

**BIG MAX ROLL-OFF SYSTEM OPERATIONAL
AND MAINTENANCE MANUAL**



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SUPPORT

Machine Identification

Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

If you, or the dealer, have added Options not originally ordered with the machine, or removed Options that were originally ordered, the weights and measurements are no longer accurate for your machine. Update the record by adding the machine weight and measurements provided in the Specifications & Capacities Section of this manual with the Option(s) weight and measurements.

Dealer Contact Information:

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Delivery Date	
First Operation	
Accessories	
Name:	
Street:	
City/State:	
Telephone:	
Email:	

Manufacturer information:

Name:	
Street:	
City/State:	
Telephone:	
Email:	

WARRANTY

SECTION 1. WARRANTY FOR PRODUCTS

- 1.1 With respect to any Products manufactured by Drive that are purchased by the Customer (the “**Drive Manufactured Products**”):
- (a) Drive warrants that the Drive Manufactured Products are, at the time of delivery to the Customer and for a period of 24 months from the date of delivery in accordance with Section 3, free from defects in material and workmanship; for any Drive Manufactured Product that Drive repaired, serviced or upgraded, Drive warrants that any repaired or replaced component of the Drive Manufactured Product will be free from defects in material and workmanship for the longer of (i) 90 days from the date of service; or (ii) the remainder of the new product warranty set out in 5.1(a);
 - (b) Drive has sole responsibility and discretion for determining the cause and nature of a Drive Manufactured Product defect, and Drive’s determination with regards to such defect shall be final. The Customer must notify Drive of any warranty claim within 30 days from the time the Customer knew or ought to have known about the defect. The exclusive remedy for any such warranty claim shall be, at Drive’s option, either (i) the repair of the Drive Manufactured Product; (ii) the replacement of the Drive Manufactured Product with a product of the same or similar type with similar capabilities; or (iii) the refund of the purchase price of the Drive Manufactured Product.
 - (c) the warranty in this Section 5.1 does not cover defects or damage caused by: (i) shipping or transportation damages; (ii) improper installation; (iii) exposure to unsuitable environmental conditions; (iv) corrosion or rust; (v) unauthorized or abnormal use or operation; (vi) negligence or accidents, including but not limited to lack of maintenance or improper maintenance; (vii) material or workmanship not provided by Drive; (viii) alteration of Products without prior approval by Drive; and (ix) acts of God, such as earthquake, flood or fire ;
 - (d) EXCEPT FOR THIS WARRANTY, DRIVE EXPRESSLY MAKES NO WARRANTIES WITH RESPECT TO THE DRIVE MANUFACTURED PRODUCTS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON-INFRINGEMENT OF THIRD-PARTY RIGHTS, AND ANY WARRANTIES THAT MAY HAVE ARISEN FROM COURSE OF DEALING OR USAGE OF TRADE.
 - (e) When notifying Drive of, or returning to Drive, any Drive Manufactured Products that fail to meet an applicable warranty, the Customer shall comply with Drive’s then-current return material authorization procedure. Drive owns, and the Customer hereby assigns to Drive, any replaced Drive Manufactured Product, and any part, component, or item removed from a Drive Manufactured Product under these warranty terms, with the intention that all such replaced products and all such removed parts, components, and items become the property of Drive; and

- (f) Drive reserves the right to charge for service time expended if any defect claimed is due to any cause not covered by the above warranty terms.
- 1.2 With respect to any Products manufactured by manufacturers other than Drive that are purchased by the Customer (the “Non-Drive Manufactured Products”):
- (a) Drive hereby assigns and passes through to the Customer all manufacturers’ warranties for the Non-Drive Manufactured Products, to the greatest extent such warranties are assignable. Drive itself does not warrant that the Non-Drive Manufactured Products are free from defects in material and workmanship.
- (b) DRIVE EXPRESSLY MAKES NO WARRANTIES WITH RESPECT TO THE DRIVE NONMANUFACTURED PRODUCTS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON-INFRINGEMENT OF THIRD-PARTY RIGHTS, AND ANY WARRANTIES THAT MAY HAVE ARISEN FROM COURSE OF DEALING OR USAGE OF TRADE; and
- (c) when notifying Drive of, or returning to Drive, any Non-Drive Manufactured Products that fail to meet an applicable warranty, the Customer shall comply with Drive’s then-current return material authorization procedure. Drive owns, and the Customer hereby assigns to Drive, any replaced Non-Drive Manufactured Product, and any part, component, or item removed from a Non-Drive Manufactured Product under these warranty terms, with the intention that all such replaced products and all such removed parts, components, and items become the property of Drive.

