to the blower and filter envelope. A 12'' (0,3 meter) work space is required around the collector for maintenance purposes.

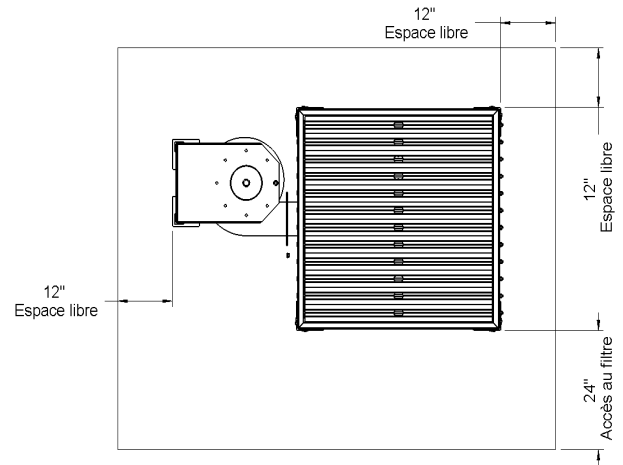


Figure 2 : Work space each side

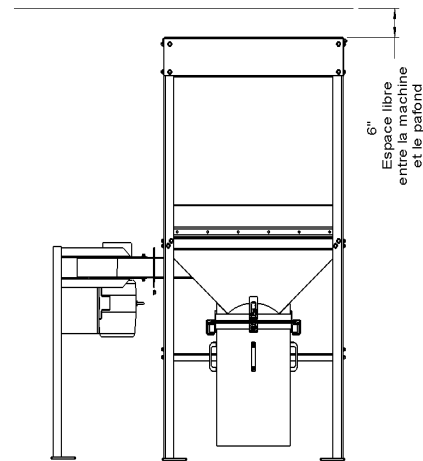


Figure 3 : Work space above collector

Warning!

Follow rules and regulations regarding an open type dust collector installed within a facility. Generally, such collector should comply with the following requirements if it is to be used for collecting combustible dusts:

1. Must not be connected to a planer or sander with mechanical feed.
2. Must be installed 20' (6 meters) or more away from any work station, walkway or emergency exit. If needed, a proper protective wall against blasts must be installed.

Assembly

Necessary tools

The following tools and equipment are recommended for the assembly of the dust collector :

- Crane or fork lift
- Swing jib
- Chains
- Shackles
- Eye bolts
- Tapered steel pins
- Ratchet set
- Spanners and/or wrenches
- Power drill
- Concrete drill bits
- Concrete anchors
- Nuts, washers and bolts
- Self tapping crews
- Silicone tubes

Installation and assembly

1. Prepare the area where the dust collector is to be installed and should be free of obstacles
2. Assemble the support legs on dust hopper and in sequence as shown.. Leg # 1 is installed front left, leg # 2 front right and legs # 3 and 4 are at the back of the unit. Attach the assembly with the fasteners supplied.

