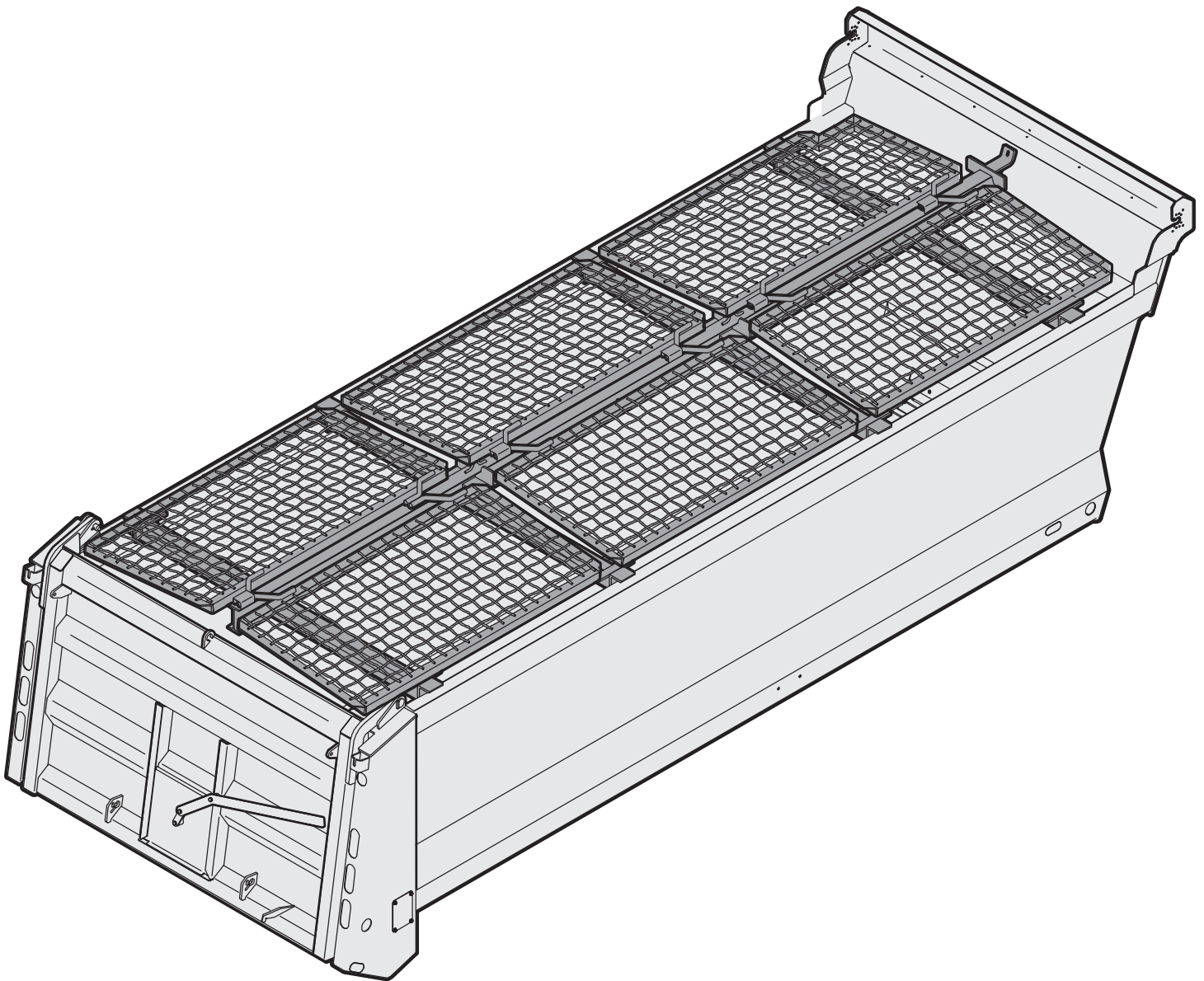


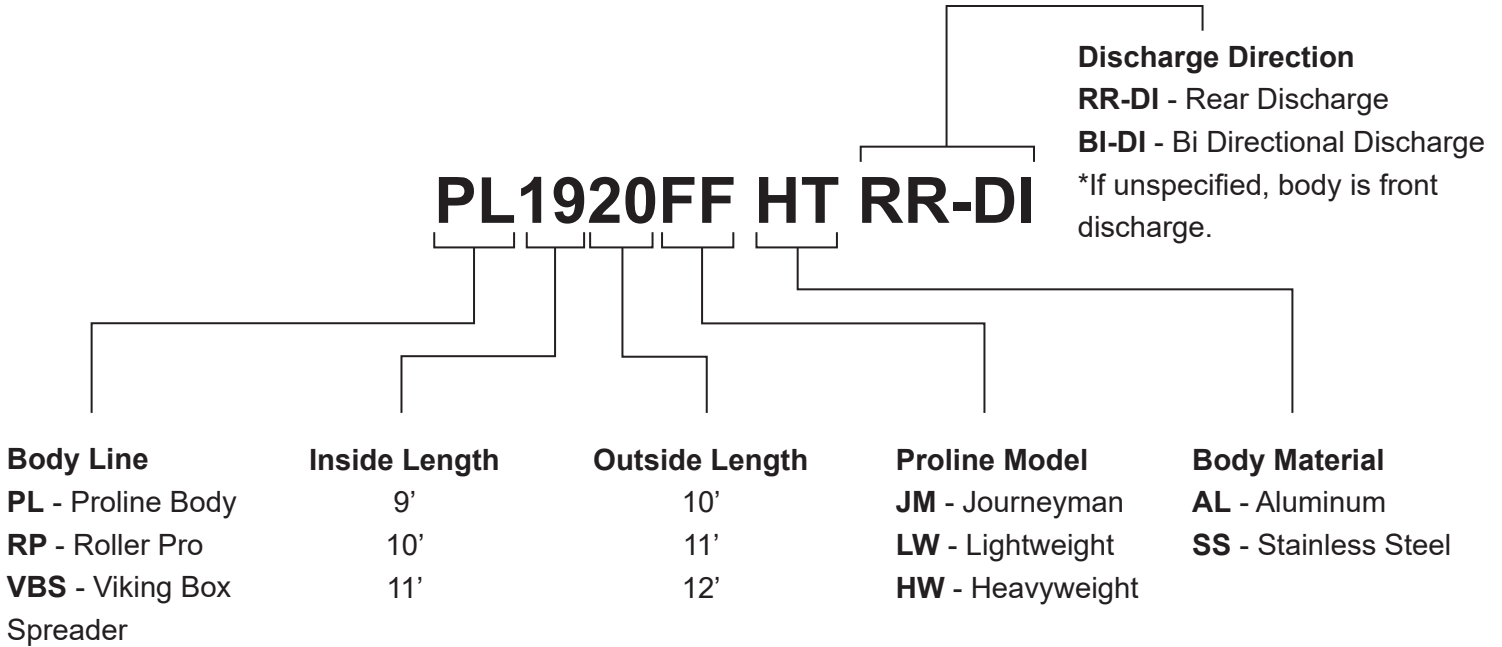
Owner's Manual

Pro-Line Flat Floor (PLFF)



