OPERATION'S MANUAL

CARTRIDGE DUST COLLECTOR SYSTEM
40000 DT MODEL

INDUSTRIAL VACUUM EQUIPMENT CORP.
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REVIEW THIS MANUAL BEFORE OPERATING THE DUST COLLECTOR SYSTEM

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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 40000 DT Serial: DCT-400??

This unit has the following **Customized Features:**

- Standard Equipment Options
- (8) 20" Dia. Duct Hose Connections Tie Offs
- John Deere Tier 3, 6.8L, 173 HP Diesel Engine
- BIHS-402 Fan with 6-Groove Banded 5V-2000 Belts
- Hydraulic Cooler with Electric Fan
- Extended Engine Air Cleaner Intake
- Thrust Bearing Lower and Incline Screw Conveyor
- 180° Rotating Discharge Auger (Direct Drive)
- Manual 12 VDC Electric Vibrator on Collection Cone
- 120-Gallon Fuel Tank
- Standard Single Battery with On/Off Selector Switch
- 8 K Tri-Axle Torflex, Pintle Style Trailer
- 1" Ball Valve with Regulator
- Integrated Solenoids with MURR Cable(s)
- Fender Running Lights
- 6" Bag Clamp Attachment

REVIEW THIS MANUAL AND SAFETY PRECAUTIONS BEFORE OPERATING THE DUST COLLECTOR SYSTEM

1.1 EQUIPMENT VIEW AND IDENTIFICATION

PO #: _____

MATERIAL#: _____

EQUIPMENT #: _____

IDENTIFICATION LABEL LOCATION

IMPORTANT SAFETY PRECAUTIONS AND WARNINGS!

When using equipment, always follow basic safety precautions, including the following:

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.

**** ALWAYS following OSHA's State and Federal Guidelines.*

WARNING! Personnel should NEVER enter The Decon Booth without wearing the recommended proper PPE.

WARNING! Always install safety signs on engine, equipment, and work areas that follow S.A.E. Recommended Practice guidelines. Maintain and replace the signs as necessary. Check for:

- Good Color
- Letter and pictorial legibility
- Proper placement

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! PRIOR to transporting, check tire pressure, torque wheel lug nuts, check trailer lights and trailer breaks**.**

WARNING! Use caution while transporting equipment, making sure this equipment, its components, and any attachments are secured properly PRIOR to Transporting.

WARNING! Make sure The Auger Discharge Valve is closed PRIOR to transporting.

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 are.

WARNING! MAKE sure trailer tires are chocked PRIOR to detaching Dust Collector System from the transporting truck.

WARNING! NEVER transport The Dust Collector System with the collection hopper full. Dust Collector should ONLY be transported while the collection hoper 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! 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! This equipment has two (2) rotating Augers. Keep hands, feet, hair and clothing away from rotating augers. Failure to do so may lead to serious personal injury or death.

WARNING! Stop equipment and follow your Lockout-Tagout procedures to adjust, service, clean and/or perform any maintenance on or to the Auger System. Failure to do so may lead to serious personal injury or death.

WARNING! NEVER run Auger System with unguarded chain drives.

WARNING! ALWAYS follow Lockout-Tagout procedures before adjusting, servicing, cleaning, and/or perform any maintenance on the Chain Drive. Failure to do so may lead to serious personal injury or even death.

WARNING! Misuse of compressed air is HIGHLY DANGEROUS and may cause permanent injury, death or property damage.

WARNING! NEVER use compressed air on the body or to blow dust/dirt off clothing.

WARNING! DO NOT check for pressure leaks with your hand. High-pressure air, fuel, or oil can cause severe personal injury.

WARNING! Relieve all pressure in the air, oil, and cooling system before any lines, fitting, or related items are removed or disconnected.

WARNING! Be alert for possible pressure when disconnecting any device from a system that utilizes pressure.

WARNING! ALWAYS disconnect the Hydraulic Power Source before opening or servicing any motors, valves or hoses. High pressure inside can cause severe personal injury, death and or property damage.

WARNING! To avoid burns, be alert for hot component parts, hot fluids in lines, tubes and compartments just after the engine has been shut off.

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.

WARNING! California Proposition 65 Warning – Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

WARNING! Carbon Monoxide Gas can be FATAL!!! Carbon Monoxide gas is a colorless, odorless gas that is generated whenever internal combustion engines are operating. Prolonged inhalation of air contaminated with only a small percentage of carbon monoxide gas may cause injury or death.

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

WARNING! DO NOT OPERATE A DIESEL ENGINE WHERE THERE ARE OR CAN BE COMBUSTIBLE VAPORS. These vapors can be sucked through the air intake system and cause engine acceleration and over-speeding, which can result in a fire, an explosion, and extensive property damage. A fuel spill or gas leak may create a combustible environment in which an engine might operate and over-speeding may result. Numerous safety devices such as air intake shutoff are available to minimize the risk of over-speeding.

WARNING! Corrosion inhibitor contains alkali. DO NOT get the substance in your eyes. Avoid prolonged or repeated contact with skin. DO NOT swallow. In case of contact, immediately flood eyes with large amounts of water for a minimum of 15 minutes. IMMEDIATELY CALL A PHYSICIAN. KEEP OUT OF REACH OF CHILDREN.

WARNING! The catalyst reagent contains urea. DO NOT get the substance in your eyes. In case of contact, immediately flood eyes with large amounts of water for a minimum of 15 minutes. Avoid prolonged contact with skin. In case of contact, immediately wash skin with soap and water. DO NOT swallow or ingest. In the even the catalyst reagent is ingested, contact a physician immediately.

WARNING! It is recommended to use caution by wearing an appropriate mask/respirator whenever working with, near, or around Dust.

WARNING! It is recommended to wear a respirator whenever working with The Dust Collector's used filters, or inside a dirty hopper. **NEVER open filter enclosure doors while unit is running. Lockout-Tagout prior to adjusting, servicing, cleaning, and or performing maintenance to the Filter Cartridges or inside a dirty hopper. **

WARNING! When lifting, ALWAYS remember to use proper Safe Lifting Techniques.

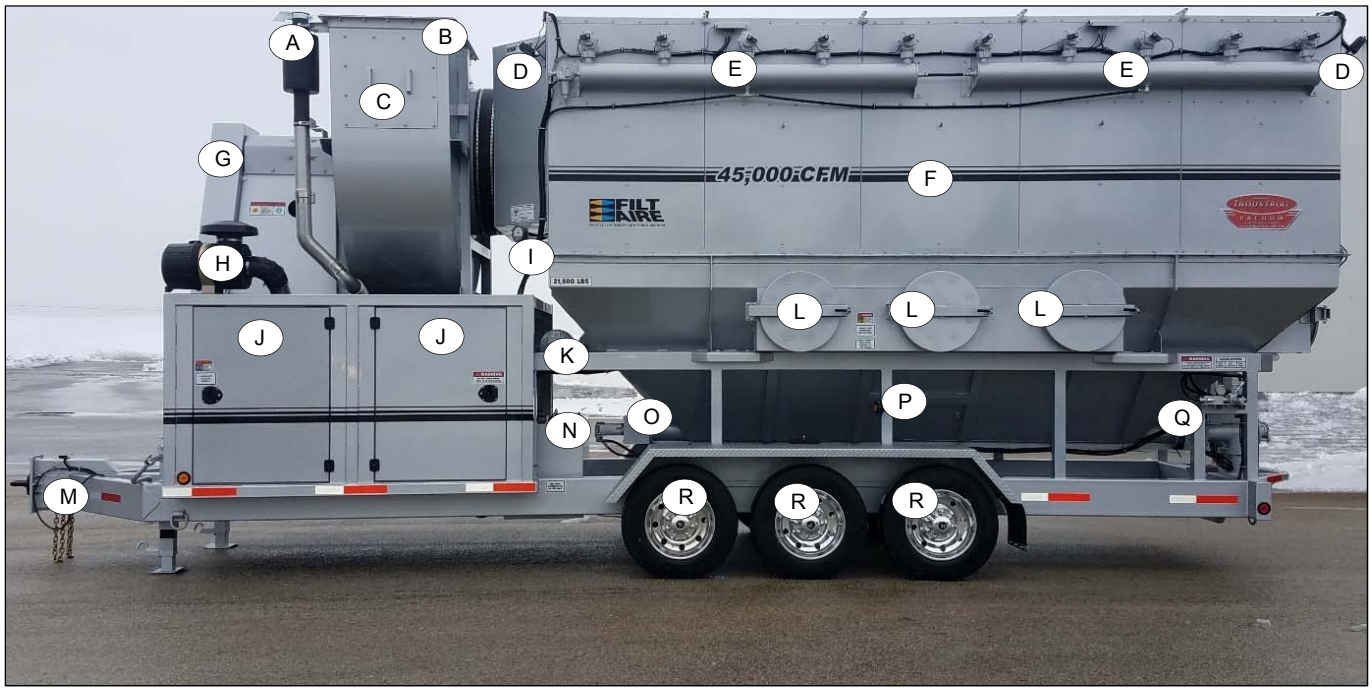
Safe Lifting Recommendations

- Bend at your knees, not at the waist.
- Keep your Back Straight.
- Keep object close to body and while maintaining a good grip.
- Don't lift and twist: always turn your feet, never twist you back.
- Ask for, or get help if the load is too large and/or heavy.

THIS MANUAL SHOULD BE KEPT NEAR THE EQUIPMENT FOR FUTURE REFERENCE.

SAVE THESE INSTRUCTIONS!

