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performance proven **VACUUM SOLUTIONS™**

OPERATOR'S MANUAL FOR THE VecLoader® Trailer Vacuums

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**VECLOADER[®] VACUUM
RECORD OF MODEL AND SERIAL NUMBERS**

Customer _____ **Machine Model:** VecLoader

Date of Shipment _____ / _____ /09 **VIN #:** 1V9PT18 1090

Paint Color Code: _____.

Gross Vehicle Weight: _____ **Actual Weight:** _____

Machine Serial Number: Plate is located on the left front of the frame.

Model Number 07019 **Serial Number** _____

Engine:

Manufacturer John Deere **Serial Number** _____ **Model** PE6068

Engine Description/ Rating

Gross H.P. _____ **Cylinders** _____ **RPM** _____

Air Compressor:

Mfg Midland **Model** _____

Fuel and Oil Capacity:

Fuel Tank: _____ **Gallons** **Approx Run Time:** 8 **Hours @ 75% load**

Fuel: Diesel **Oil:** 20 **Quarts with Filter Change**

Blower: Plate is located on the end opposite the drive shaft.

Manufacturer _____

Serial Number _____ **Model** _____

Maximum Pump Ratings _____ **CFM** _____ **Hg**

Belt Tension: Adjust to 7.60 lbs. @ .19" deflection or Check if Belt Drive

Baghouse Filter Bags—Qty _____, **Reorder#** _____, **Microfilter —Qty** _____, **Reorder#** _____.

Non Standard Options on machine:

Note: A copy of this page must be submitted with all warranty claims

VECLOADER OPERATOR'S MANUAL

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INTRODUCTION

⚠ DANGER

This manual contains important information about the safe operation of your VecLoader vacuum and must be read and understood prior to machine maintenance or operations. The vacuum is extremely powerful and poses a great safety hazard if instructions and warnings are not observed.

DO NOT operate or service this machine or permit anyone to operate or service this machine until you or the other persons have read this manual. It is your responsibility to insure that all operators are properly trained for safe operation. Allow only trained operators who have demonstrated the ability to operate and service this machine correctly and safely perform those activities. Factory training is always available. It is highly recommended that each new operator receive Factory Training. Closely supervise inexperienced operators. Failure to follow safety and or operating instructions and precautions could result in severe personal injury, death, or machine damage. If there are questions, call:

1 (414) 247-7100 or 1 (800) 832-4010

Make sure this manual is complete and in good condition. Insure all safety decals are in good condition. Call your dealer or Vector Technologies if replacement manuals or decals are required. If you sell or transfer this equipment, this manual should be passed along to the new owner and operators.

⚠ DANGER

NEVER USE, MOVE OR WORK ON THE VACUUM WITHOUT REFERENCE TO THE SAFETY PROCEDURES NOTED WITH IN THIS MANUAL. FAILURE TO DO SO COULD RESULT IN SEVERE PERSONAL INJURY, DEATH, OR MACHINE DAMAGE.

⚠ DANGER

UNLESS SPECIALLY EQUIPPED AND NOTED ON PAGE i OF THIS MANUAL THE VACUUM CANNOT BE USED TO CONVEY FLAMMABLE OR EXPLOSIVE MATERIALS. ALL SAFETY RULES MUST BE OBSERVED. FAILURE TO FOLLOW WARNINGS COULD RESULT IN SEVERE PERSONAL INJURY, DEATH, OR PROPERTY DAMAGE.

⚠ DANGER

VECLOADERS ARE EXTREMELY POWERFUL VACUUMS. DO NOT PLACE HANDS, FACE, CLOTHING, OR ANY BODY PART INTO OR NEAR ANY SUCTION INLET, HOSE OR NOZZLE WHEN OPERATING THE VACUUM. THERE IS INHERENT RISK TO OPERATING PERSONNEL EVEN IF A HOSE GUARD OR NOZZLE IS IN PLACE. POWERFUL SUCTION WILL CAUSE SEVERE PERSONAL INJURY OR DEATH. IT IS RECOMMENDED THAT EACH WORKER IN THE VICINITY OF THE VACUUM ACTIVITY CARRY A RETRACTABLE RAZOR KNIFE OR OTHER SHARP CUTTING IMPLEMENT. THE PURPOSE OF THE KNIFE WOULD BE TO CUT THE VACUUM HOSE OPEN SHOULD CLOTHING OR A BODY PART BE SUCKED INTO THE HOSE. SOME HOSES MAY NOT BE EASILY OR QUICKLY CUT, SO CARRYING A KNIFE IS NOT A SUBSTITUTE FOR VIOLATION OF THIS SAFETY RULE AND OTHER APPROPRIATE WORK RULES.

⚠ DANGER

UNDER NO CIRCUMSTANCES SHOULD ANY MODIFICATIONS BE MADE TO VECTOR TECHNOLOGIES LTD. MACHINERY WITHOUT PRIOR WRITTEN FACTORY AUTHORIZATION. ANY UNAUTHORIZED MODIFICATIONS WILL VOID THE WARRANTY, AND MAY CAUSE HARM TO PERSONS OR PROPERTY.

⚠ DANGER

EACH NEW VECLOADER IS FURNISHED WITH A HOSE END GUARD(S). ADDITIONAL HOSE GUARDS ARE AVAILABLE FROM THE FACTORY IN ALL COMMON HOSE DIAMETERS. THE POWERFUL SUCTION IS DANGEROUS. VECLOADERS SHOULD NOT BE USED WITHOUT THIS GUARD INSERT PLACED AT THE END OF THE SUCTION HOSE UNLESS A VECTOR SUPPLIED NOZZLE IS BEING USED. NEW VECTOR BULK NOZZLES ARE FURNISHED WITH SAFETY CROSS-RODS. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN PERSONAL INJURY OR DEATH. CROSS RODS ARE AVAILABLE FOR OLDER NOZZLES.

⚠ DANGER

VECLOADER VACUUMS ARE FURNISHED WITH AN EMERGENCY SHUTDOWN PENDENT. STANDARD SYSTEMS ARE FURNISHED WITH 100' CORD. ADDITIONAL LENGTHS OF CORD ARE AVAILABLE FROM THE FACTORY OR LOCAL STORES AND MUST BE OBTAINED IF OPERATING CONDITIONS DICTATE LONGER HOSE RUNS. ALL WORKERS AT THE END OF EACH VACUUM HOSE MUST HAVE THIS PENDENT WITHIN THEIR IMMEDIATE REACH WHILE VACUUMING. IF MULTIPLE HOSE OPERATORS ARE ANTICIPATED, AN "E-STOP" SPLITTER IS AVAILABLE FROM THE FACTORY TO ALLOW FOR MULTIPLE E-STOPS. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

⚠ DANGER

THE STANDARD FILTERS SUPPLIED WITH THIS UNIT ARE NOT HEPA RATED. UNLESS NOTED ON PAGE i OF THIS MANUAL, YOUR VECLOADER IS NOT EQUIPPED WITH HEPA FILTERS. DO NOT VACUUM MATERIAL REQUIRING HEPA FILTRATION WITH THIS VACUUM UNLESS FACTORY HEPA FILTRATION IS SUPPLIED AND DOCUMENTED IN WRITING FROM THE FACTORY. OBSERVE ALL FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS REGARDING HANDLING OF REGULATED MATERIAL.

⚠ DANGER

THE SAFETY INFORMATION PROVIDED IN THIS MANUAL DOES NOT REPLACE SAFETY CODES, INSURANCE REQUIREMENTS, OR FEDERAL, STATE, AND LOCAL LAWS. IT IS THE USER'S RESPONSIBILITY TO OBSERVE ALL FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS APPLICABLE TO THE JOB SITE AND THE EQUIPMENT BEING UTILIZED. IT IS THE USERS' RESPONSIBILITY TO MAINTAIN A SAFE WORK ENVIRONMENT. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

NOTE

Some models utilize a clutch and belt-drive the vacuum producer and while other units feature a direct-drive coupling between the engine and blower. Care should be taken to insure that proper maintenance procedures are followed for belt-drives including tightening and adjustment as noted. Direct-drive couplings require no maintenance. Information on direct-drive couplings is included in the **APPENDIX** of the Manual.

SAFETY

SAFETY RULES

Failure to follow the safety precautions in this manual can result in personal injury, death, or property damage. Observe the same common sense precautions used with any similar machine, where carelessness, inattention, or poor maintenance could be hazardous to people or property. Carefully read the safety precautions below and within this manual.

TYPES OF SAFETY MESSAGES



Indicates immediate hazards, which, if not avoided, WILL result in severe personal injury or death. The color associated with Danger is RED.



Indicates hazards or unsafe practices, which, if not avoided, could result in severe personal or death. The color associated with Warning is ORANGE.



Indicates hazards or unsafe practices, which may result in minor personal injury or machine damage, if not avoided. It may also be used as an alert against unsafe practices. The color associated with Caution is YELLOW.

NOTE Aids in understanding a procedure, or increasing efficiency of operation.

RECOMMENDED PRECAUTIONS

Operating and maintenance personnel must understand and apply the following recommended precautions. Failure to follow recommendations may result in personal injury, death, or property damage.

General Precautions:



Under no circumstances should any modifications be made to Vector Technologies Ltd. machinery without prior written factory authorization. Any modifications will void the warranty, and may cause harm to persons or property.



DO NOT smoke while filling the fuel tank or working on the fuel system. Failure to do so could result in severe personal injury, death, or property damage.



Do not use the vacuum to convey flammable or explosive materials. Each safety rule must be observed. Failure to follow this precaution could result in severe personal injury, death, or property damage.

Towing Precautions:



Use caution when towing this unit as it is very heavy. A properly maintained tow vehicle meeting the towing requirements for this unit should be utilized. Applicable weights are indicated on Page i of this manual. Failure to follow this precaution could result in severe personal injury, death or machine damage.

⚠ DANGER

Ensure your vehicle, trailer and driver are properly trained and licensed and in compliance with all applicable laws and regulations. Failure to follow this precaution could result in severe personal injury, death or machine damage.

⚠ DANGER

Make sure all lights on the trailer are functioning properly before transporting this unit. Failure to follow this precaution could result in severe personal injury, death or machine damage.

⚠ DANGER

Always tow the machine with the hopper in the lowered and locked position. Failure to follow this precaution could result in severe personal injury, death or machine damage.

⚠ DANGER

Always tow the VecLoader with the safety chains crossed and attached to the tow vehicle. The emergency break-away cable must also be properly attached to the towing vehicle. Failure to follow these precautions could result in severe personal injury, death or machine damage.

⚠ DANGER

Before towing unit, inspect the tires, torque on lug nuts and the hitch mechanism to be sure the trailer is road-worthy. Failure to do so could result in severe personal injury, death, or property damage.

⚠ DANGER

The vacuum trailer must be level with the tow vehicle. The brakes must be operational and tested for function. Failure to do so could result in severe personal injury, death, or property damage.

Operating Precautions:

⚠ DANGER

DO NOT operate or service this machine or permit anyone to operate or service this machine until you or the other persons have read this manual. It is your responsibility to insure that all operators are properly trained for safe operation. Allow only trained operators who have demonstrated the ability to operate and service this machine correctly and safely perform those activities. It is highly recommended that each new operator receive Factory Training. Closely supervise inexperienced operators. Failure to follow safety and or operating instructions and precautions could result in severe personal injury, death, or machine damage.

⚠ DANGER

Unless noted on Page i. of this manual, the VecLoader is not equipped with Hepa filters. Do not vacuum material requiring Hepa filtration with this vacuum. Observe all federal, state, and local rules and regulations regarding handling of regulated material.

⚠ DANGER

Do not place hands, face, clothing, or any part of body into or over any suction inlet when operating the VecLoader. The powerful suction can cause severe personal injury or death. Each worker in the vicinity of the vacuum activity should carry a retractable razor knife or other sharp cutting implement. The purpose of the knife would be to cut the vacuum hose open should clothing or a body part be sucked into the hose. Some hoses may not be easily or quickly cut, so carrying a knife is not a substitute for violation of other safety rules, laws and ordinances.

⚠ DANGER

Each new VecLoader is furnished with a hose end guard(s). The vacuum should not be used without this guard insert placed at the end of the suction hose unless a Vector supplied nozzle is being used. New Vector bulk nozzles are furnished with safety cross-rods. Safety cross rods should be installed on older nozzles. The powerful suction can cause severe personal injury or death. Failure to follow this precaution could result in personal injury or death.

⚠ DANGER

Units are furnished with an Emergency Shutdown pendent. The vacuum will shut down when the red button is depressed. Most systems are furnished with 100-foot cord. The pendent must stay with the vacuuming worker and must not be used without the 100 foot cord or longer cord in place. Additional lengths of cord are available from the factory or local suppliers and must be obtained if operating conditions dictate longer hose runs. All workers operating vacuum hose must have this pendent within their immediate reach. Failure to follow this precaution could result in severe personal injury or death.

