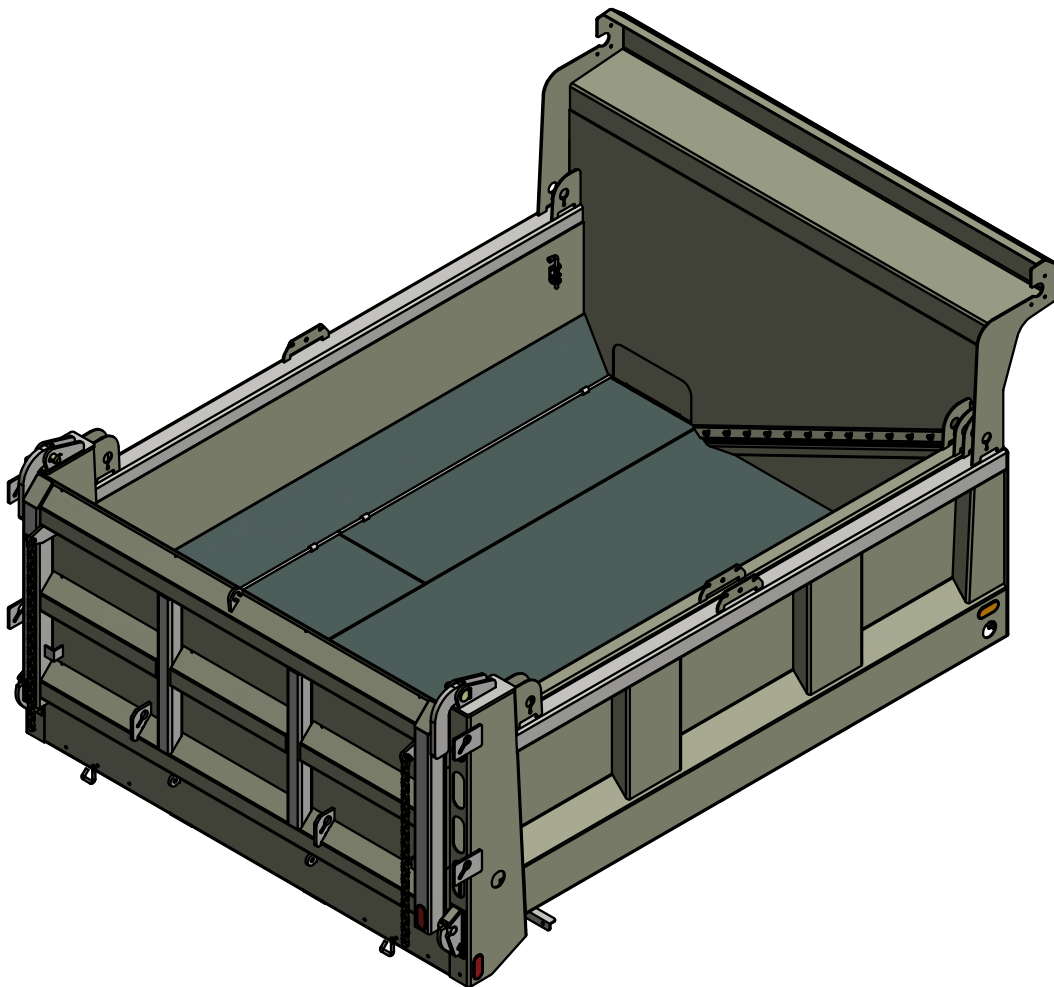




OWNER'S MANUAL
PROLINE SIDE DUMP (PLSD)



EQUIPMENT MAY NOT BE EXACTLY AS SHOWN. SOME COMPONENTS MAY BE OPTIONAL.
TO MAINTAIN OUR ON-GOING PRODUCT DEVELOPMENT AND IMPROVEMENT PROGRAM, VIKING-CIVES LTD. RESERVES THE RIGHT TO CHANGE EQUIPMENT & SPECIFICATION WITHOUT NOTICE.



PRO-LINE COMBINATION SPREADER MODEL CODES

All **Pro-Line Combination Spreaders** have an associated model code, which identifies the style, type and length of body. The model codes used to describe a **Pro-Line Combination Spreader** can be broken down as follows: the first two letters identify the Pro-Line product, the next four numbers identify the length of the body, while the remaining characters indicate the body style & type. A typical model code is as follows: PL1415LW. Below is a partial list of some of the different types of **Pro-Line Combination Spreaders** available. PL1415HW; PL1415LW; PL1415LW-II; PL1415LW-II FRT-DI; PL1415LW-II RR-DI; PL1415SD

Some examples of the terminology used to describe the different types of **Pro-Line Combination Spreaders** are as follows:

PL – Pro-Line

1011, 1112, 1314, 1415 – The Length of the Body (approximate inside/outside length)

