



## Owner's Manual

Brute 8500 for Leak Proof and Standard Floor Systems





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## ABOUT THIS MANUAL

This manual is to be used as the primary guide for operating your Brute 8500 LIVE FLOOR® conveying system. A separate Installation Manual and Parts and Service Manual is also included in your kit.

Carefully read the Owner's Manual prior to running the equipment. It may also be helpful to review the Installation Manual as this will give you additional insight into the operation of your Brute 8500 LIVE FLOOR® conveying system. Make sure you have a complete understanding of how to SAFELY operate this equipment prior to putting it into service.

This manual includes instructions for both Leak Proof floor and Standard floor installations. Where the operation process differs, it will be denoted by the terms "**Leak Proof**" or "**Standard**" floor.

Hallco™ will periodically update these manuals. Contact your Hallco™ representative to verify you have the latest version. The version is identified in the lower right corner of each page next to the Hallco™ part number, if revised, you will find a revision letter of the manual.

### SAFETY

Your safety is the utmost importance to Hallco™. Follow safe working practices while installing this system. Review all safety guidelines and pay attention to safety warning symbols as they will highlight specific dangerous aspects of the task at hand.

Only properly trained and authorized personnel shall install, operate and service Hallco™ equipment. Installers are expected to have a fundamental understanding of tool safety and safe working practices.

DO NOT deviate from these instructions or modify the equipment without written authorization from Hallco™. Modifications can render the equipment unsafe and void your warranty.

Hallco™ assumes no liability for damages which may occur as a result of installing any of the LIVE FLOOR systems manufactured by Hallco™ Industries Incorporated.

Installing your Hallco™ LIVE FLOOR® system will require some alterations to your truck, trailer, or bin. Any alterations without the approval of the equipment manufacturer may void the equipment warranty. Check with the equipment manufacturer before performing any alterations. This installation manual is intended as a guide only and may not cover all the nuances of your application.

**FAILURE TO FOLLOW SAFETY GUIDELINES WILL RESULT IN INJURY OR DEATH.**

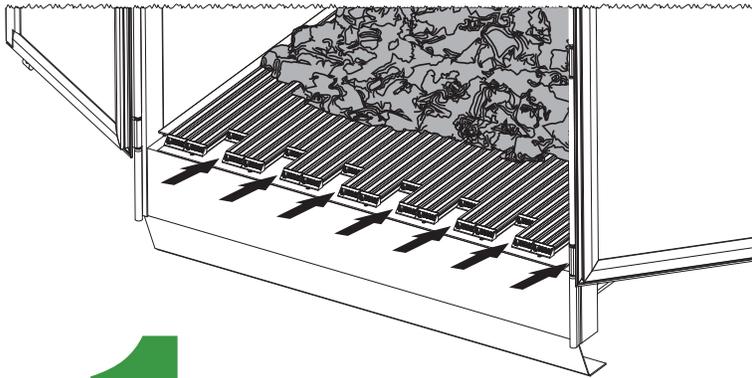
## WHAT IS A LIVE FLOOR™ CONVEYOR AND HOW IT WORKS

A Live Floor™ conveyor is designed to unload the contents of a trailer through the rear doors without the need for lifting or tilting the trailer itself.

A Live Floor™ conveyor is made of multiple slats or boards that are as long as the conveyor. The slats are arranged side by side and all at the same level so they cover the entire width of the floor. They don't move up and down or side to side, only back and forth.

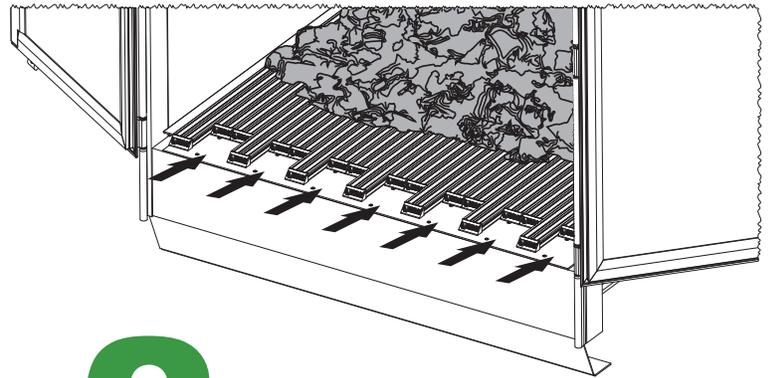
Entire trailer loads are unloaded at once by conveying all of the slats together in one direction for a stroke; keeping two thirds of the slats stationary and retracting one third at a time under the load to their original position; then conveying all of the slats together again.

The slats are divided into three groups and each group is driven by a hydraulic cylinder. There are very few moving parts.



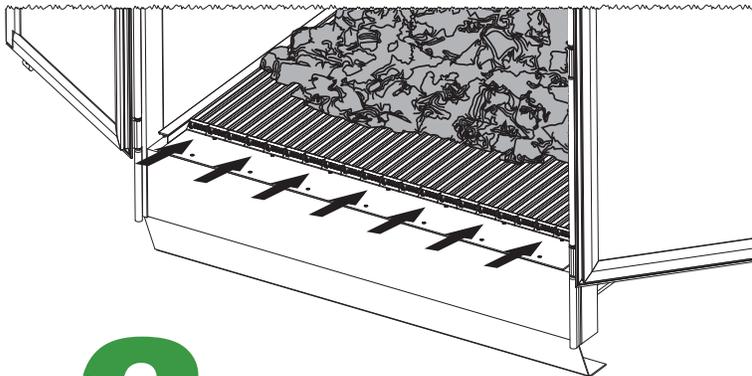
# 1

First Group Retracts



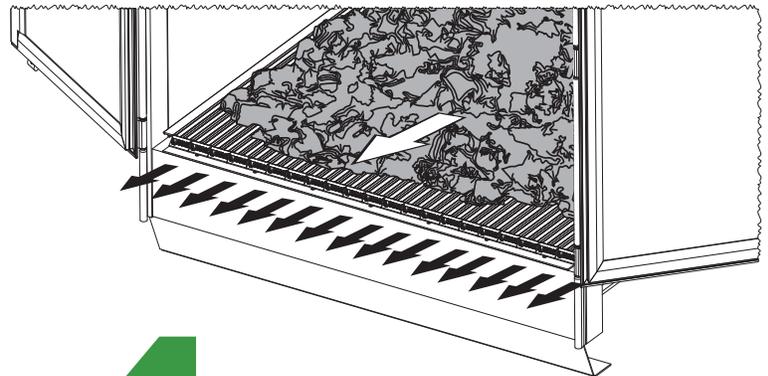
# 2

Second Group Retracts



# 3

Third Group Retracts



# 4

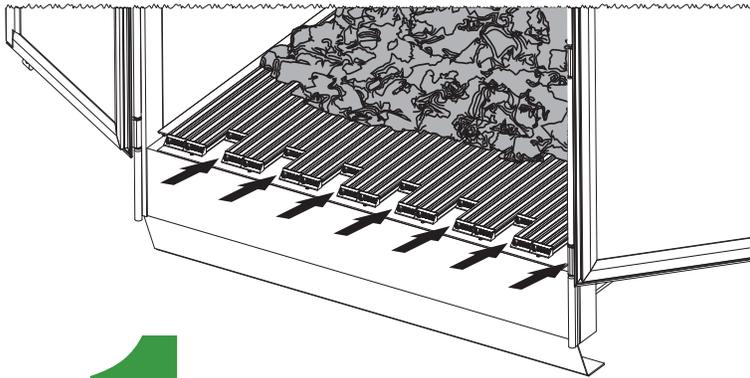
All Groups Convey Together

### The Benefits of Hallco™ Accelerator Technology

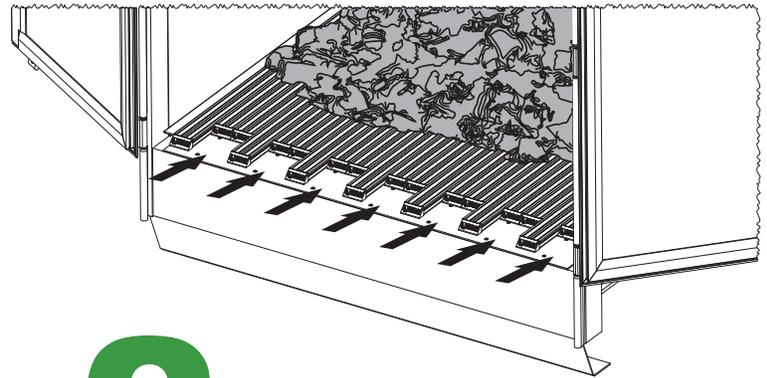
Available as an option on Hallco™ Standard Floor installations is patented Hallco™ Accelerator.

30% faster unload at the touch of a button, the ACCELERATOR allows you to choose. Because some loads only need the force of a 2-step cycle, the ACCELERATOR switches your floor from a standard 3-step operation to a 2-step all within the same system.

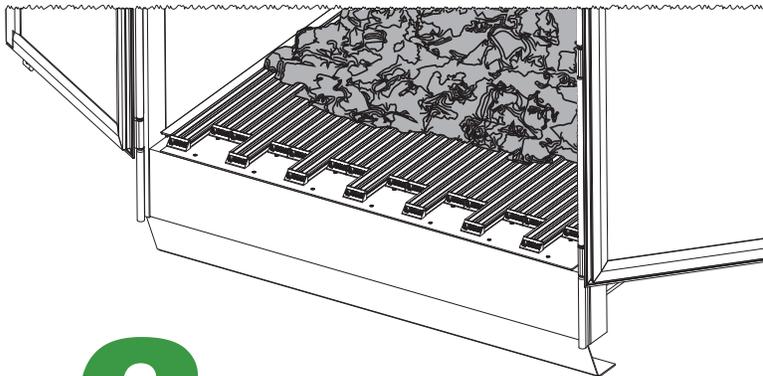
Refer to [page 19](#) for instructions for operating your Accelerator.



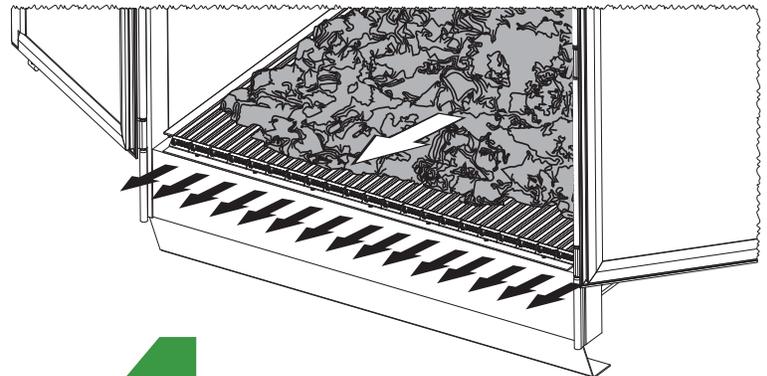
**1** First Group Retracts



**2** Second Group Retracts



**3** Third Group Remains, saving valuable time



**4** Two Groups Convey Together

### Safety Symbols

The following safety symbols are used throughout this manual and on safety decals; they represent potential hazards, mandatory notices and safety precautions that should be taken while working with Hallco™ equipment. A description of the alert will accompany each icon. Familiarize yourself with them below to quickly identify important information while working on this equipment.

These symbols indicate immediate dangers or hazards associated with the task at hand. Take extra precautions where indicated:



Signifies a general hazard to your safety or potential damage to equipment.



Signifies a trip hazard.



Signifies a crushing hazard between two moving parts.



Signifies a slip/fall hazard. SRB or SRC rated anti-slip footwear should be used.



Signifies a burn hazard or hot surface.



Signifies a crushing hazard by ejected or falling loads.

These symbols indicate a safety requirement or informational safety instruction:



Signifies a mandatory safety precaution that must be taken.



Signifies there is additional information in a supplementary manual or guide that must be read prior to carrying out a task.



Signifies all forms of energy must be locked in the OFF position prior to carrying out a task. Follow safe lock-out-tag-out procedures.



Signifies the various forms of personal protective equipment (PPE) required to safely complete a task.



## SAFETY GUIDELINES

BE CAREFUL around the Brute 8500 LIVE FLOOR® conveying system. It is industrial equipment that can move without warning!

**STOPPED EQUIPMENT IS NOT SAFE EQUIPMENT!** Just because the machine is not running does not mean it is safe. LOCK OUT AND BLOCK all stored energy prior to working on the equipment.

Consider all these areas **EXTREME HAZARD ZONES** and take extra precautions when nearby. Visually clear area prior to operating the equipment.

### **DO NOT STAND NEAR THE TRUCK WHILE UNLOADING!**

Operators may leave the truck in NEUTRAL to assist in unloading. TRUCK MAY MOVE UNEXPECTEDLY crushing someone between the truck and immovable objects or under the tires.

### **DO NOT LEAVE THE TRUCK UNATTENDED WHILE UNLOADING!**

Materials being unloaded will behave in unpredictable ways causing jams or creating projectiles. Be aware of the area around the vehicle and be ready to initiate an emergency shut down at all times.

### **DO NOT STAND BEHIND THE TRAILER!**

Do not stand near the discharge end of a Live Floor conveyor. Materials may get stuck or jammed. DO NOT attempt to unjam the materials from the rear of the trailer! Doing so can cause the load to shift unexpectedly and bury or overwhelm persons in this area.

### **DO NOT ENTER THE TRAILER WHEN IT IS LOADED!**

Loads are unstable and can shift while in the trailer. DO NOT stand between the load and the front wall of the trailer. The load can reverse and crush you! DO NOT attempt to climb the load!

### **DO NOT TOUCH THE CROSS-DRIVES WHEN ENERGIZED!**

Cross-drives will crush you when they operate! DO NOT place your hands near or in-between the cross-drives when the system is powered on and hydraulics are pressurized. Only enter this area after proper lock-out tag-out procedures have been implemented!

### **DO NOT OPEN THE SLOPE SHEET WHEN ENERGIZED!**

Parts under the slope sheet will crush you when they operate! DO NOT place your hands near or in between the frame and the cross-drives or cross-drive shoes when the system is powered on and hydraulics are pressurized. Only enter this area after proper lock-out tag-out procedures have been implemented!

### **DO NOT TOUCH THE SLATS WHEN ENERGIZED!**

Slats can crush hands or feet between the front wall and the slat ends. Sharp edges on the slats can cut you!

### **DO NOT TOUCH THE HYDRAULICS!**

Allow the system to cool before touching. The hydraulic systems will get hot enough to burn you.

There are many other areas on the Brute 8500 LIVE FLOOR® conveying system that are hazardous. Take extra precautions when working with the system and always follow safe lock-out tag-out procedures.

**SAFETY GUIDELINES (CONTINUED)****DO NOT DISABLE, REMOVE OR OVERRIDE ANY GUARDS!**

All guards that are supplied with the system must stay in place during operation. Moving parts will CRUSH and DISMEMBER. MOVING PARTS DO NOT STOP WHEN OBSTRUCTED!

**DO NOT ATTEMPT TO DISLODGE JAMMED OR STUCK LOADS BY HAND!**

Jammed or stuck loads are EXTREMELY DANGEROUS! Loads can give way at anytime causing deadly avalanche of debris! Only use caged or guarded heavy equipment to dislodge loads from a safe distance.

**DO NOT OVERLOAD THE SYSTEM!**

Overloading the trailer will result in damage to the Brute LIVE FLOOR® conveying system creating potentially hazardous situations! Always adhere to maximum load capacity as specified by the trailer OEM.

**DO NOT OVERHEAT THE SYSTEM!**

Monitor the temperature at the tank occasionally during operation. Oil temperature shall not exceed 180° F [82° C]. Excessive temperatures will damage the internal seals and components!

**ALWAYS VERIFY TRAILER DOORS ARE OPEN PRIOR TO STARTING THE SYSTEM!**

Running the system with the trailer doors closed will severely damage the trailer and the Brute system! Loads will eventually force the doors open in an explosive manner!

**ALWAYS MONITOR THE SPACE AT THE FRONT WALL WHEN LOADING!**

While in LOAD MODE, avoid piling loads against the front wall of the trailer. Excessive load on the front wall of the trailer will result in damage to the trailer and the NEXUS™ system!

