CARTRIDGE DUST COLLECTOR SYSTEM
DC 12000 ES MODEL

OPERATION’S MANUAL

REVIEW THIS MANUAL BEFORE OPERATING THE
DUST COLLECTOR SYSTEM
# TABLE OF CONTENTS

**SECTION 1:**
**GENERAL INFORMATION AND INSTALLATION INSTRUCTIONS**
1.1 EQUIPMENT VIEW AND IDENTIFICATION  
1.2 INSPECTION OF EQUIPMENT  
1.3 SETTING UP THE DUST COLLECTOR SYSTEM  
1.4 CONNECTING COMPRESSED AIR SUPPLY  
1.5 CONNECTING ELECTRICAL SUPPLY  

**SECTION 2:**
**OPERATION AND SHUTDOWN INSTRUCTIONS**
2.1 INITIAL START-UP PROCEDURES  
2.2 OPERATING THE DUST COLLECTOR SYSTEM  
2.3 EFFECTIVE OPERATIONS & CONSIDERATIONS  
2.4 SHUTDOWN PROCEDURE  

**SECTION 3:**
**MAINTENANCE AND TROUBLESHOOTING INSTRUCTIONS**
3.1 ROUTINE MAINTENANCE  
3.2 CARTRIDGE REMOVAL & INSTALLATION  
3.3 TROUBLESHOOTING  
3.4 TECHNICAL SUPPORT AND CONTACT INFO  

**SECTION 4:**
**SPECIFICATIONS AND OPTIONAL EQUIPMENT**
4.1 EQUIPMENT DATA  
4.2 OPTIONAL ACCESSORIES  

**SECTION 5:**
**MAJOR COMPONENTS AND REFERENCE INFORMATION**
5.1 MOTOR & STARTER  
5.2 CENTRIFUGAL FAN  
5.3 ELECTRICAL COMPONENTS & WIRING SCHEMATICS  
5.4 LIFTING DIAGRAM  

**SECTION 6:**
**WARRANTY AND SERVICE NOTES**  

**SECTION 7:**
**SPARE PARTS LIST**
SECTION 1:
GENERAL INFORMATION AND INSTALLATION INSTRUCTIONS

1.1 EQUIPMENT VIEW AND IDENTIFICATION

SPECIAL INFORMATION ABOUT THE CARTRIDGE DUST COLLECTOR SYSTEM

Each Dust Collector System is built with standard equipment options, but also can be built with specific customized features. Therefore, some of the information described in this manual may not apply to your particular equipment.

Dust Collector System
Model: DC 12000 ES  Serial: DCS-100??

This equipment weights 7,000 LBS. (Empty) Caution must be used during lifting and/or transportation.

This equipment is 9’-10” in height, in the stowed position. Caution must be used for overhead clearances.

This unit has the following customized features:

☑ Standard Equipment Options
☐ 40HP, Premium Efficiency motor (480 Volt)
☐ 40HP Rated Motor Starter, NEMA 3R
☐ HDBI-200 Direct Drive Fan
☐ Run Light, Start Button, Local/Off/Remote Switch
☐ Lift Cage, 4”x12” Fork Pockets

It is recommended that this manual should stay near The Dust Collector System for future referencing purposes.
1.1 EQUIPMENT VIEW AND IDENTIFICATION

REVIEWS THIS MANUAL BEFORE OPERATING THE DUST COLLECTOR SYSTEM

MODEL #: ______________________
SERIAL#: ______________________
DATE PURCHASED: ______________

IDENTIFICATION LABEL LOCATION

WARNING!
This manual contains important materials for the owner and/or operator(s) to know and understand. The information in this manual relates to Protective Personal Safety and prevention of potential equipment problems. It is the responsibility of the owner/Operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help distinguish this information, use symbols and definitions below. Please read the manual paying attention to these sections.

Failure to read this manual and its safety instructions is considered misuse of Equipment and may lead to serious injury or death.
Important Safety Precautions and Warnings:

When using The Dust Collector System, always follow basic safety precautions, including but not limited to the following:

**WARNING!** This symbol appears when a potentially hazardous safety condition exists that could cause personal injury or death. These hazards are not always apparent to trained mechanics.

**WARNING!** It is recommended that **ALL** Owners/Operators and personnel working around or with The Dust Collector System read and understand this manual PRIOR to operating the equipment.

**WARNING!** **ONLY** authorized and trained personnel should operate this equipment.

**WARNING!** This manual should be kept near The Dust Collection System for future referencing.

**WARNING!** **ALWAYS** use Proper Protective Equipment (PPE) when operating or working near The Dust Collector Equipment. Protective footwear, hearing protection, and safety glasses are recommended, but not limited to, during operations.