HW – Heavy Weight Body; LW – Light Weight Body, VW - Value Weight Body, SD - Side Dump Body

FRT-DI – Front Discharge; RR-DI – Rear Discharge; BI-DI – Bi-directional Discharge

II – Pro-Line Body (Second Generation)

SSTL – Stainless Steel Body; HTEN – High Tensile Body; ALUM – Aluminum Body

CAPACITY OF PRO-LINE PLSD COMBINATION SPREADER

The Pro-Line Combination Spreader has been designed to handle a wide range of material for spreading needs. Some of the materials commonly used in a Pro-Line Combination Spreader include:

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

Approximate Capacity of Pro-Line Side Dump Spreaders

BODY LENGTH	WATER LEVEL CAPACITY	CAPACITY WITH 10 INCH SIDEBOARDS	SIDE HEIGHT	INSIDE OVERALL LENGTH
PL1011SD	6.2 cu. yd	8.4 cu. yd	30"	120"
PL1213SD	10.2 cu. yd	14.2 cu. yd	40"	144"
PL1314SD	11.1 cu. yd	15.4 cu. yd	40"	156"
PL1415SD	12.0 cu. yd	16.6 cu. yd	40"	168"



BODY PROP SAFETY PRECAUTIONS

DANGER

When the body is in an elevated or raised position, including when any repairs or adjustments are made, the unit must have its safety prop set or be blocked securely, so that the body cannot fall on anyone. In addition, the body must be on solid level ground and fully unloaded prior to using the body prop. The hoist control lever must be in the neutral position, with the PTO disengaged, and the unit in lockout. **Failure to do so may result in severe injury or death.**

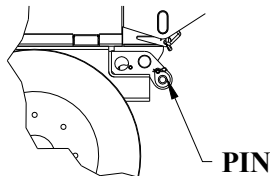
Use of Body Safety Prop:

To use pin type prop:

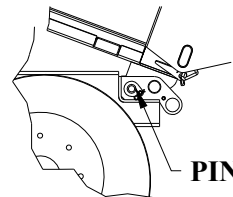
1. Remove body prop pins from storage location.
2. Raise body 30 to 40 degrees at a height above the top of the safety prop.
3. Place hoist control valve in neutral (hold) position.
4. Insert the body prop pins into the holes located on each side in front of dump hinge.
5. Before lowering the dump hinge, reinstall the hairpin locking body pins in place.
6. Lower the body slowly until the profiled hinge block contacts the prop pins.
7. Visually verify that the pin is located properly.

To remove pin type prop:

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



BODY PROP PIN STORED



BODY PROP PIN INSTALLED

CAUTION

**COMPLETELY UNLOAD BODY PRIOR TO USING BODY PROP PINS.
BODY PROP REQUIRED WHEN WORKING UNDER THIS UNIT.
ALWAYS USE BOTH BODY PROP PINS.**



Alternate Blocking Method:

To use:

1. Railway tie or piece of wood approximately 6" X 6" X 5 ft. to lay across frame rails just ahead of dump hinge and extend approximately 1 ft. past the outside of each frame rail.
2. Place two, 4" X 4" blocks approximately 5 ft long between tandem tires and block securely against body underside.

Use of Side Tip Safety Prop (Body Mounted):

To use:

1. Raise the side tip to a height slightly above the top of the safety prop.
2. Raise the safety prop using the round bar handle. **DO NOT GO UNDER THE RAISED BODY.**
3. Lower the side tip allowing the safety prop to locate in the female socket located on the underside of the floor
4. Visually verify that the safety arm is located properly. **Note: If for any reason the safety prop cannot be used the body must be blocked by other methods to ensure safety.**

To store away:

1. Lift the side tip slightly above the top of the safety prop.
2. Lower the safety prop
3. Lower the side tip down.



0820112-SD

DECAL KIT PROLINE SAFETY ANSI Z535.3

SAFETY PRECAUTIONS DECALS AND MESSAGES

Before you start operating your **Proline Side Dump**, familiarize yourself with the following safety precautions. The following illustrations show the Viking-Cives Group caution and warning 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

Diagram illustrating the installation of the pin type body prop. The diagram shows a side view of the dump body hinge area. A prop pin is shown in two positions: 'STORED' (retracted) and 'INSTALLED' (extended and locked).

