



DURASUCKER®

LIQUID VACUUM TRUCK



OPERATORS MANUAL



LIMITED WARRANTY

Subject to the terms and conditions below, Super Products warrants to its original purchaser ("original purchaser") that new equipment sold after the effective date of this limited warranty is free of defects in material or workmanship at the time it was shipped from Super Products for a period of 12 months from the shipment date, provided the equipment is used in a normal and reasonable manner and in accordance with all operating instructions. Super Products agrees, at its sole election, to either repair or replace (inclusive of labor) any parts and components manufactured by Super Products. Super Products must be notified with thirty (30) days of such defect or failure, at which time Super Products will provide instructions on the warranty procedures to be followed. This limited warranty is subject to those limitations and exclusions as described in such warranty procedures. Super Products will not honor claims for warranty that have not been previously authorized via the warranty procedures (including that labor rates and times must be preapproved in writing).

In addition, Super Products agrees to provide extended warranties for certain components as indicated below: (extended warranty periods begin from the shipment date to the original purchaser).

- "10 Years on the debris body and all poly water tanks (from defects in material or workmanship).
- "3 Years on Super Products' single-piston water pump (from defects in material or workmanship).

Super Products does not provide any express or implied warranty to (and Super Products shall not be responsible for)

- "Any major components of the equipment that Super Products used in manufacturing or assembling the equipment but that Super Products did not manufacture (including, but not limited to, truck engines or any component of the chassis, vacuum pump, water pump, and hydraulics, driveline, power takeoff, and transfer case). Super Products assigns to the original purchaser any warranty extended by the manufacturer of such components. Disposition of any warranty claim for such components will be at the sole discretion and remedy of the component supplier. Super Products shall have the right of disposal of parts and components that are replaced.
- "Normal wear parts, including but not limited to, valves, gaskets, light bulbs, filters, oils and fluids.
- "Consumable items, including but not limited to, vacuum hose, sewer hose, nozzles, and vacuum tubes..
- "Normal adjustments and maintenance services.

This limited warranty does not cover any damage to nonfunctioning or malfunctioning of the equipment, or any components or parts comprising the equipment, due to: (a) any alteration, substitution, misuse or abuse by the original purchaser or its agents; (b) their non-compliance with any operator's manual, maintenance manual or warning published by Super Products or the component manufacturer and issued to the original purchaser; or (c) their non-compliance with the general standard of reasonable care.

OTHER THAN AS EXPRESSLY STATED HEREIN, THERE ARE NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED. MORE SPECIFICALLY, THERE ARE NO IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY. ORIGINAL PURCHASER ACKNOWLEDGES AND AGREES THAT SUPER PRODUCTS MAKES NO REPRESENTATIONS OR PROMISES, AND THAT ORIGINAL PURCHASER IS NOT RELYING UPON ANY ORAL OR WRITTEN REPRESENTATIONS OR PROMISES, REGARDING ANY PERFORMANCE CHARACTERISTICS OR CAPABILITIES OF THE EQUIPMENT OR THE COMPONENTS THEREOF (INCLUDING, WITHOUT LIMITATION, THE INTEGRATION OF SUCH COMPONENTS OR THE COMBINATION IN WHICH SUCH COMPONENTS MAY BE USED), EXCEPT AS EXPRESSLY STATED IN THE DESCRIPTION OF THE EQUIPMENT CONTAINED IN THE ACKNOWLEDGMENT OR OTHER WRITTEN DESCRIPTIONS PROVIDED BY SUPER PRODUCTS.

SUPER PRODUCTS' MAXIMUM LIABILITY SHALL NOT EXCEED AND ORIGINAL PURCHASER'S REMEDY IS LIMITED TO EITHER (a) REPAIR OR REPLACEMENT OF THE DEFECTIVE EQUIPMENT, OR AT SELLER'S OPTION (b) RETURN OF THE PRODUCT AND REFUND OF THE PURCHASE PRICE. SUCH REMEDY SHALL BE ORIGINAL PURCHASER'S ENTIRE AND EXCLUSIVE REMEDY. ORIGINAL PURCHASER ACKNOWLEDGES THAT UNDER NO CIRCUMSTANCES SHALL SUPER PRODUCTS BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND ARISING IN CONNECTION WITH OR OUT OF THE EQUIPMENT AND THAT SUPER PRODUCTS' LIABILITY, WHETHER IN CONTRACT, TORT, UNDER ANY WARRANTY OR OTHERWISE SHALL NOT EXCEED THE RETURN OF THE AMOUNT OF THE PURCHASE PRICE PAID BY BUYER, WHICH AMOUNT MAY BE REDUCED DUE TO DEPRECIATION AND DAMAGE BEYOND NORMAL WEAR AND TEAR. ORIGINAL PURCHASER UNDERSTANDS THAT THE LIMITATION OF SUPER PRODUCTS' LIABILITY RELATING TO THE EQUIPMENT IS A MATERIAL TERM OF THE PARTIES' TRANSACTION

This limited warranty is not transferable without the prior written approval of Super Products.

NO ACTION ARISING OUT OF ANY CLAIMED BREACH OF THIS LIMITED WARRANTY OR TRANSACTIONS UNDER THIS LIMITED WARRANTY MAY BE BROUGHT MORE THAN TWO (2) YEARS AFTER THE CAUSE OF ACTION HAS OCCURRED.

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General Safety Instructions and Practices

A careful operator is the best operator. Safety is of primary importance to the manufacturer and should be to the owner/operator. Most accidents can be avoided by being aware of your equipment, your surroundings, and observing certain precautions. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Read and understand these safety messages before assembling, operating, or servicing this equipment. This equipment should only be operated by those persons who have read the manual, who are responsible and trained, and who know how to do so responsibly



The Safety Alert Symbol combined with a Signal Word, as seen below, is used throughout this manual and on decals which are attached to the equipment. The Safety Alert Symbol means: **“ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!”** The Symbol and Signal Word are intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this equipment.



DANGER

Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury and property damage. It may also be used

NOTICE

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage. It may also be used to alert against unsafe

NOTE

Identifies points of particular interest for more efficient and convenient operation or repair.



READ, UNDERSTAND, and FOLLOW the following **Safety Messages**. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in this manual and in the Safety Messages on the implement. Always follow the instruction in this manual and use common sense to avoid hazards

Visual Attention Safety

Pictographs are used throughout this manual to help bring your visual attention to safety issues.

1




SAFETY HAZARD	SAFETY AVOIDANCE	SAFETY PREVENTION
<p>Pictograph surrounded by a triangle indicates a Safety Hazard that must be avoided.</p> <p>Example:</p>  <p>Equipment contacting overhead electrical lines</p>	<p>Pictograph in a circle or inside a box indicates an avoidance procedure that should be followed to prevent injuries.</p> <p>Example:</p>  <p>Always shut off engine and remove key before working on equipment.</p>	<p>A circle with a slash through it indicates an action that is prohibited.</p> <p>Example:</p>  <p>No Smoking</p>

Figure 1-1

NOTE

Identifies points of particular interest for more efficient and convenient operation or repair.

Translation — Safety Section

130 W Boxhorn Drive
Mukwonago, WI 53149
Mukwonago, WI 53149
(800) 837-9711

Personal Protection Equipment (PPE)

					
Wear Safety Glasses to Comply with ANSI Z87	Wear Hard Hat	Wear Safety Shoes	Wear Hearing Protection	Wear Protective Gloves	Wear Safety Reflective Vest

Figure 1-2

Always wear protective clothing and personal safety devices issued to you or required by job conditions.

This should always include:

- Hard hat
- Safety shoes
- Safety glasses with side shields (marked to comply with ANSI Z87), goggles, or face shield
- Heavy gloves (chemical resistant)
- Hearing protection
- Reflective clothing



WARNING

Never wear loose clothing or jewelry that can catch on controls or other parts of the machine. Loose clothing can be drawn into the suction hose. Never wear a wristwatch or finger rings when working on or around equipment.

When Using Pressurized Air or Water

			
Wear Face Protection Shield	Wear Wet Weather Protective Suit	Wear Waterproof Gloves and Safety Shoes with Metatarsal	Wear Respirator

Figure 1-3

When using pressurized air or water for cleaning or material erosion/movement, you should use the following:

- Face Shield
- Wet Weather Protective Suit
- Waterproof Gloves
- Respirator
- Safety Boots with Metatarsal Guard

General Hazards and Prevention Safety






				
Read and Understand Operator's Manual	DO NOT USE DRUGS or ALCOHOL before or while operating equipment	Always shut off engine and remove key before working on equipment	Always install Debris Body and tail gate props before working under equipment	Always wear your seatbelt

Figure 1-4

 **WARNING**

To avoid serious injury or death, do the following:

- **Read, understand, and follow** the operator's manual instructions, warnings, and safety messages
- **Do not allow** untrained or unauthorized persons to operate equipment.
- **Do not allow** untrained coworkers to operate or assist in operating equipment.
- **Do not allow** bystanders near equipment or work area.
- **Do not allow** anyone to operate equipment while under the influence of drugs or alcohol.
- **Do not use drugs or alcohol** before or while operating equipment.
- **Consult** medical professional for medication impairment side effects.
- **Wear** appropriate safety personal protective equipment (**PPE**).
- **Wear** appropriate breathing respirator and protective suit when operating with hazardous or unknown substances.
- **Do not wear** loose clothing or jewelry to avoid injury from entanglement in rotating parts.
- **Keep body and limbs away** from suction inlets.
- **Do not open or close** the tailgate or raise or lower the body unless the area is clear of people and obstructions.
- **Never** put any part of your body under an open tailgate unless it is sufficiently propped.
- **Never operate** the vacuum pump unless you are certain the suction hose is clear of people and obstructions.
- **Never operate** the vacuum pump without the safety relief systems working properly as described within this manual.
- **Do not enter the debris body** if hazardous materials are suspected inside the debris body. Take the unit to a certified tank cleaning facility.
- **Always shut off the engine**, remove the key, and set the parking brake before working on the truck or equipment.
- **Stay alert.** Prolonged operation can cause fatigue. **Stop and rest.**

General Hazards and Prevention Safety — continued


			
<p>Use adequate lighting for proper vision.</p>	<p>Do not touch hot surface. Keep hands and limbs away from hot surfaces.</p>	<p>Tanks can be under pressure. Relieve pressure before opening.</p>	<p>Use three-point contact when climbing on equipment.</p>

Figure 1-5

Visibility Conditions When Operating

- **Operate in daylight** or with lights that gives at least 50 yards clear visibility.
- **Be able to see** and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris, and foreign objects.
- **Use extreme care** when backing up. Vision may be limited. Severe damage or injury can occur.
- **Do not run engines** in enclosed building without adequate exhaust ventilation.

Safety Signs

- **Replace** missing, damaged, or unreadable safety signs immediately!

Equipment Guards

- **Never** operate machine if equipment guards are damaged or missing.
- **Replace** missing or damaged guards immediately!

Mounting and Dismounting Truck or Equipment

- **Only** mount or dismount when truck and moving parts are stopped.
- **Always use three-point contact** when climbing on or dismounting equipment.
- **Walkways, steps, and handrails** should be checked before use to ensure a proper non-slip surface. Replace or repair damaged component immediately.

Hot Surface

- **Stay clear** of hot surfaces such as mufflers, hydraulic pumps, valves, and tanks.
- **Relieve pressure** from tank, reservoirs, valves, and hoses before servicing or opening.

Crushing Hazards and Prevention Safety







				
Never go under raised Debris Body until prop is installed	Never go under raised tailgate until prop is installed	Truck can tip over while dumping debris on un-level surface	Slow down on curves, High Center of Gravity	Truck can tip over when truck wheels are on unstable soil

Figure 1-6

Debris Body Prop Support

 **WARNING**

Never go under raised debris body until prop is installed. Failure to do so could result in personal injury or death.

1. Raise body sufficiently to allow body prop support to be swung into position.
2. Slowly lower body until body contacts body prop support.
 - To remove body prop support, reverse above procedure.

Tailgate Prop Support

 **WARNING**

Always position tailgate prop in proper position before entering any areas beneath tailgate or entering body. Failure to do so could result in serious injury or death.

1. Raise tailgate sufficiently to allow tailgate prop support to be swung into position.
2. Slowly lower body until body contacts body prop support.

- To remove tailgate body prop support, reverse above procedure.

Truck Tip Over

 **WARNING**

Always wear seat belt while seated in truck to prevent injury.

- Truck driver must have valid and appropriate training license before transporting liquids on public roads.
- Slow down on curves to prevent truck from tipping over.
- Always ensure unit is on firm and level ground before operating the dump system. When dumping, raise the body in steps, allowing the material to dump out in a steady flow.
- **Do not allow** people and/or vehicles beside debris body while dumping.
- Never drive truck with raised debris body.
- Keep truck away from drop-offs and soft soil shoulder where truck could tip over.

Trip and Fall Prevention Safety

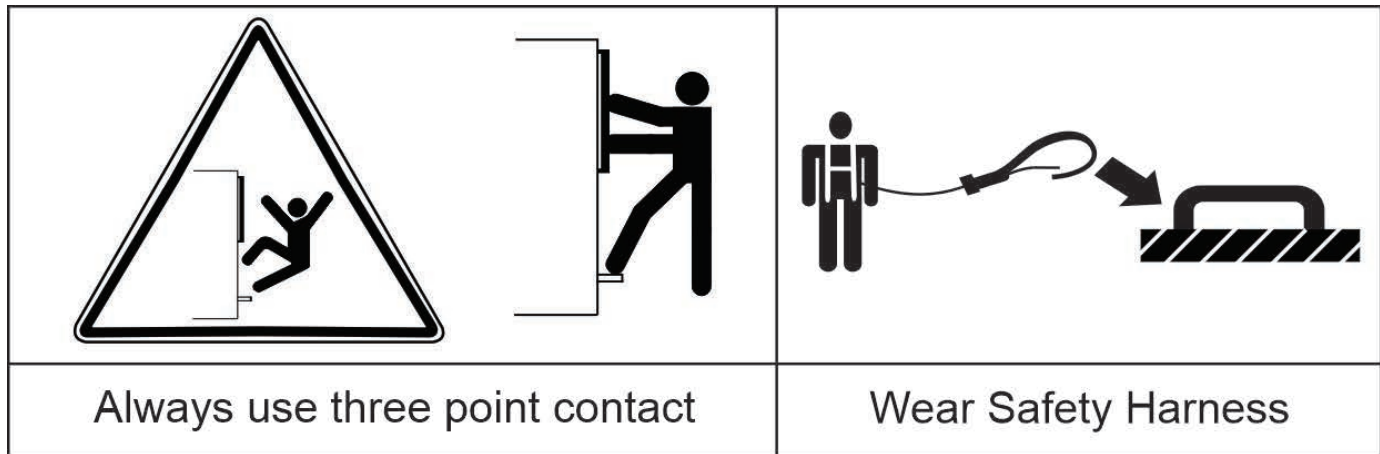


Figure 1-7

- Always maintain three-point contact with the machine, using two hands and one foot, or two feet and one hand, at all times during entry and exit. Never grab control levers or steering wheel when mounting or dismounting machine.
- **Walkways and steps** should be checked monthly to ensure a proper non-slip surface. Repair or replace damaged walkway or steps.
- **Keep** grab handles, steps, and walkways free of mud, oil, grease, and other foreign material. Clean non-skid surface material as required.
- **Ground level personnel** must be present whenever climbing onto unit to protect against inadvertent operation.
- **During operation**, occupants on elevated equipment surfaces must wear a full body harness with a lanyard attached to an authorized lanyard anchorage point. Attach only one lanyard per lanyard anchorage point.
- **Face the machine** when entering or leaving the elevated equipment surfaces.

High-Pressure Fluid Leak Hazards

			
High pressure oil penetrating skin.	High pressure oil eroding skin.	Using cardboard to check for oil leaks.	Tank contents under pressure. Allow oil to cool before slowly removing cap.

Figure 1-8



DANGER

To avoid serious injury or death from high-pressure hydraulic oil leaks penetrating skin, follow these rules:

- **Do not operate** equipment with oil or fuel leaks.
- **Keep** all hydraulic hoses, lines, and connections **tight** and in **good condition** before applying pressure to the system.
- **Relieve hydraulic pressure** before servicing the hydraulic system.
- **Remove** and replace or test hydraulic hoses if a leak is suspected. Have a qualified service facility perform the test.



DANGER

High-pressure fluid leaks can be invisible. When checking for hydraulic leaks and working around hydraulic systems, follow these rules:

- **Always wear** safety glasses with side shields (marked to comply with ANSI Z87) and impenetrable gloves.
- **Use** paper or cardboard to search for leaks.
- **Do not use** hands or body parts to search for leak.
- **Keep** hands and body **away** from pin holes and nozzles ejecting hydraulic fluid.