Pro-Line Combination 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 a Pro-Line combination spreader can be broken down as follows:



Pro-Line Flat Floor Spreader Capacities

The Pro-Line combination spreader is designed to handle a wide range of material for spreading needs. Some of the materials commonly used in the Pro-Line combination spreader include:

- Sand and salt for snow & ice control
- Light gravel for general contractor duties
- Hot tar and asphalt

Body Length	Winter Capacities (with Liquid Tanks) w/ 6" sideboards * w/ 10' sideboards	Summer Capacities (Without Liquid Tanks) w/ 6" sideboards *w/ 10" sideboards	Side Height	Inside Length	Outside Length
PL20FF	14.1 yd³ 16.7 yd ³ *18.6 yd ³	19.0 yd³ 21.7 yd ³ *23.4 yd ³	46"	20'	21'

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

SAFETY INSTRUCTIONS

COMPLETELY UNLOAD BODY AND MOUNTED TANKS PRIOR TO USING PROP, TO USE PIN TYPE BODY PROP:

1. Raise body 30 to 40 degrees. Place hoist control valve in neutral (Hold) position.
2. Remove body prop pins from storage location and insert into holes located on each side in front of dump hinge.
3. Before lowering dump hinge re-install hairpin locking body prop pin in place.
4. Lower body slowly until profiled hinge block contacts the prop pins.

TO REMOVE PIN TYPE BODY PROP:

1. Raise body sufficiently to take load off of prop pins. Place hoist control valve in neutral (Hold) position.
2. Remove pins from both sides and return to storage location. Before lowering body be sure that area below box is clear.

0820103



0820097



0820093



0820098



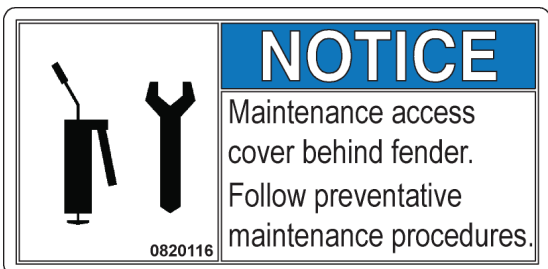
0820101



0820108



0820009



0820116




0820107

	⚠ WARNING
	<p>Flying material can cause injury.</p> <p>Always wear safety eye protection.</p> <p>Stand clear of spinner while in operation.</p>

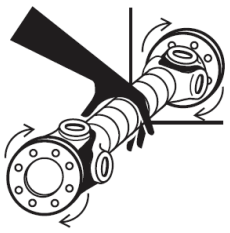
©Clarion Safety Systems, LLC clarionsafety.com xxxxx Reorder No. 0820094

0820094

	⚠ WARNING
	<p>Read and understand owner's manual before using or servicing this equipment.</p> <p>Failure to follow operating and servicing instructions may cause death or serious injury.</p>

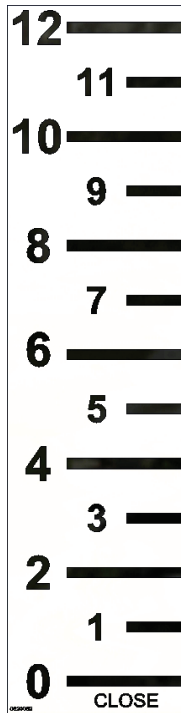
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0820099


	⚠ WARNING
	<p>Rotating shaft.</p> <p>Do NOT operate with guard removed.</p> <p>Follow lockout procedure before servicing.</p>

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0820100



0820052

⚠ WARNING

<p>Cable and pulley can crush and cut.</p> <p>Exposed moving parts can cause serious injury.</p> <p>Stand clear while in operation.</p>

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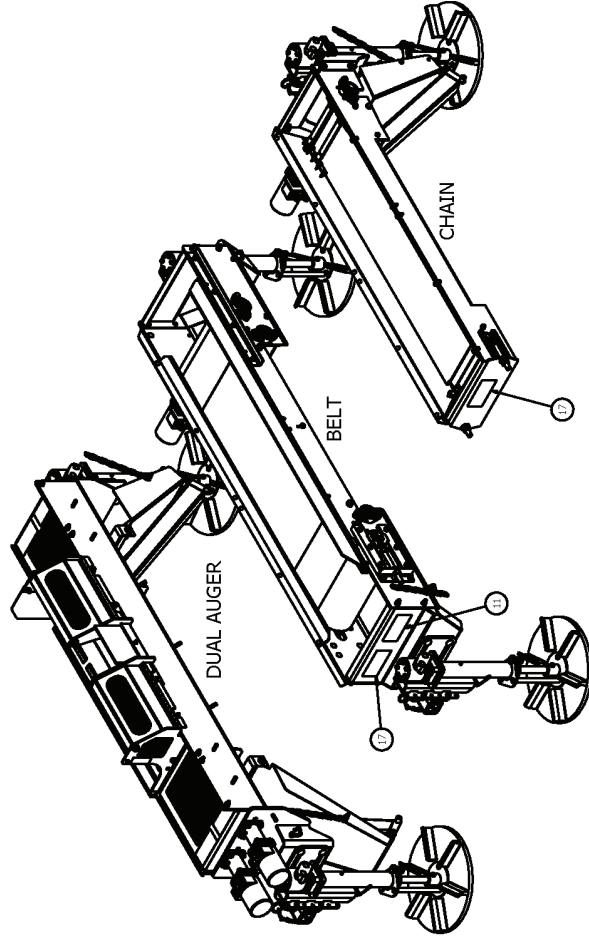
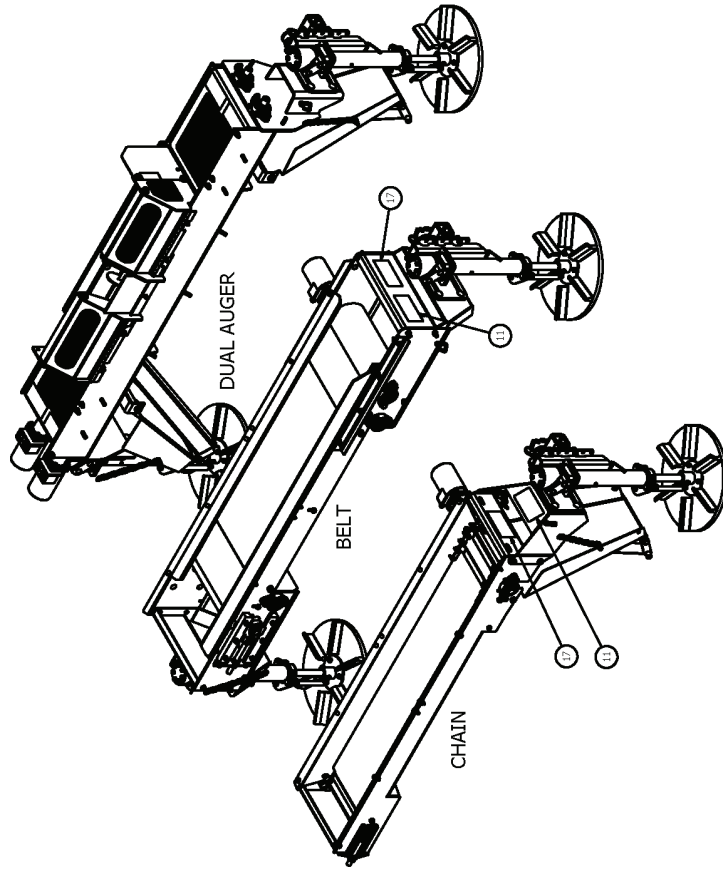
0820109

