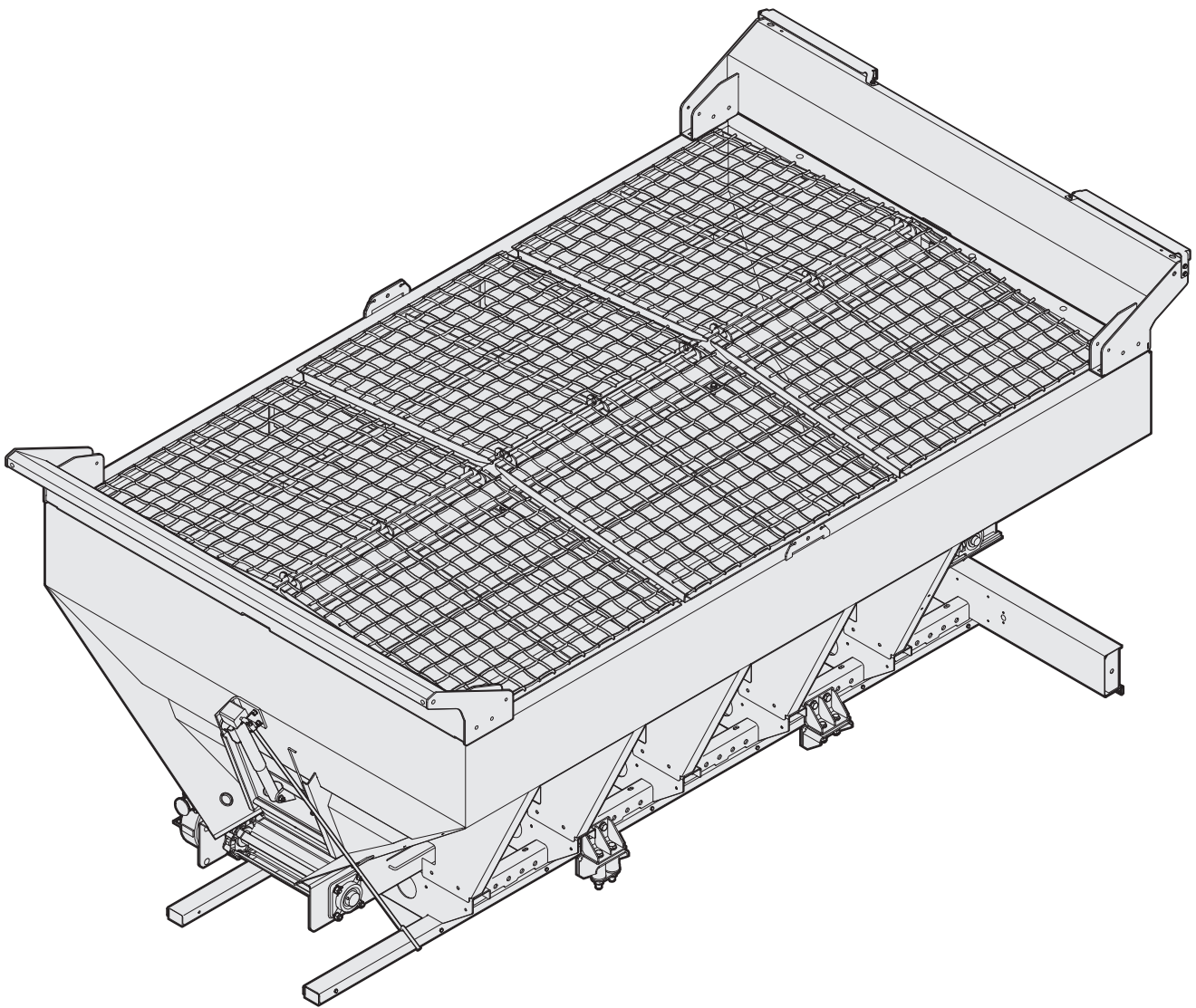


Owner's Manual

Viking Frame Mount Hopper (VFH)