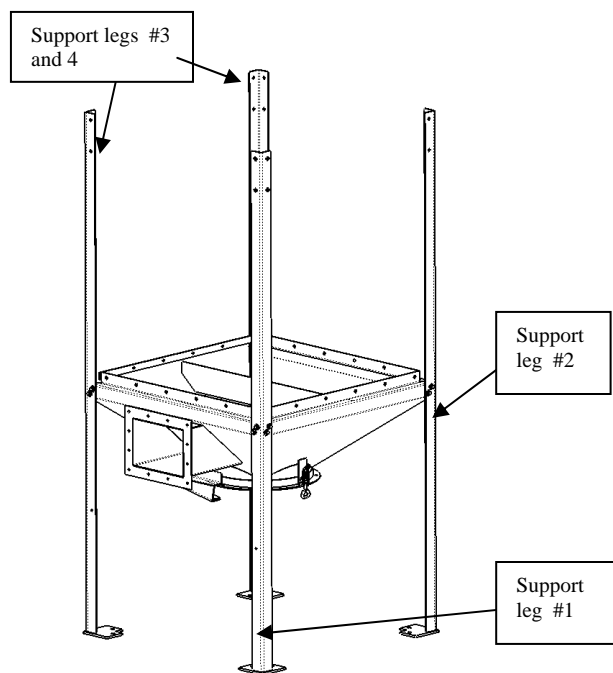


Figure 4 : Assembly step 2

3. Install the cross braces (3 pieces # 4) on the bottom section of the support legs. Use the fasteners supplied.

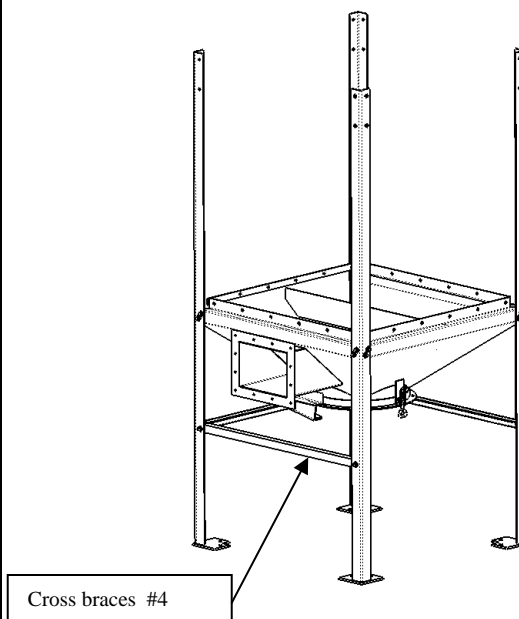


Figure 5 : Assembly step 3

4. Referring to figure 6, install top panels # 5 and 6. The panels with holes must be facing the dust collector inlet.

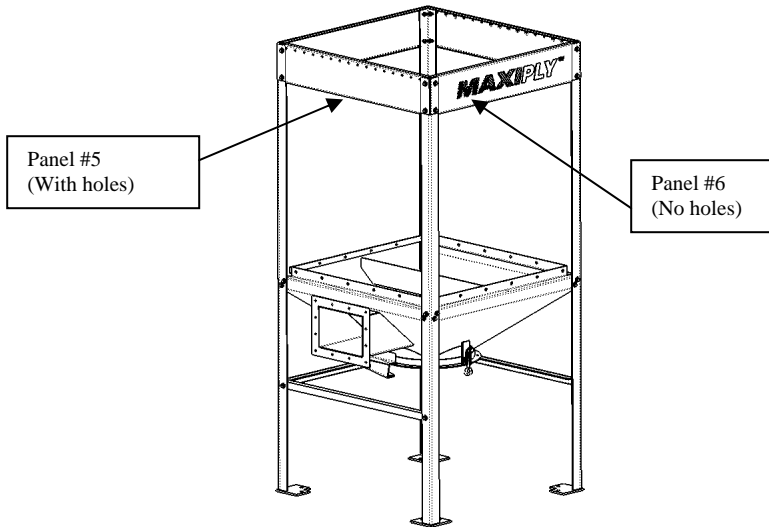


Figure 6 : Assembly step 4

5. The bottom part of the filter envelope is bolted to the filter frame section of the hopper. This is to ensure the filter envelope is not damaged during freight. at the factory. The upper part of the filter needs to be attached to the part of the dust collector frame. In order to do so, insert the rods through the filter sleeves in both # 5 panels. Tighten with the fasteners (supplied). For the installation of the optional manual shaker system, refer to the installation section of this device (page 10).

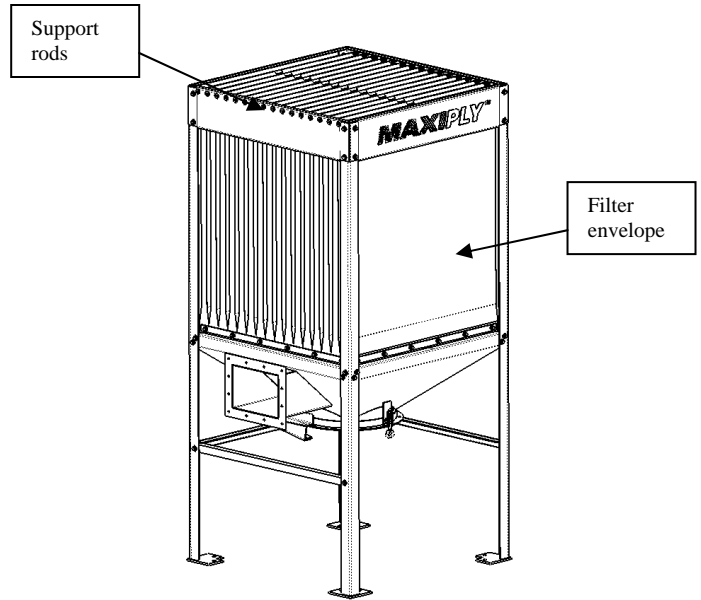


Figure 7 : Assembly step 5

6. Install the dust storage bin by inserting it into the guides underneath the hopper. Once this is done, lift the bin and clip it in place.