SECTION 2. WARRANTY FOR SERVICES

- 2.1 Drive warrants that the Services will be performed in a workmanlike manner. The Customer must notify Drive of any breach of this warranty within 30 days of the date such non-compliant Services were provided. The Customer’s exclusive remedy for a breach of this warranty is for Drive to re-perform the Services at no extra charge; and
- (A) EXCEPT FOR THIS WARRANTY, DRIVE EXPRESSLY MAKES NO WARRANTIES WITH RESPECT TO THE SERVICES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON-INFRINGEMENT OF THIRD-PARTY RIGHTS, AND ANY WARRANTIES THAT MAY HAVE ARISEN FROM COURSE OF DEALING OR USAGE OF TRADE.

SECTION 3. DISCLAIMER OF WARRANTY AND INDEMNIFICATION

- 3.1 No agent, representative, employee, or consultant for Drive has any authority to make any representations or warranties on behalf of Drive.
- 3.2 The Customer hereby indemnifies and holds Drive and any of its directors, officers, employees, consultants, agents, and representatives (collectively, the “Indemnified Parties”) harmless from and against any and all liabilities, fines, suits, claims, obligations, damages, penalties, demands, actions, costs and expenses of any kind or nature (including, without limitation, reasonable legal fees) collectively, the “Losses”) arising from, in connection with, or relating to (i) any act or omission or course of action on the part of an Indemnified Party in the performance of its obligations (including, but not limited to, the Services) under this Agreement; or (ii) the use of the Products; provided that this indemnity shall not apply to any Losses resulting from the wilful misconduct, gross negligence, or bad faith of the Indemnified Party.
- 3.3 Without limiting the foregoing, the Customer acknowledges and agrees that the Services may violate, negate, or otherwise invalidate warranties on Customer’s property, and that Drive is not responsible for any such violations, negations, or invalidations of any warranties on Customer’s property (other than those warranties explicitly provided by Drive in these Terms and Conditions) arising from, in connection with, or relating to the Services.

SECTION 4. LIMITATION OF LIABILITY

- 4.1 TO THE MAXIMUM EXTENT PERMITTED BY LAW, DRIVE’S TOTAL LIABILITY ARISING FROM, IN CONNECTION WITH, OR RELATING TO THE PRODUCTS AND/OR SERVICES, WHETHER FOR BREACH OF CONTRACT, TORT, WARRANTY, NEGLIGENCE, OR OTHERWISE SHALL BE LIMITED TO THE AMOUNT PAID TO DRIVE FOR THE PRODUCTS AND SERVICES FOR WHICH LOSSES OR DAMAGES ARE BEING CLAIMED. DRIVE WILL NOT BE LIABLE UNDER ANY CAUSE OF ACTION, WHETHER IN CONTRACT, TORT, WARRANTY, NEGLIGENCE OR OTHERWISE, FOR ANY INDIRECT, SPECIAL INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES, REGARDLESS OF WHETHER DRIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES. THE PRICE FOR DRIVE PRODUCT’S AND SERVICES ARE CONSIDERATION FOR LIMITING DRIVE’S LIABILITY. EXCEPT FOR WARRANTY CLAIMS, NO ACTION RELATING TO THE PRODUCTS OR SERVICES MAY BE BROUGHT BY THE CUSTOMER MORE THAN ONE (1) YEAR AFTER DELIVERY OF THE PRODUCTS OR COMPLETION OF THE SERVICES

SAFETY

All related manuals should always be kept with the equipment, to ensure the operator has all pertinent information to hand. Reproductions of the manual are available from Drive Products if other copies are required for your office.