⚠ DANGER

Do not vacuum flammable or explosive material. Failure to follow this precaution could result in severe personal injury, death, or property damage.

⚠ WARNING

Always attempt to position VecLoaders on solid ground. If you must set-up on soft ground, make sure there are planks underneath the jack stands to distribute the weight of the machine evenly. Failure to do so could result in severe personal injury, death, or property damage.

⚠ DANGER

Always position the machine so that it is sitting no more than 5° off level in any direction. Failure to do so could result in severe personal injury or machine damage.

⚠ DANGER

Always lower and pin the four jack stands so that they ALL bear weight before raising the hopper. Failure to follow this precaution could result in severe personal injury, death or machine damage.

⚠ DANGER

Do not bypass or remove safety controls and features. Failure to follow this precaution could result in severe personal injury, death or machine damage.

⚠ DANGER

Wear the proper protective equipment required for safe operation of this equipment and as the job requires. Protective equipment could include but not be limited to steel toe boots, harnesses, safety vests, dielectric gloves, safety glasses, hard hat, ear protection, communication radio, sharp knife and close fitting clothing or protective coveralls. When operating this equipment, avoid wearing jewelry such as rings, bracelets, necklaces, and watches. Long hair should be covered or otherwise controlled. Failure to follow this precaution could result in personal injury, or death.

⚠ WARNING

Always wear safety glasses or goggles when looking up inside the hopper through the discharge door. Failure to follow this precaution could result in severe personal injury.

⚠ WARNING

Never raise the baghouse under electric wires, near any power cables or under obstructions. Failure to follow this precaution could result in severe personal injury, death or machine damage

⚠ DANGER

Never stand under the raised hopper unless the safety struts are in place. Failure to do so could result in severe personal injury, or death.

⚠ DANGER

Always install the safety struts when the hopper is in the raised position. Failure to follow this precaution could result in severe personal injury, death or machine damage.

⚠ CAUTION

The vacuum hose may suddenly move and cause you to lose balance. ALWAYS secure the hose to prevent severe personal injury, death, or property damage.

⚠ WARNING

Do not smoke while servicing the batteries. Lead acid batteries give off a highly explosive hydrogen gas which can be ignited by flame, electrical arcing or by smoking. Wear appropriate eye protection. Failure to follow this precaution could result in severe personal injury or death.

⚠ DANGER

Keep hands, feet, and clothing away from power-driven parts. Contact with moving drive belts, drive couplings or any rotating machinery will result in severe personal injury or death. Ensure that guards, shields, and access doors are in place and secured before operating.

⚠ WARNING

Always operate the machine with the engine and belt cover in closed in place or the shroud enclosure side doors closed. Failure to follow this precaution could result in severe personal injury or death.

⚠ DANGER

Do not operate the vacuum if any controls are inoperable or require maintenance. Failure to follow this precaution could result in severe personal injury, death, or property damage.

⚠ DANGER

Before vacuuming any material that would set off a static charge, the machine must be properly grounded. Consider the material being vacuumed. Failure to follow this precaution could result in severe personal injury, death, or property damage.

⚠ WARNING

Do not operate the unit if dust is visible at the blower discharge. Failure to follow this precaution could result in severe personal injury or death.

⚠ WARNING

Check the hopper periodically to make sure all the material is discharging and not building up on the inside. Failure to follow this precaution could result in severe personal injury, machine damage, or death.

⚠ WARNING

Do not attempt to operate the VecLoader if the system has shut down due to low oil pressure or high engine temperature. Repair the cause for shutdown before restarting. Failure to follow this precaution could result in personal injury, death, or property damage.

⚠ CAUTION

Using the wrong grade and weight of oil and operating at high engine temperature during break-in can cause engine damage. Use correct oil grade and specification, and adequate engine coolant.

NOTE

Excess engine oil can cause high oil consumption, high operating temperatures, and oil foaming. **Do not** overfill crankcase.

⚠ CAUTION

Operation of the engine without sufficient oil may cause engine damage.

⚠ WARNING

Never remove the radiator cap from a pressurized system while the engine is running or hot. Hot water and/or steam will be expelled resulting in severe burns.

⚠ CAUTION

Do not crank the engine more than twenty seconds. Wait ten seconds before trying again. If the engine fails to start after two or three tries, return the Key/Start Switch to OFF. Failure to follow this precaution could result in machine damage.

⚠ CAUTION

The following procedure must be observed before starting the vacuum unit when temperatures are below freezing. Before starting unit and with the engine off and the clutch disengaged-- manually spin the blower by rotating the drive belts to insure that blower lobes are not frozen in place. If the lobes will not freely turn, unit should be moved to a warmer environment to allow any ice inside the blower to thaw. After thawing, any water will be evacuated without incident upon starting the blower. If the blower remains "frozen" in warmer conditions, call the factory for consultation before starting unit. Failure to follow this precaution could result in blower damage and may void blower warranty.

⚠ CAUTION

To prevent idler bearing and belt failure, the machine drive belts must be inspected and tightened periodically during the first eight to ten hours of operation. Failure to follow this precaution may result in machine damage.

⚠ DANGER

UNLESS NOTED ON PAGE i. OF THIS MANUAL, THE VECLOADER IS NOT EQUIPPED WITH HEPA FILTERS. DO NOT VACUUM MATERIAL REQUIRING HEPA FILTRATION WITH THIS VACUUM. OBSERVE ALL FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS REGARDING HANDLING OF REGULATED MATERIAL.

⚠ DANGER









THE SAFETY INFORMATION PROVIDED IN THIS MANUAL DOES NOT REPLACE SAFETY CODES, INSURANCE REQUIREMENTS, OR FEDERAL, STATE, AND LOCAL LAWS. IT IS THE USER'S RESPONSIBILITY TO OBSERVE ALL FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS APPLICABLE TO THE JOB SITE AND THE EQUIPMENT BEING UTILIZED. IT IS THE USERS' RESPONSIBILITY TO MAINTAIN A SAFE WORK ENVIRONMENT.

⚠ DANGER

THE VACUUM SYSTEM CAN BE SHUT DOWN REMOTELY BY DEPRESSING THE EMERGENCY E-STOP AND AT THE VACUUM BY USE OF THE VACUUM OFF SWITCH. ALL JOB SITE WORKERS SHOULD BE TRAINED IN VACUUM EMERGENCY SHUTDOWN PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

SAFETY, OPERATING AND MAINTENANCE DECALS

Safety decals have been placed on the VecLoader vacuum to provide warning and instruction to persons working in the area and to protect them and the surrounding environment from harm. Additional decals indicate operating and maintenance instructions. Do not remove, paint over, or otherwise cover the decals. Damaged or weathered decals should be replaced. Decals are noted below:

<u>Item</u>	<u>Quantity</u>	<u>Description</u>
1.	1 ea	 Decal - Vacuum hose may suddenly move...(Part #9182-00)
2.	1 ea	 Decal - DO NOT vacuum flammable material, it may explode... (Part #9172-00)
3.	2 ea	 Decal - DO NOT Open Doors...(Part #9162-00)
4.	1 ea	 Decal-DO NOT remove or install drive belt cover with the engine running. (Part #9181-00)
5.	1 ea	 Decal - Very powerful suction...(Part #9174-00)
6.	5 ea	 DO NOT Raise Cyclone... (Part #9201-00)
7.	1 ea	Diesel Fuel Only (Part #9170-00, where applicable)
8.	2 ea	Drain Daily (Part #9177-00)
9.	1 ea	Lube Clutch Weekly (Part #9176-00)
10.	1 ea	 Remote Emergency Stop instructions on unit (Part #9811-AO)
11.	1 ea	 Remote Emergency Stop instructions on e-stop (Part #9811AO-11)

Some warning decals will not be applicable on some models.

See **Figure 6.** for decal locations.

VECLOADER VACUUMS KEY COMPONENTS (MODELS WILL VARY)

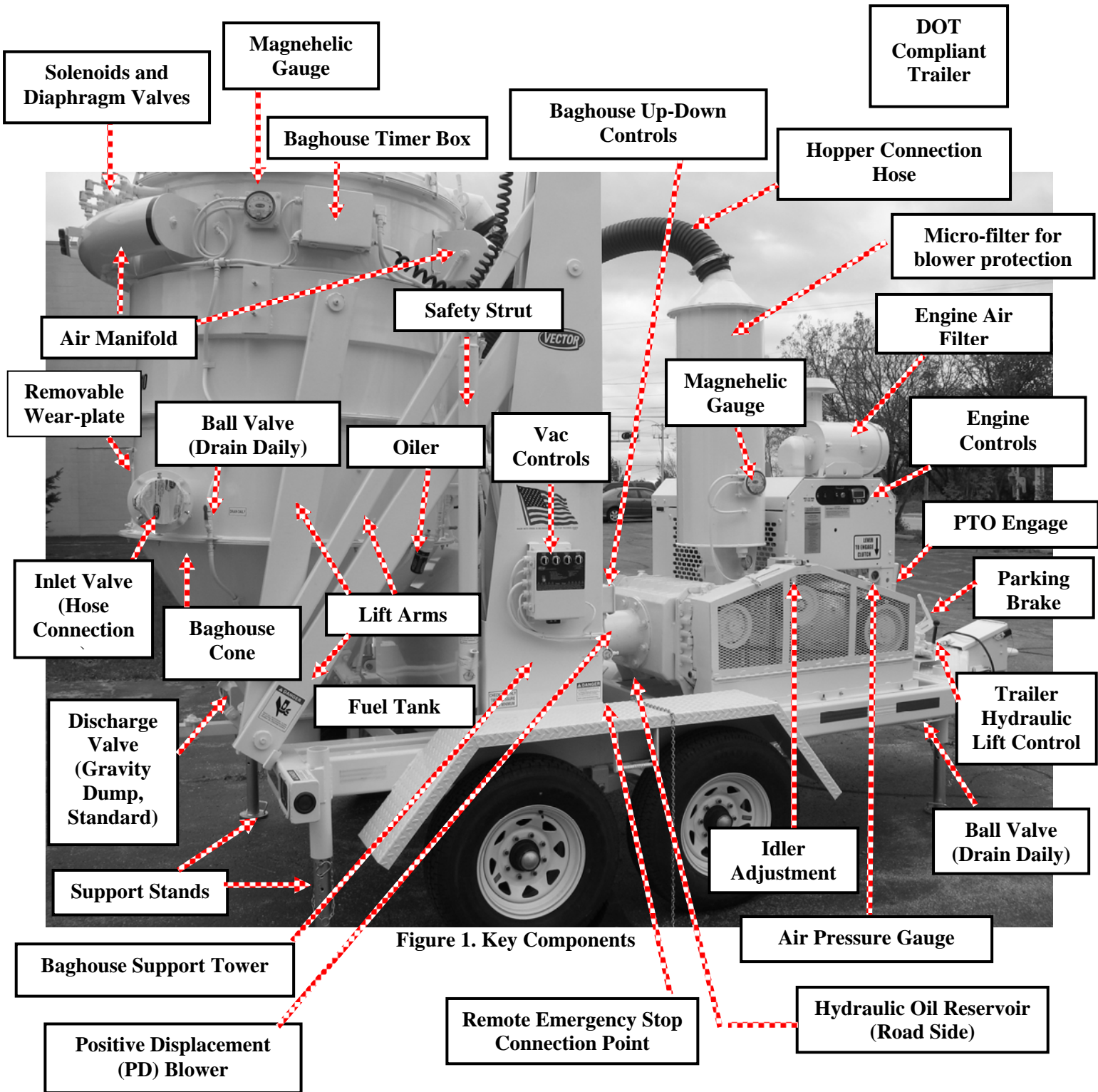


Figure 1. Key Components

VECLOADER VACUUMS TRAILER COMPONENTS (MODELS WILL VARY)

