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Dear Customer:

On behalf of Highway Equipment Company, now doing business as New Leader Manufacturing, we want to thank you for your purchase of your Hi-Way® equipment.

You are now eligible for our **FREE EXTENDED WARRANTY PROGRAM** provided your dealer completes and returns the DELIVERY & EXTENDED WARRANTY FORM to New Leader Manufacturing within 30 days of delivery.

When your dealer submits the DELIVERY & EXTENDED WARRANTY FORM online, not only will you receive our BASIC (6) six-month genuine parts only warranty; you will also receive, at no charge, an additional (7) seven months for a total of (13) thirteen months of warranty for parts.

As an added bonus for getting the DELIVERY & EXTENDED WARRANTY FORM to New Leader Manufacturing within 30 days of delivery, we will also extend labor coverage at our standard dealer labor reimbursement rate for a period of (13) thirteen months. Contact your dealer to register and complete the DELIVERY & EXTENDED WARRANTY FORM online at <http://legacy-hiway.highwayequipment.com>.

Thank you for your purchase.

FREE Extended Warranty Program

- 30 days to turn in DELIVERY & EXTENDED WARRANTY FORM
- 13 months on genuine parts
- 13 months labor

This pre-delivery checklist is provided to identify the items checked and, if necessary, adjusted by the dealer prior to delivery of this machine.

CHECK THE FOLLOWING AND ADJUST IF NECESSARY:

Before starting engine/Before starting machine operation

- | | |
|---|--|
| <input type="checkbox"/> Battery condition and connection | <input type="checkbox"/> Engine oil level, oil filter and oil drain plug |
| <input type="checkbox"/> Electrical connections | <input type="checkbox"/> All safety shields in place |
| <input type="checkbox"/> Hydraulic oil level and line connections | <input type="checkbox"/> All fasteners secure |
| <input type="checkbox"/> Gearcase oil level (right and/or left) | <input type="checkbox"/> Chain tension and sprocket alignments |
| <input type="checkbox"/> Lubricate all grease fittings | <input type="checkbox"/> Air cleaner and connections – IMPORTANT |

Start chassis/Start run to operation temperature

- | | |
|---|---|
| <input type="checkbox"/> All gauges operating correctly | <input type="checkbox"/> Hydraulic fittings tight no leaks |
| <input type="checkbox"/> Engine RPM (idle) | <input type="checkbox"/> Flow control valve operation |
| <input type="checkbox"/> Engine RPM (operating speed) | <input type="checkbox"/> Test manual operation of conveyor & spinners |
| <input type="checkbox"/> Adjust feedgate | <input type="checkbox"/> Check belt alignment and chain tension |
| <input type="checkbox"/> Hydraulic system functions | <input type="checkbox"/> Pump flow @ OERPM is ____ GPM |

Stop operation/Turn off engine, engage parking brake

- Visual check for leaks All oil levels full

Inspection performed by: Dealer Signature _____ Date _____

Reviewed the following with the owner:

- Operations manual Safety precautions Storage Warranty

Customer Signature _____ Date _____



MODEL E2020A2
Operator's/Parts Manual

UNIT SERIAL NUMBER: _____

MANUAL NUMBER: 318511-D

EFFECTIVE 03/2026



1330 76TH AVE SW
CEDAR RAPIDS, IA 52404-7052
PHONE (800) 363-1771 | FAX (319) 286-3350
www.newleader.com

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HI-WAY LIMITED WARRANTY

BASIC WARRANTY

HIGHWAY EQUIPMENT COMPANY ("Highway") has manufactured or is distributing the Product/Genuine Parts to which this warranty is attached, and warrants to its original reseller including Dealers, Distributors and Original Equipment Manufacturers (hereafter called Dealer) that the Product/Genuine Parts will, under normal conditions of use and service, be free from material defects due to faulty manufacturing for a period of six (6) months from the date of delivery to the original user. For any Product/Genuine Part that does not conform to the aforesaid warranty within six (6) months from the date of delivery to the original user, your Dealer will, at its option, repair or replace parts. Labor costs for this basic warranty coverage will be paid by Highway to the Dealer at their standard shop rate, based on the amount of time Highway establishes to be the time reasonably necessary to make required repairs. If the Product/Genuine Part is defective in materials or workmanship, you must promptly notify your Dealer; and complete the warranty registration by utilizing the internet at <http://dealer.highwayequipment.com> for such Product before the expiration of the warranty period (Genuine Parts do not require a warranty registration but may require proof of purchase). If your Dealer determines that the defect is due to Highway's material or workmanship, your Dealer will, with Highway's consent, repair such defect during normal working hours, at their location, or such other location as the Dealer may designate. The installation of any part that did not originate from Highway will void this Basic Warranty in its entirety. In the event of repair or replacement, the warranty period shall not be extended beyond the original warranty period. In the case of a demonstration or rental machine (Demo), the warranty will begin at the date of delivery to the original user. If the Demo is sold within the first 120 days of the demo or rental period, the warranty will re-start to the date it is delivered to the end user. If the Demo is sold after the 120th day, the warranty will remain at the date of original delivery to the original user.

EXTENDED WARRANTY

In lieu of the basic warranty described above, if the warranty registration (or warranty information as provided above) is received at Highway within thirty (30) days after the date of delivery to the original user, Highway will warrant that the Product will, under normal conditions of use and service, be free from material defects due to faulty manufacturing for a period of thirteen (13) months from the date of delivery to the original user. For any Product that does not conform to the aforesaid warranty within thirteen (13) months from the date of delivery, your Dealer will, at its option, send you a new part, or give you full credit for the part, provided the replacement part is purchased through your Dealer. Labor costs for this extended warranty coverage will be paid by Highway to the Dealer at their standard shop rate, based on the amount of time Highway establishes to be the time reasonably necessary to make required repairs. If the Product is defective in materials or workmanship, you must promptly notify your Dealer before the expiration of the warranty period. If your Dealer determines that the defect is due to Highway's material or workmanship, your Dealer will, with Highway's consent, repair such defect during normal working hours, at their location, or such other location as your Dealer may designate. In the event of repair or replacement, the warranty period shall not be extended beyond the original warranty period. In the case of a Demo, the warranty will begin at the date of delivery to the original user provided the machine is registered with Highway within 30 days. If the Demo is sold within the first 120 days of the demo or rental period and the machine is registered with Highway within 30 days of the sale, the extended warranty will re-start to the date it is delivered to the end user. If the Demo is sold after the 120th day and is registered with Highway within 30 days of the sale, the extended warranty will remain at the date of original delivery to the original user.

Genuine Parts are covered by the Basic Warranty and are not eligible for the Extended Warranty.

If you fail to complete the warranty registration (or warranty information as provided above) to Highway within thirty (30) days after the date of delivery, this extended warranty shall not apply, and your sole remedy for any defects in the Product shall be under the basic warranty described above. This includes all demo or rental machines.

The above warranties do not cover:

- (1) Product that is damaged by abuse, neglect, accident, or modification;
- (2) fluids, towing, telephone, travel and cleaning cost;
- (3) loss of use of vehicle, inconvenience, commercial loss, or consequential damages;
- (4) any combustion engine; or
- (5) the Product itself if parts are installed on the Product that did not originate from Highway.
- (6) Labor for Genuine Parts.

The above warranties do not apply under the following conditions:

- (1) when Product has been improperly used or installed, or modified, or fitted with sideboards, or fails because of defects or inefficiency of components not furnished with the Product;
- (2) **when Product is used for purposes for which it was not originally designed or intended;**
- (3) when Product is used under abnormal operating conditions; or
- (4) when the dealer or user fails to follow Highway instructions regarding the Product, including the instruction to install only Highway-supplied parts onto the Product.

HIGHWAY WILL BEAR NO OTHER EXPENSE, INCLUDING BUT NOT LIMITED TO LABOR AND MATERIAL COSTS (OTHER THAN THOSE SPECIFIED HEREIN) OF ANY KIND, AND YOUR EXCLUSIVE REMEDY, IN LIEU OF ALL INCIDENTAL, SPECIAL, CONSEQUENTIAL OR ANY OTHER DAMAGES, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR NEGLIGENCE, IS LIMITED TO REPAIR OR REPLACEMENT AS HERETOFORE DESCRIBED. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED OF ANY KIND REGARDING ANY PRODUCT, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR USE. IN NO CASE SHALL HIGHWAY BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL THEORY.

Unless modified in writing, signed by both parties, this Limited Warranty is understood to be the complete and exclusive agreement between the parties, superseding all prior agreements, oral or written, and all other communications between the parties relating to the subject matter of this Limited Warranty. No representative or agent of Highway nor any third party has authority to change or modify this warranty in any respect, nor to assume any other obligation or liability on behalf of Highway. Any action for breach of warranty must be commenced within six (6) months following the expiration of the Limited Warranty.

These warranties are extended only to the original Dealer and are not transferable. In the event of a warranty claim, you should promptly notify your Dealer, and provide the following:

1. Model and serial number of the Product;
2. Date of delivery to the original user;
3. Part number of the defective part;
4. Description of the difficulty encountered;
5. Date of repair.

Highway will work with your Dealer regarding instructions for repair, replacement, or refund, if the warranty claim can be validated.

Effective with Product delivered to original user on or after August 25, 2014.

SAFETY

SAFETY

PLEASE ! ALWAYS THINK SAFETY FIRST !!

The purpose of this manual is to familiarize the person (or persons) using this unit with the information necessary to properly install, operate, and maintain this system. The safety instructions indicated by the safety alert symbol in the following pages supersede the general safety rules. These instructions cannot replace the following: the fundamental knowledge that must be possessed by the installer or operator, the knowledge of a qualified person, or the clear thinking necessary to install and operate this equipment. Since the life of any machine depends largely upon the care it is given, we suggest that this manual be read thoroughly and referred to frequently. If for any reason you do not understand the instructions, please call your authorized dealer or our Product Sales and Support Department at (319) 363-8281 or 1-800-363-8006.

It has been our experience that by following these installation instructions, and by observing the operation of the spreader, you will have sufficient understanding of the machine enabling you to troubleshoot and correct all normal problems that you may encounter. Again, we urge you to call your authorized dealer or our Product Sales and Support Department if you find the unit is not operating properly, or if you are having trouble with repairs, installation, or removal of this unit.

We urge you to protect your investment by using genuine NLM parts and our authorized dealers for all work other than routine care and adjustments.

New Leader Manufacturing reserves the right to make alterations or modifications to this equipment at any time. The manufacturer shall not be obligated to make such changes to machines already in the field.

This Safety Section should be read thoroughly and referred to frequently.

ACCIDENTS HURT !!!

ACCIDENTS COST !!!

ACCIDENTS CAN BE AVOIDED !!!



Important Safety Information

▲WARNING

Before using this equipment, read, understand and follow all instructions in the Operator's Manual provided with this equipment. If the user and/or assistants cannot read or understand the warnings and instructions, the employer of the user and/or assistants must provide adequate and necessary training to ensure proper operation and compliance with all safety procedures pertaining to this equipment. If Operator's Manual has been lost, visit www.newleader.com or call your authorized dealer or our Product Sales & Support Department at (800) 363-1771 for replacements. Serious injury or death can result from the failure to read, understand, and follow instructions provided in this manual.

Figure 1.1 - The need for safety cannot be stressed strongly enough in this manual. At New Leader Manufacturing, we urge you to make safety your top priority when operating any equipment. We firmly advise that anyone allowed to operate this machine carefully read, learn and understand all messages and information in this manual and on machine's safety decals before operating machine, as well as familiarize themselves with the location and function of all machine controls.

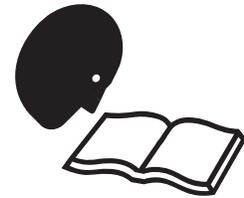


Figure 1.1

The following guidelines are intended to cover general usage and to assist you in avoiding accidents. There will be times when you will run into situations that are not covered in this section. At those times the best standard to use is common sense. If, at any time, you have a question concerning these guidelines, please call your authorized dealer or our Product Sales & Support Department at (800) 363-1771.

Safety Alert Symbols



Take note! This safety alert symbol found throughout this manual is used to call your attention to instructions involving your personal safety and that of others. Failure to follow these instructions can result in injury or death.

In this manual and on the safety signs placed on the unit, the words "DANGER," "WARNING," "CAUTION," and "NOTICE" are used to indicate the following:



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to physical injury.

NOTE:

Provides additional information to simplify a procedure or clarify a process.

General Safety Rules

Operations

PREPARE FOR EMERGENCIES

Figure 1.2 - Be prepared if a fire starts. Keep a fully charged fire extinguisher and first aid kit in accessible place on the vehicle at all times.

Fire extinguisher must be Type ABC or Type BC.

Keep emergency numbers for doctors, ambulance service, hospital and fire department available at all times.



Figure 1.2

INSPECT HARDWARE BEFORE USE

Figure 1.3 - Inspect all bolts, screws, fasteners, keys, chain drives, body mounts and other attachments periodically. Immediately replace any missing or damaged parts with NLM specified parts.

Inspect spinner fins, spinner frame mounting and spinner fin hardware daily. Look for missing or loose fasteners, wear and cracks. Replace immediately with NLM specified parts.

Tighten all bolts, nuts and screws to specified torques. Refer to "Standard Torques" in Maintenance section of this manual.

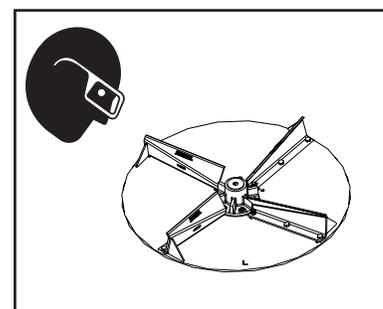


Figure 1.3

HANDLE FLAMMABLE MATERIALS SAFELY

Figure 1.4 - Handle fuel and hydraulic oil with care. They are highly flammable.

Exposure to toxic fluids or fumes may occur during the normal operation of this system. Before attempting to fill, use, or service this system, read Safety Data Sheets (SDS) to know the specific hazards of the fluids you are using. Always use proper Personal Protective Equipment when attempting to fill, use, or service this system.

Always stop engine before refueling machine or filling hydraulic reservoir.

Never smoke while adding fuel or oil to machine. Add fluids in a safe place away from open flame and sparks.

Do not allow overflow. Clean up spilled fuel and oil immediately.

Always have a multipurpose dry chemical fire extinguisher filled and available during machine operation and when adding fuel. Know how to use it.

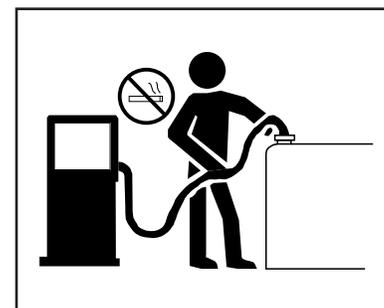


Figure 1.4

General Safety Rules

Operations

HANDLE HAZARDOUS MATERIALS SAFELY

Figure 1.5 - Materials to spread can be dangerous.

Improper selection, application, use or handling may be a hazard to persons, animals, plants, crops or other property.

A Safety Data Sheet (SDS) provides specific details on chemical products: physical and health hazards, safety procedures and emergency response techniques.

Check all SDS's before starting any job using a hazardous material. Follow all instructions and precautions given by the material manufacturer.



Figure 1.5

WORK IN WELL-VENTILATED AREAS

▲ WARNING	Never run machine engine inside a building unless adequate ventilation is provided to safely and properly remove exhaust fumes. Failure to comply with this requirement could result in death or serious injury.
------------------	--

Figure 1.6 - Always work in a properly ventilated area.

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, use proper equipment to safely remove exhaust fumes from the working area.

Open building doors and get fresh air into the working area whenever possible.



Figure 1.6

PROTECT AGAINST NOISE

Figure 1.7 - Long periods of exposure to high decibels or loud noise can cause hearing impairment or loss.

Wear proper hearing protection such as earmuffs or earplugs during periods of exposure to high decibels or loud noise.

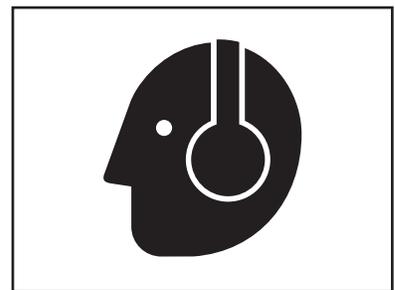


Figure 1.7

General Safety Rules

Operations

AVOID MOVING PART HAZARDS

Figure 1.8 - Entanglement in rotating drive lines or moving parts will cause serious injury or death.

Stay clear of all moving parts, such as shafts, couplings and universal joints.

Make sure all personnel are clear of machine before starting.



Figure 1.8

Figure 1.9 - Do not operate machine without all guards and shields closed and secured.

Disconnect and lock out power source before removing guards.

Disconnect and lock out power source before adjusting or servicing.

Keep hands, feet, hair and clothing away from moving parts.

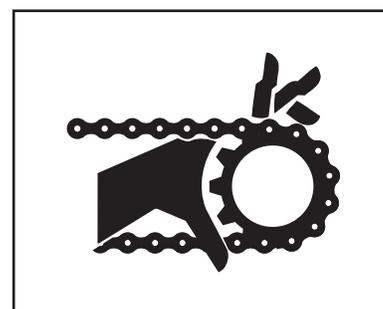


Figure 1.9

Figure 1.10 - Keep away from spinners while they are turning.

Rocks, scrap metal and other material can be thrown from the spinners violently. Stay away from discharge area.

Stop machine before servicing or adjusting. Wear eye protection.

Make sure discharge area is clear before spreading.

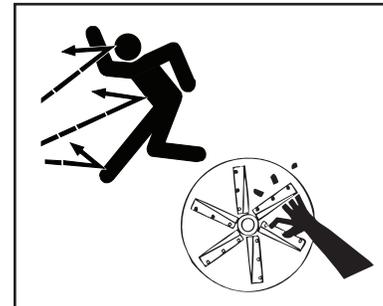


Figure 1.10

Figure 1.11 - Stay out of spreader.

If necessary to enter the spreader, return to shop, empty body, turn off all power, engage brakes, shut down engine and remove keys before entering.

Tag all controls to prohibit operation. Tags should be placed, and removed, by the person working in the body.

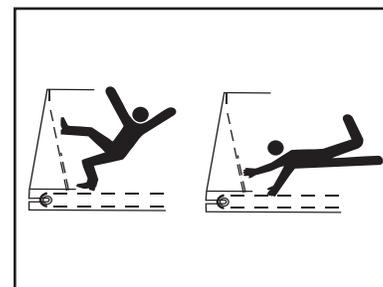


Figure 1.11

General Safety Rules

Operations

DO NOT CLIMB OR STAND ON MACHINE

Figure 1.12 - Never allow any personnel to ride in or on the machine.

Use inspection ladder or portable ladder to view the unit. Use caution when getting on and off the ladder, especially in wet, icy, snowy or muddy conditions. Clean mud, snow and ice from steps and footwear.

Always maintain three-point contact with steps, ladders and handholds. Face the machine when mounting and dismounting inspection ladder. Do not jump off machine.



Figure 1.12

OPERATE MACHINE SAFELY

Always walk around and visually inspect machine before using. Check the immediate vicinity of machine for people and obstructions. Ensure adequate visibility.

Avoid distractions such as reading, eating or operating personal electronics while operating machine. Never operate the machine under the influence of alcohol, drugs or while otherwise impaired.

Always come to a complete stop before reversing. Be sure that all personnel are clear of machine path. Turn around and look directly for best visibility. Ensure all rear view mirrors are properly installed and adjusted. Use a signal person when backing if view is obstructed or when in close quarters.

Always disengage hydraulics before shutting down engine. DO NOT start engine with hydraulics engaged.

General Safety Rules

Transportation & Handling

TRAVELING & TRANSPORTING ON PUBLIC ROADS

Always walk around and visually inspect the machine before traveling on public roads. Check for damage and/or faulty components that can fail and create a hazard or unsafe condition. Make sure all machine systems operate properly, including but not limited to: headlights, tail and brake lights, hazard warning lights, turn indicators, parking brake, horn and rear view mirrors. Repair or replace any component that is not in proper working order.

Never drive machine at a speed that causes it to bounce or cause loss of control.

Obey all traffic safety laws and regulations. Operate the machine with hazard warning lights on, unless prohibited by law. It is the operator's responsibility to activate and use road lights properly while traveling on public roads.

Cover all loads that may spill or blow away. Environmental damage may result. Do not spread dusty materials where dust may create pollution, visibility issues or interfere with traffic on public roads.

When transporting equipment or machine on a trailer, ensure it is properly secured. Be sure that SMV signs on equipment or machine are covered while in transport on a trailer.

Be aware of overhead structures and power lines. Make sure machine can safely pass under. Refer to "Dimensions & Capacities" pages in the Operations section of this manual.

NAVIGATING ROUGH & UNEVEN TERRAIN

Figure 2.1 - Turn slowly and be careful when traveling on rough surfaces and side slopes. Avoid holes, ditches and obstructions that may cause machine to roll over, especially with a loaded spreader.

Never drive near the edge of a gully or steep embankment.

Load may shift, causing vehicle to tip.

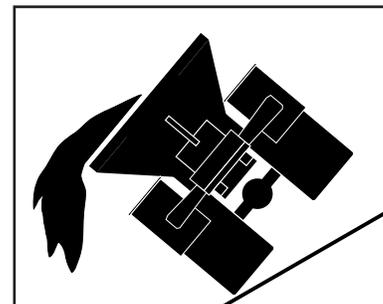


Figure 2.1

General Safety Rules

Maintenance

READ AND UNDERSTAND MAINTENANCE PROCEDURES

Figure 3.1 - Read the maintenance and safety instructions and understand them before performing any maintenance procedure.

Never perform any maintenance procedure or repair if the instructions and safety procedures are not fully understood. Only trained and qualified personnel should perform any maintenance procedure or repair.

Never modify any equipment or add attachments not approved by New Leader Manufacturing.

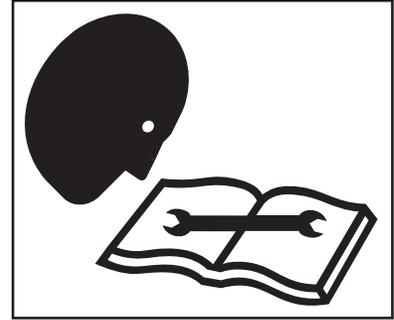


Figure 3.1

DO NOT SERVICE OR ADJUST MACHINE WHILE IN MOTION

Figure 3.2 - Never lubricate, service or adjust the machine or any of its components while they are moving.