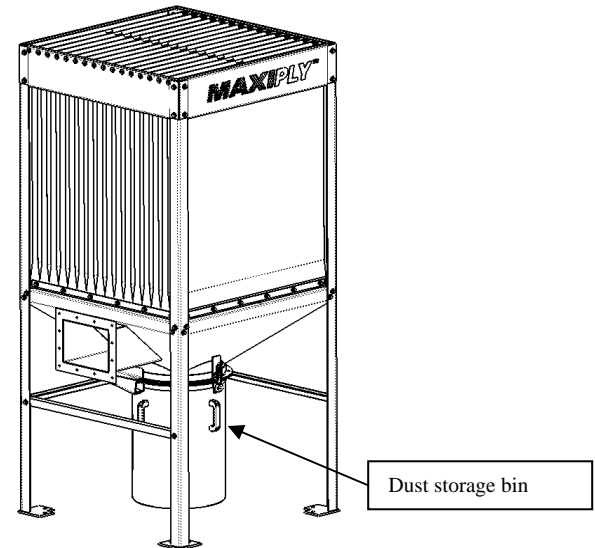


Figure 8 : Assembly step 6

7. Lift the fan assembly in way that the motor is facing toward the floor and the outlet of the fan facing the inlet of the collector. Install the fan support legs at the back of the fan assembly. Align the fan assembly with the collector inlet. Fasten the fan outlet and collector inlet together with the fasteners supplied.

Warning!

The use of a swing jib is recommended in order to avoid damages to the collector cabinet.

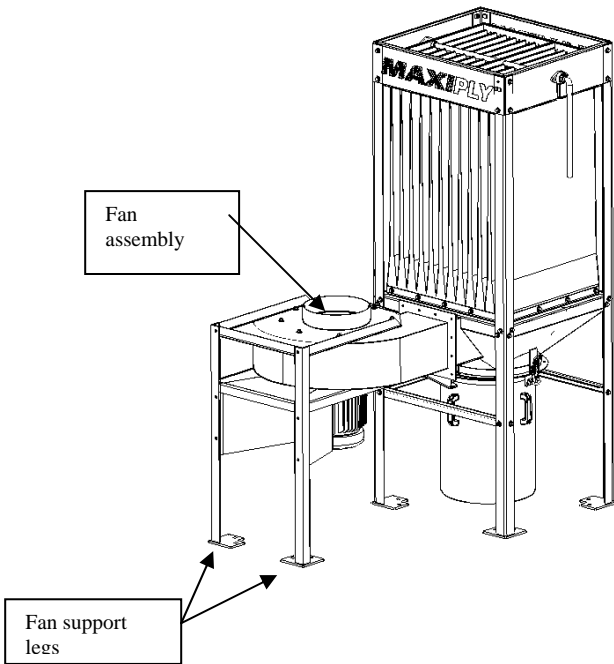


Figure 9 : Assembly step 7

8. Install a grounding wire.
9. Install anchor bolts to secure the collector to the floor. (floor anchor bolts are not supplied)
10. Final step is to connect the main ductwork to the fan inlet (top). Filter assembly with shaker

Warning!

Steps 1 through 5 mentioned above must be performed prior to installing the filter shaker frame.

1. Install the filter shaker frame by lifting it and by inserting the shaker handle through the opening in the upper filter frame. Attach the filter frame to the upper panels with the fasteners (supplied).