CAUTION

Use caution when removing hydraulic tank cap. Contents may be under pressure.

- Tank contents may be under pressure.
- **Allow oil to cool** before removing cap slowly.
- **Relieve** oil pressure before removing cap slowly.
- **Stay away** from hot oil that may spray from tank or hoses.



DANGER

High-pressure hydraulic oil can puncture skin. If injured, seek immediate medical attention and inform the physician of the cause of the injury. Surgery is required to remove the fluid from the body. Failure to seek proper medical attention will result in serious injury or death.



Figure 1-9

Power Line/Static Electrical Hazard Warnings

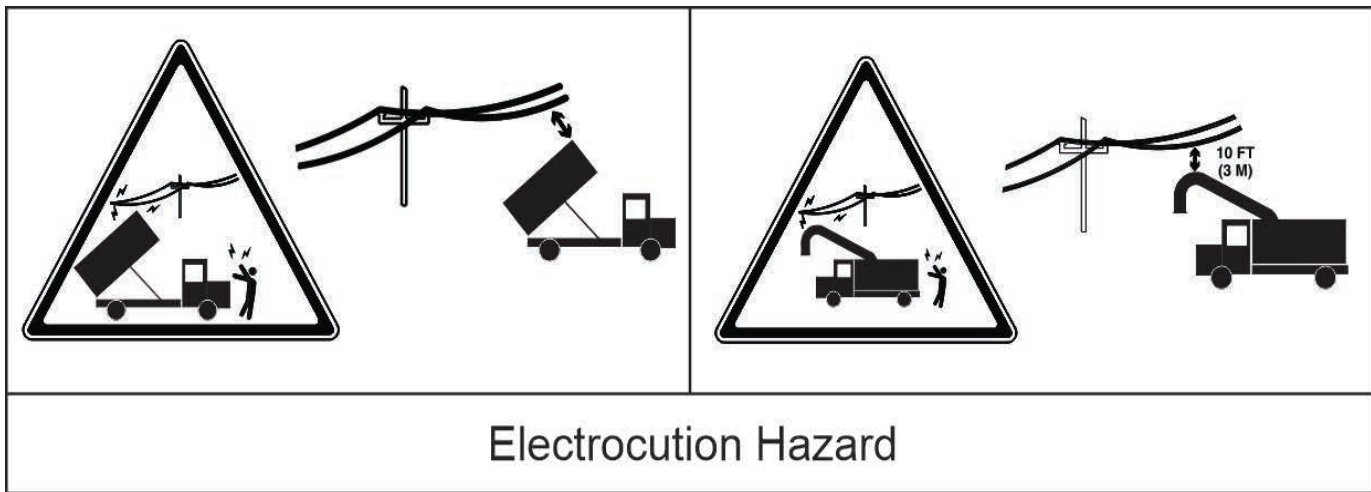


Figure 1-10



DANGER

This machine is not insulated and does not provide protection from contact or being near electrical current.

- **Never** operate the unit in an area where overhead power lines, overhead or underground cables, or other power sources may exist without ensuring that the appropriate power or utility company has de-energized the lines.
- **Always** check for power lines before raising boom or debris body.

Follow all requirements for using mobile equipment when working around power lines. The Occupational Safety and Health Administration (OSHA) requirements apply to most workers. The following information is from OSHA. Additional information can be obtained from www.osha.gov.

Overhead Power Line Tips for Construction Workers Before You Begin Construction Work

- Survey the site for overhead power lines.

NOTE

Never get within 10 feet of an overhead power line!

- Consider all overhead lines as energized until the electric utility indicates otherwise or an electrician

verifies that the line is not energized and has been grounded.

- In construction work, an overhead power line safety component should be part of your employer's overall safety and health program and safety training.
- If overhead lines are present, call the utility company and ask if the utility company can shut off the lines while you are working near them.
- If overhead lines cannot be shut down, ask the utility company if they can install insulation over the lines during the time you will be working near them.

Working with Tools and Equipment

- If the lines cannot be shut down and/or insulation cannot be applied, a minimum safe distance of 10 feet must be established.
- Only use non-conductive ladders when working on or near overhead power lines.
- Employees shall not be permitted to approach or carry any conductive object closer than 10 feet to an energized line.



WARNING


Non-electrical conducting coating must be used on water nozzles to prevent electrical contact with underground electrical power lines.

Chemical and Biological Hazard Safety

		
Chemical Burning Skin Hazard	Chemical, Dust and Fumes Inhalation Hazard	Wear Respirator when around hazardous fumes

Figure 1-11


Chemicals and Diesel Engine Exhaust

 **WARNING**

California Proposition 65: Diesel engine exhaust and some of its constituents are known to the state of California to cause cancer, birth defects, and other reproductive harm.

 **WARNING**

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

 **WARNING**

Always read carefully and comply fully with the manufacturer's instructions when handling fuels, oils, solvents, cleansers, and any other chemical agent.

Sewer Gas Hazard

- Do not smoke or have lighted materials in or around sewer lines, drains, or catch basins.

Chemical Waste Hazard

- Storm drains, catch basins, and sewers may contain harmful chemicals. To prevent contamination and injury, wear chemical resistant gloves, long sleeves, trousers, and safety glasses or face shields.
- Seek immediate medical attention if exposure or contamination is suspected.

Biological Hazards

- Germ and other biological hazards are common in sewers, drains, and catch basins. Use appropriate personal protective equipment to avoid injury and contamination. Get medical attention for injuries associated with cleaning sewers, drains, and catch basins if biological contamination is suspected.

Dust Hazard

- Repeated or substantial breathing of hazardous dusts, including crystalline silica, could cause fatal or serious respiratory disease including silicosis. Concrete, masonry, many types of rock, and various other materials contain silica sand. California lists repairable crystalline silica as a substance known to cause cancer. Operation of this equipment under certain conditions may generate airborne dust particles that could contain crystalline silica. In those conditions personal protective equipment including an appropriate respirator must be used. If excessive dust is generated, a dust collection or suppression system should also be used during operation.

Transport Safety and Hazards Warnings

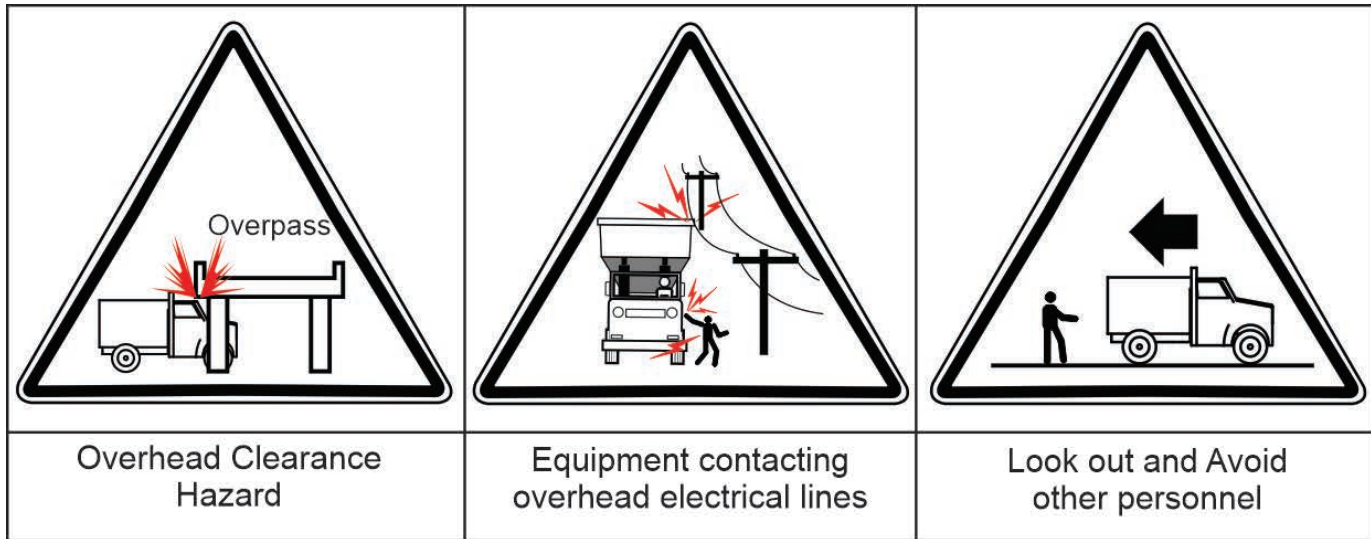


Figure 1-12

WARNING

Follow all steps before moving truck when towing or transporting equipment to avoid serious injury and death:

Before Transporting Truck Inspection

- Ensure unit is road worthy by performing a pre-trip inspection before driving to and from job site.
- Check that tailgate is closed and properly locked.
- Ensure all equipment is properly secured and positioned for maximum visibility and adequate clearances.
 - Close all water drain valves and install all plugs and strainers previously removed.
 - Check that boom (if equipped) is locked in transport position and properly secured.
 - Check that all tools, accessories, and work tubes/hoses are properly secured.
 - Check that cabinet doors and access panels are closed.
 - Check that all cleanout doors are closed and latched shut.
 - Check that the dust chute and tailgate are closed and latched shut.
- Always measure overhead clearance height of truck and equipment.
- Check for low hanging electric or telephone wires and power cables on the ground.

- Look out for and avoid other personnel, machinery and vehicles in the area. Use a spotter if you **do not** have clear view

Never Exceed your Gross Vehicle Weight Rating (GVWR)

- In operation on public highways, the combined weight of the chassis, body, and payload must not exceed the gross vehicle weight rating of the chassis as rated by the cab and chassis manufacturer.

NOTE

It is possible to overload the unit capacity.

- *Load your water supply at or near the job site.*
- *Regulate your work to maintain minimum water storage when leaving the work location.*

Pedestrian Safety

- Conduct a visual check and warning (honk horn) before starting or moving the truck to ensure the safety of people on the ground and other equipment in the area.
- Be aware of all personnel who are working on the ground.
- Look out for and avoid other personnel, machinery and vehicles in the area. Use a spotter if you **do not** have clear view.

Transport Safety and Hazards Warnings - Continued

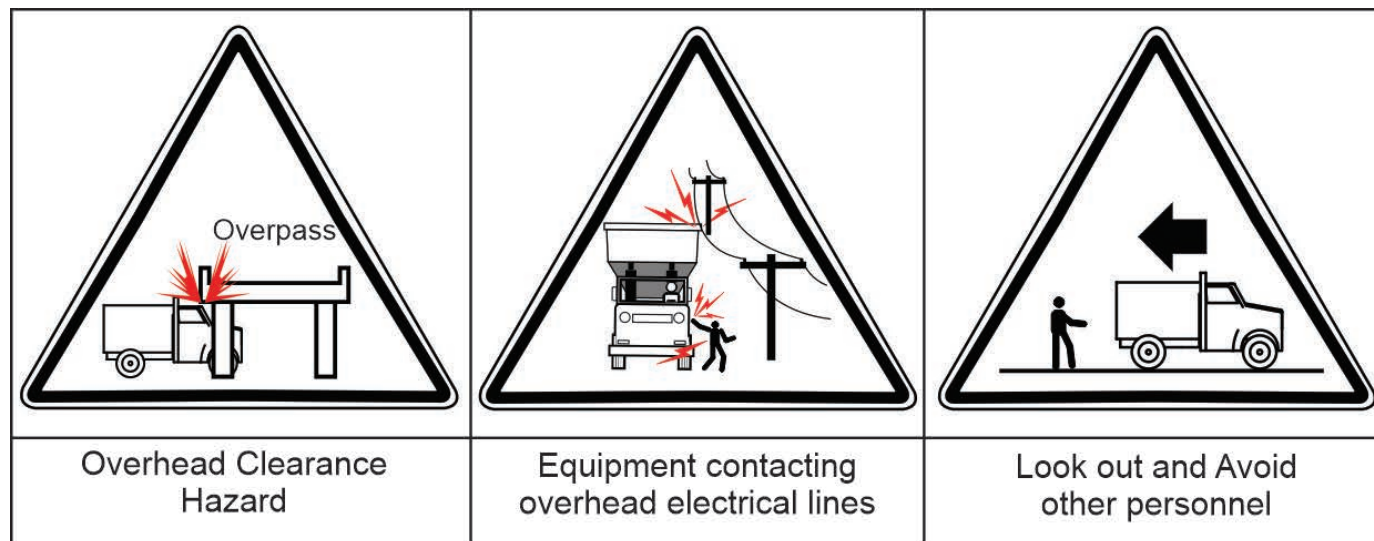


Figure 1-13

Determine Stopping Characteristics of Truck for Transporting Braking Tests

- Stopping distance with loaded debris body will be greater than empty truck.
- Reduce travel speed on wet or icy roads; stopping distances increase.

Determine Maximum Turning Speed Before Operating on Roads or Uneven Ground

- **Test** equipment by slowly increasing speed on turns to determine if it can be operated at higher speeds.
- **Use reduced** turning speeds on sharp turns to avoid equipment turning over.
- Truck has a high center of gravity when carrying a loaded debris body. Use extreme caution when transporting at highway speeds. Slow down for sharp corners to avoid tipping or turning over.

When Transporting Equipment

- **Do not move** truck unless debris body is fully lowered in the horizontal storage position.
- **Always** wear seat belt when operating truck.
- **Follow** all local traffic regulations.
- **Use** low speeds to avoid overturn tipping when debris body is filled.
- **Use** low speeds and gradual steering on curves, hills, rough or uneven surfaces, and wet roads
- **Turn on** truck flashing warning lights when driving slower than traffic.
- Transport the truck only at safe speeds that allow for proper control of the truck while driving and stopping

Job Site Safety and Hazard Warnings

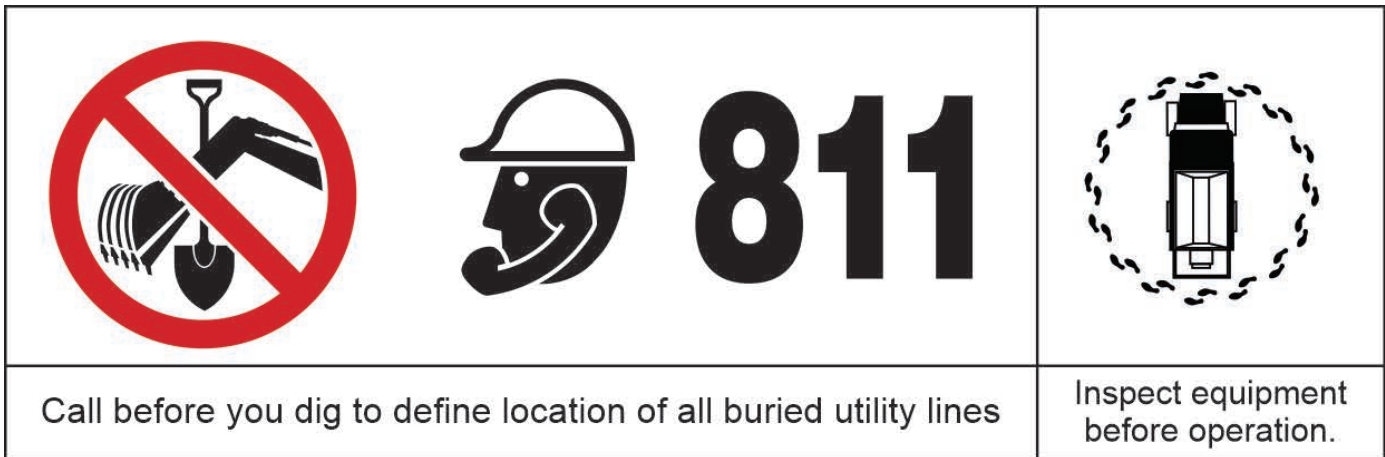


Figure 1-14


WARNING

Job site hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment.

To Help Avoid Injury

If job site classification is in question or if the possibility of unmarked electric utilities exists, classify the job site as electric.

Arrange for Traffic Control

- If working near a road or other traffic area, contact local authorities about safety procedures and regulations.
- Always activate beacons and flashers before job setup.
- Always use safety cones.
- If working on a roadway, follow required temporary traffic control measures.
- Use job site controls, such as cones and barricade tape, to prevent bystanders from entering potentially hazardous areas and to keep them away from machinery.

Prepare for Working Near Existing Utilities

- Boots must have high tops and meet the electric hazard protection requirements of ASTM F2413 OR ASTM F117, when tested at 14,000 volts. Tuck legs of pants completely inside boots.
- Gloves must have 17,000 AC maximum use voltage, according to ASTM specification D120. If working around higher voltage, use gloves and boots with appropriately higher ratings.

Plan for Emergency Services

- Make sure you have the telephone numbers for local emergency and medical facilities on hand, and access to a telephone.