**WARNING!** Read and follow all safety decals located on the equipment. Keep in good condition. Replace damaged or missing decals accordingly. Replacements are available from manufacturer.

**WARNING!** **ALWAYS** be prepared for Emergencies! Have phone numbers and first aid items readily available and know your companies designated Emergency Action Plan.

**WARNING!** **NEVER** start or operate this equipment without the proper safety guards or protective parts in place. Failure to do so could cause serious personal injury, death, and/or property damage.

**WARNING!** **ALWAYS** disconnect and lockout-tagout power PRIOR to servicing or performing any and all maintenance on The Dust Collector Equipment. Failure to do so could result in serious personal injury, death and/or property damage.

**WARNING!** **NEVER** operate this equipment with unguarded inlet(s) or outlet(s). Failure to do so could cause serious personal injury, death, and/or property damage.

**WARNING!** The Dust Collector should be secured in the stowed position during ANY/ALL; including but not limited to lifting or transportation of this equipment.
**WARNING!** Use caution while transporting equipment, make sure equipment and its components are secured properly.

**WARNING!** Lift the unit with a fork lift or crate that is rated and capable of lifting the weight of The Dust Collector System. This will allow the Equipment to adjust out of the stowed position.

**WARNING!** The Dust Collector System is considered a Crushing Hazard while being lifted and could cause severe personal injury, death, or property damage.

**WARNING!** Personnel responsible for adjusting the telescoping legs should NEVER walk and/or stand under the equipment while being lifted.

**WARNING!** NEVER adjust weight bearing extended telescoping legs or the pins securing them when the Dust Collector System is standing in the lifted operations position.

**WARNING!** The telescoping legs on Skid Style Dust Collectors are considered a pinch point hazard. Use extreme caution while adjusting.

**WARNING!** Use caution while setting lifted unit down at desired work area. Go slow, keeping hands, feet, personnel, and work area clear from underneath lifted Dust Collector. If dropped or set down quickly while lifted, 

**WARNING!** Make sure **all** telescoping legs evenly bear weight and are properly pinned.

**WARNING!** When setting up for operations, make sure the unit is set-up on a solid level surface. If surface conditions are not level or solid, take proper precautions with planks or plywood for a more secure and safe work area.

**WARNING!** NEVER lift or transport The Dust Collector System with the collection hopper full. Dust Collector should ONLY be lifted or transported while the collection hopper is **EMPTY**.

**WARNING!** NEVER open the filter enclosure access doors while The Dust Collector is operating. Failure to keep doors close could cause serious personal injury.

**WARNING!** Collection hoppers and Filters alike may contain harmful materials. Take the proper steps and precautions to clean, dispose or change the filter media. Use Proper Protective Safety Equipment (PPE), it is recommended to wear a respirator while working with filters, in the filter housing enclosure, or in/around the collection cone area.

*****ALWAYS following OSHA’s State and Federal Guidelines.***
**WARNING!** NEVER enter Filter Housing Enclosure without disconnecting all power and following proper lockout-tagout procedures PRIOR to servicing or performing any and all maintenance.

**WARNING!** The Filter Housing Enclosure is considered a Confined Space Hazard, NEVER enter without disconnecting all power and following proper lockout-tagout procedures PRIOR to entering. It is recommended, to always tell and have someone at the opening in case of injuries inside space.

**WARNING!** ALWAYS empty the Collection Hopper(s) after operations, taking the proper steps and precautions to clean out and dispose of the waste.

***ALWAYS following OSHA’s State and Federal guidelines.***

**WARNING!** Work in well-ventilated areas and DO NOT use The Dust Collector on explosive materials and/or gases.

**WARNING!** ONLY authorized and trained personnel should open the electrical enclosure. Use caution, electric shock can cause serious personal injury, death and/or property damage.

**WARNING!** Fans are designed to work by creating suction and air pressure which can be hazardous, NEVER stand directly in front of the inlet(s) and/or outlet(s) while unit is on and operating.

- **Inlet-** Is an opening or entrance for intake. Personnel or solid objects in close proximity to a fan inlet can be overcome by the created intake suction, and drawn into the fan.

- **Outlet-** Is an opening, or exit through which something is let out. Personnel in close proximity to a fan outlet can be subject to debris become dangerous projectiles upon being exhausted out.

**WARNING!** NEVER operate, service, perform maintenance, or attempt to touch fan with guards removed. Fan blade can cause serious personal injury, death and/or property damage.

**WARNING!** NEVER operate the fan with a non-ducted inlet and/or outlet. If the blower inlet and/or outlet is non-ducted, it is the user’s responsibility to install an inlet and/or outlet guard.