COMPLETELY UNLOAD BODY 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



0820112: DECAL KIT PROLINE SAFETY ANSI Z535.3



0820097



0820093



0820098



0820101



0820108



0820096



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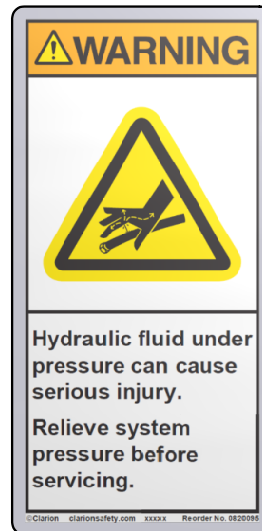
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0820112: DECAL KIT PROLINE SAFETY ANSI Z535.3



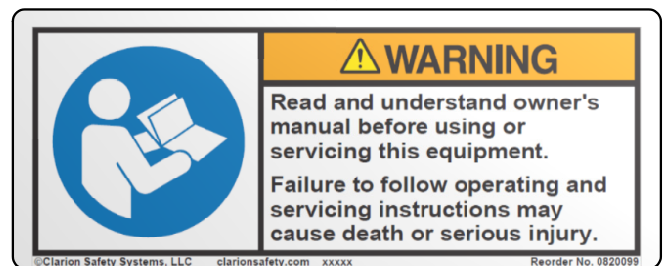
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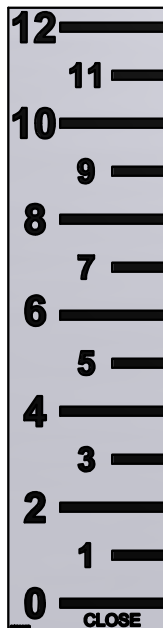
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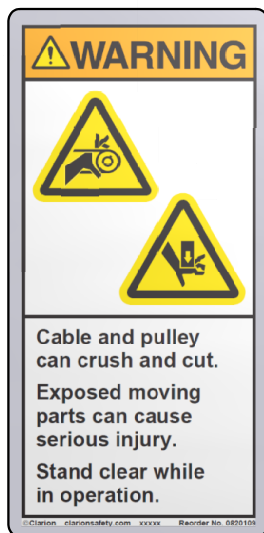
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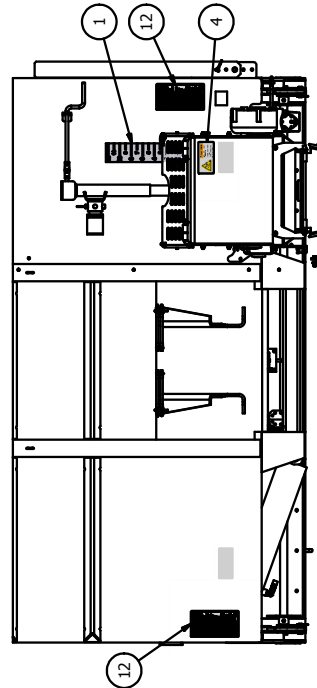
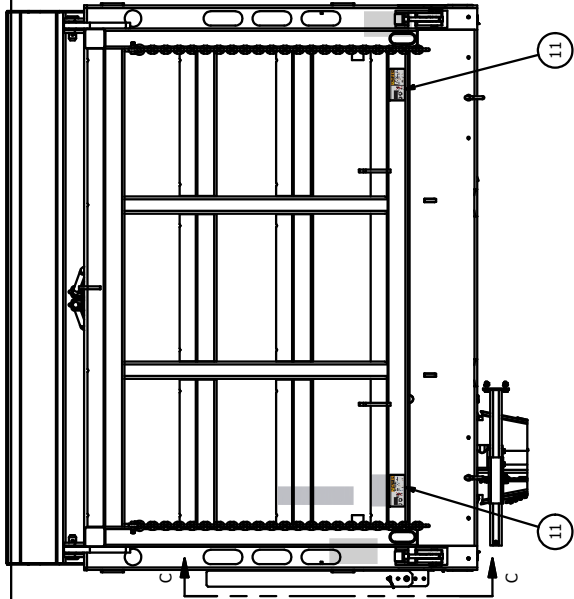
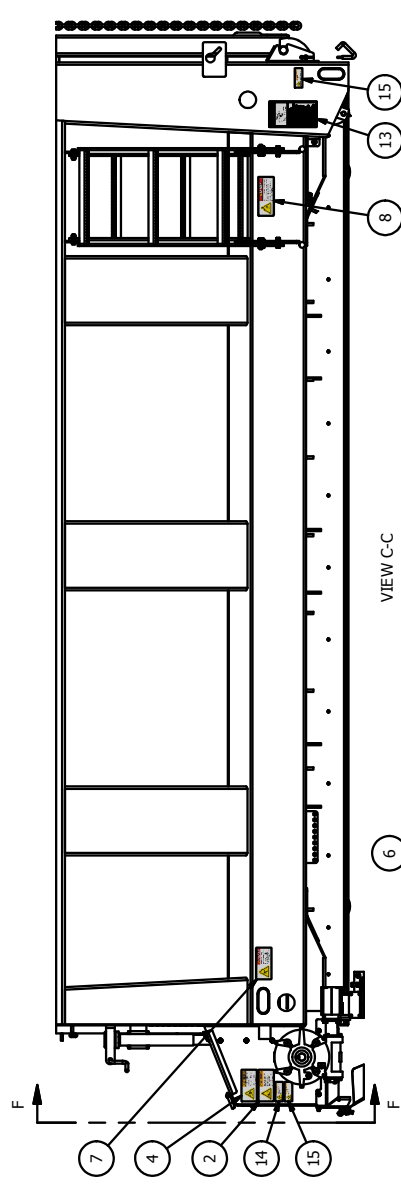
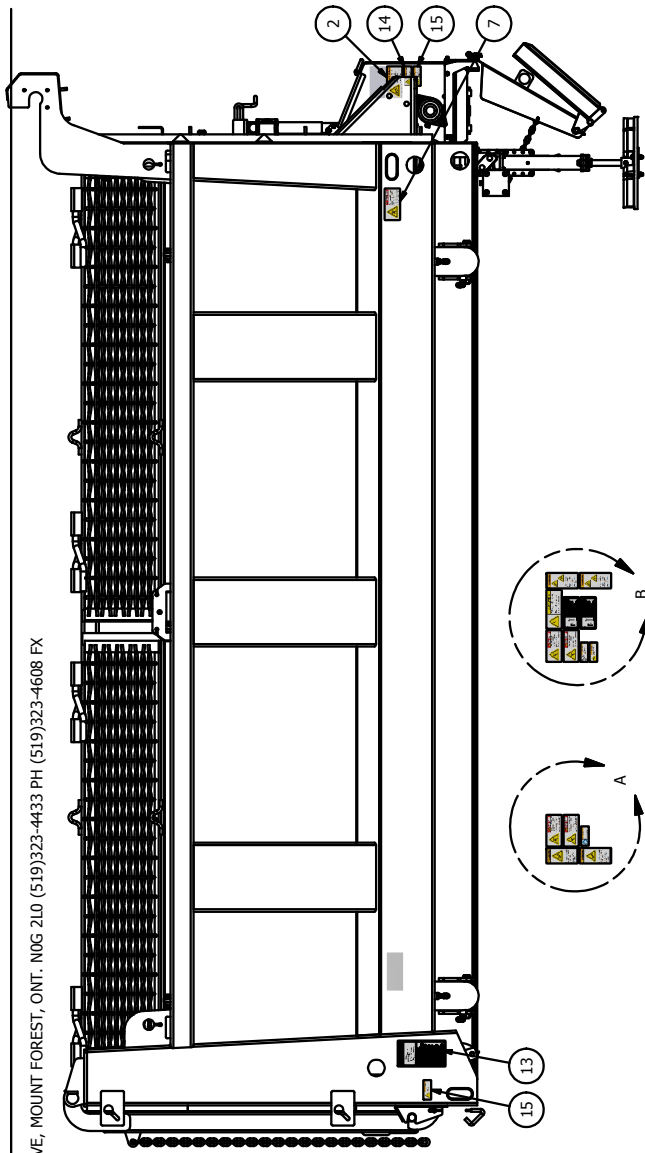