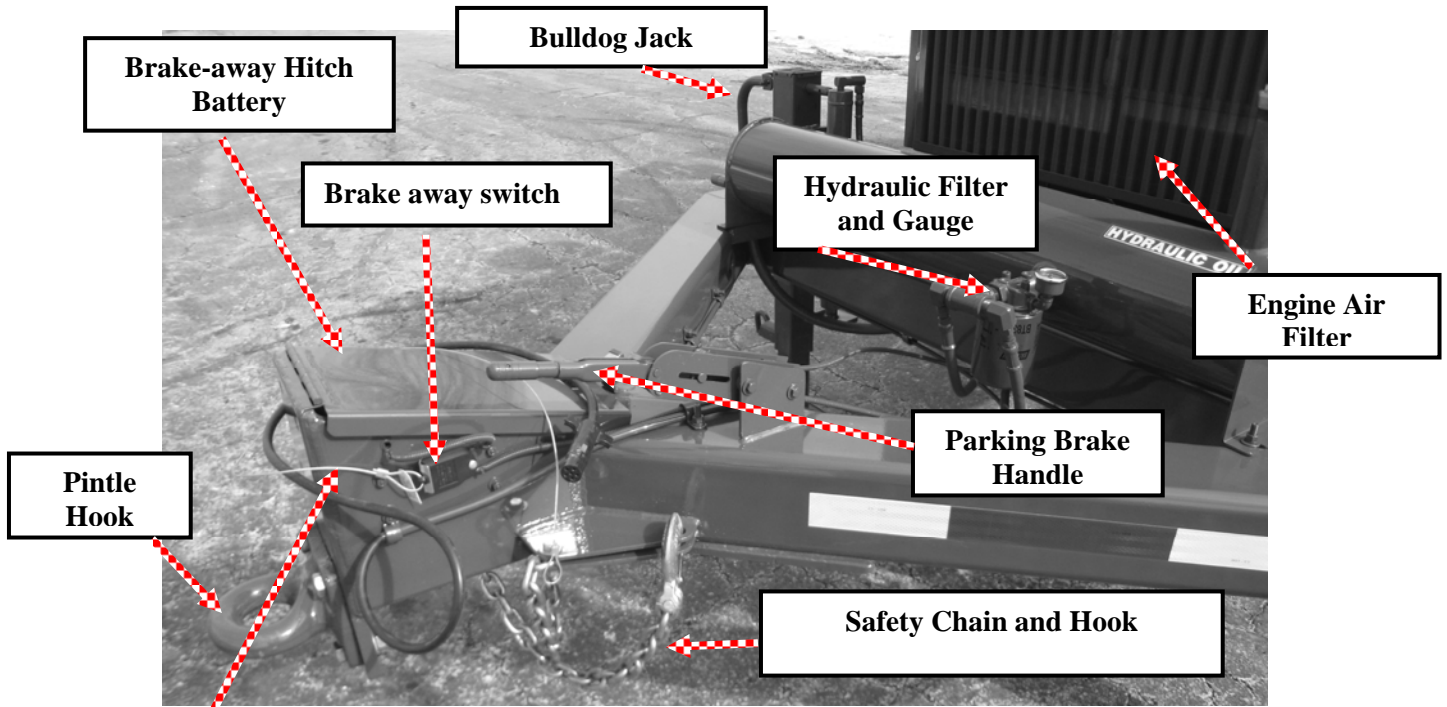
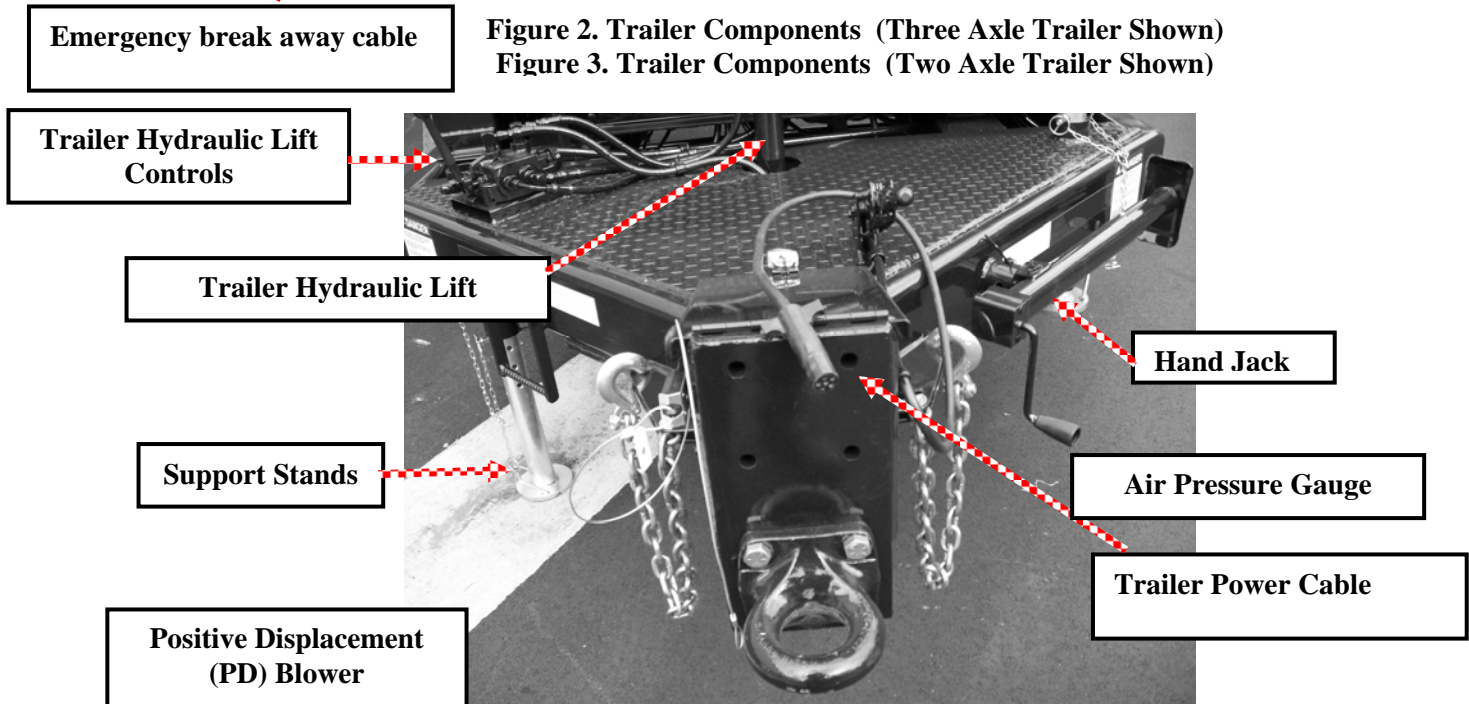


Figure 2. Trailer Components (Three Axle Trailer Shown)
Figure 3. Trailer Components (Two Axle Trailer Shown)



VECLOADER VACUUMS KEY COMPONENTS (MODELS WILL VARY)

⚠ DANGER

Watch out for pinch points. Failure to follow this precaution will result in severe personal injury or death.

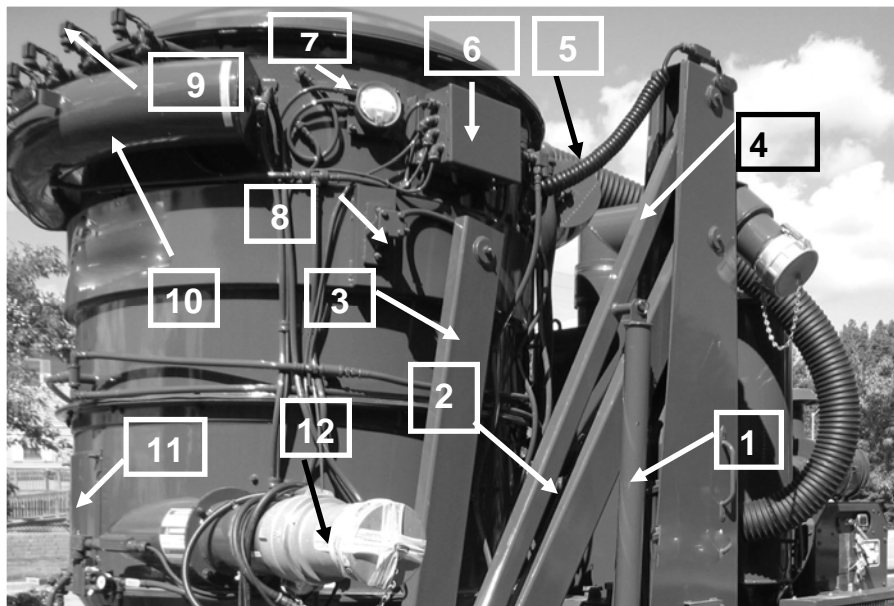


Figure 4.

1. Baghouse safety strut
2. Lift arm 2x6x92
3. Lift Arm 2x6x71
4. Lift arm 2x3x95
5. Coiled electric cable
6. Baghouse timer box
7. Baghouse magnehelic gauge
8. Upper vibrator
9. Baghouse pulsejet valve and solenoid
10. Rear air manifold for pulse jet
11. Removable wear plate
12. Inlet

SAFETY, OPERATING AND MAINTENANCE DECAL LOCATIONS

Safety decals have been placed on the VecLoader vacuum to provide warning and instruction to persons working in the area and to protect them and the surrounding environment from harm. Additional decals indicate operating and maintenance instructions. Do not remove, paint over, or otherwise cover the decals. Damaged or weathered decals should be replaced. The noted references are to the list of decals in the preceding section.



Figure 5. Decal Locations

See Page 9 for decal descriptions.

STANDARD SPECIFICATIONS

- ENGINE:** See **RECORD OF MODEL AND SERIAL NUMBERS**, page i
- RATING:** See **RECORD OF MODEL AND SERIAL NUMBERS**, page i
- CONTROL PANEL:** See **INSTRUMENT REVIEW** following
- VACUUM PUMP:** See **RECORD OF MODEL AND SERIAL NUMBERS**, page i
- COMPRESSOR:** 13.1 ACFM with air reservoir.
- VACUUM GAUGE:** 0- 30" Hg , Glycerin filled.
- PRIMARY FILTER:** The vacuum's filtration system consists of a cyclonic baghouse with coated filter bags. The filter bags are continuously cleaned by reverse air pulses, controlled by a solid-state timer and solenoid valves. A magnehelic gauge shows any pressure change across the filters. The number of filter bags and their reorder number is noted on page i of this manual.
- SECONDARY FILTER:** Replaceable cartridge type microfilter(s), mounted on blower for additional filtration and protection of blower. The filter is not pulsed by the air system. The number of filters and their reorder number is noted on page i of this manual.
- DRIVE:** Some models utilize a clutch and belt-drive the vacuum producer and while other units feature a direct-drive coupling between the engine and blower. Care should be taken to insure that proper maintenance procedures are followed for belt-drives including tightening and adjustment as noted. Direct-drive couplings require no lubrication. Information on direct-drive couplings is included in the **APPENDIX** of the Manual.
- E-STOP SYSTEM:** Each new VecLoader is furnished with a Remote Emergency Stop with a 100 foot cord. Each worker at the end of the hose must have immediate access to an Emergency E-Stop. Each customer will receive training on use of the E-stop. If you do not understand the system or need additional extensions or adapters for multiple hose orders, contact Vector.
- The E-Stop System is noted in greater detail on Page 15 of this manual. Make sure you understand and follow its use.

MAJOR COMPONENT OVERVIEW

ENGINE

Included in this manual is the supplying Manufacturer's "Operator's Manual" and "Parts Catalog". The engine should be maintained per the Manufacturer's instructions. Many model feature newer Tier II or Tier III engines with electronic controls. Since these engines are significantly different than "traditional" engines, additional care and time should be spent reviewing the appropriate Manufacturer's manual.

CLUTCH

Clutch Operating and Maintenance Instructions are included with this manual. Some models with direct-drive couplings may not have a clutch. Follow the supplying manufacturer's instructions as to grease intervals and adjustment procedures. The clutch needs adjustment when there is little or no effort required snapping it over center. Sometimes this means adjusting the clutch every few days for the first 100 hours of operation. If the clutch slips excessively, it will overheat and cause damage. The clutch carries the supplying Manufacturer's limited warranty for 90 days of service.

DRIVE BELTS AND COUPLINGS

Some models belt-drive the vacuum producer and while other units feature a direct-drive coupling between the motor and blower. Care should be taken to insure that proper maintenance procedures are followed for belt-drives including tightening and adjustment as noted. To prevent idler bearing and belt failure, drive belts must be inspected and periodically tightened during the first eight to ten hours of operation. Direct-drive couplings will require no lubrication. Information on direct-drive couplings is included in the **APPENDIX** of the Manual

BLOWER

The component should be maintained as per the supplying manufacturer's Maintenance Instructions included with this manual. The blower is a precision piece of equipment and service should not be attempted by other than qualified personnel. **Blowers require lubrication in both ends.** The blower needs little maintenance other than checking oil levels and changing oil as required. If the blower begins to "knock", **SHUT DOWN THE UNIT IMMEDIATELY AND CONSULT FACTORY.** The blower carries a limited warranty from its manufacturer. See supplied warranty documentations for details.

AIR COMPRESSOR

The air compressor is run off the auxiliary drive of the engine and is lubricated and cooled through the engine. Although the air compressor requires minimal maintenance, reference should be made to the supplying Manufacturer's maintenance instructions.