⚠ WARNING

<p>Hydraulic fluid under pressure can cause serious injury.</p> <p>Relieve system pressure before servicing.</p>

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0820095



Maintenance

Preventive Maintenance Inspection & Lubrication

Proper maintenance of your Proline Combination Spreader is essential for a long service life, as well as ensuring that the equipment performs optimally. The maintenance procedures outlined will aid your Proline Combination Spreader in performance and longevity.



CAUTION: Before any adjustment, service or maintenance is performed on the spreader, ensure to understand and follow all safety rules:

- Keep all shields and guards in place when operating this equipment.
- Adjust and lubricate spreader, only when the power source is off and locked out.
- The drive shafts, conveyor, and spinner assemblies transmit great amounts of power, and are hazardous when in operation. All maintenance, inspections, or operator adjustments must be made with all source power off.
- When the spreader becomes clogged, shut off the power source and lock it out before attempting to clear the blockage.
- Keep hands, feet and clothing away from moving parts and pinch points.

Maintenance Schedule



Adjust



Check/Inspect



Replace



Lubricate






Daily Inspection

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


Initial Maintenance

During the first weeks of use, operating forces may cause hardware to loosen as the new machine is subjected to exceptional forces. Additionally, Hydraulic oils break down quickly and become contaminated as debris from manufacturing processes. Initial maintenance is paramount to the efficient operation and service life of the equipment.

First 20 Hours of Operation

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







First 50 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 SAE80/90EP.




Regular Maintenance

Daily Maintenance





-  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.
 -  Visually Inspect all fasteners. Tighten or replace, if necessary.
 -  Visually inspect all hydraulic connections and hoses for cracks and/or leaks. Rupturing hoses may produce a high-pressure stream of hot hydraulic oil.
 -  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.
 -  Inspect conveyor chains and tailgate locking mechanism. Adjust as required.
 -  Check all conveyor beds for excessive wear or damage.


Clean unit - Empty unit & wash all areas clean of salt and road dirt to prevent corrosion.
 -  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.
-

Weekly Maintenance

-  Grease all required components at the beginning of each season, then once a week.
 - Main conveyor,
 - Cross conveyor
 - Spinner bearings
 - Hoist cylinder mounts
 - Tailgate hinges
 - Dump hinge
-  Check all conveyor chains, chain covers, sprockets, and conveyor beds for excessive wear or damage. Adjust conveyor chains and tailgate locking as required.
-  Oil conveyor chains frequently, with an anti-corrosive lubricant every 5 working days and once monthly off-season.

Monthly Maintenance




-  Check bolt tightness at valve, cab controls, body guides, and drive shaft bearings.
-  Check structural welds at dump hinge, hoist frame and 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 color 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. Re-tighten and/or replace fittings and hoses as required.

Mid-Season Maintenance

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

End of Season Maintenance

-  Inspect sprockets, chains, chain covers, bearings, and shafts for wear or damage.
-  Visually inspect the tensioning rollers annually to ensure they are intact and aligned, allowing the chain to roll smoothly.
-  Check conveyor sprocket teeth for excessive wear annually.

Storage

Remove spinner(s) inspect bearings, couple hoses on spinner and on truck.

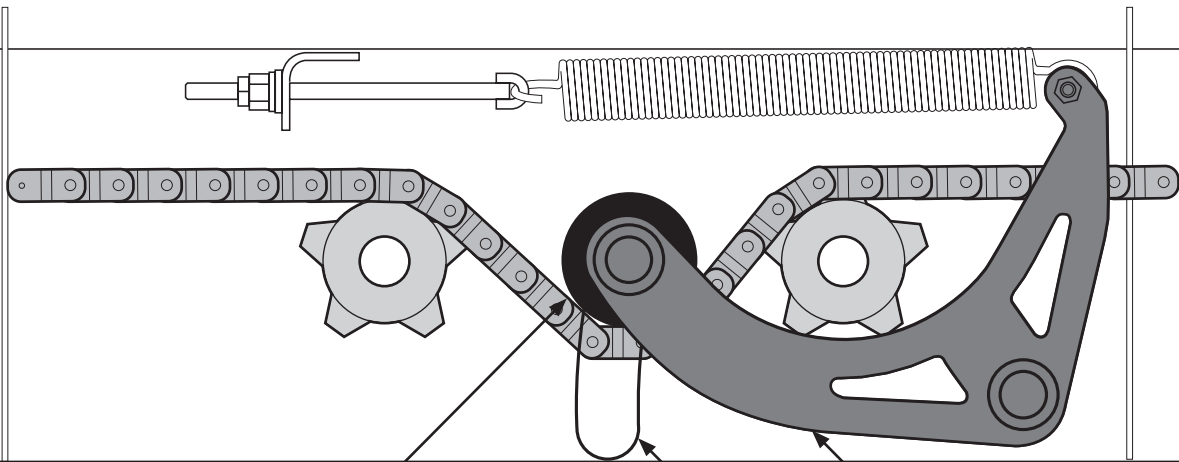
Thoroughly wash down conveyor chains and conveyor beds, and lubricate each.

Empty salt or corrosive materials in the body during the off-season.

Lubricate conveyor and cross conveyor chain with an anti-corrosive lubricant during the off-season.