0820112-SD: DECAL KIT PROLINE SAFETY ANSI Z535.3

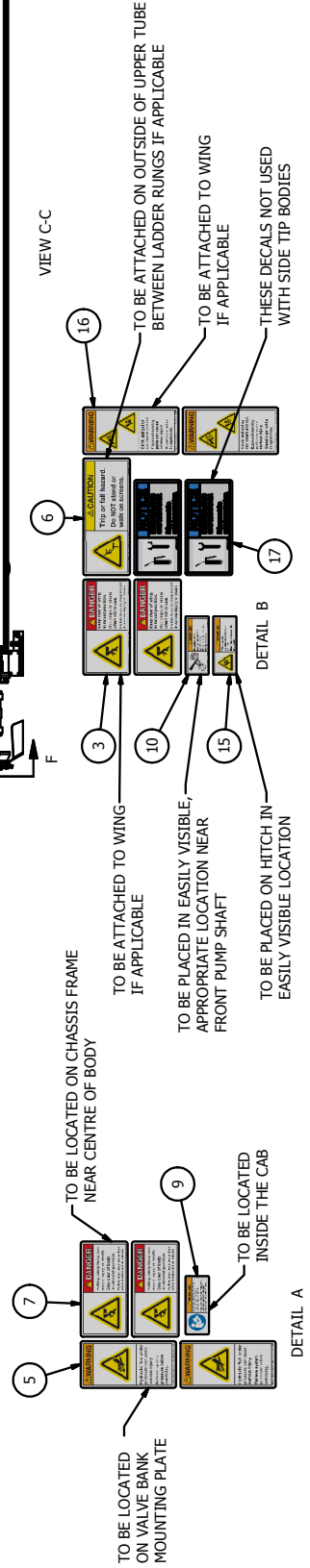
ITEM ID	ITEM NO	DESCRIPTION	QTY REQ
1	0820052	DECAL GATE DOOR HEIGHT	1
2	0820092	DECAL WARNING CHAIN	3
3	0820093	DECAL DANGER WING	2
4	0820094	DECAL CAUTION SPINNER	2
5	0820095	DECAL WARNING HYD PRESSURE	2
6	0820096	DECAL CAUTION SCREENS	1
7	0820097	DECAL DANGER FALLING BODY	4
8	0820098	DECAL DANGER ENTER BODY	1
9	0820099	DECAL WARNING READ MANUAL	1
10	0820100	DECAL WARNING ROTATING SHAFT	1
11	0820101	DECAL CAUTION BEHIND TRUCK	2
12	0820102	DECAL SAFETY INFO PROLINE	2
13	0820103	DECAL SAFETY INSTRUCT PROPS	2
14	0820107	DECAL WARNING ROTATING SHAFT	2
15	0820108	DECAL WARNING PINCH POINT	5
16	0820109	DECAL WARNING WING POST	2
17	0820116	DECAL NOTICE MAINTENANCE ACCESS	2