Job Site Safety and Hazard Warnings - Continued

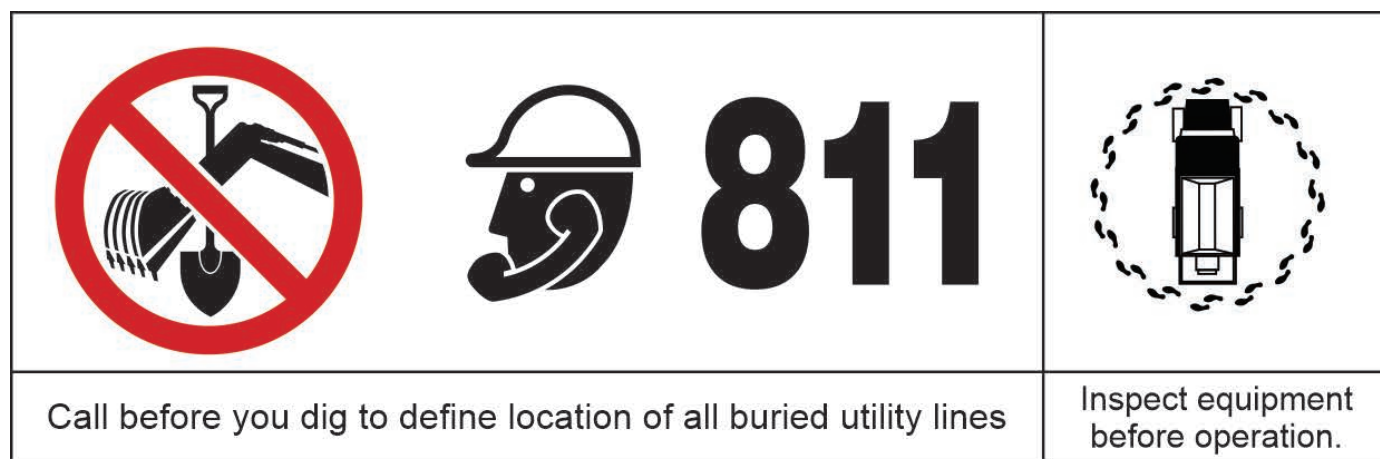


Figure 1-15

Inspect the Job Site

- Follow U.S. Department of Labor regulations on excavating and trenching (Part 1926, Subpart P) and other similar regulations.
- Contact your local One-Call (811 in USA) or the One-Call referral number (888-258-0808 in USA and Canada) to have underground utilities located before digging. Also contact any utilities that do not participate in the One-Call service
- Inspect job site and perimeter for evidence of underground hazards, such as the following:
 - “Buried utility” notices
 - Utility facilities without overhead lines
 - Gas or water meters
 - Junction boxes
 - Drop boxes
 - Light poles
 - Manhole covers
 - Sunken ground
 - Mark location of all buried utilities and obstructions
- Walk and inspect job site for unsafe conditions and identify any potential hazards for operators and bystanders. Do not operate equipment if unsafe conditions cannot be controlled.

Visibility Conditions When Operating

- **Operate in daylight** or with lights that provide adequate visibility to perform job safely.
- **Make sure** passersby, steep slopes, ditches, drop-offs, overhead obstructions, and power lines are visible and identifiable.

Prepare the Job Site

- Open manholes and other access openings create risk of trips and falls. Be aware of such locations and do not step in or over them. Ensure manhole covers and other covers are in place prior to leaving the job site.
- Be aware of traffic and pedestrians on the job site. Use extreme caution while moving around the vehicle to avoid contact with other moving vehicles. Before stowing the boom or moving the vehicle, make sure pedestrians are clear of the area.
- Clear the area to be excavated. Remove rocks or branches too large for vacuum hose.
- Select a solid area to stand on while excavating.

Fire Extinguisher

If required, mount a fire extinguisher near the power unit but away from possible points of ignition. The fire extinguisher should always be classified for both oil and electric fires. It should meet legal and regulatory requirements.

Vacuum Equipment Operation Safety and Hazard Warnings



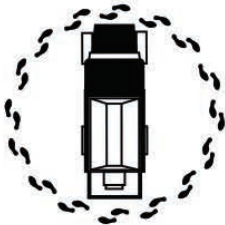
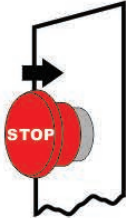
			
<p>Read and Understand Operator's Manual.</p>	<p>Ensure truck parking brakes are set.</p>	<p>Inspect equipment before operation. Ensure all components are operating properly.</p>	<p>Emergency Stop Button.</p>

Figure 1-16

It is the operator's responsibility to be knowledgeable of all potential operating hazards and to take every reasonable precaution to ensure that oneself, others, animals, and property are not injured or damaged by the operation of this equipment. Do not operate the equipment if passersby or untrained persons are within the active job site. **Never operate** this equipment if a shield or guard is missing or in poor operational condition.

NOTE

Read and understand all operating instructions and the entire safety section of this manual and the truck manual before attempting to operate any equipment.

If you do not understand any of the instructions, contact your nearest authorized dealer for a full explanation. Pay close attention to all safety signs and safety messages contained in this manual and those affixed to the unit.


WARNING

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use common sense to avoid hazards.


WARNING

Always set the truck parking brakes and if on unlevelled surfaces chock the wheels. Unexpected truck movement can cause serious injuries.

Before operating the equipment, conduct a walk-around inspection of the equipment for proper operation. Repair any improperly functioning, broken, or damaged equipment before operating.

Inspect the job site for unsafe conditions and identify any potential hazards for operators and bystanders. Do not operate equipment if unsafe conditions cannot be controlled.

Emergency Stop Button Function

This equipment is equipped with an emergency stop button that can be activated at any time during operation to close all tank valves. Emergency stop button is located on the front drivers side hose tray.

Pressing the emergency stop button while the machine is in operation has the following results:

- Closes the rear discharge valve
- Closes the rear inlet valve
- Closes tank top isolation valve

Vacuum Equipment Operation Safety and Hazard Warnings - Continued




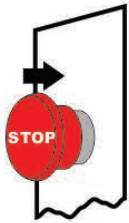
			
Read and Understand Operator's Manual.	Ensure truck parking brakes are set.	Inspect equipment before operation. Ensure all components are operating properly.	Emergency Stop Button.

Figure 1-17

To Reset E-STOP

- The operator must reset the emergency stop button.
 - Twist the emergency stop button, and it will pop out
- Upon resetting the emergency stop switch all air actuated tank valves will open.

Vacuum Safety Operation



WARNING

Make sure no one is near the end of the vacuum hose and the 4-way valve is Neutral before engaging the vacuum pump. Failure to do so could cause personal injury.

- Keep vacuum tools and hoses away from face and body. An injury caused by vacuum can be serious. The vacuum must be stopped or the vacuum pressure relieved as quickly as possible at any sign of danger. Seek medical attention immediately.
- Do not attach hose, pipe, or accessories with the vacuum on. The vacuum can trap fingers, hands, and feet with enough force to crush or cut.
- Do not use a bare open hose end for vacuuming. A variety of hose and attachments are available to keep the operator clear of the hose opening.
- Before cleaning the suction tubes or hoses, lower the engine speed to idle, open the relief valve, turn off the truck's engine, remove the keys, and lock the cab doors.
- When working close to the end of the hose, wear tight-fitting clothes. Keep shirts and jackets closed so that they will not be pulled into the end of hose.
- Remove loose-fitting jewelry such as bracelets and necklaces unless they are under tight-fitting clothing.
- Do not use hands or feet to remove obstructions from the end of the hose.
- Keep all body extremities and clothing away from the end of the hose.

Vacuum Equipment Operation Safety and Hazard Warnings - Continued



CAUTION

Failure to engage parking brakes and/or position wheel chocks could result in unexpected chassis movement, which could cause bodily injury or property damage.

- The use of this equipment in the removal or handling of any regulated substance or material must be performed in strict accordance with all applicable federal, state, and local laws and regulations. Approved safety and personal protection equipment and clothing must be used and worn at all times.
- Never use a vacuum machine to vacuum dusty materials until the material safety data sheets (MSDS) have been consulted to determine if the dust is combustible. Only air mover units that are part of a verified assured grounding system and that have bags, doors, and any other non-welded debris body components grounded to the debris body can be used if the materials contain combustible dusts.

Pre-Start Checklist

- Ensure operator and co-workers have read and understood the safety instructions in the Operator's Manual.
- Ensure that all required maintenance has been performed.
- Park truck on level ground and set parking brakes.
- Ensure cleanout doors and tailgate are closed and latched shut.
- Attach suction hose and tubing as required, including relief valve.

Vacuum Operation

NOTE

- The unit must be thoroughly cleaned between jobs to prevent cross-contamination or chemical reactions..
- Never use the vacuum in any type of rescue operation.
- Operating the unit inside a building or confined areas can create additional risks to the unit, operators, and building occupants. Engine exhaust gas can reach deadly levels. Heat buildup from the engine and blower discharge can overheat equipment.



DANGER


Never operate engines where there are or can be combustible vapors. Vapors pulled into an engine air intake can cause engine acceleration and over speeding. This can result in death, injury, and property damage.

High-Pressure Water Safety and Hazard Warnings

			
Pressurized fluid and erosion of flesh Hazard	Injection Hazard	Wear protective gloves	Wear face protection - Face Shield

Figure 1-18

- Release pressure before attempting to open any door, hatch, hose, or tube.
- Do not bend or strike high-pressure lines.
- Report any loose or damaged tubes or hoses to mechanics so repairs can be made prior to continued use.


WARNING

In the event of any water jet injury

- **Seek medical attention immediately!**
- **Inform the physician of the cause of the injury.**
- **Tell the physician what type of water jet project was being performed at the time of the accident and the source of the water.**

Operators using or working around high-pressure water systems need to take additional precautions, including specialized personal protection equipment. This and additional information on high-pressure water safety is provided by and available as a wallet card from:

Water Jet Technology Association
 906 Olive Street, Suite 1200
 St Louis, MO 63101-1419
 (314) 241-1445
 fax (314) 241-1449
 e-mail: wjta@wjta.org
 website: www.wjta.org


**IMPORTANT
MEDICAL
INFORMATION!**

READ THIS PLASTIC CARD AND KEEP IT IN YOUR WALLET. IN THE EVENT OF A WATERJET INJURY, SHOW THE CARD TO YOUR DOCTOR.

Distributed by the: WaterJet Technology Association, 906 Olive Street, Suite 1200
 St Louis, MO 63101-1419,
 phone: (314) 241-1445, fax: (314) 241-1449
 e-mail: wjta@wjta.org
 website: www.wjta.org

Figure 1-19

- Use the handgun wash-down system for final equipment and job site cleanups or for cleaning debris buildups on the inside of body.


DANGER

The water handgun operates at high pressure. Never point the water handgun at yourself or others. Make sure you are holding handgun securely with both hands, in a secure stance. Water gun has a kickback when turned on.

- Always bleed the pressure from the handgun before disconnecting it from the high-pressure handgun connection.

Dust Hazard and Explosion Prevention Safety

1



Explosion Hazard

Figure 1-20

In a confined area, certain concentrations of dust in an otherwise normal atmosphere can explode when spark occurs. This phenomenon is known as a dust explosion. It has been known to occur in grain elevators, underground mines, flour mills, crushers, etc. The dust itself need not be an explosive or flammable substance.

The safe operation of transferring potentially explosive dust should be addressed by the following

- Static charge dissipation
- Spark prevention

See “Static Charge Dissipation” on page 1-24 and “Spark and Fire Prevention Safety” on page 1-25 for specific information on addressing these two concerns.

Hydrocarbon Waste Recovery






				
Chemical Burning Skin Hazard	Fire Hazard	Explosion Hazard	No Smoking	Never have an open flame

Figure 1-21

 **DANGER**

Do not vacuum flammable or combustible materials unless you have read, understand, and follow these instructions and are fully trained. Failure to do so could result in death or injury.

Most Durasuckers are equipped with a rotary vane vacuum pump to vacuum materials into the debris tank. The rotary vane vacuum pump includes a non-metallic vanes to reduce the chance of a spark inside the vacuum pump. However, rotary vane vacuum pumps have the potential to produce significant amounts of heat which could be a source of ignition if not carefully maintained and managed.

Some Durasuckers may be equipped with a LIQUID RING vacuum pump which uses water (or glycol mixture) to create the vacuum seal and to cool the vacuum pump. While cooler than a rotary vane vacuum pump, the operating temperature of a LIQUID RING vacuum pump must still be monitored and maintained when picking up flammable or combustible materials.

Use extreme caution before vacuuming materials that may be combustible or flammable. Hydrocarbon materials may be picked up with a rotary vane blower or LIQUID RING blower if the following concerns (as described in the following pages) are addressed:

- Controlling the lower explosive level (LEL)
- High temperature prevention
- Static charge dissipation
- Spark prevention

AND

Follow API-2219 Safe Operation of Vacuum Trucks in Petroleum Service, including:

- Hazardous Material Awareness and Identification

- Personal Protective Equipment
- Atmospheric testing
- Conductive Hose
- Bonding and Grounding
- Vacuum Exhaust Venting


 **DANGER**

Do not vacuum flammable or explosive materials with a rotary lobe blower.

Some Durasuckers may be equipped with a rotary lobe blower with metal lobes. Never use a rotary lobe blower to vacuum materials with flash points below 150°F.

However, hydrocarbon materials with flash points greater than 150°F may be picked up with a rotary lobe blower if the following four concerns are addressed:

- Controlling the lower explosive level (LEL)
- High temperature prevention
- Static charge dissipation
- Spark prevention

 **DANGER**

It is not recommended that materials with a flash point below 150°F be picked up under any operating conditions with a rotary lobe blower.

A rotary lobe blower may be used to pick up materials with flash points greater than 300°F without addressing the four concerns

Refer to API Standard 2219 for more information on safe operation of vacuum trucks in petroleum service.

1

Controlling Lower Explosive Level (LEL)






				
Chemical Burning Skin Hazard	Fire Hazard	Explosion Hazard	No Smoking	Never have an open flame

Figure 1-22

Super Products recommends that a monitor for hazardous hydrocarbon concentrations be installed in the exhaust stream of the vacuum pump to continuously monitor for lower explosive level (LEL). The monitor must be properly calibrated based on the product being picked up.

For details on how the monitor operates, it is suggested you contact a reputable monitor manufacturer such as Industrial Scientific Corporation in Oakdale, PA at 1-800-338-3287..

If the LEL reading approaches 50%, it is recommended that the operator at the end of the work hose lift the hose out of the material being conveyed and allow only air to enter the vacuum hose. As an alternative, a bypass switch could be installed to open the two valves discussed in “High Temperature Prevention” on page 1-23.

High-Temperature Prevention



DANGER

Failure to comply with the recommendations for high-temperature prevention could result in equipment failure, personal injury, or death.

We suggest that in order to pick up materials with flash points below 300°F, primary and backup system sensors and air flow modifications to limit operating temperatures should be made to a standard vacuum system as manufactured by Super Products. They include the addition of two temperature gauges with adjustable switches, and two temperature sensors, which should be installed in the exhaust airstream of the vacuum pump. In addition, two air-operated valves should be installed on the body. The temperature sensors and gauges should be similar to a Murphy temperature “switch gauge” whereby a contact closes, permitting use of an electrical signal at temperatures above an adjustable preset temperature. The valves should have a minimum four inch diameter.

In operation, the operator should set the trip point of the temperature switches at or below the flash point of the material being picked up. If the exhaust temperature reaches the set point of the temperature switch, the valves would open. This would stop the conveyance of material through the vacuum hose, permit cool air to be sucked into the body and vacuum system for cooling the vacuum pump, and quickly vent from the body so as to not cause an explosion. Prior to each load being vacuumed, the operator should test each system to ensure the valves are working.

The operator should set the trip point of both Murphy gauges to the lowest possible setting, block off the intake hose, and operate the vacuum pump at a minimum of 1000 RPM until the temperature rises to the trip point. The operator should ensure that once the temperature has reached the trip point, the respective valve opens.



DANGER

Do not use the unit unless both temperature limitation systems are working properly.

Static Charge Dissipation



DANGER

Failure to comply with the recommendations for static charge prevention could result in equipment failure, personal injury, or death

1

When picking up potential explosive materials (either hydrocarbons with flash points below 300°F, or explosive dust), it is necessary to safely dissipate static charges by completely grounding the vacuum truck, intake hose, and container from which the material is being removed. Only a static dissipating vacuum hose supplied by Super Products should be used. There should be a grounding strap run from the truck frame to a grounding stake.

All grounding cables should be a minimum of 1/0 in size. Grounding lugs should be welded onto the male and female couplings of all hose sections so that grounding straps (min. #10 gauge wire) can be run from the male coupling to the female coupling at all connection points. A grounding reel should be installed on the vacuum loader with the ground cable run to the container from which the material is being removed.