Auto Tensioning System

The auto-tensioning system in the PLLW-II will maintain proper tension as the chain wears and stretches. A new chain will be set to the top of the tension slot. As the chain wears/stretches, the tension roller will move down the slot. When the chain tensioner is bottomed out, links must be removed to shorten the chain to its original tension.



Tension Roller

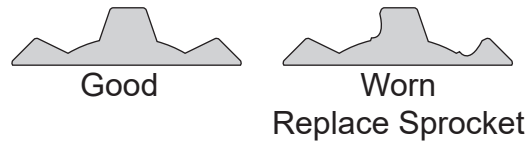
Tension Linkage

Tension Slot

Regular Maintenance

Because a conveyor chain is a wearing part, the service life can be extended of your PLLW-II chain system by following these regular maintenance procedures:

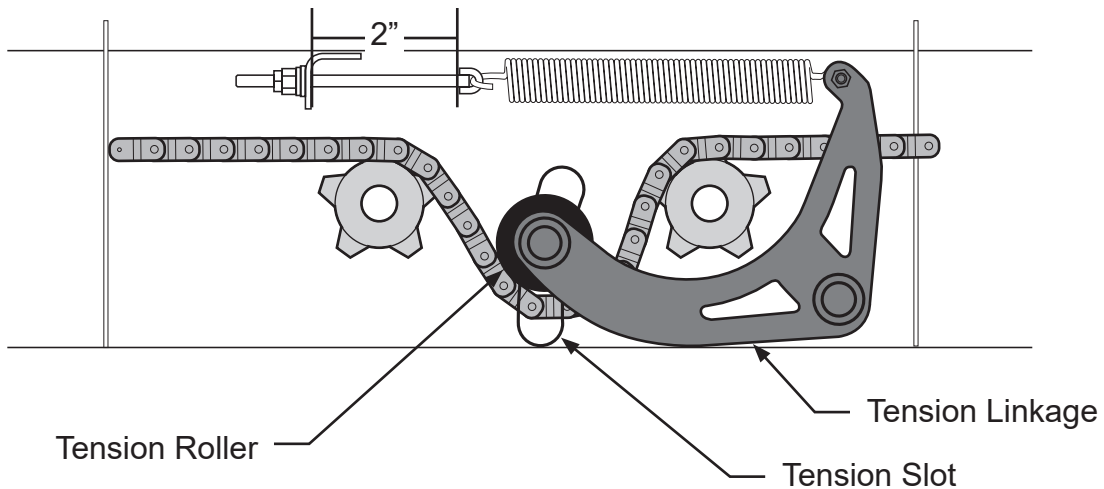
- Never leave salt or corrosive materials in the body during the off-season.
- Lubricate chain with an anti-corrosive lubricant during the off-season.
- Visually inspect the tensioning rollers every year to ensure they are intact and aligned, allowing the chain to roll smoothly.
- Grease pillow bearings using remote grease ports located at front driver side of dump body.
- Check sprocket teeth for excessive wear annually.



Adjustment

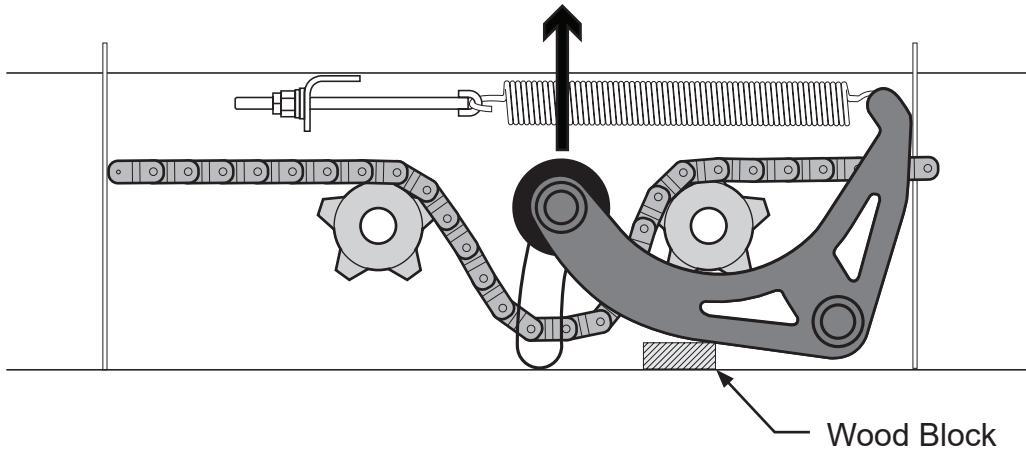
When the roller is at the bottom of the tension slot, it will be necessary to remove some links in the chain, in order to restore the chain to its original length.

To set spring to factory tension, tighten draw rod until a gap of 2" (two inches) remains between draw flange and the eyehole that holds the spring.



To Remove Chain Links

1. Using a pry bar, lift the tensioning linkage high enough to release tension and place a wood block under the tensioning arm to hold the tensioner roller in its highest position.



2. Run the conveyor until the the master link is at the back of the dump body (underneath the conveyor guard).

NOTE: The master pins are the only pins that are held in place by cotter pins. All other pins have formed collars on both ends.



3. At the rear of the body, remove the conveyor guard to gain access to the chain links.

4. Remove the cotter pins, and chain link pins to break the chain. To remove additional links, the formed collar must be ground down and the pin punched out.

5. Once the desired links are removed, replace all chain link pins and cotter pins to complete the chain.

6. Using a pry bar, lift the tensioning linkage and remove the supporting block. and gently lower, slowly easing the chain into tension. Reinstall all guards before testing.

NOTE: Chains are a wearing part. The recommended service life of them is 3 years. If the chain is continually stretched and shortened, it will eventually break, and potentially cause damage to other components on the equipment.



Hydraulic fluid Specifications

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 a minimum 10-micron absolute.