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BOX 1120, NORPARK DRIVE, MOUNT FOREST, ONT. N0G 2L0 (519)323-4433 PH (519)323-4608 FX



VIEW F-F
SCALE .06



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PREVENTIVE MAINTENANCE INSPECTION & LUBRICATION

The following sections will guide you in the proper maintenance procedures for your **Pro-Line Side Dump Body**. It is important that all applicable maintenance procedures be followed to get the maximum amount of use from the combination spreader.

CAUTION: Before any adjustment or lubrication work is performed on the spreader make sure to understand and follow all safety rules.

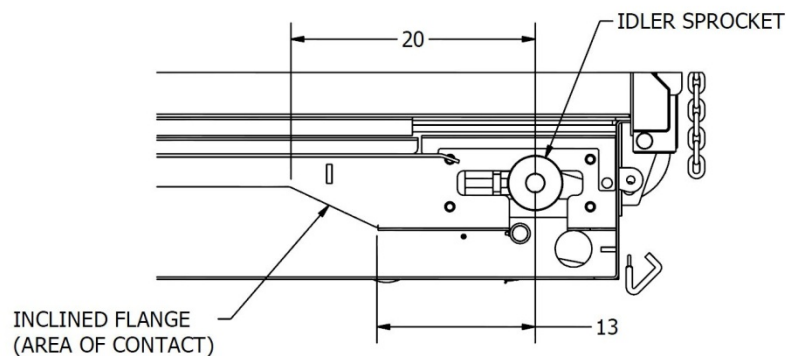
- Keep all shields and guards in place when operating this equipment.
- Adjust and lubricate spreader only when the power source is off and locked out.
- The drive shafts, conveyor, and spinner assemblies transmit great amounts of power, and accordingly, are hazardous when in operation. All maintenance, inspections, or operator adjustments must be made with all power sources 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.

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

1. 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.
2. Grease all required components: beginning of each season, then once a week. Grease all main conveyor, cross conveyor and spinner bearings. Grease hoist cylinder mounting, tailgate hinges, dump hinge, and chain adjustment screws.
3. Check all components for loose and/or missing fasteners, if required tighten and/or replace.
4. Visually inspect all hydraulic connections and hoses for cracks and/or leaks. Rupturing hoses may produce a high-pressure stream of hot hydraulic oil.
5. Check all conveyor chains, chain covers, sprockets, and conveyor beds for excessive wear or damage.
6. Adjust conveyor chains and tailgate locking as required.
7. Oil conveyor chains frequently, at least every 5 working days and once monthly off-season.
8. 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.
9. Main Conveyor Drive System: The main conveyor drive assembly of the Pro-line Combination Spreader, consisting of a high torque low speed hydraulic motor coupled to a 25:1 gearbox is designed to operate trouble free under normal spreading conditions.

10. Chain Tension:

- The importance of proper chain tension cannot be overemphasized. When the chain goes out of adjustment, excessive and rapid chain wear will result. Drag chain slack should be checked periodically and taken up until the distance between centerline of idler sprocket and where chain contacts lower flange is approximately 13 to 18 inches. This should be somewhere along the inclined face of the flange. If the chain only touches at the top of the inclined flange and has little to no slack (less than 1/2 inch of play), the chain is too tight and should be loosened.



- 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 underside 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 underside. New chains will stretch in the first month of operation and therefore require greater attention to proper adjustment during this break-in period.
11. Another recommended conveyor maintenance procedure is to thoroughly clean out the spreader and the longitudinal chain return area after each use. All the sand and salt that accumulates during normal operation should be flushed out. Keeping this area as clean as possible will help to reduce the chance of conveyor damage and prolong the service life of the unit. **(Note: Be sure to keep all hands and feet clear of the moving chain at all times and always follow all safety rules.)**



PLSD - MAINTENANCE SCHEDULE

AFTER FIRST 20 HOURS OF OPERATION

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

AFTER FIRST 50 AND 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 SAE80/90EP.