1. READ AND UNDERSTAND the operator's manual before operating the hoist or any related equipment.
2. Safety decals and reflectors must be clean, in place, and clearly visible.
3. NEVER operate any equipment while under the influence of any alcohol or drugs that will compromise the operator's alertness. Carefully follow instructions on any medication
4. NEVER position yourself or allow any other person at any time to be on or under any portion of the hoist. If the hoist is elevated, always use the hoist props, and properly block the hoist.
5. ONLY ALLOW trained operators and qualified personnel to operate, work with and on the equipment.
6. NEVER operate the unit until the hydraulic system, including the cylinders and lines, are full of oil, free of air, and in good working condition.
7. DO NOT use any method or device to hold a control valve open which will prevent the spring centered valve handle from automatically returning to center. Spring centered valves are intended to stop their controlled actions when the handle is released.
8. Check the overhead area for low power lines and other overhead obstructions. DO NOT operate the hoist if there is not sufficient overhead clearance.
9. DO NOT use a chain, rope, or any other connecting device between the winch cable hook and the container.
10. DO NOT move the truck while the hoist and container are raised. A raised load creates a top-heavy unstable load and potential overhead problems.
11. DO NOT load, dump, or unload a container on uneven ground.
12. Check the winch cable for wear and fraying. Replace the cable if defective before using the hoist
13. DO NOT allow the cable to rub on any surface when loading or unloading a container. Always keep the cable centered on the hoist frame.
14. DO NOT allow the cable to become slack when loading or unloading a container. This may cause the container to disconnect.
15. DO NOT operate the winch cylinders to load or unload a container unless the front of the hoist frame is above the top of the truck cab.

16. DO NOT pressure wash the dirty outside grease from the rollers, sheaves, rear hinges, cylinder ends or the winch cable. This grease is used to keep dirt out and the lubricating grease in place
17. DO NOT allow any personnel to be on, close to, behind, sides, or under a unit while a container is on an elevated hoist.
18. The container MUST always be fully engaged at the front stops.

LOCKOUT PROCEDURE

The purpose of a Lockout Procedure is to recognize, isolate, and render safe all types of energy sources. The Lockout Procedure should establish performance habits which protect all personnel from injury while they are in, on, or around the equipment during repair, maintenance, and other associated activities.

Compliance and enforcement of a Lockout Procedure is the responsibility of the owner and operator. The following information provides a guideline for creating a Lockout Procedure. A detailed documented program must be established to fit each situation and condition

1. Observe and review all conditions of the equipment. All sources of stored energy must be recognized, managed, and cautiously released by qualified personnel. Examples:

- Shut down truck engines and any auxiliary engines.
- Disengage power take-off systems.
- Relieve stored hydraulic or pneumatic pressure after installing any blocking devices.
- Relieve all entrapped hydraulic pressure.

2. Remove the key from the vehicle ignition.

3. Notify all affected individuals that they must comply with the Lockout Procedure.

4. Tag all controls to inform personnel that the equipment is “under repair,” “do not operate,” or whatever the situation dictates. All affected personnel must be informed of the meaning and appearance of the Lockout Tag.

MINIMUM REQUIREMENTS FOR LOCKOUT TAG:

- ❖ Tags must be made of a material capable of withstanding the environment to which they are exposed. Examples: oil, grease, fuel, etc.
- ❖ Tags must be easily recognizable and clearly visible at the location of the operating controls.
- ❖ Tags must be standardized using one or more of the following criteria: color, shape, size, and/ or format.

5. Only authorized individuals should release the equipment for use after repairs have been made.

6. Periodic inspections should be done by the owner to verify the correct use and compliance with the Lockout Procedure.

NOTE: Other procedures and responsibilities may be associated with the Lockout Procedure as dictated by the uniqueness of each situation and any applicable standards and/or codes.

Please note that the guidelines listed above are intended to create an awareness of the necessity for a “Lockout/Tagout Procedure.” The owner should obtain a current copy of the following references:

- ANSI Z244.1
- Federal Code of Regulations Title 29 Part 1910 Section 1910.147

It is ultimately the owner’s responsibility to establish, train for, and oversee the implementation of all lockout/ tagout procedures.

LOADING PROCEDURE

Before operating the equipment:

1. Be sure the area is clear.
2. Check the area for low power lines or any other obstacle which may interfere with hoist operation.
3. Never operate equipment which is damaged and/or improperly maintained.
4. Always operate the equipment within its rated capacity.
5. Study this entire manual and become properly trained with this equipment before attempting to operate it.