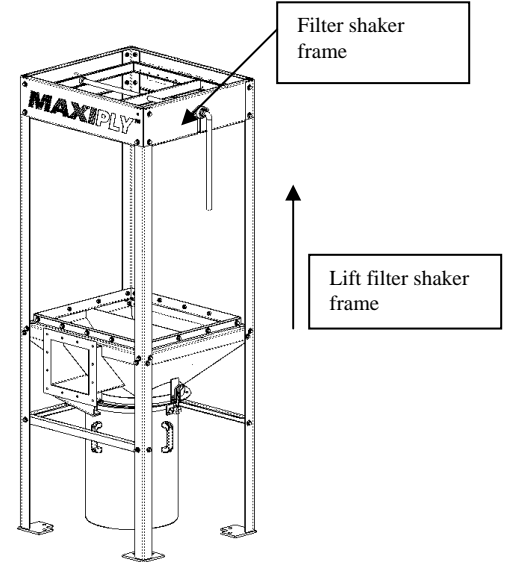


Figure 10 : Installation of filter shaker frame

2. Insert the rubber bands through the bows and attach them to the filter shaker frame. Refer to drawing below.

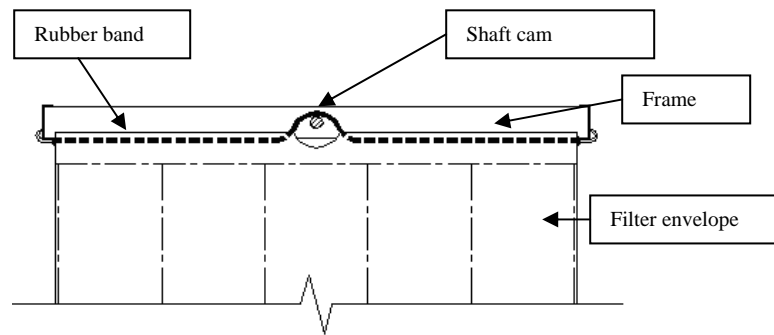


Figure 11 : Installation of rubber bands

Electrical connections

Warning!

The electrical connection must be performed by a certified electrician and by applying local building rules and regulations. For safety measure, disconnect all electrical power prior to installation.

The fan starter is not supplied by *A.Q.C. Inc.* Contact *A.Q.C. Inc.* for information on the proper starter for your dust collector.

The electrical panel may be installed directly on the *MaxiPLY* unit or remote.

Once all electrical connections have been completed, switch "ON" the motor and check for proper rotation.

Ducting systems

- The dust collector should be installed as close as possible to the machines creating the dust. This is to minimize the length of the ductwork.
- If possible, do not install short radius elbows or bends.
- Install taps or branches having a 30 degree slope or less.
- Do not install straight 90 degree taps (T's).
- Join ductwork and branches using self tapping screws and silicone. Preferred ducting system is clamp-on type not requiring any screws causing possible jams and dust build-up at the screws.

Start-up

Check list

Before starting the dust collector for the first time, the steps listed below should be followed to ensure the collector will work properly.

- Remove all objects in the vicinity of the collector inlet and outlet.
- Ensure all accessories and optional equipment are secured and installed correctly.

Shaker system

- Check if the upper filter frame is well in place and fastened correctly.

Electrical connections

Warning!

The electrical connection must be performed by a certified electrician and by applying local building rules and regulations. For safety measure, disconnect all electrical power prior to installation.

- Check if all electrical connections are watertight and proper electrical current is available.
- Check if all remote controls (if supplied) are connected to the control panel and all switches are at the "OFF" position.
- Supply power to the collector.
- Start the fan and shut it OFF immediately. Check motor rotation.

Start/Stop procedure

Starting the unit with a new filter envelope

Shut inlet and outlet dampers (if installed) at about 50% before starting the unit. Allow a few hours for dust to penetrate the filter envelope before starting the shaker system. This will result in a better filtration efficiency and longer filter envelope lifetime.

Normal start-up

Start the collector and allow dust to enter the unit.

Shutting the unit OFF

Shut down power to the collector and close all inlet and outlet dampers so that dust does not flow back into the unit. You may now access the collector for inspection, drum change or drum empty out and/or filter envelope replacement.

Safety measures

Workers/Staff

Any maintenance on the collector should be accomplished by a minimum of two (2) workers. When finished, retrieve all tools inside the collector.

All maintenance staff should wear protective clothing or apparatus such as goggles, gloves, breathing equipment or such devices before working inside the collector.

Warning!

Never perform maintenance tasks by an unaccompanied worker. All personnel must be accounted for before restarting the collector.

Electrical components

To avoid injuries, all electrical components must be shut off prior to inspection or servicing the unit. This procedure includes getting access to the filter section.