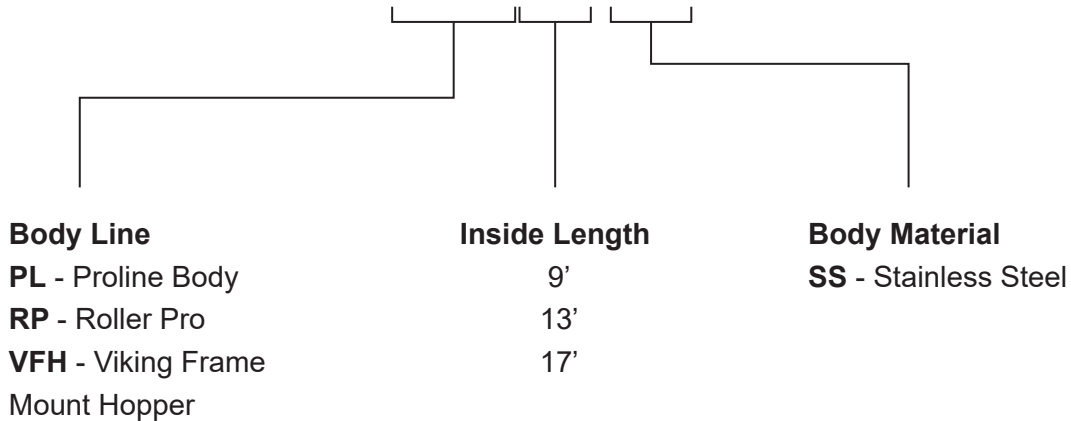




VFH Spreader Model Codes

All Pro-Line combination spreaders have an associated model code, which identifies the style, type, and length of the body. The model codes used to describe VFH can be broken down as follows:

VFH09 SS



VFH Hopper Capacities

The VFH Hopper is designed to handle a wide range of material for spreading needs. Some of the materials commonly used in the VFH Hopper include:

- Sand and salt for snow & ice control

Body Length	Level Capacity	Level Capacity w/ 6" sideboards	Side Height	Inside Length	Outside Length
VFH09	7.3 yd ³	8.6 yd ³	66"	107"	111"
VFH13	10.7 yd ³	12.6 yd ³	66"	155"	159"
VFH17	14.1 yd ³	16.6 yd ³	66"	203"	207"

Proline Safety Decal Kit - ANSI Z535.3 0820112



SAFETY PRECAUTIONS DECALS AND MESSAGES

Before you start operating your Pro-Line Combination Spreader, familiarize yourself with the following safety precautions. Owners, ensure that all operators are familiar safety decals and proper procedures. Failure to follow proper operating instructions, may result in serious injury or death.

The following illustrations show the Viking-Cives Group Caution, Warning and Danger decals. Following the illustrations, you will find a listing of the caution and warning decals with item numbers and a drawing showing the decals location.

SAFETY INSTRUCTIONS

1. Do NOT use this equipment before reading and understanding the operator's manual.
2. Do NOT lift dump body when truck is moving.
3. The opening control of the rear gate must be locked when the truck is moving.
4. The truck must be in a stable position before starting to lift the dump body.
5. Do NOT tip on recently excavated ground or in filling ground if the soil is not properly compacted.
6. When lifting or dumping, the user must at all times be in control of the operation.
7. The rear gate must be released before starting to lift the dump body.
8. Nobody should stand in the cylinder's operation area when in action.
9. Before dumping, make sure nobody stands in the area.
10. Before starting the spreading mechanism, make sure nobody stands near the spreader.
11. Never stand inside the dump body when the conveyor is in operation.
12. Before starting the spreader, make sure that the outflowing gate is open.
13. When the dump body is not in operation, it must at all times lay on the truck frame.
14. When truck is not in use, remove keys from ignition.
15. When using the dump body as a spreader, use screens for loading.