When material is being transferred by a pneumatic conveying system, static electricity is generated. If this electricity is not dissipated through an electrical ground, arcing can occur. The resulting spark can cause a dust explosion or a hydrocarbon explosion either within the unit or within a building that the conveying line enters. .

The following safeguards are recommended to dissipate static charge caused by operation of the unit:

- Truck tires can insulate the unit; therefore, an electrical wire should be connected between the body and a known electrical ground such as a water pipe, plant ground loop system, or metal stake driven into the ground sufficiently deep to ensure an electrical ground. Bolt wire to truck frame — do not weld.
- The electrical resistance from the truck to the electrical ground must be at 10 ohms or less for the duration of the material transfer process. Some companies, such as Newson Gale, provide a ground verification system to enable operators to establish safe grounding of their vehicle.
- Supertube and hose couplers have rubber sealing gaskets. The presence of dirt and corrosion can prevent electrical conduction from tube to tube through the tube clamps. It is recommended to weld a bolt or a threaded stud to each end of each tube or hose coupler, and connect a wire of sufficient length from tube to tube after installation of the clamp. Wing nuts could assist in making these connections quickly.
- Standard Super Products material handling hoses are specially designed to conduct static electricity. Do not substitute hoses of unknown construction, particularly plastic hoses, which may not be static conducting.
- Never operate the unit inside a building that has a dust-laden atmosphere, such as inside of a grain elevator. The unit's electrical system and electrical components will arc in normal operation. Sparks and flame could also be emitted from the engine exhaust. Any of these conditions could cause a dust explosion within the building.
- Before operation, ensure that all ground wire connections are tight and free from corrosion and paint.

Spark and Fire Prevention Safety

			
Fire Hazard	Explosion Hazard	No Smoking	Never have an open flame

Figure 1-23

 **DANGER**

Failure to comply with the recommendation for spark prevention could result in equipment failure, personal injury, or death.


When picking up materials with flash points below 300°F, it is necessary to take precautions to prevent generating sparks. Explosion from spark ignition can occur when picking up an explosive product (solid or gaseous).

Typically, sparks occur from material striking steel or when metal objects within the material, such as nuts, bolts, or nails, strikes a steel surface. This is especially prevalent where bends in the vacuum piping system occur or inside the collector body when material strikes the floor.

The suggested way of protecting from such an explosion is to use abrasive-resistant rubber-lined elbows where a bend occurs. Line the inside of the material deflector with a rubber abrasion-resistant material and partially fill the debris body with an extinguishing liquid, such as water, so the incoming material does not strike another object, causing a spark. The entire unit should be grounded, as described previously, and only static dissipating hoses should be used. It is essential the truck engine exhaust is directed away from the blower exhaust silencer to avoid an explosion caused by the hot gases or a spark from the engine exhaust..

The vacuum pump exhaust air should only enter the atmosphere at a minimum of 100 feet away from any other potential ignition source.

If the environment in which the truck sits has an explosive gas in the atmosphere, protective measures such as grounding all engine belts, explosive proof alternators, voltage regulators, special truck exhaust mufflers, engine run-away protection devices etc., must be used. Consult the truck manufacturer for details.

 **DANGER**

All of the above situations are extremely dangerous, and all precautionary steps must be taken or else equipment damage, personal injury, or death could occur. If there is any doubt as to the material to be conveyed, a complete analysis must be done prior to vacuuming.

Debris Body Dumping and Hazard Warnings





			
Never go under raised Debris Body	Equipment contacting overhead electrical lines	Hand can be crushed by Debris Body	Truck can tip over when truck wheels are on unstable soil

Figure 1-24

! WARNING

NEVER leave body raised or partly raised while vehicle is unattended or while performing maintenance or service under body unless body is propped to prevent accidental lowering. The debris body **MUST BE** empty for service work.

- **Never** prop a raised loaded debris body.
- **Never** attempt to raise body when vehicle is on unlevel ground.

! WARNING

Never go under a raised loaded debris body. Never go under a raised body without securely propping it. Body must be empty.

- **Immediately** report any damage or malfunction of the unit or components to your employer.
- **Never** ride, or let any other person ride, on any part of the vehicle other than in the cab.
- **Make sure** that all individuals and obstructions are clear of the hoist and body before operating the controls, and be ready to stop operation at any time that a hazardous condition might occur.

! WARNING

Use extreme caution when dumping contents of the debris body. Ensure all personnel are at least 20 feet away from truck. Select a dump site that is on level ground and is clear of overhead obstructions. Serious injury or death to the operator and/or bystanders could occur if precautions are not taken when dumping the contents of the debris body.

- When positioning the truck at the dump station, choose an accessible location on level ground. Raising the debris body on unlevel ground increases the possibility of tipping.
- **Make sure** the area is clear of ground and overhead obstructions
- **Never** raise the debris body unless you can clearly see all overhead structures. Stay clear of all utility lines.
- **Do not** dump the debris body over a pit area where the ground may cave in or is unstable.
- **Use care** when positioning the debris body to the dump station. Your vision, especially to the side and rear of the debris body, may be reduced by the size of the debris body. Use mirrors to aid vision. If you cannot see the dump site clearly, stop the truck and examine the area. If necessary, request assistance to guide you while backing the truck into position.
- **Never** drive with the debris body in the raised position. Traveling with the debris body in the raised position increases the chances of colliding with overhead obstructions. In addition, the center of gravity of the debris body is higher with a raised debris body, making the unit more prone to tipping over.

Sewer Gas Safety and Hazard Warnings






			
Explosion Hazard	Chemical, Dust and Fumes Inhalation Hazard	Wear Respirator when around hazardous fumes	Never have an open flame

Figure 1-25

 **WARNING**

- Sewer lines often contain poisonous or explosive gas such as methane. **NEVER** enter or bend over a sewer without proper ventilation and personal protective equipment. If another person needs help in a sewer, immediately call for emergency assistance. **NEVER** enter the sewer to help unless you have been trained to do so and have proper personal protective equipment.
- NEVER** smoke in or around sewer lines, drains, or catch basins.
- Failure to follow these instructions may result in death or serious injury.

Confined Space Hazard

Follow all requirements for confined space when servicing. All large water bodies and vessels that can be entered are to be considered permit-required confined space as defined by the Occupational Safety and Health Administration (OSHA). The following information is from OSHA 3138-01R 2004. The full document can be obtained from www.osha.gov.

Many workplaces contain spaces that are considered to be “confined” because their configurations hinder the activities of employees who must enter into, work in, or exit from them. In many instances, employees who work in confined spaces also face increased risk of exposure to serious physical injury from hazards such as entrapment, engulfment, and hazardous atmospheric conditions. Confinement itself may pose entrapment hazards, and working in confined spaces may keep employees closer to hazards such as machinery components than they would be otherwise. For example, confinement, limited access, and restricted airflow can result in hazardous conditions that would not normally arise in an open workplace.

The terms “permit-required confined space” and “permit space” refer to spaces that meet OSHA’s definition of a “confined space” and contain health or safety hazards. For this reason, OSHA requires workers to have a permit to enter these spaces.

By definition, a confined space:

- Is large enough for an employee to enter fully and perform assigned work.
- Is not designed for continuous occupancy by the employee.
- Has a limited or restricted means of entry or exit.

These spaces may include underground vaults, bodies, storage bins, pits and diked areas, vessels, and silos.

Trenching Hazards

NOTE

Reference to OSHA regulations are for informational purposes only and not intended as legal advice.



Occupational
Safety and Health
Administration

**Safety
Tips**

Working safely in trenches



Do **NOT** enter an unprotected trench!

Each employee in a trench shall be protected from a cave-in by an adequate protective system.

Some of the protective systems for trenches are:

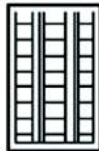
- Sloped for stability; or



- Cut to create stepped benched grades; or



- Supported by a system made with posts, beams, shores or planking and hydraulic jacks; or



- Supported by a trench box to protect workers in a trench.



Additionally, excavated or other materials must be at least 2 feet back from the edge of a trench; and



A safe means of egress shall be provided within 25 feet of workers in a trench.



For more complete information:

OSHA Occupational
Safety and Health
Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA
TTY (877) 889-5627

OSHA 3243-03R-05

Excavations

OSHA 2228
2002 (Revised)



OSHA Occupational
Safety and Health
Administration
U.S. Department of Labor

De-energize and Lockout Procedures



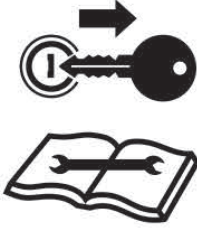


				
Electrical Wire Hazard	Hand Crushing Hazard	Remove key and read service/maintenance manual/handbook before servicing	Wait until all moving parts have stopped completely	Lock-Out

Figure 1-26


WARNING
 Workers can be seriously or fatally injured if machinery they service or maintain unexpectedly energizes, starts up, or releases stored energy.

Note

Follow all requirements for PPE when servicing equipment.

De-energization and lockout refer to specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment or from the release of hazardous energy during service or maintenance activities.

De-energization requires the authorized employee to turn off and disconnect the machinery or equipment from its energy source(s) before performing service or maintenance and to either lock out or isolate the equipment/components to prevent the release of hazardous energy (e.g., electricity, compressed air, high pressure fluid, etc.).

Lockout devices hold energy-isolation devices in a safe or "off" position. They provide protection by preventing machines or equipment from becoming energized because they are positive restraints that no one can remove without a key or other unlocking mechanism or through extraordinary means, such as bolt cutters.

To properly de-energize this equipment:

1. Lower the debris body and tailgate to the lowered transport position or onto the mechanical props to support the component.
2. Lower the boom (if equipped) to the storage position or to the lowest or ground position.
3. Place the transmission in the park position.
4. Set the parking brake.
5. Turn off the engine and remove the keys.
6. Switch the battery power off if the truck has a battery disconnect switch, or disconnect the battery ground cables.
7. Lock the truck doors and securely store the truck keys.

Hazards with Equipment Maintenance



WARNING

Avoid serious injury or death from component failure by keeping implement in good operating condition by performing proper service, repairs, and maintenance.

1

Before Performing Service, Repairs, and Maintenance on the Equipment

- **Stop pto and engine**, engage parking brake, lower implement, allow all moving parts to stop, and remove key before dismounting from truck.
- **Place** debris body, tailgate, and boom in lowered position or securely block up with support props.
- **Wear safety glasses, protective gloves** and follow **safety procedures** when performing service, repairs and maintenance on the equipment.
- Allow components to cool before servicing or performing maintenance.
- **Avoid contact** with hot hydraulic oil tanks, pumps, motors, valves and hose connection surfaces.
- **Securely** support or **block up** raised framework and lifted components before working underneath equipment.
- **Follow instructions** in maintenance section when replacing hydraulic cylinders to prevent component from falling.
- **Stop and shut off truck** engine before doing any work procedures.
- **Use** ladder or raised stands to reach high equipment areas inaccessible from ground.
- **Ensure** good footing by standing on solid flat surfaces when getting on equipment to perform work.
- **Follow** manufacturer's instructions in handling oils, solvents, cleansers, and other chemical agents.
- **Do not** change any factory-set hydraulic calibrations to avoid component or equipment failures.
- **Do not** modify or alter equipment, functions, or components.

Performing Service, Repairs, Lubrication, and Maintenance

- **Inspect** for loose fasteners, worn or broken parts, leaky or loose fittings, missing or broken cotter keys, washers on pins, and all moving parts for wear.
- **Replace** any worn or broken parts with authorized service parts.
- **Never** lubricate, adjust, or remove material while it is running or in motion.
- Lubricate unit as specified by lubrication schedule.
- **Torque** all bolts and nuts as specified.

Safety Shields, Guards, and Safety Devices Inspection

- **Replace** any missing, broken, or worn safety shields, guards, and safety devices.
- **Replace** any damaged or worn safety warning decals. Damaged or worn decals need to be replaced with new ones.

Decal Location

In addition to the decals provided by Super Products™ there may be decals shown that are part of the cab and chassis or other non Super Products components; these will not be covered.

Some decals shown may appear in a different location than pictured due to differences in optional equipment on each machine and differences in cab and chassis configuration.

If any decal provided by Super Products is missing or becomes illegible, a replacement decal can be requested from Super Products at no charge and should be replaced immediately.

1



ITEM	DESCRIPTION	TYPE	PART NO.	SEE FIG.
1	Crushing Hazard avoid standing behind machine when dumping	WARNING	3050-01202	1-32
2	Durasucker	LOGO	0037299-White 0037360-Black	-
3	Entanglement Hazards avoid rotating shaft.	DANGER	3050-01180	1-33
4	Hydraulic Reservoir	INSTRUCTION	3050-00051	1-34
5	Entanglement Hazards avoid rotating shaft.	DANGER	3050-01179	1-35
6	Drain here	INSTRUCTION	3050-00024	1-36
7	Super Products	LOGO	0037228-White 0037229-Black	-
8	Safety Walk Tape, 2"	TAPE	3506-00000	-

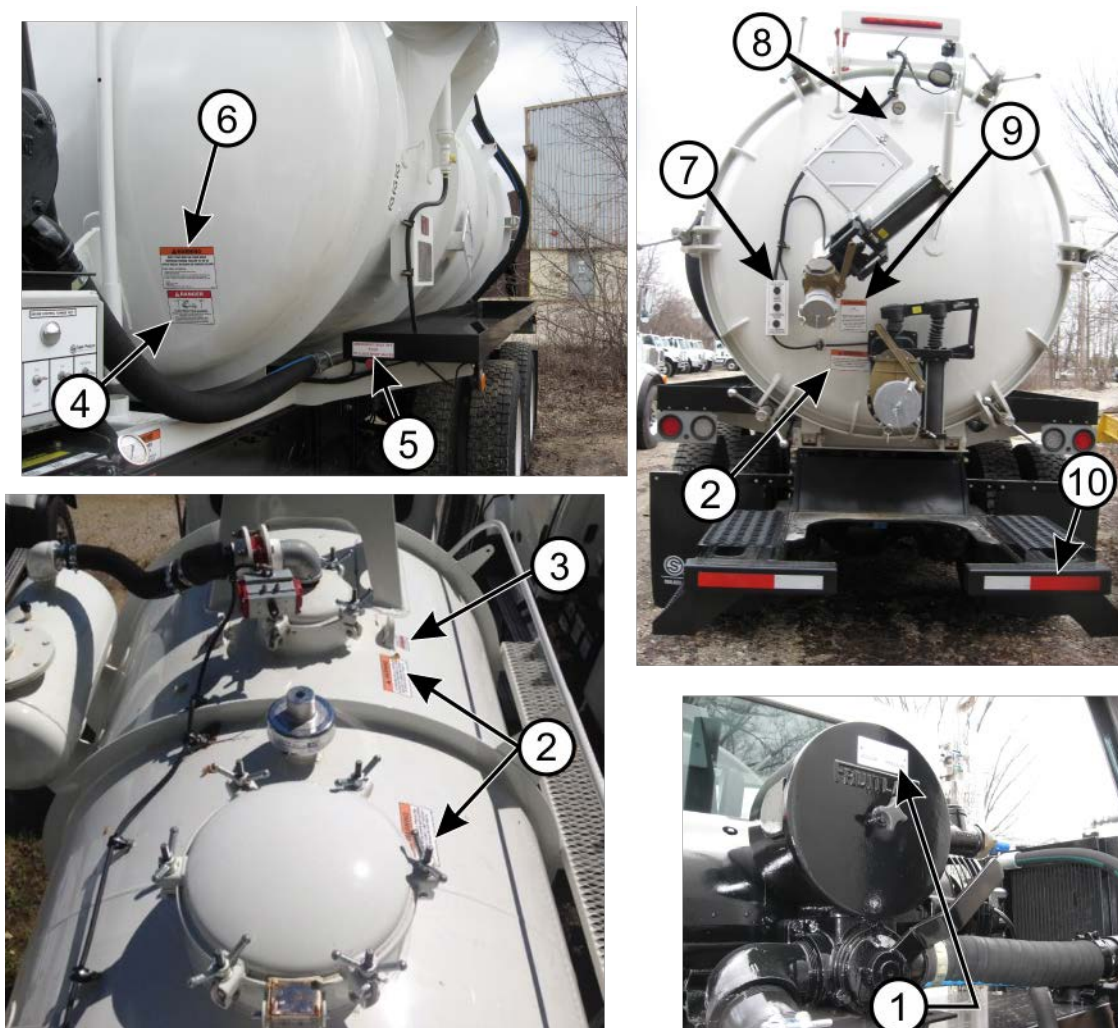
Figure 1-27 Right Side of Truck

1



ITEM	DESCRIPTION	TYPE	PART NO.	SEE FIG.
1	Crushing Hazard avoid standing behind machine when dumping	WARNING	3050-01202	1-32
2	Durasucker	LOGO	3050-01319	-
3	Crushing Hazard keep clear when lowering body	WARNING	3000-01132	1-37
4	Entanglement Hazards avoid rotating shaft.	DANGER	3050-01180	1-33
5	Entanglement Hazards avoid rotating shaft.	DANGER	3050-01179	1-35
6	Valve Positions	INSTRUCTION	3050-01254	1-38
7	Unlatch and open tailgate before raising body.	CAUTION	3050-00126	1-39
8	Made in the USA	LOGO	3050-00433	1-40
9	Super Products	LOGO	3050-01261	-
10	Drain Here	INSTRUCTION	3050-00024	1-36
11	Liquid Gauge	INSTRUCTION	3050-01253	-