There are many other areas on the Brute 8500 LIVE FLOOR® conveying system that are hazardous. Take extra precautions when working with the system and always follow safe lock-out tag-out procedures.

 Prior to starting the Brute always complete the PRE-STARTUP checklist and the RUNNING safety checklist on [page 16](#).



## GENERAL GUIDELINES FOR PROPER OPERATION OF YOUR BRUTE 8500 LIVE FLOOR®

Your Brute 8500 LIVE FLOOR® conveying system will **convey poorly or not at all** if any of the following conditions apply to the material you are trying to convey:

- If the load adheres to the slats or the walls of the container.
- If the load has a higher pressure against the walls than against the floor. This happens when a light weight, compressible material is loaded from the top and then compressed into the container from the top. The risk of this happening can be reduced by sloping the side walls so that the distance between the walls is narrow at the top and wide near the floor.
- If the load is not cohesive. In order to unload all of the material a tarp or other form of sheeting will need to be placed under 6.6'-9.8' [2-3 m] of the load and all of the way up the front wall. This sheeting will need to be free to move with the load.
- If a load is palletized on pallets that do not evenly distribute the weight over their base. This causes the pallets to only be moved by one or two of the slat groups making them try to twist instead of convey. Place something under these pallets that will more evenly distribute the weight across the floor.

The Brute 8500 LIVE FLOOR® conveying system **will wear out quickly** if you load it with materials of the following characteristics:

- Abrasive materials such as crushed glass or sharp gravel.
- Corrosive materials such as chicken manure or other materials with a very high or very low acidity [pH] level.
- High impact where heavy objects are dropped directly on the aluminium slats from over 2 m [6.6'] height.
- High temperature, materials exceeding 167° F [75° C].

The Brute 8500 LIVE FLOOR® is not designed to prevent load liquids from leaking to the ground when used in **Standard** floor configurations.

The ends of the slats will wear out quickly if the load is not free to fall off the end of the conveyor but is restrained by a wall or the pile of unloaded material.

In freezing conditions the floor may hesitate or not move due to slats being frozen together (Standard Floor only). If the floor exhibits signs of jamming in freezing conditions wait until temperatures rise enough to thaw the load before attempting to unload.

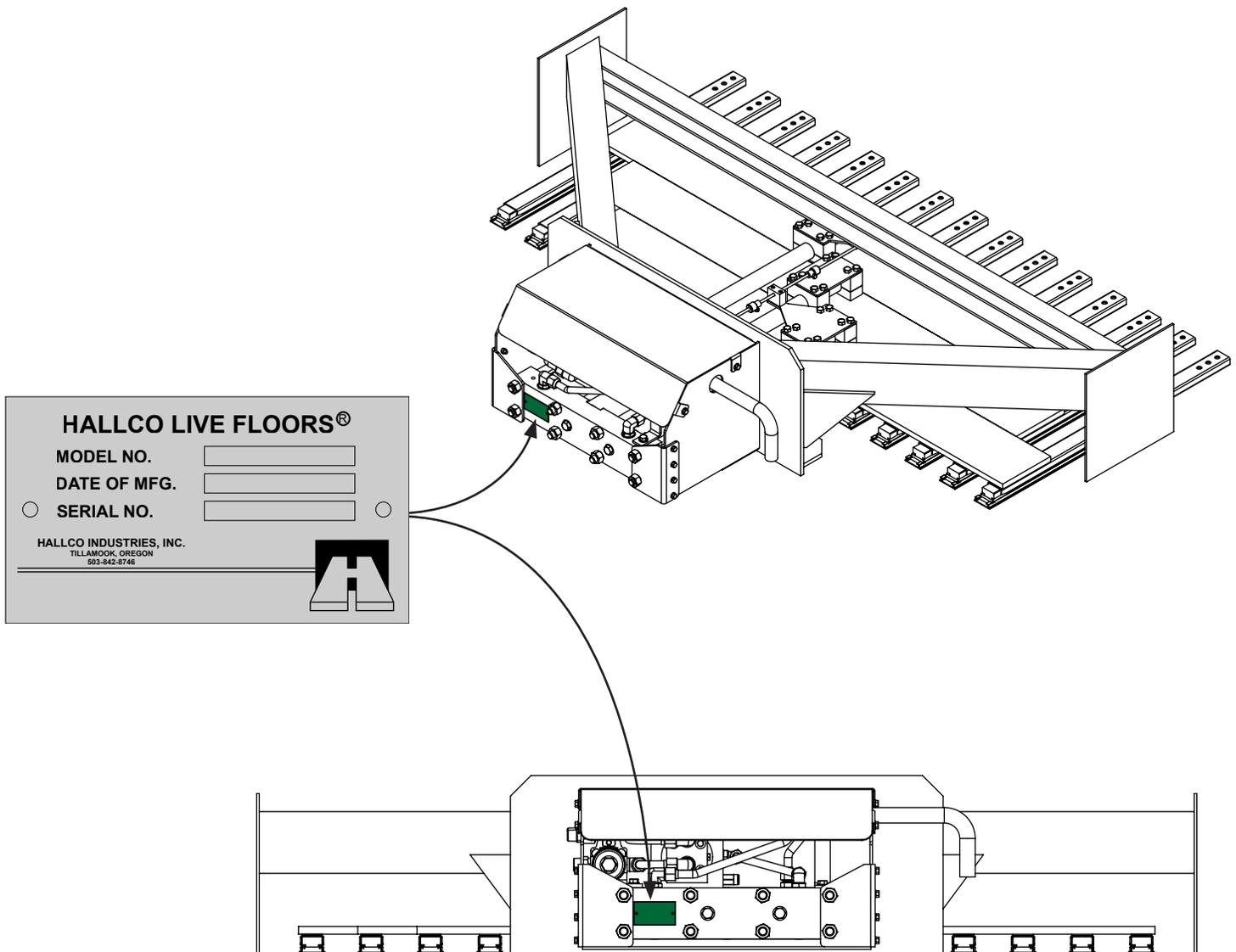
Evenly distributed loads will provide for the best unloading/loading conditions. When possible load the trailer as evenly as possible.



### BRUTE 8500 IDENTIFICATION

When requesting information or technical support it is important to have your Brute 8500 serial number and model number available. You can find this on the back of your Brute 8500 base manifold. Please locate the serial number, model number, and date of manufacture and write it below for quick future reference.

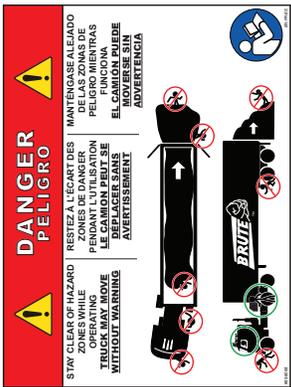
If your serial plate becomes damaged or unreadable contact your Hallco™ representative for a replacement.



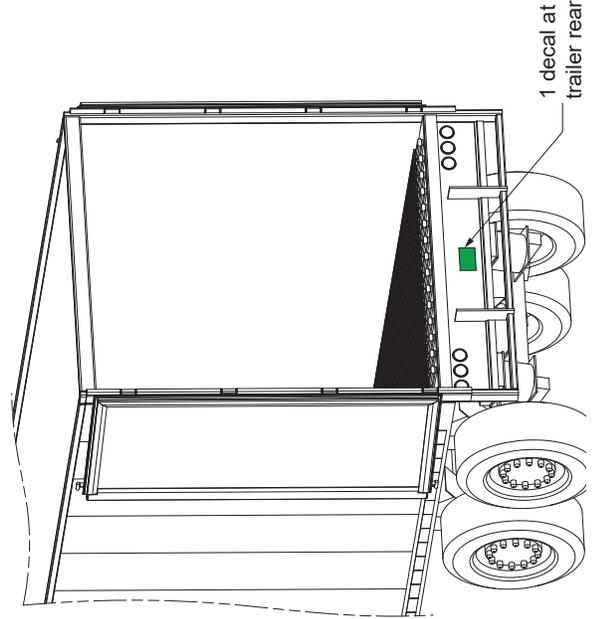
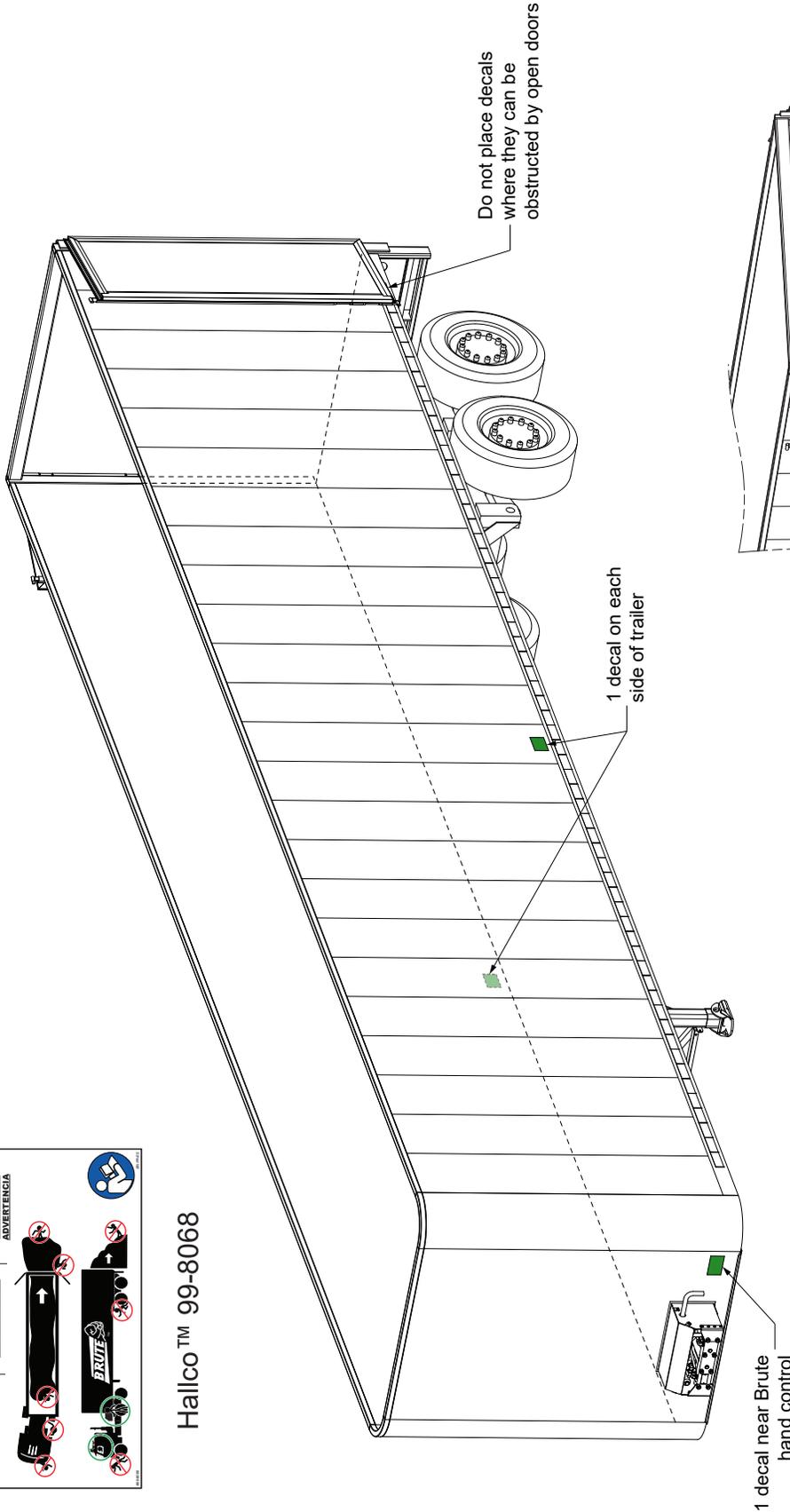
Serial Number: \_\_\_\_\_