**WARNING!** Even when the power supply is locked out, fans may cause injury or damage if the impeller is subject to “wind-milling,” which is the fan blade and drive components turning due to a draft system. To guard against this hazard, secure fan blade, allowing no rotational movement.

**SAVE THESE INSTRUCTIONS!!**
1.1 EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Lift Eyes</td>
<td>Quantity 4</td>
</tr>
<tr>
<td>B</td>
<td>Air Manifold with Diaphrags</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Filter Area</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Magnehelic Gauge</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Fan Outlet Damper</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Compressed Air (IN) Regulator</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Fan Housing</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Instrument Panel</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Boltable Fan Access Guard</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Collection Hopper</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Fork Pockets</td>
<td>Quantity 4</td>
</tr>
<tr>
<td>L</td>
<td>Telescoping Legs with Pins</td>
<td>Quantity 4</td>
</tr>
</tbody>
</table>
1.1 EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Lift Eyes</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Air Manifold with Diaphrams</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Filter Area Housing Enclosure</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Fan Outlet Damper</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Fan Outlet Damper Manual Lever</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Instrument Panel</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Fan Housing</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Electric Motor</td>
<td></td>
</tr>
</tbody>
</table>
1.1 EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>16” OD Round Inlets w/ Weather Covers</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Filter Area Housing Enclosure</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Hinged Filter Access Doors with Quick Release Handles</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Collection Hoper</td>
<td>Quantity 2</td>
</tr>
<tr>
<td>E</td>
<td>Telescoping Legs</td>
<td>Quantity 4</td>
</tr>
</tbody>
</table>
1.1 EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Instrument Panel</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>ON/ OFF Lever</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Red Run Light</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Green Start Button</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>ON/ OFF Remote Switch</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>ON/OFF Filter Pulsing Switch</td>
<td></td>
</tr>
</tbody>
</table>
EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Air Manifolds With Diaphrams</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Fan Outlet Damper</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Fan Outlet Damper Manual Lever</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Fan Housing</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Filter Area</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Collection Hopper</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Electric Motor</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Dust Collector ID Name Plate</td>
<td></td>
</tr>
</tbody>
</table>
1.1 EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Air Manifold Regulator and Gauge</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Air Pulsing Diaphragm</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Air Manifold Drain Valve</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>16” O.D. Round Inlets with Weather Covers</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Hinged Filter Access Doors with Quick Release Handles</td>
<td></td>
</tr>
</tbody>
</table>
1.1 EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Collection Hopper</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Adjustable Drum Cover Manual Handle</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Stainless Steel Slide Gate</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Adjustable Drum Cover and 10’ Discharge Hose</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>55 Gallon Drum</td>
<td></td>
</tr>
</tbody>
</table>
1.1 EQUIPMENT VIEW AND IDENTIFICATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Fan Outlet Damper</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Air Manifold</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Fan Outlet Damper Manual Lever</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Fan Housing</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Air Manifold Drain Valve</td>
<td></td>
</tr>
</tbody>
</table>
1.2  INSPECTION OF EQUIPMENT

Please inspect the equipment for proper parts, orientation, size, and condition prior to accepting shipment.

Notify the manufacturer immediately if there are any concerns in the equipment that you are receiving.

1.3  SETTING UP THE DUST COLLECTOR SYSTEM

The Dust Collector System should be set up in an area where the ground is solid and level. Make accommodations so the work area will be safe and secure.

Attach the appropriate size duct hose to the inlet connections
Unpin all four of the telescoping legs.
Lift the units with a fork lift or crane that is rated and capable of lifting the weight of the equipment. Lifting diagrams are displayed on the equipment and in the manual.
When the unit is lifted about 40" high there will be a second set of holes. Align the outer holes with the inner square tube holes and pin thru both, using the supplied 1” dia. hitch pin and clip.
Install 55-gallon drum under the collection hopper.
Make sure the slide gate is in the closed position.
Apply pressure down on the drum cover handle and pull out the safety catch so the lid can lower down on the drum opening.

**Always use proper protective equipment when operating equipment. Hearing protection, safety glasses, gloves, and respirator are recommended. Follow OSHA, State and Federal guidelines.**
1.4 CONNECTING COMPRESSED AIR SUPPLY

**Customer supplied hook-up connection:**

The compressed air supply line should be a minimum of 3/4” diameter or a recommended 1” diameter rated for the PSI that is being supplied from the compressor source. The airline must be free of dirt, oil, and water. Purging the airline prior to installation is recommended.

A clean, dry and oil-free air supply is required for proper operation. The air pressure will need to be regulated at 80-PSI max. (Factory set). If excessive moisture is present in the air system, an after cooler, desiccant dryer and in line air filter are strongly recommended. For cold climate, outdoor installations this will be mandatory to insure proper operations.