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 and tailgate locking mechanism as required.
- Check all conveyor beds for excessive wear or damage.
- Clean 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.
- 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.

WEEKLY MAINTENANCE

- As part of an on-going preventive maintenance program your Pro-Line Combination Spreader should be regularly lubricated. The following list indicates both the location and number of lubrication points for a Side Dump Body. Additional lubrication points may exist on your particular unit. Please consult Viking-Cives and/or nearest authorized dealer for specific lubrication diagrams.
 - **Hoist Cylinder:** Total number of grease fittings: four
 - a. Hoist base pivot blocks (2)
 - b. Bottom mounting pin (2)
 - **Main Body Assembly:** Total number of grease fittings: twenty-four
 - a. Main conveyor drive shaft bearing (1)
 - b. Main conveyor idle shaft bearings (2)
 - c. Main conveyor grease tensioner cylinders (2)
 - d. Tipper hinge tubes (6)
 - e. Tipper cylinders (4)
 - f. Front gate screw jack (1)
 - g. Tailgate hinge pins (2)
 - h. Tailgate shaft bushings (4)
 - i. Dump hinge pins (2)
 - **Spinner Assembly:** Total number of grease fittings: two
 - a. Lower bearing (1)
 - b. Spinner shaft tube (1)



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. Retighten and/or replace fittings and hoses as required.

SEMI-ANNUAL/ SIX-MONTH 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

- Remove spinner, 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 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.

FILTER PARTS

<u>VCL ITEM NUMBER</u>	<u>DESCRIPTION</u>
0560011	Inline High Pressure Filter Assembly - STAUFF
0560032	Inline High Pressure Filter Assembly - MP FILTRI
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

LUBRICANTS

<u>LOCATION</u>	<u>FLUID TYPE</u>	<u>CAPACITY REQUIRED</u>
Gearbox	SAE 80/90EP Gear oil (antifoaming)	Capacity 1 Liter (2 1/4 pints US).
Hydraulic system	Petro-Canada HVI 36	Capacity Varies Per Truck System.