Model Number: \_\_\_\_\_

Date of Manufacture: \_\_\_\_\_



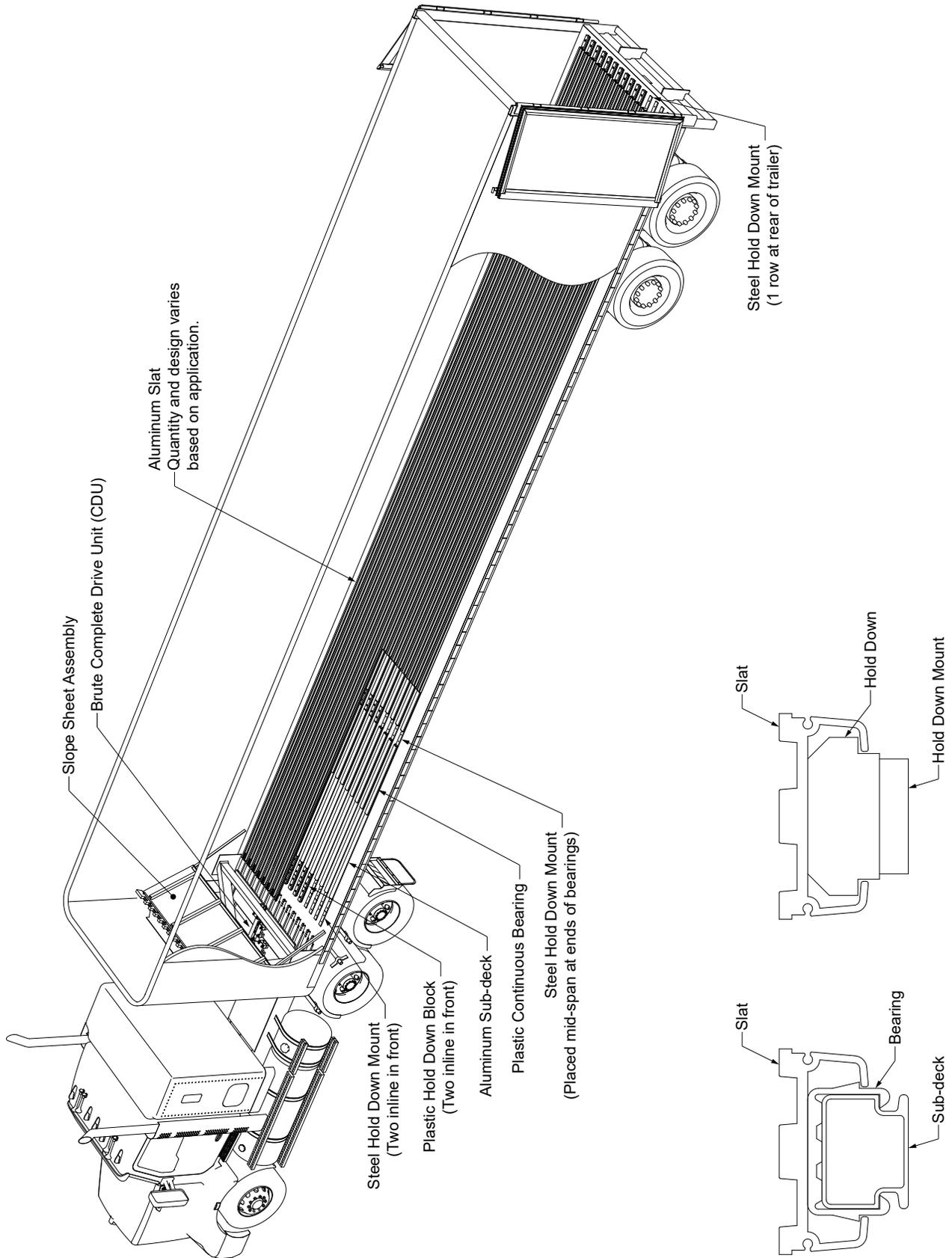
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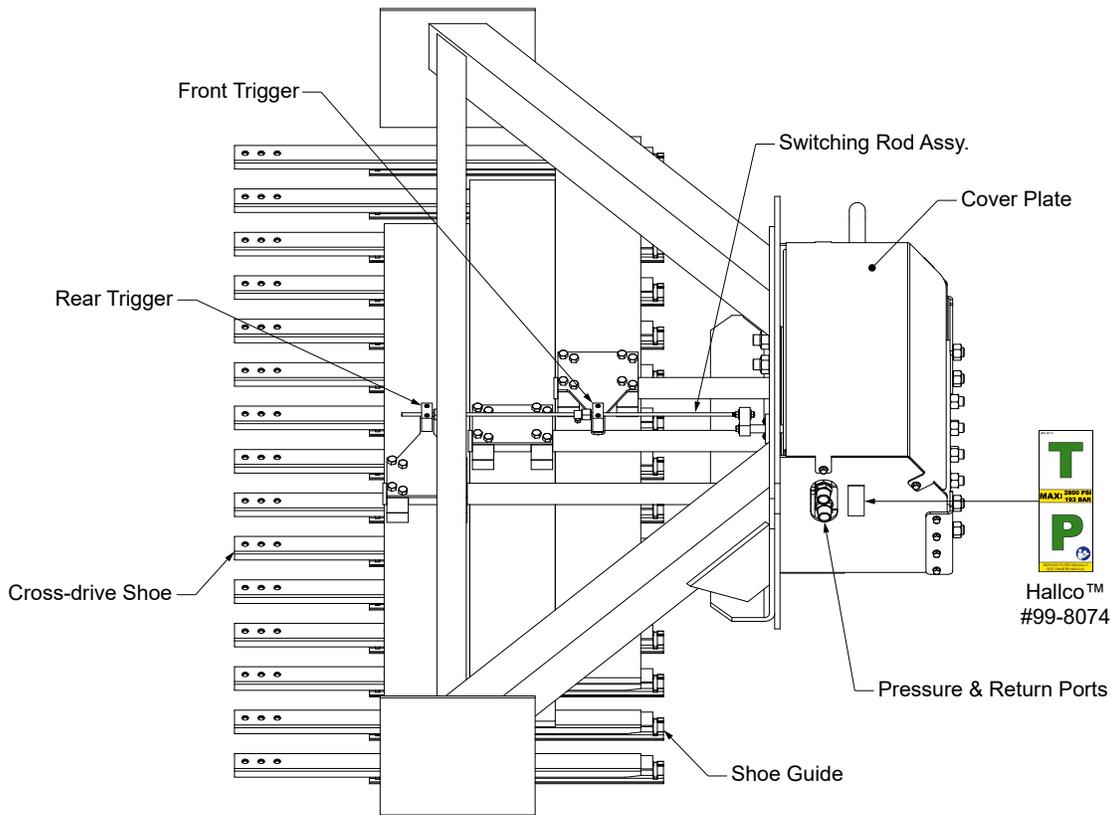
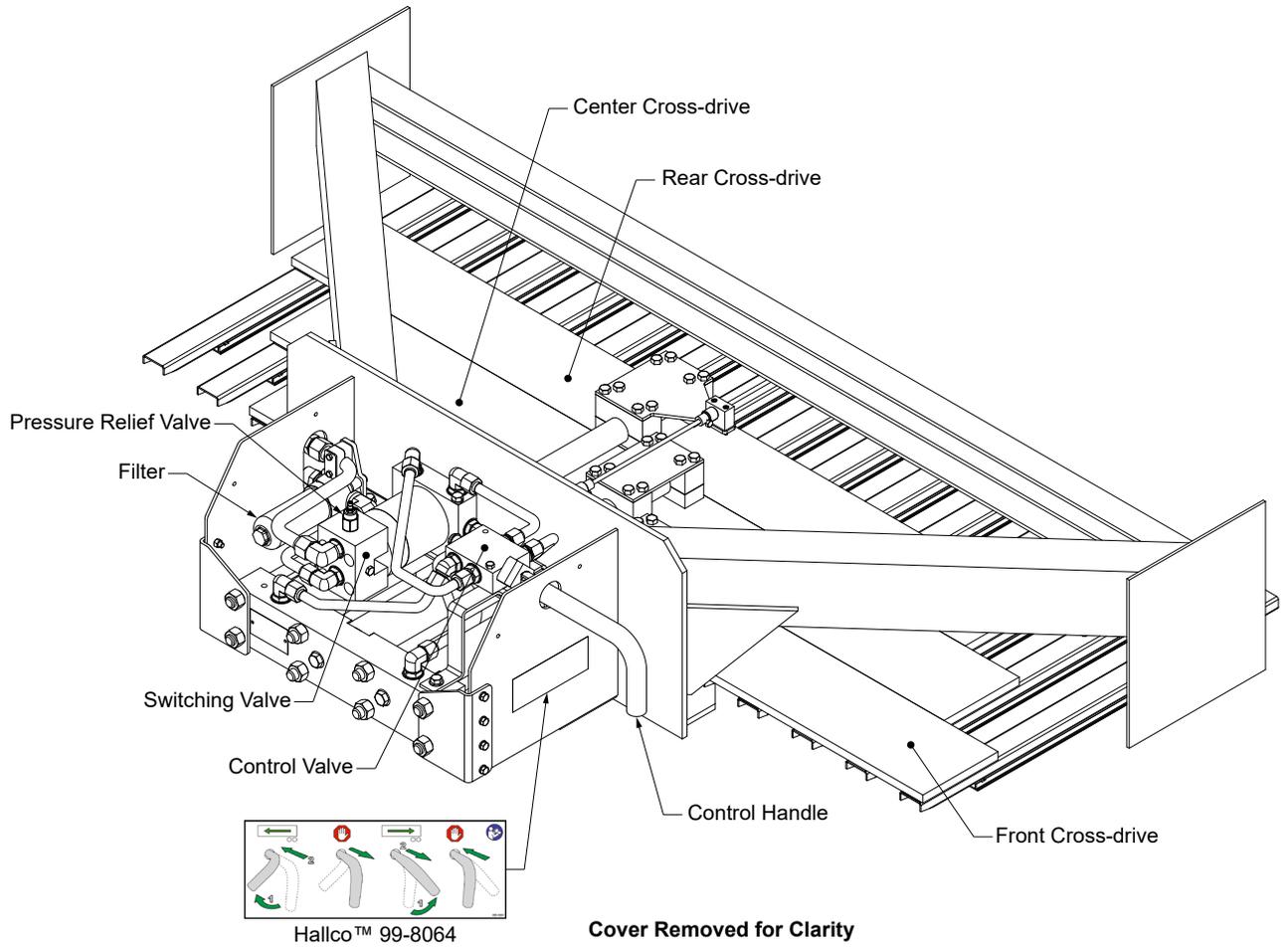


**SAFETY DECALS**

Hallco provides four decals warning of hazard zones. The decals must be applied so that they are easily identifiable from all approach angles.

If these decals are damaged or removed contact your Hallco™ representative for replacement.







### BRUTE SYSTEM SPECIFICATIONS

Shaft Diameter	2.0" [50.8 mm]
Cylinder Diameter	4.5" [114.3 mm]
Stroke	8" [203.2 mm]
Relief Pressure	2800 psi [193 bar]
Recommended Flow Rate	30 gpm [114 lpm]
Load Capacity	40 Ton [36 Metric Ton]

Theoretical Minimum Unload Times for a 48' [14.6 m] Trailer

Recommended flow rates

Oil Flow	Cycles Per Minute	Convey Speed <sup>1</sup>		Unloading Time <sup>1</sup> (minutes)	
		GPM	[LPM]		ft/min
5	1.97	[20]	1.31	[.40]	36.5
11	3.94	[40]	2.63	[.80]	18.3
16	5.91	[60]	3.94	[1.20]	12.2
21	7.89	[80]	5.26	[1.60]	9.1
26	9.86	[100]	6.57	[2.00]	7.3
32	11.83	[120]	7.89	[2.40]	6.1



1. Convey speeds and unload times shown are at 100% efficiency and do not account for such things as load slippage or other environmental factors. Actual conveyor speeds and unload times vary by load type.

## HYDRAULIC SYSTEM REQUIREMENTS



Hydraulic Fluid

Anti-Wear (AW). Viscosity of ISO 32 to 46 Petroleum OR mineral base. Moisture content, H<sub>2</sub>O < 1%. Some eco-friendly oils may be used. Contact Hallco for compatibility.



Fluid Temperature: < 180° F [82° C]



Pump

Pump must be a Gear, Vane or Piston type that will provide the desired oil flow rate at a full 3000 psi [207 bar]. Pump must be matched to its power source. Drive it directly or through a PTO by an engine or electric motor powerful enough to support the flow and pressure.

Summary:

Recommended flow: 5-32 gpm [20-120 lpm]  
 Pressure rating: ≥ 3,000 psi [207 bar]  
 Power source for 30 gpm [114 lpm] ≥ 68hp [50 kw]  
 Speed: Motor or PTO ↔ Pump



Tank / Reservoir

Use a reservoir that has all of these features:

- Capacity equivalent to desired flow rate. *i.e. 30 gal. capacity for 30 gpm flow rate.*
- Inlet diameter greater than 1.25" [30 mm].
- Outlet diameter greater than 2" [50 mm].
- Turbulence reducer on return inlet.
- Pump supply outlet near bottom.
- Whirlpool prevention on the outlet.
- Filler cap with breather and filter.
- Visible fluid level gauge.
- Visible Thermometer.
- Oil heater for climates with ambient temps below 32°F

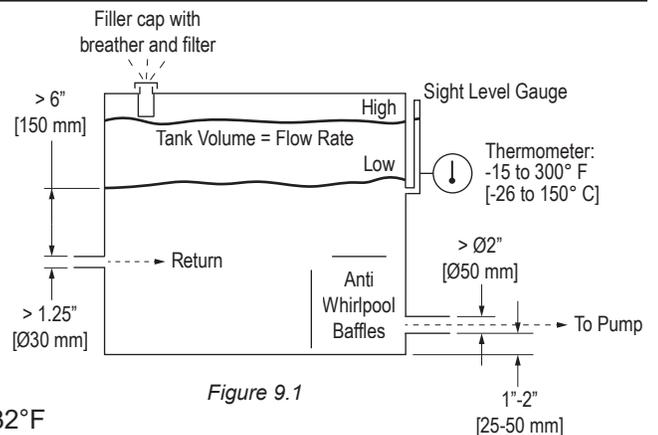


Figure 9.1

Hydraulic Supply Circuit

60 micron (max.) pressure filter rated to handle the maximum pressure and flow. Included with the Brute system.

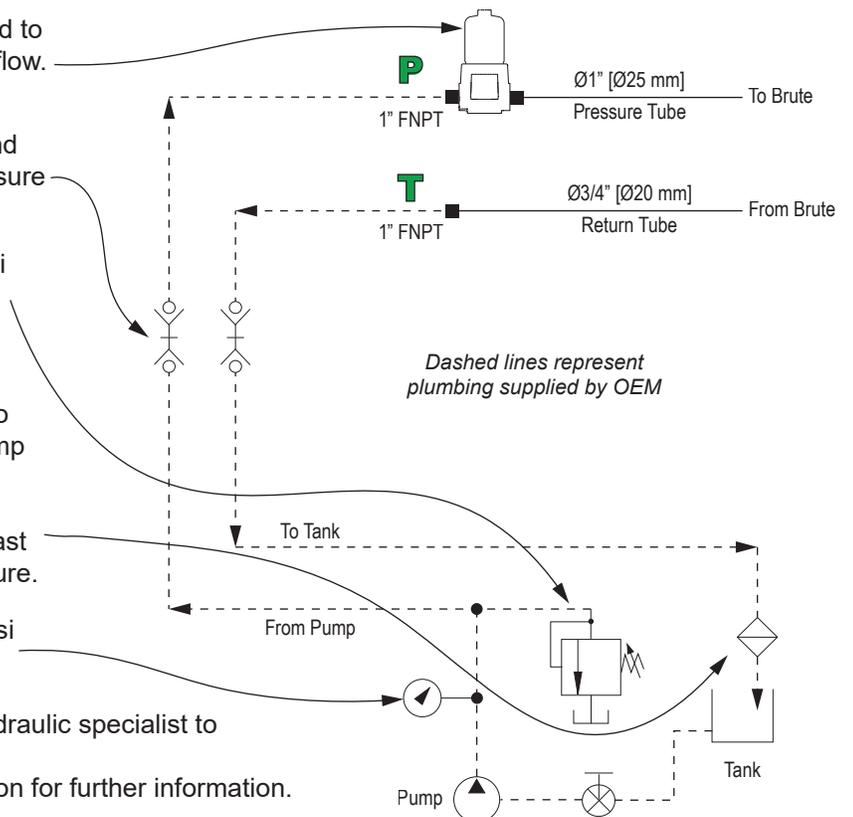
Quick connects that are matched and rated for the maximum system pressure and flow rate.

Pressure relief valve set at 3,000 psi [207 bar] maximum and rated to handle at least the maximum pump output flow.

25 micron (max.) return filter rated to handle more than the maximum pump flow. Place it as close to the tank as possible. Make the hydraulic line between the filter and the tank at least Ø1.5" [Ø38 mm] to prevent filter failure.

Visible pressure gauge. 0 to 5000 psi [0 to 350 bar]. Glycerin filled.

Hallco recommends consulting a hydraulic specialist to design the hydraulic supply system. Refer to pump supplier documentation for further information.





**PRE-STARTUP CHECKLIST  
LEAK PROOF AND STANDARD FLOOR SYSTEM**

Hallco™ strongly recommends operators follow a Pre-Startup Checklist at the beginning of each shift or prior to starting the floor after it has been sitting for periods exceeding 24 hours.

- Check the entire floor to make sure all the slats are fully on each bearing.
- Check the front and rear slat clearances for obstructions.
- Make sure all the hydraulic fittings are tight.
- Make sure the switching rod is straight and the stops are tight. Skip this check if the stops have not been set yet.
- Make sure there are no clamps, temporary blocks or tools in the area where the cross-drives move back and forth.
- Make sure the chrome surface of the shafts near the cylinders is clean and free of paint, weld spatter or other roughness which could damage the seals.
- Check that the pressure and return lines are correctly plumbed to the hydraulic pump.

**PRE-RUN CHECKLIST**

**IMPORTANT! Perform this safety check EVERY TIME you operate the floor. Failing to clear the surrounding area prior to operating the Brute can lead to injury or death!**

- Check to make sure rear doors are open and secured.
- Check to make sure there are no persons or property in the unloading zone behind or to the sides of the trailer.
- Check under the trailer to make sure there are no persons or property in the hazard zone under the trailer.
- Check for nearby persons that are not familiar with the function of the machine be aware of their location at all times. **ESPECIALLY IF VEHICLE IS TO REMAIN IN NEUTRAL DURING THE UNLOADING PROCESS!**



**Do not operate the equipment until the Pre-Run Checklist has been completed!**

### UNLOADING THE BRUTE 8500

To UNLOAD the Brute 8500 from the stopped position rotate the handle counter clockwise until it stops then pull the handle out until it stops (fig. 1). Note: the handle should point in the direction you want the load to travel.

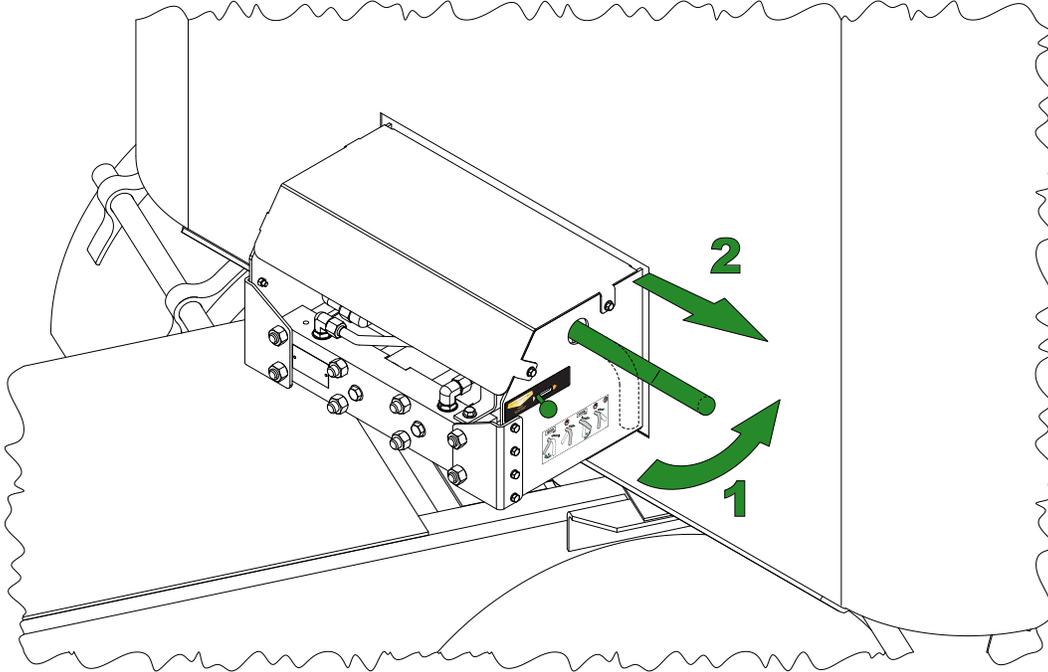


Figure 1

### STOPPING THE BRUTE 8500 (WHEN UNLOADING)

To STOP the Brute 8500 from the UNLOAD position push the handle in until stops (fig. 2). Note: the handle can freely rotate down (clockwise) when in the STOPPED position. This movement is not necessary to stop the system.