- Close air manifold drain valves
- Purge and attach air supply line
- Open supply shut-off valve
- Regulate to 80-PSI max.
- Make certain there are no air leaks. Tighten fittings where required.

1.5 CONNECTING ELECTRICAL SUPPLY

- Consult certified electrician for installation hook-up. Follow the proper electrical codes and laws that apply.

- Optional cam lock connections can be supplied for electrical hook-up to NEMA enclosure.
  *See Picture to Identify an example of Optional Cam Lock Connection Feature.*

- The Dust Collector System will need the appropriate power supplied to the Main Instrument Panel (480 volts, 3 phase wiring).

- The Dust Collector System can run in hand or auto mode. When “Hand Mode” is selected The Dust Collector can operate from the Main Instrument Panel only. When “Auto Mode” is selected the dust collector can operate from a Remote Panel only. Electrical Schematics are supplied with the equipment and in the manual for proper connections.
SECTION 2:  
OPERATION AND SHUTDOWN INSTRUCTIONS

2.1 INITIAL START-UP PROCEDURES

The following procedures need to be followed prior to operating The Dust Collector System. Refer to these Sections:

- Section 1.3 SETTING UP THE DUST COLLECTOR SYSTEM
- Section 1.4 CONNECTING COMPRESSED AIR SUPPLY
- Section 1.5 CONNECTING ELECTRICAL SUPPLY.

Filter pulsing timer set-up

Make sure the electrical power supply to The Dust Collector System is “off” before changing the timer settings.

- Set the timer “off-time” to approximately 10 seconds
- Set the timer “on-time” to 150 milliseconds

Initial set-up

The electrical system needs to be checked. Make sure the electrical supply that will run The Dust Collector System is turned “on”. On the electrical enclosure, the service disconnect handle needs to be put to the “on” position. The following steps will need to be verified:

- Make sure the regulated air pressure is set to 80-PSI.
- Turn the filter pulsing switch to the “on” position. Verify that all the pulsing solenoids and diaphragm valves are operating in their timed sequence and repeating. After verification turn the filter pulsing switch to the “off” position.
- Check to see if the manual damper valve is in the “closed” position.
- Put the 3-position selector switch to the “hand” position. Push the “start” button, this will start the fan. Verify the fans rotation by seeing what way the shaft is spinning. The correct rotation for the fan/motor is counter clockwise (CCW). Labels on the fan are indicating the proper rotation also. Make sure the fan is spinning freely with no obstructions and vibration free. Once rotation is verified and the electrical phasing is correct, turn the 3-position selector switch to the “off” position.

Note: The “auto” position on the selector switch is only used for remote operation. This option can be hooked up for remote location starting. Schematics are provided with the equipment and in this manual for proper connection or contact the manufacturer for hook-up details.

- The Dust Collector System is now set-up and ready for operation.
2.2 OPERATING THE DUST COLLECTOR SYSTEM

Operation with new cartridges

☐ When the cartridges are new, The Dust Collector System will need to be operated with the manual fan damper partially opened (about 30% open). This will help prevent cartridge damage and overloading the fan motor at start-up.

☐ When ready to filter dust, start the fan motor. Put the 3-position selector switch to the “hand” position and push the “start” button. Note: **For auto operation** put the 3-position selector switch to the “auto” position and push the start button on the Remote Instrument Panel.

☐ Maintain the partial air volume flow rate until the differential pressure across the cartridges reaches 3" WG, as indicated on the magnehelic gauge. Cartridges will perform more efficiently when there is a thin layer of dust on the filter media. Running The Dust Collector System with the filter pulsing switch in the “off” position will expedite the differential pressure range.

☐ Slowly move the manual fan damper handle to the fully open position (100% open) and start the filter pulsing sequence (turn the filter pulsing switch to the “on” position).

Operation with older cartridges

**Always use proper protective equipment when operating equipment. Hearing protection, safety glasses, gloves, and respirator are recommended. Follow OSHA, State and Federal guidelines.**

☐ Slowly move the manual fan damper handle to the fully open position (100% open).

☐ When ready to filter dust, start the fan motor. Put the 3-position selector switch to the “hand” position and push the “start” button. Note: **For auto operation** put the 3-position selector switch to the “auto” position and push the start button on the Remote Instrument Panel.

☐ Start the filter pulsing sequence (turn the filter pulsing switch to the “on” position).
Operation of collection hoppers

☐ Open slide gate on the discharge drum to empty the collection hopper. Once the 55-gallon drum is full, close the slide gate. Raise the drum cover by pulling down on the handle and locking the safety catch. The drum cover will then be locked into its highest position.