Figure 1-28 Left Side of Truck



ITEM	DESCRIPTION	TYPE	PART NO.	SEE FIG.
1	Vacuum/Pressure Valve	INSTRUCTION	3050-01255	-
2	Pressurized Tank, always relieve all pressure in tank before removing cover.	WARNING	3050-01252	1-41
3	Not for lifting vehicle or loaded tank	WARNING	0028390	1-42
4	Electrocution Hazard keep body 10 feet from overhead lines.	DANGER	3050-01260	1-43
5	Emergency shut off	INSTRUCTION	3050-01243	1-44
6	Crushing Hazard body prop must be used when servicing truck	WARNING	3050-01258	1-45
7	Valve positions.	INSTRUCTION	3050-01270	1-46
8	Operating Vacuum inches of Mercury	INSTRUCTION	3050-00144	-
9	High Vacuum Port	WARNING	3050-01259	1-47
10	Conspicuity Diamond Grade Sheeting	REFLECT	3544-00000	-

Figure 1-29

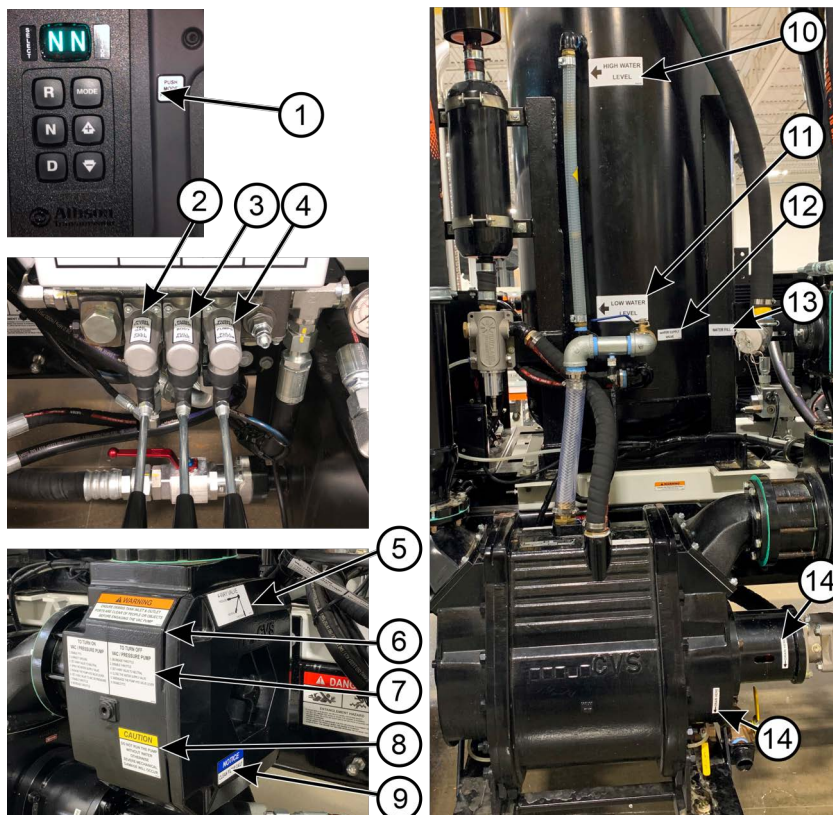
1



ITEM	DESCRIPTION	TYPE	PART NO.	SEE FIG.
1	Cruise Control	INSTRUCTION	3050-01115	-
2	Attention this unit has special parameters that are necessary for operation.	ATTENTION	0003392	1-48
3	Notice cruise control must be turned off before using remote throttle.	NOTICE	3050-01115	-
4	Alarm body raised.	NOTICE	3050-01186	1-49
5	Super Products Worldwide Vacuum Technology	LOGO	3050-00193	1-50

Figure 1-30

Decal Location-Liquid Ring Vacuum Pump



ITEM	DESCRIPTION	TYPE	PART NO.	SEE FIG.
1	Push Mode for PTO	INSTRUCTION	0041146	-
2	Tailgate, Push Close, Pull Open	INSTRUCTION	0040388	-
3	Body, Push Lower, Pull Raise.	INSTRUCTION	0040389	-
4	Pump, Push Trash, Pull Vacuum	INSTRUCTION	0040390	-
5	4-Way Valve	INSTRUCTION	0041122	-
6	Ensure Ports are Clear	WARNING	0041125	-
7	To Turn ON/OFF Vacuum Pump	INSTRUCTION	0041126	-
8	Do Not Run the Pump without water	CAUTION	0041123	-
9	Clean Filter Daily	NOTICE	0041120	-
10	High Water Level	INSTRUCTION	0041197	-
11	Low Water Level	INSTRUCTION	0041198	-
12	Water Supply Valve	INSTRUCTION	0041128	-
13	Water Fill	INSTRUCTION	0041127	-
14	Drain	INSTRUCTION	3050-00193	-

Figure 1-31

1



Part No. 3050-01202

Figure 1-32



Part No. 3050-01179

Figure 1-35



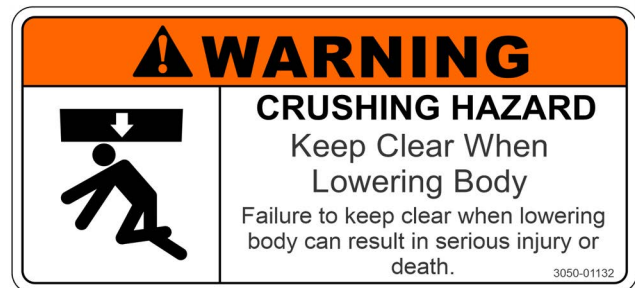
Part No. 3050-01180

Figure 1-33



Part No. 3050-00024

Figure 1-36



Part No. 3050-01132

Figure 1-37



Part No. 3050-00051

Figure 1-34



Part No. 3050-01254

Figure 1-38



Part No. 3050-00126

Figure 1-39



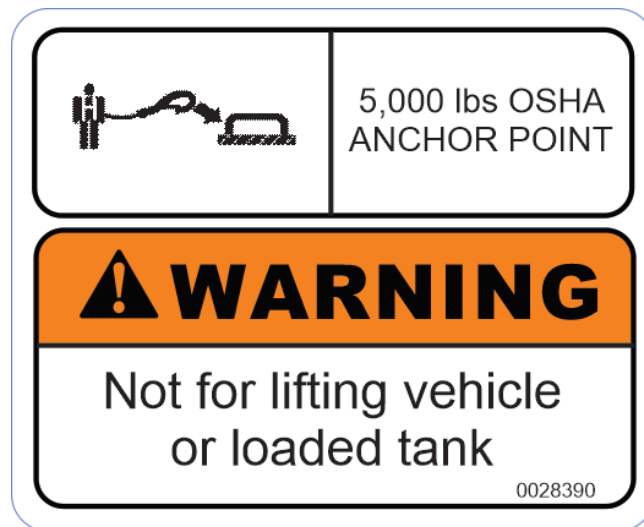
Part No. 3050-00433

Figure 1-40



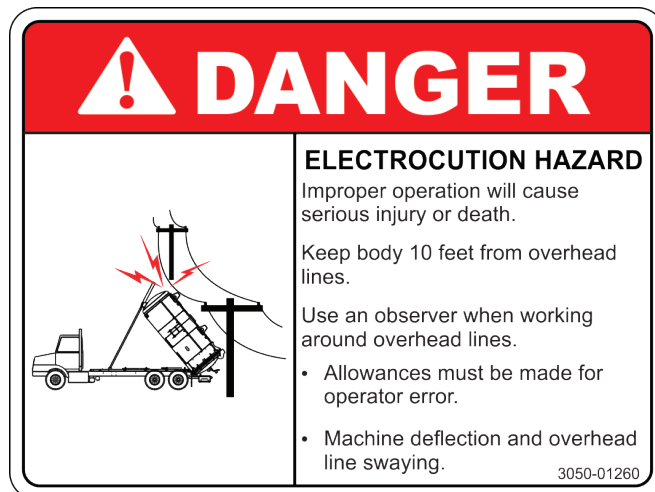
Part No. 3050-01252

Figure 1-41



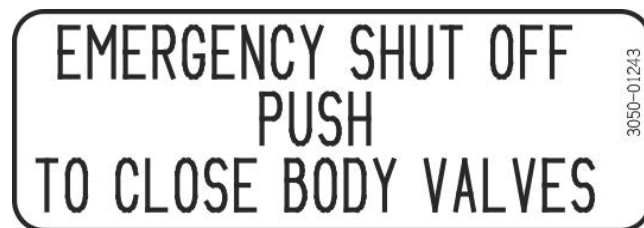
Part No. 0028390

Figure 1-42



Part No. 3050-01260

Figure 1-43



Part no. 3050-01243

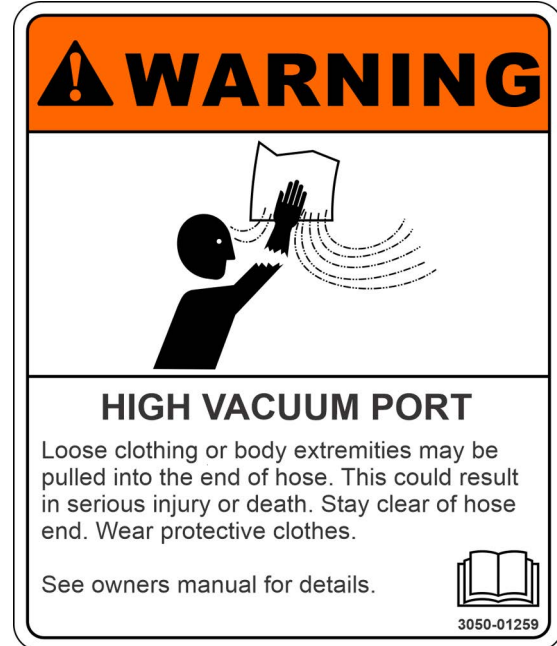
Figure 1-44

1



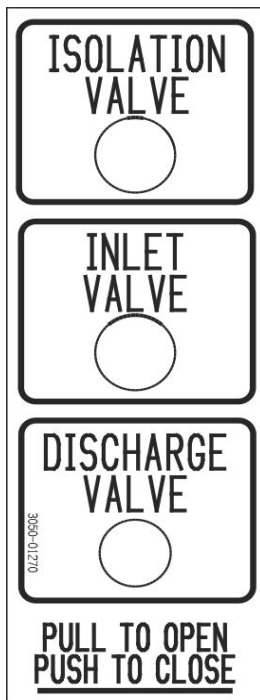
Part No. 3050-01258

Figure 1-45



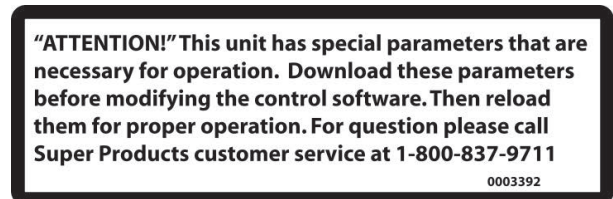
Part No. 3050-01259

Figure 1-47



Part No. 3050-01270

Figure 1-46



Part No. 0003392

Figure 1-48



Part No. 3050-001186

Figure 1-49



Part No. 3050-00193

Figure 1-50

Chapter 2

Operation

2

Introduction

This manual contains safety, operation, maintenance and parts information for the Super Products' Durasucker® Liquid Vacuum Truck. It has been prepared to acquaint you with the design features of the unit, to instruct you in its proper use and maintenance, and help you get the most efficient use of its tools and accessories.

All operator and service people should read this manual to acquaint themselves with its contents before using the equipment. The Durasucker is a piece of heavy equipment and improper use or neglect of safety precautions may increase the chance of injury. This manual should be retained with the unit as reference for operator and maintenance personnel.

Principles of Operation

The Durasucker is designed for sucking up liquid material. The vacuum system utilizes either a vane type vacuum pump, a Liquid Ring vacuum pump, or a positive displacement "Roots" type vacuum pump. The pump is driven by hydraulic pressure which is driven by the truck engine through a power take-off gearbox. Material is picked up at the end of a suction hose and drawn into a tank body.

The air inside the tank body exits at the top front section where the primary shut-off ball float is located. When the tank body is full the liquids will float the ball against a seal and shut off the air stream leaving the tank body. The vacuum pump should be disengaged at this point to prevent overheating.

Only liquid material should be sucked up to prevent equipment damage. Do not suck up dry material because any airborne material or mist will enter the vacuum pump and damage the pumps performance and life.

The Durasucker is equipped with a vacuum pump exhaust silencer to minimize sound levels. The exhaust silencer also performs as a vacuum pump inlet filter when running the unit is pressure mode. Thirdly, the exhaust silencer catches oil exhausting the vacuum pump when a vane type vacuum pump is used.

Vacuum System

The vacuum system utilizes a positive displacement type of vacuum pump that is mechanically driven from the truck's engine.



WARNING

The vacuum system is designed for liquids and slurries, not damp or dry materials. Dry or dusty materials must be made into a slurry before vacuuming.

The standard vacuum system is capable of conveying material by pure vacuum only. Durasucker units equipped with optional high air flow vacuum pumps and cyclone separators are capable of conveying material by two (2) modes: "pure vacuum" and "air conveying".

Pure Vacuum

As a general rule, pure vacuum would be used for removing sludge from beneath liquid or for rapid liquid loading. In this mode, the vacuum hose is totally submersed in the liquid, and only material (no air) transports through the line.

With the standard air cooled vacuum pump and vacuum relief vents, the maximum distance from the top of the vacuum hose supported by the boom to the liquid surface cannot exceed two hundred seventy-two (272) inches, (22.7) feet, at sea level assuming water as the liquid.

For materials of a higher density than water, these figures must be reduced. With optional liquid cooled vacuum pumps, these figures may be increased. Consult the factory for additional information.

OPERATION

Air Conveyance

Air conveyance should only be attempted with optional high air flow vacuum pumps and cyclone separators. Air conveyance of liquid material creates mist that will harm the vacuum pump if not separated by a cyclone separator.

Air conveyance requires enough air velocity going past the material to be picked up to capture such, and convey through the vacuum tube to the body. This requires the vacuum pump be operating at a fast enough speed to produce the required airflow to capture the material.

It should be noted that for maximum efficiency, all vacuum line connection points must be air tight. It should also be noted that the vacuum pump should never be operated above a pump exhaust temperature of 220°F. Deviations from this maximum operating temperature must be approved by Super Products.