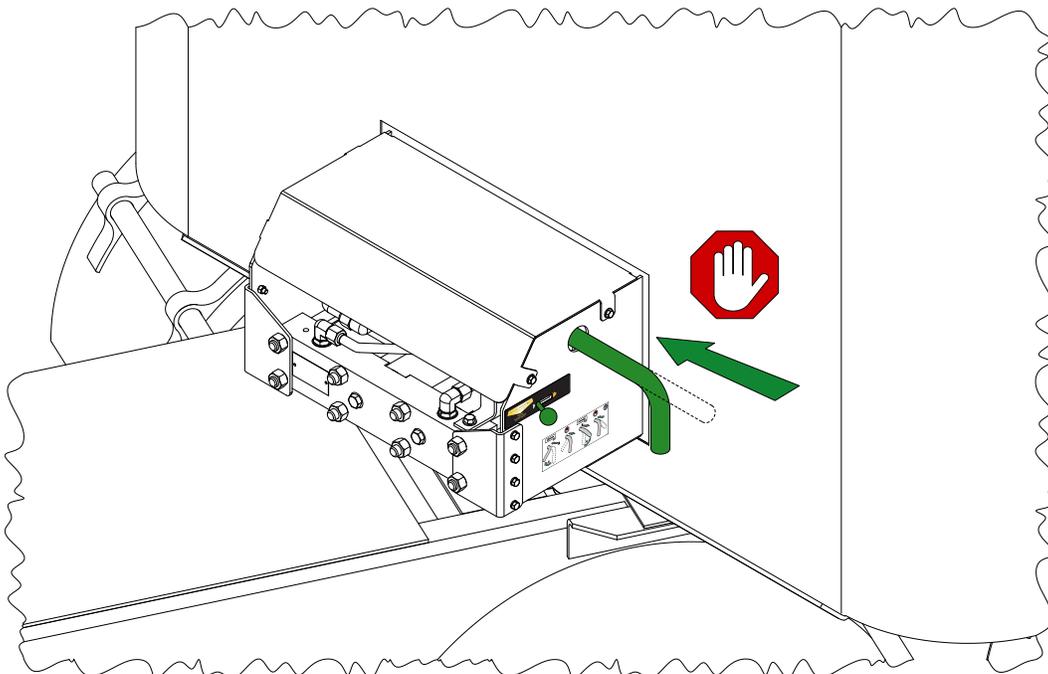


Figure 2

### LOADING THE BRUTE 8500

To LOAD the Brute 8500 from the stopped position rotate the handle clockwise until it stops and push the handle in until it stops (fig. 1). Note: the handle should point in the direction you want the load to travel.

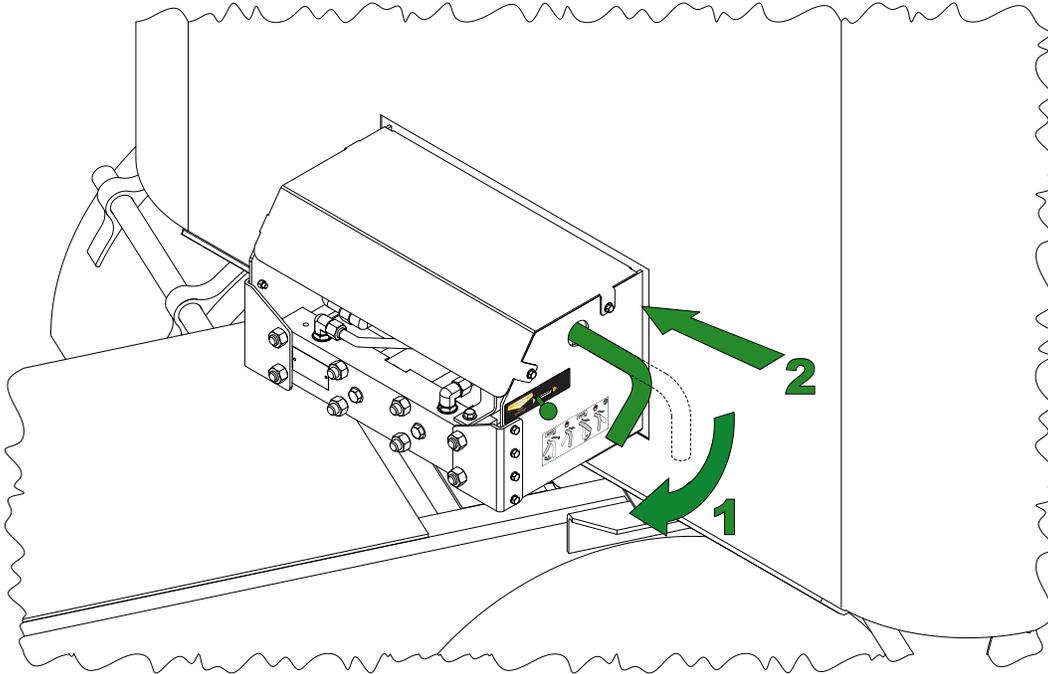


Figure 1

### STOPPING THE BRUTE 8500 (WHEN LOADING)

To STOP the Brute 8500 from the LOAD position pull the handle out until stops (fig. 2). Note: the handle can freely rotate down (counter clockwise) when in the STOPPED position. This movement is not necessary to stop the system.

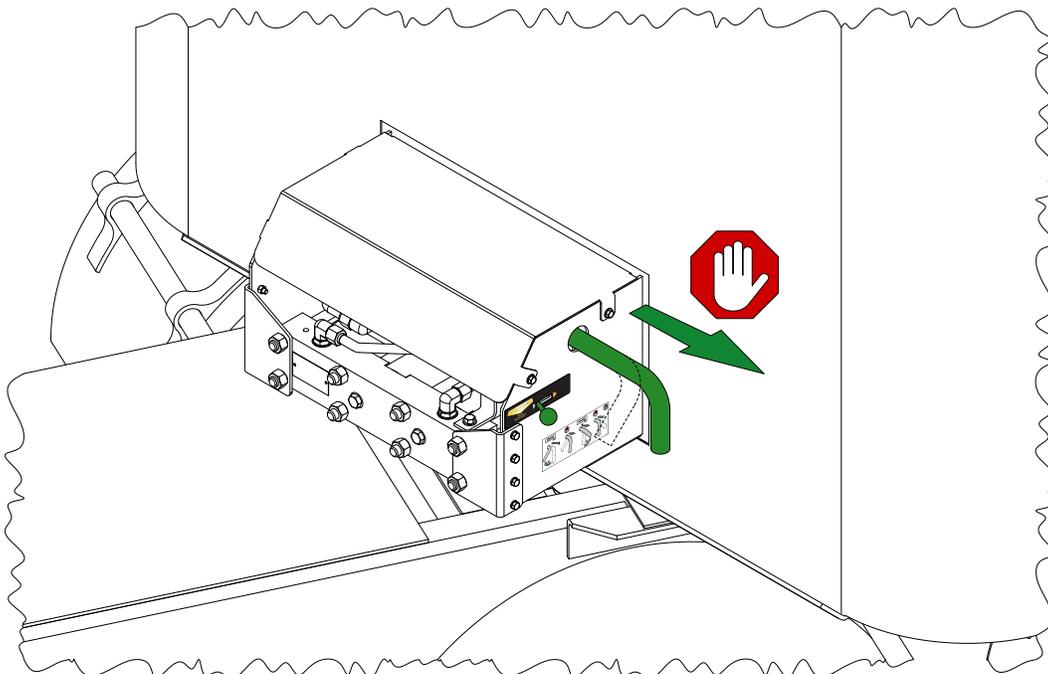


Figure 2

## OPERATING THE ACCELERATOR (OPTIONAL FEATURE)

When in UNLOAD mode you can engage the Hallco™ Accelerator function to increase the speed of unloading by 30%. To engage the Accelerator, move the Accelerator lever to the right (fig. 1). The Accelerator lever should now point in the direction the load will accelerate towards.

To dis-engage the Accelerator, move the Accelerator lever back to the left.

Refer to [page 5](#) for overview of how Hallco™ Accelerator technology works.



**NOTE: The Accelerator function has no effect when the system is in LOAD mode.**

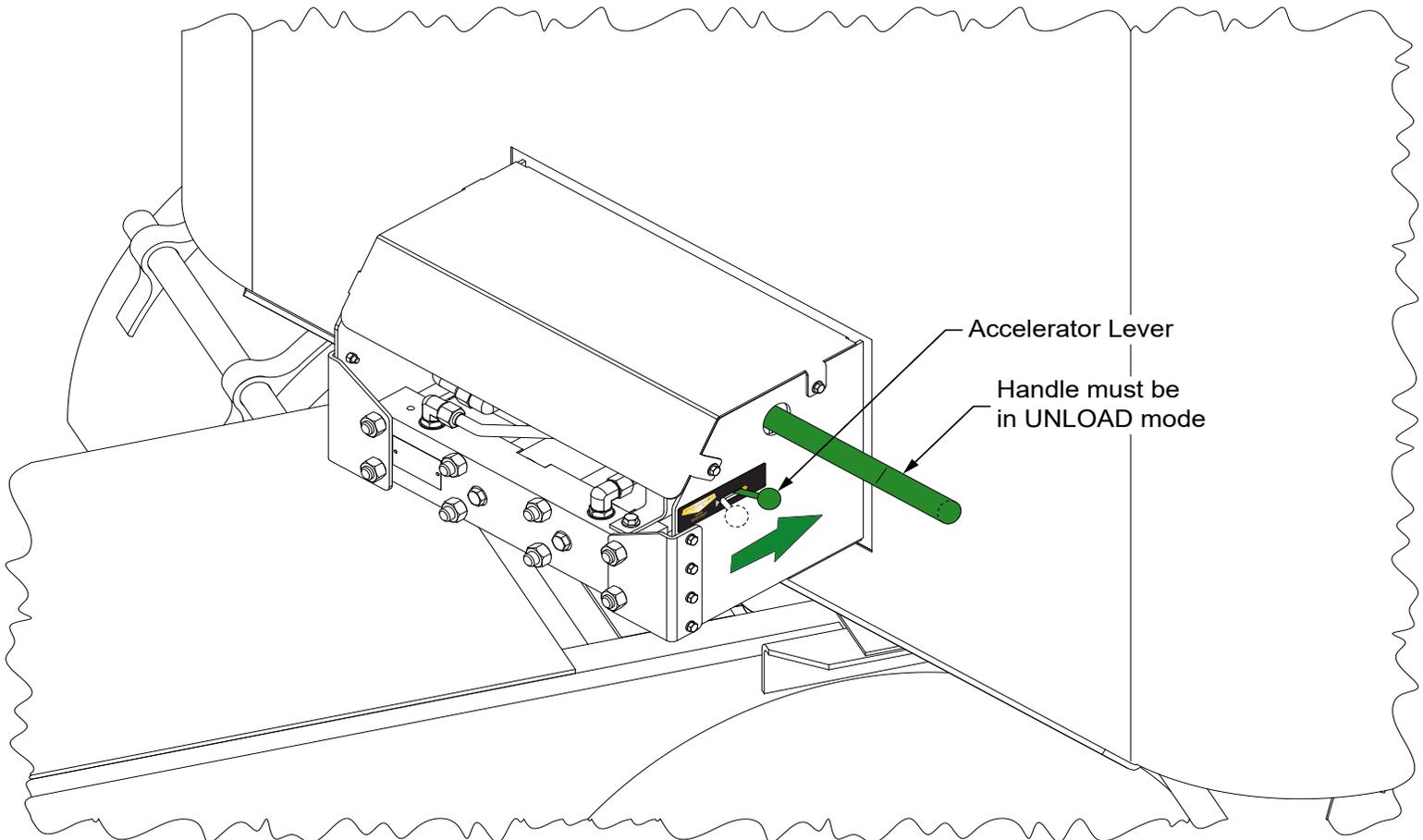


Figure 1



### PROCESS FOR ADJUSTING SWITCHING ROD

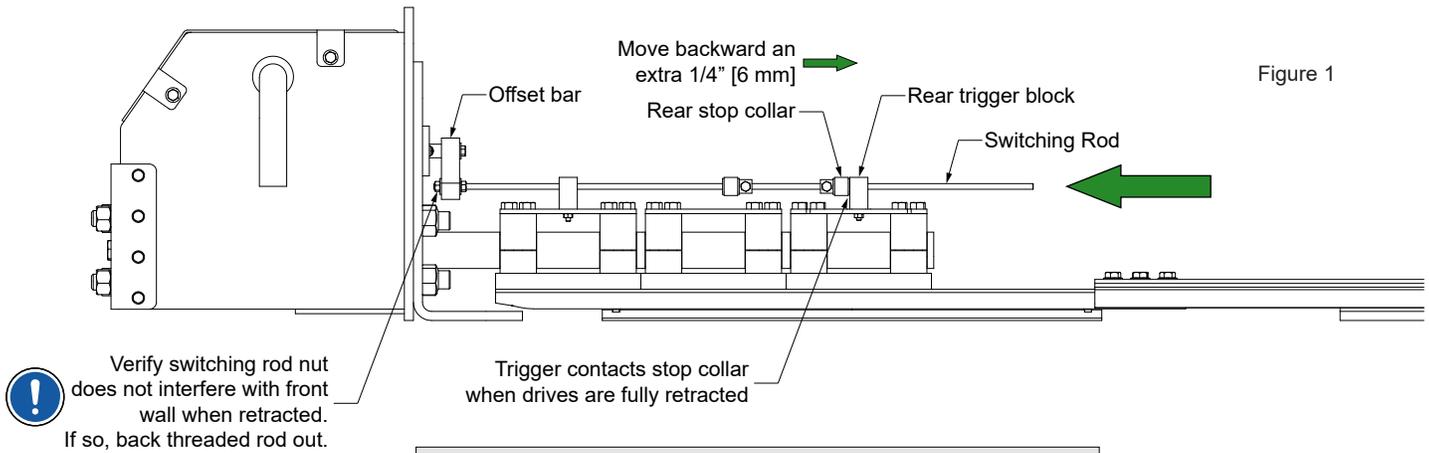
**Note: The switching rod should be adjusted from the factory. Only follow these steps if the floor is not shifting properly.**

Reference figure 1 for these steps:

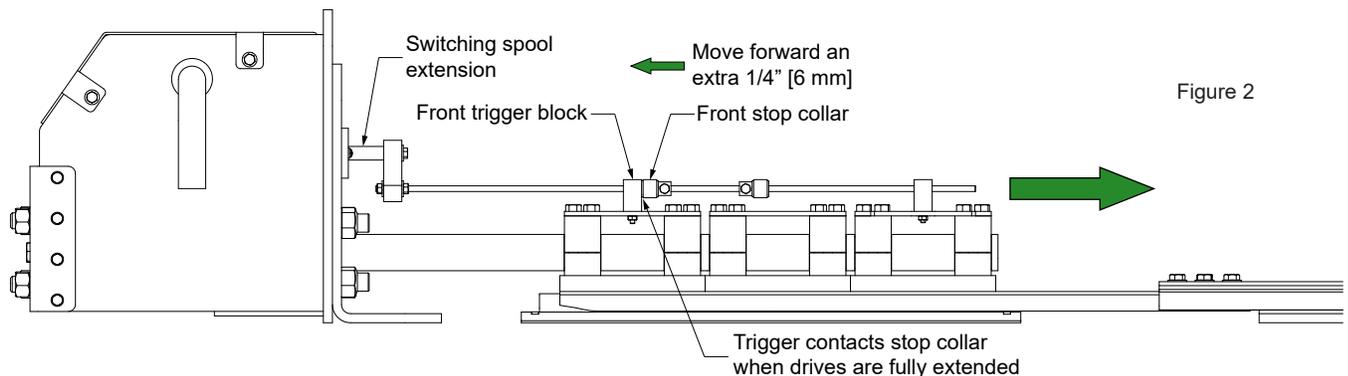
1. Pull the switching rod rearward.
2. Operate the floor in "LOAD" mode until the rear cross-drive reaches it's end of stroke.
3. Stop oil flow. Push rod in (forward).
4. Make sure end of rod does not interfere with front wall of the Brute.
5. Move the rear stop collar back until it contacts the rear trigger block then jog the cross-drives back so you can move the collar an additional 1/4" [6 mm] backward.
6. Tighten the stop collar screw to 8 lb-ft [11 Nm].