Never wear loose clothing or jewelry when working near machine tools or moving parts.

Remove rings and other jewelry to prevent electrical shorts and other personal injury when in contact with machine tools or moving parts.

Close and secure all guards removed for service. Check all screws, bolts, nuts and fasteners for proper torques before operating machine.

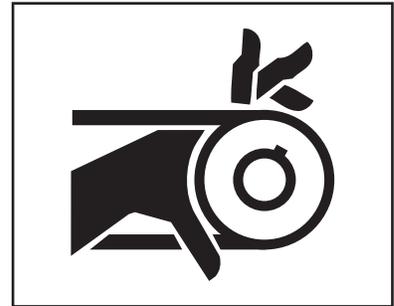


Figure 3.2

WEAR PROPER PROTECTIVE EQUIPMENT

Figure 3.3 - Wear close-fitting clothing and proper safety equipment for the job.

Always wear eye protection when working on or around the machine.

Wear a suitable hearing protection device such as earmuffs or earplugs to protect against high decibels or loud noises.

Prolonged exposure to high decibels or loud noise can cause hearing impairment or loss of hearing.

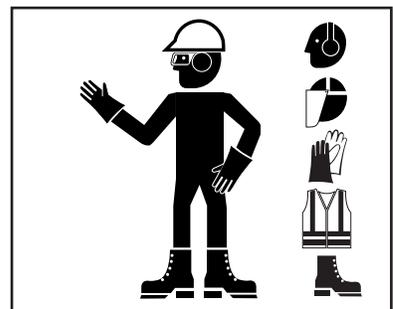


Figure 3.3

Wear protective gloves to protect hands from cuts, abrasions and minor burns.

General Safety Rules

Maintenance

HANDLE FLAMMABLE SOLVENTS SAFELY

Figure 3.4 - Never use diesel fuel, kerosene, gasoline or any flammable solvents for cleaning.

Exposure to toxic fluids or fumes may occur during the normal operation of this system. Before attempting to fill, use, or service this system, read Safety Data Sheets (SDS) to know the specific hazards of the fluids you are using. Always use proper Personal Protective Equipment when attempting to fill, use, or service this system.

Perform work using flammable fluids and solvents in a safe place away from open flame and sparks. Do not smoke.

Do not weld, grind or flame cut on any tank containing oil, fuel, fumes or any other flammable material, or any container that contents or previous contents are unknown. Move all flammable materials and containers away from work area.

Clean up spilled fuel and oil immediately.

Always have a multipurpose dry chemical fire extinguisher filled and available. Know how to use it.



Figure 3.4

USE PROPER LIFTING EQUIPMENT

Figure 3.5 - Use only lifting devices that meet or exceed OSHA standard 1910.184 or ASME B30.20-2013.

Never lift equipment over people.

Never lift a loaded unit. Never lift unit with any loose objects or persons in the body. Loads may shift or fall if improperly supported, causing death, serious injury or machine damage.

Before unfastening heavy parts or assemblies, support with adequate hoist or other device to prevent falling, tipping, swinging or any other movement that may cause injury or damage.



Figure 3.5

USE PROPER TOOLS FOR THE JOB

Figure 3.6 - Use of improper tools (such as a screwdriver instead of a pry bar, pliers instead of a wrench, a wrench instead of a hammer) can cause serious injuries or machine damage.

Use power tools only to loosen threaded parts and fasteners. Using power tools to tighten may cause over-tightening and component damage.

Use only service parts meeting New Leader specifications.

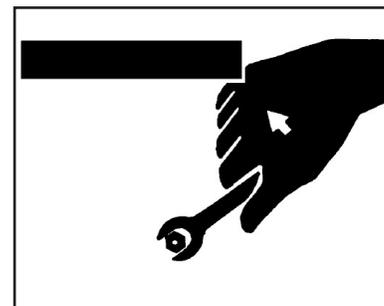


Figure 3.6

General Safety Rules

Maintenance

HIGH PRESSURE FLUID HAZARDS

Figure 3.7 - Escaping fluid under pressure can penetrate the skin causing serious injury.

Always stop machine, allow to cool and relieve pressure before servicing hydraulic system. Never open hydraulic lines under pressure. Make sure all connections are tight and all hoses are in good condition before pressurizing system.

Always use a piece of cardboard or wood to search for leaks instead of hand. Wear impervious gloves and eye protection when servicing system.

Seek medical attention immediately if fluid penetrates your skin. Gangrene may result if wound is left untreated.



Figure 3.7

AVOID HEATING NEAR HIGH PRESSURE FLUID LINES

Figure 3.8 - Flammable spray can be generated by heating near pressurized fluid lines, resulting in burns to yourself and bystanders.

Do not heat by welding, soldering or using a torch near pressurized fluid lines or other flammable materials.

Pressure lines can suddenly burst when heat goes beyond the immediate flame area.

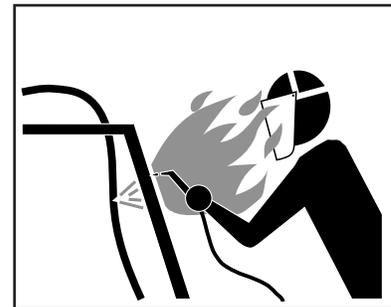


Figure 3.8

AVOID TOXIC FUMES & DUST

Figure 3.9 - Hazardous fumes can be generated when paint is heated from welding, soldering or using a torch.

Remove paint before heating:

- Remove a minimum of 4 in (100 mm) from area to be affected by heating. If paint cannot be removed, wear an approved respirator while heating or welding.
- Avoid breathing dust from sanding or grinding on paint.
- If a solvent or paint stripper is used, wash stripper away with soap and water before heating or welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse for at least 15 minutes before heating or welding.

Do not use chlorinated solvents in areas where welding will take place.

Perform all work in a well-ventilated area that will carry all toxic fumes and dust away.



Figure 3.9

General Safety Rules

Maintenance

CLEAN MACHINE OF HAZARDOUS CHEMICALS

CAUTION

During application of hazardous chemicals, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous chemical. Failure to comply with this requirement may result in minor or moderate injury.

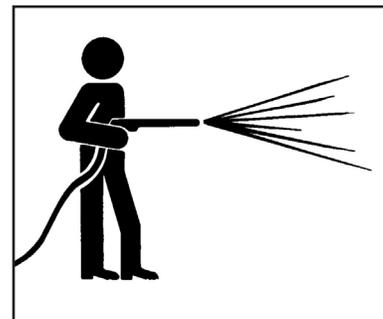


Figure 3.10

Figure 3.10 - When exposed to hazardous chemicals, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

1. Clean operator's station to maintain unobstructed visibility of all windows and mirrors, and safe operation of all controls.

NOTICE

Directing pressurized water at electronic/ electrical components, bearings and hydraulic seals or other sensitive parts and components may cause product malfunctions. Reduce pressure and spray at 45 to 90 degree angles.

2. Wash entire exterior of vehicle.
3. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

HANDLE BATTERIES SAFELY

WARNING

Sulfuric acid in battery electrolyte is poisonous. It can burn skin, eat holes in clothing, and cause blindness if it contacts eyes. Keep sparks and flame away from batteries. Wear proper safety equipment. Failure to comply with this requirement could result in death or serious injury.

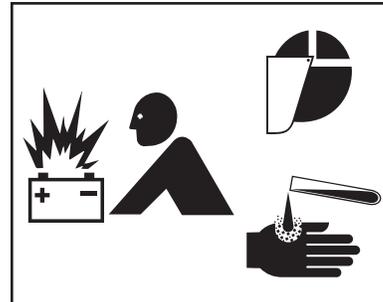


Figure 3.11

Figure 3.11 - Lead acid batteries generate flammable and explosive gases. Keep sparks and flame away from batteries. Do not smoke.

If acid contacts eyes, skin or clothing, flush with water immediately. Seek immediate medical attention if acid contacts eyes.

PROPER TIRE MAINTENANCE

Figure 3.12 - Never weld on a wheel or rim that has a tire on it.

Never attempt to mount or remove a tire unless using the proper equipment, tire safety cage, instructions, training, and you are qualified to perform the work safely. Failure to follow the correct procedures when mounting a tire on a wheel or rim can cause an explosion and serious injury.

Tire service procedures must be performed by trained and qualified personnel.



Figure 3.12

General Safety Rules

Storage

PARK VEHICLE SAFELY

Figure 4.1 - When leaving the vehicle unattended for any reason, be sure to:

- Shut down PTO.
- Shut off vehicle's engine, and unit's engine if applicable.
- Place vehicle transmission in "Neutral" or "Park".
- Set parking brake firmly.
- Remove ignition key and take it with you.
- Block wheels.

These actions are recommended to avoid unauthorized use, runaway, vandalism, theft and unexpected operation during startup.

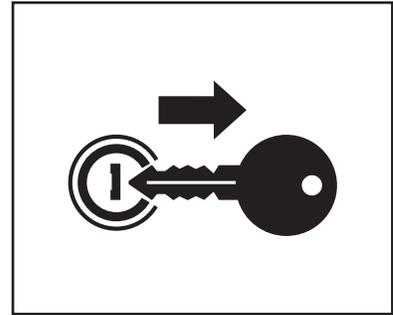


Figure 4.1

SUPPORT MACHINE PROPERLY

Figure 4.2 - When machine is removed from vehicle, always store on adequate supports on a firm level surface. Improper supporting or storage of spreader may cause machine to fall, resulting in serious injury or death.

Never use lifting device to free machine from a chassis, storage stands or frozen ground, or to lift the chassis in any way. Shock loading is prohibited and sudden accelerations must be avoided. Lifting in such a manner could result in injury or machine damage.



Figure 4.2

DISPOSE OF WASTE PROPERLY

Figure 4.3 - Improper disposal of waste can threaten the environment and ecology. Potentially harmful waste used with equipment include items such as fuel, oil, filters and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Do not pour waste onto the ground, down a drain, or into any water source.

Comply with all OSHA, local, City, State, Province, Country and jurisdiction regulations, ordinances and standards, related to your particular work area and environment. Inquire on proper disposal methods from your local environmental or recycling center, or from your local dealer.

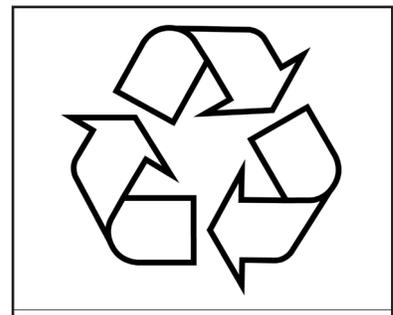


Figure 4.3

Safety Decal Maintenance

Keep safety decals and signs clean and legible at all times.

Replace safety decals and signs that are missing or have become illegible.

Replaced parts that displayed a safety sign should also display the current sign.

Safety decals or signs are available from your dealer's Parts Department or from New Leader Manufacturing by calling (800) 363-1771.

Safety Decal Installation

Clean Surface

Wash the installation surface with a synthetic, free-rinsing detergent. Avoid washing the surface with a soap containing creams or lotion. Allow to dry.

Position Safety Decal

Decide on the exact position before application. Application marks may be made on the top or side edge of the substrate with a lead pencil, marking pen, or small pieces of masking tape. NOTE: Do not use chalk line, china marker, or grease pencil. Safety decals will not adhere to these.

Remove the Liner

A small bend at the corner or edge will cause the liner to separate from the decal. Pull the liner away in a continuous motion at a 180-degree angle. If the liner is scored, bend at score and remove.

Apply Safety Decal

Tack decal in place with thumb pressure in upper corners. Using firm initial squeegee pressure, begin at the center of the decal and work outward in all directions with overlapping strokes. NOTE: Keep squeegee blade even—nicked edges will leave application bubbles. Pull up tack points before squeegeeing over them to avoid wrinkles.

Remove Pre-mask

If safety decal has a pre-mask cover remove it at this time by pulling it away from the decal at a 180 degree angle. NOTE: It is important that the pre-mask covering is removed before the decal is exposed to sunlight to avoid the pre-mask from permanently adhering to the decal.

Remove Air Pockets

Inspect the decal in the flat areas for bubbles. To eliminate the bubbles, puncture the decal at one end of the bubble with a pin (never a razor blade) and press out entrapped air with thumb moving toward the puncture.

Re-Squeegee All Edges

Safety Decals

! DANGER



MOVING PART HAZARD
To prevent death or serious injury:

- Stay out of box while conveyor is moving.
- Disconnect and lockout power source before adjusting or servicing.
- Do not ride on spreader.

364-C

! DANGER



FLYING MATERIAL & ROTATING SPINNER HAZARD
To prevent death or serious injury:

- Wear eye protection.
- Stop machine before servicing or adjusting.
- Keep bystanders at least 60 feet away.

388-C

! WARNING



HIGH PRESSURE FLUID HAZARD
To prevent death or serious injury:

- Relieve pressure on system before repairing, adjusting, or disconnecting.
- Keep all lines, fittings and couplers tight and free of leaks.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Do not use hydraulic lines for hand holds or steps.
- Components may be hot.

39138-C

! WARNING

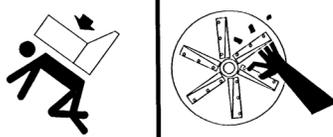


To prevent death or serious injury:

- Do not place objects on fenders.
- Keep off fenders. They are not intended to carry loads.

39200-D

! WARNING



FALLING SPINNER HAZARD
To prevent death or serious injury:

- Stay out from under spinner in raised position or while lowering hopper.
- Do not operate or transport in raised position.
- Keep away from rotating spinner.

71807-C

! WARNING

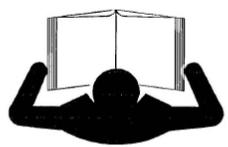


FALLING HAZARD
To prevent death, serious injury or machine damage:

- Do not stand or climb on guard.

55630-D

! CAUTION



TO AVOID INJURY OR MACHINE DAMAGE:

- Do not operate or work on this machine without reading and understanding the operators manual.
- Keep hands, feet, hair and clothing away from moving parts.
- Do not allow riders on machine.
- Avoid unsafe operation or maintenance.
- Disengage power takeoff and shut off engine before removing guards, servicing or unclogging machine.
- Keep unauthorized people away from machine.
- Keep all guards in place when machine is in use.
- If manual is missing, contact dealer for replacement.

150034-C

! WARNING: Cancer and Reproductive Harm-
www.P65Warning.ca.gov

315865-A

NOTICE

- Conveyor chain life will be noticeably extended by periodic lubrication.
- Use a 75% diesel fuel and 25% number 10 oil mixture on the links and rollers.
- Failure to keep the chain links loose and free running can result in severe damage to the conveyor chain, drag shaft, gear case, body structure, and is cause for voiding the warranty.

21478-E

! CAUTION

HAZARDOUS MATERIALS
To avoid injury or machine damage:

- Materials to be spread can be dangerous.
- Improper selection, application, use or handling may be a hazard to persons, animals, crops or other property.
- Follow instructions and precautions given by the material manufacturer.

321-C



INSTALLATION

INSTALLATION

In mounting the Model E2020A2 spreader on a truck, the following questions must be considered:

1. Is the CA (Cab to Axle) dimension of the truck (for chassis mounting) and/or the length of the truck's dump body (for dump body mounting) correct for the length of the spreader?

To answer this question, the following chart will assist in matching spreader to truck:

Spreader Inside Body Length (Feet)	Truck CA/CT Dimension (Inches)	Truck Dump Body Length (Feet)
9	72 CA	9
10	84 CA	10
11	84 CA	11
12	102 CA	12
13	102 CA/108 CT	13
14	120 CT	14
15	130 CT	15
16	138 CT	16

NOTICE

The Cab to Axle/Tandem dimensions are only guidelines. Consult federal, state and local weight laws and chassis manufacturer's ratings to ensure neither government weight restrictions, nor GVWR and GAWRs are exceeded.

2. Is the truck's GAWR (Gross Axle Weight Rating) and the GVWR (Gross Vehicle Weight Rating) adequate to carry the fully loaded spreader?

To answer this question, refer to your Hi-Way dealer. He knows where to find the GAWR and GVWR for most trucks, and how to calculate the weight distribution on each axle and total loaded vehicle weight.

3. How will the hydraulic pump be driven?

The answer to this question will depend upon the availability of means to drive a pump that exist on the particular truck chosen for the mounting. Your dealer should be able to help here as well. However, the pump to be used will be determined by both the pump drive selected and the hydraulic control system chosen.



Lifting the Spreader

⚠ WARNING

Use only lifting devices that meet or exceed OSHA standard 1910.184 or ASME B30.20-2006. Never lift equipment over people. Never lift unit with anything or anybody in the body. Loads may shift or fall if improperly supported. Failure to comply with this requirement could result in death or serious injury.

⚠ CAUTION

Do not use lifting device to free unit from a chassis, storage stands or frozen ground, or to lift the chassis in any way. Shock loading is prohibited and sudden accelerations should be avoided. Failure to follow this requirement may result in injury or machine damage.

Always inspect unit lift points for signs of wear, cracking, corrosion, gouges, alterations, or distortion.

Always use a sling, spreader bar, or lifting bar that attaches to the lifting points with a minimum of 60 degrees from horizontal. It is preferable to use an "H" style lifting bar that keeps the attaching chains in a near vertical orientation as shown in Figure 1. Operators of lifting devices must be qualified and knowledgeable in their use and application.

Position the chassis with adequate room around the unit. Work in an environment that permits clear communication to others nearby. Keep area clear of persons when loads are to be lifted and suspended. Do not allow the lifted load to come in contact with any obstruction.

Store units on a solid surface using appropriate storage stands when not installed.

Attach lifting bar to spreader and remove slack. Remove Highway Storage Leg System (HSLs) if applicable. Lift spreader for installation onto truck chassis.

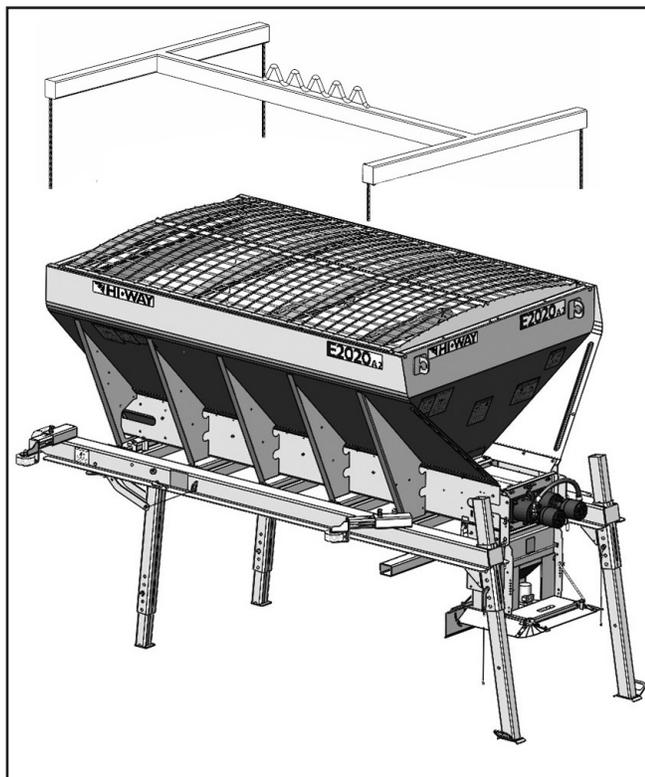


Figure 1 - Lifting Bar (HSLs Shown)

Truck Chassis Installation

Chassis Mounting

Truck Frame Length:

In most cases, the truck frame must be shortened. The length from the rear of the cab to the end of the frame should be approximately as shown on the following chart.

MINIMUM RECOMMENDED FRAME LENGTH

Spreader Length - Feet	9	10	11	12	13	14	15	16
Minimum Frame Length - Inches	99	111	123	135	147	159	171	183

Wood Filler Strips

Hardwood filler strips (not supplied with spreader), one by three inches, must be installed the length of the frame behind the truck cab. Cut the filler strip to length and place on top of the truck frame rails. With a heavy hammer strike directly above each rivet head to mark the position of the rivet, if frame has rivets in top flange. Remove the filler strips and counterbore for the rivet heads. Replace the filler strips and hold them in place by bending anchor clips as shown in Figure 2. If the truck frame has fishplates on the top flange, it will be necessary to provide a level top surface by adding steel shim bars or strips of the same thickness as the fishplates and as wide as the frame channel top flange. These shim bars or strips must be drilled out to clear any rivet or bolt heads. **DO NOT WELD** these bars or strips to the truck frame. To do so may void truck warranty. Place the wood filler strips on top of them and secure both steel shims and wood filler strips by means of bending the anchor clips around them and the frame top flanges as shown in Figure 2. Each steel shim bar or strip and each separate wood filler strip should have three (3) anchor clips. Locate anchor clips between spreader body cross sills. Secure each anchor clip by driving 1/4" sheet metal screw through clip into wood filler strip as shown in Figure 2.

Positioning Body

Place the spreader body on the truck frame. Position body centrally with respect to the truck frame rails and approximately four inches to the rear of the cab. Check the position of the spreader at the rear to insure that the rear mounting angles can be properly positioned on truck frame and centered on rear cross tubes. Center filler plates under the ends of the cross channels where necessary to prevent the channels from gouging into the wood.



Installation Instructions Cont.