1.1 EQUIPMENT VIEW AND IDENTIFICATION



Key	Identification	Remarks
A	Unit Exhaust Muffler	
B	Backward Inclined Fan with Exhaust Screen	
C	Boltable Fan Access Guard	
D	LED Work Lights	(5)
E	Unit Air Manifolds	
F	Filter Cartridge Area	
G	Fan Belt and Shaft Guards	
H	Engine Air Filter	
I	Magnehelic Gauge	
J	Lockable Hinged Access Doors Power Unit	
K	Air Reservoir	
L	20" Latching Manways on Collection Cone	(8)
M	Pintle Type DOT Tri-Axle Trailer	2-1/2" Pintle Tow Eye
N	120-Gallon Diesel Fuel Tank	
O	Guarded Lower Horizontal Auger Motor and Direct Drive	
P	Collection Hopper	
Q	180° Rotating Inclined Discharge Auger	
R	Torflex Tandem 10,000lbs Axles	

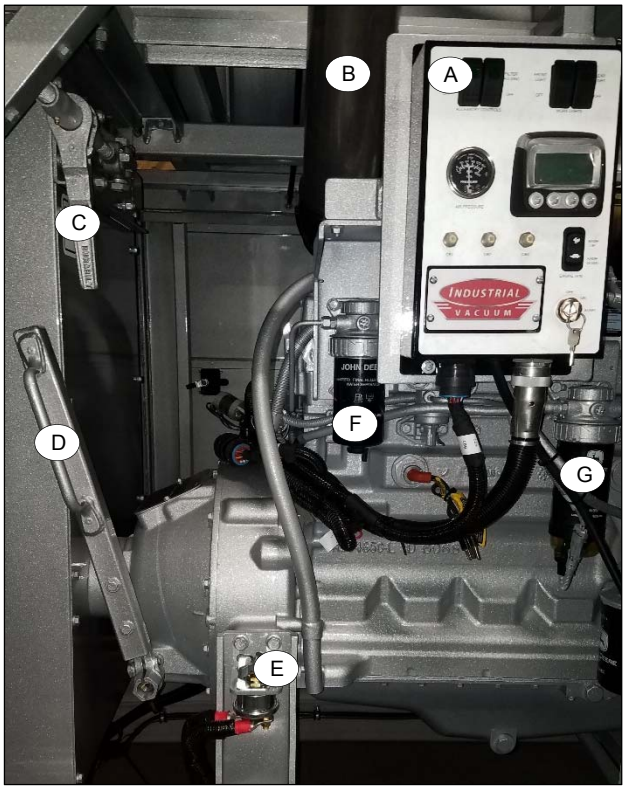
1.1 EQUIPMENT VIEW AND IDENTIFICATION

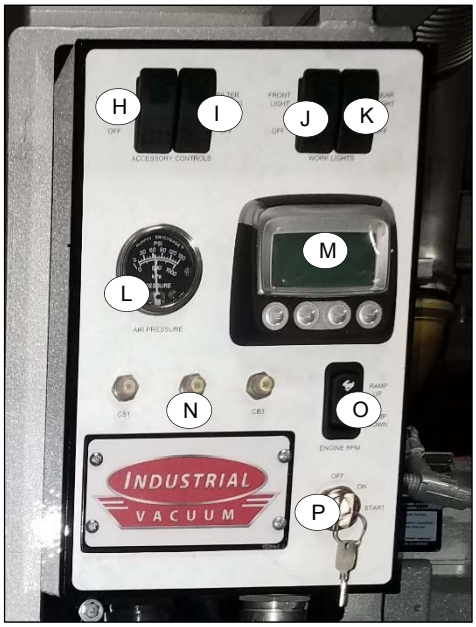
Key	Identification	Remarks
A	Identification Light Bar	
B	LED Work Lights	(5)
C	Filter Cartridge Rear Access	(Clean Side)
D	Unit Air Manifolds	
E	Lockable Hinged Filter Access Doors	
F	Filter Cartridge Area	
G	20" Latching Manways on Collection Cone	(8)
H	Guarded Auger Direct Drives	(2)
I	Collection Hopper	
J	Inclined Discharge Auger 180° Rotational System	With Security Pins for Lockable Safety
K	Auger Discharge Spout with Shut-off Valve & 6" Outlet	
L	Removable Fenders	
M	Hose & Adapter Storage Area	
N	Auger Clean-out Access	
O	Inclined Discharge Auger	
P	Trailer "D" Rings	

1.1 EQUIPMENT VIEW AND IDENTIFICATION

A	LED Work Lights	
B	Backward Inclined Fan with Exhaust Screen	
C	Unit Exhaust Muffler	
D	Lockable Hinged Filter Access Doors	
E	Fan Belt and Shaft Guards	
F	Engine Air Filter	
G	20" Latching Manways on Collection Cone	(8)
H	Lockable Hinged Access Doors Power Unit	
I	Unit Crank Jack	
J	Torflex Tandem 10,000lbs Axles	
K	Pintle Type DOT Tri-Axle Trailer Hitch Assembly	2-1/2" Pintle Tow Eye

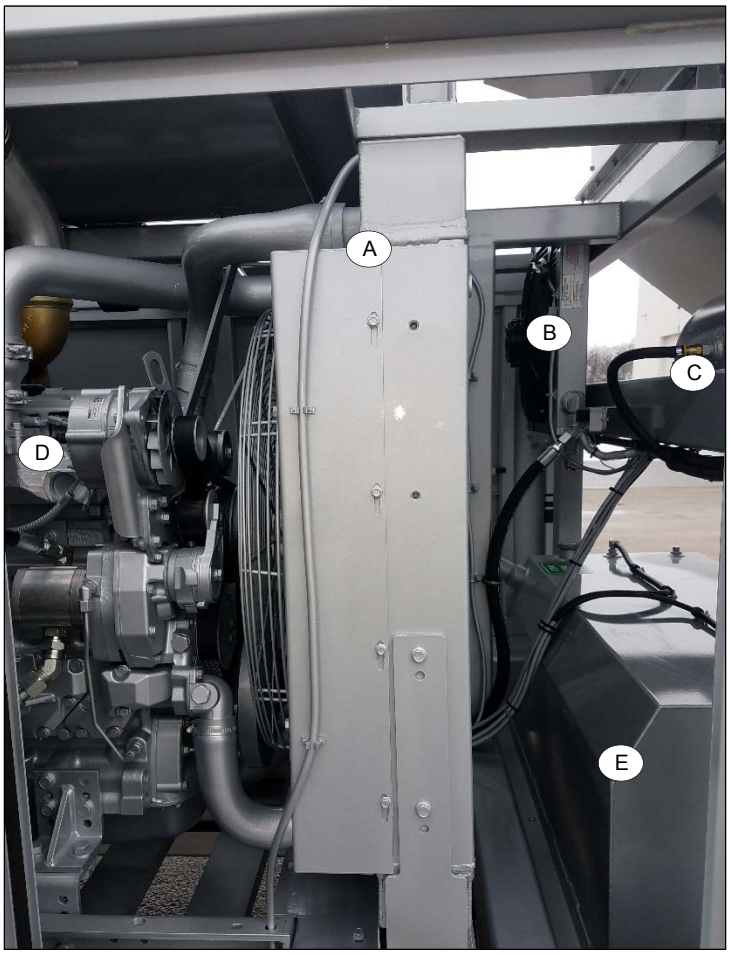
1.1 EQUIPMENT VIEW AND IDENTIFICATION





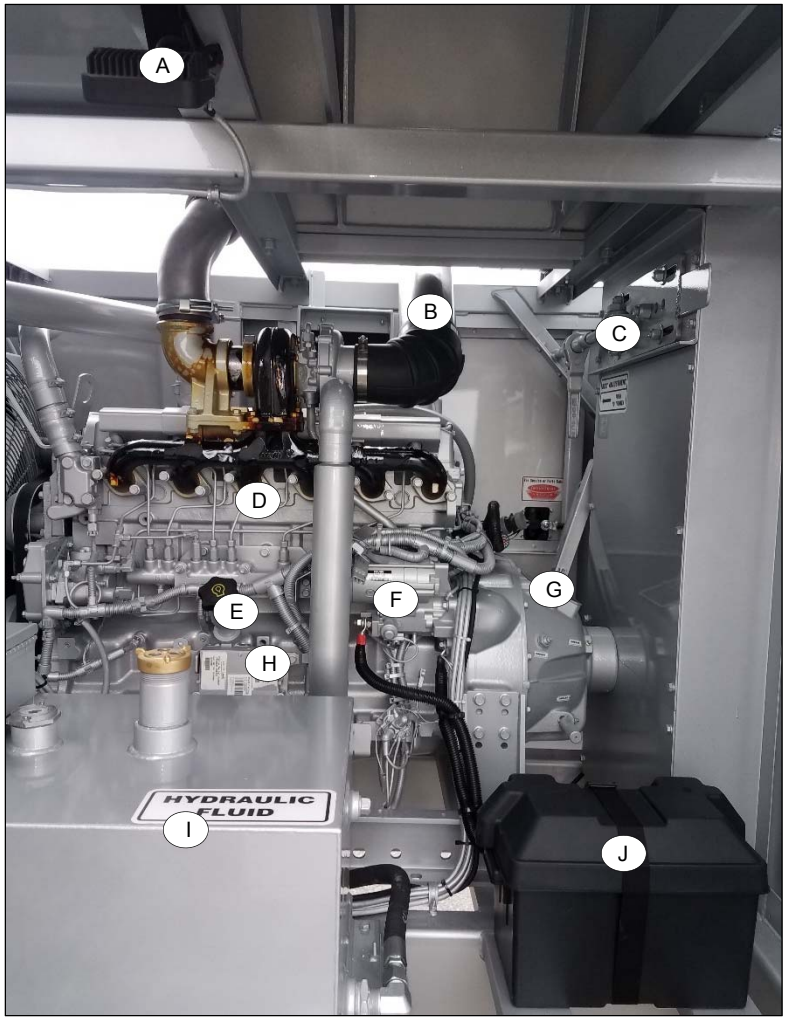
Key	Identification
A	Instrument panel
B	Engine air cleaner
C	Drive belt tensioner adjustment handle
D	PTO engagement handle
E	Battery selector switch
F	Fuel filter
G	Fuel and water separator
H	Vibrator switch
I	Filter pulsing switch
J	Front work light switch
K	Rear work light switch
L	System air pressure gauge
M	Murphy Powerview gauge
N	Circuit breakers
O	Rabbit/Turtle RPM switch
P	Key ignition switch

1.1 EQUIPMENT VIEW AND IDENTIFICATION



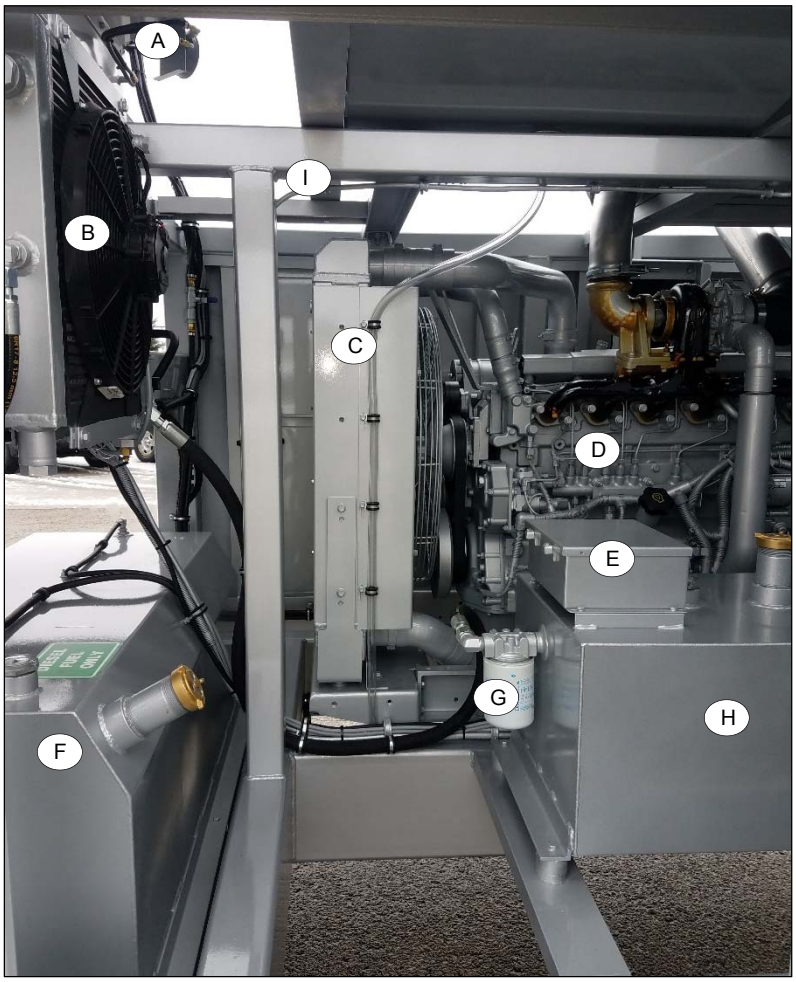
Key	Identification
A	Engine Radiator
B	Hydraulic Cooler with 12VDC Fan
C	Air Reservoir
D	John Deere 6.8L, 173HP, Tier 3 Diesel Engine
E	120-Gallon Diesel Fuel Tank