☐ Remove, cover, and dispose of drum.

☐ Install new drum under collection hopper.

☐ Lower the drum cover by slightly pulling down on the handle to remove the safety catch. Let the downward pressure off of the handle and the weight of the drum cover will let the handle go upward and the drum cover will lower onto the 55-Gallon drum.

☐ Repeat when needed.

2.3 EFFECTIVE OPERATIONS & CONSIDERATIONS

The Dust Collector System is designed to operate the most efficient by maintaining 4” WG pressure drop across the cartridges. The magnehelic gauge on the side of the unit monitors the differential pressure. Depending on the characteristics of the dust being collected the pressure drop range may need to lean towards the 6” WG pressure drop to operate effectively.

☐ When the proper conditions apply such as a constant dust load, moisture, and temperature, etc., the differential pressure will drop as the unit’s air volume is decreased. (Manual outlet damper)

The following may or may not drop or decrease the differential pressure:

The filter pulsing timer “time-on” is increased.

The filter pulsing timer “time-off” is decreased.

The air manifold pressure is increased.
2.3 EFFECTIVE OPERATIONS & CONSIDERATIONS

MAGNEHELIC DIFFERENTIAL PRESSURE GAUGE
MOBILE OR SKID MOUNTED DUST COLLECTOR

This magnehelic gauge indicator ranges between 0" to 10" on the water column. The magnehelic gauge will monitor the dust collector filters and show the differential pressure between the clean side and the dirty side of the filter. A lower reading on the water column indicates a cleaner filter and a higher reading indicates dirty or plugged filters.

With new (or clean) filters, the gauge should read between 0.5" – 1.5" on the water column. Figure A shows the dust collector with new (or clean) filters.

The normal operating range should be between 1.5"- 6" on the water column. Figure B shows the normal operating range.

As the filters become increasingly dirty, the indicator will move higher on the water column. When the gauge reaches 8” or more on the water column, the filters in The Dust Collector need to be inspected and/or replaced, as shown in Figure C.

Things to Consider:

A low-pressure drop can be obtained but will shorten the cartridge life and use more than the normal amount of compressed air. Higher maintenance costs could be the result with the amount and time of air being increased to the filter pulsing.

A high-pressure drop can be obtained but will make the fan work harder and use more horsepower, which creates a higher amp draw on the electric motor. Higher electric costs could be the result and also reduced air volume through The Dust Collector System.
2.3 EFFECTIVE OPERATIONS & CONSIDERATIONS

Do not exceed 80-PSI pressure on the air manifolds. Failure to comply with these recommendations will result in cartridge or diaphragm failure.

Increasing the filter pulsing timer “time-on” will also increase the amount of compressed air used and for most applications this will not change the efficiency.

For optimum performance, from The Dust Collector System, it is key to keep a constant range of 4”-6” WG pressure drop across the cartridges. This will insure a coating of dust on the cartridges to work properly and have a longer life expectancy. If the cartridges do not have a coating or layer of dust covering the filter media there is a chance of dust emissions to pull thru, usually on initial start-up of new cartridges.

<table>
<thead>
<tr>
<th>Figure</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Shows the magnehelic gauge indicating “clean” or “new” filter conditions</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Shows the magnehelic gauge indicating normal operating range</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Shows the magnehelic gauge indicating “dirty” conditions requiring inspection/maintenance</td>
<td></td>
</tr>
</tbody>
</table>

Figure Identification

A Shows the magnehelic gauge indicating “clean” or “new” filter conditions

B Shows the magnehelic gauge indicating normal operating range

C Shows the magnehelic gauge indicating “dirty” conditions requiring inspection/maintenance
2.4 STANDARD SHUTDOWN PROCEDURE

☐ In Local mode: Turn 3-position switch to the “off” position on the Main Instrument Panel. This will shut-off power to the fan motor.

In Auto mode: Push the Stop button. This will shut-off power to the fan motor.

☐ Allow the filter pulsing timer to cycle 2 or 3 more times before turning the “filter pulsing” switch of the “off” position. This will allow the cartridges to have some additional cleaning time. Doing this each time for shut down will help cartridge life. Cleaning the cartridges while the fan is in the “off” position will also help take care of hygroscopic or sticky dusts that tend to cling on the pleats.

☐ Move the main disconnect lever, located on the panel, to the “off” position.

☐ Open slide gate on the discharge drum to empty the collection hopper. Once the collection hopper is empty, close the slide gate. Raise the drum cover by pulling down on the handle and locking the safety catch. The drum cover will then be locked into its highest position for when the unit is in the stowed position.

☐ Remove and dispose of drum.

FOR MOBILE APPLICATIONS:

☐ Disconnect electrical, air and duct hose connections before moving or transporting.