0820102

0820102



Proline Safety Decal Kit - ANSI Z535.3 0820112

ITEM ID	ITEM NO.	DESCRIPTION	QTY REQ
1	0820102	DECAL SAFETY INFO PROLINE	2
2			
3	0820097	DECAL DANGER FALLING BODY	4
4	0820093	DECAL DANGER WING	2
5	0820098	DECAL DANGER ENTER BODY	1
6	0820101	DECAL CAUTION BEHIND TRUCK	2
7	0820108	DECAL WARNING PINCH POINT	5
8	0820096	DECAL CAUTION SCREENS	1
9	0820116	DECAL NOTICE MAINTENANCE ACCESS	2
10	0820107	DECAL WARNING ROTATING SHAFT	2
11	0820094	DECAL CAUTION SPINNER	2
12	0820095	DECAL WARNING HYDRAULIC PRESSURE	2
13	0820100	DECAL WARNING ROTATING SHAFT	1
14	0820099	DECAL WARNING READ MANUAL	1
15	0820052	DECAL GATE DOOR HEIGHT	1
16	0820109	DECAL WARNING WING POST	2
17	0820092	DECAL WARNING CHAIN	3



0820097



0820093



0820098



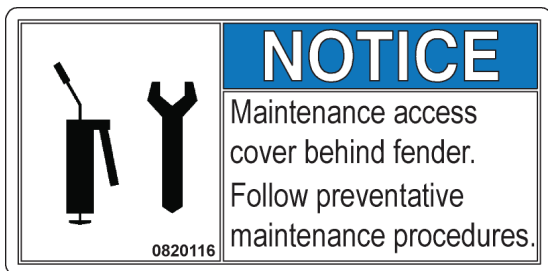
0820101



0820108



0820009



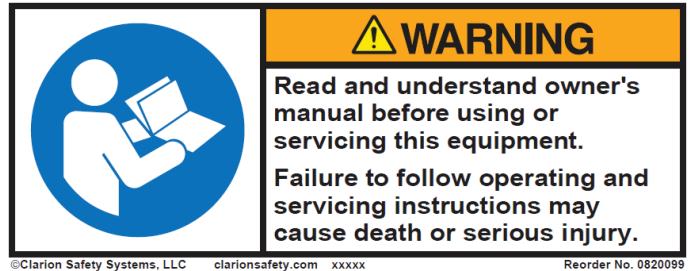
0820116



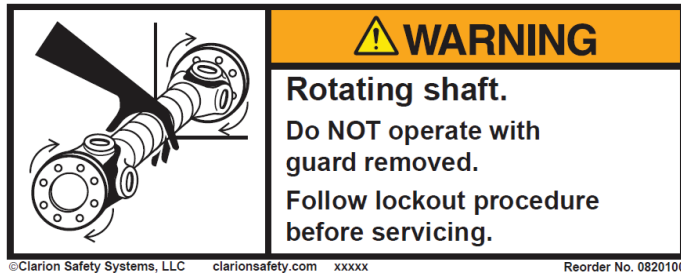
0820107



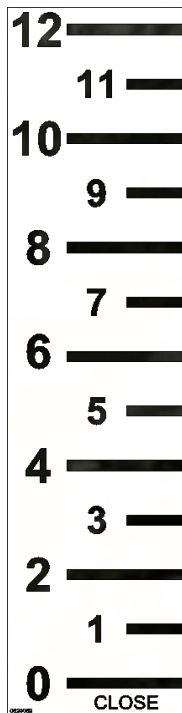
0820094



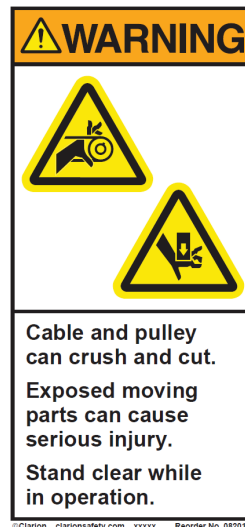
0820099



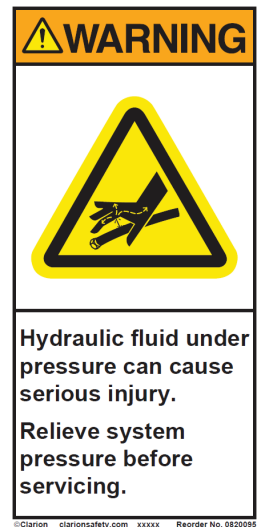
0820100



0820052



0820109



0820095

Introduction








This instruction/parts manual has operation and maintenance information for the Viking-Cives VFH Hopper. It has been prepared to familiarize you with the design features of the unit, and to instruct you in its proper operation and maintenance.

Read this manual carefully before you operate or service your VFH Hopper. Remember that you're working with heavy equipment that can injure you or someone else. You can help lessen the chance of injury by following the procedures in this manual, carefully.