1.1 EQUIPMENT VIEW AND IDENTIFICATION



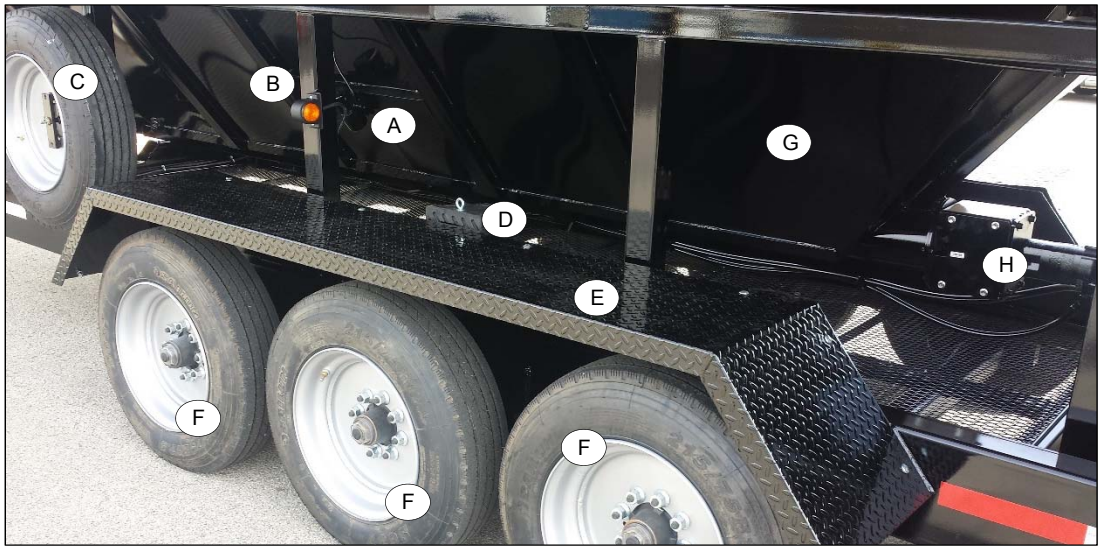
Key	Identification
A	LED "Engine Compartment" Work Light
B	Unit Engine Exhaust
C	Drive Belt Tensioner Adjustment Handle
D	John Deere 6.8L, 173HP, Tier 3 Diesel Engine
E	Engine Oil Fill
F	Engine Starter
G	PTO and Engagement Handle
H	Engine ECU Box
I	Hydraulic Fluid Tank
J	Standard Single Battery with Protective Case

1.1 EQUIPMENT VIEW AND IDENTIFICATION



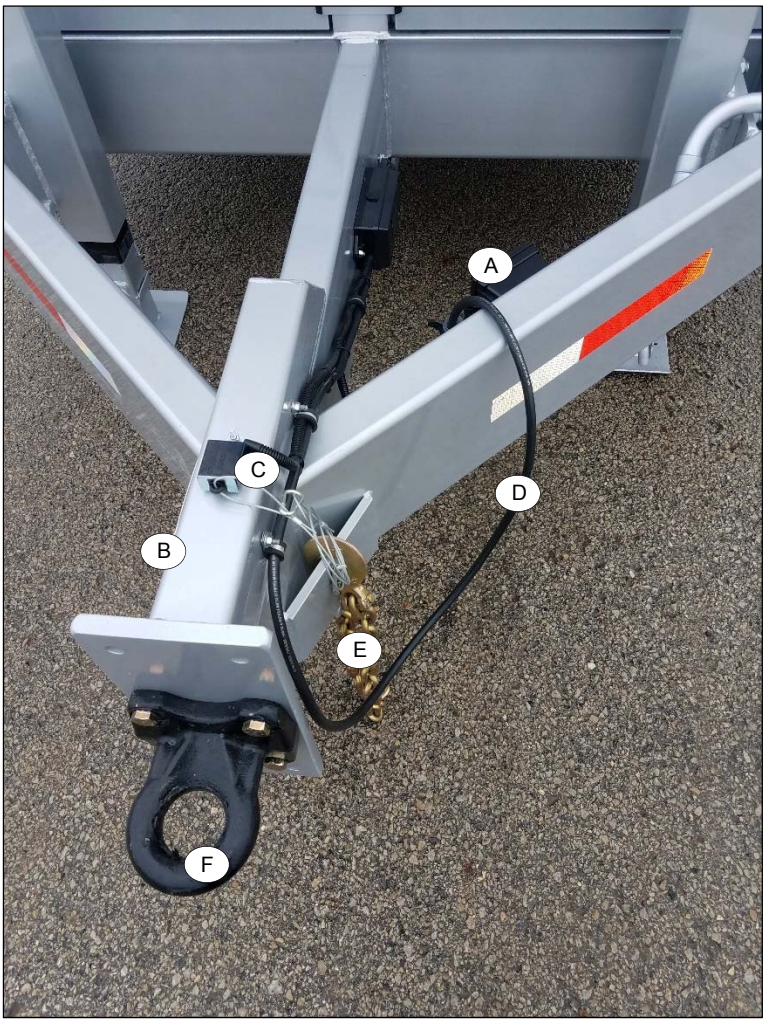
Key	Identification
A	Magnehelic Gauge
B	Hydraulic Cooler with 12VDC Fan
C	Engine Radiator
D	6.8L, 173HP, Tier 3 John Deere Diesel Engine
E	Filter Pulsing Enclosure
F	120-Gallon Diesel Fuel Tank
G	Hydraulic Filter
H	Hydraulic Fluid Tank

1.1 EQUIPMENT VIEW AND IDENTIFICATION



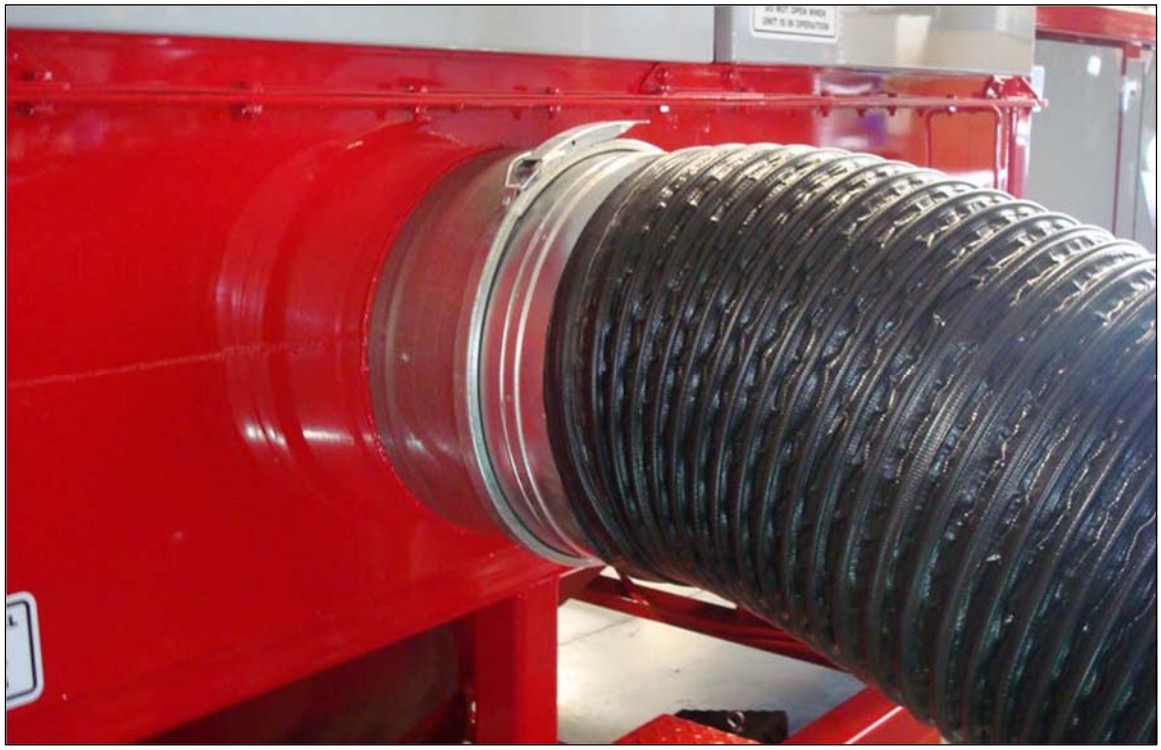
Key	Identification
A	12 VDC collection cone vibrator
B	Fender marker light
C	Spare tire and holder
D	(2) Wheel chock holders
E	(2) Removable fenders
F	Torflex tri-axle (oil filled)
G	Collection cone
H	Horizontal Auger Direct Drive
I	Filter area
J	Hydraulic auger control with gauge
K	20" hose connections covers (rear)
L	Inclined Auger Direct Drive
M	Rear Bumper with D-Rings

1.1 EQUIPMENT VIEW AND IDENTIFICATION



Key	Identification
A	Breakaway Battery System w/ Indicator Light
B	Unit ID Name Plate
C	Breakaway Switch w/ Cable and Clip
D	7 Prong Trailer Plug
E	Breakaway Chains w/ Clevis Hooks
F	Pintle Style Trailer

1.1 EQUIPMENT VIEW AND IDENTIFICATION



Key	Identification	Remarks
A	20" Dia. Hose Connections with Hose Adapter & Quick Release Clamp	
B	20" Dia. Hose Connection	Shown with Duct Hose

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 TOWING OF THE DUST COLLECTOR SYSTEM

The Dust Collector System should be towed with the appropriate vehicle that can handle the size and weight. A vehicle equipped with dual tires and electric brakes is required.

The following should be checked prior to towing The Dust Collector System:

- Empty collection cone and auger system. **NEVER** travel with material or dust in the cone or auger. Make sure the auger discharge valve is in the closed position.
- Disconnect any duct hose from hose adapters. Cover all hose connection inlets using clamp and covers provided. Secure duct hose under collection cone in the hose storage area.
- Make sure wheel chocks are stowed in the holders.
- Lock and secure all access doors.
- Connect all the dust collector trailer components to the tow vehicle. (tow eye, safety chains, breakaway cable, and trailer light plug). Make sure trailer lights and electric brakes work. Ensure the trailer is level for adequate towing.
- Check tire pressure and lugs nuts for proper settings.