☐ Use forklift or crane to take weight off hitch pins in telescoping legs. Remove pins and lower unit to ground. Make sure to securely pin all four telescoping legs in their stowed position.

☐ Once these procedures are done The Dust Collector System will be ready for moving or transporting.

2.4 EMERGENCY SHUTDOWN PROCEDURE

☐ In Local mode: Turn 3-position switch to the “off” position on the Main Instrument Panel. This will shut-off power to all the control switches located on the Main Instrument Panel.

In Auto mode: Push in the Emergency Stop button. This will shut-off power to all the controls in the auto mode. Note: Pull out the Emergency Stop button to reset power to the Remote Instrument Panel.

Note: Turn the Main Service Disconnect Handle to the “off” position and ALL power (480 volt and 120-Volt power) will be disconnected to the Main and Remote Instrument Panels.
SECTION 3: MAINTENANCE AND TROUBLESHOOTING INSTRUCTIONS

3.1 ROUTINE MAINTENANCE

DAILY

☐ Drain moisture from air manifold.
☐ Check for air leakage on components and fix if needed.
☐ Make sure there is no obstructions around inlet and outlet connections.
☐ Monitor and empty collection hopper.
☐ Visually inspect the fan outlet damper for dust emissions. If dust is visible check condition of cartridges for holes or loose fit.
☐ Monitor differential pressure range and keep between 4”-6” WG. Never exceed 8” WG. Refer to 3.3 Troubleshooting Section.

WEEKLY OR PERIODIC

☐ Inspect fan housing for foreign material. Drain or remove if needed (refer to Fan Maintenance and Troubleshooting Manual).
☐ Inspect bearings and handle control on damper (refer to Fan Maintenance and Troubleshooting Manual).
☐ Make sure moisture is kept out of the air system and cartridge area.
☐ Grease motor (refer to WWE Maintenance and Troubleshooting Manual).
☐ Check access door and collector area for possible leaks, gasket condition, and corrosion or build-up.

Making sure routine maintenance is done to The Dust Collector System will ensure many years of trouble free operation.
3.2 CARTRIDGE REMOVAL & INSTALLATION

The Dust Collector System should be in the stowed position to easily access the cartridge area. Also use the appropriate personal protective equipment when removing used cartridges. Follow OSHA, state, and federal guidelines.

- Open access door by removing the (3) ½" handle nuts and washers. Hang hooks under door.
- Start with removing the ½" handle nuts and cartridge retaining plates with gasket. Holders are on the inside of the access door for the handle nuts.
- Cartridges should be removed from top to bottom. Carefully slide the used cartridges off the support rails. Dispose of properly.
- At this time check the collection hopper for maintenance or cleaning.
- Install the new cartridges by using the same process. Note the gasket side of the cartridge should face the vertical tube sheet of the collector area. (opposite the access door)
- Place cartridge retaining plate with gasket facing towards the cartridge and tighten the ½" handle nut.
- The cartridges are properly tightened when they can no longer spin or move on their axis. Make sure to double check all cartridges.
- Inspect gaskets on access door.
- Close door, install washers and tighten ½" handle nuts.
- Make sure not to overtighten the access door.
- Refer to section 2.1 Initial Start-Up Procedures for new cartridges.

**Always use proper protective equipment when operating equipment. Hearing protection, safety glasses, gloves, and respirator are recommended. Follow OSHA, State and Federal guidelines.**
### 3.2 CARTRIDGE REMOVAL & INSTALLATION

<table>
<thead>
<tr>
<th>Key</th>
<th>Identification</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Cartridges</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Tube Sheet</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>½&quot; Handle Nuts</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Cartridge Support Rails</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Cartridge Retaining Plate With Gasket</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Gasket Material</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Filter Access Door</td>
<td></td>
</tr>
</tbody>
</table>
3.2 CARTRIDGE REMOVAL & INSTALLATION

NEVER start any kind of maintenance on Dust Collection System unless ALL power to the driven equipment has been shut down. Disconnect and lock out power before entering or servicing the equipment.
3.3 TROUBLESHOOTING