AIR DRYER

The supplying Manufacturer's bulletin on this component is included in this manual. It is Vector Technologies recommendation that the drier be rebuilt and the desiccant be changed every 500 hours, or if malfunction occurs.

BAGHOUSE TIMER AND DUMP CYCLE TIMER

These components cannot be serviced in the field. Checks are limited to voltage to unit, fuse, and output. If the fuse is good and power is present at the input leads and the unit fails to operate, the circuit board should be replaced.

VACUUM RELIEF VALVE

The vacuum relief is factory set and should not be changed as serious damage may result if unqualified personnel improperly adjust the valve. Models with 28" Hg. may not have vacuum relief valves.

ENGINE AIR CLEANER

The air cleaner on the diesel engine is a dual element filter. There is a smaller secondary element inside the primary element. The secondary element requires change only when the primary element gets torn, broken or is installed improperly. Operating the engine without proper air filtration will VOID THE ENGINE WARRANTY. Running the engine without proper air filtering for as little as one hour can seriously shorten engine life.

TRAILER BRAKE SYSTEM

⚠ DANGER This component does require ongoing maintenance and inspection and should be maintained as per the Manufacturer's maintenance instructions.

REMOTE EMERGENCY STOP PLUG-IN

⚠ DANGER The vacuum system cannot be run without the Remote Emergency Stop Button being plugged in and raised up. The button should be depressed to shut down the system in an emergency situation. Each worker at the end of a vacuum hose must have an Remote Emergency Stop Button within his immediate reach. Prior to any vacuum operation the Remote Emergency Stop system should be tested and verified.

⚠ DANGER

DO NOT operate or service this machine or permit anyone to operate or service this machine until you or the other persons have fully read this manual. It is your responsibility to insure that all operators are properly trained for safe operation. Allow only trained operators who have demonstrated the ability to operate and service this machine correctly and safely perform those activities. It is highly recommended that each new operator receive Factory Training. Closely supervise inexperienced operators. Failure to follow safety and or operating instructions and precautions could result in severe personal injury, death, or machine damage.



Figure 6.
Remote shut down receptacle



Figure 7.
Remote shut down button



Figure 8.
Remote shut down pendant

INSTRUMENT REVIEW

The instrument panel or the engine control panel on many VecLoaders contains the following items. Some controls may be abbreviated as shown.

1. **"Trailer" Lever** - This lever is used to raise and lower the hydraulic cylinder under the front of the trailer for unit set-up. (Not offered on all models)
 2. **Hydraulic On/Off Switches** - Two-position On/Off selector switch
 3. **"Cyl up/down" Button** - Used to raise and lower the collection hopper.
 4. **Digital Read-out Panel indicating the following:**
 - a. **Run Hours** The hours register when the key is turned on.
 - b. **Tachometer** - The engine will idle at 800 RPM and has a maximum governed speed as noted for the specific model on the Standard Specifications portion of this manual.
 - c. **Oil Pressure** - If oil pressure in the engine drops to 15 PSI, the safety switch will shut off the unit.
 - d. **Engine Temperature** - The engine temperature will normally run between 180°F and 230°F. The safety switch will shut the engine off if it reaches 230°F.
 - e. **Volt Meter** - The meter indicates charge system condition.
 5. **Air Pressure Gauge** - Air pressure should read between 90 and 120 PSI
 6. **Key/Start Switch**- Ignition Switch
 7. **Vacuum ("VAC") On/Off Switch** - The two-position on/off selector switch is used to energize the dump cycle timer system
 8. **Vibrator ("VIB") On/Off Switch** - The two-position on/off selector switch is utilized to turn optional vibrator(s) on or off.
 9. **Baghouse ("BAG") On/Off Switch** -The two-position on/off selector switch is initiates the baghouse pulse system by sending power to the timers.
 10. **Air-dryer Heater On/Off Switch (optional)** - Protects controls on some Tier II engines (not on all models)
 11. **Timers** - Vacuum time and dump time cycles can be adjusted to accommodate varying materials.
 - a. **Vacuum Time Knob ("ON")** - Selects vacuum cycle duration.
 - b. **Dump Time Knob ("OFF")** - Selects dump cycle duration. Vacuuming can not occur during the dump cycle unless unit is specially equipped with a continuous dump valve.
- ⚠ CAUTION** VACUUM AND DUMP TIMES WILL VARY DEPENDING ON DENSITY AND FLOW CHARACTERISTICS OF EACH MATERIAL CONVEYED. OPERATORS MUST MONITOR THE MACHINE DURING SEVERAL DUMP CYCLES TO MAKE CERTAIN THAT ALL MATERIAL IS BEING DISCHARGED FROM THE HOPPER.
12. **Electronic throttles** – Units feature Tier-II and Tier III Controls with Electronic throttles. Older VecLoaders models were equipped with manual or air throttles.

DAILY EQUIPMENT CHECKS

DAILY MAINTENANCE AND EQUIPMENT CHECKS

⚠ DANGER

DO NOT operate or service this machine or permit anyone to operate or service this machine until you or the other persons have fully read this manual. It is your responsibility to insure that all operators are properly trained for safe operation. Allow only trained operators who have demonstrated the ability to operate and service this machine correctly and safely perform those activities. It is highly recommended that each new operator receive Factory Training. Closely supervise inexperienced operators. Failure to follow these precautions could result in severe personal injury, death, or machine damage.

⚠ DANGER

All inspection procedures should be accomplished with engine off and key removed! Failure to do so may result in severe personal injury, death, or property damage.

⚠ WARNING

Do not smoke while servicing the batteries. Lead acid batteries give off a highly explosive hydrogen gas which can be ignited by flame, electrical arcing or by smoking. Failure to follow this precaution could result in severe personal injury or death.

⚠ DANGER

Do not smoke while filling the fuel tank or working on the fuel system. Failure to do so could result in severe personal injury, death, or property damage.

⚠ WARNING

Wear appropriate eye protection when servicing the VecLoader. Failure to follow this precaution could result in severe personal injury or death.

Overview of Daily Maintenance including optional compressor and viabrators:

Daily VecLoader maintenance is not complicated and does not require specialized tools. The following items need to be checked on a daily basis to assure long service life as well as worker safety.

ALL INSPECTIONS LISTED BELOW MUST BE PERFORMED WITH THE ENGINE OFF AND THE KEY PULLED.

1. **Blower oil-** The oil level needs to be in the center of the sight glasses located at each end of the blower.
2. **Belt Driven Compressor, where equipped.**
 - a. Check oil level- The oil level is checked by removing the fill cap and adding oil to maintain a level all the way to the top. Note that the compressor cannot be overfilled as any excess will just run out.
 - b. Inspect compressor air filter- Remove and inspect the filter, blow out using compressed air or replace as needed.
 - c. Inspect compressor drive belts. Verify that the belts are not cracked or glazed and that the belts are tensioned to a level that the belts are not jumping in the grooves of the pulleys.

3. **Baghouse vibrator** -Fill the lubricator for the baghouse vibrator to the full mark and monitor the level periodically throughout the day and add as needed.
4. **Drive Belts**- all drive belts on the machine must be periodically inspected and tightened during the first eight to ten hours of operation. **After the initial inspection, inspect daily and tighten where required.**

⚠ WARNING Belts should be checked hourly during the initial operating period and **each day if the machine is in operation.**

Note that on most models the air compressor is direct driven off the auxiliary drive of the engine. While the air compressor requires minimal maintenance, reference should be made to the supplying Manufacturer's maintenance instructions.

DIESEL ENGINE

1. Check engine oil level.
Locate Dipstick, through the shroud door or engine enclosure opening.
 2. Check radiator coolant level.
 - a. The coolant level should be to the bottom of the cap opening.
 3. Clean or change primary engine air cleaner cartridge
 4. Check battery connections (Batteries are service-free)
 5. Check radiator fins for dirt and obstructions.
 - a. On units with a fiberglass shroud enclosures, check on the fan side.
 - b. On units with steel enclosures, check on the outside of radiator.
- Keep hands and loose clothing away from fan, belts, and pulleys.

BLOWER

1. Check Blower oil level on both sides of blower.
 - a. Locate sight-glasses on the blower. All blower models have two sight-glasses, with the required lubrication on each side.
 - b. Oil level should be halfway across each sight-glass.
 - c. Add oil on each side as required. Refer to BLOWER LUBRICATING OIL, in EXTENDED MAINTENANCE, this manual.
2. To prevent idler bearing and belt failure, all drive belts on the machine must be periodically inspected and tightened during the first eight to ten hours of operation. **Tension should be as specified for the model noted on page i . After the initial inspection, inspect daily and tighten where required.**

⚠ WARNING Belts should be checked hourly during the initial operating period and **each day if the machine is in operation.**

3. During freezing conditions, check that the blower rotates freely by hand with the engine off, ignition key pulled for safety and the PTO disengaged.

HYDRAULIC SYSTEM

1. Check oil level and maintain from 1/2 to 3/4 full.
2. Check for hydraulic leaks on the various hoses and connections.

GENERAL

1. Perform a visual inspection for loose fasteners and bolts or damaged hoses, repair or replace as needed.
2. Drain water from the air reservoirs. Systems typically have two or three air reservoirs including baghouse and power module locations. Drain by cracking the ball valves open at each reservoir and allowing the condensation to drain.
3. Check the inside of the collection hopper to be sure no material is collecting on the walls of the cone.
4. Inspect inlet pipe and removable wear plate for excessive wear and replace as needed.
5. When the unit is running and the air pressure is up to at least 90 PSI, check for the bag pulsing sequence.
6. Check readings on magnehelic gauges on baghouse & micro filter. Reference the filter section of this manual for additional details.
7. Check gravity dump door or other dump system and all associated equipment for foreign material and clean if required. Replace gaskets as needed.
8. Check the hour meter and compare to the maintenance records to see if any scheduled maintenance is required.
9. Walk the length of the vacuum hose run and inspect for loose couplings or damaged hose and repair or replace as needed.
10. After the vacuum is in operation verify that the hydraulic back pressure gauge is not reading in the red. If it is reading in the red, replace the filter.
11. After the vacuum is in operation, listen for any unusual noises or vibrations, determine cause and make necessary repairs or adjustments.
12. Do not operate this equipment unless all of the daily maintenance procedures listed above are completed and all needed repairs have been complete

EXTENDED MAINTENANCE

⚠ DANGER

ALL INSPECTION PROCEDURES SHOULD BE ACCOMPLISHED WITH ENGINE OFF AND KEY REMOVED! FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN SEVERE PERSONAL INJURY, DEATH, OR PROPERTY DAMAGE.

FIRST 10 HOURS

1. Re-torque (if applicable), head bolts on air compressor to 10 ft. pounds.
2. Check belt tension, if applicable. To prevent idler bearing and belt failure, all drive belts on the machine must be inspected and periodically tightened during the first eight to ten hours of operation. **After the initial inspection, inspect daily and tighten where required.**

See drive belt discussion at the end of the **Extended Maintenance** section.

⚠ WARNING Belts should be checked hourly during the initial operating period and **each day if the machine is in operation.**

EVERY TIME THE UNIT IS TOWED

Test break-away switch on braking system. **⚠ WARNING** Refer to Manufacturer's manual for other cautions and maintenance procedures.

WEEKLY

1. Verify pulse system on baghouse is working properly.
2. Grease lift arms, PTO if applicable (5 points), axle shackles. See next section for **Fuel and Lubrication** specifications. See following pages for grease point locations.
3. Check pressure on trailer tires.


FIRST 50 HOURS

1. Check removable outer wear plate for wear. Wear life on the removal wear plate will vary greatly dependent on the abrasive qualities of the material being conveyed. Therefore, it is important to inspect the plate in initial stages of vacuum use until the wear pattern is established. Note that the point of impact is not the center of the liner but the lower quadrant so that when the liner is worn, the wear plate can be rotated 180⁰ and used again. This rotation should be made when the liner is worn to approximately 1/8-inch thickness. Inspections should continue every 25 hours until wear pattern is determined. After the wear pattern is established, inspections should match anticipated wear.
2. Re-torque wheel lug-nuts.

FIRST 100 HOURS

1. Change engine oil and engine oil filter. NOTE: Fuel and lubrication specifications follow.
2. Check condition of removable wear plate.
3. Change blower oil.

EACH 100 HOURS OR MONTHLY

1. Check operation of compressed air system. System is present to operate between 90 PSI and 120 PSI. Contact factory if system is not within these preset ranges.  **WARNING** System must not exceed 120 PSI.
2. Check airline connections for leaks.
3. Optional vibrator (s)-
 - a. Check all bolts in vibrator, to insure they are tightened properly.
 - b. Check oil level in vibrator lubricator, maintain at full.
4. Check and grease the butterfly valve/vacuum bypass (vacuum breaker). This valve is on tank head on most models.
5. Inspect drive belts.