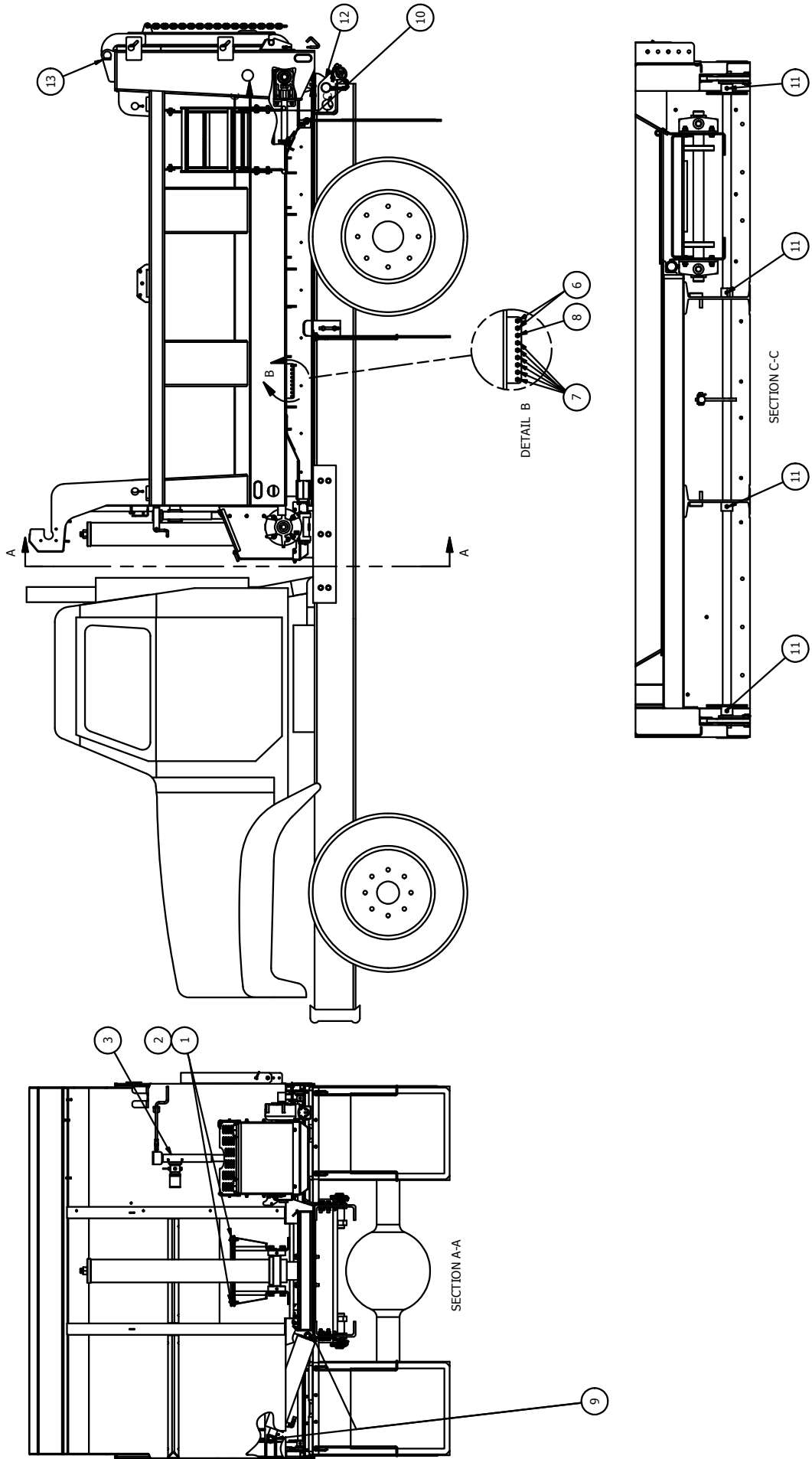
LUBRICATION POINTS : PLSD

ITEM ID	DESCRIPTION	QTY REQ
1	HOIST BASE PIVOT BLOCKS	2
2	HOIST BOTTOM MOUNTING PIN	2
3	FRONT GATE SCREW JACK	1
4	SPINNER SHAFT TUBE	1
5	SPINNER LOWER BEARING	1
6	MAIN CONVEYOR IDLER SHAFT BEARINGS	2
7	TIPPER HINGE TUBES	6
8	MAIN CONVEYOR DRIVE SHAFT BEARING	1
9	TIPPER CYLINDERS	4
10	MAIN CONVEYOR GREASE TENSIONERS	2
11	TAILGATE SHAFT BUSHINGS	4
12	DUMP HINGE PINS	2
13	TAILGATE HINGE PINS	2

7



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OPERATING INSTRUCTIONS

1. **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.
2. **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 your nearest authorized dealer.
3. **The operator should familiarize himself 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.
4. **Dump Body Operation.**
 - a. With the engine running, pull the dump raise lever in the cab back toward the rear of the unit.
 - b. 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.**
 - c. To lower body, push the dump lever forward.
 - d. 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.
 - e. Whenever the body is in a raised position, the "body raised" indicator light located on the dash will be illuminated. This light will not go out until the body is in the fully down position.
5. **Sander Operation (Manual Spreader System)**
 - a. 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 and causing excessive heat.
 - b. To stop sander operation, push the lever with black knob down.
 - c. One method of controlling the discharge rate is with the control gate. Each unit is equipped with a manual hand crank or hydraulically operated gate.
 - d. The spinner chute can be adjusted to locate sand in any location on the spinner. By relocating four bolts the spinner disc height can be adjusted between 9" to 12" off the ground. Optional salt chutes can be purchased for locating a salt ribbon.
6. **Sander Operation (Automated Spreader System).**
 - a. 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. For detailed operating instructions, refer to the "Owner's Manual" supplied with automated control unit.
7. **Side Tip Operation**
 - a. **Do not operate the side tip when the body is lifted.**
 - b. To lift the side tip in the body, move the lever in the cab to the lift/raise position. This should be done when material application slows to allow more material onto the belt.
 - c. To lower the side tip in the body after the body is emptied, move the lever in the cab to the lower position. Release the lever when the tipping frame is fully lowered.
 - d. Be sure not to extend or retract the cylinders beyond the limits of the cylinder.

Dumping Operation



DANGER: Dumping operations can be extremely dangerous. Always ensure that you follow the proper safety precautions and exercise common sense when dumping loads. Failure to do so may result in damage to the equipment, severe injury, or death.



DANGER: DO NOT dump on uneven, unstable ground.



WARNING: Prior to dumping, ensure that the tailgate claws have been released.

ALWAYS ensure that the vehicle is parked on a stable and level surface.

NEVER attempt to raise dump body if the surface grade exceeds 6 degrees. Raising a load on an uneven surface can cause the vehicle to tip.

NEVER attempt to raise a load on excessively muddy or moist surfaces.

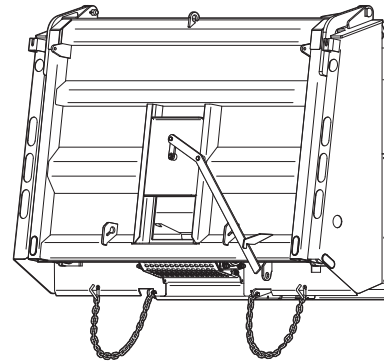
NEVER transport the vehicle with a disproportionately rearward load. Uneven loads that collect at the tailgate can alter the vehicle's weight distribution and affect the handling and stability of the vehicle when in motion.