DANGER: If incorrectly used, this equipment can cause severe injury. Your chance of injury can be greatly reduced by following all caution/warning decal notifications. All decals must be kept clean and complete, replace any decals that are not readable. Decals may be purchased directly from Viking-Cives Group and/or the nearest authorized dealer. All Operator/Service people should review this manual carefully and become familiar with its contents. **If anyone else beside you operates or services this equipment, make sure they read this manual and are instructed to follow the safety procedures related to this equipment.**

Daily Inspection and Lubrication

Daily inspection along with periodic preventive maintenance will reduce the chance of any major repairs and down time during equipment use.

-  Check the fluid level in the hydraulic oil reservoir. If the sight indicates low oil level, add the appropriate amount of the specified hydraulic fluid.
 -  Grease all required components.
 -   Check all components for loose and/or missing fasteners, if required tighten and/or replace.
 -  Visually inspect all battery terminals and electrical connections, wires, switches, etc. for signs of corrosion, wear, loose and/or broken connections, etc. At the beginning of each shift review all lighting accessories to ensure proper working conditions, immediately replace any broken or non-functioning bulbs and/or lenses.
 -  Visually inspect all hydraulic connections and hoses for cracks and/or leaks.
 -  At the beginning of each shift, visually inspect all caution and warning decals. All decals should be complete and legible. If decals are not legible, clean them. If cleaning the decals does not make them legible, install new decals.
-

Vehicle Lockout Procedure

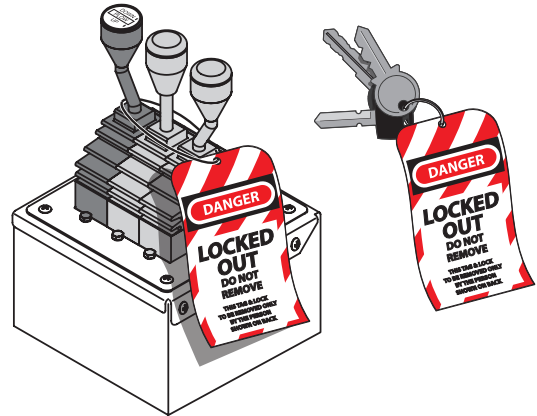
Vehicle lockout procedures are essential in protecting workers while performing maintenance or repairs to the vehicle and its equipment. The purpose of the Lockout Procedure is to recognize, isolate and neutralize all potential sources of energy (electrical, hydraulic or kinetic) and render the equipment safe for all personnel during maintenance or repairs.



DANGER: ALWAYS Follow the proper Lockout Procedure when performing any maintenance to any electrical or hydraulic systems. Maintenance Safety is the responsibility of the owner, as well as the operator. **A detailed procedure must be established to fit every situation.**

Lockout & Tagout Procedure

1. Park vehicle on a firm, level surface (such as a concrete garage floor or paved area) that is large enough to safely accommodate working on the truck.
2. Lower all attachments to the ground.
3. Apply the vehicle's parking brake, stop the engine and remove keys from the ignition.
4. With the engine off, relieve all pressure on the hydraulic system by moving the hydraulic levers in both directions.
Relieve all pressure on the pneumatic system by pumping the brakes while the vehicle is off or by opening the release valve on the air tank.
5. Notify all affected individuals that they must comply with the lockout procedures.
6. Tag the in-cab controls "Do Not Operate" and notify all affected personnel of the meaning of the tag.












WARNING: When relieving hydraulic and pneumatic pressure, some component movement may occur. Exercise extreme caution when working on pneumatic or hydraulic systems, and keep all bystanders clear while relieving pressure.

NOTE: Tags should be suited to resist the environment in which they are to be used (oil, sunlight, grease, etc...). Tags must be easily recognizable at the location of the operating controls. Tags must be standardized by color, shape, size and format.