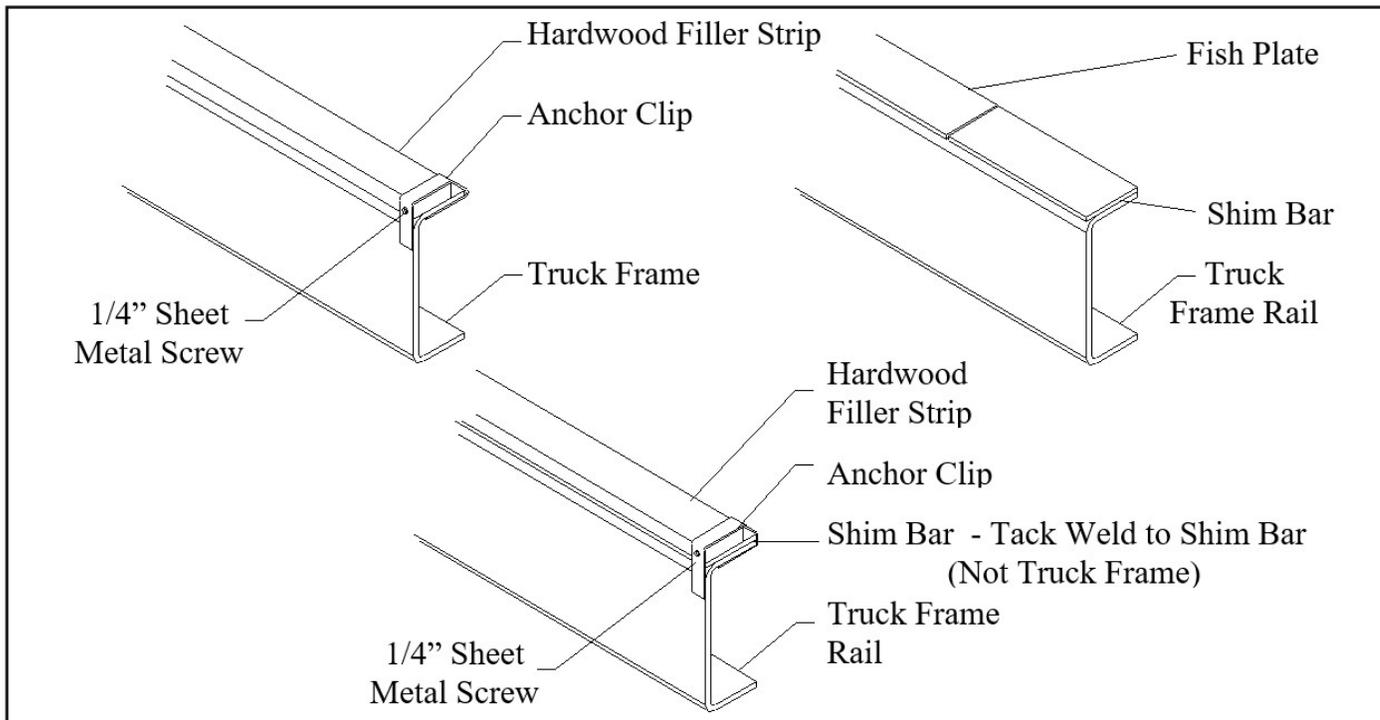


Figure 2 - Wood Filler Strips & Anchor Clips

NOTICE

DO NOT PUT HOLES INTO TOP OR BOTTOM FRAME FLANGES. To do so may void truck manufacturer's warranty. When drilling holes in frame member, drill only through vertical web portions.

Installing Front Mounting Angles

Assemble the two front mounting angle springs and hardware. Use a 3/8" shim between the cross tube mounting plate and truck frame mounting angle. Position assembly under the second cross tube from the front and against the truck frame, make sure that the springs do not contact the cross tube. Mark the position of the holes in the mounting angle onto the truck frame. Drill two (2) 9/16" holes through the truck frame and install the mounting assembly using the 1/2" hardware supplied. Weld the mounting plate to the bottom of the cross tube on three sides and remove 3/8" shim. (Figure 4) Tighten the spring assembly until the compressed spring height is 3 5/8". There should be a 3/8" space between the cross tube mounting plate and the truck frame mounting angle. (Figure 3) Repeat this procedure on the other side of the truck frame, on the same cross tube.

Installing Center Mounting Angles (9 Foot through 11 Foot Bodies)

Position the center mounting angles at a convenient cross tube near the center of the body with the slotted faces against the truck frame. Weld on three sides the mounting angle to the bottom of the cross tube. (Figure 4) Do not install hardware, these mounting angles are for side-to-side support only. (Figure 3)



Installing Center Mounting Angles (12 Foot to 16 Foot Bodies)

Position the center mounting angles at a convenient cross tube near the center of the body with the slotted faces against the truck frame and mark the location of the slots on the truck frame. Drill two (2) 9/16" diameter holes through the truck frame, approximately 3/4" from the bottom of the slot. (Figure 3) Weld on three sides the mounting angle to the bottom of the cross tube. (Figure 4) Install hardware and torque according to torque chart.

NOTE: The position of the center mounting angles will vary from truck to truck due to obstructions, such as spring shackles, etc.

Installing Rear Mounting Angles

Position the rear mounting angles with the slotted faces against the side of the truck frame and centered on the rear cross sill. Mark the location of the slots on the truck frame. Drill two (2) 9/16" diameter holes through the truck frame at the bottom end of the slots. (Figure 3) Weld on three sides the mounting angle to the bottom of the cross tube. (Figure 4) Install hardware and torque according to torque chart.

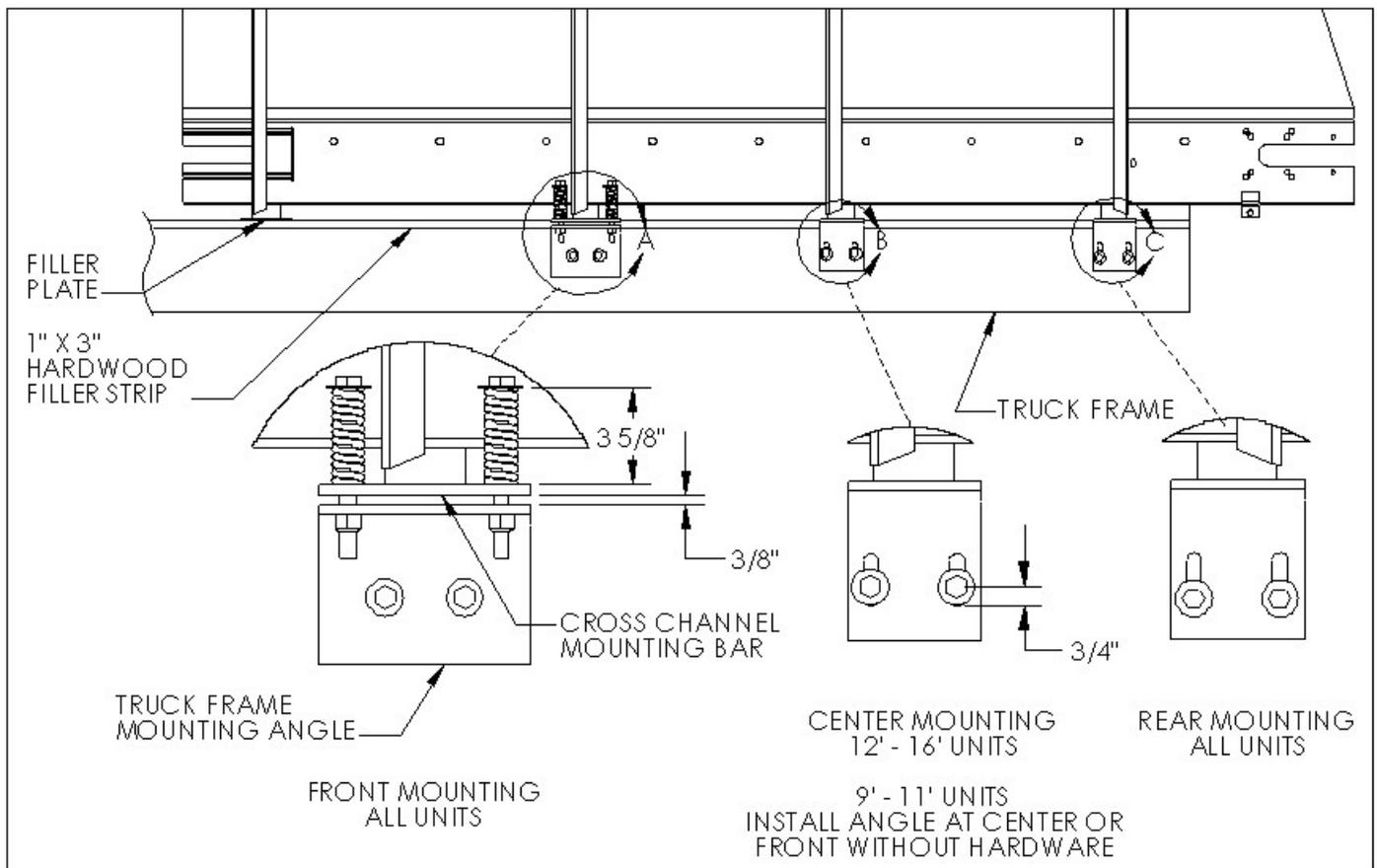


Figure 3 - Mounting Angle Installation

Installation Instructions Cont.

NOTICE

DO NOT WELD TO VEHICLE FRAME! Such welding can lead to fatigue cracking and must be avoided.

CAUTION

When drilling holes, make sure that the drill will not puncture the gas tank or harm any other obstruction! Failure to follow this requirement may result in injury or machine damage.

Securing Spreader Body to Frame

Install the mounting angles and tighten the mounting bolts according to the torque chart. Weld the mounting angles to the spreader cross tubes by welding them on the front, outer and rear sides. (Figure 4) Be sure welds between mounting angles and spreader cross tubes are sound full fillet welds. Center mounting angles so good fillet welds can be made on three sides—an edge bead weld is not a satisfactory weld for this service. Use dry E6013 or E7018 rod for mild steel spreaders. On stainless steel spreaders, use type 308 welding rod.

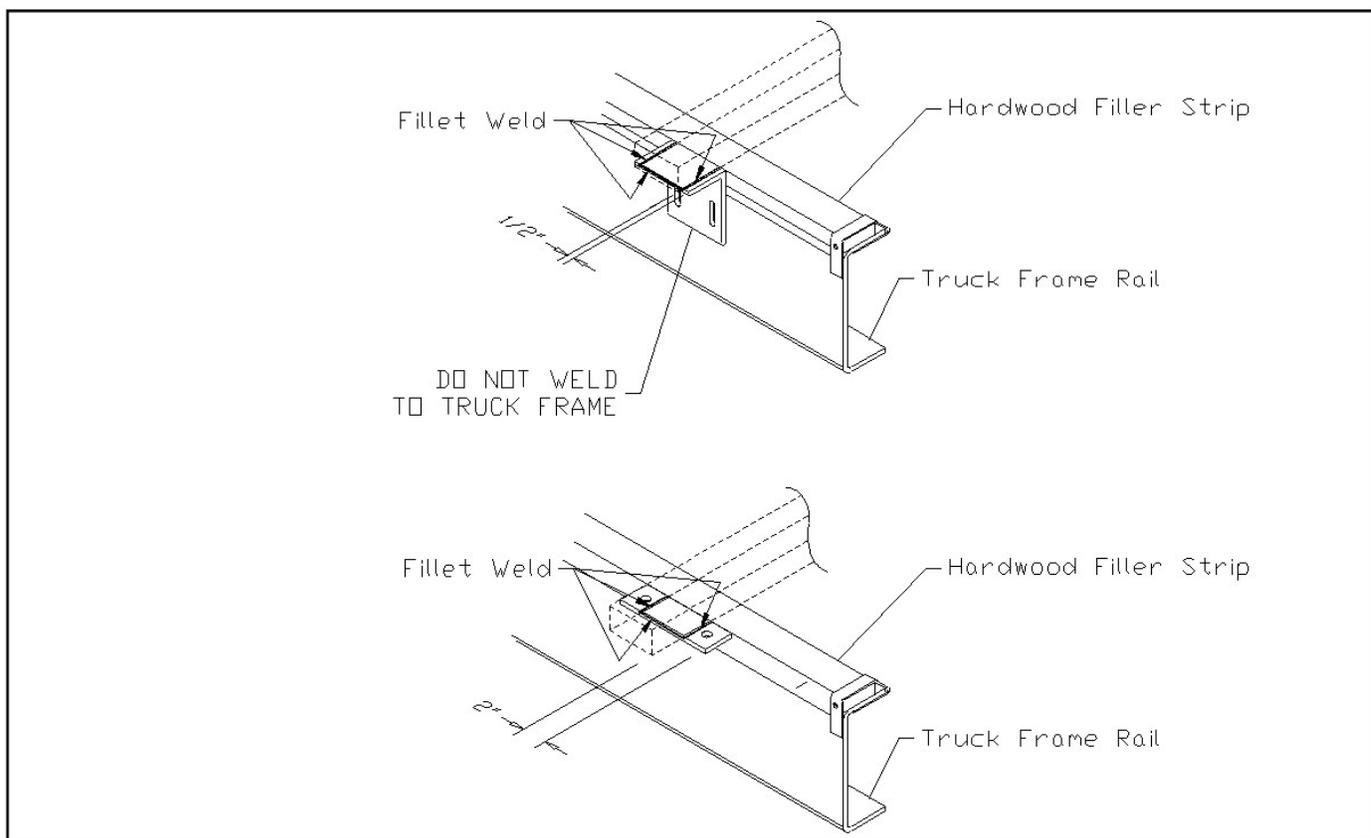


Figure 4 - Welding Instructions

NOTICE

DO NOT WELD TO VEHICLE FRAME! Such welding can lead to fatigue cracking and must be avoided.

Dump Body Installation

Spreader Preparation

Roller Sidebars

The four roller sidebars are intended to guide the spreader along the sidewalls during loading and unloading. Settings on each side of the spreader must be equal to center spreader on the dump body.

NOTE: If the dump body has large radiused corners, the sidebars can be flipped to increase the height of the roller.

1. Measure the inside width of the dump body at the front just above any radiused corner.
2. Measure the distance between the two front rollers on the spreader as shown in Figure 1. Start from the outside edge of one roller and measure to the outside edge of the opposite roller.

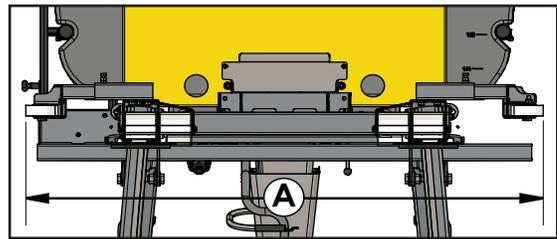


Figure 1 - Distance Between Front Rollers

3. Adjust the roller sidebars as necessary so distance between rollers is just less than the inside width of dump body:
 - a. Loosen the locknut (A) and bolt (B) on top of side bar.
 - b. Adjust roller sidebars as shown in Figure 2. Align bolt with sidebar hole.
 - c. Verify the distance between two front rollers. Adjust if necessary.
 - d. Tighten bolt so it is securely in sidebar hole.
 - e. Tighten locknut.

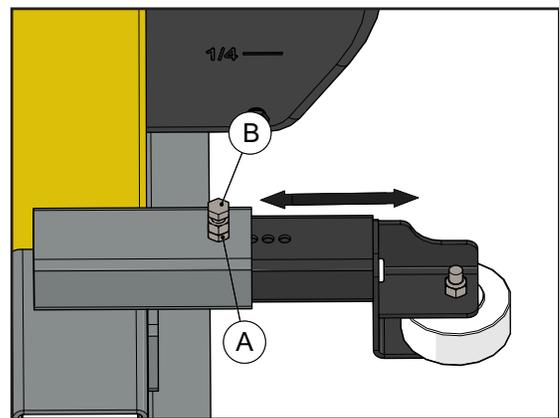


Figure 2 - Adjust Roller Sidebars

4. Repeat for the two rear roller sidebars.

Loading

The Highway Storage Leg System (HSL) is designed to be used where the dump body floor is between the height of 50" to 62". The height of the legs will need to be adjusted for first time use to match the dump body floor height. The legs should be adjusted so the spreader sits level or slightly elevated at the front.

Check to make sure the vehicle is suitable for the spreader. Consider all other auxiliary equipment such as front snow plows, wings and scrapper blades. Consider the total weight of the spreader, liquid and granular materials.

The dump body floor must be clear of sand, salt, snow, ice or any other debris and the four rubber pads should always contact the floor when the spreader is installed.

1. Raise loading platform approximately 10°.

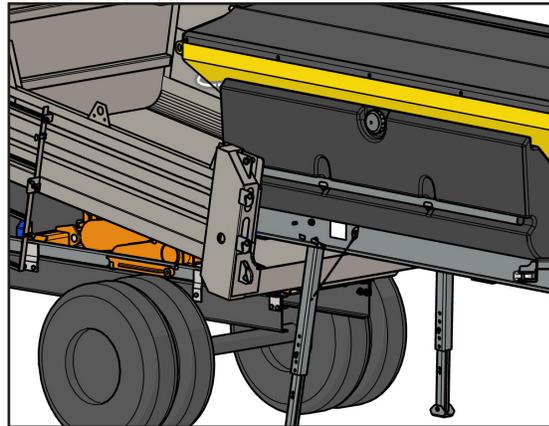


Figure 1 - Loading

2. Figure 1 - Back truck underneath spreader until spreader's front leg supports leave the ground.

3. Apply truck's parking brake and chock wheels.

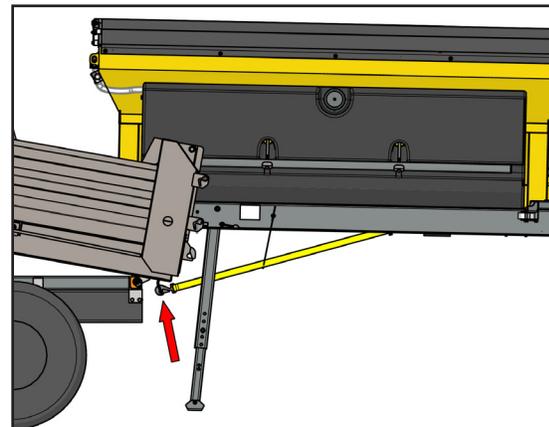


Figure 2 - Attach Safety Strap

4. Figure 2 - Attach safety strap to chassis and tighten so strap is taut. Front legs remain locked.

- Figure 3 - Remove front leg locking pins (A). Store front leg locking pins in hole (B).

NOTE: On high truck floors and short spreader bodies, the front legs may need to be shortened to fold up.

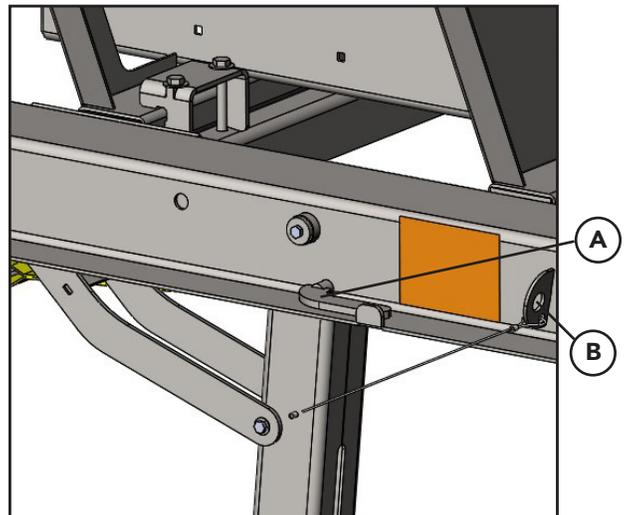


Figure 3 - Leg Support Lock Pin

NOTICE!

Spreader angle may need to be increased or decreased to properly position on truck.

- Figure 4 - Continue to back dump body underneath spreader until truck makes contact with spreader.
- Apply truck's parking brake and chock wheels.

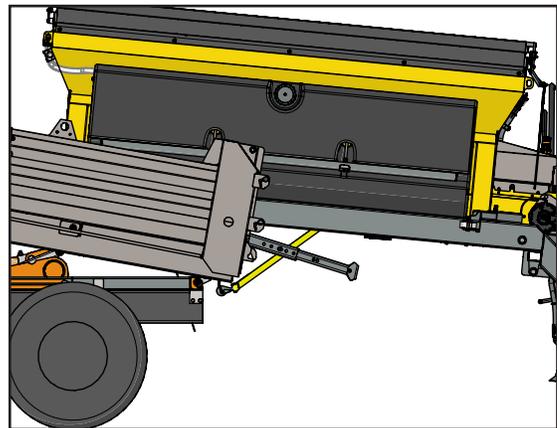


Figure 4

8. Figure 5 - Lower the dump body completely. The rear legs should be off the ground.

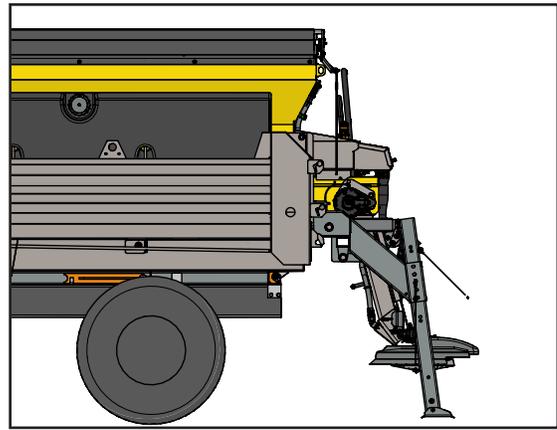


Figure 5

9. Figure 6 - Raise rear legs:
 - a. Remove lock pin (A).
 - b. Grip rear leg at handle (B).
 - c. Lift leg above the height of the spinner.
 - d. Insert lock pin into hole (C).

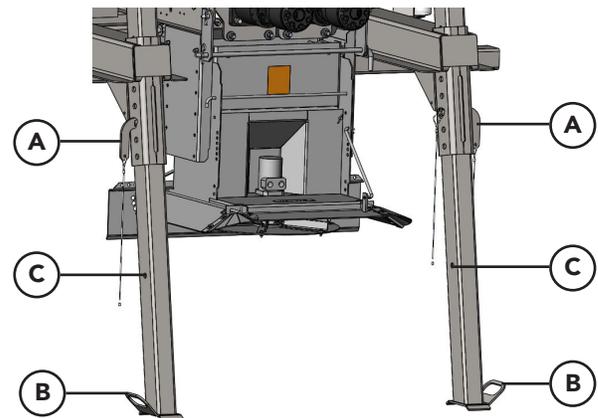


Figure 6 - Rear Leg detail

10. Secure spreader. See Securing Spreader section.
11. Hook up all connections between spreader and chassis.

Securing Spreader

⚠ WARNING

Inspect securing devices and tie-down points for wear and tear. Replace securing device and repair tie-down points if any sign of wear or damage. Make sure securing devices do not contact sharp edges, moving or hot components. Failure to comply with this requirement could result in death or serious injury.

Spreader must be secured to dump body to eliminate movement caused by braking, cornering and acceleration of truck. Operator is responsible for supplying and attaching appropriate securing devices as the spreader can be installed in many different types of dump bodies with a variety of tie downs. The Federal Motor Carrier Safety Administration may be used as a guide for securing loads.

Ensure roller sidebars are correctly positioned to restrict side-to-side movement.

⚠ CAUTION

Avoid sharp edges and corners when attaching straps to prevent personal injury. Failure to follow this requirement may result in injury or machine damage.

Secure spreader to chassis and dump body with ratchet straps, mounting to the securing hooks located at each corner of the spreader, on the top and the sides.