Air Flow

1. Air is evacuated from the tank body (#1).
2. Liquid material enters body through the rear inlet (#2) with internal stand-pipe.
3. Float ball (#3) acts as vacuum shutoff when body becomes full of liquids.
4. Air exits the body through the isolation valve (#4) and enters the secondary shut-off (#5) located on left side of unit.
5. Air continues out the top of the secondary shut-off to the 4-way valve (#6).
6. a) The air goes into the vane type vacuum pump (#7) and exits to the oil-catch muffler (#8) where it is released into the atmosphere.
b) The air goes into the liquid ring vacuum pump (#10) and exists to the water supply tank (#11) where exhaust air is separated from the exhaust water and released into atmosphere.
7. Pressure mode is achieved by rotating the 4-way valve counter-clockwise. This reverses the flow of air and liquid material. Liquid material exits the tank body through the rear discharge valve (#9)

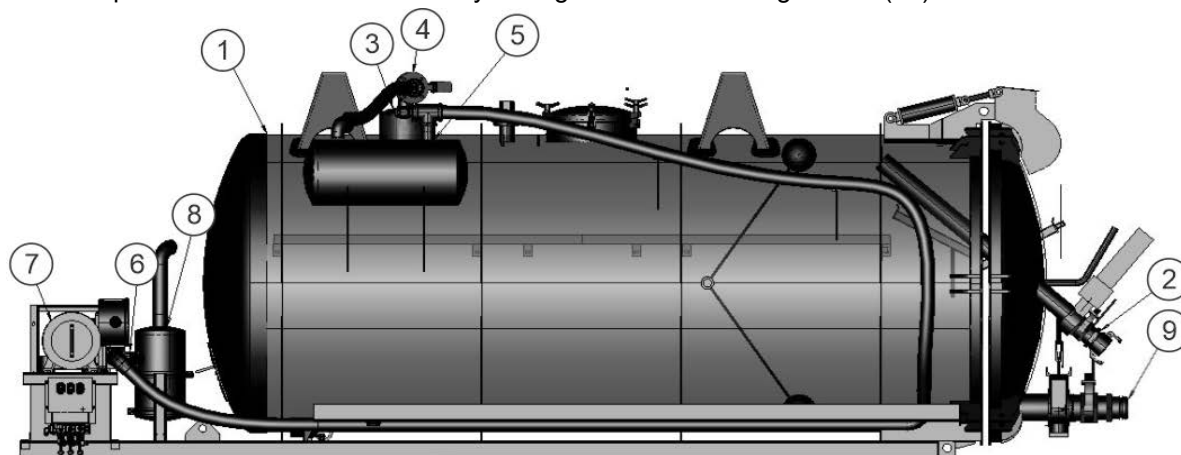


Figure 2-1 Vane Type Vacuum Pump

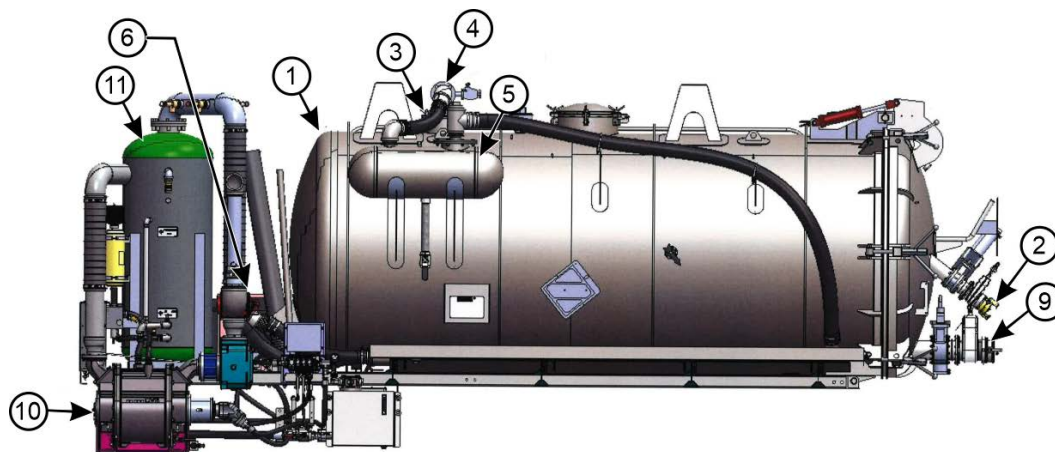


Figure 2-2 Liquid Ring Vacuum Pump

Vane Type Vacuum Pump Operation

The vacuum pump is driven by a hydraulic motor and hydraulic pump system. The hydraulic pump is driven by a power take-off gearbox mounted to the chassis transmission. The transmission should be in neutral, parking brakes engaged and wheel chocks properly positioned.



WARNING

Failure to engage parking brakes and/or position wheel chocks could result in unexpected chassis movement which could cause bodily injury or property damage.

1. Start engine and let it idle.
2. Make sure the parking brake is engaged and the transmission is in neutral.
3. Depress the clutch and press the PTO engage switch on the dash. Slowly release the clutch. This starts the hydraulic pump.
4. Turn on the "throttle enable" switch located on the operator's control panel, just behind cab.
5. Rotate the 4-way valve to the neutral position (half way between vacuum and pressure).
6. Check oil level in vacuum pump. Never run the vacuum pump without oil.
7. Open (pull out) emergency close button on the driver's side front hose tray.
8. Open (pull out) the isolation valve control button and the inlet control button on the rear door.



WARNING

The system is capable of full vacuum. Keep your body and clothing away from the end of the hose. Make sure no one is near the end of the vacuum hose before engaging the vacuum pump. Failure to do so could cause severe personal injury.

9. Pull the hydraulic control lever to the vacuum position to start the vacuum pump.
10. Rotate the 4-way valve to the vacuum position.
11. Push the engine speed switch up to increase the engine rpm and the vacuum pump rpm.
12. Vacuum may be broken quickly by rotating the 4-way valve to the neutral, middle, position. This allows air to go directly from the muffler to the vacuum hose without going through the vacuum pump.

13. When done vacuuming, decrease engine and vacuum pump rpm to idle, then push control lever to neutral to disengage the vacuum pump. The hydraulic pressure gage should drop back to a low level (less than 100 psi)..



CAUTION

Do not push the control lever beyond neutral, otherwise hydraulic overheating will occur and damage the hydraulic pump and control valve. to alert against unsafe practices.

NOTE

The vacuum pump control valve also powers the optional liquid transfer pump. Do not push the control lever beyond neutral unless you intend to run the liquid transfer pump.

Vacuum Relief Valves

The Durasucker® is equipped with a standard vacuum relief valve to protect the vacuum pump from overheating. The vacuum pump is rated for full vacuum for brief periods of time, but will overheat if cooling air is not allowed to pass through the vacuum pump for extended periods of time. The small vacuum relief valve located on the vacuum pump inlet allows the entry of cooling air. Inspect this device for proper operation before each use.

Vacuum Pump Operation - Blower Mode (Pressure Unloading)

For pressure unloading, follow the same sequence as above except, rotate the 4-way valve to the pressure position in step 10.

Pressure Relief Valves

The Durasucker® is equipped with a tank pressure relief valve on the front top half of the tank body. This valve is pre-set to relieve at between 120% and 132% of Maximum Allowable Working Pressure and is not adjustable. The Durasucker is also equipped with a system pressure relief valve to protect the vacuum pump from overheating. The vacuum pump will overheat if cooling air is not allowed to pass through for extended periods of time. The system pressure relief valve is located on the secondary shut-off assembly. Inspect this device for proper operation before each use.

Liquid Ring Vacuum Pump Operation

The vacuum pump is driven by a hydraulic motor and hydraulic pump system. The hydraulic pump is driven by a power take-off gearbox mounted to the chassis transmission. The transmission should be in neutral, parking brakes engaged and wheel chocks properly positioned.



WARNING

Failure to engage parking brakes and/or position wheel chocks could result in unexpected chassis movement which could cause bodily injury or property damage.

1. Start engine and let it idle.
2. Make sure the parking brake is engaged and the transmission is in neutral.
3. Press the mode button on the Allison shift selector on the dash. This turns on the PTO and starts the hydraulic pump.
4. Connect the grounding cable to a good earth ground
5. Open (pull out) emergency close button on the driver's side front hose tray..
6. Open (pull out) the isolation valve control button and the inlet control button on the rear door.
7. Check water level in the water supply tank. Never run the vacuum pump without water.
8. Rotate the 4-way valve to the neutral position (half way between vacuum and pressure).
9. Open water supply valve.



WARNING

The system is capable of full vacuum. Keep your body and clothing away from the end of the hose. Make sure no one is near the end of the vacuum hose before engaging the vacuum pump. Failure to do so could cause severe personal injury.

10. Pull the hydraulic control lever to the vacuum position to start the vacuum pump.
11. Rotate the 4-way valve to the vacuum position.
12. Turn on the "throttle enable" switch located on the operator's control panel, just behind cab.
13. Push the engine speed switch up to increase the engine rpm and the vacuum pump rpm.
14. Vacuum may be broken quickly by rotating the 4-way valve to the neutral, middle, position. This allows air to go directly from the muffler to the vacuum hose

without going through the vacuum pump. hydraulic pressure gage should drop back to a low level (less than 100 psi)..

15. When done vacuuming, decrease engine and vacuum pump rpm to idle, rotate the 4-way valve to the neutral position, close the water supply valve, then push control lever to neutral to disengage the vacuum pump. The hydraulic pressure gage should drop back to a low level (less than 300 psi).



CAUTION

Do not push the control lever beyond neutral, otherwise hydraulic overheating will occur and damage the hydraulic pump and control valve.

NOTE

The vacuum pump control valve also powers the optional liquid transfer pump. Do not push the control lever beyond neutral unless you intend to run the liquid transfer pump.

Cooling Air Injection Valve

The Durasucker® Liquid Ring is equipped with a standard cooling air injection valve to protect the vacuum pump from overheating. The vacuum pump is rated for full vacuum, but will warm up to about 60°F above ambient temperature. Inspect this device for proper operation before each use.

Vacuum Pump Operation - Blower Mode (Pressure Unloading)

For pressure unloading, follow the same sequence as above except, rotate the 4-way valve to the pressure position in step 11.

The Durasucker® Liquid Ring is equipped with system pressure relief valves set at 10psi to protect the pump from overheating and to protect the hydraulic system from over pressurizing. Inspect and verify the pressure relief valves are operating properly before each use.

Controls and Instrumentation

Electric Controls



Figure 2-3

The electric control panel is located on the driver's side of the truck just behind the cab. The control panel includes:

- Panel Light
- Panel Light switch
- Throttle Enable switch
- Engine Speed increase/decrease

Hydraulic Controls

All hydraulic functions are controlled by manual control valves located on the driver's side of the truck just behind the cab. There are three control valves that operate 4 functions:

1. Tailgate
 - Pull to Open
 - Push to Close
2. Body Lift
 - Pull to Raise
 - Push to Lower
3. Pumps
 - Pull for Vacuum Pump
 - Push for Liquid Pump (Optional)



Figure 2-4

Hydraulic power is provided by a hydraulic pump mounted to the transmission-mounted PTO. The transmission should be in neutral, parking brakes engaged and wheel chocks properly positioned. A hydraulic relief valve and a hydraulic pressure gage are provided to protect and diagnose the system. The pressure relief is set at 2100 PSI. The pressure relief is set at 4000 PSI on the Durasucker® Liquid Ring.



CAUTION

Never allow the hydraulic system to go over hydraulic relief for extended periods of time. This will cause overheating and pump and valve failure.

2

Air Controlled Valves

There are three spring-loaded, self-closing valves on the unit that are opened remotely when air pressure is applied. The panel shown on the right, located on the tailgate, operates these three self-closing valve.



Figure 2-5

PULL TO OPEN

PUSH TO CLOSE

An emergency air control button is located on the front left hose tray. Pushing the emergency air control button will dump air pressure and close all three self-closing valves at once. A thermal fuse is provided at the air control panel which will release air pressure and close all self-closing valves during a thermal event exceeding 250°F.



WARNING

All valve functions and operation are identified. Make sure you understand all functions and operations before operating unit. Failure to do so could result in equipment damage or personal injury.

Payload Dumping Operation

The preferred method of emptying the tank body is to drain the liquid through the rear discharge valve.

- Connect the proper hose to the discharge valve.
- Rotate the 4-way valve at the vacuum pump to Neutral.
- Open (pull out) emergency close button on the driver's side front hose tray.
- Open (pull out) the isolation valve control button.
- Open (pull out) the discharge valve control button.
- Open the manually-operated gate valve (if equipped).

Customers may choose to add a manually-operated gate valve to allow the operator to control the flow rate of the discharge. Pull up the valve handle fully for full open discharge or pull up partially for limited flow rate discharge.

For thick liquids or moderate slurries it may be beneficial to raise the tank body while unloading payload through the rear discharge valve.



Figure 2-6



CAUTION

Never raise the tank body more than two section of the hydraulic lift cylinder with the tailgate closed. The body raise cylinder is constructed of three stages to get maximum lift with the tailgate open. Raising the body more than two stages with the tailgate closed will damage the manual tailgate wing-bolts.

TO RAISE THE TANK BODY:



WARNING

Position the truck on firm, level ground before raising the tank body. Failure to do so could cause the truck to tip over.

- Start engine and let it idle.
- Make sure the parking brake is engaged and the transmission is in neutral.
- Depress the clutch and press the PTO engage switch on the dash. Slowly release the clutch. This starts the hydraulic pump. (For automatic transmission, press the mode button on the Allison shift selector to turn on the PTO.)
- Position wheel chocks to prevent the truck rolling forward or backward in the event of parking brake failure.
- Hydraulic functions are available whether or not "Throttle Enable" is on.



DANGER

Check for overhead electric lines and obstructions. Failure to do so could cause personal injury or death or property damage.



WARNING

Make sure no one is behind the truck or near the tailgate area before raising or lowering the rear door. Failure to do so could cause personal injury or death.

- Pull the control lever labeled "Body" to raise the tank body.
- Position the body prop at the front of the body if the body if you need to leave the truck with the body raised OR if someone needs to enter the space below the tank body.



DANGER

Never enter the space below a raised body unless the body prop is properly positioned.

- Severe personal injury or death could occur.
- When finished unloading, make sure no person or object has entered the space below the tank body.
- Push the control lever to lower the tank body.

NOTE

The time to lower the tank body is controlled by a hydraulic throttle valve. Increased engine speed while lowering the body will put undue stress on the components and will not decrease the time needed to lower the body. Lower the body with engine speed at idle.

Tailgate Operation

The Durasucker® is equipped with a full opening rear door, as known as the tailgate. This provides very good access for cleaning and inspecting the inside of the tank body.

TO OPEN THE TAILGATE:

- Start engine and let it idle.
- Make sure the parking brake is engaged and the transmission is in neutral.
- Depress the clutch and press the PTO engage switch on the dash. Slowly release the clutch. This starts the hydraulic pump. (For automatic transmission, press the mode button on the Allison shift selector to turn on the PTO.)
- Hydraulic functions are available whether or not "Throttle Enable" is on.
- Manually loosen the tailgate wing-bolts.



WARNING

Make sure no one is behind the truck or near the tailgate area before raising or lowering the tailgate. Failure to do so could cause personal injury or death.

- Pull the control lever labeled "Tailgate" to raise the tailgate

NOTE

The backup alarm will sound as soon as the tailgate begins to raise. The alarm will continue to sound until the tailgate prop is properly positioned or the tailgate is fully lowered.

- Position the tailgate prop at the rear passenger side of the truck



Figure 2-7



DANGER

Never enter the space below a raised tailgate unless the tailgate prop is properly positioned. Severe personal injury or death could occur.



DANGER

Never enter the tank body unless you are trained and equipped to enter a potentially hazardous space.

2

TO CLOSE THE TAILGATE:

- When you are ready to close the tailgate make sure the body and tailgate area is clear of personnel or obstructions.
- Reposition the tailgate prop to the stored position.
- Push the control lever to lower the tailgate.

NOTE

The time to lower the tank body is controlled by a hydraulic throttle valve. Increased engine speed while lowering the body will put undue stress on the components and will not decrease the time needed to lower the body. Lower the body with engine speed at idle.

- Manually tighten tailgate wing-bolts.

Liquid Transfer Pump Operation (Optional Equipment)

2

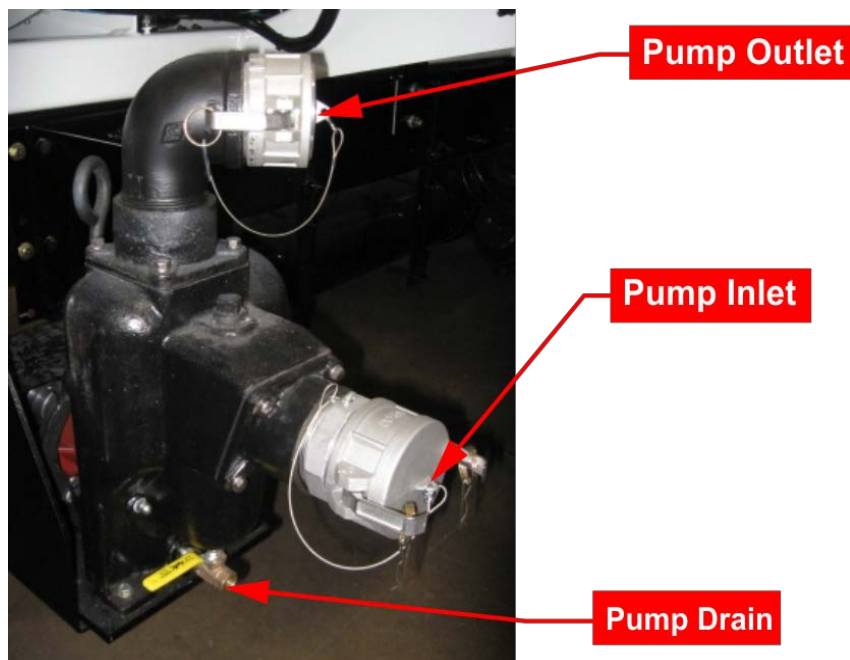


Figure 2-8

When the truck is equipped with the optional liquid transfer pump, hydraulic power is shared with the vacuum pump. The manual control valve sends hydraulic oil to either the vacuum pump or the liquid transfer pump. The neutral position sends the hydraulic oil back to the hydraulic reservoir. A relief valve and a flow control valve are also provided to protect the components.