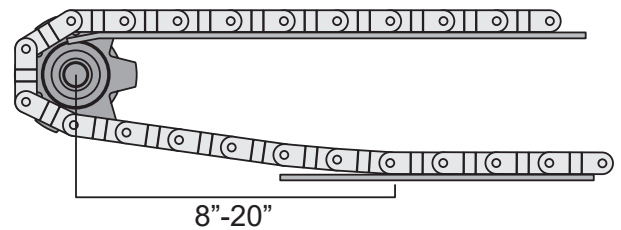
Preventative Maintenance, Inspection & Lubrication

Daily inspection along with periodic preventive maintenance will reduce the chance of any major repairs and down time during equipment use.

-  Check the fluid level in the hydraulic oil reservoir. If the sight indicates low oil level, add the appropriate amount of the specified hydraulic fluid.
-  Grease all required components: beginning of each season, then once a week.
 - All main conveyor, cross conveyor and spinner bearings.
-   Check all components for loose and/or missing fasteners, if required tighten and/or replace.
-  Visually inspect all hydraulic connections and hoses for cracks and/or leaks.
-  Check all conveyor chains, chain covers, sprockets, and conveyor beds for excessive wear or damage.
-  Adjust conveyor chains as required.
-  Oil conveyor chains frequently, at least every five working days and once monthly off-season.
-  At the beginning of each shift, visually inspect all caution and warning decals. All decals should be complete and legible. If decals are not legible, clean them. **If cleaning the decals does not make them legible, install new decals.**

Chain Tension:

The main conveyor chain assembly should not be tightened any more than necessary to prevent the chain links from jumping the sprocket teeth, or jamming between the back side of drive sprocket teeth and the under side of the conveyor floor. Over-tightening of the conveyor chain will cause excessive wear on all parts and/or jamming, as well as higher working pressures. It is recommended that the tension should be checked with a loaded box which will show a greater slackening of the chain on the under side. New chains will stretch in the first month of operation and therefore require greater attention to proper adjustment during this break-in period.









Drag chain slack should be checked periodically and taken up until distance between centreline of idler sprocket and where chain contacts lower flange on longitudinal is 8 inches to 20 inches.


Cross conveyor chain will also require adjustment especially in the first month of use. When the pintle chain is lifted off conveyor floor, allow approximately 1" gap between chain bottom and floor.

Maintenance Schedule






After First 20 Hours of Operation

-  Inspect hydraulic fluid for contamination and level.
-  Thoroughly lube all mechanical parts – bearings, hoist mounting, chains, and adjusters.
-  Change hydraulic system filter(s).
-   Inspect for loose bolts, pins, conveyor chains, and tighten/adjust as required.
-  Inspect main conveyor gearbox oil for contamination and level. Oil sample should be taken from the oil level hole, not the drain hole.

After First 50 & 100 Hours of Operation

-  Change main conveyor planetary gearbox gear oil. **NOTE:** Never mix mineral and synthetic oils in gearbox. Viking-Cives Group recommends using an antifoaming gear oil grade SAE 80% EP.

Daily Maintenance

-  Check fluid level in the hydraulic oil reservoir, if the sight indicates low oil level, add appropriate amount of the specified oil.
 -  Adjust conveyor chains as required.
 -  Check all conveyor beds for excessive wear or damage.
 -  Visually inspect all battery terminals and electrical connections, wires, switches, etc. for signs of corrosion, wear, loose and/or broken connections, etc. At the beginning of each shift review all lighting accessories to ensure proper working conditions, immediately replace any broken or non-functioning bulbs and/or lenses.
 -  At the beginning of each shift, visually inspect all caution and warning decals. All decals should be complete and legible. If decals are not legible, clean them. If cleaning the decals does not make them legible, install new decals.
- Clean unit - wash all areas clean of salt and road dirt to prevent corrosion.

Weekly Maintenance

As part of an on-going preventive maintenance program, your Hopper Sander should be regularly lubricated. The following list indicates both the location and number of lubrication points for the Hopper Sander. Additional lubrication points may exist on your particular unit.

Drive shaft bearing (1)
Idle shaft bearings (2)
Gear Reducer (2)

Monthly Maintenance

- 🔍 Check bolt tightness at valve, cab controls, body guides, and drive shaft bearings.
- 🔍 Check structural welds on the body for cracks due to fatigue or overload.
- 🔍 Inspect conveyors for possible wear; check set screws/bolts for tightness on sprockets, glider blocks, and gearbox coupler.
- 🔍 Inspect hydraulic fluid colour for possible contamination. If oil appears thick or dirty, drain and replace fluid/filter(s). **NOTE:** Excessive foaming can be an indication of air and/or moisture presence in the hydraulic system.
- 🔍 Check for oil leaks in all hydraulic fittings and hoses. Retighten and/or replace fittings and hoses as required.