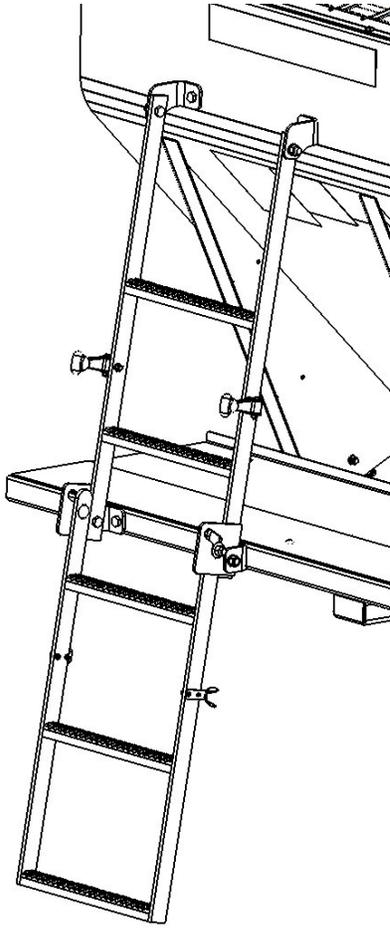
Removal From Dump Body

Reference illustrations on previous pages in reverse order as necessary.

1. Empty spreader of all liquid and granular materials.
2. Drive to level, firm surface to unload spreader. Take truck out of gear and set parking brake.
3. Disconnect all hydraulic and electrical connections from spreader to truck.
4. Remove devices used to secure spreader.
5. Lower rear legs of spreader to approximately 1" (5cm) from ground and lock in position.
6. Ensure safety strap on bottom side of spreader is still connected to dump body.
7. Raise dump body approximately 10°, so the spreader's rear legs touch the ground and the rubber pads lift off of the dump body floor.
8. Drive truck forward, sliding spreader out of box until front leg locking pins can be removed.
9. Drive truck forward until front legs fold down.
10. Take truck out of gear, set parking brake and chock wheels.
11. Set front legs approximately 1" (5cm) from ground and lock in position. Secure in upright position with locking pin through subframe.
12. Unhook safety strap from truck.
13. Slowly drive truck out from under spreader. Lower dump body.

Installation Instructions Cont.

Ladder – Side



Position upper ladder in a suitable location on fender and side sheet as shown in Figure 1. Mark holes on side sheet and fender. Remove ladder and drill 9/16" holes. Attach to side sheet with hardware.

Tighten all hardware to recommended torque.

NOTE: Longer bolts are used to attach mounts to ladder and shorter bolts are used to attach mounts to sidesheet or fender.

Figure 1 – Side Ladder Installation

Parts needed:

Description	Qty
Bracket - Mount Ladder 304	2
Bracket - Mount Ladder Lh 304	1
Bracket - Mount Ladder Rh 304	1
Capscrew - .5-13nc X 1.25 SS	4
Capscrew - .5-13nc X 1.5 SS	4
Ladder - Side Assy 304	1
Nut - Hex .5-13nc SS	8
Washer - Lock .5 SS	8

Installation Instructions Cont.

Ladder – Rear With HSLs

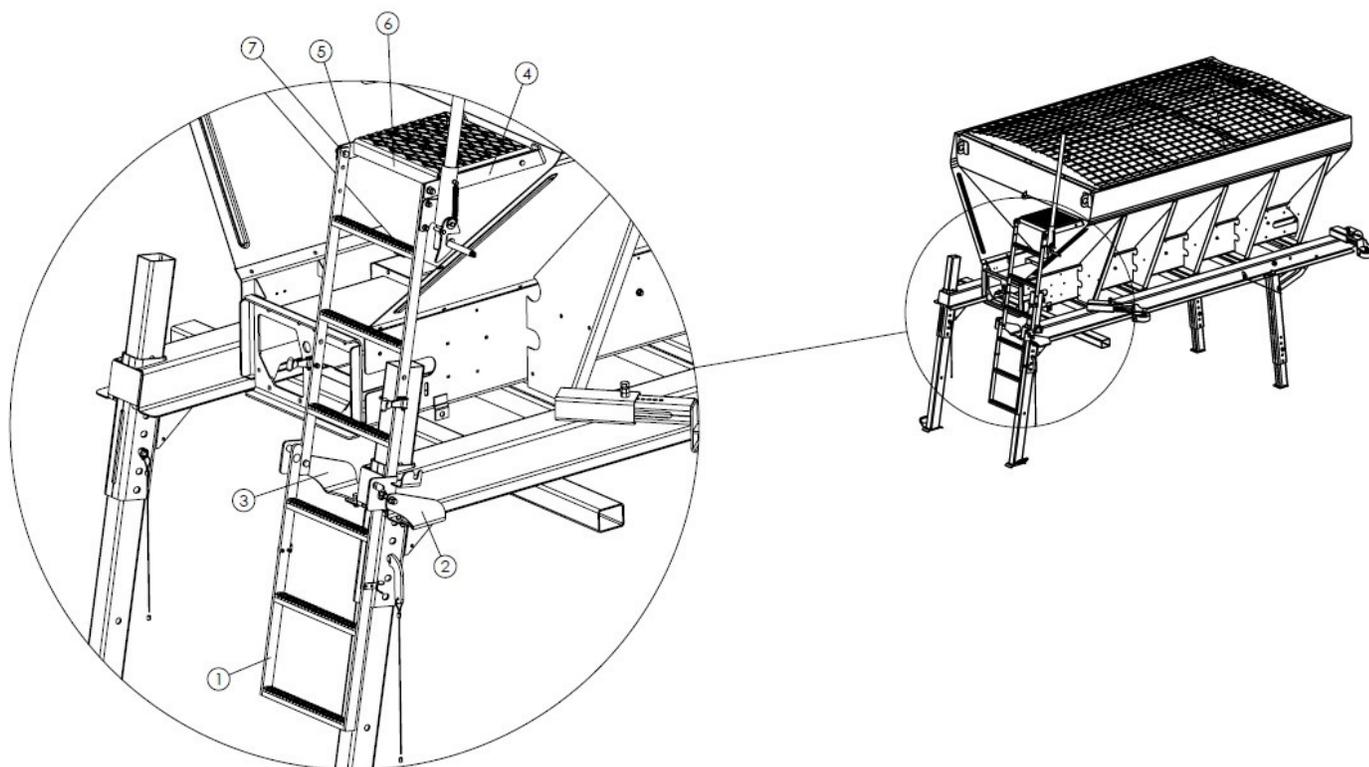


Figure 1 – Rear Ladder Installation

Parts needed:

Description

Description	Qty
Ladder - Assy Rear 304	1
Mount - Ladder Lower RH 304	1
Mount - Ladder Lower LH 304	1
Mount - Ladder Upper RH 304	1
Mount - Ladder Upper LH 304	1
Platform - Wldmt 14.80 X 16.75	1
Ladder - Kit Hdw W/Legs SS	1

Position ladder so that lower ladder mounts (2,3) can be attached to frame assembly as shown in Figure 1. Position Platform (4) and mark holes on endgate. Remove ladder and drill 9/16" holes. Attach to endgate with hardware.

Tighten all hardware to recommended torque.

Installation Instructions Cont.

Ladder – Rear W/O HSLs

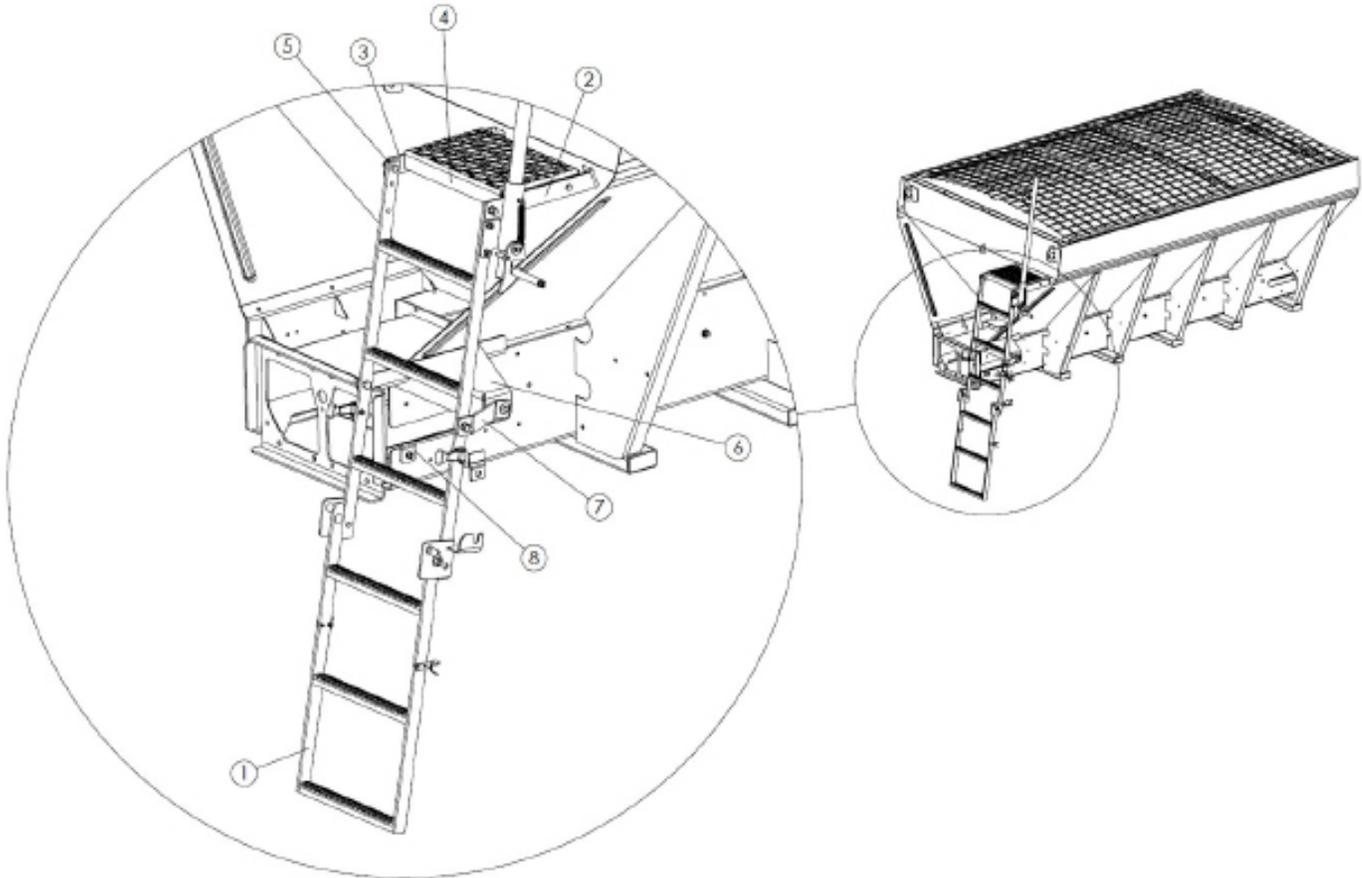


Figure 1 – Rear Ladder Installation

Parts needed:

Description

Description	Qty
Ladder - Assy Rear 304	1
Mount - Ladder Upper Rh 304	1
Mount - Ladder Upper Lh 304	1
Platform - Wldmt 10.80 X 16.75	1
Ladder - Kit Hdww/O Legs Ss	1
Support - Wldmt Ladder 304	1
Brace - Ladder 304	1
Brace - Ladder 304	1

Position ladder so that lower ladder mounts (7,8) can be attached to frame assembly and Support Weldment (7) as shown in Figure 1. Position Platform (4) and mark holes on endgate. Remove ladder and drill 9/16" holes. Attach to endgate with hardware.

Tighten all hardware to recommended torque.

Installation Instructions Cont.

Cab Shield

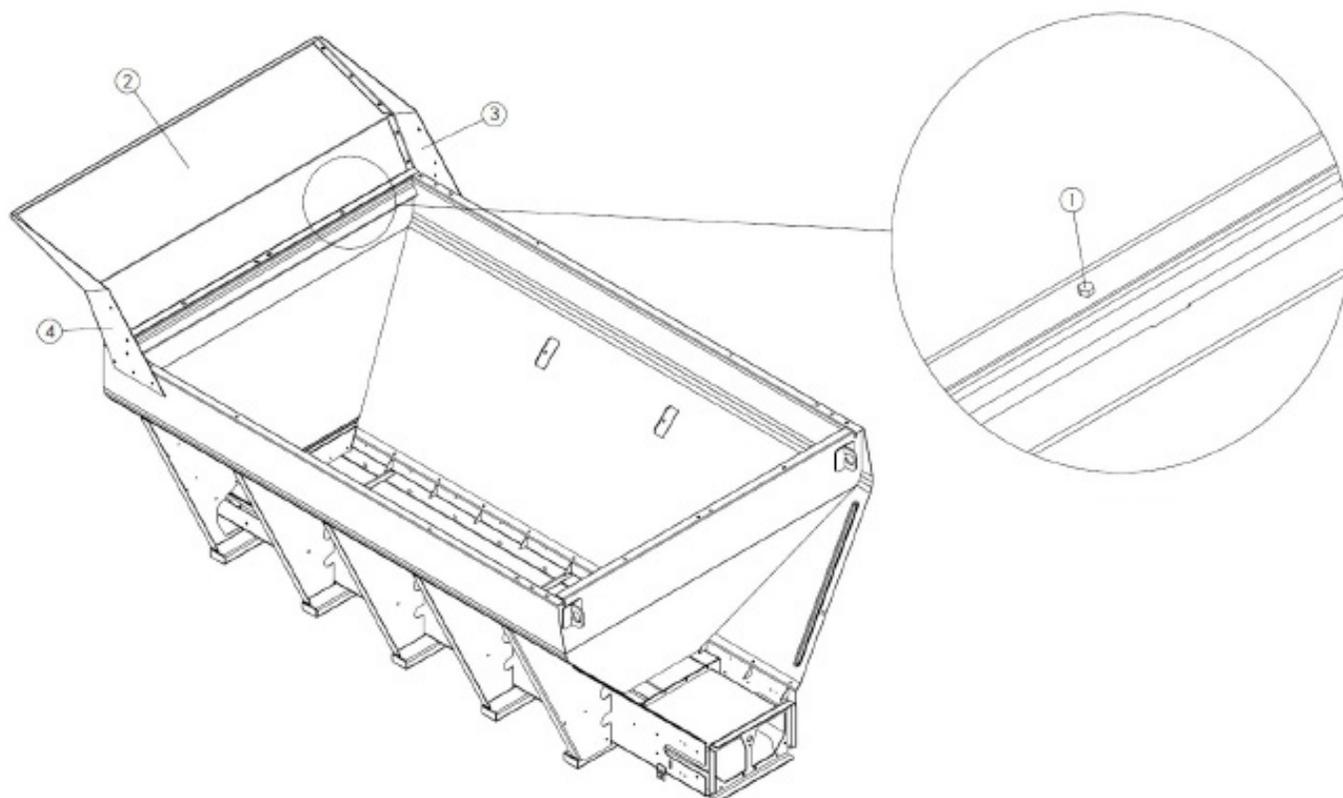


Figure 1 – Cab Shield Installation

Parts needed:

Description	Qty
Panel - Cab Shield 57 304	1
Support - Wldmt Rh 304	1
Support - Wldmt Lh 304	1
Nut - Hex .375-16nc SS	20
Washer - Flat .375 SS	10
Washer - Lock .375 SS	20
Capscrew - .375-16nc X 1 SS	20

Attach Supports to the Cab Shield using the hardware provided, but do not tighten. Center Cab Shield on front of the unit as shown in Figure 1 and mark the hole locations on the front endgate and both sides. Remove the Cab Shield and drill 7/16" holes where marked. Install Cab Shield using remaining hardware. Tighten all hardware to recommended torque.

Fenders

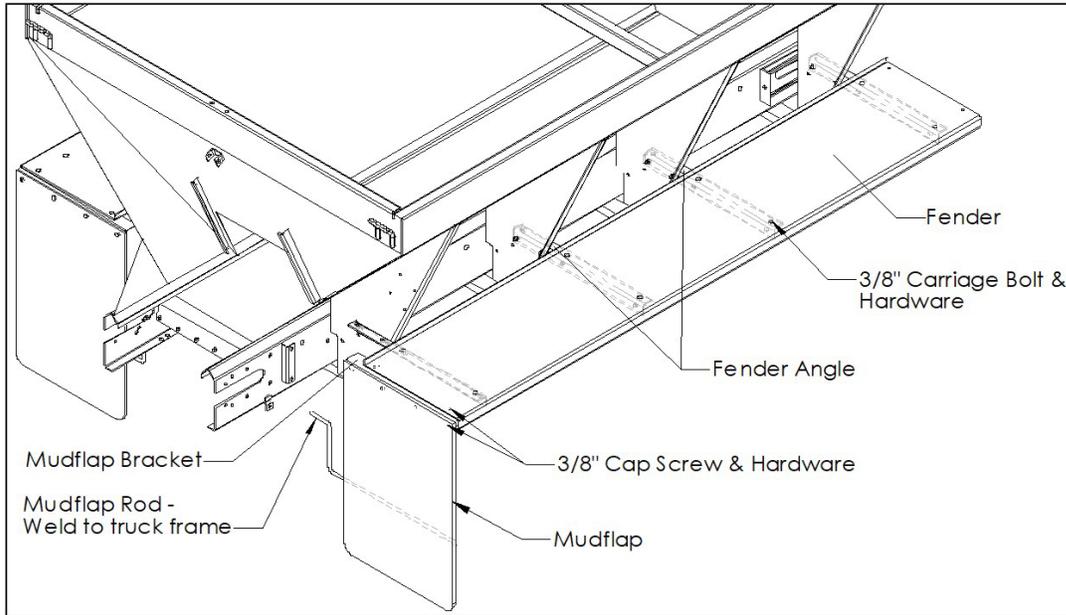


Figure 1 – Fender Installation

Parts needed:

Description

Fender Panel

Qty

2

Angle – Fender

AR

Carriage Bolt – 3/8 x 1

AR

Flat Washer – 3/8

AR

Lock Washer – 3/8

AR

Hex Nut – 3/8

AR

Attach fender angles to spreader stakes using 3/8" carriage bolts, lock washers and hex nuts as shown in Figure 5. Do not tighten the hardware at this time. Attach the fender panels on top of the fender angles using 3/8" carriage bolts, flat washers, lock washers and hex nuts. Tighten angle and panel hardware to recommended torque. Repeat on opposite side.

Mudflaps

Bracket – Mudflap Mount RH

Qty

1

Bracket – Mudflap Mount LH

1

Cap Screw – 3/8 x 1

12

Flat Washer – 3/8

12

Lock Washer – 3/8

12

Hex Nut – 3/8

12

Mudflap

2

Rod – Mudflap

2

Attach mudflap brackets to fender panels using 3/8" cap screws, flat washers, lock washers and hex nuts as shown in Figure 5. Install mudflap on brackets using remaining hardware. Place mudflap rod in front of the mudflap and find a suitable location to weld the rod onto the truck frame.



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Installation Instructions Cont.

Spinner

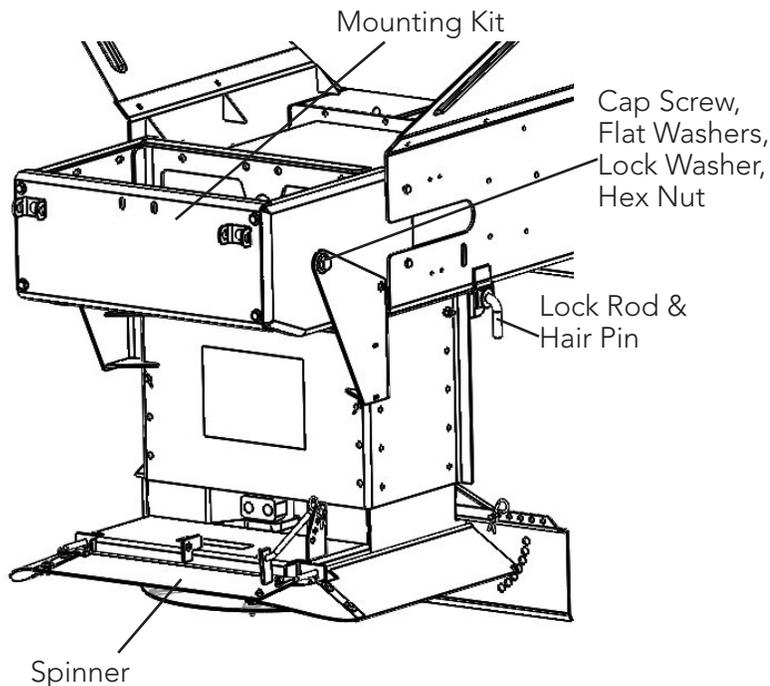


Figure 1 – Spinner Installation

Parts needed:

Description	Qty
Mounting Kit	1
Capscrew - .625-11nc X 1.75 SS	2
Washer - Flat .625 SS	4
Washer - Lock .625 SS	2
Nut - Hex .625-11nc SS	2
Lock Rod	2
Hair Pin	2
Spinner	1

**NOTE: See parts lists at the back of this manual for Driveline and Underslung Spinner mounting hardware.

Assemble and install Mounting Kit as shown in Figure 1 using supplied hardware. Position Spinner inside bottom of E2020A2 and align holes. Place supports under Spinner so hardware can be installed. Tighten to recommended torque. Install Lock Rods and secure with Hair pins.

* NOTE: 1/2" hardware may be used in place of Lock Rods to attach Spinner to bottom lip of unit so spinner will not pivot.

⚠ WARNING

Testing should be conducted in approved test stands with adequate guards to protect the operator. Failure to comply with this requirement could result in death or serious injury.

Installation Instructions Cont.

Winch

An optional Winch can be attached to assist in lifting the Spinner Assembly.

Parts needed:

Description	Qty
Bracket - Winch 304	1
Capscrew - .375-16nc X 1 SS	7
Washer - Flat .375 SS	9
Washer - Lock .375 SS	9
Nut - Hex .375-16nc SS	9
Bracket - 304	1
Bolt - Carriage .375-16nc X 1	2
Round - 304	1
Pipe - Sch80 .5 X 4.625 304	1
Pin - Cotter .125 X 1 SS	2
Winch - Worm Gear Loop Drive	1
Link - Quick .313 SS	1
Pulley - .25 X 1.75 Od SS	1
Cable - Wire Rope .25 7 X 7 SS	1
Clamp - .25 Thimble Ss	1

1. Figure 1 - Secure Bracket (1) to Mounting Support (2) using four Capscrews, Washers, Lock Washers and Nuts (3).
2. Secure Winch Bracket (4) using four Capscrews, Washers, Lock Washers and Nuts (5).
3. Secure Bracket (6) to Mounting Support (2) using two Bolts, Washers, Lock Washers and Nuts (7).
4. Position Pipe (8) and Round (10) as shown and secure with Pins (9).