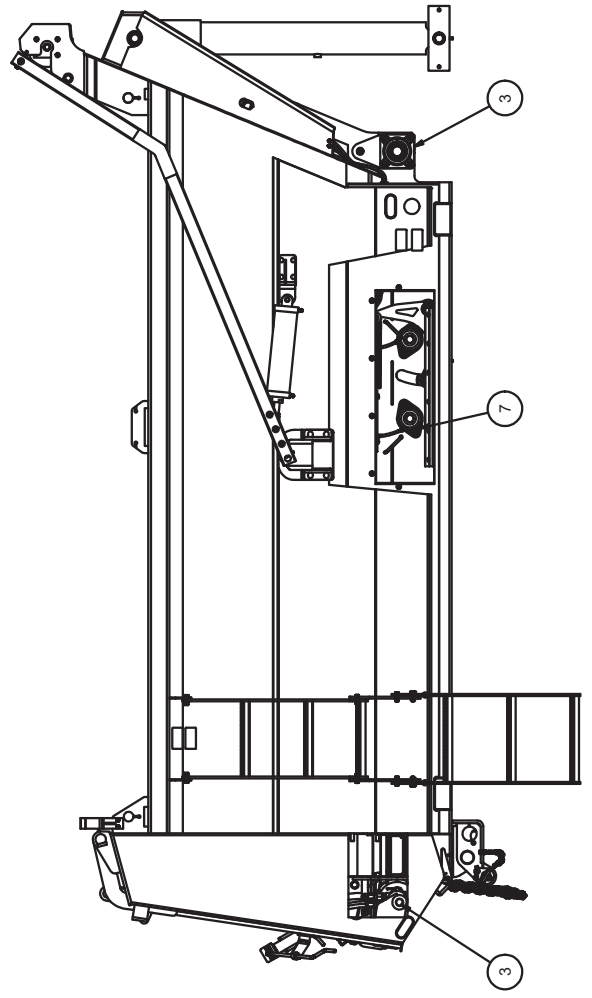
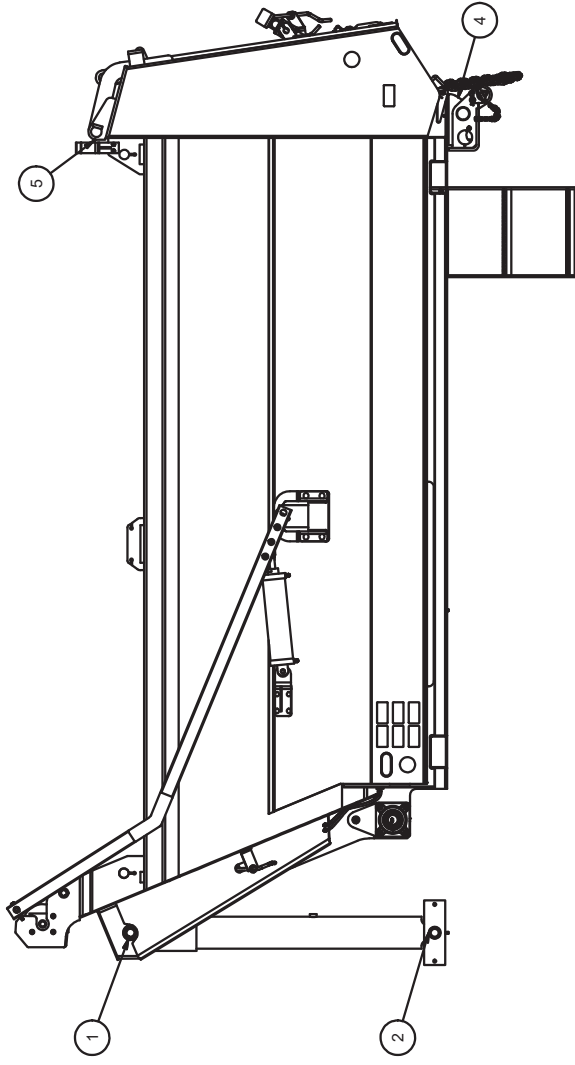
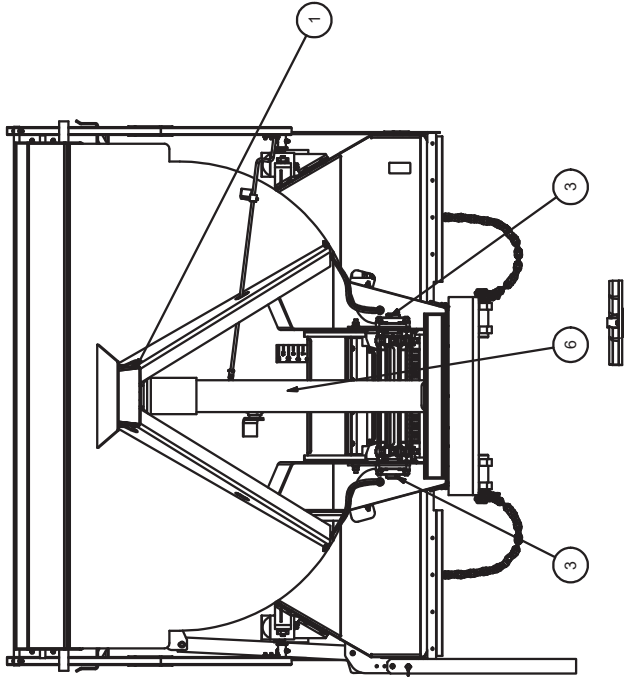
Additionally the use of electronic spreader control systems requires greater filtration and therefore should be equipped with an in-line high-pressure filter and element. Viking-Cives Group recommends changing filter elements more frequently at three (3) month intervals.

VCL Item Number	Description
0560010	Inline High Pressure Filter Element 10 Micron – STAUFF
0560004	Inline High Pressure Filter Element 10 Micron – PARKER
0560031	Inline High Pressure Filter Element 10 Micron – MP FILTRI
0560009	Return Manifold Filter Element 10 Micron

Location	Fluid Type	Required Capacity
Planetary Gearbox	SAE 80/90EP Gear oil (antifoaming)	1 Liter (2 1/4 pints US).
Hydraulic System	Petro-Canada HVI 36	Varies Per Truck System*

*Hydraulic fluid capacity can vary by the number and type of accessories on the equipment. To ensure that proper fluid levels are maintained, regularly check the oil level indicator located on the rear tower oil tank.

***VIKING GIVES**





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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

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.

Dump Body Operation

All operators should familiarize themselves with all equipment prior to operation. The in cab controls are placed at a comfortable reach of the operator and are clearly marked as to the equipment/function they control.

1. With the engine running, pull the dump raise lever in the cab back toward the rear of the unit.
2. If dumping a load, the air operated tailgate release valve should be pulled to the open position to operate tailgate release mechanism. This must be done before raising the body.
3. To lower body, push the dump lever forward.
4. To stop and hold dump body in any position while raising or lowering the unit, release the lever and it will automatically center itself in a neutral position.

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 (Manual Spreader System)

1. The sander valve is located to the right of the driver's seat. To operate the conveyor chain and spinner, raise the lever with the round black knob to the on position. Both spinner and conveyor will begin to move. The two knobs on top of the valve block control the speed of the conveyor and spinner.
Warning: Do not use flow knobs to shut off hydraulic flow, this would cause oil to blow past the relief valve, causing excessive heat.
2. To stop sander operation, push the lever with black knob down.
3. One method of controlling the discharge rate is with the control gate. Each unit is equipped with a manually operated gate that is operated by hand crank.

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.