Failure to follow the procedures listed above may result in severe injury or death and/or damage to equipment

1. Align the hoist rails with the long sills of the container and back the truck as squarely as possible to the container. Allow 3 - 4 feet between the container and Big Max Roll off. Put the transmission in neutral and engage the PTO.
2. Raise the hoist until the tail touches the ground. Do not allow the hoist tail to lift the truck up by raising the hoist after the tail is touching the ground.)
3. Set truck brakes. Connect the cable to the container hook.
4. Release truck brakes. Pull the container onto the hoist allowing the truck to roll under the container. Be sure the container long sills are lined up on the hoist properly.
5. Continue pulling the container onto the hoist. After the container front rollers are ahead of the hoist rear hinge point, lower the hoist enough to keep the container long sills and hoist rails in line and even with one another. Lower the hoist when the center of gravity of the container is forward of the rear hinge and continue pulling the container forward until it is securely locked into the front stops.
6. Do not attempt to power the hoist down before the center of gravity of the container is past the rear hinge point of the hoist. This can cause excessive stress, loss of control and/or damage to equipment.
7. Disengage PTO and relieve all pressure in the system before driving away.

DUMPING PROCEDURE

1. Examine the dump site. The area should be level, solid, and clear of obstacles. Check for overhead clearances such as power lines.
2. With hoist and container in the down position, open the tailgate and secure the door in the open position using the chain provided on the container door. Engage PTO and raise hoist until load slides out.
3. In the event that all of the load is not discharged, or it becomes necessary to move the unit forward, lower the hoist and container to the full down or travel position prior to any forward movement of the truck. Always keep the tires properly and evenly inflated.

UNLOADING PROCEDURE

1. Set truck brakes.
2. Raise the hoist high enough to allow the container to move rearward.
3. Lower the container.
4. Release the truck brakes. Continue lowering the container allowing the truck to roll out from under the container.
5. If the container being unloaded is heavy, feather the control valve to slow the downward movement of the container. Do not allow the front of the container to hit the ground abruptly. Failure to do so can result in damage to the container and/or hoist.

CONTAINER POSITIONING

CORRECT CONTAINER POSITIONING

Center of Gravity is approximately 10-12% of wheelbase in front of center point of the tandem