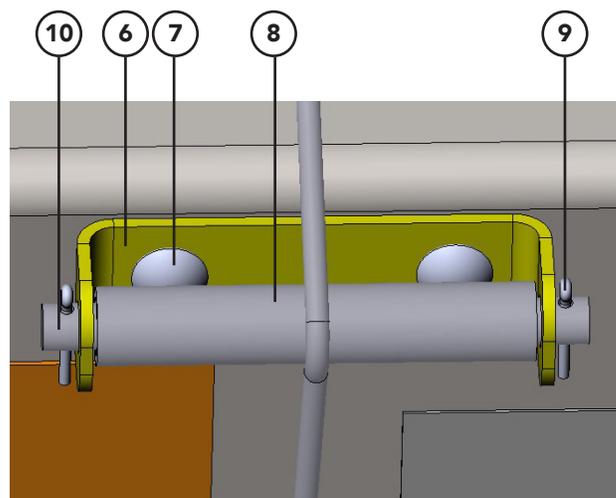
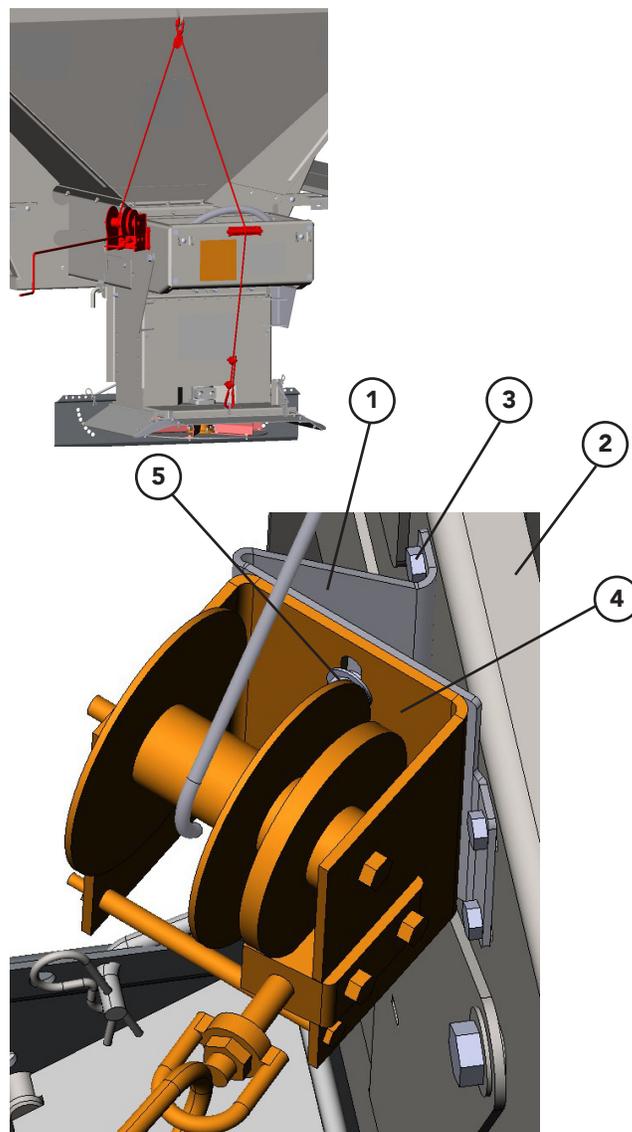
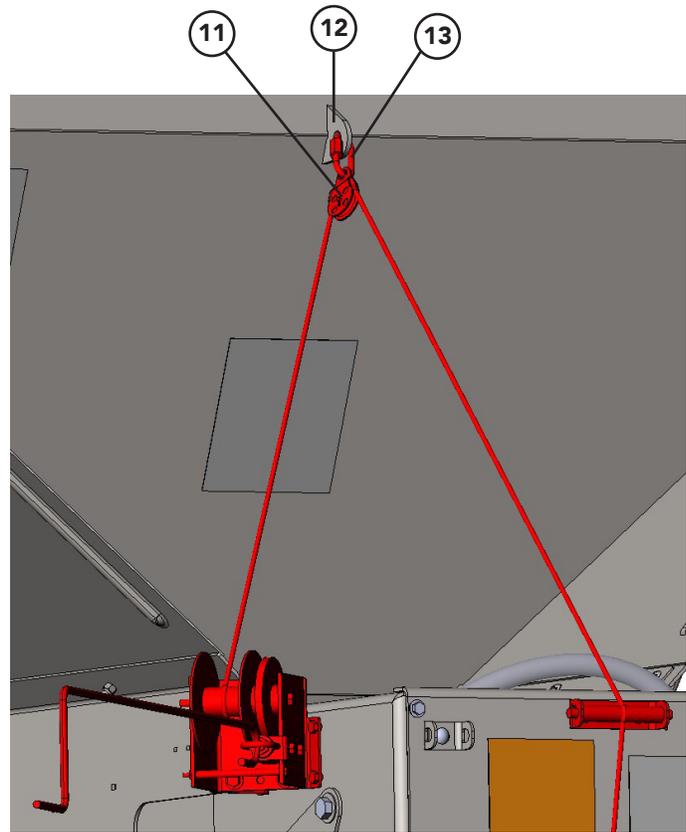


Figure 1 – Winch Installation

Installation Instructions Cont.

5. Figure 2 - Attach Pully (11) to weldment (12) using quick Link (13).



6. Run Cable (14) as shown.
7. Secure cable to Spinner Weldment (15) using Clamp Assembly (16).

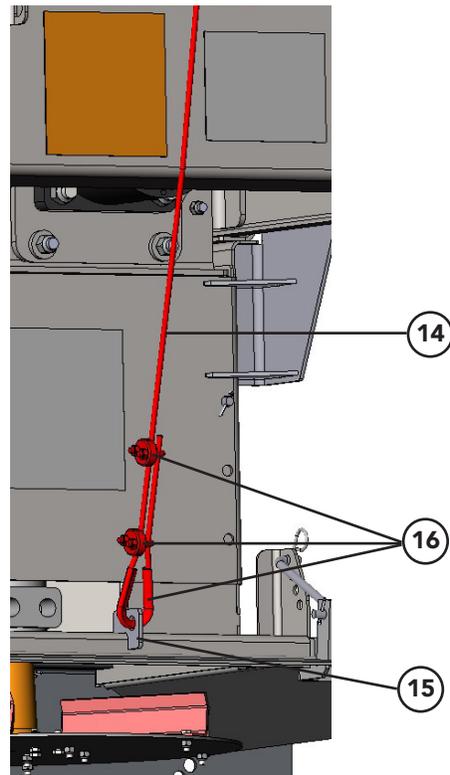


Figure 2 – Pully Installation

Inverted V

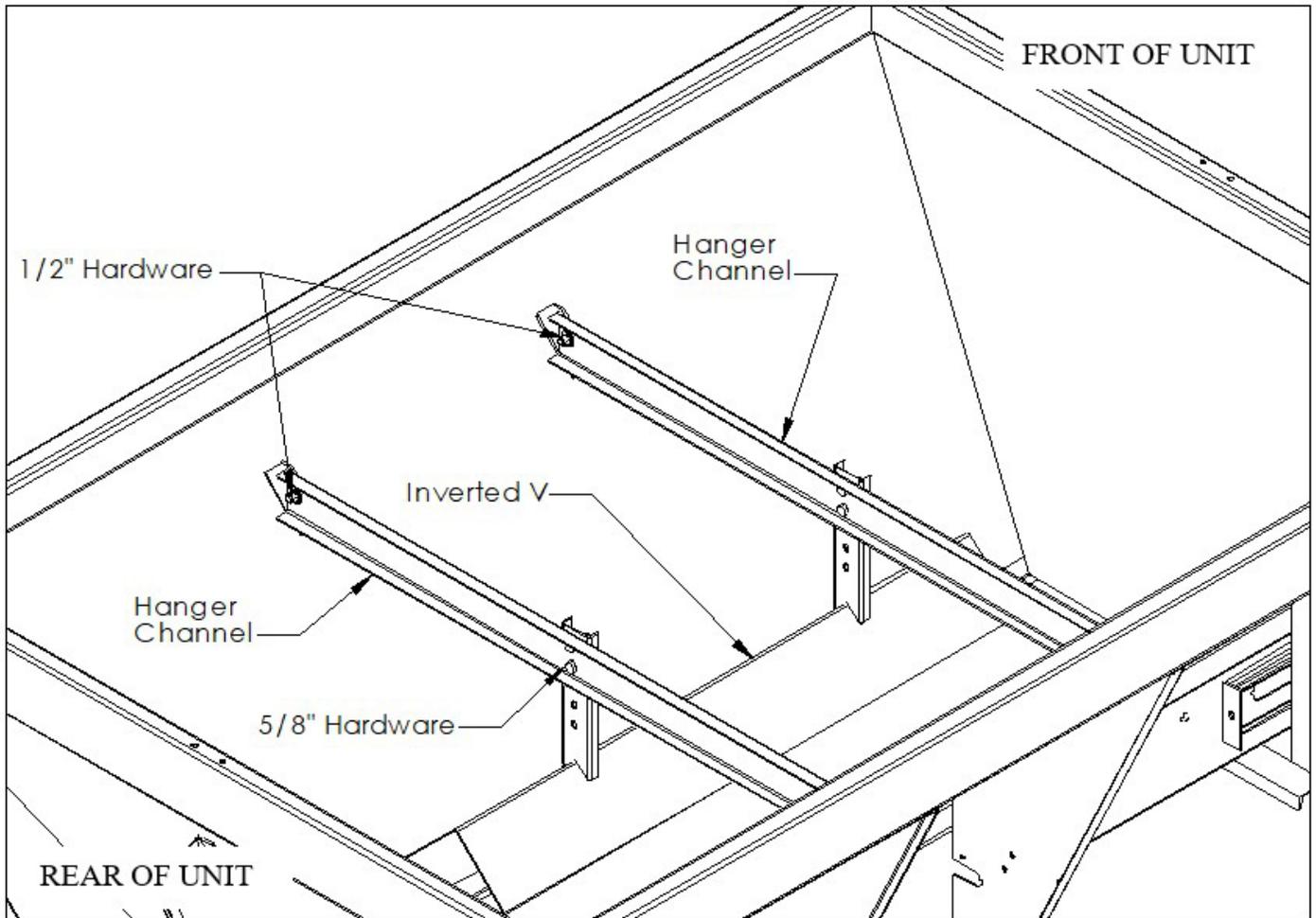


Figure 1 – Inverted V Installation

Description

Hanger Channel
 Inverted V
 Cap Screw – 1/2 x 1 1/4
 Flat Washer – 1/2
 Lock Washer – 1/2
 Hex Nut – 1/2
 Cap Screw – 5/8 x 1 3/4
 Lock Nut – 5/8

Qty

2 or 3
 1
 4 or 6
 4 or 6
 4 or 6
 4 or 6
 2 or 3
 2 or 3

Set Inverted V on the bottom inside the spreader body facing the direction shown. Attach Hanger Channels to the sides of the spreader body with the flanges facing the rear of the unit, using 1/2" cap screws, flat washers, lock washers and hex nut. Attach Inverted V to Hanger Channels using 5/8" cap screws and lock nuts. Tighten all hardware to recommended torques.

Installation Instructions Cont.

Screens

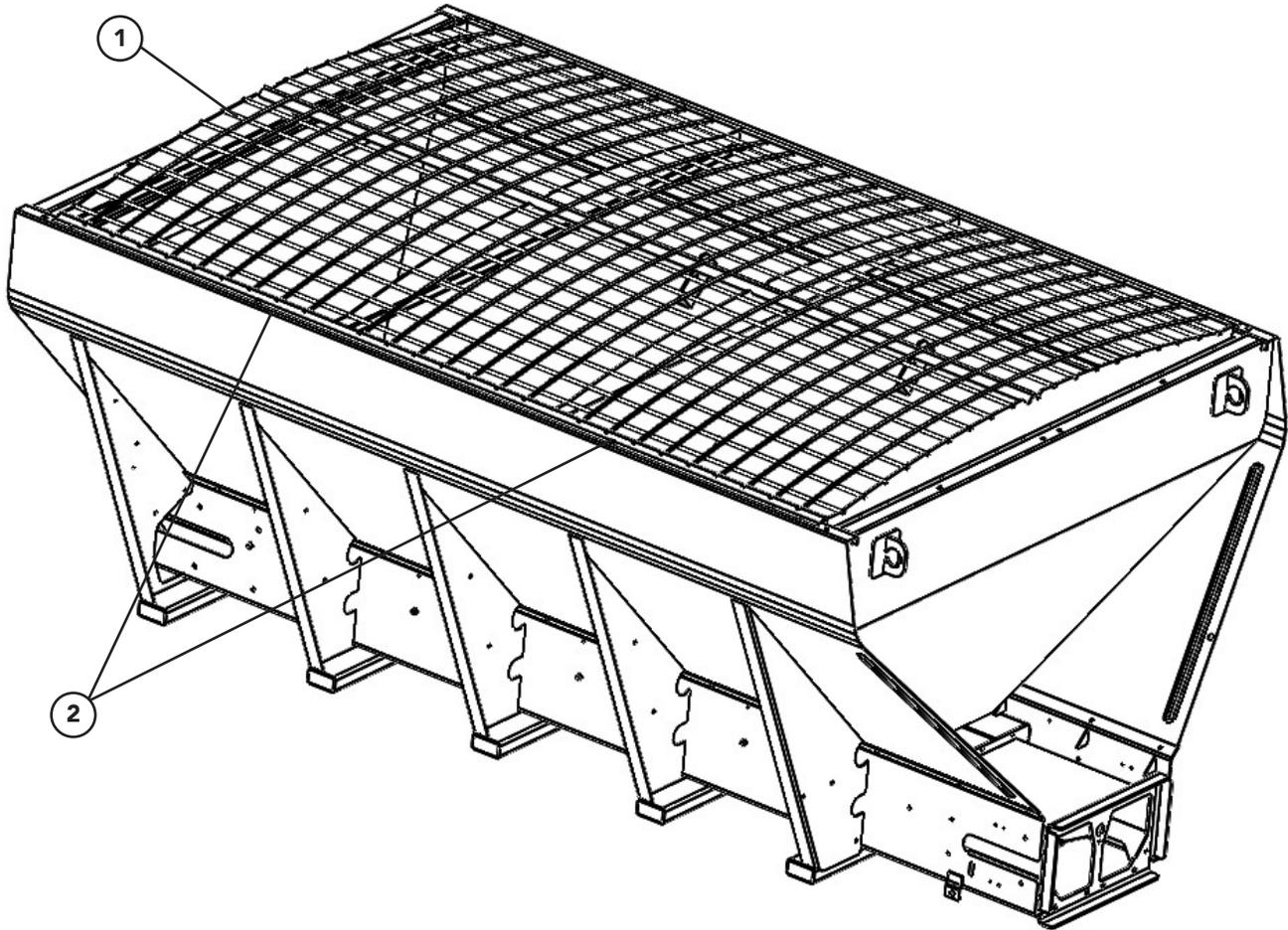


Figure 1 – Screen Installation

Parts needed:

Install Screen (1) and secure with two capscrews (2).

Description	Qty
Screen	1
Capscrew - .375-16nc X .75 SS	2

Installation Instructions Cont.

Hydraulic Hose Installation

Determine the pressure port of the pump. Install the pressure hose into this port as shown in Figure 1. Connect the suction hose to the opposite port and to the tank outlet on the reservoir. If necessary, use plastic tie straps to support hoses so that they will not catch on field obstructions or contact the muffler or moving parts.

Use thread sealer on all fittings, except "O" ring and JIC adapters, "O" ring valves and motors, etc. When using thread sealer, do not put it on the first three threads of the fitting. Too much sealer on the fitting or on the first three threads will force it into the oil stream where it could damage the system.

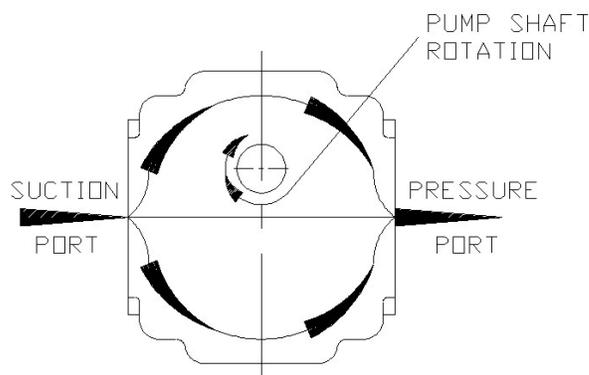


Figure 1 – Hydraulic Pump

CAUTION

If a threaded connection is tightened too tightly, the fitting or housing into which the fitting is placed could be distorted and an unstoppable leak could occur. Failure to follow this requirement may result in injury or machine damage.

Assemble the system as shown in the "Hydraulics System" parts list. Place the hose clamps as needed to keep hoses away from hot or moving parts. Do not let hoses hang so low as to be snagged. Do not stretch hoses tight.

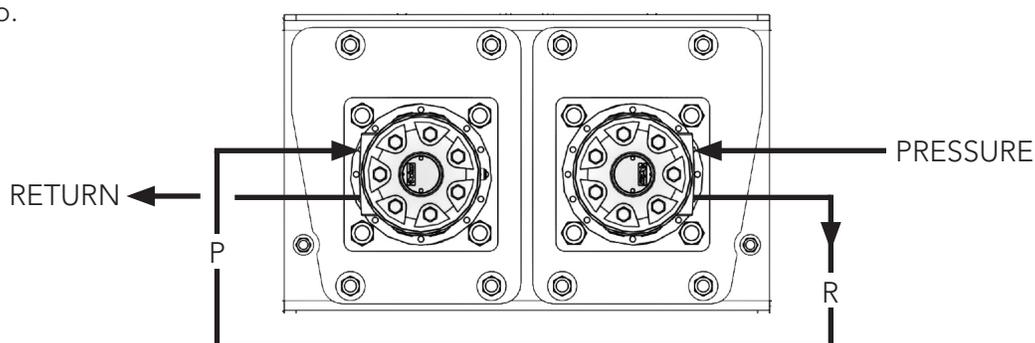
Hydraulic Requirements

Hydraulics		GPM (LPM) (Gallons/Liters per Minute)	Maximum Pressure (PSI)
Dual Auger V-Box	Spinner & Auger	25 (95)	3000*

NOTICE

Hydraulic motors are reverse rotation. Plumb as shown below.

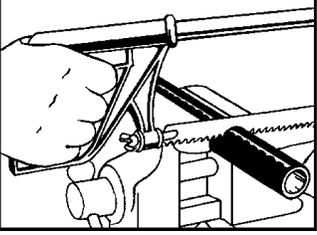
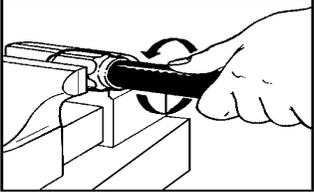
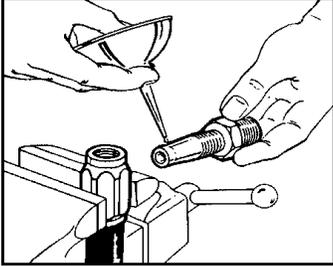
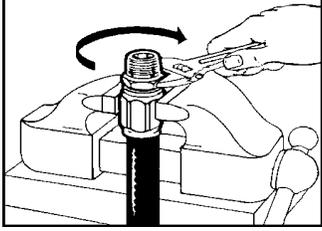
*NOTE: For optimal performance, the hydraulic system must be capable of 3000psi to assist with auger initial startup.



Hydraulic Motors
HI-WAY

Installation Instructions Cont.

Reusable Non-Skive Type Ends

	<p>Step 1 Cut hose to length required using a fine tooth hacksaw or cut-off machine. Clean hose bore.</p>
	<p>Step 2 Liberally lubricate hose cover with hose assembly lube. Place socket in vise and turn hose into socket counterclockwise until it bottoms. When assembling long lengths of hose, it may be preferred to put hose in the vise just tight enough to prevent from turning, and screw socket onto the hose counterclockwise until it bottoms.</p>
	<p>Step 3 Liberally lubricate nipple threads and inside of hose. Use heavy weight oil.</p>
	<p>Step 4 Screw nipple clockwise into socket and hose. Leave 1/32" (.08cm) to 1/16" (.16cm) clearance between nipple hex and socket. Disassemble in reverse order. Used with permission of the Aeroquip Company</p>

⚠ WARNING

Do not use one manufacturer's hose with another manufacturer's fittings! Such use will void any warranty and may cause premature burst or leak of hydraulic fluids! Such bursting or leaking may cause severe injury and/or fire! Failure to comply with this requirement could result in death or serious injury.

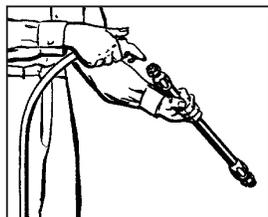
Installation Instructions Cont.

Hydraulic Hose Maintenance

Hose assemblies in operation should be inspected frequently for leakage, kinking, abrasion, corrosion or other signs of wear or damage. Worn or damaged hose assemblies should be replaced immediately.

WARNING

Testing should be conducted in approved test stands with adequate guards to protect the operator. Failure to comply with this requirement could result in death or serious injury.



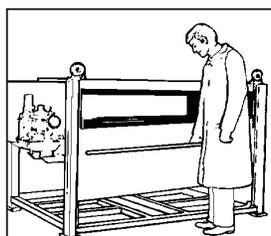
Clean

Clean assembly by blowing out with clean compressed air. Assemblies may be rinsed out with mineral spirits if the tube stock is compatible with oil, otherwise hot water at 150°F (65.55° C) maximum may be used.



Inspect

Examine hose assembly internally for cut or bulged tube, obstructions, and cleanliness. For segment style fittings, be sure that the hose butts up against the nipple shoulder; band and retaining ring are properly set and tight, and segments are properly spaced. Check for proper gap between nut and socket or hex and socket. Nuts should swivel freely. Check the layline of the hose to be sure the assembly is not twisted. Cap the ends of the hose with plastic covers to keep clean.



Test

The hose assembly should be hydrostatically tested at twice the recommended working pressure of the hose.