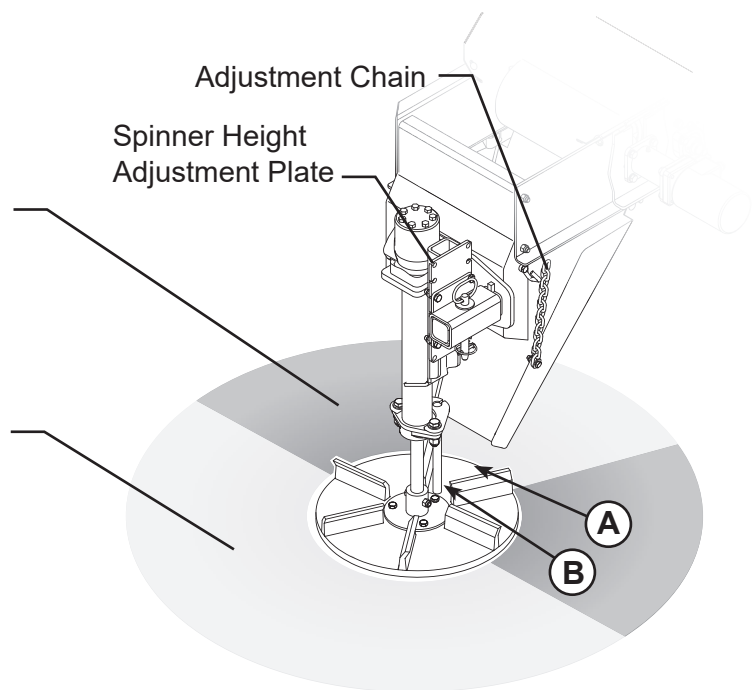
A. Outer Disc: Material placed nearer to the outer edge of the disc, will discharge towards the underside of the truck in either a forward or rearward direction (depending on the rotation direction of the disc).

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.



Vehicle Lockout Procedure

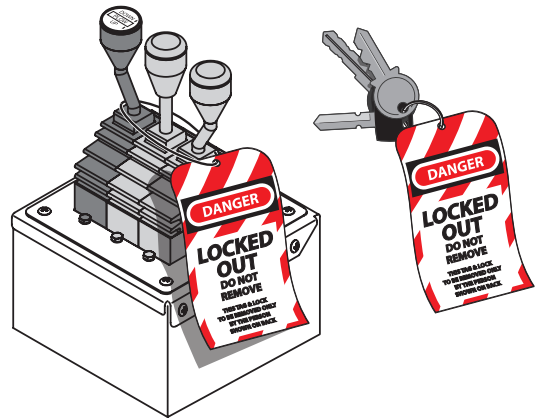
Vehicle lockout procedures are essential in protecting workers while performing maintenance or repairs to the vehicle and its equipment. The purpose of the Lockout Procedure is to recognize, isolate and neutralize all potential sources of energy (electrical, hydraulic or kinetic) and render the equipment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



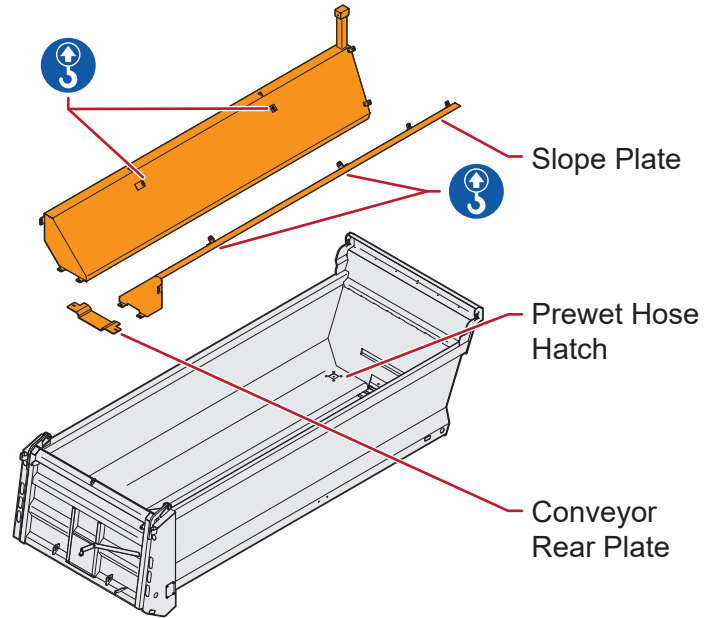
WARNING: When relieving hydraulic and pneumatic pressure, some component movement may occur. Exercise extreme caution when working on pneumatic or hydraulic systems, and keep all bystanders clear while relieving pressure.

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.

Winter Component Installation

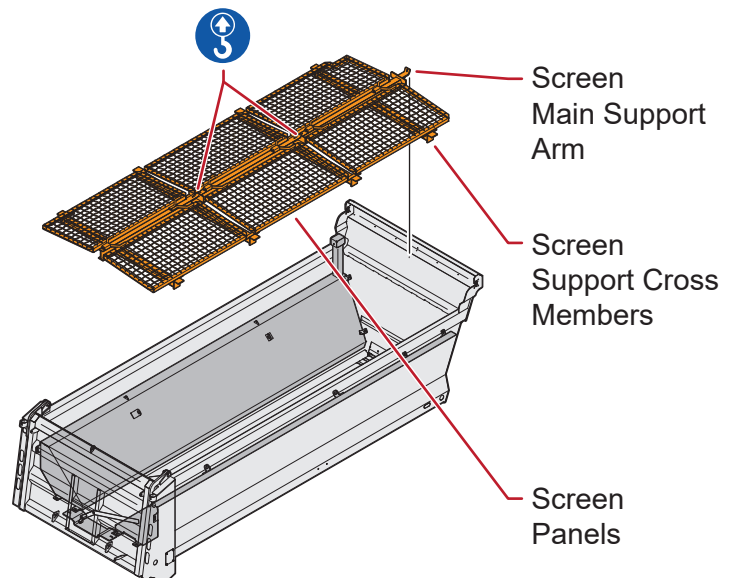
1. Tank Installation

- A. Remove the Prewet Hose Hatch.
 - B. Attach lifting hooks to the the **liquid tanks/slope plates** and lower them into the body.
- NOTE:** Ensure that the tank vent is oriented to the front of the body.
- The PLFF Body can be outfitted with two tanks, two slope plates, or one tank and slope plate. Before mouting the tanks/slope plates, note where the front mounting flanges are and where the rear flanges are.
- C. When the tank is in the propoper position, the fittings will be aligned with the **Prewet Hose Hatch**.
 - D. Once the tanks/slope plates are in position, fasten them to the body at the front and rear with carriage bolts at the mounting flanges.
 - E. Install the **Conveyor Rear Plate** at the rear of the body, fasten with carriage bolts.