EVERY 200 HOURS OR EVERY TWO MONTHS

1. Change engine oil and engine oil filter.
2. Check upper deflector plate inside collection hopper.
3. Check condition of removable wear plate, replace as needed.
4. Grease the lift arm bushings.
5. Check the condition of the removable inlet pipe. Replace as needed.
6. Check the pressure differential gauge. Clean or replace as needed.
7. Check the dump door for proper sealing and gasket condition. Repair or replace as needed.
8. Grease the butterfly valve/vacuum bypass (vacuum breaker).
9. Inspect the hopper connection hose and replace as needed.

EVERY 500 HOURS

1. Change engine fuel filter.
2. Change blower oil in both ends.
3. Change hydraulic oil and filter.
4. Change microfilter cartridge.
5. Inspect drive belts.
6. Rebuild air drier and change desiccant.

EVERY 1,000 HOURS

1. Remove vent tube on engine and clean it with diesel fuel.
2. Change hydraulic oil and filter.
3. Change filter bags.
4. Check dump door or posi-seal gaskets.
5. Change engine oil.

FIRST 200 MILES AND IN 3,000 MILE INCREMENTS

Check brake-shoe adjustment at the first 200 miles and in 3,000-mile increments or as use and performance requires.

EVERY 5,000 (ROAD) MILES or SIX MONTHS

Insure the “break-away” battery is fully charged.

EVERY 12,000 (ROAD) MILES or TWELVE MONTHS

1. Repack wheel bearings on trailer.
2. Insure the “break-away” battery is fully charged.
3. Inspect condition of tires.

GREASE FITTING LOCATIONS

There are 17 grease fittings on standard two axle trailers and 23 fittings on standard three axle units. All fittings need be greased once a week. Locations are as follows:

		Two Axle	Three Axle	Comments
A.	Clutch Arm	1	1	1 each, See Figure 8
B.	PTO	4	4	2 per side, See Figure 8
C.	Bulldog Jack	0	4	2 per jack, See Figure 9
D.	Axle Rocker	2	4	1 or 2 per side, See Figure 10
E.	Lift Arms	10	10	5 per side, See Figure 11 and 12
	Total	17	23	

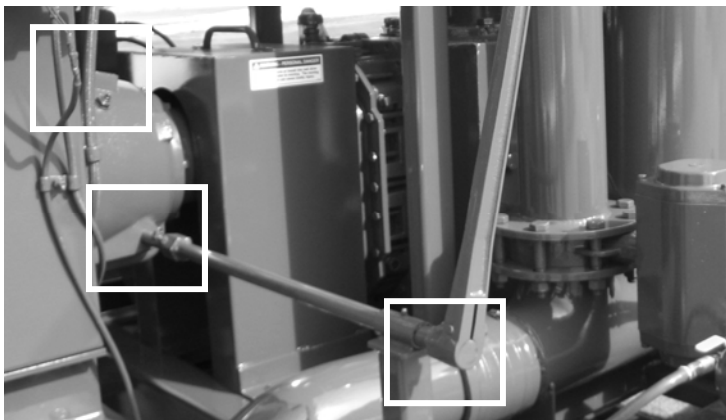


Figure 9.
PTO and Clutch Arm- 5 total grease points



Figure 10.
Two each bulldog jack

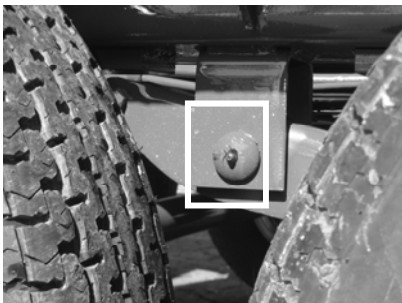


Figure 11.
Each side of rocker, one per side on two axle models, two per side on three axle models



Figure 12.
Lift Arms- 10 grease points

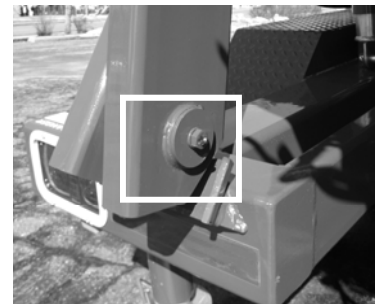


Figure 13.
Lift Arms- 10 grease points

FUEL AND LUBRICATION SPECIFICATIONS

DIESEL FUEL SPECIFICATIONS

1. Use grade No. 2- Diesel fuel above 32°F. Off Road Diesel Only
2. Use grade No. 1- Diesel fuel below 40°F. Off Road Diesel Only
3. Use grade No. 1- Diesel fuel for all temperatures at elevations above 5,000 feet. Off Road Diesel Only

⚠ CAUTION Use a diesel fuel treatment when the outside temperature drops below 32°F. Follow all recommended instructions on additive label. For best engine performance, use an untreated (off-road) fuel, performing your own “winterization”, where conditions dictate.

ENGINE LUBRICATING OIL

1. Multi-viscosity diesel engine oils are recommended, such as 15 W-40.+ 50
2. **NOTE:** When John Deere Plus 50 oil and the specified John Deere Filter are used, the service interval for engine oil and filter changes and may be increased to every 375 hours.

BLOWER LUBRICATING OIL

Use synthetic oil as specified in the Blower Manufacturer’s manual.
Refer to Manufacturer’s Bulletin #03-01. Manufacturer’s recommendations are:

1. Royal Purple Synthetic GT 320 for ambient temperatures above 80° F.
2. Royal Purple Synthetic GT 220 for ambient temperatures below 79° F.

HYDRAULIC FLUID

Use an anti-wear hydraulic oil with rust and oxidation inhibitors.
-- ISO viscosity index 32 (SAE 10)
EXAMPLE: Pennzoil A/W Hydraulic 32 or Shell Tellus 32

VIABRATORS


Use SAE 10W, API Service CD/SD, single viscosity oil

GREASE POINTS

Use a lithium-based grease

DRIVE BELT INSPECTION AND MAINTENANCE PROCEDURES

To prevent idler bearing and belt failure, drive belts must be inspected and periodically tightened during the first eight to ten hours of operation. If this procedure is not followed, there is the potential for idler bearing and belt failure. **Tension should be as specified for the model noted on page i.**

 **WARNING** Belts should be checked each day when the machine is operating.

To inspect belts:

1. Open service door or remove applicable belt guard.
2. Inspect belts, looking for glazing and wear.
3. Replace applicable belt guard.
4. Run machine and watch for belt bounce.

DANGER

Use extreme care when following this procedure. Keep hands and clothing away from power-driven parts. Contact with moving drive belts or any rotating machinery will result in severe personal injury or death.

5. If belt bounce, slip, or a tendency to roll is evident, the belts need to be adjusted.

To adjust belts:

1. Machine must be shut down and the key removed
2. Using a 15/16" socket wrench, loosen the slide plate bolts, and then with a 3/4" wrench tighten adjuster screw.
3. Inspect belts and readjust as necessary.

WARNING

Identical inspection and periodic tightening procedures must be followed when installing new belts. Failure to follow this procedure will cause damage to new belts, idler, and reduce machine production and potentially void the idler warranty.

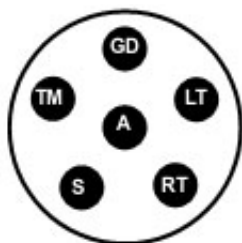
NOTE

Direct-drive couplings require no maintenance. Information on direct-drive couplings is included in the **APPENDIX** of the Manual.

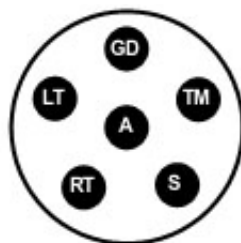
TRAILER WIRING

Wiring for 6-Way Round Connectors on Vector Technologies Trailers

Cord Wire	Gauge	Vector Trailer Wire	Molded Trailer/Sealed Car Connector Terminal	Thermo-Plastic/Metal Connector Terminal
Black	10 Ga.	White	Common Ground	#1 Common Ground
Blue	12 Ga.	Red	Electric Brake	#2 Electric Brake
Brown	14 Ga.	Brown	Tail & License	#3 Tail & License
	10 Ga.	Black	Battery Charge	#4 Battery Charge
Yellow	14 Ga.	Yellow	Left Stop & Turn	#5 Left Stop & Turn
Green	14 Ga.	Green	Right Stop & Turn	#6 Right Stop & Turn
Red	14 Ga.	Blue	Center Auxiliary	#7 Center Auxiliary



Vehicle End



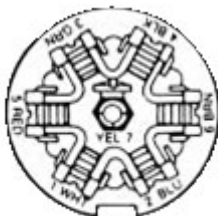
Trailer End

S*	Brakes	Blue
GD	Ground	Black
TM	Taillights	Brown
RT	Right Turn	Green
A*	Accessory	Red
LT	Left Turn	Yellow

⚠ CAUTION Some manufacturers use “S” for Accessories and “A” for brakes. Locate by function only. Color coding is not-standard among all manufacturers.

Wiring for 7 Pole RV Trailer Wiring Diagram

Cord Wire	Gauge	Vector Trailer Wire	Molded Trailer/Sealed Car Connector Terminal	Thermo-Plastic/Metal Connector Terminal
White	10 Ga.	White	Common Ground	#1 Common Ground
Blue	12 Ga.	Red	Electric Brake	#2 Electric Brake
Green	14 Ga.	Brown	Tail & License	#3 Tail & License
Black	10 Ga.	Black	Battery Charge	#4 Battery Charge
Red	14 Ga.	Yellow	Left Stop & Turn	#5 Left Stop & Turn
Brown	14 Ga.	Green	Right Stop & Turn	#6 Right Stop & Turn
Yellow	14 Ga.	Blue	Center Auxiliary	#7 Center Auxiliary



Vehicle End



Trailer End

1	Ground	White
2	Electric Brakes	Blue
3	Tail, Running Lights	Green
4	Battery	Black
5	LH Stop & Turn	Red
6	RH Stop & Turn	Brown
7	Auxiliary	Yellow

⚠ CAUTION Locate wires by function only. Color coding is not-standard among all manufacturers.

VACUUM USE AND SHUT DOWN

⚠ DANGER

Failure to follow these set up instructions, precautions and warnings could result in severe personal injury or death.

⚠ DANGER

Do not place hands, face, clothing, or any part of body into or over any suction inlet when operating the VecLoader. There is inherent risk even if a hose guard or nozzle is in place. The powerful suction can cause severe personal injury or death.

⚠ DANGER

The safety information provided in this manual is not a substitute for safety rules, safety codes, insurance requirements, or federal, state, and local laws. It is the user's responsibility to observe all federal, state, and local rules and regulations applicable to the job site and the equipment being utilized. It is the users' responsibility to maintain a safe work environment.

SETTING-UP FOR VACUUMING

1. Perform daily maintenance procedures.
2. When the trailer is in position, set the parking brake and chock the wheels so unit cannot move when disconnected from the truck.

⚠ WARNING

Always position the vacuum on solid ground. If you must set-up on soft ground, make sure there are planks placed underneath the jack stands to distribute the weight of the machine evenly. Failure to do so could result in severe personal injury, death, or property damage

⚠ DANGER

3. Always position the machine so it is sitting no more than 5° off level in any direction. Failure to do so could result in severe personal injury or machine, death or property damage
4. Turn the **Key/Start Switch** to the **ON** position. Wait until display indicates "Start", "Ready" or "Crank" ("Crank Position").
5. Turn **Key/Start Switch** to the "**CRANK**" position to start. The engine should now be now running.

Using "**Trailer**" control lever (not available on all models), raise tongue of VecLoader off pintle hook on the truck, and pull the truck away. Lower front of trailer, then lower and pin rear jack stands in such a way that the trailer will sit level. Make sure these pads are sitting on a concrete surface, or if placement on soft ground is unavoidable, the pads should be positioned on heavy planks that will not sink into the ground.

⚠ DANGER

6. Raise front of trailer so that the rear jack stands are carrying weight, then lower and pin the front jack stands. When the unit is set, it should be level with pressure on all four jack-stands.
7. Always lower and pin the four jack stands so that they all bear weight before raising the hopper. Failure to follow this precaution could result in severe personal injury, death or machine damage.