TO TRANSFER LIQUID INTO THE TRUCK:

- Connect a hose to the pump inlet. Connect the other end of the hose to liquid to be loaded.

NOTE

The liquid level must be within 25 vertical feet of pump inlet.

- Pour 2 quarts of the liquid to be transferred into the pump outlet to prime the pump
- Connect a hose from the pump outlet to the tank inlet connection.
- Rotate the 4-way valve to Neutral.
- Open the isolation valve.
- Open the discharge valve(s).
- With truck engine at idle, push spool valve lever to "Liquid Pump".
- When loading is complete, close the discharge valve(s) and isolation valve and return spool valve

lever to the neutral position. The hydraulic pressure gauge should drop back to a low level (less than 100 psi).

- Disconnect hoses.
- Clean and drain the liquid pump after each use.

TO TRANSFER LIQUID OUT OF THE TRUCK:

- Connect a hose to the pump inlet. Connect the other end of the hose to liquid to be unloaded.
- Connect a hose from the tank discharge connection to the pump inlet. Priming is not necessary as the truck tank discharge is higher than the liquid transfer pump.
- Rotate the 4-way valve to Neutral.
- Open the isolation valve.
- With truck engine at idle, push spool valve lever to "Liquid Pump".
- Open the discharge valve(s).
- When unloading is complete, close the discharge valve(s) and isolation valve and return spool valve lever to the neutral position. The hydraulic pressure gauge should drop back to a low level (less than 100 psi).
- Disconnect hoses.
- Clean and drain the liquid pump after each use.

Maintenance

Maintenance Instructions

Operators of this truck should have a good understanding of the required equipment maintenance and normal sequence of operation. Refer to other sections of this manual as required.

Extreme care must be taken when adjustments or repairs are made to this truck. Observe all applicable decals and safety precautions.

The serial number placard (1) is located on the driver's side of the debris tank.



Figure 3-1

Vane Type Vacuum Pump Maintenance

Vane-type vacuum pumps must be lubricated to ensure adequate life and performance.

1. Check vacuum pump oil level before each use. Check oil sight glass on the end of the vacuum pump. The oil level can be as high as the top of the sight tube because this oil is consumed while running a vane-type vacuum pump.



CAUTION

Never run the vacuum pump without lube oil. Equipment damage will occur.

2. Periodically, approximately weekly during normal service, inject one cup of diesel fluid into the vacuum pump inlet. Then run the vacuum pump for about two minutes. This conditions and lubricates the vanes to prevent drying and cracking. Also do this when unit is to be stored or not operated for longer than one (1) month.
3. Vacuum relief valves and pressure relief valves are provided with the Durasucker® for your protection and for the protection of the equipment.



DANGER

Never operate the vacuum pump in pressure mode unless the pressure relieve devices are in proper working condition

4. Read the vacuum pump's owner's manual to familiarize yourself with further pump precautions.

Preventive Maintenance Instructions

Preventive maintenance routines assist in keeping all equipment in proper working condition. Preventive maintenance and inspection schedules are not only desirable but also necessary to ensure continued trouble-free operation of the equipment. They can also prevent and reveal mechanical, hydraulic, or electrical problems that might otherwise develop into equipment malfunction.

We urge you to protect your investment by servicing it according to the lubrication and maintenance schedule listed on the following pages. Regular maintenance will ensure maximum truck performance, long life, safety, reliability, and full warranty protection.

Lubrication Recommendation Chart

Component	Lubricant	Capacities
Grease	Super Products Spec 3060-00023 White Lithium	-
Hydraulic System	Super Products Spec 3060-00048 Chevron Rando HD Premium Oil MV	38 Gallons
Vacuum System Vane Pump	Super Products Spec 3060-00046 Chevron Regal R&O Oil ISO 100	Consumes 1 gallon every 16.6 hours
Transfer Pump	Super Products Spec 3060-00005 Automatic Transmission Fluid Type A Dexron 3	-



Figure 3-2

Exhaust Aftertreatment Regeneration Information

When the truck needs to go into a regen cycle, a series of alarms and warning messages will be displayed on the cab dash to instruct the operator to shut down work operations and put the truck into a regen cycle.

NOTE

For specific regen instructions and DEF specifications, see the owner's manual supplied with the OEM chassis.

DEF Maintenance

The cab and chassis supplied with your Durasucker™ vacuum truck is equipped with a diesel exhaust after-treatment system that must be maintained properly to ensure proper operation of the truck

Always make sure the diesel exhaust fluid (DEF) tank (1) has adequate DEF fluid. The truck's emissions system is constantly consuming this fluid to perform the exhaust aftertreatment.

NOTE

The DEF tank may be located in different locations on the truck depending on the specific cab and chassis configuration.

Maintenance Schedule

For assistance on how to perform each task listed, follow the provided steps

	DAILY	WEEKLY	MONTHLY	EVERY 1,000 HOURS OR YEARLY
DEBRIS BODY				
Body Interior	Clean			
Tailgate Seal	Clean			
Debris Level Indicator	Clean			
Discharge Valve	Clean			
Inlet Valve	Clean			
Secondary Tank Drain Valve	Clean			
DEBRIS TANK				
Discharge Valve	Inspect			
Inlet Valve	Inspect			
Top Isolation Valve	Inspect			
Air Control Valves	Inspect			
Remote E-Stop Control Valve	Inspect			
Tailgate Seal		Inspect		
Float Ball Debris Indicator		Inspect		
DOT Pressure Relief Valve on Debris Tank		Inspect		
Manway		Inspect		
Pressure Relief Valve on Secondary Tank		Inspect		
Nuts & Bolts		Inspect/Tighten		
Air Breather Vents at each Air Valve		Inspect		
Air Breather Vents at each Air Cylinder		Inspect		
Vacuum Hoses			Inspect	
Tailgate Prop			Inspect	

MAINTENANCE

	DAILY	WEEKLY	MONTHLY	EVERY 1,000 HOURS OR YEARLY
ELECTRICAL SYSTEM				
Lights	Inspect			
Mobile Ground Verification System (if equipped)	Inspect			
Electrical Cables & Harnesses			Inspect	
Bonding/Grounding Wires between Tailgate and Top of Tank			Inspect	
Bonding/Grounding Wires between Chassis and Tank			Inspect	
Bonding/Grounding Wires at each Vacuum Hose End			Inspect	
POWER FRAME				
Vacuum Pump Oil Level	Inspect			
Hydraulic Tank Oil Level	Inspect			
Drive Coupling			Inspect	
HYDRAULIC SYSTEM				
Hoses and Fittings		Inspect		
Hydraulic Filter Condition Indicator		Inspect		
Hydraulic Oil Sample Analysis	Inspect Every 500 Hours or Every 6 Months whichever comes first			
Hydraulic Oil				Replace
Hydraulic Filter				Replace
CHASSIS				
Driveshafts		Inspect		
PTO Axle		Inspect		
PTO on the Transmission			Inspect	
LUBRICATION				
Debris Tank		Lubricate		
Debris Tank Lift Cylinder Pivots		Lubricate		
Debris Tank Rear Hinge		Lubricate		
Tailgate Hings		Lubricate		
Tailgate Wingnuts		Lubricate		
Tailgate Prop		Lubricate		
Discharge Valve Stem		Lubricate		
Inlet Valve Stem		Lubricate		

Maintenance Items

NOTE

See *Lubrication Recommendation Chart* for servicing the Durasucker™ truck. If a product is unavailable, contact Super Products for a recommendation of alternate products.

Debris Tank

- Body Interior - Empty debris body and clean interior. Clean tailgate sealing surface.
- Float Ball - Clean the float ball daily or after each load. Inspect the float ball weekly for dents and proper sealing.
- Tailgate Seal - Clean the tailgate seal after each discharge of debris with the use of a pressure washer. Inspect the seal weekly for rips, tears, and proper alignment with the body. Replace as necessary.
- Tailgate Latch Wing Nuts and Bolts - Clean the tailgate latch bolts after emptying the tank by opening the tailgate. Lubricate the wingnut zerk fitting with grease weekly and inspect the condition of the latch bolts. Repair or replace as necessary.
- Tailgate Hinge - Inspect for wear. Check cotter pins. Grease weekly.
- Tailgate Lift Cylinder Pin - Inspect for wear. Check cotter pins.
- Tailgate Prop - Inspect for wear or damage. Check free movement. Grease weekly.
- DOT Pressure Relief Valve - Check for debris or obstruction. Check for proper operation.
- Secondary Pressure Relief Valve - Check for debris or obstruction. Check for proper operation.
- Manway - Check for bolt tightness. Inspect for wear or damage.
- Debris Tank Hinge - Inspect for wear. Check cotter pins. Grease weekly.
- Debris Tank Lift Cylinder - Inspect for wear. Check cotter pins. Grease weekly.
- Debris Tank Discharge and Inlet Valves - Clean the valves after each use to ensure proper sealing. Inspect the valves for proper sealing and operation. Check for leaks and wear weekly.
- Air Hoses - Check for leaks, cracks, abrasion, or other damage.
- Air Breather Vents - Make sure the vent is clean and clear of debris. Check that air is passing through the vent without restriction.

- Air Control Valves - Check that each valve properly opens and closes the correct tank valve within 10 seconds.
- Remote E-Stop Control Valve - Check that the red E-Stop valve closes all three tank valves within 30 seconds.



Figure 3-3

Electrical System

- Cables and harnesses - inspect for wear, abrasion, or other damage.
- Lights - Make sure that all vehicle lights are working properly.
- Bonding/Grounding Wires - Check for tightness and proper electrical contact. Clean or remove any corrosion and apply di-electric or battery cable grease to prevent corrosion.

NOTE

Do not spray electrical enclosures and components with high-pressure water.

Hydraulic System

- Hydraulic Oil - Inspect the hydraulic oil level in the reservoir weekly. The oil level should be at the center of the sight glass with all of the hydraulic cylinders retracted.
- Remove cap and add hydraulic oil to correct level as needed.
- Hydraulic oil should be changed yearly or after every 1,000 hours of use.
- Hoses and Fittings - Inspect all hoses and fittings for leaks weekly. Check hoses for cracks, fraying, and rubbing. Close valves and replace the necessary hoses and/or tighten fittings.
- Hydraulic Filter - Replace the hydraulic filter yearly, after every 1,000 hours of use, or when the filter indicator is in the red area. When the vacuum pump is running full speed and the hydraulic oil is at room temperature the hydraulic filter condition indicator should be in the green zone. If it is in the red zone change the hydraulic filter immediately.



Figure 3-4



Figure 3-5

- Vacuum Pump Oil Level - Inspect the oil level of the vacuum pump daily. The sight glass on the vacuum pump should be half full. Add oil through the fill plug as necessary. Refer to "Lubrication Recommendation Chart" in maintenance section.
- Bolts and Nuts - Check and tighten all bolts and nuts weekly.
- Drive Shafts - Inspect the universal joints and drive shaft weekly. Grease the universal joints and drive shaft slip yolks monthly.



Drive Shaft Slip Yolk and U-Joint Grease Points

Figure 3-6

Power Frame

- Vacuum Pump Screen - remove the vacuum pump cover above the 4-way valve. Remove the screen and check for cleanliness. Clean with mineral spirits or diesel fuel.
- Vacuum Relief Valve - Check for debris or obstruction. Check for proper operation.
- Drive Coupling - Inspect the drive coupling between the vacuum pump and the hydraulic motor monthly. Check for looseness and signs of wear.

Liquid Ring Maintenance Schedule

The following describes the maintenance work that is necessary for an optimum, trouble-free operation. Maintenance intervals must be observed. If increased wear of individual components or functional groups is determined during regular inspections, the operator has to reduce the required maintenance intervals on the basis of the actual signs of wear. Changes compared to the normal operation (increased power consumption, temperatures, vibrations, noises, etc. or respond of monitoring systems) lead to the assumption that the functions are impaired. These then have to be subjected to an inspection by specialized staff.

For maintenance schedule refer to table

Interval	Maintenance Work	To be carried out by
Weekly	Check Safety Valve	Operator
	Check Water Stop Valve	
	Clean Cooling Unit/Process Water Cooler	
	Clean VacuStar	
	Clean Vacuum Filter	
	Clean Cell Ventillation Filter, replace if damaged	
	Check V-belt and V-belt tension, re-tension if neccessary	
Monthly	Check fastening screws and tighten if necessary	Specialized Staff
Quarterly	Check Cell Ventillation Valve	Specialized Staff
Half-Yearly	Check Non-return Valve of VacuStar	Specialized Staff
5000 Hours or 3 Years	Replace permanent Grease Fitting	Specialized Staff
15,000 Hours	Replace Roller Bearing	Specialized Staff
	Replace Shaft Sealing Rings	
	Replace Slide Ring Seals	

Performance of Maintenance Work

Cleaning

1. Switch off system and secure against restarting.
2. Remove soiling appropriately. Observe the following:
 - Do not use aggressive cleaning agents.
 - After cleaning work, check that all previously opened covers and safety equipment are correctly installed and function correctly.

Clean process water radiator

Clean radiator cooling fins, cooling air must have a free-flow through the radiator cooling fins.

Process water circulation

Scale all parts carrying process water, if necessary.

Roller bearings lubrication

Replace permanent grease filling of the roller bearings either after 5000 hrs or 3 years. Prior to a replacement, remove old grease and clean bearings. If grease is replaced (approx.30g per bearing) fill the bearing entirely, but the free space in the bearing housing only up to approx.30 – 40%.

3

Replace roller bearings

Replace roller bearings after 15,000hrs and fill them with grease accordingly if newly installed.

Shaft sealing rings

After 15,000 hrs. replace the shaft sealing rings situated between bearings and slide seal rings as well as the shaft sealing ring situated between bearings and drive shaft together with the roller bearings..

Slide ring sealing

Replace slide ring seals together with the bearings after 15,000hrs.

Cleaning suction filter

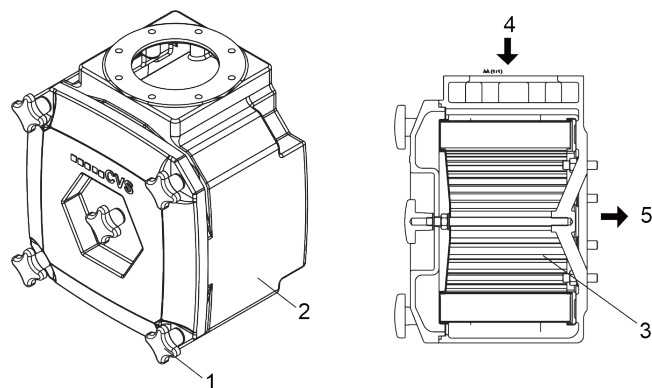
Clean the suction filter depending on accumulated dirt and specification in the maintenance schedule. To open the suction filter 1600 F (fine filter) and 1600 G (coarse filter), it is necessary to open a star handle, on the suction filter 1600 F-D (fine filter, pressure-resistant) and 1600 G-D (coarse filter, pressure-resistant), 5 star handles need to be opened to remove the lid. The hexagon nut on the stud bolt must be unscrewed to remove the filter cartridge.

NOTE

Pay attention during cleaning that no liquid, dirt or other objects get into the vacuum.

Cleaning procedure:

- Rinse out filter casing with detergent
- Rinse out stainless steel fabric filter cartridge with detergent
- Carefully rinse out filter cartridge with fine filter cartridge.
- Check for damage after cleaning.
- Replace defective cartridge.
- Check round sealing ring on casing lid for damage.
- Damaged sealing rings must be replaced
- After cleaning, reassemble the filter in reverse order



- 1 Star Handle
- 2 Casing
- 3 Filter Cartridge
- 4 Air Inlet Soiled Air
- 5 Air Outlet Filtered Air

Figure 3-7 Suction Filter

Troubleshooting

Troubleshooting Overview

This guide is intended as a quick reference to aid operators and technicians in troubleshooting potential issues with the Durasucker® liquid vacuum truck. This guide describes symptoms and lists several probable causes and their solutions. The primary rule of troubleshooting is to check the simple things first; therefore, the probable causes are generally listed in order of simplest to most complex.

Before attempting any repair, read, understand, and follow the operator's manual instructions, warnings, and safety messages.

All repairs should be performed by a qualified technician.

Before Attempting any Troubleshooting you must call our Customer Service Representatives at 262-784-7100

The Basic Troubleshooting Process

1. Prepare tools, information, and safety equipment.
2. Define the symptom.
 - What is the problem?
 - When does it occur?
 - When did it work properly?
 - When did it stop working properly?
3. Reproduce the symptom.
4. Narrow it down to the root cause.
 - Proceed logically.
 - Check the simple things first.
 - Divide and conquer — rule out what is not the problem. This is especially important to define if the root cause is human error, electrical, hydraulic, or mechanical.
 - Believe your evidence — if all else is eliminated, that which remains must be true.
 - Never assume anything — check it yourself.
 - Check everything — you could have multiple faults.
5. Repair or replace the defective component.
6. Educate and train the operator when it is a case of human error.
7. Verify the symptom is gone.