2. Screen Installation

- A. Attach lifting hooks to the screen support assembly.
- B. Lift and lower the screen onto the top of the body. While Lowering the screen assembly, ensure that the **Screen Support Cross Members** are resting on the top tube of the sides.
- C. Secure the **Screen Main Support Arm** to the headboard with a carriage bolt.



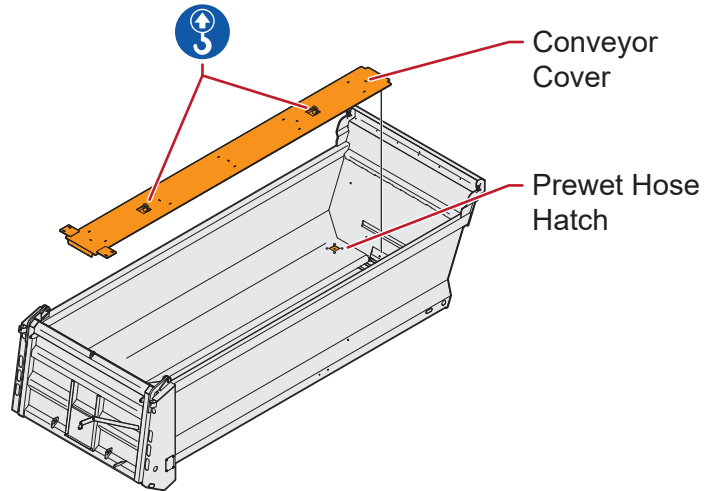
3. Plumbing Installation

Attach the prewet plumbing kit to the tank where the tank Fitting protrudes out of the bottom of the **Prewet Hose Hatch**.

Summer Component Installation

1. Conveyor Cover Installation

- A.** Remove the **Screen Assembly, Liquid Tanks/Slope Plates, and Conveyor Rear Plate.** Set them down on a firm and level surface that is out of the way, during the summer season.
- B.** Re-install the **Prewet Hose Hatch** to seal the floor of the body.
- C.** Lift and lower the **Conveyor Cover** into the body, and place it over the conveyor. Fasten the cover at the rear of body with carriage bolts.
- D.** Close the front material discharge gate at the front of the body.