Reference figure 2 for these steps:

7. Push the switching rod forward.
8. Operate the floor in "UNLOAD" mode until the front cross drive reaches it's end of stroke.
9. Stop oil flow. Pull rod out (rearward).
10. Move the front stop collar forward until it contacts the front trigger then jog the cross-drives forward so you can move the collar an additional 1/4" [6 mm] forward.
11. Tighten the stop collar screw to 8 lb-ft [11 Nm].



Cross-drives shown in the **retracted (forward)** position



Cross-drives shown in the **extended (rear)** position



## PREVENTATIVE MAINTENANCE

Hallco™ strongly recommends operators periodically check the wear of the various system components. Proactively inspecting and replacing worn components will extend the life of the system as a whole.

The best way to track wear is to keep a log tracking the number of loads processed. Due to the wide range of materials, conditions and different use of the equipment, Hallco can only recommend an interval based on average usage. It is important that in the first year of operation you pay close attention to how quickly parts wear and develop a maintenance schedule tailored to your specific needs.

### CHECK AFTER FIRST 10 LOADS

**Deck Bolts:** check the tightness of the deck bolts. To check tightness observe whether there is movement of the bolt head relative to the slat when the floor is moving. If there is movement then remove the bolt, clean the female threads, and insert a new bolt with medium thread-lock and tighten to the appropriate torque. Refer to the Brute 8500 Installation Manual.

**Slats:** check the slats and the slat surfaces for shiny metal or unusual wear patterns. This may be an indication of misalignment that could cause premature wear. If there is anything unusual, contact your local Hallco™ representative.

### CHECK EVERY 600 LOADS

**Deck Bolts:** check the tightness of the deck bolts. To check tightness observe whether there is movement of the bolt head relative to the slat when the floor is moving. If there is movement then remove the bolt, clean the female threads, and insert a new bolt with medium thread-lock and tighten to the appropriate torque. Refer to the Brute 8500 Installation Manual.

**Brute Mounting Welds:** visually inspect the Brute frame. Look for indications of broken welds where the frame attaches to the trailer.

**Brute Hydraulic Module Mounting Bolts:** check the tightness of the four (4) bolts attaching the Brute hydraulic module to the Brute frame. The bolts should be torqued to 800 lb-ft [1080 Nm].

**Cylinders and Pistons:** when the cylinder walls, pistons and seals wear down there will be less power available and the oil will heat up a lot faster. A local temperature increase of the cylinders during operation will indicate that there is bypassing oil around the pistons that requires repair. Use an infrared thermometer to measure the temperature of various components of the hydraulic system to see where there is localized higher temperature.

**Hydraulic Shaft Seals:** check for leaking oil where the shaft enters the aluminium head. Leaking oil may be caused by damaged seal glands or damaged shaft surfaces.



### CHECK EVERY 600 LOADS (CONT.)

**Switching Rod Springs:** check the switching rods springs to make sure they are intact and not broken.

**Shaft Bearing Block:** shine a light on one side of the block and see if you can see any light coming through around the shaft. If there looks like there is a gap of more than 2 mm then tighten the mounting bolts enough to close the gap. Do not tighten more than this as it will increase the friction on the shaft significantly.

### CHECK EVERY 1,200 LOADS

**Slats:** the rear end of the slats wear the fastest. When the weld on the top of the aluminium end cap is worn through then the slat will need to be rotated end for end or replaced.

**Slat Seals:** look for material sifting through the slats and falling on the ground or piling on top of the NEXUS™ drive unit. This is an indication that the seals need to be replaced.

**Side Trim:** replace the rear portion of the side trim when the slats are rotated or replaced. Move closer to the slat if there is a gap.

**Bearings & Hold Downs:** measure from the bottom of the slat leg to the top of the trailer cross-member. When this measurement is under 2mm then the bearings and hold downs should be replaced.

**Slope Sheet Wiper:** the wiper needs to be touching the top of the slat. If it is not then reposition the wiper or replace it.

**Pressure Filter Element:** dirty oil is the primary cause for failure in the hydraulic system. Remove the pressure and return filter elements and inspect for contamination. Replace if dirty.

**NOTE:** check every 600 loads if the pressure and return quick connects are disconnected often or if the pump system is wearing out.

### YEARLY INSPECTION

**Oil Reservoir:** inspect the oil and the reservoir, replace the oil and clean the reservoir if it is contaminated with water and dirt.



## TROUBLESHOOTING THE BRUTE DRIVE SYSTEM

If you experience problems with your Brute drive, follow the troubleshooting guide over the next few pages.

If you get stuck at anytime contact your Hallco representative. Make sure you have your model number and serial number ready before calling, [see page 12](#) for locating this information.

### IMPORTANT TROUBLESHOOTING SAFETY NOTES

When troubleshooting the Brute make sure that you have locked out and tagged out all energy sources. **DO NOT** operate the Brute without its guarding.

When servicing electric components disconnect electrical supply between the trailer and truck to prevent electrical shock.

When hydraulics are disconnected take extra precautions to prevent debris from entering the system. Small particulates can prevent the Brute from switching properly.

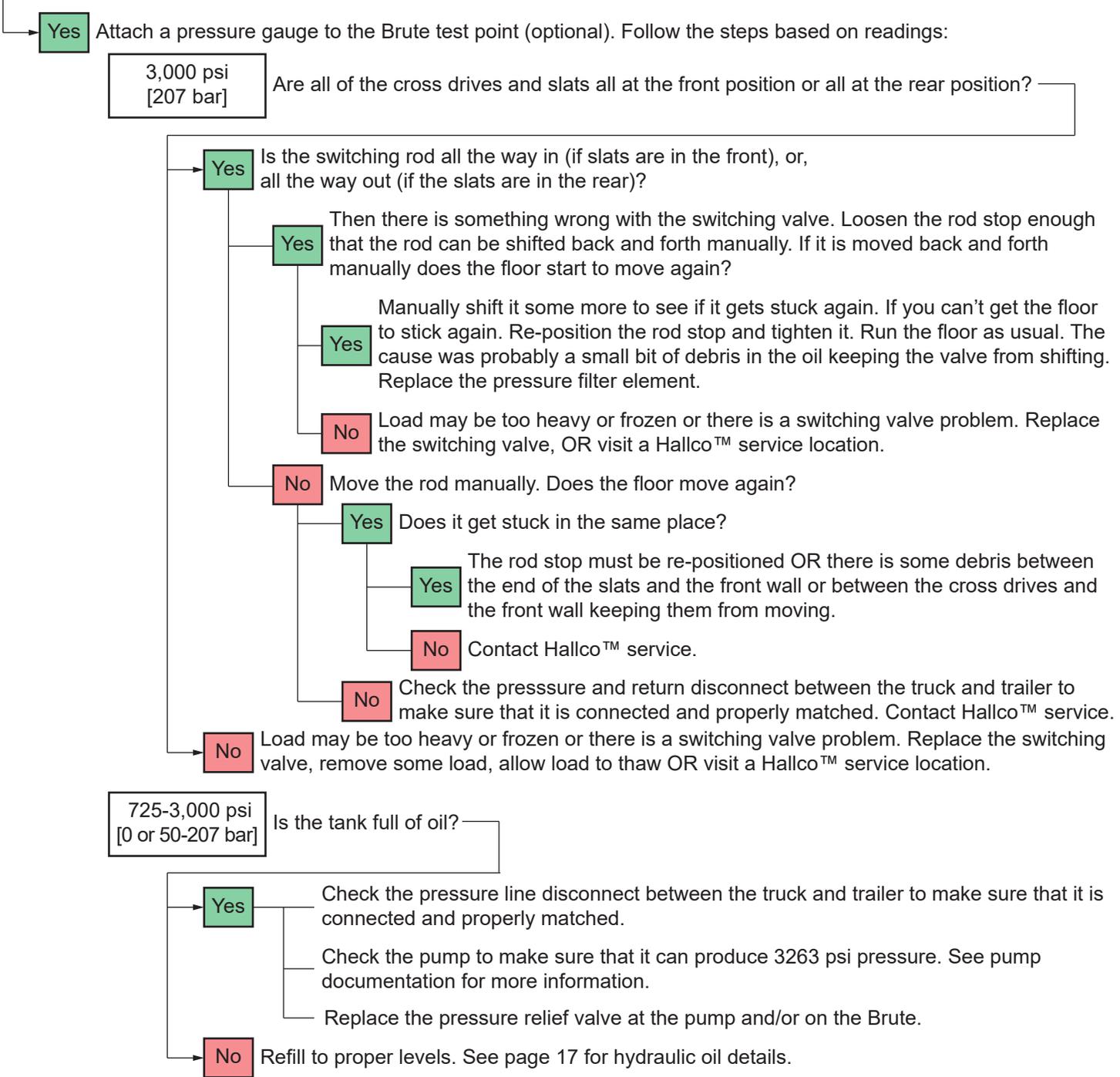
When troubleshooting, have the PTO/PUMP documentation readily available. The Brute is an integral piece of a larger machine, some steps will require you to check status of the PTO/PUMP and it's components.

**DO NOT** attempt to troubleshoot the system if you do not have experience running it. When troubleshooting you will be expected to know what is proper operational sounds, lights and movements. Inexperienced users can cause additional damage if they are not familiar with the equipment.

**PROBLEM: No part of the floor moves.**

Confirm the following conditions:

The PTO/pump is on and operating normally.





**PROBLEM: Floor moves in “Unload” mode but gets stuck in “Load” mode OR floor moves in “Load” mode but gets stuck in “Unload” mode.**

Confirm the following conditions:

1. The PTO/pump is on and operating normally.  Confirmed

→ Is there debris between the cross drives or damage to the cross drives preventing them from moving?

Yes Clear the cross drives, check for and repair additional damage prior to running the floor.

No Is there debris or damage on either end of the slats preventing them from moving?

Yes Clear the slats, check for and repair additional damage prior to running the floor.

No Contact Hallco™ service.

---

## BRUTE 8500 DISASSEMBLY

The following pages outline the general disassembly procedures of your Brute 8500 LIVE FLOOR® conveying system. Specific rebuild manuals for the Hydraulic Module and Switching Valve assembly are available from your Hallco™ representative.

Reassembly is reverse process except where noted in the following instructions.



**Caution!** Before disassembly, you must prep the area with catch pans for hydraulic fluid. There will be residual fluid in all the lines, cylinders and filter. **DO NOT ALLOW HYDRAULIC FLUID TO DRAIN ONTO THE GROUND.**

### REMOVE COVER

There are four (4) 3/8"-16 screws with lock washers securing the cover to the frame side plates. Remove these screws to release the cover (fig. 1).

### RE-INSTALLING COVER

When re-installing, the cover tabs should go over the outside of the frame side plates. Screws should be torqued to **23 ft-lbs [31 n-m]**.

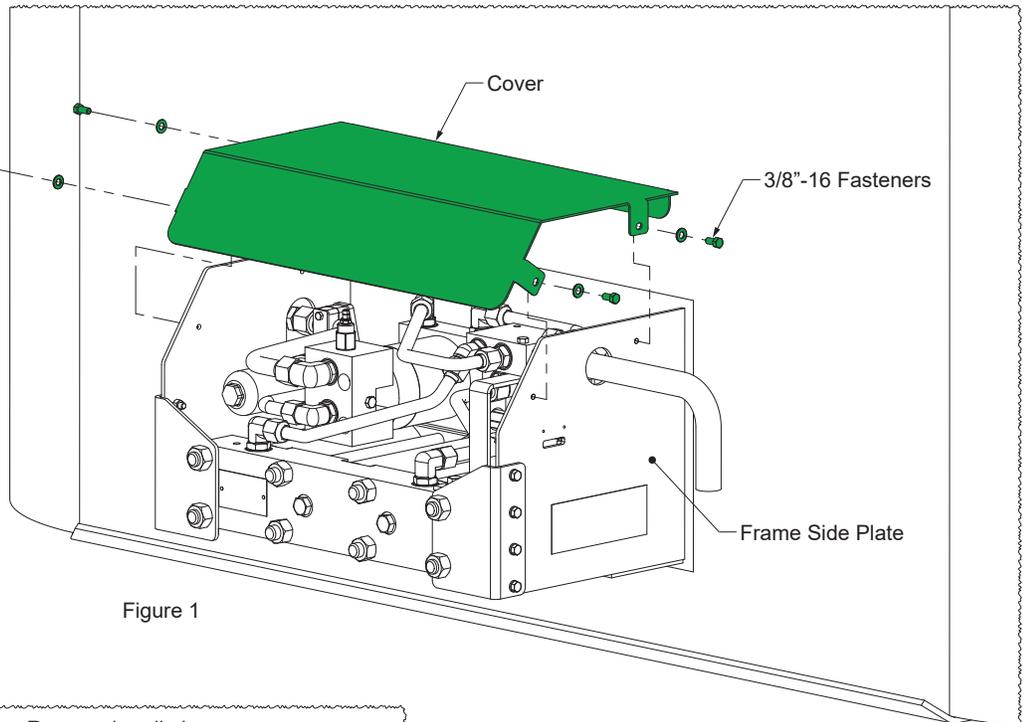


Figure 1

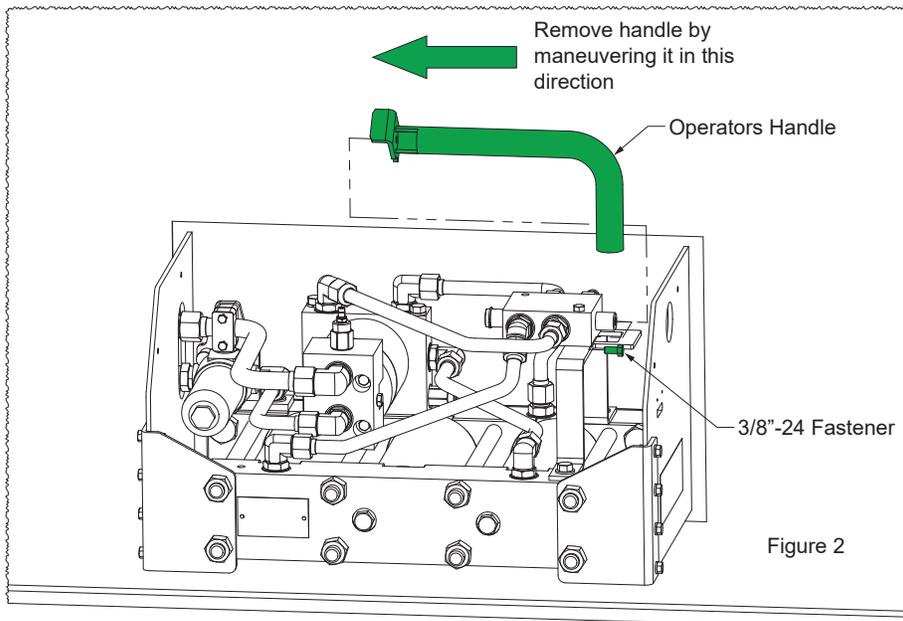


Figure 2

### REMOVE HANDLE

There is one (1) 3/8"-24 screw securing the operators handle to the control valve spool. Once removed rotate and slide the handle **TOWARDS** the center of the Brute to fish it out of the opening (fig. 2).

### RE-INSTALLING HANDLE

When re-installing, replace the handle and screw, torque to **23 ft-lbs [31 n-m]**.

### REMOVE PRESSURE & RETURN ADAPTERS

Remove pressure and return lines from truck and unscrew 1" NPT pressure and return adapters. Be careful to catch any residual fluid that will drain when removed (fig. 1).