VERY HIGH DIFFERENTIAL PRESSURE

☐ Check compressed air pressure (80 PSI max) regulate if needed.
☐ Check filter pulsing system for proper operation. Make sure all diaphragms and solenoids are working.
☐ If none of the valves are pulsing, check timer operation and compressed air supply.
☐ If some of the valves are not pulsing, check for solenoid loose wiring or solenoid valve blockage or damage.
☐ Assuming all valves are operating properly, decrease the filter pulsing timer “time-off” and evaluate improvement.
☐ Operate the filter pulsing system with the fan turned to the “off” position for approx. 20 minutes. If the differential pressure is about the same after turning the fan “on” again, the cartridges may be plugged, which will require a cartridge change.
☐ Check for moisture or oil in the air supply. If the cartridges are damp they will have high dust build-up. Refer to 1.4 Connecting Compressed Air Supply.
☐ Check for dew point of dust-laden air. Severe moisture conditions may require insulating and heat treating the collector.
☐ Check the main air flow volume with an air measuring device to insure The Dust Collector System is working properly for its design conditions.
☐ Check the dust particle size, air temperature, and moisture against its designed conditions.
☐ Check collection hopper to make sure it is empty. If material starts sticking or bridging inside the hopper it will need to be removed. Open slide gate and empty collection hopper into 55-gallon storage container more often. Make sure discharge hose is not plugged. Preventative maintenance should be done or options can be installed to help keep the collection hopper clean. Excessive build-up of material in the collection hopper contributes to a high differential pressure drop and premature wear of cartridges.
**VERY LOW DIFFERENTIAL PRESSURE**

- Inspect manehelic gauge and connection hoses.
- Measure air volume (ACFM) that is going through The Dust Collector System.
- Reduce filter pulsing frequency by increasing the timer’s “time-off” setting.

**DUST EMISSION**

- Check for improper cartridge installation.
- Check cartridges for holes or wear. Replace worn out cartridges.
- Reduce the filter pulsing frequency by increasing the timer’s “time-off” setting.
- After installation of new cartridges and before performing emission tests allow The Dust Collector System to filter dust-laden air for about 48 hours. The cartridges need to have time to get a coating of dust on the filter media to achieve optimal performance.

**POOR CARTRIDGE LIFE**

- Measure actual air volume (ACFM) and compare against its design specs. Excessive dust-laden air, along with abrasive dust will shorten cartridge life.
- If cartridges show signs of wearing in certain areas of the collector, a modified baffle may be required inside the collector. Contact manufacturer for assistance.
- Check operating temperature. It should be within the manufacturer’s specs of the filter media being used. Also, check characteristics of the dust and make sure the appropriate filter media is being used.
- Check for moisture problems in the collector area. High moisture will cause cartridges to have excessive dust build-up. This will make the performance of The Dust Collector System to operate at elevated pressure drops and lower air volume.
- If experiencing other problems, please contact the manufacturer for further assistance.
3.4 TECHNICAL SUPPORT AND CONTACT INFO

INDUSTRIAL VACUUM EQUIPMENT CORP.

N7959 BIRCH RD.
IXONIA, WI 53036
800-331-4832

www.industrialvacuum.com
SECTION 4: SPECIFICATIONS AND OPTIONAL EQUIPMENT

4.1 EQUIPMENT DATA

The 12000 ES Model Dust Collector System **HAS** the Following Standard Equipment:

- (2) 16” QF Inlet Connections with Quick Release Ducting
- Adjustable Drum Cover Kit (Manual Handle Mechanism)
- (4) Telescoping Legs with Pins
- Inlet Air Regulator
- Magnehelic Gauge
- Four-Point Heavy Duty Lift Cage (Low Profile)
- Manual Outlet Damper with Protective Screen
- Quick Release Filter Access
- Compact Size for Shipping

The 12000 ES Model Dust Collector System **HAS** the Following Operating, Design, and Construction Data:

- 12,000 ACFM (Air Volume)
- 12” WG (Operating Pressure)
- Very Fine Iron Oxide & Paint Fines Less Than 1 GR./CU. FT. (Dust Info)
- Ambient (Operating Temperature)
- Outdoor Mobile Equipment
- Weight of Unit 7,000 LBS (Empty)
- 17” WG (Design Pressure)
- 12 SCFM @80-PSI (Reqd. Air Compressor)
- 4,992 SQ. FT. Filter Area
- 500 ACFM (Air to Cartridge Ratio)
- 2.4/1 (Air to Filter Area Ratio)
- 12-Gauge Carbon Steel Construction
- Cartridges (12.75” Dia.x26” Long) 208 SQ. FT. of Filter – QX Cellulose/Poly Blend
4.2 OPTIONAL EQUIPMENT

The 12000 ES Model Dust Collector System CAN HAVE the Following Optional Equipment:

- Diesel Power Package
- Dual Electric/Diesel Power Unit
- Air Compressor Package
- DOT Approved Tandem Axle Trailer
- DOT Pintle or Gooseneck Trailer Hitch Option
- Hydraulic Telescoping Lift
- Ladder Kit
- Sound Package for Quiet Operations
- Removeable Feet – Casters, V-Groove, Vibration Pads
- Discharge Height Leg Extensions
- Four-Way Fork Pockets
- Camlock Connectors (Electric Panel Connections)
- Separate Camlock Connector Enclosure
- Outlet and Inlet Transitions
- Soft Start Package
- Hose and Connection Supplies
- Collection Vibrators
- Walkways and Railings
- Explosion Proof Vent, Fan, and Motor
- Fire Suppression Systems
- Various Filter Media Types Available