8. If the unit is equipped with a front trailer lift cylinder, this should be raised up to prevent damage.
9. Run out the **Remote Emergency Stop Pendent** to the work area. Sufficient cord to reach each vacuum area must be plugged in. Each worker must have a Remote Emergency Stop Pendent within immediate reach.
10. Attach suction hose to inlet port on cylinder and layout hose. Do not attach hose to vacuum inlet port when machine is running. Hose inlet guards or nozzles must be placed at the end of the hose. A discussion of hose layout follows. Each worker in the vicinity of the vacuum activity should carry a retractable razor knife. The purpose of the razor would be to cut the vacuum hose open should clothing or a body part be sucked into the hose. Some hoses may not be easily or quickly cut, so carrying a knife is not a substitute for violation of other safety rules.
11. Remove rubber strap holding dump door closed and/or any other valve or cylinder retainer.

⚠ WARNING

Never raise the cyclone under electric wires, near any power cables or under obstructions. Failure to do so could result in severe personal injury, death, or property damage.

12. Using "**CYL**" cylinder up control button, raise hopper about 5 feet.
13. Remove the two safety struts at the rear of the trailer from the carrying pins and attach them to the lift arms.
14. Continue raising hopper to the necessary height to clear the collection box, dump truck, or container.
15. When the proper height is reached, place the pins in the uppermost hole on the safety struts, and then gradually lower the hopper until it is resting on the safety strut pins.
16. If not immediately prepared to commence vacuum activities, turn **Key/Start Switch** to the **OFF** position.

⚠ DANGER

Always install the safety struts when the hopper is in the raised position. Observe all additional safety procedures below. Failure to follow these precautions could result in severe personal injury, death or machine damage.

⚠ DANGER

Do not stand under the collection hopper or get between the collection hopper and the trailer when the cylinder is in the raised position without the safety struts in place.

Insure the trailer's stabilizing jacks are lowered into position if the trailer is not securely attached to a truck.

Do not leave the collection cylinder in the raised position.

VACUUM HOSE LAY-OUT PROCEDURE

Dependent on the material being conveyed and the vacuum model purchased, VecLoaders are capable of drawing material through the vacuum hose great distances. Longer layouts or those which combine long horizontal and vertical hose runs may be utilized, but special procedures must be followed to insure efficiency. Call Vector Service if assistance is needed.

⚠ DANGER

VECLOADER VACUUMS ARE FURNISHED WITH AN EMERGENCY SHUTDOWN PENDENT. STANDARD SYSTEMS ARE FURNISHED WITH 100' CORD. ADDITIONAL LENGTHS OF CORD ARE AVAILABLE FROM THE FACTORY OR LOCAL STORES AND MUST BE OBTAINED IF OPERATING CONDITIONS DICTATE LONGER HOSE RUNS. ALL WORKERS AT THE END OF THE VACUUM HOSE MUST HAVE THIS PENDENT WITHIN THEIR IMMEDIATE REACH WHILE VACUUMING. IF MULTIPLE HOSE OPERATORS ARE ANTICIPATED AN "E-STOP" SPLITTER IS AVAILABLE FROM THE FACTORY TO ALLOW FOR MULTIPLE E-STOPS. ALL WORKERS MUST UNDERSTAND EMERGENCY SHUTDOWN PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

⚠ DANGER

Before vacuuming any material that would set off a static charge, the machine must be properly grounded. Consider the material being vacuumed. Failure to follow this precaution could result in severe personal injury, death, or property damage.

⚠ WARNING

Due to possibility of static discharge from plastic vacuum hose, the work (whip) end vacuum hose section must be made of static dissipating high carbon content rubber. Failure to follow this precaution could result in potential health hazards and property damage.

VACUUMING PROCEDURES

⚠ DANGER

VACUUM SYSTEMS CAN BE SHUT DOWN REMOTELY BY DEPRESSING THE EMERGENCY E-STOP AND AT THE VACUUM BY USE OF THE VACUUM OFF BUTTON. ALL JOB SITE WORKERS SHOULD BE TRAINED IN VACUUM EMERGENCY SHUTDOWN PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

⚠ DANGER

DO NOT VACUUM FLAMMABLE OR COMBUSTIBLE MATERIAL. OBSERVE ALL FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS REGARDING HANDLING OF REGULATED MATERIALS.

⚠ DANGER

EACH NEW VECLOADER IS FURNISHED WITH A HOSE END GUARD. THE VACUUM SHOULD NOT BE USED WITHOUT THIS GUARD INSERT PLACED AT THE END OF THE SUCTION HOSE UNLESS A VECTOR SUPPLIED NOZZLE IS BEING USED. DO NOT PLACE HOSE GUARD OR NOZZLE AT THE END OF THE VACUUM HOSE WHILE THE MACHINE IS RUNNING. NEW VECTOR BULK NOZZLES ARE FURNISHED WITH SAFETY CROSS-RODS. RODS SHOULD BE PLACED ON OLDER BULK NOZZLES. CONTACT VECTOR FOR INSTRUCTIONS. THE POWERFUL SUCTION CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN PERSONAL INJURY OR DEATH.

⚠ DANGER

DO NOT PLACE HANDS, FACE, CLOTHING, OR ANY PART OF BODY INTO OR OVER ANY SUCTION INLET WHEN OPERATING THE VECLOADER. THE POWERFUL SUCTION CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. EACH WORKER IN THE VICINITY OF THE VACUUM ACTIVITY SHOULD CARRY A RETRACTABLE RAZOR KNIFE OR OTHER SHARP CUTTING IMPLEMENT. THE PURPOSE OF THE KNIFE WOULD BE TO CUT THE VACUUM HOSE OPEN SHOULD CLOTHING OR A BODY PART BE SUCKED INTO THE HOSE. SOME HOSES MAY NOT BE EASILY OR QUICKLY CUT, SO CARRYING A KNIFE IS NOT A SUBSTITUTE FOR VIOLATION OF OTHER SAFETY RULES, LAWS AND ORDINANCES.

Procedures—

1. Start engine as noted in **SET UP**.
2. Verify that the work end of the hose is either manned or otherwise protected to prevent foreign objects from entering the hose or causing injury to personnel in the area.
3. Verify that the **Remote Emergency Stop** pendent is in the immediate vicinity of each hose end.
4. Select proper **Dump Time** (“OFF TIME”) and **Vacuum Time** (“ON”) settings for the materials being conveyed. The dump time and vacuum time must be set on the instrument panel according to the type of material being vacuumed.

NOTE: Vacuum time and dump time settings control the duration of the vacuum cycle and the length of the dump cycle. The “vacuum time” knob controls the amount of material being vacuumed into the baghouse and the “dump time” knob controls the time it takes to discharge the vacuumed materials. When first beginning to vacuum a new product or under changing conditions, the system should be closely monitored to insure all vacuumed material is not allowed to fill the cone beyond two thirds level and that the dump time is long enough to allow or the material to completely discharge prior to the subsequent vacuum cycle. Therefore it is best to begin with the vacuum time set to a lower setting and the dump time set to a higher setting. The optimum setting for the vacuum time is when approximately one half of a cubic yard of material is vacuumed before the dump time is initiated. The optimum setting for the dump time is where the collected material is able to completely discharge before the vacuum time restarts. Keep making adjustments until the optimum setting is attained.

Many factors will influence **VAC** and **DUMP** cycles such as distance, product density, moisture, etc.

5. Turn “**Baghouse (“BAG”)** pulse system switch to the **ON** position. Listen to verify that the bags pulse sequence is active.


6. Turn Vibrator (“**VIB**”) switch to the **ON** position if vibrators are required for the application
7. Engage clutch.
8. Turn vacuum “**VAC**” switch to the **ON** position after verifying that the vacuum hose is clear of personnel and obstructions.
9. Connect the **Remote Emergency Stop** pendant to the twist lock connector.
10. Test **Remote Emergency Stop** by depressing the Emergency Stop Button on the remote to verify the vacuum stops. **▲DANGER** Failure to follow these precautions could result in severe personal injury or death.
11. On systems with optional sound attenuation enclosures and cooling fans, start the cooling fan by depressing the “**Cooling**” button. The cooling fan must be on whenever the vacuum is in operation.
12. Vacuuming can begin upon pulling out the **Remote Emergency Stop** button. The vacuum system cannot be run without the emergency stop button being in a “pulled out” position. The button should be depressed to shut down the system in an emergency situation. Each worker at the end of a vacuum hose must have an emergency stop button within his immediate reach.
13. The vacuum is now ready to begin vacuuming material. Again verify that the work end of the hose is not near anything that could inadvertently be pulled into the hose or where personnel could be caught in the hose. If there is an operator at the work end of the hose, he should be made aware that the vacuum system is starting up.
14. Monitor the vacuum time and dump time as previously and continue to make adjustments until the optimal settings are attained.
15. Continue vacuuming until the job is complete and then refer to the shutdown procedures below.

TO SHUT DOWN VACUUM

Shutdown procedures are basically the reverse of the start up procedure:

1. Allow all material to clear suction hose.
2. Depress **Remote Emergency Stop** button at the pendant.
3. Turn vacuum “**VAC**” switch to the **OFF** position to stop the vacuum.
4. Disengage clutch.
5. Disconnect vacuum hoses and Remote E-Stop.
6. Turn vibrator (“**VIB**”) switch to the **OFF** position to turn the vibrator system off.
7. Turn **Baghouse** pulse system switch to the **OFF** position.
8. If applicable, depress the “**Cooler**” button” to stop the cooling fan. Not on most units.
9. Always allow diesel engine to idle for at least 5 minutes after it has been under load before shutting off.

FINAL SHUTDOWN AND PREPARING UNIT FOR TRAVEL

1. Start engine.
2. Turn the **Hydraulics** (“**HYD**”) switch to the **ON** position to enable the hydraulic function.
3. Using **Cylinder** (“**CYL**”) **up power control button**, raise collection hopper and unpin safety struts. Remove safety strut support pins from both sides.
4. Using **Cylinder** (“**CYL**”) **down or lower control button**, lower the baghouse until the safety strut supports can be removed from the upper pins and allow the safety strut supports to rest on the frame.
5. Continue to lower the baghouse completely down. As the hopper approaches the bottom position, be sure the bottom of the hopper swings in towards the trailer and the retention hook on the discharge spout engages the retainer bar on the trailer frame.
6. Place the safety strut supports back in the storage position and reinstall the pins.
7. If the machine is to be transported the following procedures should be followed.
 - a. Using "**Trailer**" control lever raise the tongue of the trailer and pin front jackstands in their stowed position.
 - b. Using "**Trailer**" control lever lower the tongue allowing the rear jackstands to be raised and pinned in their stowed position.
 - c. Using "**Trailer**" control lever, raise the tongue of the trailer high enough to allow the truck to back under the hitch. Lower the tongue onto the towing vehicle and secure the hitch.  **WARNING** Be sure to retract the hydraulic cylinder.
 - d. Attach rubber strap that holds the discharge door closed. Engage any other dump door or cylinder restraints. Where applicable, unpin the lift arm lock bar from the storage position and pin it to the lift arm to secure for transport.
 - e. Consider covering the discharge spout with a collection bag for travel as an additional precaution against baghouse spills during transport.
8. Turn the **Hydraulics** (“**HYD**”) switch to the **OFF** position.
9. Turn off engine and remove key.

TRANSPORT

⚠ DANGER

Before towing unit, inspect the tires and hitch mechanism to be sure they are road-worthy. Failure to do so could result in severe personal injury, death, or property damage

⚠ DANGER

Before towing unit, follow all trailer tow precautions noted in the safety section of this manual. Failure to do so could result in severe personal injury, death, or property damage.

⚠ DANGER

Always tow the machine with the hopper in the lowered and locked position. Failure to follow this precaution could result in severe personal injury, death or machine damage

1. Attach the safety chains and hook up the trailer lights cord.
2. Install brake-away switch cord to the tow vehicle.
3. Be certain the front trailer hydraulic lift cylinder is fully raised before traveling on the road.
4. Insure all marker lights, brake and turn signals are functioning before traveling on the road.
5. Check pressure on trailer tires before towing.

⚠ DANGER

The VecLoader is not designed or rated for transport with its hopper in a filled or partially filled condition. Therefore the unit must be emptied prior to transport. Failure to do so could result in severe personal injury, death, or property damage and may violate local and federal laws.

FILTRATION

FILTER OVERVIEW AND PULSE SYSTEM



THE STANDARD BAGHOUSE FILTERS SUPPLIED WITH THIS UNIT ARE NOT HEPA RATED FILTERS. DO NOT VACUUM MATERIALS REQUIRING HEPA FILTRATION WITH THIS VACUUM UNLESS FACTORY HEPA FILTRATION IS SUPPLIED AND INDICATED AS SUCH IN WRITING BY THE FACTORY.