Steps to consider when unloading The Dust Collector System from the tow vehicle:

- 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.
- If surface conditions are not level or solid take proper precautions with planks or plywood for a more secure and safe work area
- It is recommended that work area must be clean and clear for good visibility and footing to prevent tripping hazards.

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

- Once in place, remove wheel chocks from holders inside frame compartment (passenger and driver side) and place between tires on both sides of trailer.
- Using the crank jack, raise from tow vehicle. Disconnect trailer chains, light plug, breakaway switch and tow vehicle. Level Dust Collector Trailer for operation.

1.4 CONNECTING COMPRESSED AIR SUPPLY

Customer supplied hook-up connection: (Needed if Dust Collector System doesn't have an onboard air compressor package)

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 will need to be regulated at 80-psi max. (supplied with the unit). 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 ON BOARD AIR COMPRESSOR PACKAGE

Refer to the VMAC operations manual for start-up procedures

Start Up Procedure for VMAC Air Compressor:

1. Ensure air system is depressurized.
2. Ensure all air outlets are CLOSED.
3. Place Dust Collector System in an area where ground is solid and level. Once in place, remove wheel shocks from holders inside frame compartment (passenger and driver side) and place between tires on both sides of trailer.
4. Start engine and bring to operating temperature.
5. Turn ON compressor.

VMAC
VEHICLE MOUNTED AIR COMPRESSORS

This vehicle is equipped with a VMAC Air Compressor System.

OPERATING INSTRUCTIONS

Daily Pre Start Check:

1. Check oil level in tank.
2. Check drive belt system.
3. Check for leaks.

Start Up Procedure:

1. Ensure air system is depressurized.
2. Ensure all air outlets are CLOSED.
3. Place vehicle in Neutral or Park and engage park brake.
4. Start engine and bring to operating temperature.
5. Turn ON compressor.

Shutdown Procedure:

1. Ensure discharge valve is CLOSED.
2. Allow engine to idle for 1 minute.
3. Turn OFF compressor.
4. Wait for system to depressurize before restarting.

For Technical Support/Parts contact your VMAC Dealer
To locate your nearest dealer call 1-800-738-8622 (250-740-3200)

4400644-A

⚠ WARNING
Always allow system to depressurize before restarting

Must use VMAC approved compressor oil in this system. Failure to use approved oil will result in damage to the compressor and will void warranty.

Do not overfill the system! Overfilling the system with oil can flood the sight glass window and make the system appear empty.

SECTION 2:
OPERATION AND SHUTDOWN INSTRUCTIONS

2.1 Initial Dust Collection System START-UP Procedures

The following procedures need to be followed prior to operating the dust collector system. Refer to these Sections: (IF APPLICABLE)

- Section 1.3 **TOWING OF THE DUST COLLECTOR SYSTEM**
- Section 1.4 **CONNECTING COMPRESSED AIR SUPPLY**
- Section 1.5 **ON BOARD COMPRESSOR PACKAGE**

***On Board Air Compressor Package:**
Refer to the VMAC operations manual for start-up procedures

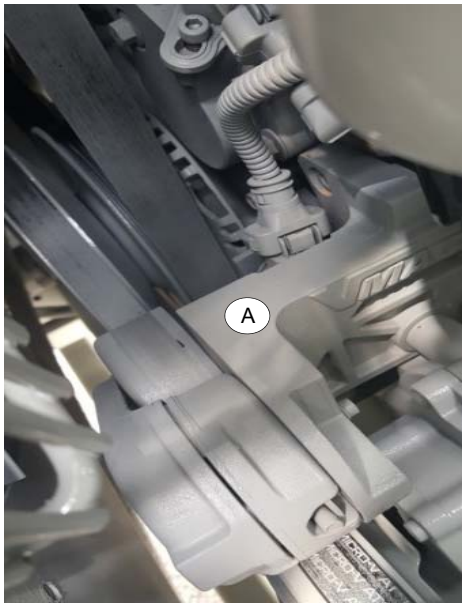
Daily Pre Start Check:

1. **Check Oil Level in Tank**
   - Open rear access door on passenger side of Dust Collector System. On VMAC tank, lift oil sight glass cover, labeled 'VMAC oil level' in order to check the oil level.
2. **Check Drive Belt System**
   - While off, carefully inspect belt, pulleys and idlers (located between radiator & engine) for glazing, edge or surface wearing, missing rib portions. Replace belt if damaged.
   - Check on & around the pulleys/idlers for cracks, chipping or any damage, if there's physical damage replace pulley or idler
   - If any damage indicates possible misalignment, check pulley alignment. If alignment is off, check all fasteners ensuring proper torque & no loose components.
3. **Check for leaks**
   - Inspect the connection hoses, seals, and the area beneath the system for evidence of leaks. Contacting the nearest dealer to replace gear box input shaft seal may be necessary.

Must use VMAC approved compressor oil in this system. Failure to use approved oil will result in damage to the compressor and will void warranty.

Do not overfill the system! Overfilling the system with oil can flood the sight glass window and make the system appear empty.

***On Board Air Compressor Equipment View and Identification



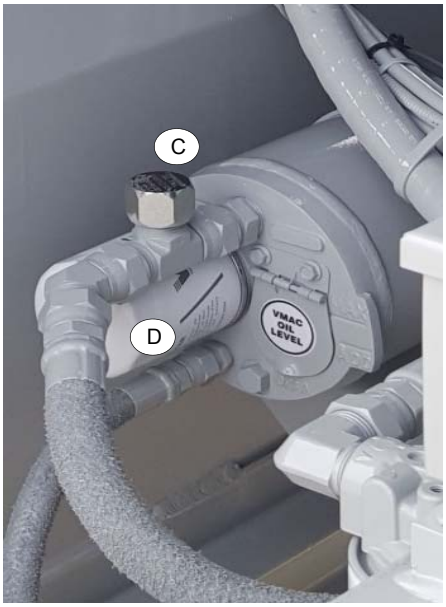


Figure	Identification	Remarks
A	VMAC Belt Drive System	
B	VMAC Digital Control Box	
C	VMAC Oil Fill	
D	VMAC Oil Filter	
E	VMAC Oil Sight Glass and Cover	

Must use VMAC approved compressor oil in this system. Failure to use approved oil will result in damage to the compressor and will void warranty.

Do not overfill the system! Overfilling the system with oil can flood the sight glass window and make the system appear empty.

2.1 Initial Dust Collection System START-UP Procedures

Filter Pulsing Timer Sequence

The filter pulsing timer board is located inside a hinged NEMA enclosure on the (Passenger's side) on top of hydraulic tank.

These are the factory settings and should not be altered.

- Verify the timer "off-time" to approximately 20 seconds
- Verify the timer "on-time" to 125 milliseconds
- Make sure the air pressure is regulated and not set above 80 psi on unit (Air pressure gauge located on Instrumentation panel).
- With engine running, 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

Prestart Procedures

Prior to operation, the following Dust Collector System components and fluid levels need to be checked:

- Inspect engine air cleaner **(refer to Diesel Engine Operation Manual)**
- Engine oil level **(refer to Diesel Engine Operation Manual)**
- Drain fuel water separator **(refer to Diesel Engine Operation Manual)**
- Engine air cleaner discharge vent is cleaned out.
- Inspect engine crankcase breather **(refer to Diesel Engine Operation Manual)**
- Verify hydraulic oil level (3/4" full).
- Fill diesel fuel tank.
- Verify coolant level **(refer to Diesel Engine Operations Manual).**
- Grease points.
- Verify drive belt tension is tight. **(Refer to 3.2 Drive Belt Maintenance Section.)**
- Clutch adjustment **(refer to PTO Operations Manual).**
- Make sure auger system is cleaned out and an empty 55-gallon drum is installed under auger discharge.
- Inspect Auger Direct Drive components (torsional insert). **(Refer to 3.3 Auger System Maintenance Section)**
- Verify oil level on VMAC **(refer to VMAC Operations Manual).**
- Check VMAC air cleaner filter
- Drain air tanks and reservoirs
- The Dust Collector System is now set-up and ready for operation.

2.2 OPERATING THE DUST COLLECTOR SYSTEM

Start-up

- Install duct hoses to The Dust Collector. Duct hose openings on either side of the collection cone can be used. Using three of the eight holes is recommended for proper air flow. Install a duct hose adapter into the duct hose end. Clamp hose to adapter. Now the quick release clamp can secure the adapter to the collection cone connection.
- Open the access door to engine controls.
- Turn battery disconnect switch to position "1" or "2". The engine can be started by turning the key ignition switch into the "start" position. Turn and hold the key ignition switch. The engine will crank over. Once it is started let go of the key ignition switch. The key ignition switch will stay in the "run" position and the engine will stay running.
- Let the engine warm up.
- Make sure all ball valves are in the "closed" position. Follow **Section 1.4 CONNECTING COMPRESSED AIR SUPPLY.**
- Engage the PTO. Pull on the handle to snap into position.
- This will engage the drive system for the fan. Make sure the fan exhaust is not blocked or obstructed. Verify belts are tight enough to run smooth on the pulley system. The belts can be tighten by the rapid belt adjust system if needed.
- Turn on the VMAC air compressor **(refer to the VMAC Operations Manual).** Push the "on" button.
- Increase engine RPM. Hold the rabbit/turtle switch into the "rabbit" position. This will increase the engine RPM to 2200. The rabbit/turtle switch can be used to lower or raise the RPM between 1000 RPM and 2200 RPM full throttle.
- The Dust Collector System will be moving air through the duct hoses.
- Turn "on" Auger System. Push Auger System Lever in to rotate Auger system "forward." Continually run auger system when collecting dust. DO NOT over fill hopper, maximum level not to exceed 50%. Auger System can also be jogged in the "reverse" position, by pulling out on the Auger System Lever
- Open 6" discharge valve. Monitor auger discharge
- Before turning on the filter pulsing sequence, refer to the operation of cartridges below. Filter pulsing can be activated by switching to the "on" position.

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) or reduced engine RPM's. This will help prevent cartridge damage at start-up.
- When ready to filter dust, start the diesel engine, engage clutch handle, and slowly increase RPM's.
- 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) or increase the engine RPM's to full throttle and start the filter pulsing sequence (turn the filter pulsing switch to the "on" position).

Operation with Older Cartridges

- When cartridges already have a thin layer of dust, the manual fan damper handle can be in the fully open position (100% open) or engine RPMs to it high limit.
- When ready to filter dust, start the diesel engine, engage clutch handle, and slowly increase RPM's to its high limit or desired RPM's needed.
- Start the filter pulsing sequence (tum the filter pulsing switch to the "on" position).

Operation of Collection Hopper Auger System

- When the dust Collection System is running, (collecting dust) The Auger System should be used.
- Make sure a 55-gallon drum or container is under the auger discharge valve.
- If a Collection Bag is used, attach the spout (of collection bag opening) around 6" discharge, and tighten bag clamping attachment.
- Move the Auger Discharge Valve Handle to the "open" position. (Open-valve handle perpendicular to valve)
- Push in the Auger System Control Lever; Located on the passenger side of the collection cone. The auger will be moving in the forward position and conveying the dust material out of the collection cone. The auger system can be used in the reverse position if there is a blockage.