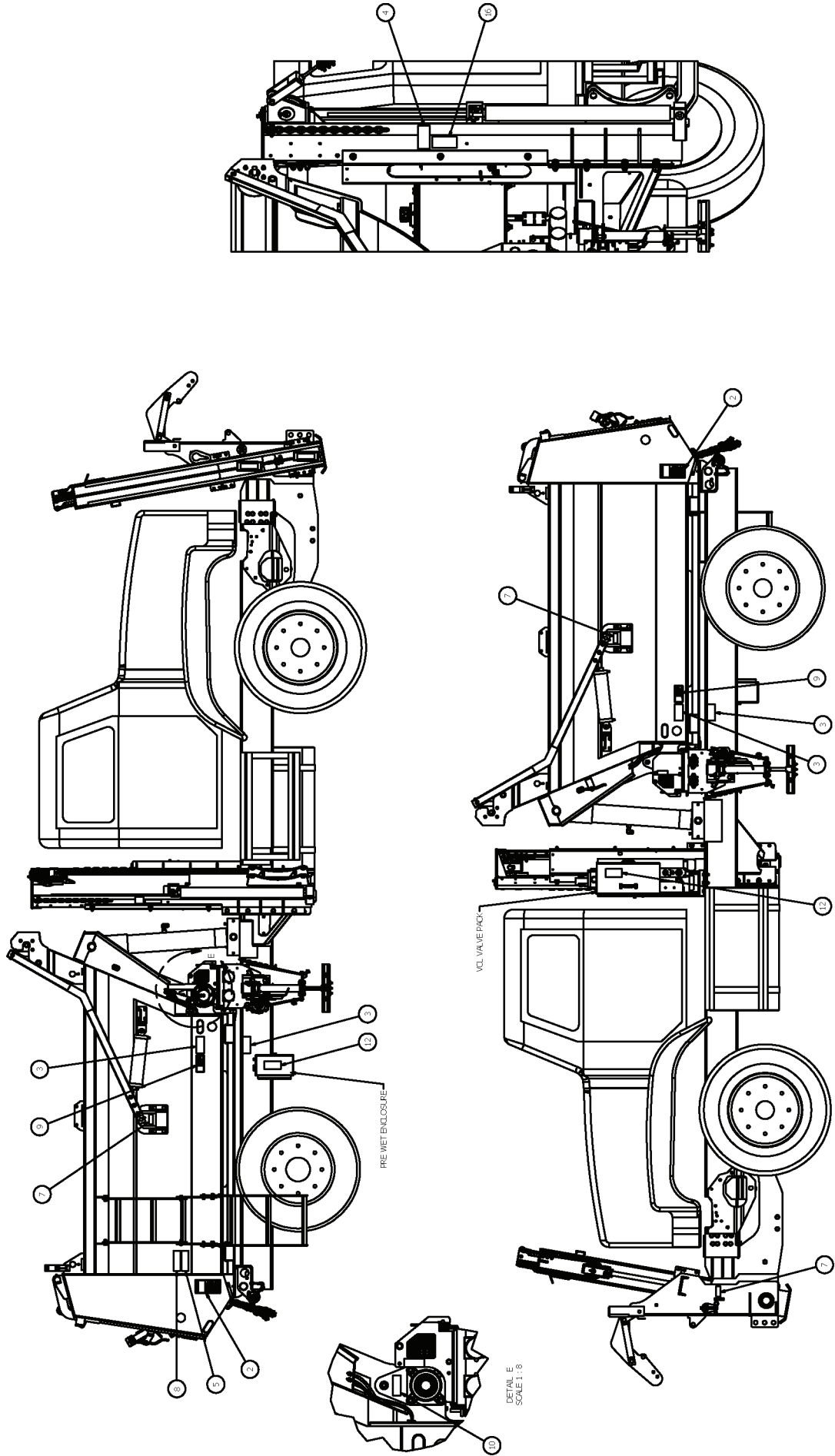




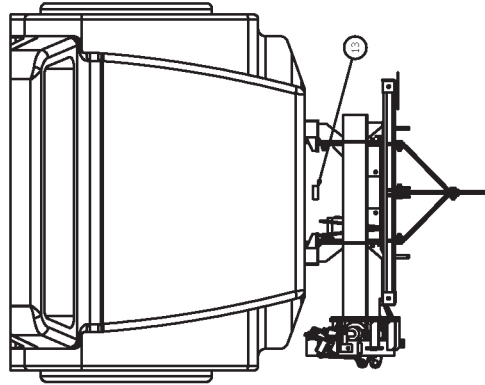
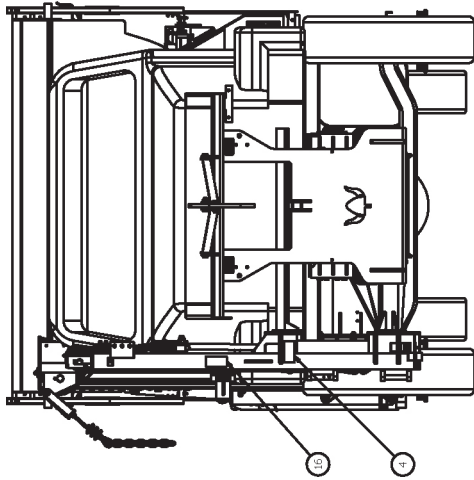
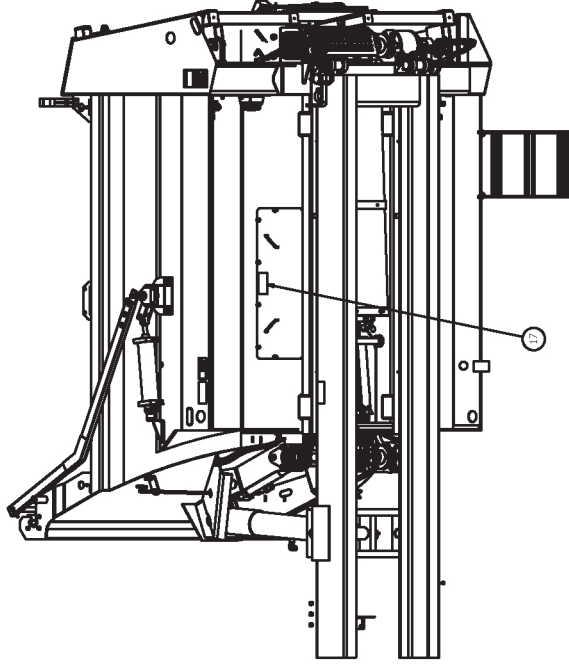
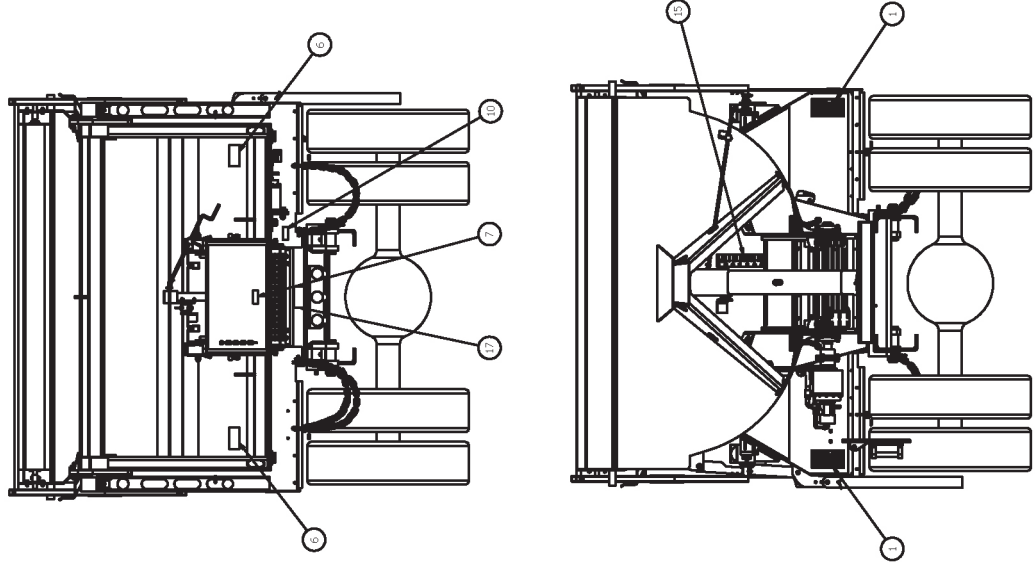
Proline Safety Decal Kit - ANSI Z535.3 0820112

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15	0820052	DECAL GATE DOOR HEIGHT	1
16	0820109	DECAL WARNING WING POST	2
17	0820092	DECAL WARNING CHAIN	3

***VIKING GIVES**



***VIKING GIVES**



Body Prop Safety Precautions



DANGER: When servicing the area under the raised body, ensure the following:

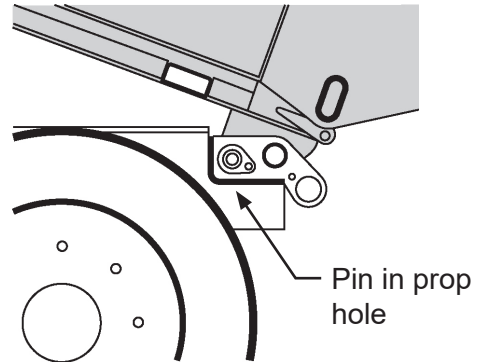
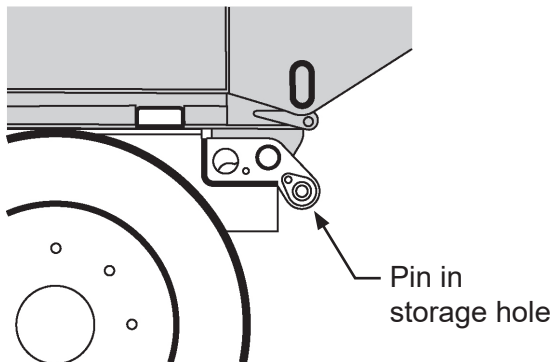
- Truck is on solid, level ground.
- The dump body is completely emptied of all material (salt, gravel, asphalt, etc...)
- The liquid tanks are completely empty.
- Raised body is supported by the safety prop pins in the upright position.
- Hoist control lever is in the neutral position.
- PTO is disengaged and the unit is in lockout.

NEVER attempt service under the raised dump body alone, failure to do so will result in serious injury or death.

Raising Dump Body & Supporting With Prop Pins

To raise and secure dump body, follow these steps:

1. Raise dump body to 30°-40° (degrees), and place hoist valve in neutral (hold) position.
2. Remove body prop pins from storage location and insert into holes located on each side in front of dump hinge.
3. Before lowering dump hinge reinstall hairpin locking body pins in place.
4. Lower body slowly until profiled hinge block contacts the prop pins.



To remove Prop Pins:

1. Raise the dump body sufficiently to take load off of the prop pins, and place hoist control valve in neutral (hold) position.
 2. Remove pins from prop holes on both sides and return to storage location provided. Before lowering body be sure that area below box is completely clear.
 3. Lower body to rest on chassis frame rails.
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