The unit's filtration system consists of a coated filter bags in a cyclonic baghouse. Secondary micro-filtration provides final protection against any damaging material passing through to the blower. The filter bags are cleaned continuously by pulse air sequences. Dependent on media being cleaned, these bags will periodically require replacement. Baghouse filters are monitored, with their condition indicated by a magnehelic gauge that will show pressure changes across the filters. In the vacuuming process, as dirt accumulates, the reading on the gauge will get higher. A reading from 30 to 50 is an indication that the bags should be replaced. VecLoaders also feature secondary filter(s) to protect the blower in the event of baghouse failure and to provide additional filtration. Secondary filters are not pulsed and cannot be cleaned, and should be replaced when baghouse filter bags are changed or as needed. Secondary filters are also monitored. A secondary filter magnehelic gauge reading from 30 to 50 is an indication that this filter(s) should be replaced. Filter loading of the secondary filter is an indication of a problem with the baghouse filtration. Repair baghouse leak, or replace filter bags as required.

Repetitive filter loading or blinding may occur due to several factors including the age of the filters, humidity, and the consistency, density and general make-up of the vacuumed media. In addition to the filter cleaning procedures noted above, certain ongoing overload conditions will be best remedied by utilizing one of several specialized filters available from the Factory or by introduction of a intermediate hopper, separator, or additional baghouses into the system. Please consult the Vector Service Department where appropriate.

BAGHOUSE FILTER REPLACEMENT (Also see photos, following this section)



The baghouse filters must be changed in accordance with all state and federal laws. The baghouse may contain hazardous materials such as lead, cadmium or other intrinsically hazardous materials. Proper ventilation and personal protective equipment must be used when any work is to be performed on the primary filtration system. Failure to follow these precautions could result in machine damage, severe personal injury, or death.

Preparing baghouse for filter change

1. Baghouse must be in lowest possible position and locked to trailer frame with locking tab.
2. Trailer must be leveled and stabilized utilizing all four (4)-corner jackstands, with emergency brake applied and wheels chocked to prevent any trailer movement.
3. All loose material in baghouse should be removed before filter change-out commences.
4. The system should be disconnected and locked-out to prevent accidental starting.
5. Drain air system completely.

Removal of baghouse lid

1. Proper material handling equipment must be used to remove top of baghouse such as forklift or overhead crane. Some units are equipped with optional baghouse lid lift system.

⚠ DANGER

Abide by all safety warnings and instructions for fork trucks or cranes when removing the baghouse lid. Failure to follow this precaution could result in machine damage, severe personal injury, or death.

2. Disconnect hopper connection hose by removing clamp and hose. Hose should be tied out of the way.
3. Disconnect butterfly valve/vacuum bypass cylinder air hose at swivel fitting.
4. Disconnect butterfly valve/vacuum bypass cylinder electrical connection at spade connector
5. Secure baghouse lid to material handling device by use of lifting eyes to prevent accidental movement. Mark cylinder and lid for proper positioning upon installation.
6. Remove all 3/8" nuts and bolts using 9/16" wrenches from rim of baghouse lid making note of the position of any wire looms and hose hangers. Store fasteners in good condition in a sealed container for reuse.
7. Clear personnel from area and remove lid with material handler.
8. Place lid on solid ground and detach material handling device.

Filter bag removal

1. Remove blast tube hold-down bracket.
2. Remove blast pipes by loosening hose clamps on connection hose at cylinder wall side and removing hold-down fasteners. Be sure to place all fasteners, hardware, and tools outside cylinder to prevent loss inside baghouse after filters are removed.
3. Remove air horns, inspect for damage and replace, as necessary.
4. Remove hose clamps from the filters
5. Filters may be wetted from the inside to reduce airborne dust. Pull filter and cage assembly upwards to remove. Stubborn filters may be loosened by carefully prying at edge where filter and tube sheet meet, taking care not to damage tube sheet. See following step for procedures where filter bags can not be removed vertically.
6. When filter bags are heavily coated with debris, it may be impossible to remove them through the top of the tube sheet. When this condition exists, push the filters downward and remove the filter bags through the (standard) gravity dump door. If the system has an alternative dump valve which does not allow bag removal by this method then it will be necessary to remove the bags through the removable wear plate section. For downward filter bag removal, follow these procedures.
 - a. If filter removal will be through the removable wear plate, refer to the procedures given in the Baghouse Wear Plate Removal and Installation.
 - b. Use a long, blunt piece of wood to apply pressure to the bottom of each filter bag.
 - c. Press two, but no more that three filter bags down through the tube sheet and into the cyclone separator.
 - d. Retrieve the removed filter bags through the opening of the removable wear plate or through the dump door.
7. Remove cages from filters to be replaced. .

8. Inspect cages for damage or deterioration and replace as necessary.
9. Clean all dust and debris from top of baghouse by vacuuming, or washing, leaving a clean dry surface.

Filter Installation

1. Install new filters into the tube-sheet and reinstall hose clamps securely.
2. Install air horns into cages.
3. Insert cages into filters until flush with top of filters.
4. Repeat installation steps 1-3 until all bags have been installed.
5. Replace blast tubes and connection hoses, tighten hose clamps, and install hold down bracket with hardware.

Lid installation

1. Make sure lid gasket is properly positioned and clean.
2. Attach material handling device to lifting eyes.
3. Position lid on cylinder using alignment marks.
4. Install all nuts and bolts finger tight on rim using a flat washer on each side and new lock washer on nut side. Do not reuse any defective fasteners.
5. Tighten all nuts until gasket slightly squishes out of gap between lid and baghouse flanges.
6. Remove material handling device.
7. Connect butterfly valve/vacuum bypass air hose.
8. Connect butterfly valve/vacuum bypass electrical connector, replace connection, if necessary.
9. Connect hopper connection hose and clamp.

Baghouse Filter Testing Procedures

1. Prepare vacuum for start-up as previously described. Observe all safety warnings.
 - a. Start engine, allow air pressure to reach 90-120 PSI.
 - b. If system will not achieve 90-120 PSI
 - i. Check if all drain valves are closed.
 - ii. Check for air leaks at all connections.
 - iii. Check compressor belt tension if so equipped.
 - iv. Check compressor unloader/check valve.
 - v. Check pulse diaphragm valves for malfunction or freezing in cold temperatures.
2. Engage blower
3. Turn on vacuum system with switch marked vacuum.

4. Check filter pulsing at each pulse valve, a small burst of air will be discharged from the bottom of each solenoid.
 - a. If no air is discharged from any solenoids, check pulse timer board for operation and proper grounding. Check for 12 volts DC at + terminal at pulse board. Check fuse. If there is 12 volts DC at the pulse board and the fuse is good, replace pulse board.
 - b. If solenoid discharges air but corresponding pulse is not heard, check diaphragm valve.
5. Check baghouse magnehelic gauge, new filters should read between 3 and 10" WC.
 - a. If there is no reading on gauge, verify hoses are connected properly with dirty side plumbed to top of gauge.
 - b. No reading indicates major leak in filter such as puncture or improper installation.
6. Check magnehelic on microfilter housing, filter must be replaced if reading is higher than 15" WC.

Machines equipped with Easy Access Baghouse Lid option ("Pop Top")

Some baghouses are equipped with an Easy Access Baghouse Lid option, allowing the baghouse lid to be removed without the aid of an external lifting device, see **Filter Fig. 6**. Filter bag change out procedures are the same with the exception of the baghouse lid.

1. Make sure the machine is parking on a level surface with the parking brake set and the wheel chocks in place between the wheels.
2. Turn off engine, remove the key and/or lock out the controls.
3. Remove the hopper connection hose.
4. Remove the air-line to the butterfly valve/vacuum bypass.
5. Remove the wire connector to the butterfly valve/vacuum bypass.
6. Release all the baghouse hold-down toggle clamps.
7. The jack is located on the rear of the baghouse.
8. Open the door for the baghouse lid jack.
9. Locate the jack handle and raise the lid up about two inches.
10. Swing the lid outward so as to clear the top of the baghouse.
11. Secure the lid to the tower utilizing an appropriate safety chain to prevent the lid from swinging back and causing injury.
12. Install bags using all steps and precautions as above.
13. To install the lid, reverse the procedure.

Microfilter replacement

1. The engine should be turned off with key-pulled and/or locked out to prevent accidental starting.
2. Drain air system completely.
3. Disconnect hopper connection hose.
4. Remove top of microfilter housing.
5. Remove filter.
6. Clean filter housing utilizing clean out plug and/or vacuuming.
7. Replace filter using new gasket and washer, making sure filter is seated properly in housing. Do not over tighten or filter damage may result.
8. Check that cover gasket is clean and properly seated, replace cover, and install hopper connection hose.
9. Repeat testing procedure noted in **Testing Procedures, above**
10. Completely block vacuum inlet with suitable object (piece of wood, steel plate) DO NOT place any body part over or into vacuum inlet.
11. Check that baghouse magnehelic gauge does not rise; if magnehelic rises it indicates that dirty side hose, fittings or filter are plugged.
12. Verify vacuum gauge's level does not rise over the machine's rated vacuum as noted on page i of this manual. If page i is not available and you are unsure as to the rated vacuum level of your unit, please contact Vector Technologies, Ltd.
13. If maximum vacuum cannot be obtained:
 - a. Check for proper operation of the air-operated butterfly valve/vacuum bypass.
 - b. Check for vacuum leaks in baghouse, hopper connection hose, vacuum inlet or vacuum hose and tools
 - c. Check blower belt tension and clutch adjustment
 - d. Change spring on vacuum relief valve.
14. Observe vacuum performance while in use. Observe both magnehelic gauges; a sudden rise in the baghouse magnehelic indicates improper filter pulsing. No reading on baghouse and/or rise in microfilter magnehelic gage indicates bag failure or improper sealing.



Filter Fig. 1
Microfilter removal.

FILTER BAG CHANGE- STANDARD SYSTEM



Filter Fig. 2
Bag house with hopper connection hose removed.



Filter Fig. 3
Remove all bolts on lid flange. Disconnect the air line and the power supply wire to the air cylinder.



Filter Fig. 4
Butterfly valve and air cylinder with rain cover removed.

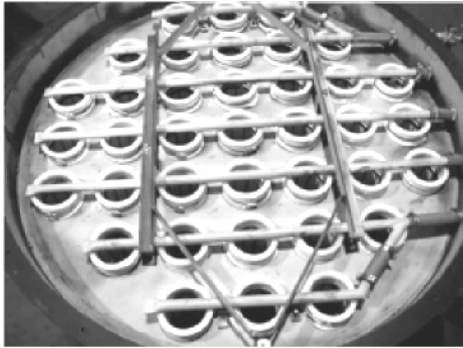


Filter Fig. 5
Lifting chains attached to lid eyes.

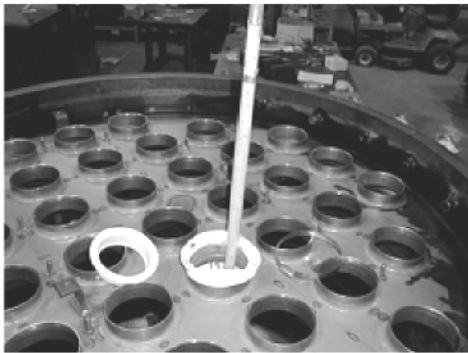


Filter Fig. 6
Easy Access Baghouse Lid Option
(Baghouse jack noted)

FILTER BAG CHANGE- STANDARD SYSTEM



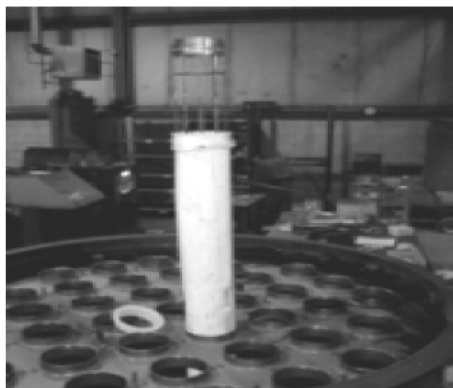
Filter Fig. 7
Top view of bag house with lid removed. Filter bag installation with bracket and blast pipes, blast ring and blast pipes installed.



Filter Fig. 8
With bracket, blast pipes, blast ring and clamp removed, peel up cuff blast pipes on filter bag. Take a screwdriver and insert between the tube sheet flange and the filter bag. Walk the screwdriver around flange to break the seal. With a broomstick, gently tap filter and cage through the tube sheet.



Filter Fig. 9
Typical bottom view of bag house with lid removed.



Filter Fig. 10
When installing filter bag and cage insert bag in flange about 6' then insert cage and gently push down. When cuff is near flange, work flange and gently tap filter tap filter bag with a rubber mallet seating bag and cage.

TROUBLE-SHOOTING

HYDRAULIC SYSTEM

If the trailer's hydraulic cylinders or the baghouse cylinders do not raise properly, this is usually caused by the hydraulic relief valve being out of adjustment - CONSULT FACTORY.