  NEVER remove guards or reach into Auger System while machine is running,

- If the Auger System becomes too loaded, make sure to idle back the engine RPM's or disengage the PTO handle. This will help aid in removing the dust material from the collection cone and not allowing more material to collect inside. If the unit is installed with hydraulic gauge on the control system levers, this can be used as a monitoring device to let the operator know how much of the load the auger system has.
- When the 55-gallon drum is full of dust material, pull out on the Auger System Handle to the middle detent "off" position.
- Move the Auger Discharge Valve Handle to the "closed" position.
- Remove, cover, and dispose of 55-gallon drum(s), container(s), or collection bag(s).
- Install new 55-gallon drum, container, or Collection Bag under auger discharge opening.
- Make Sure Auger System is cleaned out before shutting down Dust Collection Unit

2.2 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.

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.

MAGNEHELIC DIFFERENTIAL PRESSURE GAUGE MOBILE OR SKID MOUNTED DUST COLLECTOR

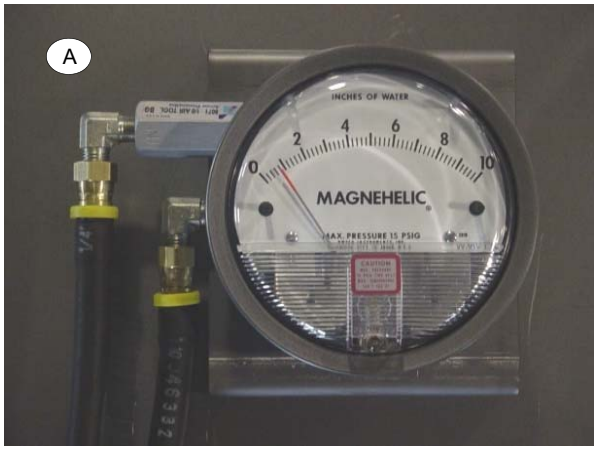
This magnehelic gauge indicator ranges between 0" to 10" on the water column. The magnehelic gauge will monitor The Dust Collector filters and show the differential pressure between the clean side and the dirty side of the filter. A lower reading on the water column indicates a cleaner filter and a higher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

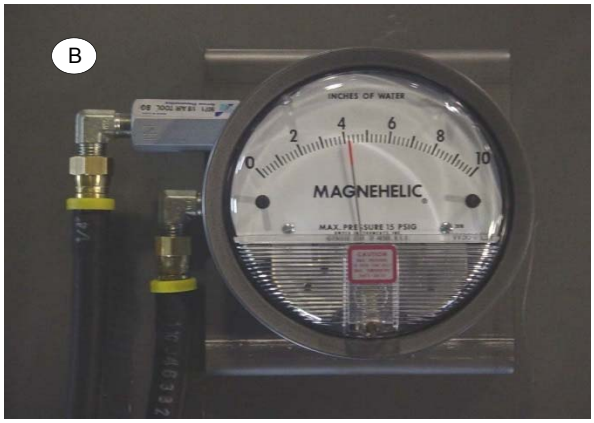
With new (or clean) filters, the gauge should read between 0.5" – 1.5" on the water column. Figure A shows the dust collector with new (or clean) filters.

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.

2.3 EFFECTIVE OPERATIONS & CONSIDERATIONS





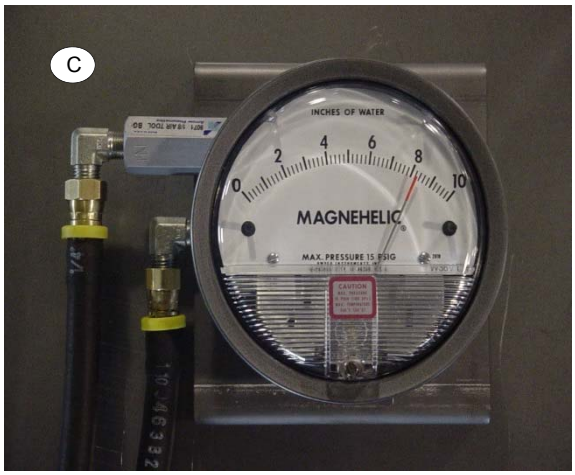


Figure	Identification	Remarks
A	Shows the magnehelic gauge indicating "clean" or "new" filter conditions	
B	Shows the magnehelic gauge indicating normal operating range	
C	Shows the magnehelic gauge indicating "dirty" conditions requiring inspection/maintenance	

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.

2.4 SHUTDOWN PROCEDURES

- 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.
- Make sure auger system is clear of dust material. Verify the auger system is off and the auger discharge valve is closed. Follow Section **2.2**
- **Operation of collection hopper auger system.**
- Decrease the engine RPM's. Push the rabbit/turtle switch into the "turtle" position. The engine will go to idle.
- Disengage the PTO. Push on handle to snap out of position. This will disconnect the drive system for the fan.
- Move the filter pulsing switch to the "off" position.
- Turn off the VMAC air compressor **(refer to VMAC Operations Manual).**
- Turn the run/stop switch to the "off" position. This will shut off the engine.
- Allow the engine to idle 3 to 5 minutes before shutting it off after a full-load operation. This allows adequate cool down of pistons, cylinders, bearings, and turbocharger components. Turn the key ignition switch to the OFF position.
- Drain the air tanks.
- Disconnect air (if applicable) and duct hose connections before moving or transporting.
- Once these procedures are done The Dust Collector System will be ready for moving or transporting. Follow the procedures in **Section 1.3 Towing of the Dust Collector System.**

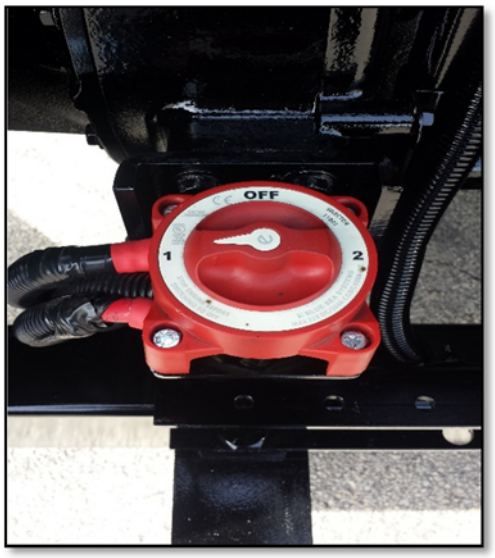
CAUTION: FAILURE TO FOLLOW THE CORRECT SHUTDOWN PROCEDURE MAY RESULT IN DAMAGE TO THE TURBOCHARGER AND SHORTEN THE TURBOCHARGER LIFE.

SECTION 3:
MAINTAINANCE AND TROUBLESHOOTING INSTRUCTIONS

3.1 ROUTINE MAINTENANCE

PROPER SAFETY PRECAUTIONS SHOULD BE TAKEN WHEN SERVICING THE DUST COLLECTOR SYSTEM.

A lock-out tag out procedure should be done on the battery disconnect. To make sure the engine can't be started before any maintenance is allowed.



SHOWN IN "ON" POSITION #1

BATTERY DISCONNECT SWITCH WITH LOCK-OUT TAG OUT LEVER. LOCATED BELOW INSTRUMENT PANEL

3.1 ROUTINE MAINTENANCE

DAILY

- Drain moisture from air manifold
- Check engine air cleaning **(refer to Diesel Engine Operations Manual)**
- In warm weather months drain moisture from alcohol injector (do not fill). In cold weather months fill alcohol injector. Use airline antifreeze approx. 1 quart.
- Verify engine oil level **(refer to Diesel Engine Operations Manual)**
- Drain fuel-water separator
- Inspect fan cooling components **(refer to Diesel Engine Operations Manual)**
- Check engine coolant level
- Verify drive belt tension is tight and running smooth around pulley system. **(refer to 3.2 Drive Belt Maintenance Section**)
- Verify auger drive chain(s) tension is tight and idler sprocket is adjusted properly. **(refer to 3.3 Auger System Maintenance Section**.)
- 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 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 3.5 Troubleshooting Section)**
- Verify oil level on VMAC air compressor **(refer to VMAC Operations Manual).**
- Verify hydraulic oil level (3/4" full)
- Check diesel fuel tank level

3.1 ROUTINE MAINTENANCE

WEEKLY OR PERIODIC

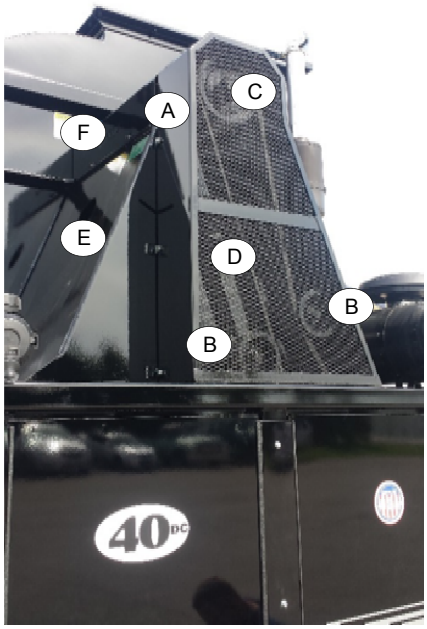
- Inspect fan housing for foreign material. Drain or remove if needed **(refer to Fan Maintenance and Troubleshooting Manual).**
- (If applicable) inspect bearings and handle control on damper **(refer to Fan Maintenance and Troubleshooting Manual).**
- Make sure moisture is kept out of the air system and cartridge area.
- Clean or replace engine air filters and clean out vent on housing.
- Verify hydraulic tank level (3/4" full). Replace hydraulic filter annually.
- Verify engine coolant level **(refer to Diesel Engine Operations Manual).**
- Grease and adjust PTO. **(refer to PTO Operations Manual).**
- Check or replace filter pulsing diaphragms gaskets after 18 months.
- Check access doors and collector area for possible leaks, gasket condition, and corrosion or build-up.
- Verify VMAC oil level **(refer to VMAC Operations Manual).**
- Clean or replace VMAC air cleaner **(refer to VMAC Operations Manual).**
- Grease and adjust auger drive system **(refer to 3.3 Auger System Maintenance Section**)

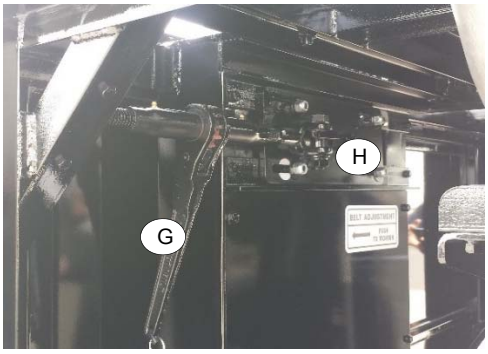
MAKING SURE ROUTINE MAINTENANCE IS DONE TO THE DUST COLLECTOR SYSTEM WILL ENSURE MANY YEARS OF TROUBLE FREE OPERATION.