Table 4-1: Hydraulic Functions, Pressures and Times

Function	No-Load Pressure (psi)	Time(s)
Body Raise	1000	17
Body Lower	2100	43
Tailgate Raise	1200	7
Tailgate Lower	1200	62
Vane Type Vacuum Pump at Neutral	1500	at full rpm
Vane Type Vacuum Pump at 20" Hg	1300	at full rpm
Vane Type Vacuum Pump at 10 psi	1800	at full rpm
Pressure Relief Setting	2100	at full rpm
Liquid Ring Vacuum Pump at Neutral	3200	at full rpm
Liquid Ring Vacuum Pump at 25" Hg	3200	at full rpm
Liquid Ring Type Vacuum Pump at 10 psi	3900	at full rpm
Pressure Relief Setting	4000	

Mechanical Troubleshooting

Table 4-2: Mechanical Troubleshooting

Function	Symptom	Probable Cause	Solution
Road mode: starting truck	Engine will not start when in road mode	Engine problems	Have engine mechanic check for problems.
Emergency stop	Tank valves will not open.	Emergency stop switch pushed.	Reset the emergency stop switch by twisting the knob.
Control system	Control system not turning on	Main fuse blown	See Table 4-3: Electrical Troubleshooting
		Ignition enable signal failed.	
Throttle control	Engine RPM will not increase or decrease	Throttle Enable or Increase switch is OFF or Broken	Turn on, Replace.
Hydraulics	No main hydraulic oil pressure	Hydraulic pump not engaged	Turn on PTO in the cab.
		Supply valve closed	Open the hydraulic supply valve.
		Low oil level in hydraulic reservoir	Add oil as required. Check for leaks.
		Oil pump suction line plugged or hose liner collapsed (very rare)	Repair or replace as required.
		Air solenoid not getting a signal	See Table 4-3: Electrical Troubleshooting
	PTO will not engage.	Chassis air pressure too low	Run engine until air pressure reaches 100 psi.
	Body functions not moving	Hydraulic valve fouled with debris	<ul style="list-style-type: none"> Shift the hydraulic valve using the. This may free the fouled valve. A dirty valve may need to be cleaned or replaced. Change the hydraulic filter.
		Failed valve	Check for pressure. Replace Valve
		Hydraulic valve fouled with debris	Have the hydraulic valve repaired or replaced.
	Hydraulic oil foamy or milky	Air in hydraulic oil tank	Inspect suction hose and fittings from hydraulic oil tank to pump for any air leaks.
		Water in oil	<ul style="list-style-type: none"> Drain all oil in system and replace oil and oil filter. Inspect or replace hydraulic reservoir fill cap.

Table 4-2: Mechanical Troubleshooting (continued)

Function	Symptom	Probable Cause	Solution
Vacuum system	Vacuum pump does not draw vacuum	Vacuum pump not engaged	<ul style="list-style-type: none"> • Enable PTO • Check Hydraulic Pressure.gauge
		Primary or Secondary Float ball stuck closed	Free and clean the float ball.
		Float ball is closed	Empty Tank
		Intake hose restricted or plugged	Remove obstructions from hose.
		Filter plugged	Clean or replace filter at 4-way valve.
		Ducting in body plugged or filled with material	Clean ducts.
		Manway doors open	Close doors.
		Isolation valve closed	Open Isolation Valve.
		4-Way Valve in Neutral	Rotate to vacuum
		Vac-relief valve failed	Repair or replace
		Holes worn in vac hose or dig tube	Repair or replace as required.
		Hose coupler assembly gasket(s) missing or damaged	Adjust, repair, or replace any missing or leaking gaskets.
		Gasket from Manway door missing or damaged	Repair or replace gasket.
		Tailgate gasket damaged or not sealing	Repair or replace gasket.
		Filter housing door seals damaged or not sealing	Repair or replace seal.
		Hoses between vacuum pump and tank damaged or not sealing	Repair or replace hose.
Vacuum pump	Dust in vacuum pump discharge Note: Operating the vacuum system while this condition exists could cause significant damage to vacuum pump and void your warranty.	Vacuumping dry material	Vacuum only liquids or slurries
Vacuum RPM	Vacuum pump running slowly.	Low hydraulic flow	Increase throttle.

Table 4-2: Mechanical Troubleshooting (continued)

Function	Symptom	Probable Cause	Solution
Tailgate	Leaking tailgate.	Tailgate unlatched.	Latch tailgate.
		Damaged gasket.	Replace gasket.
		Dirt around gasket or mating surface on tailgate	Clean gasket and mating surface of tailgate.
		Damaged gasket retainer or tailgate surface	Repair or replace.
	Tailgate will not close	Tailgate prop out.	Rotating tailgate prop to storage position..
		No hydraulic oil pressure	<ul style="list-style-type: none"> • Velocity fuse in protection mode. • See “Hydraulics” function in this table.
		Hydraulic line pinched, plugged, or broken	Securely support tailgate, slowly disconnect hydraulic hoses, and replace failed hose.
		Hydraulic cylinders failed	Replace hydraulic cylinders.
Liquid pump	No water pressure Note: <i>Water pump function should be available in both vac mode and dump mode.</i>	Water supply valve closed	Open supply valve.
		Water hose leaking	Replace hoses.
		PTO failure	<ul style="list-style-type: none"> • Engine speed greater than 900 RPM. • PTO hydraulic enable solenoid failure or failed confirm switch
		No hydraulic pressure	See “Hydraulics” function in this table
Chassis air	Low air pressure (never reaching 100 PSI)	Solenoid valve or diaphragm valve on filter stuck open	Clean, repair, or replace as required.
		Faulty compressor or regulator on truck	Repair or replace compressor or regulator.
		Leak in the air lines, pneumatic valves, cylinders, or tanks	Locate the leak and repair or replace as required.
		Defective dash air pressure gauge	Replace dash air pressure gauge.

Electrical Troubleshooting

Table 4-3: Electrical Troubleshooting

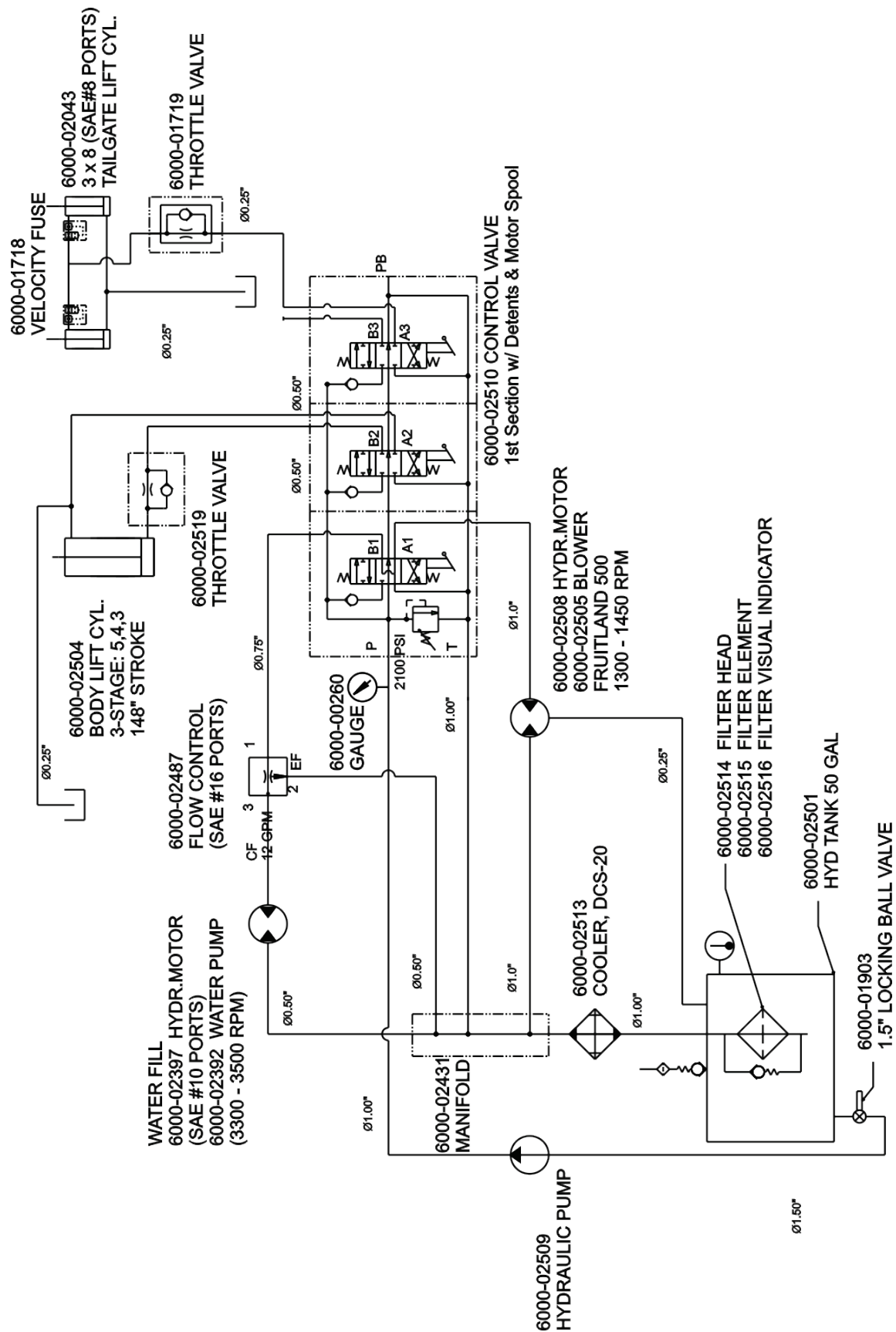
Function	Symptom	Probable Cause	Solution
Control system	Control system not turning on	Main fuse blown.	Check fuses at battery power distribution box.
		Ignition enable signal failed.	Check ignition enable fuse at chassis fuse panel.
Power take-off (PTO)	PTO not engaged.	No PTO enable signal present at solenoid.	Make sure PTO CONFIRM HYD input LED is lit on chassis module.
		No signal from PTO pressure confirm switch.	Locate and repair or replace.
	Display shows PTO error on screen, and buzzer sounds	Engine speed greater than 900 RPM when enabling PTO.	Reduce engine speed to idle before enabling PTO.
		PTO pressure confirm switch indicates PTO did not shift.	<ul style="list-style-type: none"> • Make sure the PTO shaft is spinning. • Locate and repair or replace.
		PTO failure.	Locate and repair or replace.
Lights	Lights will not work	Too much current load.	Determine the cause of the overcurrent condition.
		Fuse blown.	Correct the reason for blown fuse, then replace blown fuse.
Power distribution	Control system not powered up	Ignition signal not present	Fuse at chassis fuse panel.
		Power not available to control system modules	Check for ignition signal at control panel main power relay.
	Power for components of the control system not present	Component has blown the fuse	Determine the cause of the overcurrent.
		Other electrical problem	Inspect, and repair or replace faulty components.
Electrical troubleshooting basics	Loss of power immediately	Fuse blown by a short circuit to ground	Determine the cause of the short circuit.
		Device connected to output is exceeding the maximum current rating	Determine the cause of the overcurrent.
	Loss of power after period of time	Fuse blown by device drawing too much current that is too close to the maximum amperage rating	Determine the cause of the overcurrent.
	Output on, but function not working	Device failure	Check for proper output.

Electrical Troubleshooting

Table 4-3: Electrical Troubleshooting (continued)

Function	Symptom	Probable Cause	Solution
Electrical troubleshooting basics <i>(continued)</i>	Electrical connection failed	Loss of electrical connection	Power, signal, or ground return wire failure.
		Cut, broken, or dislodged wire	Locate and repair or replace.
		Connector pin not fully seated inside connector	Reseat pin into connector.
		Wire pulled out of crimped pin	Locate and repair or replace.
	Analog signal not working	Wires connected to wrong pin location	Check wiring against the drawing to determine where the signal is lost.
		Loose wire connection	Connect an incandescent lamp to the circuit and wiggle wires.
		Device failed	<ul style="list-style-type: none"> • Using wire jumpers, temporarily connect power and ground to get device to work. CAUTION: Incorrect wiring may damage device. • Check LEDs on device. • Replace device. • LED light on proximity sensor should light up when it senses steel.

DWG NO. 9900-00143 - Schematic, Hydraulic, Vane Type Vacuum Pump



4-Troubleshooting Section 4-8



4-Troubleshooting Section 4-9



Service and Spare Parts

Service Parts - Durasucker	
Description	Part Number
BODY/TAILGATE	
Gasket, Tailgate, Neoprene	3500-00258
Gasket, Tailgate, Nitrile	0032890
Gasket, 12" Manway, Buna	3000-03308
Gasket, 20" Manway, Buna	3000-03317
Indicator Assembly, Float Level	3000-03227
Kit,Seal,Floatball, for 3000-03227	0033090
Kit,Pivot,Floatball, for 3000-03227	0033089
Repair Kit for 6" Pneumatic Gate Valve	7300-02805
Repair Kit for 4" Pneumatic Gate Valve	7300-02806
Valve, Gate, Stainless 4" TTMA Betts	0032001-00001
Valve, Gate, Stainless 6" TTMA Betts	0032002-00001
Valve, Gate, Steel 4" TTMA Betts	0032001
Valve, Gate, Steel 6" TTMA Betts	0032002
Wing Nut, Rear Door	0000016
Bolt, For Wing Nut	0000017
HYDRAULICS	
Cooler, Hydraulic, DCS20-12	6000-02513
Cooler Fan and Motor for 6000-02513	7310-03014
Cylinder, Body Lift	6000-02504
Cylinder, Tailgate Lift	6000-02043
Filter Element	6000-02515
Filter Housing, w/ Filter Element	6000-02514
Filter Indicator	6000-02516
Gauge, Pressure	6000-00260
Motor, Vacuum Pump Hydraulic	6000-02508
Motor, Water Pump Hydraulic	6000-02397
Pump, Hydraulic	7006-00191
Switch, Oil Cooler Temperature	5500-03209

Service Parts - Durasucker	
Description	Part Number
LIGHTING AND SAFETY	
Alarm, Back Up	5500-00561
Decal Set	3050-01251
Junction Box	5500-03188
Light Assembly, Rear ID	9010-01002
Light Kit, License Plate	5500-01881
Light, Back Up	5500-01904
Light, Marker & Clearance (Amber)	5500-03139
Light, Marker & Clearance (Red)	5500-03138
Light, Rear Work	5500-03198
Light, Stop/Tail/Turn	5500-01903
Placard Holder	3000-03290
Prop Rod, Rear Door	8500-03177
Proximity Sensor, Tailgate/Body Up	9016-00097
Valve, E-Stop Air (Red)	6000-02521
VACUUM SYSTEM	
Coupling, Vacuum Pump Drive w/ Insert	7000-00196
Insert, Vacuum Pump Drive Coupling	7300-02831
Exhaust Muffler Lid O-ring Gasket, 42"	7300-02836
Gauge, Vacuum/Pressure	6000-02527
Relief Valve, Vacuum 20" Hg	3000-03298
Vacuum Pump	6000-02505
Vacuum Pump Filter	7300-02801
Vacuum Pump Repair Kit	7300-02802
Vacuum Pump Vane Kit	7300-02803

Service Parts - Durasucker Liquid Ring	
Description	Part Number
Hydraulic In-Tank Filter ZINGA	0038893
Pump, Hydraulic LR	0038858
Manifold, Hydraulic Liquid Ring	0038891
Hydraulic Power Control Valves - Muncie V130	0038785
PTO 10-Bolt #CS11-A1007-H1IX	0038912
Sensor, Level, Capacitive, Deutsch, 1/4" NPT	0040086
Decal, Kit, LR	0040199
Hose, Transfer, Super-Vac 4"	0031536-03200
Hose, Transfer, Super-Vac 4"	0031536-16500
Hose, Transfer, Super-Vac 4"	0031536-04200
Relay, Timer	0040278
Filter Screen	
Thumb Screw for Filter Screen	
Gasket Kit	
6" Dia Hoses	
Hose Clamps	
Fan for Water Tank Cooler	
12VDC Kidney Loop Pump	
Assembly (Cooler, Fan, Pump)	
CVS LR Pump Seal Kit	
CVS LR Pump Service Tool for Seals	
CVS WR2500 LR Pump	
Lovejoy Coupling and Jaw Kit	
Sunfab Hydraulic Motor	
Water Tank Sight Tube	
Sight Tube Ball	
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Contact Super Products if you require additional information regarding the operation of your Durasucker Liquid Vacuum Truck.



130 W BOXHORN DR. MUKWONAGO, WI 53149 • P: 800.837.9711 • www.superproducts.com