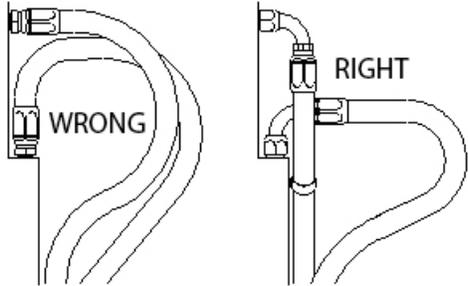
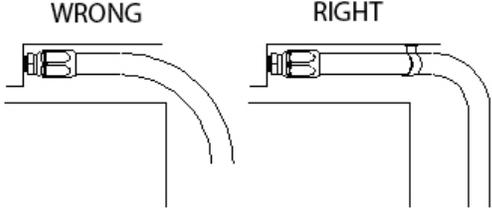
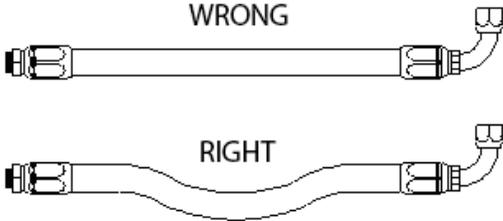
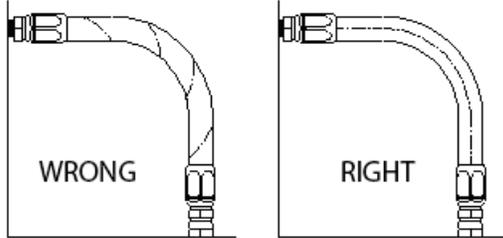
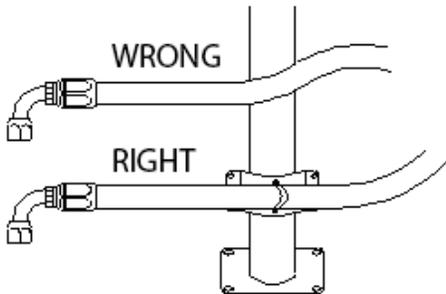
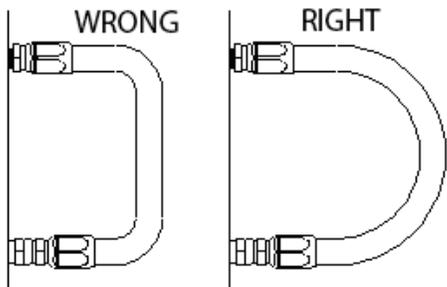
Test pressure should be held for not more than one minute and not less than 30 seconds. When test pressure is reached, visually inspect hose assembly for: 1. Any leaks or signs of weakness. 2. Any movement of the hose fitting in relation to the hose. Any of these defects are cause for rejection.

Storage and Handling

Hose should be stored in a dark, dry atmosphere away from electrical equipment, and the temperature should not exceed 90° F (32° C).

Installation Instructions Cont.

Hydraulic Hose Installation Guide

	
<p>1. Use elbows and adapters in the installation to relieve strain on the assembly, and to provide easier and neater installations that are accessible for inspection and maintenance. Remember that metal end fittings cannot be considered as part of the flexible portion of the assembly.</p>	<p>2. Install hose runs to avoid rubbing or abrasion. Clamps are often needed to support long runs of hose or to keep hose away from moving parts. It is important that the clamps be of the correct size. A clamp that is too large will allow the hose to move in the clamp causing abrasion at this point.</p>
	
<p>3. In straight hose installations allow enough slack in the hose line to provide for changes in length that will occur when pressure is applied. This change in length can be from +2% to -4%.</p>	<p>4. Do not twist hose during installation. This can be determined by the printed layline on the hose. Pressure applied to a twisted hose can cause hose failure or loosening of the connections.</p>
	
<p>5. Keep hose away from hot parts. High ambient temperature will shorten hose life. If you cannot route it away from the heat source, insulate it.</p>	<p>6. Keep the bend radii of the hose as large as possible to avoid hose collapsing and restriction of flow. Follow catalog specs on minimum bend radii.</p>

(Used with the permission of The Weatherhead Company.)



Installation Instructions Cont.

Electrical Connections

Connect all electrical control circuits. The supply conductor should be connected to the accessory terminal of the truck ignition switch through the fifteen amp. circuit breaker provided in the control panel. All wiring should be approved automotive insulated wire, should be supported adequately with insulating ties or straps, should be located where it will not interfere with any control access, does not contact any moving parts or sharp edge and is kept away from any hydraulic line or any heated part.

Lights

Lights and reflectors are provided to meet DOT FMVSS 108 requirements but not necessarily any other applicable local, regional or national codes. Install lights and reflective devices to conform to DOT FMVSS-108 and state requirements.

Filling The Hydraulic System

NOTICE

DO NOT attempt to run pump without first filling hydraulic oil reservoir and opening suction line gate valve, or pump may be ruined.

Fill reservoir with hydraulic oil as specified in the Lubricant Specifications section of this manual. Be sure oil is clean, free from dirt, water and other contaminants.

Lubricate all points requiring lubrication per Lubrication Chart in this manual.



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**OPERATIONS
&
MAINTENANCE**

**OPERATIONS
&
MAINTENANCE**

Operations and Maintenance

General Description

The E2020A2 is a hopper-type spreader intended for spreading abrasives and/or chemicals, primarily for ice and snow control. It is available for truck chassis or dump body mounting.

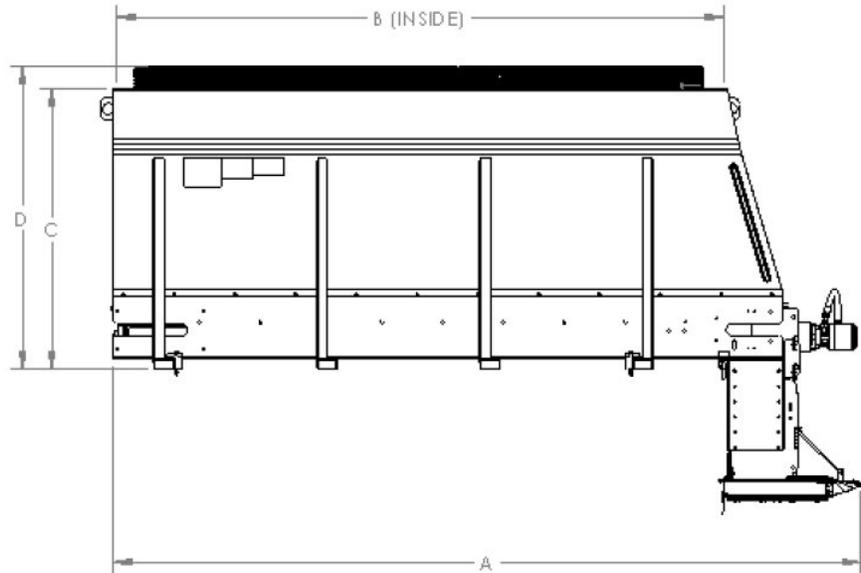
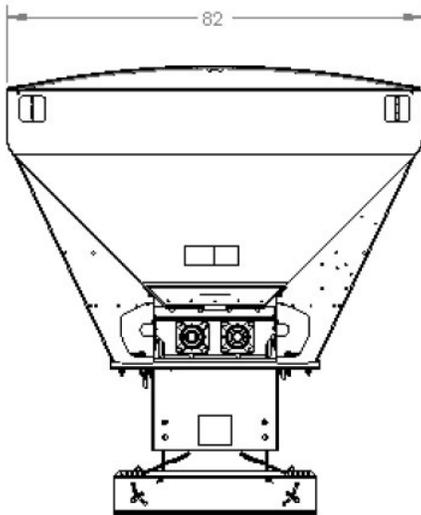
The unit is powered hydraulically. The auger motors are plumbed in series and controlled by user supplied hydraulic valving. The spinner is also driven by hydraulic motor and controlled user supplied hydraulic valving.

Dual seven-inch (17.8cm) augers run the full length of the bottom to dispense material at the rear of the body. Each auger is driven by a hydraulic motor through a planetary gearcase.

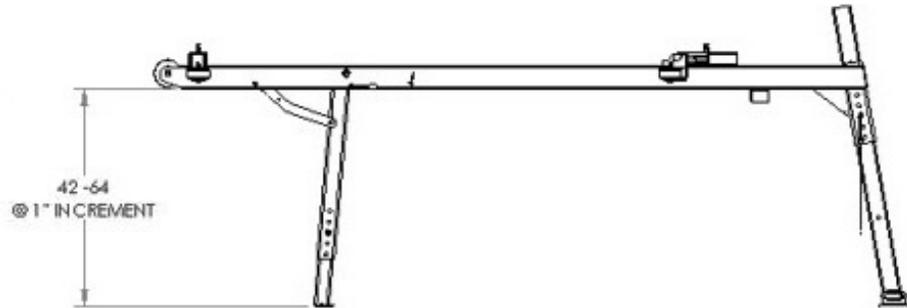
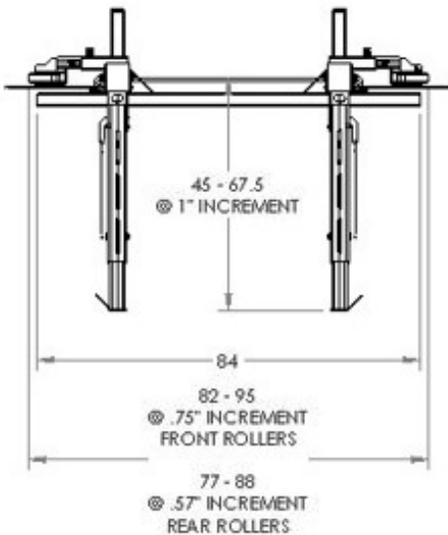
Distributor spinner assembly has a twelve inch (12") (30.5cm) vertically adjustable height hopper with two (2) internal, adjustable deflectors and three (3) external adjustable baffles and a twenty inch (20") (50.8cm) diameter spinner with six formed, heat-treated replaceable fins.

This product is intended for commercial use only.





Size	Dim A	Dim B	Dim C	Dim D	Struck Capacity cubic foot (cu m)	Estimated Weight pounds (kg)
10' 82" x 56"	148"	120"	55"	57"	176 (4.9)	5500 (2495)
10' 82" x 65"	148"	120"	64"	66"	228 (6.5)	5600 (2540)
12' 82" x 56"	172"	144"	55"	57"	214 (6.0)	6200 (2812)
12' 82" x 65"	172"	144"	64"	66"	276 (7.8)	6400 (2903)
13' 82" x 56"	184"	156"	55"	57"	233 (6.6)	6600 (2993)
13' 82" x 65"	184"	156"	64"	66"	300 (8.5)	6700 (3039)
14' 82" x 56"	196"	168"	55"	57"	252 (7.1)	7000 (3175)
14' 82" x 65"	196"	168"	64"	66"	324 (9.1)	7100 (3221)



Prior to testing the unit, check the position of the ON-OFF control in the cab. It should be in the OFF position. Do not load the hopper.

1. Check to be sure that no loose parts or other material are in body, on spinner hopper or on spinner disk.
2. Raise feedgate until it is completely clear of conveyor.
3. Fill the hydraulic tank with oil. Refer to the Lubricant and Hydraulic Oil Specifications section for proper oil. Check to make sure that the gate valve under the reservoir is fully open (rotate counter-clockwise to open).
4. If crankshaft PTO transmission has been installed, be sure transmission has proper amount of lubricant.
5. Start engine. Engage PTO or actuate electric clutch switch (if applicable). Let the engine run at approximately 1000 RPM for a few minutes, allowing the oil to circulate through the pump and back to the reservoir. In cold weather, allow greater warm-up time.

⚠ WARNING Stand clear of moving machinery. Failure to comply with this requirement could result in death or serious injury.

6. Place the cab ON-OFF control in ON position and open the spinner control approximately one quarter (Position 3). Let the unit run until the air is expelled from the circuit and the spinner is running smoothly. Turn the spinner knob to the OFF position.
7. Open the conveyor knob approximately one quarter (Position 3) on the valve. Let the unit run for a few minutes until the conveyor is running smoothly.
8. Check all connections in the hydraulic system to make sure that there are no leaks.
9. Check hydraulic oil reservoir and refill to maintain level around mid-point of sight gauge. Unit is now ready for road testing.

⚠ WARNING DO NOT check leaks with hands while system is operating as high pressure oil leaks can be dangerous! If skin is pierced with hydraulic fluid at high pressure seek immediate medical attention as fluid injected into the skin could cause gangrene if left untreated. Relieve pressure before disconnecting hydraulic lines or working system. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Failure to comply with this requirement could result in death or serious injury.

⚠ WARNING DO NOT check for leaks adjacent to moving parts while system is operating as there may be danger of entanglement! Failure to comply with this requirement could result in death or serious injury.

Before taking unit out to use, make a “walk-around” inspection to ensure that spreader is not damaged, that all essential parts are in place and that all fasteners are tight and all guards are in place. Check all controls to be sure that they are operating satisfactorily.

If material to be spread is not already in spreader, have the unit loaded. With ON-OFF control in OFF position, engage pump drive and allow oil to circulate until it is warm (this may be done while traveling to loading or starting point). The colder the weather, the more important this “warm-up.”

All spinner speed, flow deflector and baffle adjustments must be made with ON-OFF control in OFF position to stop spinner and conveyor to avoid injury from spinner and/or discharging material.

Set variable speed spinner control to obtain spread width desired. Since spread width is affected by spinner speed, spinner height, flow deflector settings, baffle positions, as well as material granule size, density and moisture content; proper settings are gained by trial and experience.

Spinner speed selected should be the lowest required to obtain the desired spread width with the material being spread. Use of high spinner speeds and attempting to control spread width by means of the external baffles will increase wear and tear on parts and create excessive damage to vehicle finishes through uncontrolled throw and bounce of materials. It will also degrade materials being spread by causing unnecessary particle break-up and waste material.

To increase spread to one side, raise the exterior baffle on that side. Raise (swing inward) the interior flow deflector on that side to direct material away from the direction of spread increase. Lower (swing downward) the interior flow deflector on the opposite side to allow material to fall on the side of the spinner away from the direction of the desired spread.

Determination of the volume of the material spread in cubic feet per mile (per inch of metering gate opening) depends upon the hydraulic system with which the spreader is equipped.

NOTE: Close feedgate before loading spreader and when traveling to point where spreading is to be done. Open feedgate before starting to spread.

In order to determine the spread rates for a particular truck, the following information is needed to perform the required calculations:

1. Calculations require accurate and complete information.
 - a. PTO Data
 1. PTO percentage of engine RPM.
 2. For calculations, PTO percentage of electric clutch drive will be 100%.
 - b. Transmission gear ratios.
 - c. Rear Axle Ratio. If two speed, determine both ratios.
 - d. Auxiliary transmission (if so equipped) gear ratios.
 - e. Rear tire size and type. From tire size and type, tire revolutions per mile may be obtained from a tire manual or tire distributor. The following lists some typical values:

HIGHWAY TIRES		
Tube Type	Tubeless Type	Tire Revolutions Per Mile
8.25 x 20	9.00 x 22.5	543
9.00 x 20	10.00 x 22.5	523
10.00 x 20	11.00 x 22.5	507
11.00 x 20		492
10.00 x 22	11.00 x 24.5	488

- f. Type of spreader conveyor.
- g. Displacement of pump in cubic inches per revolution.

2. Spread Rate Calculations:

From the data obtained above (1), the spread rate in cubic feet of material per mile per inch of feedgate opening will be:

$$Y = \frac{PTO \times TR \times RA \times AUX \times TRM \times CFR \times PD}{16665}$$

- Where:
- Y = Yield in cubic feet per mile per inch of feedgate height.
 - PTO = Power Take Off percentage.
 - TR = Transmission gear Ratio.
 - RA = Rear Axle ratio.
 - AUX = Auxiliary transmission gear ratio.
 - TRM = Tire Revolutions per Mile.
 - CFR = Cubic Feet per Revolution delivered by conveyor.
 - = .192 for #2 or #4 conveyor
 - = .237 for #5 conveyor
 - PD = Pump Displacement in cubic inches per revolution.

If the vehicle has no auxiliary transmission and is to be operated in third gear (Ratio 2.24), low range rear axle (Ratio 8.87), and a #2 conveyor is in the spreader, the equation would be solved as shown below.

$$Y = \frac{(PTO) (TR) (RA) (TRM) (CFR) (PD)}{16665} = \frac{47 \times 2.24 \times 8.87 \times 523 \times .192 \times 2.77}{16665}$$

$$Y = 15.586 \text{ Cubic Feet/Mile/Inch of Gate Opening}$$



Calibration Procedure

The material delivery charts in this manual have been based upon theoretical volumes calculated from expected engine, pump, hydraulic valve and hydraulic motor operating characteristics, together with ideal material flow to auger and from auger to spinner. The attainment of the listed material volumes are not guaranteed.

It is recommended that the spreader be calibrated periodically (a yearly calibration is recommended) so that actual deliveries can be determined under a representative set of operating conditions. The following procedure is suggested.

Select a smooth, level test course about 1/4 mile long. Place a marker about 200 yards (183 m) from the starting point and a second marker just 100 feet down course from the first marker.

Fill spreader body about half full of material for which calibration is to be run (full load may be used if desired).

Place unit at start of test-course. Without moving truck, run auger and spinner until uniform discharge from spinner occurs. Shut off auger and spinner. Close spinner valve so that spinner does not turn. Brush off any material remaining on the spinner. Lower all external baffles so that they hang straight down and set in that position.

Weigh empty calibration box and record weight. Hang empty box below spinner by suspending from spinner hopper.

With auger control OFF, start truck, bring up to speed in gear for which calibration is desired. Turn auger ON when first marker is passed and turn auger OFF when second marker is passed. Bring truck to a halt. Lower calibration box and carefully brush all material on spinner into box.

Weigh box with material. Subtract weight of empty box. Material weight represents amount of material discharged per 100 feet (30.9 m) of travel.

Repeat above for two more runs and average results of all three runs. The average weight of material discharged per 100 feet (30.9 m) of travel multiplied by 52.8 will give the weight of material used in test that would be delivered per mile of travel.

If volume is desired instead of weight, divide weight discharged by the weight of one cubic foot of the material used in the calibration above. Result will be volume discharge in cubic feet.

Weights Of Various Materials

MATERIAL	APPROXIMATE WEIGHTS (Pounds)	
	Per Cu. Foot	Per Cu. Yard
Ashes	40	1080
Cinders	30	810
Limestone, Crushed	100	2700
Salt	80	2160
Sand	100	2700
Urea	60	1620



Hydraulic System

The use of proper oil in the hydraulic system is one of the most important factors for satisfactory operation. Utmost cleanliness in handling the oil cannot be stressed enough. Keep the hydraulic oil in original closed containers, clean top of container before opening and pouring, and handle in extremely clean measures and funnels.

Refer to the Lubricant and Hydraulic Oil Specifications section of the manual for selection of the proper hydraulic fluid for use in the hydraulic system.

▲ WARNING

DO NOT check leaks with hands while system is operating as high pressure oil leaks can be dangerous! If skin is pierced with hydraulic fluid at high pressure seek immediate medical attention as fluid injected into the skin could cause gangrene if left untreated. Relieve pressure before disconnecting hydraulic lines or working system. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Failure to comply with this requirement could result in death or serious injury.

▲ WARNING

DO NOT check for leaks adjacent to moving parts while system is operating as there may be danger of entanglement! Failure to comply with this requirement could result in death or serious injury.

Service Schedule

1. Check the hydraulic oil daily by means of dipstick. Add oil if required. Periodically inspect the hoses and fittings for leaks.

NOTICE

CHANGE THE HYDRAULIC OIL FILTER AFTER THE FIRST WEEK (OR NOT MORE THAN 50 HOURS) OF OPERATION ON A UNIT.

2. After first filter change, replace filter when indicator reaches Danger Zone.
3. The reservoir should be drained through drain plug (not through suction outlet), flushed, and refilled annually, or the oil should be changed if it shows any signs of breaking down under continued high-pressure operation. Discoloration of oil is one sign of breakdown.

▲ WARNING

Shut off all power and allow all moving parts to come to rest before performing any maintenance operation. Entanglement with moving parts could cause serious injury. Failure to comply with this requirement could result in death or serious injury.

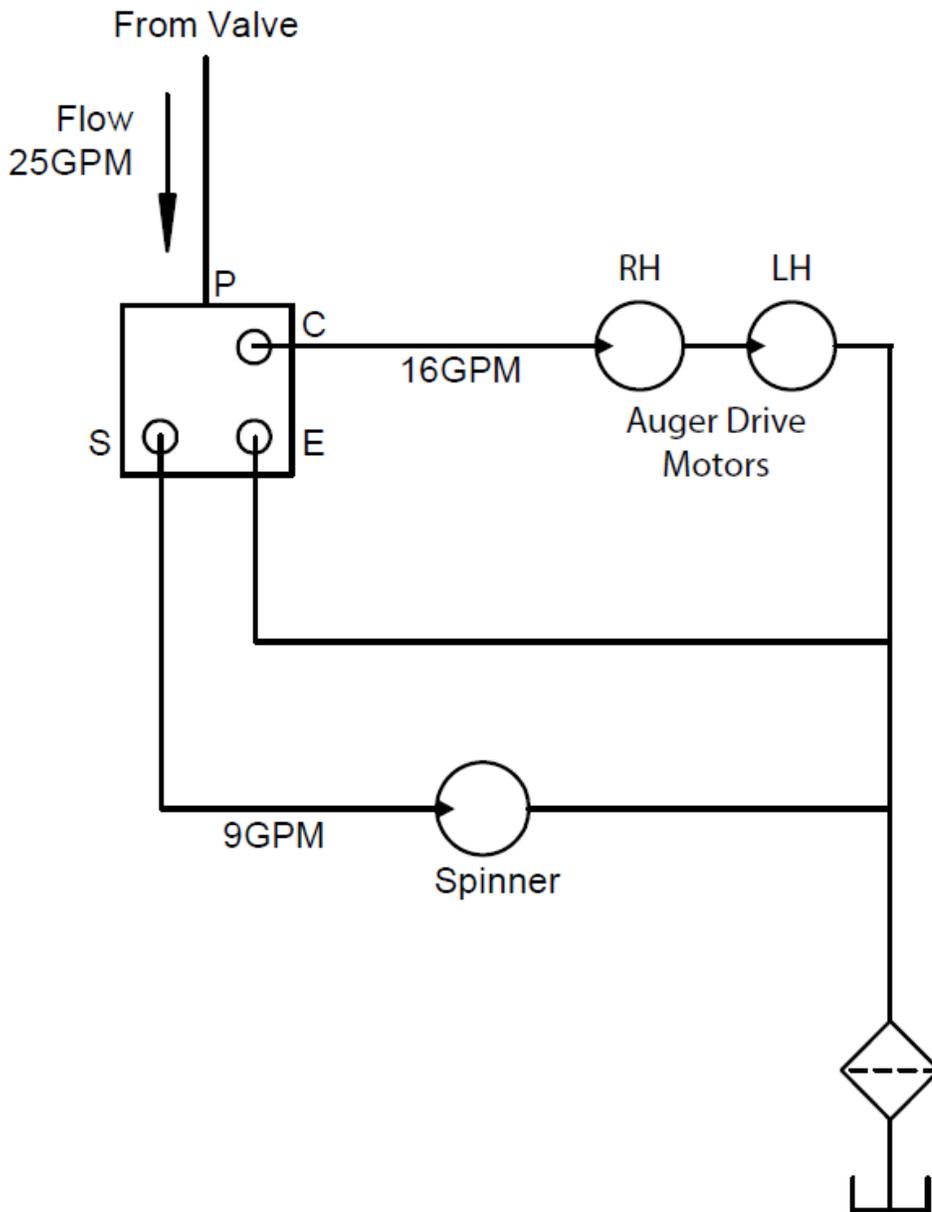
The spreader should be regularly lubricated with the lubricants recommended in this manual in accordance with the following chart:

Location	Places	Method	Frequency
Hydraulic System			
Reservoir	1	Check Daily; Change Annually	
Filter	1	Check Daily; Change when indicator is red	
Hydraulic System - Dual Control Valve			
Hex Valve Stem (Under hand knob)	2	Hand Grease	Check Annually
Conveyor			
Drive Shaft Bearings	2	Grease Gun	Weekly
Idler Shaft Bearings	2	Grease Gun	Weekly
Take-up Screws	2	Hand Grease	Monthly
Chain	2 Strands	Spray Oil	Weekly
Chain Oiler (If so equipped)	1	Oil	Daily
Gear Case	1	Gear Box	Check Monthly
Feedgate			
Jack Assembly - Gears	1	Grease Gun	Monthly
Spinner Assembly - Drive Line Spinner Only			
Drive Shaft - Slip Joint	1	Hand Grease	Annually
U-Joints	2	Grease Gun	Weekly
Pillow Block Bearings	2	Grease Gun	Weekly

NOTE: Unusual conditions, such as excessive dust, temperature extremes or excessive moisture may require more frequent lubrication of specific parts.