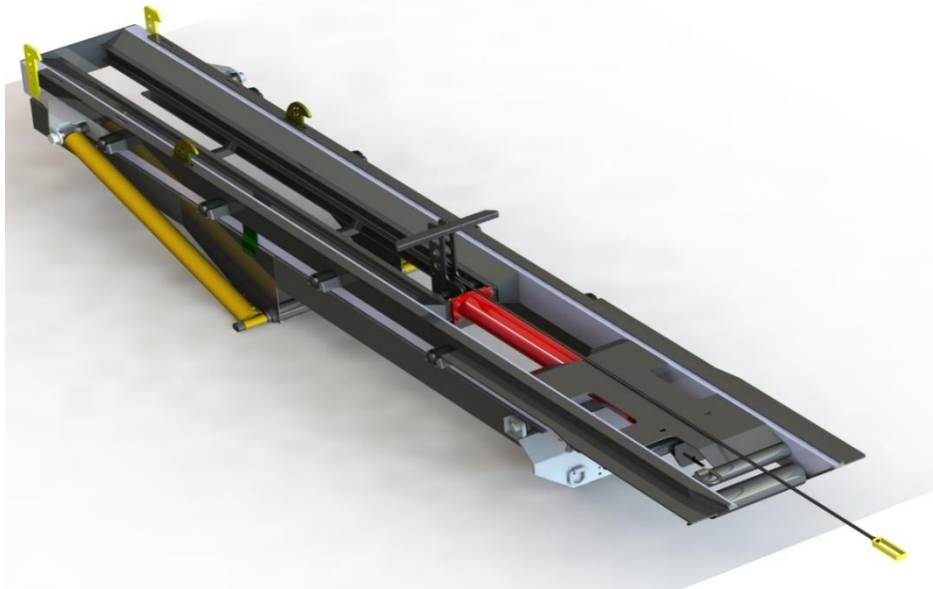
INCORRECT CONTAINER POSITIONING



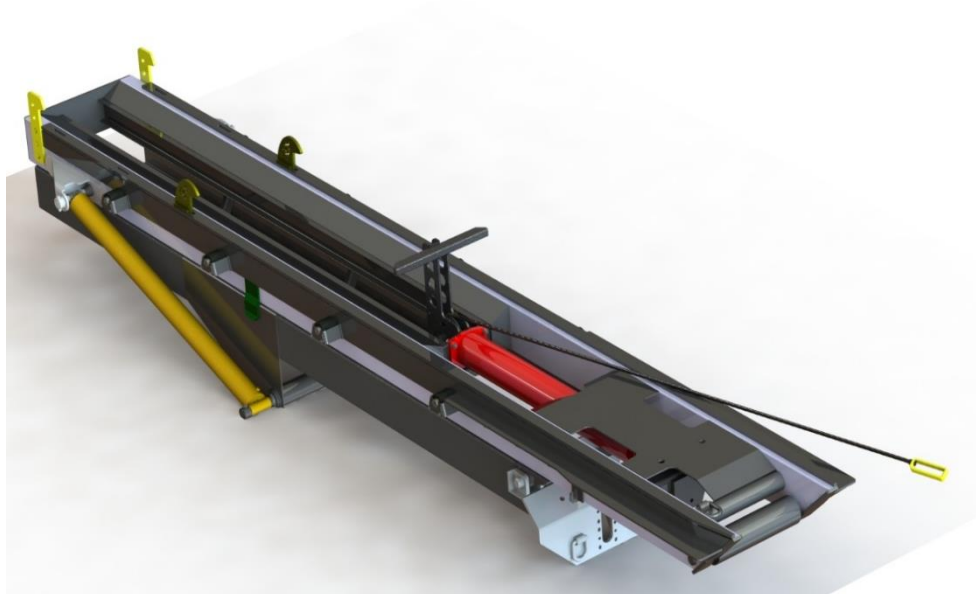
CABLE POSITION

Always pull cable up center of hoist. Never allow the cable to be pulled over the side of hoist when winching on, as this can cause the cable to destroy itself or damage the front sheave. Injury to the operator and/or bystanders could result if the cable breaks and snaps back around to the truck cab area.

CORRECT CABLE POSITION



INCORRECT CABLE POSITION



MAINTENANCE

Maintenance begins with the purchase and use of the correct hoist properly designed for the application. Trained, qualified, and competent personnel should perform all operations, inspections, service, and maintenance. These inspections are intended to verify that the hoist and its components are in the proper safe operating condition and are within normal wear guidelines. If there are any items that do not pass your inspection, notify the responsible party. A lockout tag must then be placed on the equipment as outlined in the “Lockout Procedure Guideline” section of this manual.

Daily Inspections:

- Back-up and hoist-up warning systems
- Cable and cable ends
- Electrical wiring
- Front stops
- Hydraulic and air leaks
- Hydraulic components
- Lamps
- Nuts and bolts
- Oil level
- Pivot points
- Rear hinge
- Reflectors
- Rollers
- Shafts and cotter keys
- Sheave blocks
- Structural components and welds
- Warning label legibility

Weekly Inspections:

All grease fittings should be properly greased after 40 hours of service or a minimum of once a week for average usage.

Every Three Months:

Inspect the condition of hydraulic oil for proper color, odor, and feel.

Every Six Months:

- Replace hydraulic oil filter
- Replace air breather

Every Twelve Months:

- Replace hydraulic oil
- Replace air and hydraulic oil filters
- Clean suction strainer

PREVENTIVE MAINTENANCE – GENERAL

Lubrication	Proper lubrication is essential for all types of bearings, gearing, and friction-producing mechanical devices. Lack of adequate and proper lubrication results in premature wear and failure of components due to increased abrasion or excessive heat.
Grease	All grease fittings should be properly greased after 40 hours of service or a minimum of once a week for average usage.
Hydraulic System	Inspect daily for leaks, loose hydraulic lines and fittings, oil level and proper operation of hydraulic system.
Air Breather	Replace air breather every six months.
Oil Filter	Replace oil filter every six months.
Suction Strainer	Inspect and clean suction strainer when changing hydraulic oil.
Hydraulic Oil	<p>1 Every Three Months: Inspect oil for proper color, odor and feel. Replace oil if it is milky or dark in color, begins to have an odor, or lacks lubricity to your touch.</p> <p>2. Every Twelve Months: Replace oil with AW32 hydraulic oil filtered through the return filter.</p>
Hydraulic Cylinders	Inspect cylinder rods, fittings and operation. Apply grease to the grease fitting on the hydraulic cylinder every week.
Warning Labels Clean	Clean and replace as necessary.