3.2 DRIVE BELT MAINTENANCE

The belt drive system has been factory stretched prior to delivery of the dust collector system. The belts can be visually inspected when the unit is in operation. The drive belt system needs to wrap around the pulleys and show there is no bounce to each individual belt on rotation. When the belts appear to be bouncing or there is major movement, the drive belt system should be adjusted.

Adjustment to the belts can be done by ratcheting the handle which will push the idler pulley away from you to tighten the belts. This tightening process only needs a small amount of movement to effectively tighten the drive belt**. Do NOT overtighten The Drive Belt System**. This will cause added stress to the other components and failure to the bearings could occur.



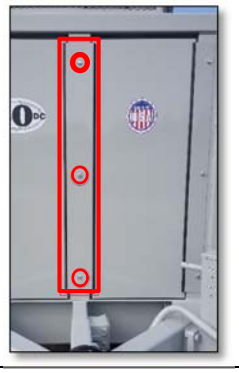


Key	Identification
A	Belt Guard
B	(2) Flat idler pulley
C	Fan shaft with V-groove pulley
D	Banded 4 Groove5VX-2000
E	Backward inclined centrifugal fan
F	Shaft Guard
G	Drive Belt Adjustment Handle
H	Drive Belt Slide Plate

DRIVE BELT MAINTENANCE

Belt Adjustments

1) Remove the three (3) bolts on the Front Center Plate. (Between the Right & Left Panels)



2) Once all three (3) Front Center Plate Bolts are removed, remove Center Plate.

3) After Front Center Plate has been removed, loosen the three (3) bolts on the Front Right of the Dust Collector.

4) Once all three (3) Front Right Side Bolts are loosened, Remove the Front Right Panel.

5) Use a Belt Tension Tester to take measurement. Take measurement half way between the Tensioner Pulley & Crank Pulley

Example: Gates 7401-0076
Pencil Type Tension Tester

6) Deflect Belt 11/16" by pushing Belt with a Tension Tester.

WARNING **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.

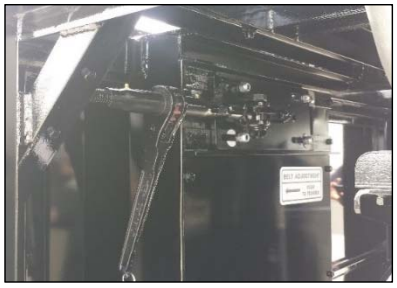
DRIVE BELT MAINTENANCE

Belt Adjustments

7) Read Measurement on Tension Tester.

- Depending on Dust Collector Application, measurement readings will vary.
- Used Belts should read between 14 – 18lbs.
- New Belts should read around 19 – 22lbs.
- Recommended initial Deflection Force is 21lbs.

8) By rotating the Ratcheting Handle, it will move slide plate towards you (sliding plate toward driver's side front Access door) Resulting in tightening of the Belt.



9) To gain more tensioning stroke, rotate Ratcheting Handle while holding onto barrel of ratcheting assembly; a "Clicking" noise will occur.

****DO NOT OVERTIGHTEN THE DRIVE BELT SYSTEM****

10) To achieve proper Belt Tension repeat steps 5 – 9 until recommended Deflection Force is achieved

11) Once Recommended Deflection Force is obtained, reassemble Dust Collector Components.

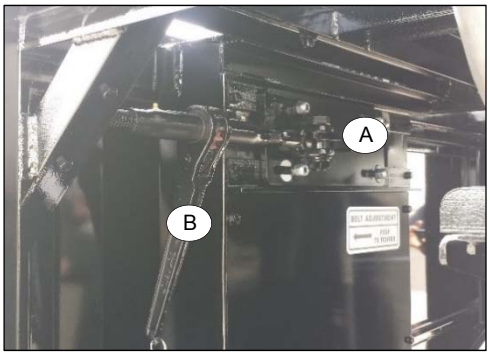
12) Reassembly of Dust Collector Components.

- Holding Front Right Panel in place, tighten the three (3) Front Right Side Bolts.
- Reattach the Front Center Plate by tightly Bolting the three (3) Front Center Plate Bolts in place.

WARNING **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.

When replacing the drive system with new belts the following procedures will have to be taken.

- Turn battery disconnect switch lever to the "off" position. Lock out/tag out.
- Remove upper belt guard and the right side engine enclosure panel. This will allow access to the drive belt system.
- Rotate the ratcheting handle so the idler pulley will loosen and the old belts can be removed.
- Inspect the v-groove and flat idler pulley for smooth bearing rotation. Replace if bearings are tight or have excessive axial movement.
- Install new banded belt around the pulleys.
- Adjust the belt idler tension with the ratcheting handle. The proper amount of tension is obtained by pressing in the center of the belts between pulley and belt idler pulley, with a belt tension tester on the top of the belt until there is a 11/16" of deflection. New belts should read around 19 – 22lbs, initial recommended deflection is 21lbs. Used belts should be between 14-18lbs.



Key	Identification	Remarks
A	Adjustable Idler Slide Plate	
B	Belt Idler Tension Ratcheting Handle	
C	Belt Tension Tester	**Example:** Gates 7401-0076 Pencil Type Tension Tester
D	Belt Tension Tester "In Use"	

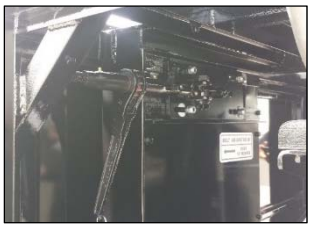
- New drive belts will need to be pre-stretched. This adjustment method will have to be repeated in approx. an hour after a loaded operation.
- Reinstall belt guard and right side engine enclosure panel.
- Remove lock out/tag out. Turn battery disconnect to the "on" position.

DRIVE BELT MAINTENANCE

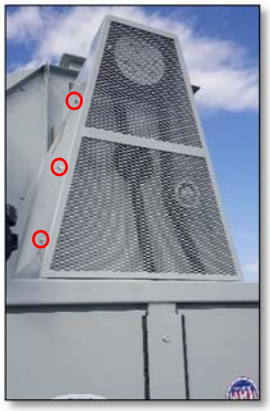
Belt Removal and Replacement

1) Open Front Passenger Side Access Door

2) Loosen the Belt by rotating Ratcheting Handle. So that the Slide Plate moves away from you. Once Slide Plate is as far away from you as allowed Belt will be loosened.



3) After Belt is Loosen, locate the Upper Belt Guard (on the top front of Dust Collector.) To remove the Upper Belt Guard first remove six (6) 3/8-16 bolts.



4) Once all six (6) Bolts are removed, take Belt Guard Off.

5) Next, remove the three (3) bolts on the Front Center Plate (Between the Right & Left Panels.)

6) Once all three (3) Front Center Plate Bolts are removed, remove Center Plate.

⚠WARNING **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.

DRIVE BELT MAINTENANCE

Belt Removal and Replacement

7) After Front Center Plate has been removed, loosen the three (3) bolts on the Front Right of the Dust Collector.

8) Once all three (3) Front Right Side Bolts are loosened, Remove the Front Right Panel

9) To Remove Belt, start to "roll off" at the bottom Crank Pulley, Holding the belt, twist and pull the inner side of belt out. Remove Belt from the bottom pulley and work up.

10) With new replacement belt, start at top Fan Pulley working belt on & down to final Crank Pulley. V-Belt ribs side must engage into pulley grooves.

NOTE: Engine Bolts may need to be loosened in order to install banded belt without damage.

11) Once Belt is on, use a Belt Tension Tester to take measurement. Take measurement half way between the Tensioner Pulley & Crank Pulley

Example: Gates 74010076
Pencil Type Tension Tester

12) Deflect Belt 11/16" by pushing Belt with a Tension Tester.

WARNING **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.

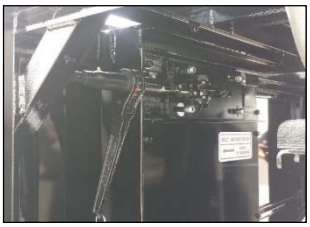
DRIVE BELT MAINTENANCE

Belt Removal and Replacement

13) Read Measurement on Tension Tester.

- Depending on Dust Collector Application, measurement readings will vary.
- Used Belts should read between 14 – 18lbs.
- New Belts should read around 19 – 22lbs.
- Recommended initial Deflection Force is 21lbs.

14) By rotating the Ratcheting Handle, it will move slide plate towards you (sliding plate toward driver's side front Access door) Resulting in tightening of the Belt.



15) To gain more tensioning stroke, rotate Ratcheting Handle while holding onto barrel of ratcheting assembly; a "Clicking" noise will occur.

****DO NOT OVERTIGHTEN THE DRIVE BELT SYSTEM****

16) To achieve proper Belt Tension repeat steps 11 – 15 until recommended Deflection Force is achieved.

17) Once Recommended Deflection Force is obtained, reassemble Dust Collector Components

18) Reassembly of Dust Collector Components.

- Holding Front Right Panel in place, tighten the three (3) Front Right Side Bolts.
- Reattach the Front Center Plate by tightly Bolting the three (3) Front Center Plate Bolts in place.
- Place Upper Belt Guard back on to top front of unit.
- Using the six (6) Bolts tightly securing Upper Belt Guard back onto Dust Collector.

WARNING **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.

40 DC Maintenance Schedule:		Frequency						
	Service	Daily	Weekly	Monthly	3 Months or 250 Hours	6 Months or 500 Hours	1 Year or 1000 Hours	2 Year or 2000 Hours
Symbols Used: (*)=Initial Break-In 100 Hours, A=Adjustment, C=Check, R=Replace/Renew								
Trailer	Tire PSI, Torque Lug Nuts, Axles, Wheel Chocks, Trailer Jacks, Trailer Lighting, Breakaway System, Empty Collection Cone, Hose Connection Covers	Pre-Trip Inspection						
	Fire Extinguisher					C		
Diesel Engine Engine	Engine Oil Level	C						
	Engine Coolant Level	C			C			
	Fuel-Water Separator Drain	C						
	Air Cleaner -Restriction	C			C			
	Charge Air Cooler & Piping	C			C			
	Radiator Hoses	C			C			
	Fan, Cooling	C			C			
	Fan Drive Belts	C			C,A			
	Engine Oil and Filters					R		
	Fuel Filters					R		
	Radiator Pressure Cap					C		
	Cooling Fan Belt Tensioner	C					C	
	Fan Hub, Belt Driven						C	
	Cooling System Flush							R
	Fan Drive Belts	*C,A		C,A				
	Grease -Zerk Points		R					
(PTO)	Clutch Linkage and Levers					C		R
	Engagement Torque				C,A			
	Fan Housing Drain	C						
	Exhaust No Obstructions			C				
	Grease -Zerk Points		R					
Centrifugal Fan	Mounting Hardware			C				
	Shaft Bearings					C		
	Fan Wheel						C	
	Shaft Seal						C	
	Rubber Fan Connection						C	