HYDRAULICS SCHEMATIC - MANUAL DUAL VALVE IN CAB



Auger Gearcase

Drain oil in a new unit after first two weeks (or not more than 100 hours) of operation, and flush gear case thoroughly with light oil. Refer to "Lubricant and Hydraulic Oil Specifications" section for proper grade oil and recommended amounts of lubricant. After initial change, oil should be changed every 2,000 hours of operation or annually, whichever occurs first.

Check gearcase oil level monthly.

Lubrication of Bearings

Grease in a bearing acts to prevent excessive wear of parts, protects ball races and balls from corrosion and aids in preventing excessive heat within the bearing. It is very important the grease maintains its proper consistency during operation. It must not be fluid and it must not channel.

Make sure all fittings are thoroughly cleaned before grease is injected. Points to be lubricated by means of grease gun have standard grease fittings.

Lubricate bearings by pumping grease until it forms a slight bead around the seals. This bead indicates adequate lubrication and also provides additional protection against the entrance of dirt.

Fasteners

Tighten all screw fasteners to recommended torques after the first week of operation and annually thereafter. If loose fasteners are found at any time, tighten to the recommended torques. Replace any lost or damaged fasteners or other parts immediately upon finding such damage or loss. Check body mounting bolts every week.

Clean-Up

For maintaining minimum maintenance operation, this equipment should be thoroughly washed every two (2) to three (3) days during the operating season. Hose the unit down under pressure to free all sticky and frozen material.

It is important that the machine be thoroughly cleaned at the end of each operating season. All lubrication and maintenance instructions should be closely followed. For longer life, repaint worn spots to prevent formation of rust.

Hydraulic System

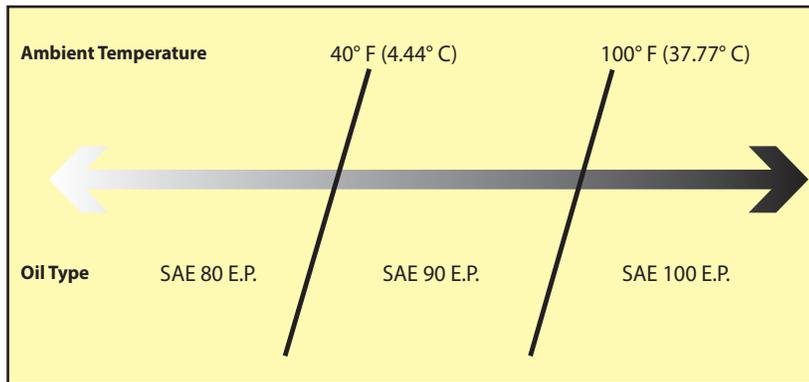
Use premium quality lubricants with 100-200 SUS or 20-43 cSt viscosity at operating temperatures. The hydraulic fluid's specifications in the table below are for normal operating conditions. Extreme environments or dirty conditions may require the use of different oils. Consult your New Leader dealer or the Product Support Department at New Leader Manufacturing for systems operating outside normal conditions.

Ideal Oil Operating Temperature	115-158°F (46.11-70° C)
Recommended Premium Lubricant	Multi-Purpose Agriculture Hydraulic & Transmission Oil
Lubricant Specifications Viscosity Index Viscosity at 40°C, cst Viscosity at 100°C, cst	Greater than 130 Less than 68 Greater than 9
Acceptable Fluid Example	Mobil 424

Gearcase Lubricant

Lubricate these assemblies with non-corrosive type extreme pressure (E.P.) gear oil conforming to MIL-L2105 B multi-purpose gear lubricating oil requirements (API Service GL 4) based on ambient temperatures listed below. Refill gear case with one and a half (1-1/2) pints (.70 liters) of recommended lubricant.

Ambient Temperature	Below 40° (4.44°C)	Between 40° (4.44°C) and 100° (37.77°C)	Above 100° (37.77°C)
Oil Type	SAE 80 E.P.	SAE 90 E.P.	SAE 140 E.P.



Grease Gun Lubricant

Use a waterproof ball and roller bearing lithium base lubricant with a minimum melting point of 300°F (148.8° C). This lubricant should have a viscosity which assures easy handling in the pressure gun at prevailing atmospheric temperatures. The grease should conform to NLGI No. 2 consistency.



⚠ WARNING

Shut off all power and allow all moving parts to come to rest before performing any maintenance operation. Failure to comply with this requirement could result in death or serious injury.

The spreader should be regularly lubricated with the lubricants recommended in this manual in accordance with the following chart:

Location	Places	Method	Frequency
Auger			
Front Bearings	2	Grease Gun	Weekly
Gearcase	1	Gear Oil	Check Monthly; Change Annually
Spinner			
Spinner Assembly/Chute Pivot Shaft	1	Grease Gun	Weekly

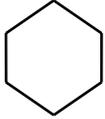
NOTE: Unusual conditions, such as excessive dust, temperature extremes or excessive moisture may require more frequent lubrication of specific parts.

*See "Lubricant and Hydraulic Oil Specifications" for types of lubricants and oil to be used.



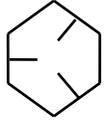
CAP SCREW GRADE IDENTIFICATION - MARKINGS ON HEAD

SAE
GRADE 2



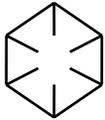
NO MARKINGS

SAE
GRADE 5



THREE MARKS - 120 DEGREES APART

SAE
GRADE 8



SIX MARKS - 60 DEGREES APART

USE GRADE 2 TORQUES FOR STAINLESS STEEL FASTENERS AND CARRIAGE BOLTS.

CAP SCREW SIZE	TORQUE - FOOT-POUNDS					
	GRADE 2		GRADE 5		GRADE 8	
	DRY	LUBE	DRY	LUBE	DRY	LUBE
1/4"	5	4	8	6	12	9
5/16"	11	8	17	13	25	18
3/8"	20	15	30	23	45	35
7/16"	30	24	50	35	70	55
1/2"	50	35	75	55	110	80
9/16"	65	50	110	80	150	110
5/8"	90	70	150	110	220	170
3/4"	100	120	260	200	380	280
7/8"	140	110	400	300	600	460
1"	220	160	580	440	900	650

PARTS

PARTS



Order from the **AUTHORIZED DEALER** in your area.

1. Always give the pertinent model and serial number.
2. Give part name, part number and the quantity required.
3. Give the correct address to where the parts are to be shipped, and the carrier if there is a preference.

Unless claims for shortages or errors are made immediately upon receipt of goods they will not be considered. Any part returns should be directed through the dealer from which they were purchased.

When broken goods are received, a full description of the damage should be made by the carrier agent on the freight bill. If this description is insisted upon, full damage can always be collected from the transportation company.

No responsibility is assumed for delay or damage to merchandise while in transit. Our responsibility ceases upon delivery of shipment to the transportation company from whom a receipt is received showing that shipment was in good condition when delivered to them, therefore, claims (if any) should be filed with the transportation company and not with New Leader Manufacturing.

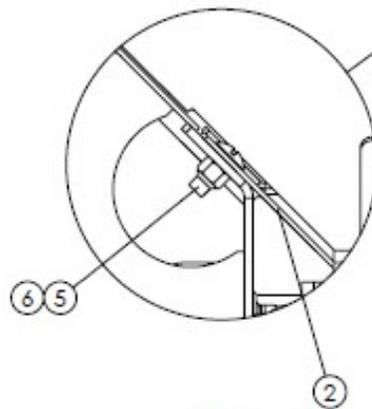
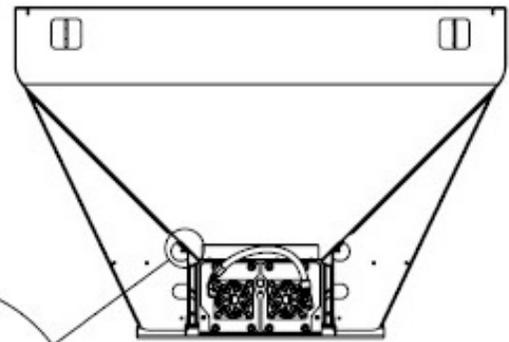
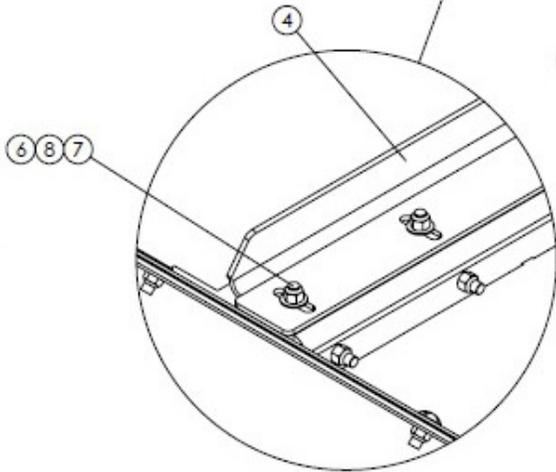
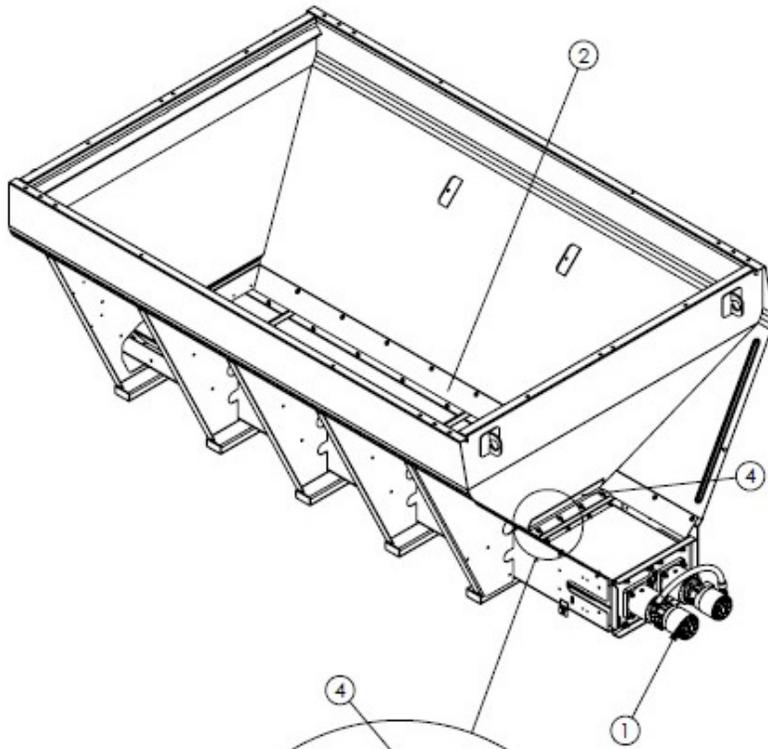
If your claims are not being handled (by the transportation company) to your satisfaction, please call the Parts Manager at New Leader Manufacturing (319-363-8281) for assistance.

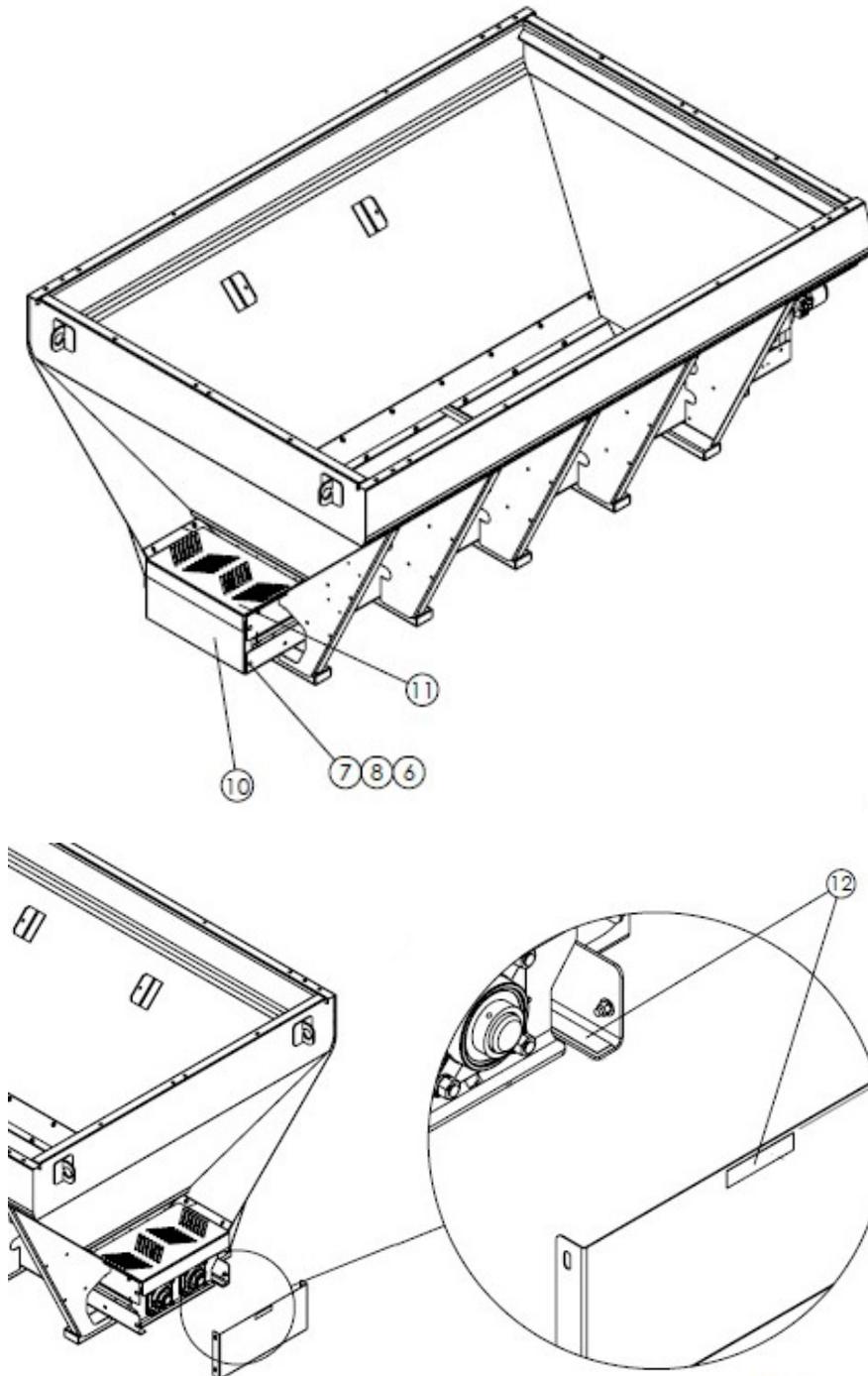
In the parts list the following symbols and abbreviations stand for:

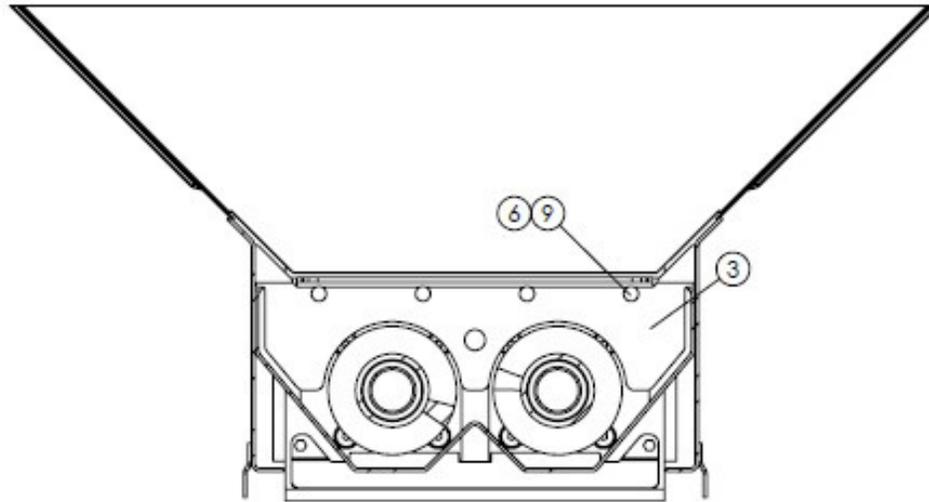
* - Not Shown
 AR – As Required
 CS – Carbon Steel
 SS – Stainless Steel

The parts listed under the different steel types (CS, 409 SS and 304 SS) are for that type of unit and do not necessarily mean the part is made of that type of steel.





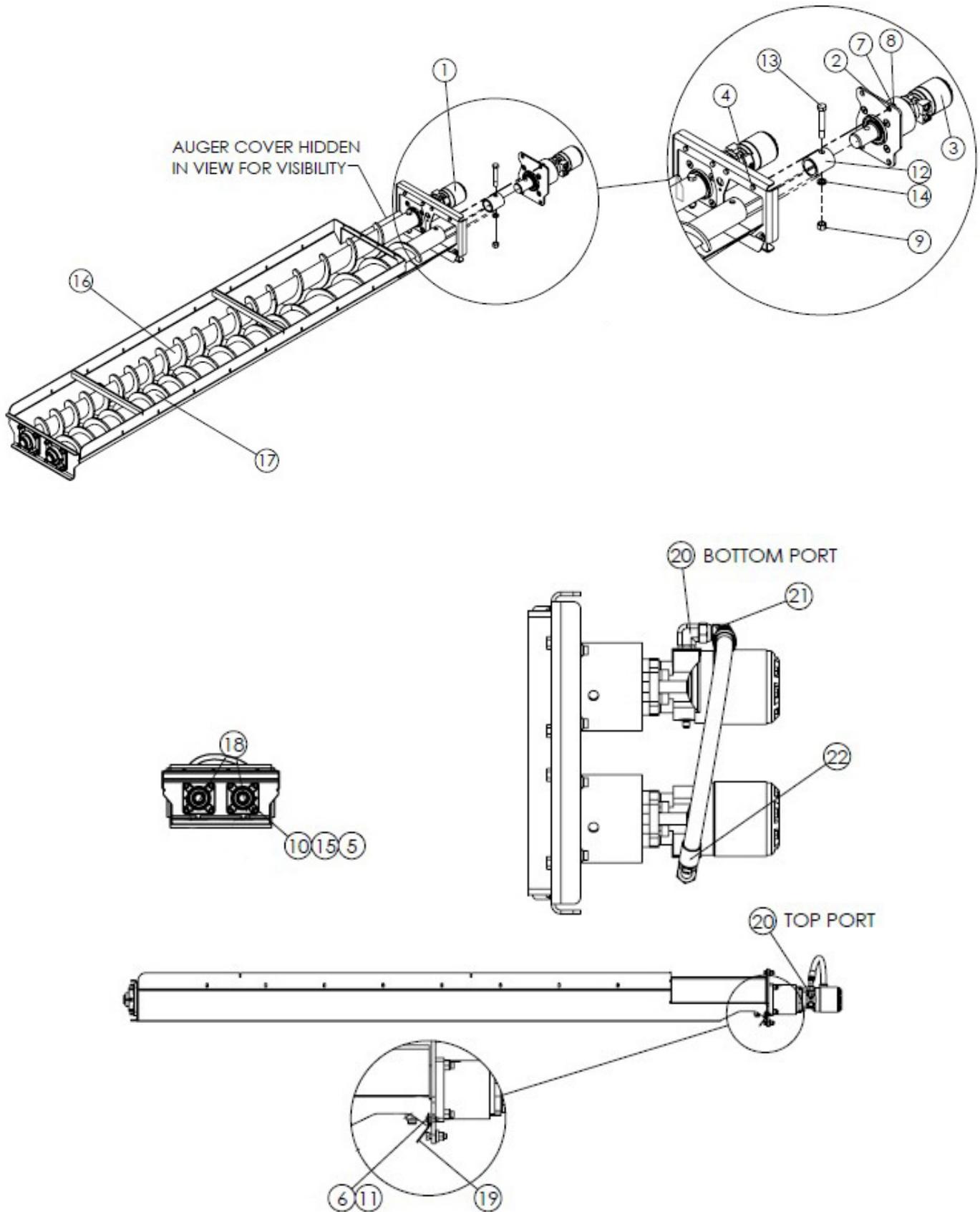




Auger Group Continued

ITEM	PART NO.	DESCRIPTION	QTY			
			10'	12'	13'	14'
1	318139	DRIVE - ASSY AUGER 10'	1			
-	318140	DRIVE - ASSY AUGER 12'		1		
	319554	DRIVE - ASSY AUGER 13'			1	
-	318141	DRIVE - ASSY AUGER 14'				1
2	318143	SHIELD - CHAIN 10' 304	2			
-	318144	SHIELD - CHAIN 12' 304		2		
	319552	SHIELD - CHAIN 13' 304			2	
-	318145	SHIELD - CHAIN 14' 304				2
3	318147	PLATE - WEIR 304	1	1		1
4	318148	SEALER - 304	1	1		1
5	71829	SCREW - TRUSS HEAD .375-16NC X	24	28		32
6	72054	NUT - LOCK .375-16NC SS	36	40		44
7	36408	BOLT - CARRIAGE .375-16NC X 1	8	8		8
8	36425	WASHER - FLAT .375 SS	8	8		8
9	36409	BOLT - CARRIAGE .375-16NC X	4	4		4
10	318149	GUARD - FRONT AUGER BOTTOM 304	1	1		1
11	318150	GUARD - FRONT AUGER TOP 304	1	1		1
12	308191	DECAL - GUARD IS MISSING	2	2		2