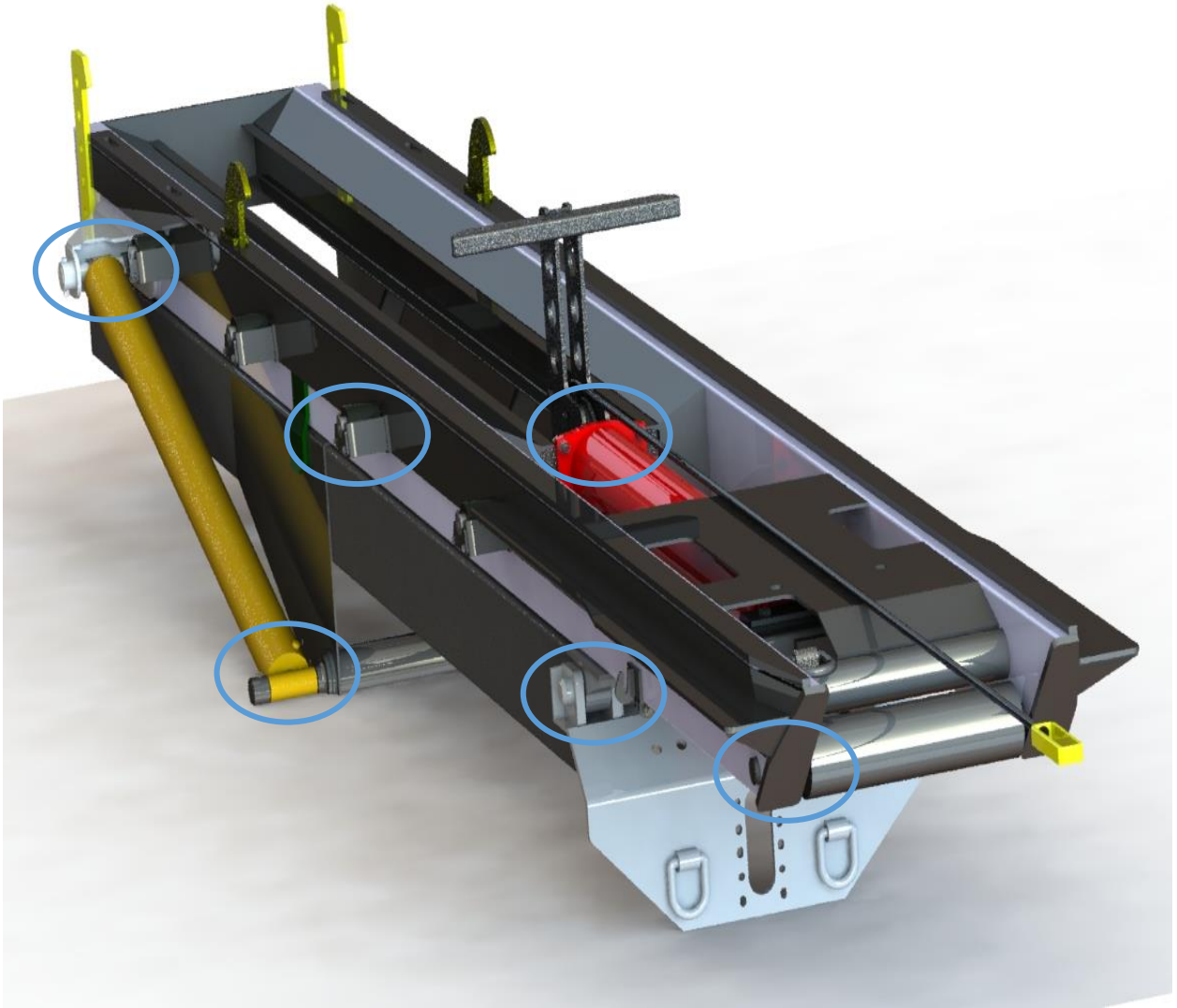
PREVENTIVE MAINTENANCE – MECHANICAL

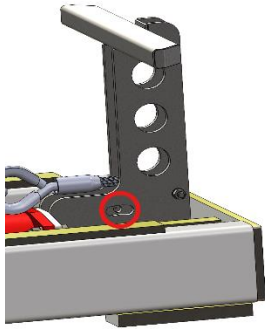
Structural and Weld Integrity	Check to ensure proper and safe working condition of structural members. Make sure the wear is within normal guidelines. Inspect weld joints.
Front Stops	Check to ensure proper and safe working condition of stops.
Nuts, Bolts, Shafts, Cotter Keys, etc.	Check to ensure proper and safe working conditions. Make sure wear is within normal guidelines and all items are within proper torque guidelines.
Rollers, Sheave Blocks, Rear Hinge, Pivot Points	Check to ensure proper lubrication, adjustment and operation.
Container Hold-Down Devices	Check to ensure proper and safe working condition.
Hoist Cable	Inspect the cable daily and conduct a thorough inspection every 40 hours of usage for breakage, unraveling, or flat spots. Inspect cable ends, clamps and pins as well. Lubricate the cable frequently to prevent rusting.

PREVENTIVE MAINTENANCE – ELECTRICAL