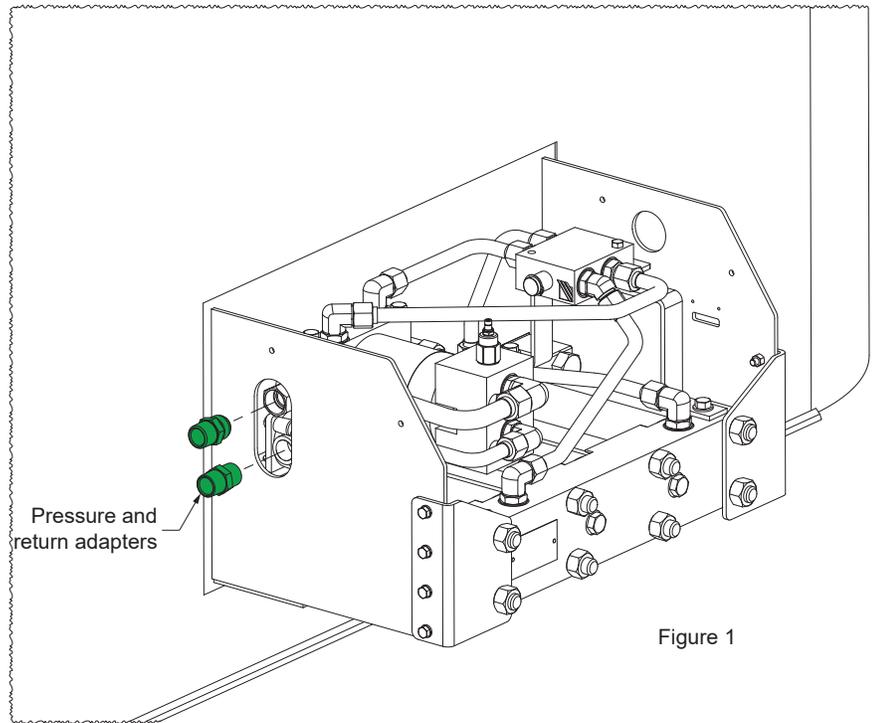


Figure 1

### REMOVE SWITCHING ROD ASSEMBLY

If you have the Accelerator option you must disconnect the accelerator cable prior to removing the switching rod. Disconnect the cable by pulling the cotter pin and removing the accelerator pin from the toggle. Secure the accelerator cable out of the way so it does not become snagged.

Take note of the side of the toggle the cotter pin and the accelerator cable is on. Reassemble on the same side otherwise the accelerator cable shielding may experience wear or bind when actuating.

If you do not have the Accelerator option skip this step.

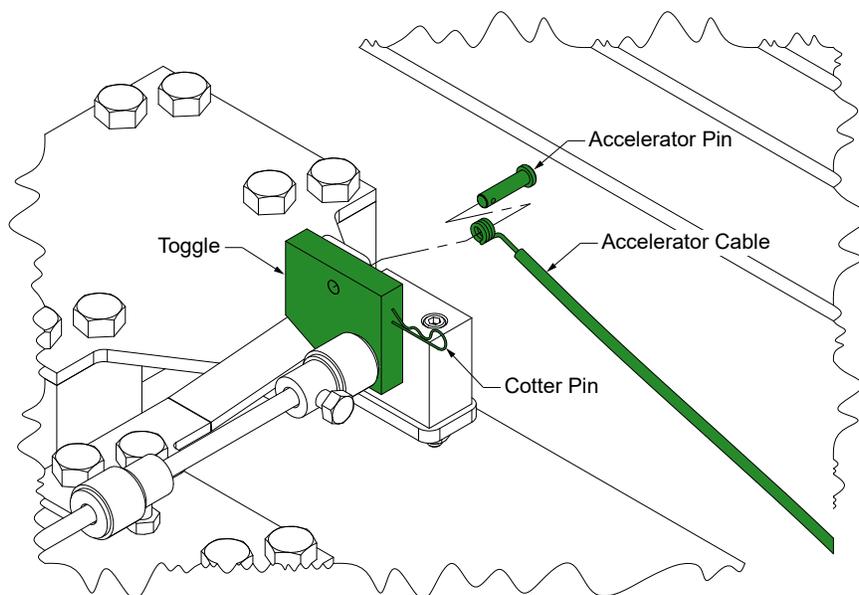


Figure 2

### REMOVE SWITCHING ROD ASSEMBLY (CONT.)

Remove switching rod assembly by removing trigger blocks from cross drive plates, each with two (2) 1/4"-20 socket head screws. Then unscrew the one (1) 5/16"-18 screw securing the switching rod offset bar to the switching valve spool.

Remove the switching rod as a complete assembly. Take care to not disturb the position of the stops.

### RE-INSTALLING SWITCHING ROD ASSEMBLY (CONT.)

When re-installing torque the 5/16"-18 screw to **13 ft-lbs [17 n-m]**.

Torque the four (4) 1/4"-20 socket head screws securing the trigger blocks to **10 ft-lbs [14 n-m]**.

If equipped, re-attach the Accelerator cable making sure it is on the correct side of the toggle.

After reassembly the stops may need to be adjusted (even if they were not disturbed) due to shifting of the equipment. See [page 20](#) for switching rod stop adjustment.

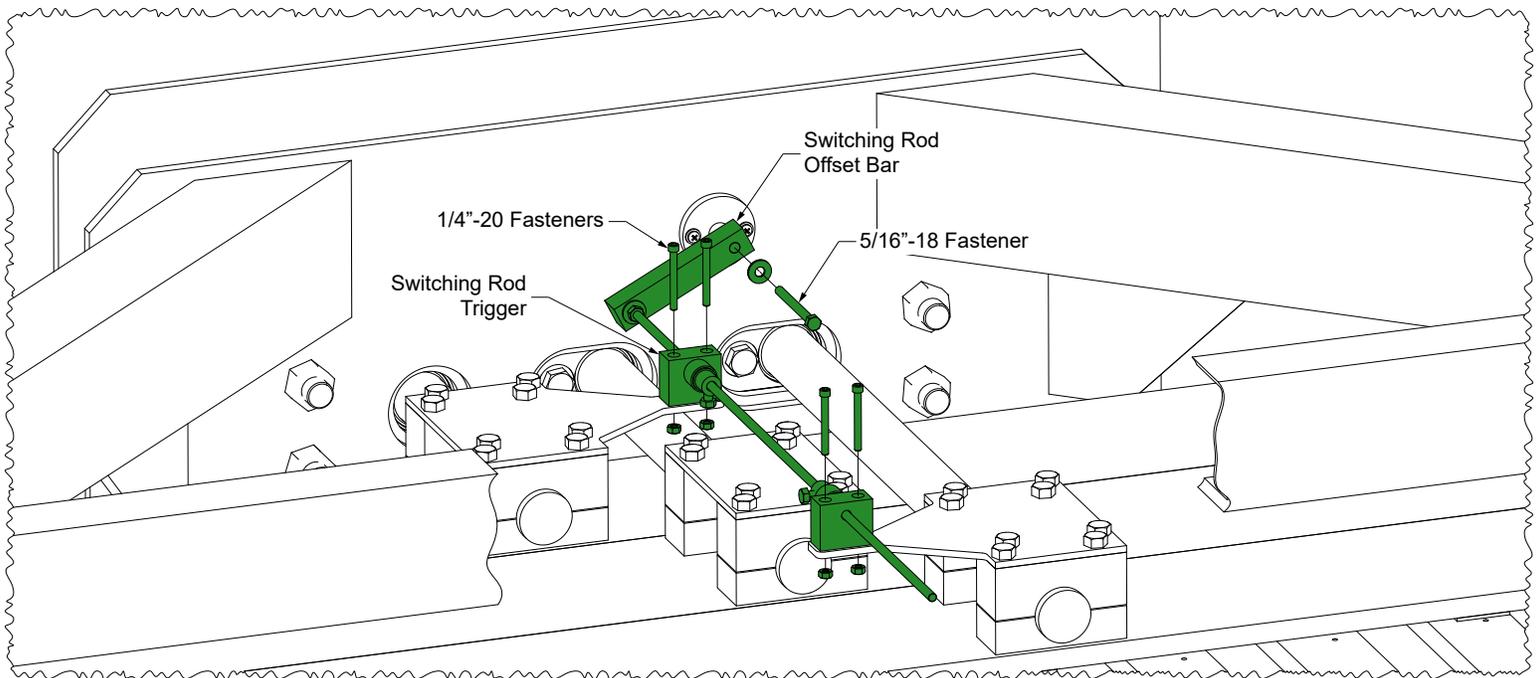


Figure 1  
(Accelerator parts not shown)

## REMOVE CROSS-DRIVE CLAMPS

Remove the shaft clamps by removing four (4) 1/2"-13 bolts per clamp. There are eight (8) bolts total per cross-drive. Note the location and orientation of the clamp tie plates when removing (fig. 1).

If your system is equipped with the Accelerator you will need to remove the accelerator trigger also (fig. 2).

## RE-INSTALLING CROSS-DRIVE CLAMPS

When re-installing torque the 1/2"-13 bolts to **80 ft-lbs [108 n-m]**.

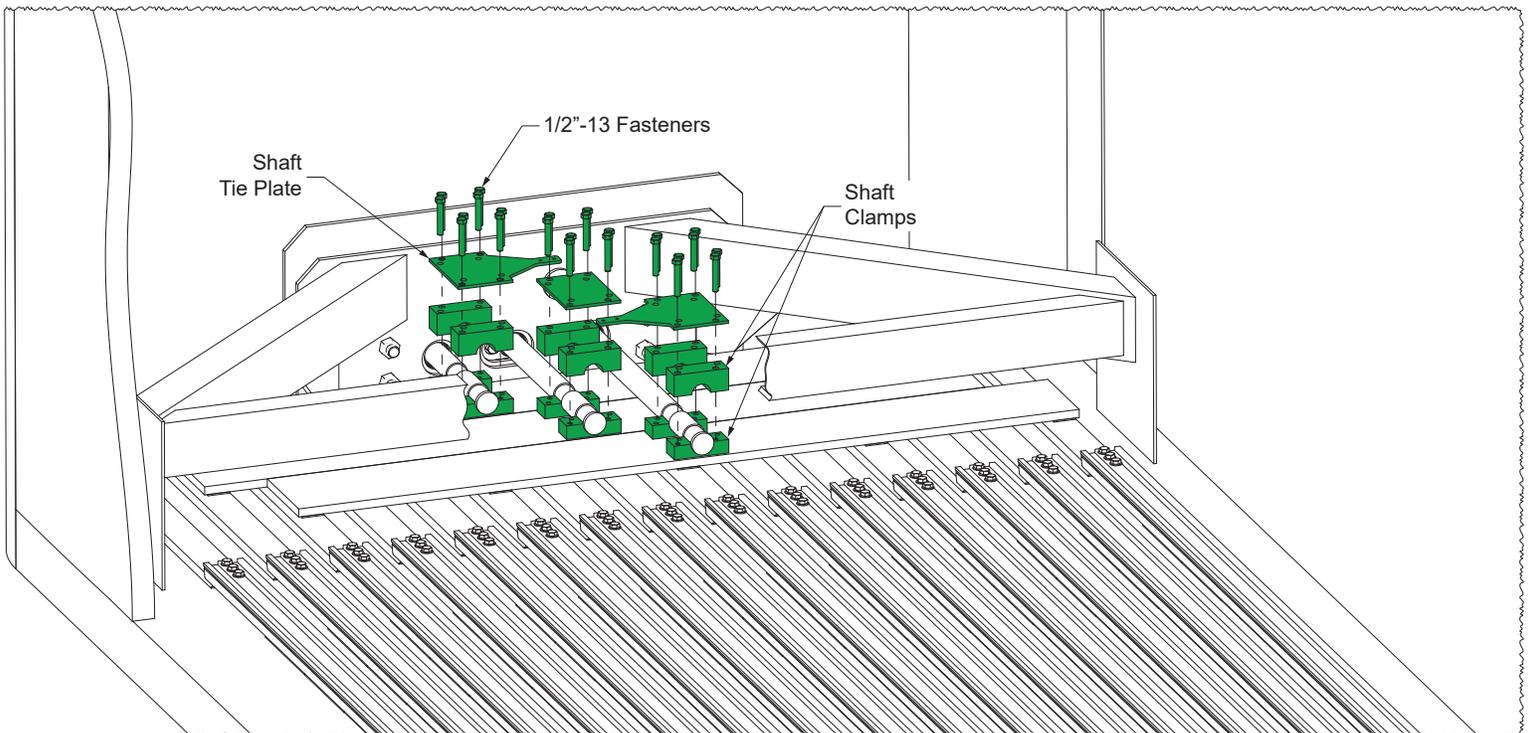


Figure 1  
(Accelerator parts not shown)

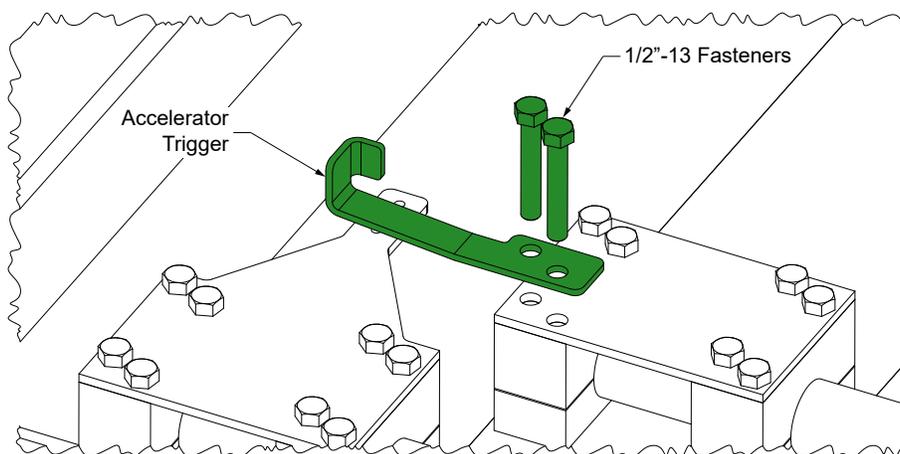


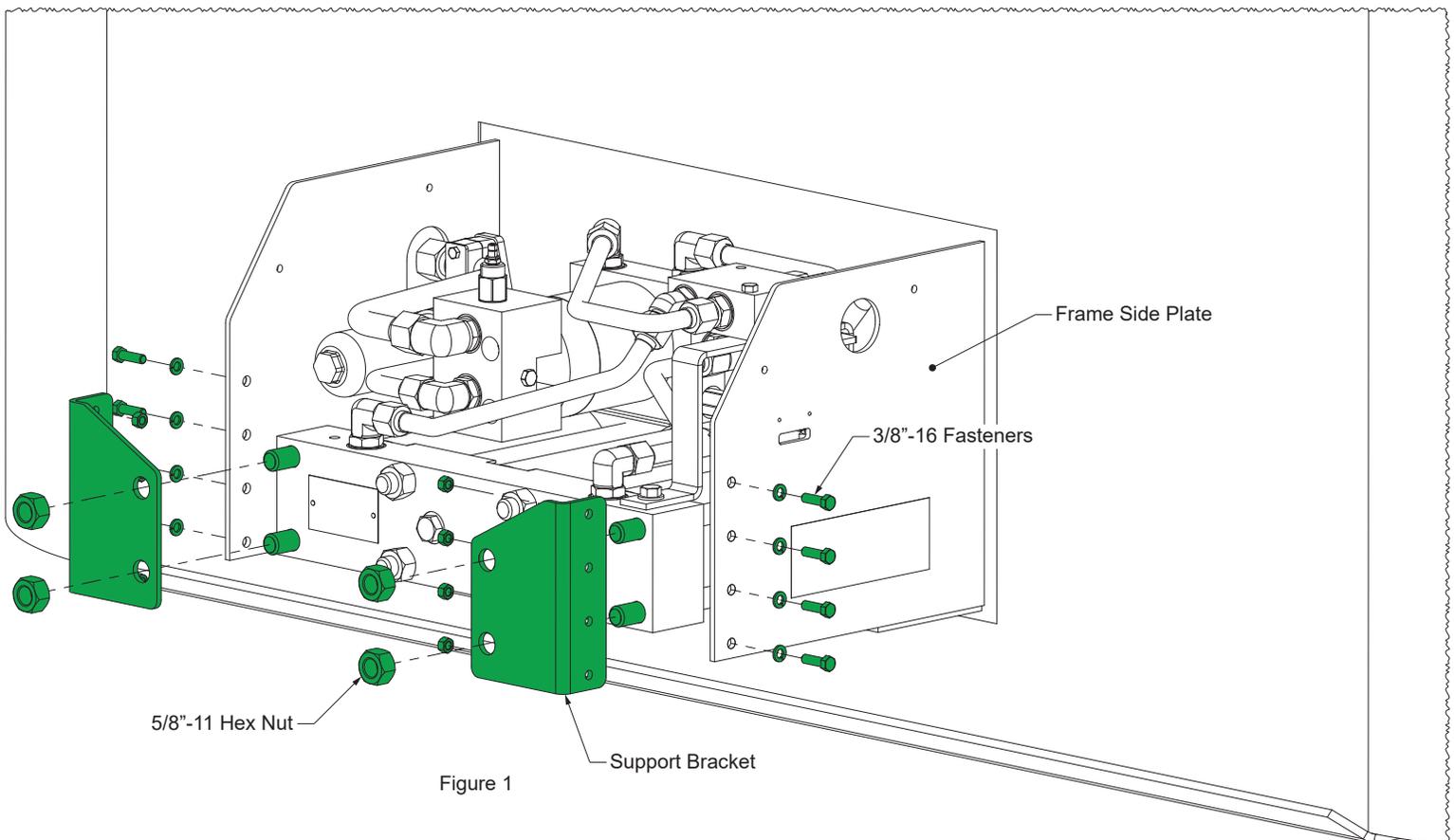
Figure 2

## REMOVE BRUTE MODULE SUPPORT BRACKETS

To remove the Brute hydraulic module you must first remove the rear supporting brackets. This is done by removing four (4) 3/8"-16 bolts, lock washers and hex nuts securing the bracket to the Brute framework. Then remove two (2) 7/8"-9 prevailing torque lock nuts securing the bracket to the Brute hydraulic module (fig. 1).