Mid-Season Maintenance

- 🔄 Replace hydraulic system return oil filter (10-micron absolute) element.
- 🔄 Replace oil(s) and all filters if excessive dirt or metallic particles are evident.
- 🔍 Inspect oil(s) for contaminants in conveyor gearbox and hydraulic reservoir.

End of Season Maintenance

- 🔄 Remove spinner(s) inspect bearings, couple hoses on spinner and on truck.
- 🔄 Inspect sprockets, chains, chain covers, bearings, and shafts for wear or damage.
- 💧 Thoroughly wash down conveyor chains and conveyor beds, and lubricate each with a non-water soluble lubricant.
- 🔄 Change main conveyor gearbox oil and hydraulic fluid and filters.

The following electronic spreader control systems require additional filtration and shall be equipped with an in-line high-pressure filter and element. Viking-Cives Group recommends changing filter elements more frequently at three (3) month intervals.

- GRESEN GRS II & GRS 31
- DICKEY JOHN W/ VICKERS VALVE
- COMPU SPREAD 220

The following is a list of recommended filter units and lubricants approved for use by Viking-Cives Group.

NOTE: Viking-Cives recommends that all hydraulic filter elements are 10 micron absolute.

Filter Parts

Item Number	ALT Item Number	Description
0560011	80225H	Inline High Pressure Filter Assembly - STAUFF
0560032		Inline High Pressure Filter Assembly - MP FILTRI
0560010	08225HE	Inline High Pressure Filter Element 10 Micron – STAUFF
0560004	80225K	Inline High Pressure Filter Element 10 Micron – PARKER
0560031		Inline High Pressure Filter Element 10 Micron – MP FILTRI
0560009	80225A	Return Manifold Filter Element 10 Micron



Applying Power to the Viking VFH Hopper

NOTE: Before applying power to the spreader, be sure that all persons are clear of all moving parts and all safety rules are followed.

When the spreader has been properly mounted and the chute and spinner assemblies properly installed and adjusted, the next step is to apply power to the spreader. Note: All fluid levels on the spreader gearbox and hydraulic system have been set at the factory, but it is a good idea to double check all fluid levels before starting to operate the spreader.

This type of spreader has a single gear type hydraulic motor to run the conveyor and a hydraulic spinner motor.

The high-pressure hydraulic fluid from the truck-mounted pump is piped into the fluid control valve that is used to control the spreader.

Mounting The VFH Hopper

Mounting the VFH hopper requires a lifting device (crane or high capacity forklift).

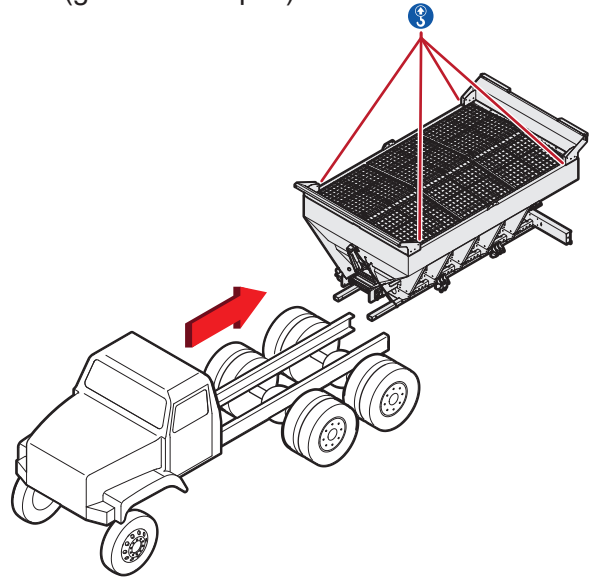


BEFORE ATTEMPTING TO MOUNT THE VFH HOPPER, ENSURE THAT THE FOLLOWING SAFETY CONDITIONS ARE MET:

1. The vehicle is parked on a firm and stable surface.
2. The vehicle is locked out and the parking brakes are engaged.
3. Ensure that the area is clear of all bystanders that are not essential to the operation.
4. Ensure that the body is empty of all material (granular & liquid).