PLEASE CONTACT:

INDUSTRIAL VACUUM EQUIPMENT CORP.
800-331-4832
www.industrialvacuum.com

FOR PRICING AND AVAILABILITY
SECTION 5:
MAJOR COMPONENTS AND REFERENCE INFORMATION

5.1 MOTOR & STARTER

Description: 40 HP 480/3/60 TEFC Motor 3600 RPM
Manufacturer: WWE

Description: 40 HP Rated Starter with Disconnect NEMA Enclosure
Manufacturer: Siemens

5.2 FAN

Description: HDBI-200 Direct Drive Fan
Manufacturer: Cincinnati Fan

5.3 ELECTRICAL COMPONENTS & WIRING SCHEMATICS

Description: 120-Volt Pulsing Timer
Manufacturer: ABL

Description: (12) 120-Volt Solenoid/Diaphragm
Manufacturer: Turbo

Description: (2) MURR – EL Exact 12 8Xm12 4-Pole Molded Cable
Manufacturer: MURR

Description: (12) DINN Cable MSUD Valve Plug
Manufacturer: MURR
5.4 LIFTING DIAGRAM
SECTION 6:
WARRANTY AND SERVICE NOTES

INDUSTRIAL VACUUM EQUIPMENT CORP.
LIMITED WARRANTY

Seller warrants each new product to be free from defects in material and workmanship under normal use and maintenance as herein described. This warranty does not apply to commercial items manufactured by others (Cincinnati Fans, Worldwide electric motors, etc.), which are covered by existing warranties of the representative manufacturers thereof. Seller’s sole obligation under this warranty shall be limited to repairing, replacing or allowing credit for, at Seller’s option, any part which under normal and proper use and maintenance proves defective in material or workmanship within twelve (12) months after delivery to Buyer. In the event of defects developing within that period, the Seller will furnish, F.O.B. its plant, without charge, parts required to replace material found defective. Beyond this, the Seller assumes no responsibility.

This warranty is in lieu of all other warranties (except of title), expressed or implied, and there is not an implied warranty of merchantability or fitness for a particular purpose. In no event shall Seller be liable for consequential or special damages.

Used products are sold on an “as is” basis and there is no implied warranty of merchantability or of fitness for a particular purpose, unless otherwise expressly stated on the face of this form.
## SECTION 7: SPARE PARTS LIST

### 12,000 CFM ELECTRIC SKID DUST COLLECTOR

#### RECOMMENDED SPARE PARTS

<table>
<thead>
<tr>
<th>Qty</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>FN3777</td>
<td>IVEC 12,000 CFM ELECTRIC SKID MOUNTED DUST COLLECTOR FILTER</td>
</tr>
<tr>
<td>1</td>
<td>EC2001-10</td>
<td>10 STATION 12 VOLT BAGHOUSE TIMER</td>
</tr>
<tr>
<td>12</td>
<td>AR4016-2</td>
<td>DIAPHRAGM FOR FILTER PULSING ON A IVEC 12,000 CFM ELECTRIC SKID DUST COLLECTOR</td>
</tr>
<tr>
<td>1</td>
<td>AR4017-2</td>
<td>DIAPHRAGM REBUILD KIT FOR IVEC 12,000 CFM ELECTRIC SKID DUST COLLECTOR</td>
</tr>
<tr>
<td>2</td>
<td>DCP95150</td>
<td>MURR-EL Exact 12 8xM12 4 Pole Molded Cable, 120 VAC, 8000-88412-3621000</td>
</tr>
<tr>
<td>12</td>
<td>DCP95151</td>
<td>MURR Dinn Cables</td>
</tr>
<tr>
<td>12</td>
<td>AR4015-1</td>
<td>120 VOLT SOLENOID FOR DUST COLLECTORS WITH MURR WIRING</td>
</tr>
<tr>
<td>1</td>
<td>AR4018</td>
<td>120 VOLT SOLENOID REBUILD KIT FOR IVEC 12,000 CFM ELECTRIC SKID DUST COLLECTOR</td>
</tr>
<tr>
<td>15</td>
<td>FN3779</td>
<td>½” HANDLE NUT</td>
</tr>
<tr>
<td>4</td>
<td>MC6001</td>
<td>1” DIAMETER HITCH PIN ASSEMBLY</td>
</tr>
</tbody>
</table>