Anchor

All sections of the collector should be firmly anchored to the floor in order to prevent tipping of the unit should an explosion occur or by accidently hitting the unit with moving equipment such as lift trucks.

Processes creating spark

If dusts or collected matter is present in the collector or in the equipment connected to the collector, no activity that could create sparks such as welding should take place until the system has been shut down and thoroughly cleaned. If similar operations should be performed in the area of the filter envelope, such filter should be removed and stored in a dry area.

Maintenance

Warning!

Refer to the *safety measures* section before proceeding with the inspection or maintenance of the dust collector

A scheduled preventive maintenance program will reduce downtime situations and increase lifetime of the unit. Charts shown in this chapter refer to maintenance and procedures related in solving malfunction. Timers and delays may be modified with conclusive experimenting of the system on a particular application.

Replacing the filter envelope

The lifetime of the filter envelope is directly linked to its resistance to the dust filtered and does not necessarily require a regular filter replacement. However, if the filter envelope is torn or punctured, it needs to be replaced as soon as possible.

Remplacement of the filter enveloppe

1. Unfasten the attachment bars at the bottom of the filter envelope located on all four (4) sides of the collector.
2. Remove the upper filter envelope support rods (rubber bands for optional manual shaker system)
3. Remove the filter envelope from the lower frame.
4. Position the new filter envelope on the frame and reinsert the support rods. Ensure the fasteners are tightened and the filter envelope is well in place.
5. Reinstall the attachment bars or rubber bands for the optional manual shaker system.

Inspection and maintenance

The chart indicated below shows different inspections and the frequency at which they should be performed..

Frequency of operations	Component	Procedure
Daily	Dust collector	<ul style="list-style-type: none"> • Check for dust or smoke leaks around the air inlet and the filter envelope frame. Refer to <i>Troubleshooting on page 17</i> of this manual. • Check dust level in dust storage bin. Empty if necessary.
Weekly	Filter envelope	Check for leaks on the filter envelope. Repair or replace if necessary. Ensure the filter envelope is securely fastened.
Semi-annually/Annually	Dust collector	Examine, clean and apply paint touch-ups if necessary. If needed, lubricate the shaker and shaft rocking system using lithium base grease.

Troubleshooting

Problem	Possible cause	Solution
Smoke or dust escaping from the filter or around the filter frame	Filter envelope not installed properly	Tighten fasteners on filter frame to ensure proper seal
	Leak in filter envelope	Repair or replace filter envelope
	Damaged seal	Repair or replace seal
Drop in filter efficiency	High level of humidity within the collector	Check humidity level or relative humidity within the collector. A slightly higher humidity level may be corrected by closing some gates and by shaking the filter. If the humidity level is too high, take necessary measures to dry the the air before it enters the collector.
	Air volume too low or too high	Check for speed and motor rotation and the position of gates. Make necessary adjustments to obtain original specifications.
	Filter envelope not suited for dust to be filtered	Replace filter envelope with a filtration system suited for the dust to be filtered.
	Filtered air temperature is higher than normal	Check temperature of air to be filtered. Bring necessary adjustments to obtain satisfactory temperature.
Static electricity build up in dust collector	Check for appropriate grounding wires of collector, components and ducting system. Increase relative humidity of air to be filtered if lower than 50% R.H. until the dust to be filtered is affected. .	

Problem	Possible cause	Solution
Air volume is less than original design	Air leaks in the system	Check for leaks in the ducting and connections. Seal leaks
	Ducting and / or filter envelope obstructed	Check filter envelope for clogs, debris, etc. Check for clogs in ducting system and gates. Repair, clean or modify if necessary.
Rapid deterioration of filter envelope	Temperature is higher than normal in collector	Check filtered air temperature. Bring necessary corrections to obtain proper temperatures.
	Dust filtered is not compatible with filter envelope	Check for dust properties to be filtered. <i>A.Q.C. Inc</i> representative or consultant will guide you for compatible filter. Replace if necessary.
	Presence of humidity in filtered air	Reduce or modify humidity factor. Replace filter envelope.
	Clog in hopper section	Find the clog and clean hopper.
	Incorrect installation of filter envelope	Examine the filter envelope and locate damages caused by a faulty installation. Repair or replace filter envelope if necessary.
	Abrasion of filter envelope due to high inlet velocity	Examine the filter envelope for holes or punctures. If needed, install a diffuser at air inlet.



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