40 DC Maintenance Schedule:		Frequency						
	Service	Daily	Weekly	Monthly	3 Months or 250 Hours	6 Months or 500 Hours	1 Year or 1000 Hours	2 Year or 2000 Hours
Symbols Used: (*)=Initial Break-In 100 Hours, A=Adjustment, C=Check, R=Replace/Renew								
VMAC Air Compressor	Air Tanks and Reservoirs Drain	C						
	Air Cleaner -Restriction	C			R			
	Check Drive Belt		C					
	Drive Belt Tensioner			C				
	Air Compressor Mtg. Hardware				C			
	Oil and Filter					R		
	Coalescing Filter						R	
	Separator Tank Breather						R	
	Air Compressor Discharge Line							C
Pneumatic System	Diaphragms/Solenoids	C						R
	Pulsing Timer Function	C						
	Alcohol Inj. Cold Weather Antifreeze	C	R					
	Alcohol Inj. Warm Weather Drain		C					
	Regulator 85 PSI Max				C			
Filtering System	Dryer Desiccant Cartridges					R		
	Dryer Purge Assembly					R		
	Dryer Exhaust Mufflers					C		
Electrical System	Fan Discharge -Dust	C						
	Magnehelic Gauge	C						
	Dust Collector Cartridges			C				R
	Magnehelic Gauge Filter							R
	Battery Disconnect	C						
	Charging- Alternator	C						
	Instrumentation	C						
	Battery Cables-Terminals			C				

40 DC Maintenance Schedule:		Frequency						
	Service	Daily	Weekly	Monthly	3 Months or 250 Hours	6 Months or 500 Hours	1 Year or 1000 Hours	2 Year or 2000 Hours
Symbols Used: (*)=Initial Break-In 100 Hours, A=Adjustment, C=Check, R=Replace/Renew								
Hydraulic System	Fluid Level	C						
	Screw Conveyor Bearings-Seals	C						
	Discharge Opening	C						
	Screw Conveyor Operation	C						
	Collection Cone Empty	C						
	Coupling Insert	*C		C			R	
	Hydraulic Hoses, Fittings		C					
	Cooler Fan		C					
	Screw Conveyor Grease -Zerk Points		R					
	Coupling Alignment		C	C				
	Hydraulic Filter						R	

3.3 AUGER SYSTEM MAINTENANCE & SAFETY

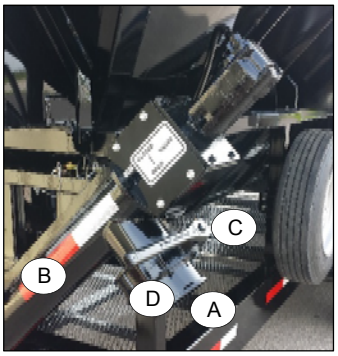
General Information:

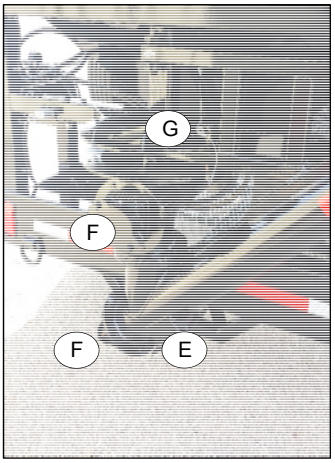
- The Auger System includes (2) hydraulic motors, (2) screw conveyors and (2) drive assemblies with safety guards. The Auger System is totally enclosed and guarded for the operator's protection. The manufacturer reserves the Rights to modify, improve, change and/or update product without obligation to make changes, improvements, and modifications to previously sold equipment.
- Making sure routine maintenance is done to the Dust Collector System will ensure many years of trouble free operation.
- It is important to take the time to examine and evaluate Dust Collector System before startup to ensure safety.

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

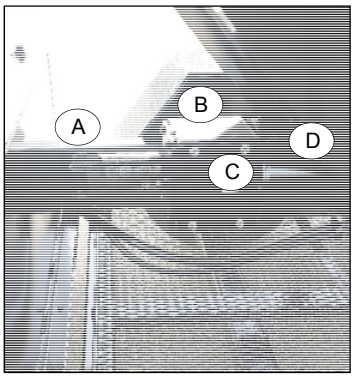
System Overview & Identification:

Within the Dust Collector System, an augers major function is to safely assist in the correct disposal of particles or dust, by conveying waste to the discharge spout.





Key	Identification
A	Auger Discharge Spout
B	Upper Inclined Discharge Auger
C	Discharge Valve Handle
D	6" Bag Clamp Attachment
E	Auger Inspection Cover
F	Heavy Duty Bearing Cover
G	180 Degree Incline Auger Pivot



Key	Identification
A	#1 Hydraulic motor
B	#1 Auger Direct Drive Guard
C	Heavy Duty Bearing with gasket inside
D	Lower Horizontal Hydraulic Auger

Auger (Screw Conveyor) - *a device consisting of a shaft with broad helical flange, rotating within a cylindrical casing to force bulk materials from one end to the other.*

Auger Direct Drive(s)- consisting of (2) coupling halves with torsional insert, cover and retaining ring. Designed to transmit power from one drive shaft to another driven shaft.

- Direct Drive #1 Is located towards front, underneath collection hopper; installed on the Hydraulic Motor powering the Lower Horizontal Auger.
- Direct Drive #2 is located in back above the Auger discharge spout; installed on the Hydraulic Motor powering the Upper Inclined Discharge Auger

Auger Discharge Spout - the device that releases and removes the continuous material waste from the Dust Collector.

Auger Inspection Cover- is the maintenance access door where the Lower Horizontal Auger & the Upper Inclined Discharge Auger connect. Cover can be removed using a 9/16" socket/ratchet or wrench on the 3/8-16 bolts and hardware.

Auger System Control- Lever to control augers movement – "forward", "reverse" or "off".

NOTE *When Auger System control lever is upright and centered; Augers are in the "off" position. Pushing the system control lever will move the augers forward conveying waste out of the collection hopper. Pulling the system control lever will move the augers into reverse.* ***CONTINUALLY RUN AUGERS WHEN DUST IS BEING COLLECTED. HOPPER SHOULD NEVER BE MORE THAN 50% FULL.***

WARNING **NEVER** do any kind of maintenance on AUGERS or DIRECT DRIVE ASSEMBLY unless **ALL** power driven equipment has been shut down. Disconnect and lock out power before entering hopper or servicing the equipment.

Bearing- used as the support and guide for a rotating, oscillating or sliding shaft, pivot, or wheel

Bearing Cover(s) - a guard that surrounds or protects the bearing.

Bearing Shaft Seal- protects bearing from dust and contaminates to enhance performance and the life of the bearing.

Discharge valve/handle- is the device in which controls the opening and closing of the Auger Discharge spout.

Open – valve/handle perpendicular to valve body
Closed – valve/handle parallel to valve body

NOTE:	*AUGER DISCHARGE SPOUT AND DISCHARGE VALVE/HANDLE SHOULD **ALWAYS** BE OPEN WHEN AUGERS ARE RUNNING; AND **SHOULD ONLY BE CLOSED DURING SHUT DOWN OR TRAVEL.***

Hydraulic Motor(s)- a motor converting kinetic or potential energy of a fluid into mechanical energy.

- Hydraulic Motor #1 is located Towards front, underneath collection hopper; powering the Lower Horizontal Auger
- Hydraulic Motor #2 is located in back near the Auger discharge spout ; powering the Upper Inclined Discharge Auger

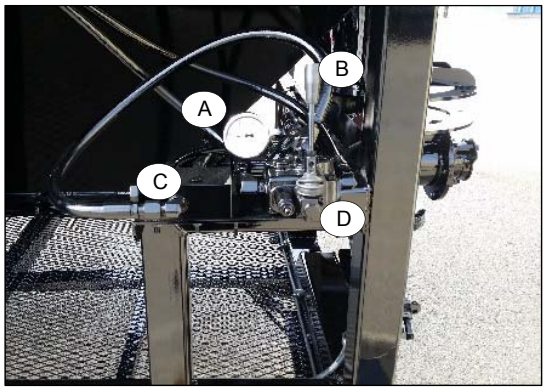
Lower Horizontal Auger- is the longer Auger that runs underneath; front to back, inside the collection hopper.

Upper Inclined Discharge Auger- is the shorter Auger located in back, removing the waste from the collection hopper conveying waste to the Auger Discharge Spout.

WARNING	**NEVER** start any kind of maintenance on DUST COLLECTOR SYSTEM unless **ALL** power driven equipment has been shut down. Disconnect and lock out power before entering hopper or servicing the equipment.

Safety Decals

Safety Decals



Key	Identification
A	Hydraulic Pressure Gauge
B	Auger System Control Lever
C	Hydraulic Flow Divider
D	Hydraulic Directional/Pressure Valve

WARNING **NEVER** start any kind of maintenance on DUST COLLECTOR SYSTEM unless **ALL** power driven equipment has been shut down. Disconnect and lock out power before entering Hopper or servicing the equipment.

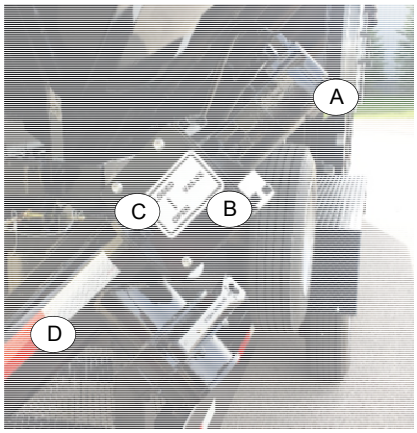
Grease Points & Lubrication Instructions:

- Lubricating bearings with grease is needed to prevent the bearings from locking up or failure. Recommended greasing instructions include both Upper and lower Auger Bearings being greased every 100 hours.
    - Recommended grease: NLGI 2 Grade Lithium Complex, ISO VG 100 (ex…Mobil SHC100)

WARNING **NEVER** start any kind of maintenance on DUST COLLECTOR SYSTEM unless **ALL** power driven equipment has been shut down. Disconnect and lock out power before entering hopper or servicing the equipment.

Auger Direct Drive Inspection:

- Weekly or monthly inspection of direct drive is needed to ensure proper performance.
- Disconnect and lock out power before servicing the equipment.
- Remove Auger Direct Drive Cover(s).
- Inspect hardware. Verify all fasteners are tight and secure.
- Inspect cover and retaining ring for defects.
- Inspect torsional insert for defects.