## RE-INSTALLING BRUTE MODULE SUPPORT BRACKETS

When re-installing Brute module support brackets, torque 3/8"-16 fasteners to **23 ft-lbs [31 n-m]**. Replace the four (4) 7/8"-9 prevailing torque lock nuts, torque in a criss-cross pattern to **200 ft-lbs [271 n-m]**.  
**DO NOT REUSE LOCK NUTS.**

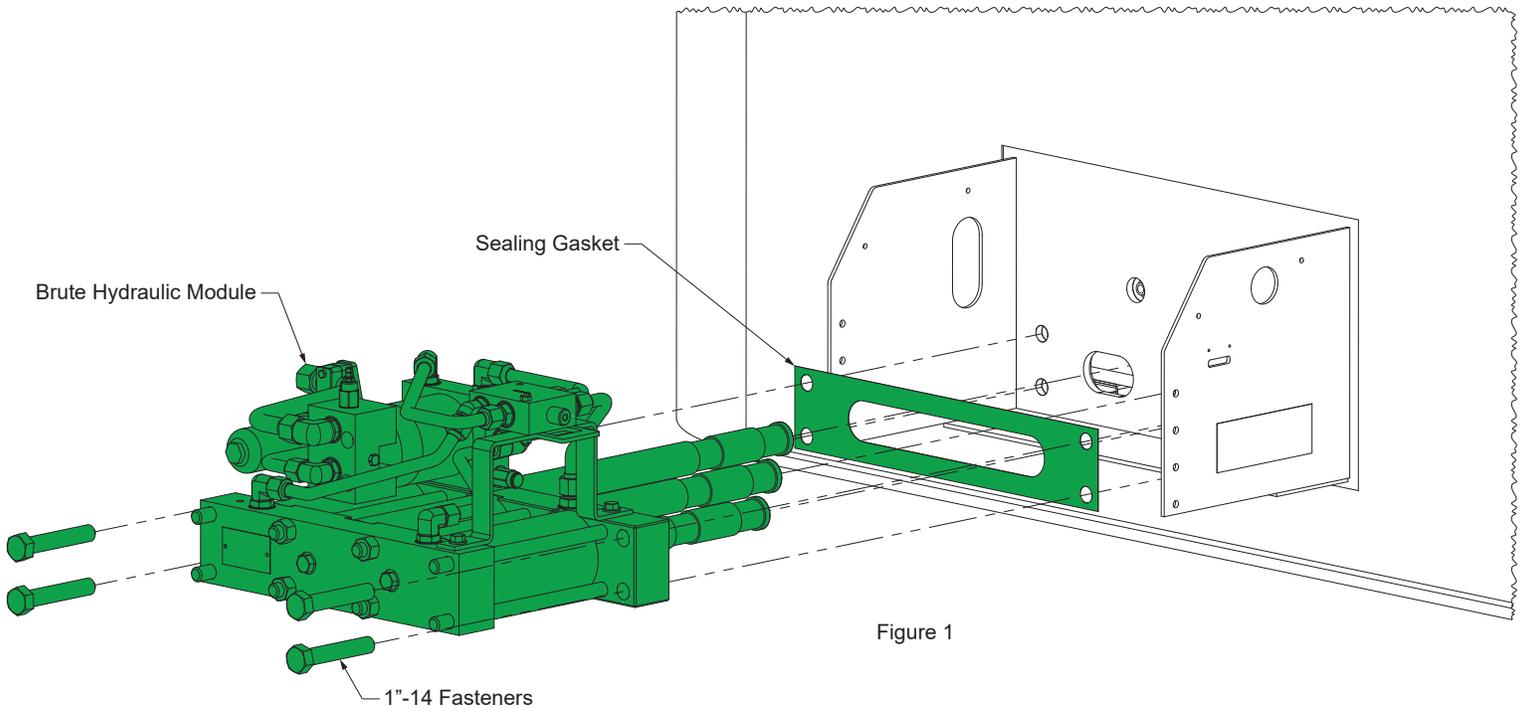


## REMOVE BRUTE MODULE

To remove the Brute hydraulic module remove the four (4) 1"-12 bolts securing the module to the frame (see figure 1 next page). The module weighs approximately **300 lbs [136 kg]**. See figure 2, page 31 for approximate center of gravity.

## RE-INSTALLING BRUTE MODULE

Replace the four (2) 1"-14 prevailing torque lock nuts, torque in a criss-cross pattern to **800 ft-lbs [1080 n-m]**.  
**DO NOT REUSE LOCK NUTS.**



Caution! Before loosening the bolts verify the module is fully supported with straps or cribbing. The hydraulic module is **HEAVY** and **UNBALANCED**.

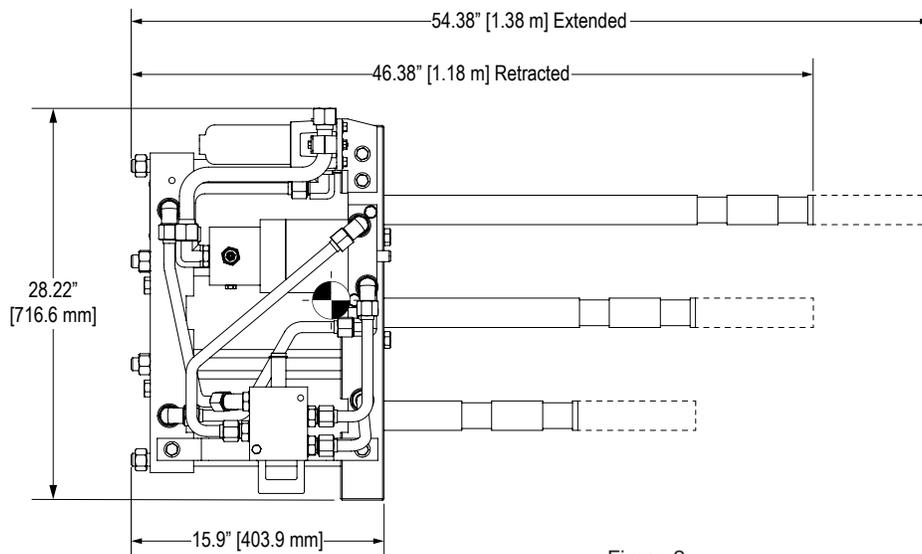
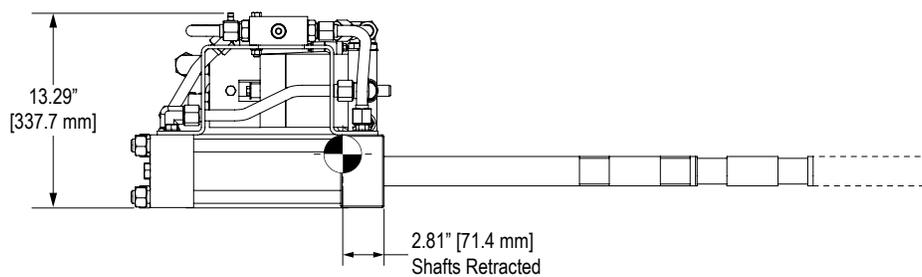


Figure 2



### REMOVE SLATS

To remove the slats. Remove three (3) 1/2"-13 serrated flange head bolts. Slide the slat towards the back of the trailer to remove.

### RE-INSTALLING SLATS

When re-installing slats torque 1/2"-13 bolts to ~~80 ft-lbs [108 n-m]~~. 100 ft-lb

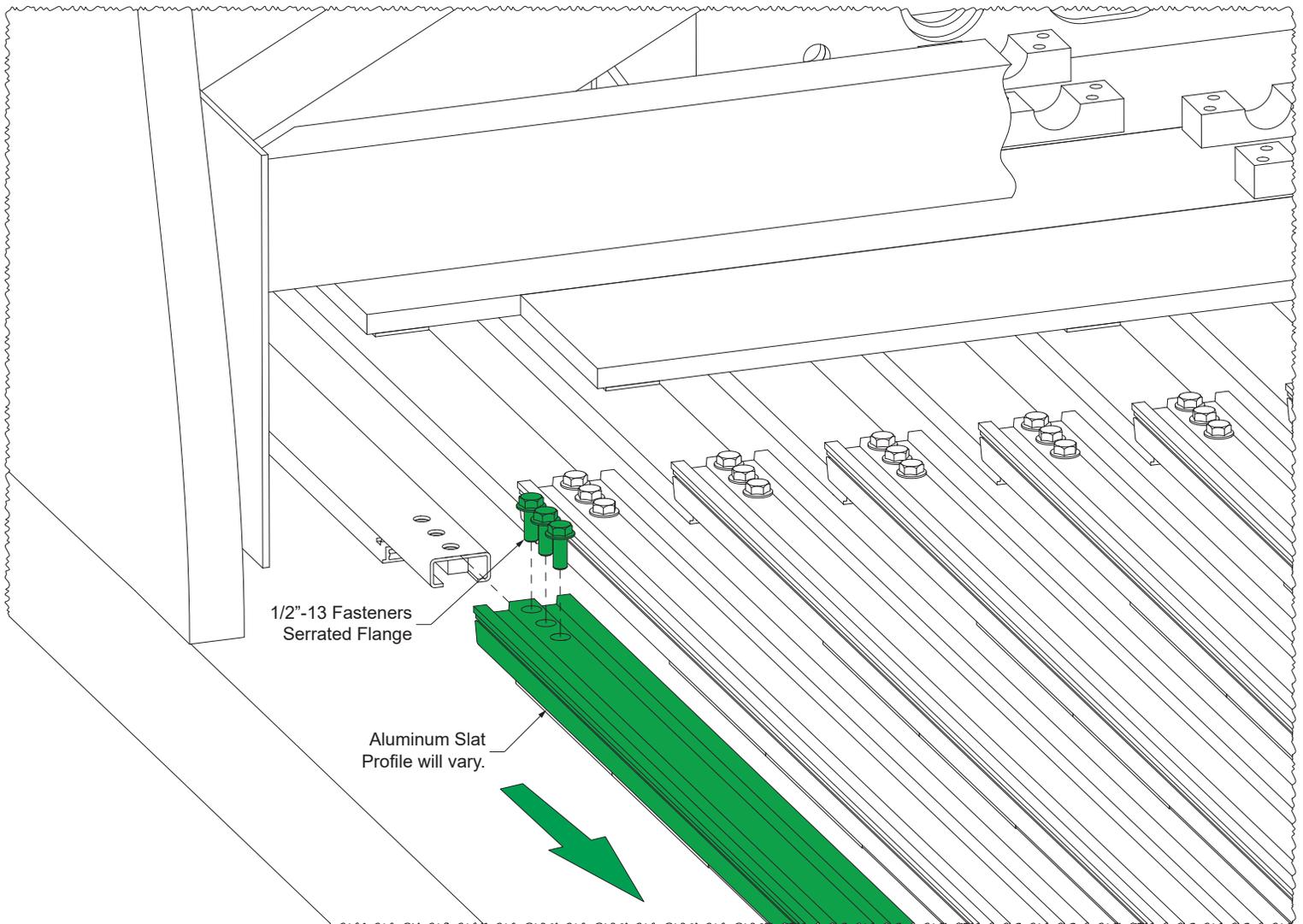


Figure 1

### REMOVE FRONT HOLD DOWNS AND SLAT BEARINGS

To remove the old downs, remove two (2) 3/8"-16 bolts securing each hold down to the hold down mount. Pull up on the continuous bearings to release them from the sub-deck.

### RE-INSTALLING FRONT HOLD DOWNS AND SLAT BEARINGS

When re-installing hold downs torque 3/8"-13 bolts to **23 ft-lbs [31 n-m]**. Snap bearings down over sub-deck. If installing new bearings refer to installation manual for proper bearing length. Some bearings require a gap to allow for thermal expansion.

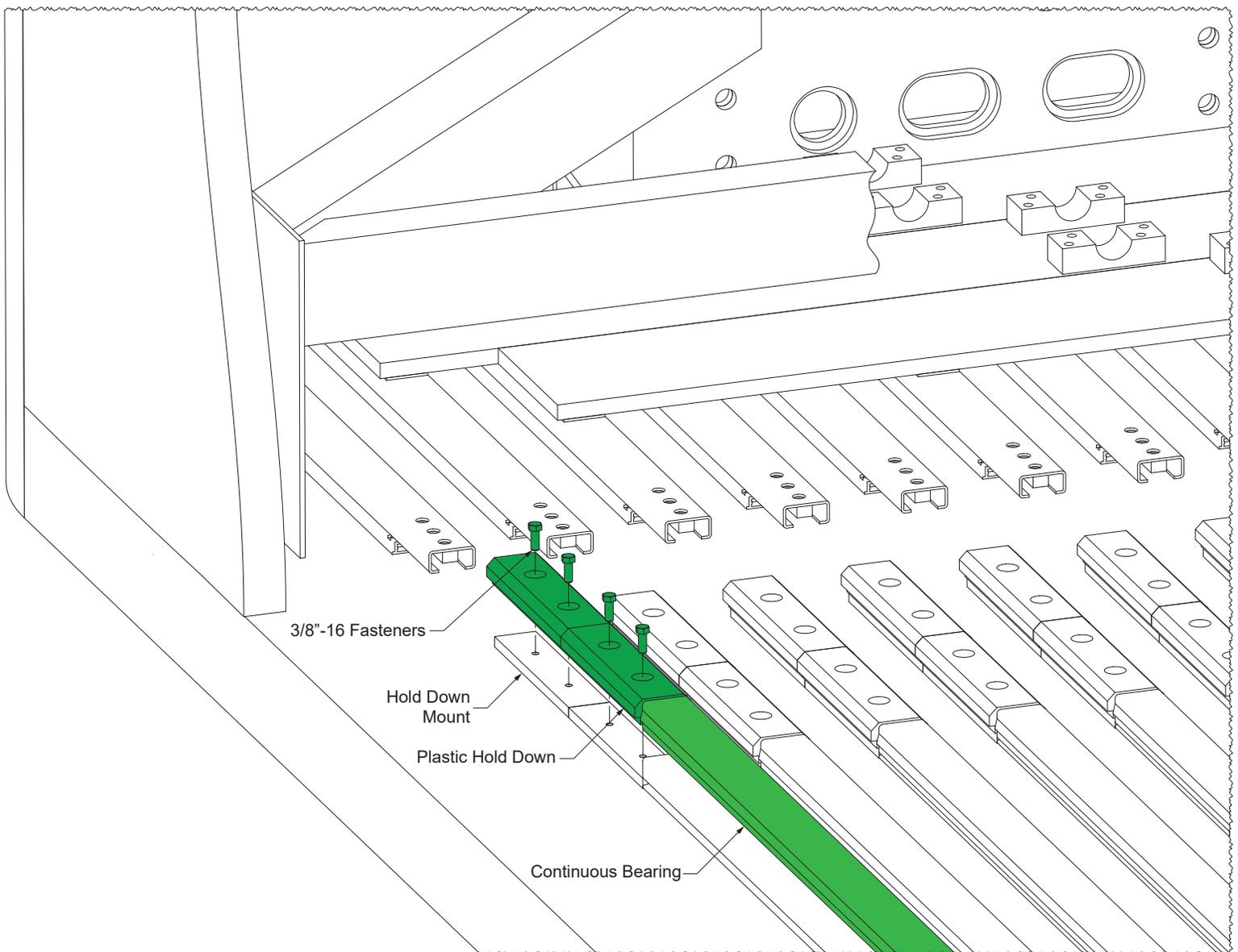


Figure 1

### REMOVE CROSS-DRIVES

To remove cross-drives slide each cross drive assembly rearward and pull up until they clear the cross-drive hold downs (fig. 1). Lift out of the trailer.