COMPRESSED AIR SYSTEM/FILTRATION

Compressed air is supplied by a compressor, which is run off the engine auxiliary drive. Compressed air is used for pulsing the baghouse filter bags and operating the butterfly valve/vacuum bypass. The vacuum bypass causes the vacuum to break and the baghouse to dump. Therefore, without compressed air, vacuum cannot be created in the suction hose since the vacuum bypass will not close and the bags will not pulse.

System air pressure should run between 90 and 120 PSI. If this pressure is not present after five minutes of running, the following steps should be preformed:

1. Turn on the **Baghouse ON** switch to start pulse system
2. Verify the pulse system is operating by listening for a click from the solenoid valves. If the pulse system is operating, likely the problem is the result of an air leak.
3. Air leak in the system:
 - a. Listen for obvious leaks inside the fiberglass shroud and at the rear of the machine around the baghouse air manifold.
 - b. If the leak cannot be detected in the above manner, try isolating the leak by pinching off the feeder lines that go to each section of the machine. Located near the compressed air tank is an air manifold with three lines running to different parts of the machine. The three lines are:
 - i. To butterfly valve/vacuum bypass
 - ii. To baghouse pulsing system
 - iii. To unloader valve on compressor
4. Using vise-grips, pinch off these lines individually and watch to see if the system pressure builds up when a line is pinched off. Once the leak is isolated, necessary repairs can be accomplished. There is a more detailed procedure under "**Filtration System**" (following page), if the leak is found in this system. If no leak is found and no other problem can be detected, it would likely indicate a faulty compressor - CONSULT FACTORY.

FILTRATION SYSTEM

The pulsed-air bag filtration system used on your system is a proven, efficient system. It requires no routine maintenance.

1. If dust or visible discharge is observed in the blower exhaust air stream, **SHUT DOWN THE UNIT**. This is the first evidence of a failure in the filter bags and if operation is continued under these conditions, severe damage to the blower could result.
2. If the filter system is not "pulsing", the bags are not being cleaned on a continuous basis. The result of this failure will be an increase in pressure across the filter bags and a resulting loss in vacuuming efficiency. If this condition persists, the velocities across the filter bags could increase sufficiently to carry dust into the blower. This would be evidenced by dust in the blower exhaust air stream. The differential pressure gauge on the back of the machine will indicate the pressure change applicable to this condition.

VISIBLE DUST FROM EXHAUST

The first sign of a failure in the filter bags is visible dust in the blower exhaust air stream coming out of the silencer. When the unit is first started with new bags, some dust may be visible for a short time, which is normal.

If leakage in the filter is suspected, the top filter cover must be removed to check for bag failure:

1. Refer to **BAGHOUSE FILTER REPLACEMENT**
2. Look down inside the filter bags, using a flashlight. Usually the bags that have been leaking will have dirt inside.
3. Remove and replace any bags with leaks following procedures noted in the **BAGHOUSE FILTER REPLACEMENT**
4. Follow test procedures

FILTERS NOT EFFECTIVE/ PULSING NOT OPERATING

Check for the following:

1. Verify the solenoid valves "click" during a pulse cycle. If they don't, there is likely an electrical/timer malfunction.
2. Air System malfunctions can be diagnosed as follows:
 - a. Check system air pressure.
 - b. If 90-120 PSI is present, then the problem will probably be an electrical malfunction.
3. If the above appears satisfactory, it indicates a leak in the air system. Isolate the air leak by "pinching off" the air hose going to the filtration storage package. If air pressure builds up with this line blocked off, this would be indicative of a leaking solenoid or diaphragm valve.
4. Inspect the solenoid valves, listen for an air leak, and place a finger on the discharge port to see if you can feel air leakage or a pressure build-up when your finger is blocking the port.

5. If the solenoid valves are not leaking, check the diaphragm valves. Listen to the diaphragm valves for a hissing sound to determine which one is leaking.
6. If a leaking solenoid or diaphragm valve is found, remove and clean the valve per the enclosed instructions, or replace it.
7. If the filter pulse system is not functioning and air pressure is present, check the following:
 - a. Check fuse on instrument panel.
 - b. Check fuse inside timer box mounted on side of filter unit.
 - c. Check wiring from timer circuit to solenoid valves.
 - d. Verify power going from the circuit, using a test meter or test light.
 - e. If all the above are intact, this indicates a malfunction in the timer circuit board.
 - f. Accordingly, replace the entire circuit board.



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REPLACEMENT PARTS

Vector Technologies stocks replacement parts and accessories for all of its products. It is recommended that only factory authorized replacement parts be used on your VecLoader to ensure best operating performance and warranty protection.

Common replacement parts on VecLoader diesel vacuum units include:

2033-00	Baghouse timer
3011-00	Hydraulic Filter
4112-01	Dryer Desiccant
6063-00	Vacuum gauge
5030-00	Diaphragm valve repair kit
5031-00	Diaphragm valve- baghouse
5025-00	Solenoid valve baghouse
See page i	Filter bags
See page i	Filter cages
5087-BC	Removable wear plate on most models
5040-00	Baghouse magnehelic gauge
See page i	Micro filter cartridge
5041-00	In Line-Filter 40 micron
9136-00	Butterfly valve spring (2 per set)
2379-AB	Remote Shutdown pendant
2379-AB1	100 foot Cord for remote shutdown
7494-AC	Hose Inlet guard, 4.0"
7495-AC	Hose Inlet guard 5.0"
7496-AC	Hose Inlet guard, 6.0"
7496-XX	Hose Inlet guards, other sizes available upon request

Engine/Model Specific:

- Engine oil filter
- Engine fuel filter
- Engine air cleaner element-primary
- Engine air cleaner element-secondary
- Blower drive belts sets

**VECTOR RECOMMEND USING ONLY AUTHORIZED FACTORY PARTS.
USE OF NON-FACTORY PARTS MAY INVALIDATE YOUR WARRANTY.**

Call 1 (800) 832-4010 Extension 36

Vector Technologies accepts Master Card, American Express, and Visa.



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VACUUM HOSE AND ACCESSORIES

Common hose and accessories include:

9155-AE	Dust retention sleeve
K7007-50	6" Heavy Duty Rubber Hose (50' roll)
7460-AA	6" Q-D Coupling Assembly
7461-BC	6" Female Disconnect at inlet
7024-00	6" Power Lock Hose Clamp
7237-BC	6" Wear Elbow
7085-CC	Hose Radius Guard
7213-AC1	6" x 5" QD Reducing Coupling
K7006-50	5" Heavy Duty Rubber Hose (50' roll)
7450-AA	5" QD Coupling Assembly
7023-00	5" Power Lock Hose Clamps
7236-BC	5" Wear Elbow
7058-DC	Rock Scoop- 5"
7051-AA	5" Floor Nozzle
7052-BC	5" Bulk Nozzle
7217-AC	Wye 5" Male QD x (5) 2-1/2" Female QD
7195-BC	5" x 4" QD Reducer
K7005-50	4" Heavy Duty Rubber Hose (50' roll)
7440-AA	4" Q. D. Coupling Assembly
7041-AA	4" Floor Nozzle
7042-BC	4" Bulk Nozzle
7022-00	4" Power Lock Hose Clamps
7216-AC	4" Q. D. x (2) 2.5" O.D. Wye
K7004-50	3" Heavy Duty Rubber Hose (50' roll)
K7004-100	3" Heavy Duty Rubber Hose (100' roll)
K7003-50	2.5" Heavy Duty Rubber Hose (50' roll)
K7003-100	2.5" Heavy Duty Rubber Hose (100' roll)
7013-00	2.5" Hose Clamp (Size 48)
9351-AE	Hopper Discharge Sleeve

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VECLOADER OPTIONAL EQUIPMENT

Vector Technologies Ltd. offers a variety of accessories and optional equipment to complement your VecLoader including:

- Floor Nozzles:** Attached to the end of the Vacuum hose to pick up material spread across bare floors or decks.
- Removable Bulk Nozzles:** Light-weight nozzle for attachment to end of the vacuum hose. Provides a rigid handle and suction tube to effectively vacuum materials from bare floors and enhancing the operator's ability to vacuum hard to reach areas.
- Insulator® Shredders:** Used in conjunction with vacuum operation to tear bulky friable material that otherwise could not fit in a vacuum hose.
- Drum Fillers:** The optional drum filler provides the ability to vacuum directly into 55 gallon drums for added convenience. Often used for specialized clean-up of products that you do not want to enter the VecLoader vacuum, including paint sludge, and similar gummy or noxious materials. Also used where it is difficult to load into and exchange drums at the vacuum source due to space considerations.
- Replacement Parts:** Vector Technologies Ltd. stocks complete replacement parts for your VecLoader including hose and filters. It is recommended that only Vector Factory authorized replacement parts be used for your VecLoader. Use of non-authorized parts may invalidate your VecLoader vacuum warranty. Replacements for required safety features are available including hose guards, remote shutdown controls, and remote shutdown cords.

VECTOR ALSO MANUFACTURES A WIDE LINE OF COLLECTION DEVICES AND HOPPERS FOR BOTH HAZARDOUS AND NON-HAZARDOUS APPLICATIONS. CONSULT YOUR FACTORY REPRESENTATIVE FOR INFORMATION ON ALL OF OUR PRODUCTS.

Call 1 (800) 832-4010 Extension 36

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VECTOR TECHNOLOGIES LTD.

SERVICE & SUPPORT

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Vector Technologies Ltd. is the leading designer and manufacturer of vacuums, classification systems, portable dust collectors and other products for hazardous and non-hazardous material handling. For almost thirty years, our designs have set world standards for reliability and performance in a variety of industrial and specialized markets. VecLoader vacuums are serviced and supported by the Vector Technologies Ltd. service group with technical assistance available over our Toll-free "Hotline". We are fully committed to being the leader in product design, product reliability, and product support. In the field service and technical support are always available. For assistance, please contact:

Vector Technologies Ltd., 6820 North 43rd Street, Milwaukee, Wisconsin 53209
1 (800) 832-4010; in Wisconsin, 1 (414) 247-7100; FAX: (414) 247-7110.

Thank you for purchasing a VecLoader
VecLoader: PROVEN PRODUCTION, POWER & PROFIT

Steve Schoenberger

Stephen B. Schoenberger, President

**VECTOR TECHNOLOGIES LTD.
LIMITED WARRANTY**

Seller warrants new Equipment to be free from defects in material and workmanship under normal use and maintenance as described herein. This warranty does not apply to commercial items manufactured by others which are covered by existing warranties of the respective manufacturers thereof nor does it apply to consumables or normal wear items such as belts, filters and wear plates. 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 the lesser of twelve (12) months or one thousand (1,000) operating hours after delivery to Buyer, provided Buyer gives notice to Seller of such defect within 30 days after discovery. This warranty does not obligate us to bear the cost of labor or transportation charges in connection with the replacement or repair of defective parts, nor shall it apply to Equipment upon which repairs or alterations have been made, unless by us. If the Seller elects to repair or replace defective Equipment or parts, the Seller will furnish, F.O.B. its plant, without charge, the repaired or replacement Equipment parts. Beyond this, the Seller assumes no responsibility and 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.

Seller may not warrant the equipment in the event of payment default.

THE WARRANTY CONTAINED ON THIS PAGE AS LIMITED HEREIN, IS THE ONLY WARRANTY EXTENDED BY THE SELLER IN CONNECTION WITH THE SALE OF ITS EQUIPMENT AND IS IN LIEU OF ALL OTHER WARRANTIES (EXCEPT OF TITLE), EXPRESSED OR IMPLIED. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

SUPPORT DOCUMENTATION INCLUDED WITH THIS MANUAL

The Manufacturers' operating manuals, parts lists and other documentation are an intricate part of this manual. They should be read thoroughly, with safety and operating instructions fully observed. Failure to follow the manufacturer's instructions could result in severe personal injury, death, and machine or property damage.

Manufacturer's information enclosed includes:

<u>Function</u>	<u>Manufacturer/Source</u>	<u>Document</u>
Engine	See page i Warranty Information Supplement(s) Operation & Maintenance Manual	Dealer Directory
Rotary Lobe Blower	See page i	Instructions Warranty Information Supplement(s)
Air Dryer	Midland	Manual Warranty Information
Air Compressor	See page i	Operating & Maintenance Instructions
Solenoid Valves	Goyen or equivalent	Troubleshooting, assembly views
Pneumatics	Vector Technologies	Schematic
Braking System	Dexter Axle	Operating & Maintenance Instructions
Axles	Dexter Axle	Operating & Maintenance Manual
Lift Over-center Valves	Manufacturer	Troubleshooting, assembly view
Drive Coupling if applicable	Manufacturer	Operating & Maintenance Instructions

APPENDIX