DANGER: Always stay clear of overhead structures and power lines.

ALWAYS ensure that there are no power lines or overhead structures that can interfere with the dump body while it is being raised.

NEVER raise dump body under power lines. Fallen power lines can cause severe injury or death to operators and bystanders, and can leave large areas without power for long periods of time.



NEVER attempt to dump through the coal door by raising the dump body as it can cause the load to shift to the rear of the truck. It is only to be used to discharge material out the rear when the body is down using the conveyor.

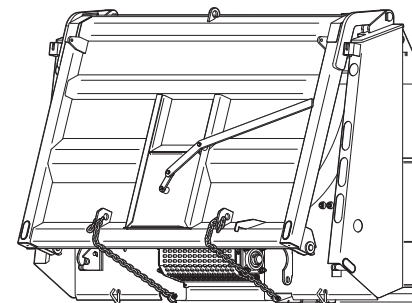


WARNING: Clear all bystanders to a safe distance when dumping

ALWAYS ensure that the area is clear of bystanders. Clear discharge area (rear and the sides of the vehicle) of all bystanders.

ALWAYS ensure that all bystanders are visible to the operator while dumping.

IT IS THE OPERATOR'S RESPONSIBILITY to make note of and be aware of all bystanders.



If you are planning to use the spreader chains, fasten them to the appropriate length using the chains and mounting brackets. Set the chains at an equal length.

Tailgate Removal



DANGER: Always observe and follow safe work procedures when lifting heavy objects. Ensure that all bystanders are at a safe distance, and that all necessary lock out and safety precautions are followed.

1. Park the vehicle on a stable and level surface, engage the parking brake, chock the wheels and lock out the machine.
2. Place a strap, chain or cable through the center lifting eye.



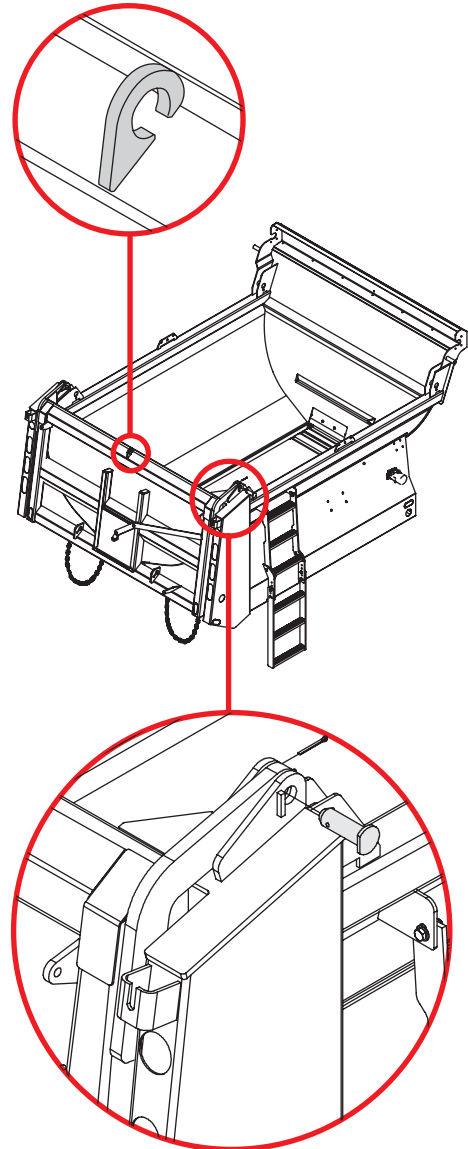
WARNING: Ensure that all rigging and lifting implements (crane, hoist, etc...) are appropriately rated to hold the load, as some rear tailgates can weigh up to 800 lbs. (363 kg).

3. Slowly raise the rigging until the cable is taught, and the weight of the tailgate is off the hinges.
4. Remove the tailgate upper pins.
5. Open the lower tailgate hardware by using the tailgate release mechanism (located in-cab)
6. Slowly move the tailgate in an Upward & Rearward direction. Ensure that the upper and lower hinges do not bind or catch.



WARNING: Keep all body parts away from suspended load. **DO NOT** attempt to release an impeded tailgate with bare hands.

7. Lay the tailgate horizontally in a safe area to ensure it does not fall during storage.
8. To replace the tailgate, repeat the above steps in reverse order.



NOTE: Some tailgate hinges will have washers between the hinge plates. Return all washers when re-installing the tailgate. Replace any worn or damaged hinge hardware before replacing the tailgate.