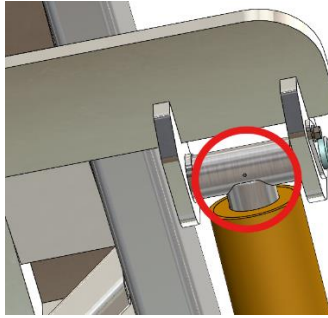
Reflectors/Lights	Inspect all lamps and reflectors daily. Make sure they are cleaned and in proper working order.
Electrical Wiring	Inspect all visible wiring to ensure that it is not frayed, is properly supported and protected, and all connections are tight.
Wire Splicing	Use wire connectors with shrink tubing for water-tight connections/
Back-up and Hoist-Up Warning Systems	Verify proper and safe operation.

GREASE FITTING LABELS





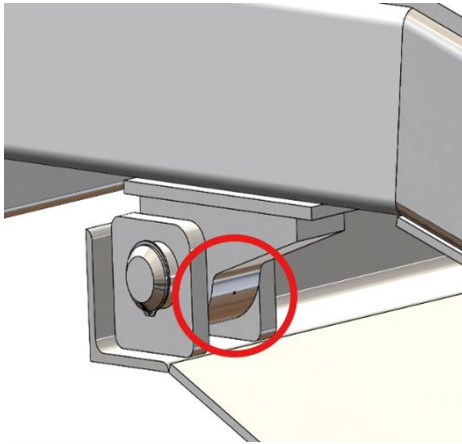
1. GREASE POINT AT SHEAVE HEAD (2)



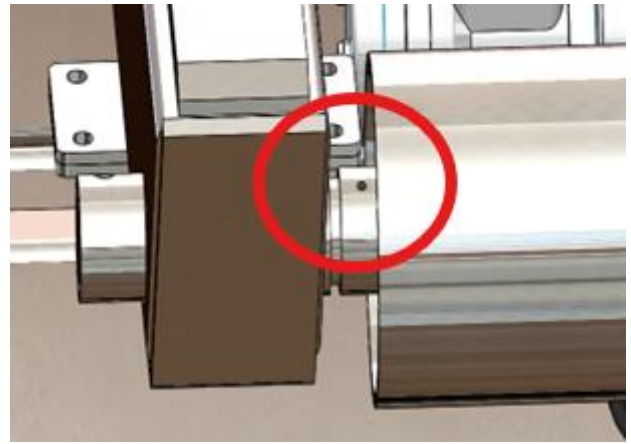
2. GREASE POINT AT UPPER CYLINDER MOUNT (2)



3. GREASE POINT AT LOWER CYLINDER MOUNT (2)



4. GREASE POINT AT HINGE BLOCK (2)



5. GREASE POINT AT REAR ROLLER (2)



**6. GREASE POINT AT SLIDING ROLLER PIN (8)
(Not Applicable for IR/VAN Spec)**

Note: This manual is subject to change without any notification.

PROPRIETARY AND CONFIDENTIAL:

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