Key	Identification
A	#2 Hydraulic Motor
B	#2 Auger Direct Drive Guard
C	Heavy Duty Bearing inside with gasket
D	Upper Incline Hydraulic Auger

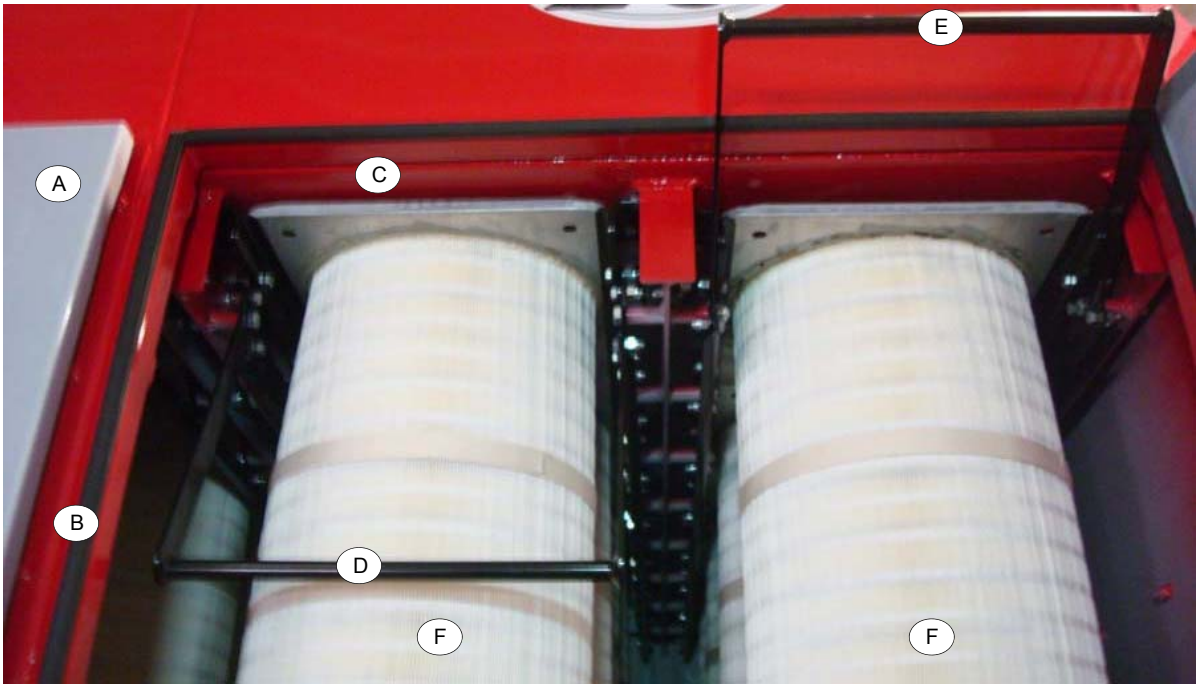
- Verify coupling alignment. Misalignment can cause damage to Auger drive and components. Consult manufacturer for proper alignment procedure.
- Reinstall Auger Chain Drive Cover(s).

3.4 CARTRIDGE REMOVAL & INSTALLATION

The dust collector system should be placed in a safe and accessible 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 doors by pulling out handles and rotating clockwise or counter-clockwise. May need to use keys provided doors can also be locked.
- Each door will give access to (2) filter rows. Each row can be individually handled.
- Raise the filter engagement handle to the top of the door opening. This will lower the filter rack and the cartridges can be slide out to the door opening. (open position)
- Use the filter removal tool to help with reaching the cartridges that are farther in the baghouse area. This removal tool is located inside of each door.
- Once all the cartridges are slide out they can be disposed of properly. Use the same steps for removing all the cartridges in the other access doors.
- At this time check the collection hopper for maintenance or cleaning.
- Install the new cartridges by using the same process. Note: the rectangular flange will only go inside the filter track one way. Make sure each cartridge stays inside the track and that the rectangular flange hits the next without riding on top. Improper seating or positioning of the cartridge will make for sealing issues and potential dust discharge.
- Make sure to double check all cartridges and that all engagement handles are in the closed position. Put all filter removal tools back inside the filter access door.
- Inspect gaskets on access doors.
- Inspect all linkage and filter racks.
- Close doors, lock if necessary.
- Refer to section **2.1 initial start-up procedures** for new cartridges.

3.4 CARTRIDGE REMOVAL & INSTALLATION



Key	Identification	Remarks
A	Cartridge Access Door	
B	Access Door Gasket	
C	Tube Sheet	
D	Filter Engagement Handle	Shown in "CLOSED" Position
E	Filter Engagement Handle	Shown in "OPEN" Position
F	Filter Cartridge	

**** Its recommended to wear respirators whenever dealing with used Filter Cartridges****

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

3.4 CARTRIDGE REMOVAL & INSTALLATION

Key	Identification	Remarks
A	Filter Access Door	
B	Filter Removal Tool & Holder	
C	Filter Access Door Handles	
D	Opening Filter Engagement Handle	
E	Filter Cartridge (s)	

3.4 CARTRIDGE REMOVAL & INSTALLATION

**** Its recommended to wear respirators whenever dealing with used Filter Cartridges****

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

Key	Identification	Remarks
A	Removing Cartridges	Using Filter Removal Tool
B	Installing Cartridges	

3.5 TROUBLESHOOTING

AUGER SYSTEM NOT WORKING PROPERLY

- Check hydraulic fluid level.
- Check for loosen or broken hydraulic hoses or fittings.
- Check and replace hydraulic return filter.
- Check torsional insert.
- Verify hydraulic motor is turning.
- Run auger in reverse to make sure nothing is lodged into auger flight.
- If experiencing other problems, please contact the manufacturer for further assistance.

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 disengaged for approx. 20 minutes. If the differential pressure is about the same after engaging the fan 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 auger discharge valve and empty collection hoppers into 55-gallon storage containers more often. Make sure discharge hoses are not plugged. Preventative maintenance should be done or options can be installed to help keep the collection hoppers 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 magnehelic 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 warn 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 manufacturers' 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.

3.6 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 DC 40000 DT model dust collector system has the following standard equipment:

- (8) S.S. Eyelets-Hose Connection Tie Offs
- Hydraulic driven screw conveyor collector unloading
- Pintle Type DOT Trailer
- Heavy duty frame, torflex tri-axles
- Lockable, hinged engine enclosure
- Magnehelic gauge
- Protective fan screen
- Collection cone electric vibrator
- Quick adjustable belt drive
- Lockable, hinged quick access filter area
- 20" Latching Manways on Cone
- 180° Rotating Direct Drive Discharge Auger

The DC 40000 DT model dust collector system has the following operating, design, and construction data:

- 40,000 ACFM (air volume)
- 14" 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 22,500 lbs (empty)
- 17" WG(design pressure)
- 30 SCFM @ 80 psi (reqd. Air compressor)
- 15,600 sq. Ft. Filter area
- 500 ACFM (air to cartridge ratio)
- 2.6/1 (air to filter area ratio)
- 12-gauge carbon steel construction
- Cartridges (12.75" dia.x30" long) 260 sq. Ft. of filter – QX cellulose/poly blend

4.2 OPTIONAL EQUIPMENT

The DC 40000 DT model dust collector system can have the following optional equipment:

- Electric 460-volt power package
- Combo diesel and electric power package
- Skid package with lift cage and fork tubes
- 12", 16" or 18" reduced inlet connections, diffuser screen with covers
- Sound package for quiet operation
- HEPA rated filtration 99.9% efficiency @ 0.5 micron
- Camlock connectors for electrical panel connection
- Tie-downs on frame
- Manual inlet damper for fan (electric unit)
- Camlock connectors (electric panel connections)
- Outlet and inlet transitions
- Digital photohelic gauge
- Hose and connection supplies (quick release)
- Collection vibrators pnuematic or electric
- Fifth wheel trailer
- Explosion proof vent, fan, and motor
- Gooseneck Style DOT Trailer.

PLEASE CONTACT:

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

FOR PRICING AND AVAILABILITY

SECTION 5:

MAJOR COMPONENTS & REFRENCE INFORMATION

5.1 ENGINE & PTO

DESCRIPTION: 173 HP 6.8 L TIER 3 or (173 HP 6.7L TIER 3)
DIESEL MANUFACTURER: JOHN DEERE or (CUMMINS)

DESCRIPTION: TWIN DISC POWER TAKE-OFF SAE #3
MANUFACTURER: TWIN DISC

5.2 FAN

DESCRIPTION: BIHS-402 BELT DRIVEN FAN
MANUFACTURER: AIR PRO FAN

5.3 HYDRAULIC COMPONENTS

DESCRIPTION: DIRECT DRIVE SINGLE GEAR PUMP
MANUFACTURER: CASSAPA

DESCRIPTION: DIRECT DRIVE BI-DIRECTIONAL AUGER MOTOR
MANUFACTURER: EATON

5.4 ELECTRICAL COMPONENTS

DESCRIPTION: 12-VOLT DC 10 STATION PULSING TIMER
MANUFACTURER: DWYER

DESCRIPTION: 12-VOLT DC FILTER SOLENOID INTEGRATED
MANUFACTURER: TURBO

DESCRIPTION: (10) DINN CABLE(S)
MANUFACTURER: MURR

DESCRIPTION: (2) 8-PORT CONNECTOR(S)
MANUFACTURER: MURR

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, John Deere, Cummins, 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.

SERVICE NOTES

SECTION 7:
SPARE PARTS LIST

40,000 CFM DUST COLLECTOR
RECOMMENDED SPARE PARTS FOR
180 HP JOHN DEERE DIESEL ENGINE

Qty			Item	Description
60			FN7546	IVEC 40,000 CFM DIESEL TRAILER MOUNTED DUST COLLECTOR FILTER
1			EC2001-10	10 STATION 12 VOLT BAGHOUSE TIMER
1			DCP0026	DIAPHRAGM FOR FILTER PULSING ON A IVEC 40,000 CFM DISEL POWERED DUST COLLECTOR
1			DCP0027	DIAPHRAGM REBUILD KIT FOR IVEC 40,000 CFM DIESEL DUST COLLECTOR
10			EP95114	MURR DINN CABLE(S)
2			EP95112	8-PORT MURR CONNECTOR(S)
1			DCP1001-2	ARCTIC AIR DRYER COMPLETE REBUILD KIT, CHECK VALVES, PURGE VALVES, INLET CHECK VALVES AND 2 CARTRIDGES
1			HY3000	HYDRAULIC FLUID FILTER CARTRIDGE
2			PR20130	FAN BELT FOR IVEC 40,000 CFM DIESEL DUST COLLECTOR (5VX-2000)
1			DCP1010	V-BELT DRIVE: V-GROOVE IDLER TENSIONER PULLY (BEARING ONLY)
2			DCP1011	40 DC V BELT DRIVE: FLAT UPPER IDLER PULLEY COMPLETE
1			P537877	ENGINE AIR CLEANER INNER, JOHN DEERE 173 HP TIER 3
1			P537876	ENGINE AIR CLEANER OUTER, JOHN DEERE 173 HP TIER 3
1			RE522878	ENGINE WATER/FUEL SEPARATOR, JOHN DEERE 173HP TIER3
1			RE541922	ENGINE PRIMARY FUEL FILTER, JOHN DEERE 173 HP TIER 3
1			RE504836	ENGINE OIL FILTER, JOHN DEERE 173 HP TIER 3
1			DCP1003	DOOR LATCH FOR DIESEL DUST COLLECTORS
1			DCP0004-1	AUGER BEARING FOR TAIL END OF UPPER & LOWER AUGERS (OPPOSITE OF MOTOR END)
1			DCO0054	DIRECT DRIVE INSERT BLUE QF25
1			DCP0004	AUGER BEARING FOR MOTOR END OF UPPER & LOWER AUGERS (OPPOSITE OF TAIL END)

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