1. Securing the Body

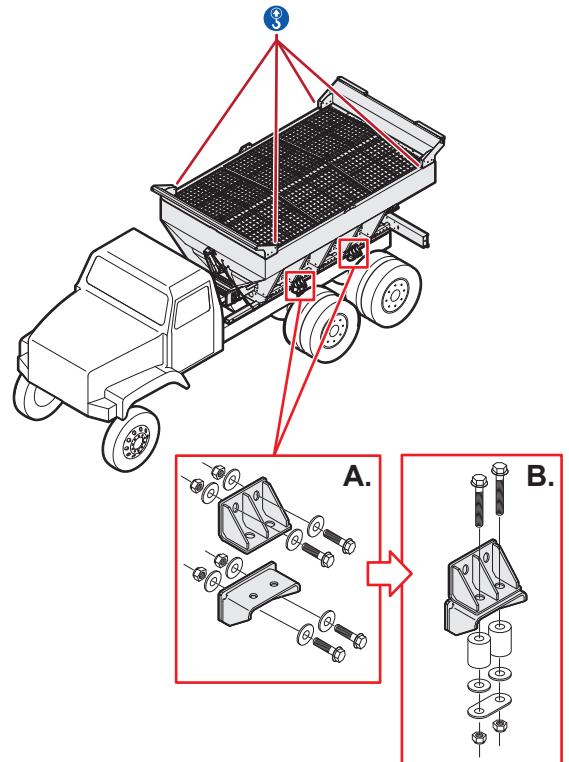
- A.** Bolt the Mounting Blocks to the vehicle chassis and the hopper Frame Rails.
- B.** Bolt the mounting blocks together to secure the hopper to the chassis.



2. Connect Hydraulic and Electrical Systems

Connect all hydraulic hoses to the quick-disconnect fittings located on the chassis.

Connect all electrical plugs to the receptacles located on the chassis.



Operating Instructions



CAUTION: Before operating any equipment, be sure to read and fully understand all caution and safety warnings. Familiarize yourself and others with all caution/warning labels and their locations. Make sure all labels are complete and legible. Replace any labels that have become unreadable and/or missing. Replacement labels can be purchased directly from Viking-Cives Group, and/or nearest authorized dealer.

IMPORTANT: Before putting any equipment into use, check for any worn, damaged or loose components, if necessary repair or replace. Listen for any unusual sounds, if necessary repair and/or replace worn or damaged parts.

Cold Weather Operation

All equipment is designed to operate with hydraulic oil minimally warm. During cold weather conditions, it is recommended that the truck be run at idle with the pump engaged and circulating the oil through the system before operating equipment.

Sander Operation (Automated Spreader System)

An automated or electronic spreader control system enables the operator to discharge the payload manually, or have it done by the unit automatically. The system synchronizes the application rate, based on predetermined values, with the vehicle ground speed. A control console within the cab allows the operator to control any of the units spreading functions.

NOTE: For detailed operating instructions refer to the Manufacturers Operator's Manual that is supplied in the appendix of this manual.

Sander Operation

Spinner Chute Adjustment

The spinner chute can be adjusted to locate sand in any location on the spinner. A salt chute can also be provided for locating a salt ribbon.

By lengthening or shortening the adjustment chain on the spinner chute, the chute can dump material on either the inside or the outside of the spinner disc.

A. Outer Disc: Material placed nearer to the outer **edge of the disc**, will discharge towards the underside of the truck in either a forward or rearward direction (depending on the rotation direction of the disc).

B. Inner Disc: Material placed **nearer to the centre spindle** of the disc will discharge evenly around the circumference of the disc.

NOTE: Material discharge is dependant on application rates as well as the rotational speed of the spinner disc. The above information is meant to aid in calibration, and will vary accordingly.

Disc Height Adjustment

Spinner height can be adjusted from 9"-12" from the ground by by raising the height on the spinner adjustment plates. Remove the four (4) bolts that secure it and move to the desired setting. Ensure that all bolts are firmly secured to ensure the proper operation of the spreader system.