Repeat the process for the center and front cross-drives (fig. 2 & fig. 3).

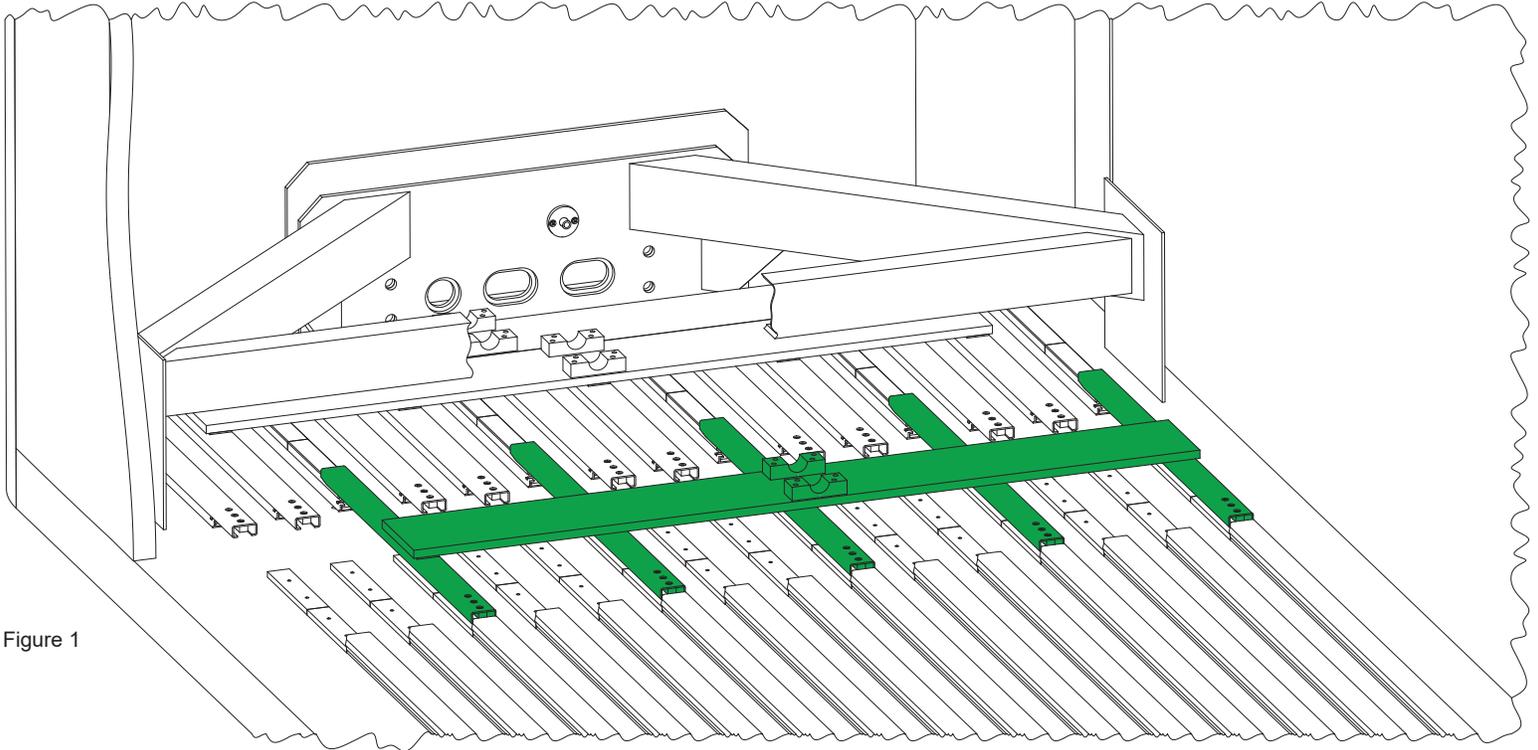


Figure 1

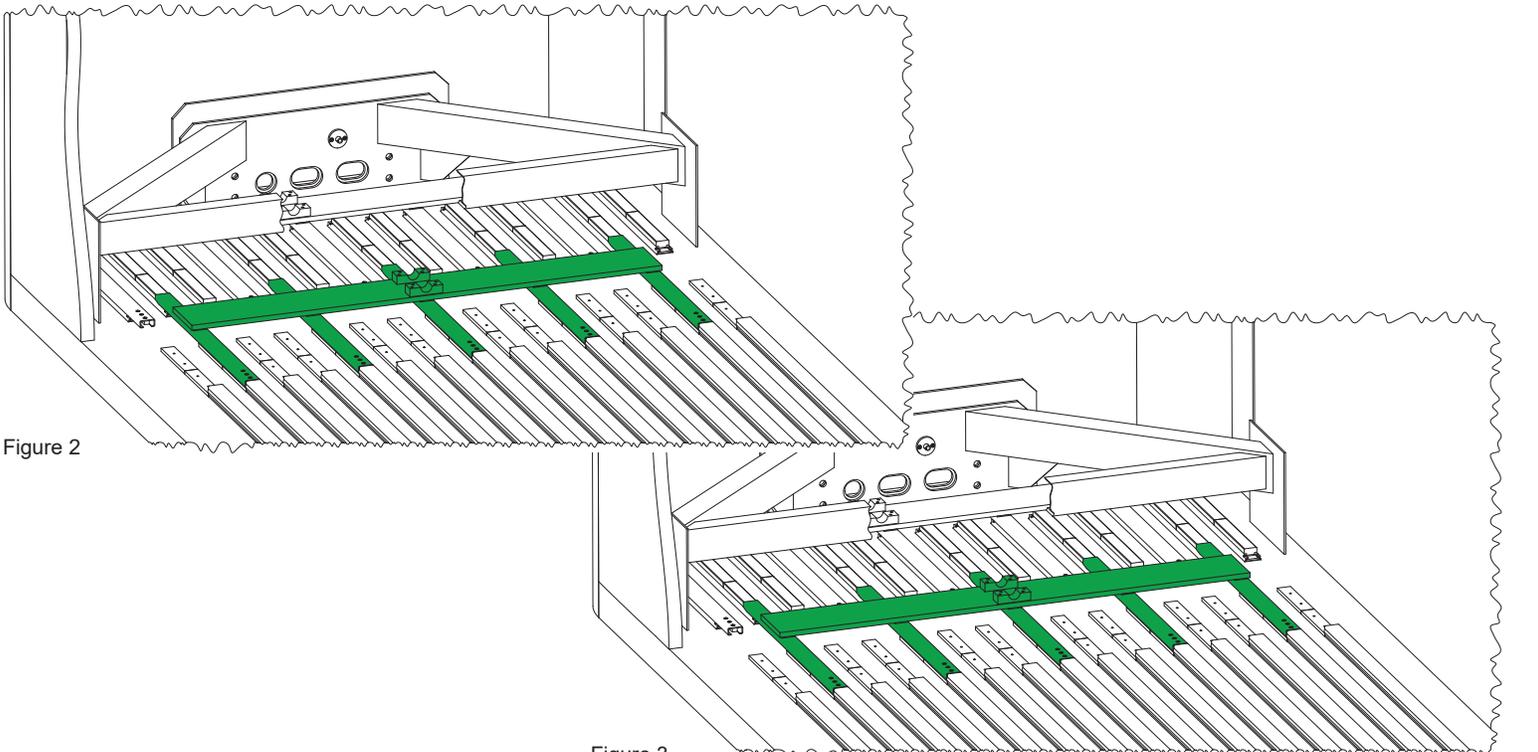


Figure 2

Figure 3



## DISPOSAL OF HYDRAULIC OIL

Hydraulic oil damages the environment and contaminates water sources if it isn't disposed of correctly.

After each oil change or prior to dismantling the system, transfer the hydraulic oil to a metal or thick plastic sealable storage container, such as a metal can or used oil container. Secure the container's lid tightly once all the hydraulic oil has been transferred.

Find a recycling center near you that accepts used motor oil. You can find this information online.



Hydraulic oil and motor oil can be mixed together for recycling purposes. Do not mix used hydraulic oil with anything other than similar oils for recycling.

## RECYCLING

The Brute system is primarily made of steel and aluminium with some plastic parts. Once system has reached its end of life, Hallco recommends complete disassembly of the system and recycling as follows:

- Cross-drives, barrels and shafts are all carbon steel and should be taken to the nearest recycling center that accepts steel.
- Frame, cover plate, brackets, slats, sub-decks, head, base, and pistons are all aluminium and should be taken to the nearest recycling center that accepts aluminium.
- Switching valve and control valve carbon steel and should be taken to the nearest recycling center that accepts steel.
- Hydraulic tubes are stainless steel and should be cleaned and taken to the nearest recycling centre that accepts stainless steel.
- Continuous bearings, hold downs and trigger blocks are HDPE plastics and should be taken to the nearest recycling center that accepts HDPE plastics.
- Hardware, fittings, springs, poppets and small parts vary by material, use your best judgment regarding recycling.



Pressure washing and/or degreasing the components prior to recycling helps prevent cross-contamination and reduces the likelihood of parts being rejected by the recycling center.









## BRUTE SERIES LIMITED WARRANTY

**Hallco™ Industries, Inc.** hereby warrants, only to the first owner of a new **Hallco™ Brute** series system from the factory or selling distributor, that the product shall be free from defects in material and workmanship for a period of **one year** after delivery to the first owner. Hydraulic components shall be warranted as free from defects in material and workmanship for a period of three years after delivery to the first owner. **This warranty does not cover normal wear and tear and maintenance and is not to be construed as a service contract.**

### Owner's Obligation:

To qualify for warranty coverage, a **Warranty Card** must be completed and returned to **Hallco™ Industries, Inc.** within **ten (10) days** of delivery. The equipment must be subject to normal use and service only.

### Definition of Normal Use and Service:

"Normal use and service" means the loading and/or unloading of uniformly distributed, **non-corrosive** material properly restrained and secured on properly maintained public roads, with gross vehicle weights not in excess of factory-rated capacity as stated in the vehicle owner's manual. For stationary installations, "normal use and service" means the conveying of uniformly distributed, **non-corrosive** material, with weights not in excess of factory-rated capacity.

### Sole and Exclusive Remedy:

If the product covered hereby fails to conform to the above Warranty, **Hallco™ Industries, Inc.** sole liability under this Warranty and the owner's sole and exclusive remedy is limited to repair or replacement of the defective part(s) at a facility authorized by **Hallco™ Industries, Inc.**. Contact **Hallco™ Industries, Inc.** for the closest Authorized Dealer. This is the owner's sole and exclusive remedy for all contract claims, and all tort claims including those based on strict liability in tort and/or negligence. Any defective part(s) must be shipped freight prepaid to **Hallco™ Industries, Inc., Tillamook Oregon.**

**EXCEPT AS EXPRESSLY SET FORTH ABOVE, HALLCO™ INDUSTRIES, INC. MAKES NO WARRANTIES EXPRESS, IMPLIED OR STATUTORY, SPECIFICALLY: NO WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF MERCHANTABILITY ARE MADE. FURTHER, HALLCO INDUSTRIES WILL NOT BE LIABLE FOR INCIDENTAL DAMAGES OR CONSEQUENTIAL DAMAGES SUCH AS, BUT NOT LIMITED TO, LOSS OF USE OF THE PRODUCT, DAMAGE TO THE PRODUCT, TOWING EXPENSES, LEGAL FEES AND THE LIABILITY YOU MAY HAVE IN RESPECT TO ANY OTHER CLAIM OR REASON.**

### Tort Disclaimer:

Hallco™ Industries, Inc. shall not have any liability in tort with respect to the products, including any liability based on strict liability in tort and/or negligence, or any other theory.



## BRUTE SERIES WARRANTY CONDITIONS

### **Warranty conditions are as follows:**

- The warranty period is for the first equipment owner only.
- A warranty period is one (1) year for the entire Hallco™ Brute system from the date of delivery to the first purchaser.
- A warranty period is one (1) year for any electrical component of the Hallco™ Brute system.
- A warranty period of three (3) years for the hydraulic components from date of delivery to the first purchaser.
- The Brute series system must be installed by the trailer manufacturer according to Hallco™ installation procedures located in the Installation Manual.
- Purchaser must follow recommended maintenance and control procedures located in the Owners Manual.
- In the case of a malfunction, trailer manufacturer or Hallco™ Industries, Inc. must be informed within 10 business days.

### **The following components are not covered by the warranty:**

- Malfunction of equipment, or caused by equipment, which was not supplied by Hallco™ Industries, Inc..
- Malfunction caused by the use of dirty oil, or oil of the wrong type as stated in the owner's manual.
- Malfunction caused by overheated oil: maximum temperature of 180° F or 82° C.
- Malfunction caused by corrosive materials.
- Malfunction caused by overloading or improper use.
- Malfunction caused by repair work performed by an unauthorized third party. Contact Hallco™ Industries, Inc. for the closest authorized dealer.
- Filter elements and components, which are subject to wear-and-tear.
- Defects in electrical components due to incorrect connection and/or incorrect voltage levels.

### **The Warranty is void if:**

- The Brute series system is used for purposes which have not been recommended by Hallco™ Industries, Inc..
- The wet kit does not meet Hallco™ Industries, Inc. system recommendations.
- The Hallco™ Brute series system is not installed properly.
- Loads in excess of legal limits are moved with the system without written permission from Hallco™ Industries, Inc..



### BRUTE SERIES WARRANTY REGISTRATION

#### Warranty Registration Process:

Warranty registration will be the responsibility of the selling party to the end user, (The Dealer or Manufacturer of the trailer or bin).

The warranty registration card (below) must be completed and returned to Hallco Industries in order for the warranty period to begin on the date of delivery (date purchaser actually takes delivery of trailer). **The beginning of the warranty will be the date of manufacture if the warranty card is not completed and sent to Hallco™ Industries, Inc..**

To validate the warranty, this registration card must be filled out completely and returned to Hallco Industries within ten (10) business days of delivery to the original end customer.

You can fill out and submit your warranty online at: [www.hallcoindustries.com/warranty-card](http://www.hallcoindustries.com/warranty-card)

Alternatively, you can fill out the form below and either mail or e-mail it to:

Mail, Fax or e-mail warranty card to:

Hallco Industries, Inc.  
PO Box 505  
Tillamook, OR 97141 USA  
Fax: +1 (503) 842-4866  
[info@hallcoindustries.com](mailto:info@hallcoindustries.com)

#### Hallco™ Industries Warranty Registration Card

Purchaser:	E-mail:
Company:	Phone:
Address:	State:
City:	Postal Code:
Country:	Trailer Manufacturer:
Date of Delivery:	Trailer VIN #:
Brute Model Number:	Dealer Name:
Brute Serial Number:	Dealer Location:
Type of Material Unloaded:	Trailer Leased or Owned:

I have fully read the Hallco™ Industries warranty information and I/we fully understand and agree to the terms of the warranty.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