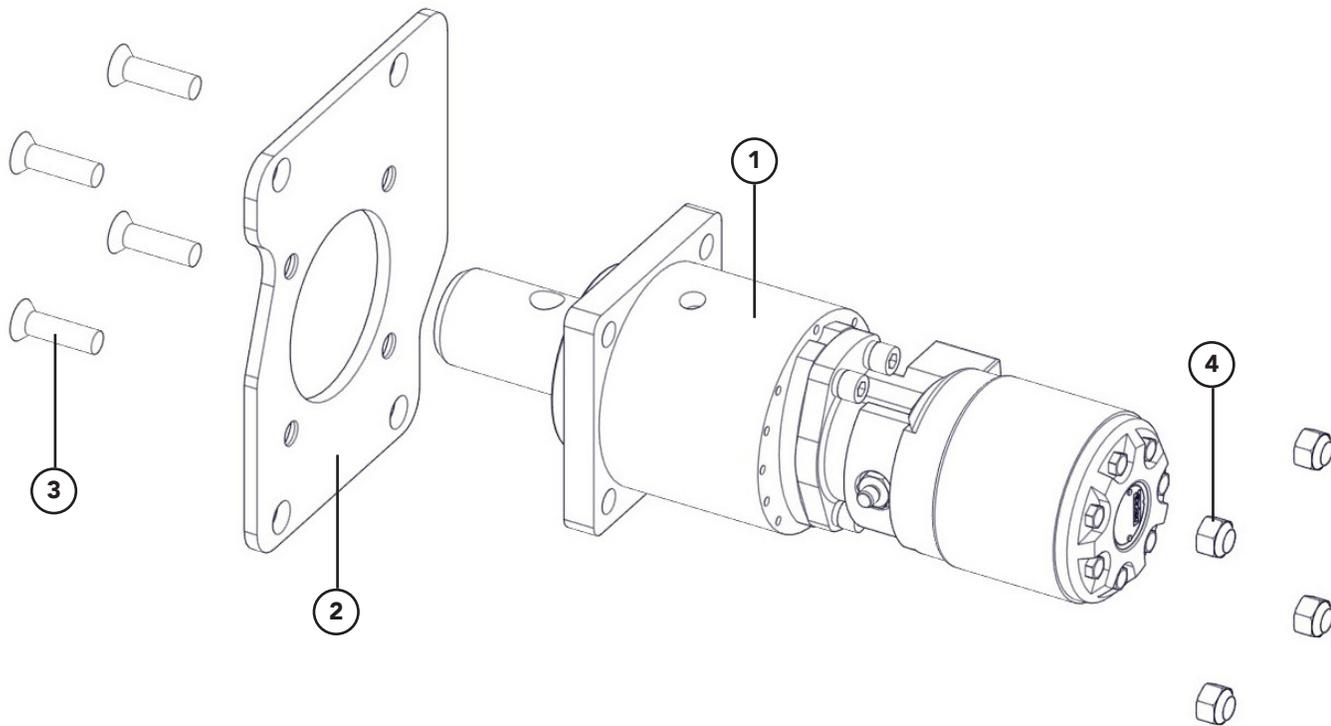


Auger Drive Assembly Continued

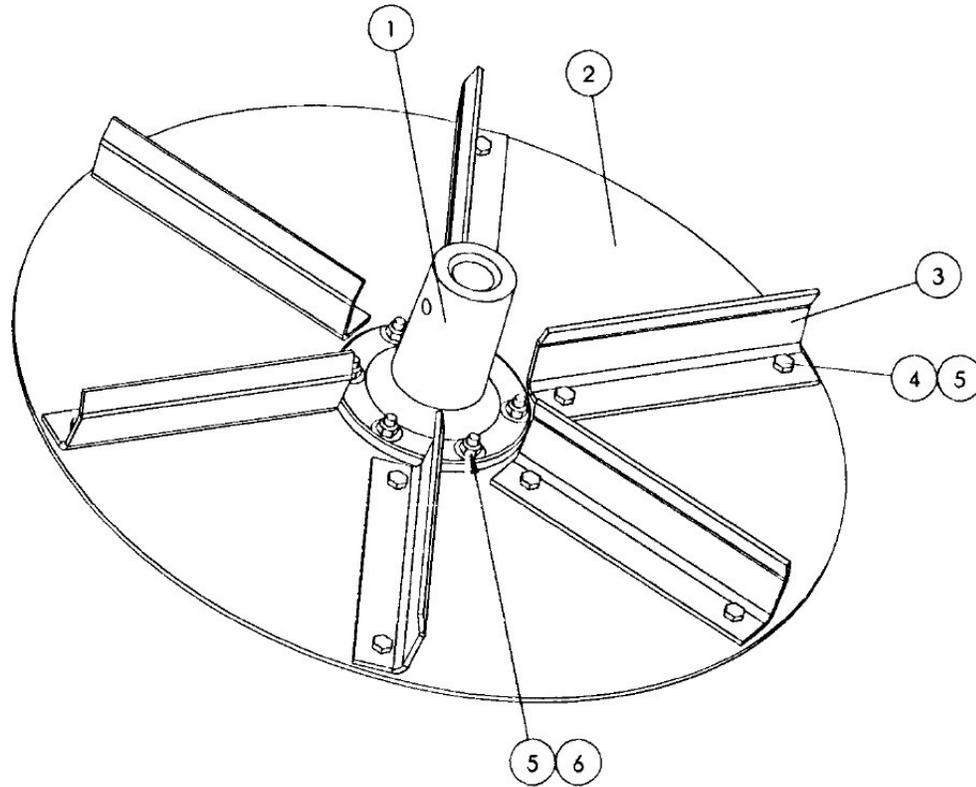
ITEM	PART NO.	DESCRIPTION	QTY
	318139	DRIVE - ASSY AUGER 10'	
	318140	DRIVE - ASSY AUGER 12'	
	319554	DRIVE - ASSY AUGER 13'	
	318141	DRIVE - ASSY AUGER 14'	
1	318155	DRIVE - ASSY AUGER RH	1
2	314142	BUSHING - DRIVE 304	8
3	318156	DRIVE - ASSY AUGER LH	1
4	71832	CAPSCREW - .5-13NC X 1.75 SS	8
5	58800	CAPSCREW - .625-11NC X 1.75 SS	8
6	36398	CAPSCREW - .375-16NC X 1 SS	2
7	314144	WASHER - DRIVE PLATE 304	8
8	39016	NUT - LOCK .5-13NC SS	8
9	314139	NUT - LOCK .875-9NC SS	2
10	36417	NUT - HEX .625-11NC SS	8
11	72054	NUT - LOCK .375-16NC SS	2
12	314143	INSERT - DRIVE AUGER TUBE	2
13	314138	BOLT - COUPLING .875 -9 UNC X	2
14	314140	WASHER - LOCK .875 SS	2
15	40597	WASHER - LOCK .625 SS	8
16	317497	AUGER - WLDMT 10' X 7OD	1
-	317913	AUGER - WLDMT 12' X 7OD	1
-	316568	AUGER - WLDMT 14' X 7OD	1
17	317496	AUGER - WLDMT 10' X 7OD	1
-	317912	AUGER - WLDMT 12' X 7OD	1
-	316567	AUGER - WLDMT 14' X 7OD	1
18	6465	BEARING - 4BF 2" BORE	2
19	318157	DEFLECTOR - 304	1
20	29773	FITTING - 12-10 070220	2
21	34709	FITTING - 12-12 070221	1
22	318223	HOSE - ASSY .75 X 26 100R12	1



Auger Drive Assembly Continued

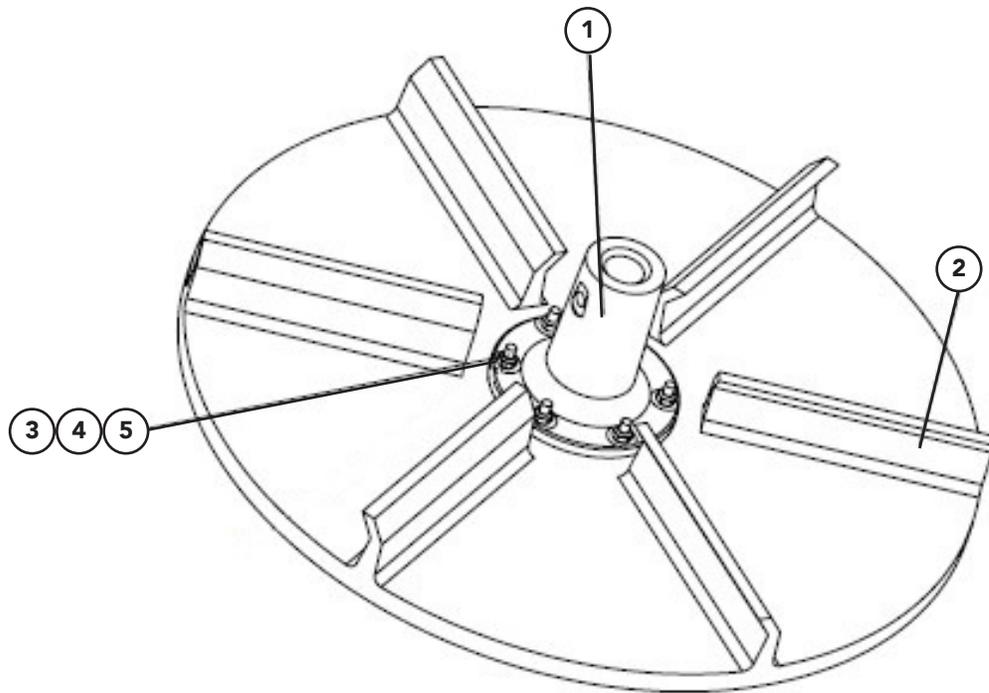


ITEM	PART NO.	DESCRIPTION	QTY
	318155	DRIVE - ASSY AUGER RH	
	318156	DRIVE - ASSY AUGER LH	
1	314133	GEAR CASE - ASSY AUGER RH	1
	314134	GEAR CASE - ASSY AUGER LH	1
2	318166	PLATE - DRIVE RH 304	1
	318167	PLATE - DRIVE LH 304	1
3	314132	SCREW - FLATHEAD .625-11NC X 2.25 SS	4
4	41762	NUT - LOCK .625-11NC SS	4



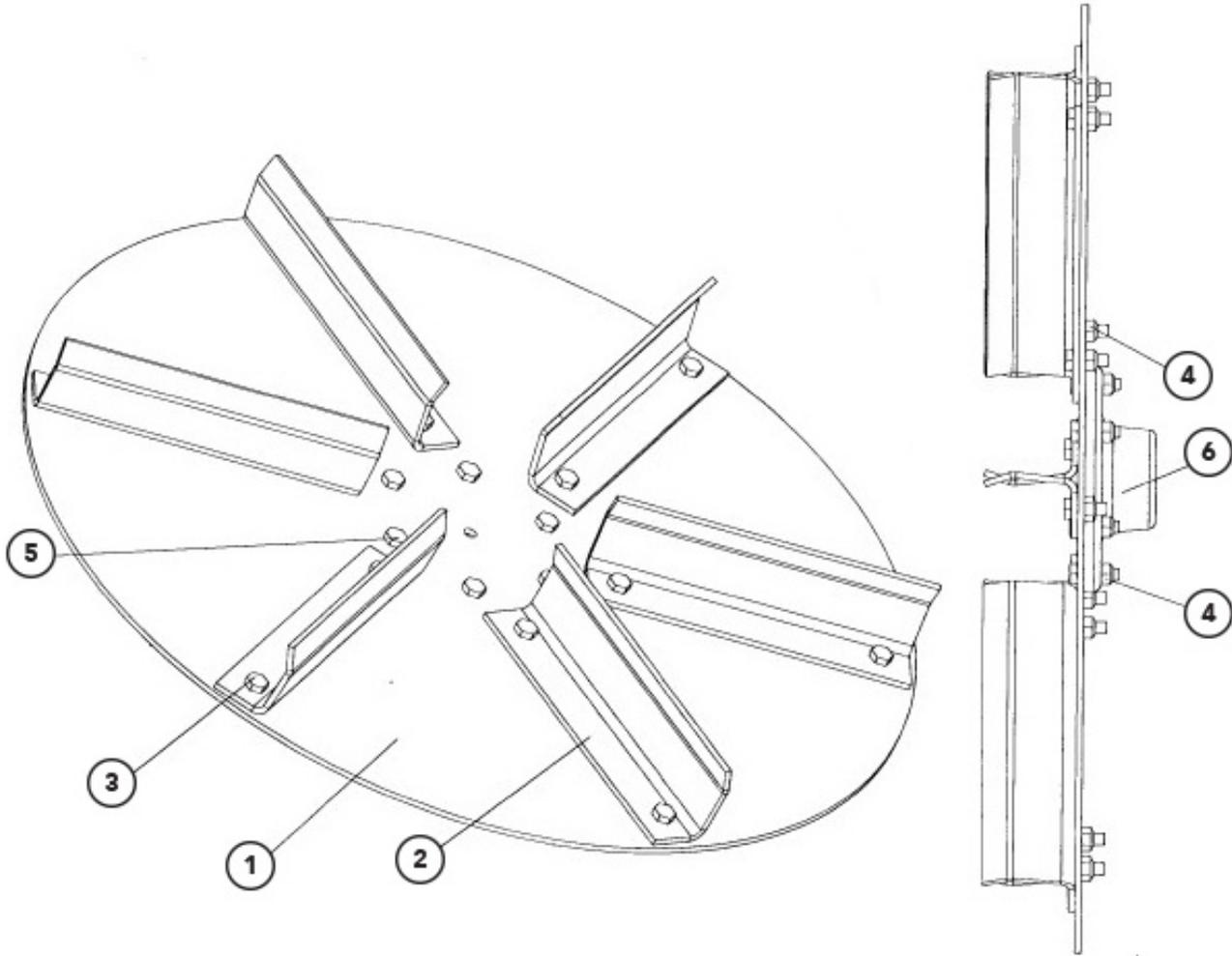
ITEM	PART NO.	DESCRIPTION	QTY
	87757	DISC - ASSY SPINNER STEEL 20"	
1	9098	DISC - DISTRIBUTOR 20"	1
2	88002	HUB - SPINNER DIRECT DRIVE	1
3	4731	FIN - FORMED 20" FANS	6
4	20003	CAPSCREW - .25-20NC X .75GR5	12
5	20676	NUT - LOCK .25-20NC ZN	18
6	20004	CAPSCREW - .25-20NC X .875 GR5	6





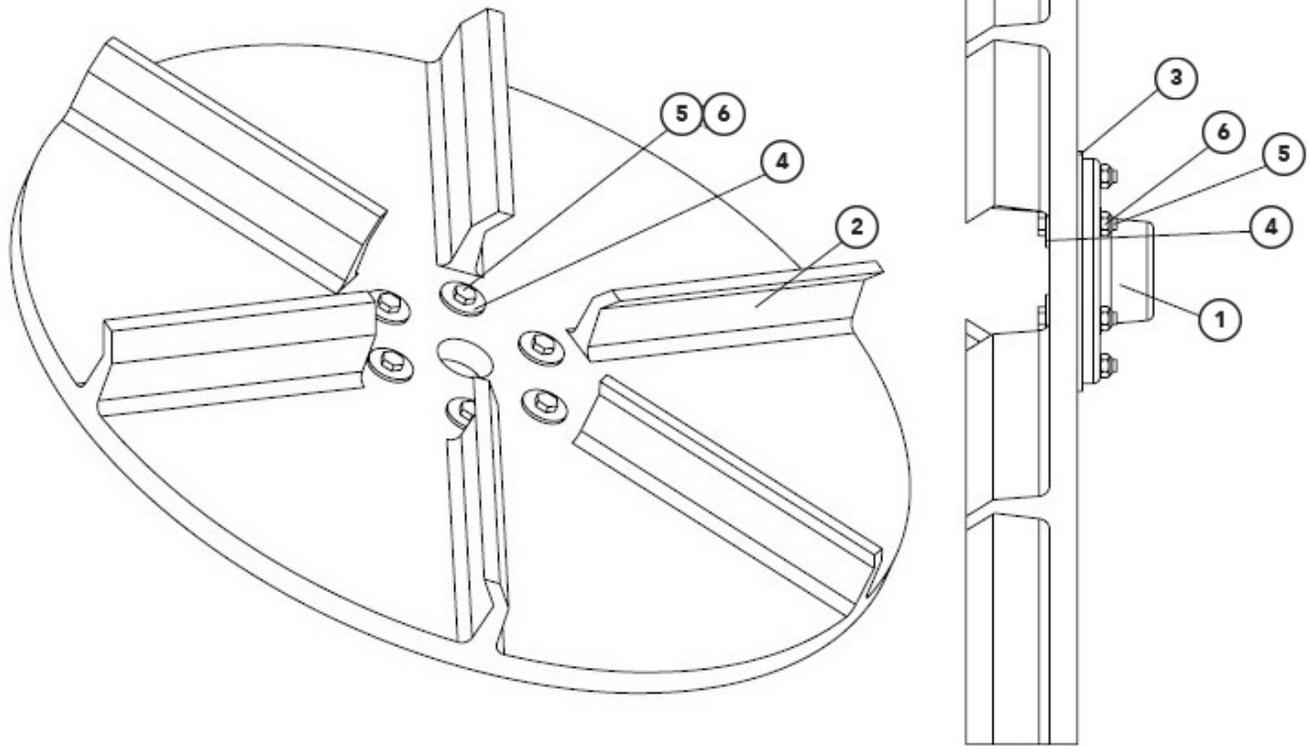
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	88396	DISC - ASSY 20 CW POLY	
1	88002	HUB - SPINNER DIRECT DRIVE	1
2	34853	SPINNER - URETHANE 20 CW	1
3	21423	WASHER - FLAT .25 SPECIAL	6
4	20007	CAPSCREW - .25-20NC X 1.5 GR5	6
5	20676	NUT - LOCK .25-20NC ZN	6

Spinner Disc - Assy - Steel - Underslung



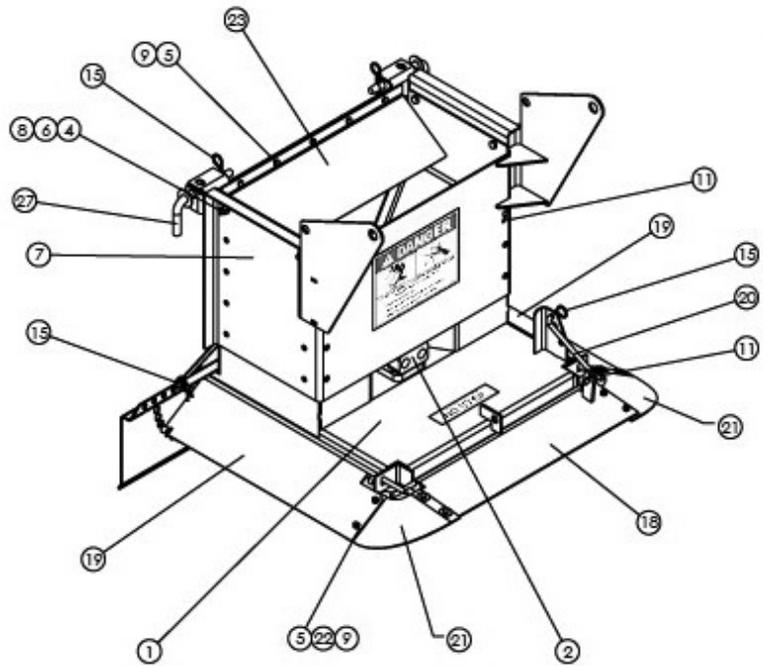
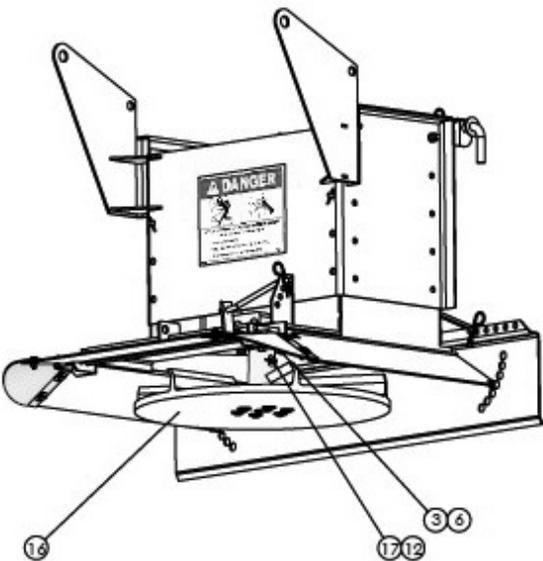
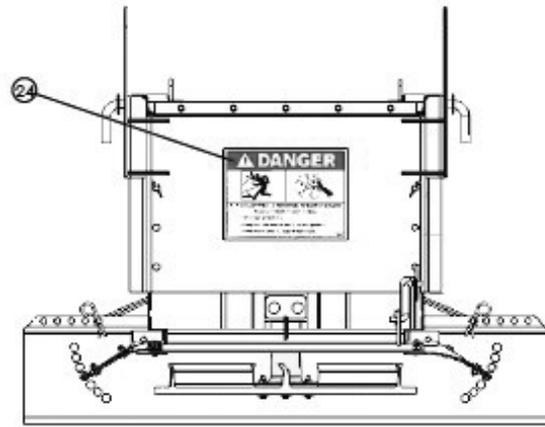
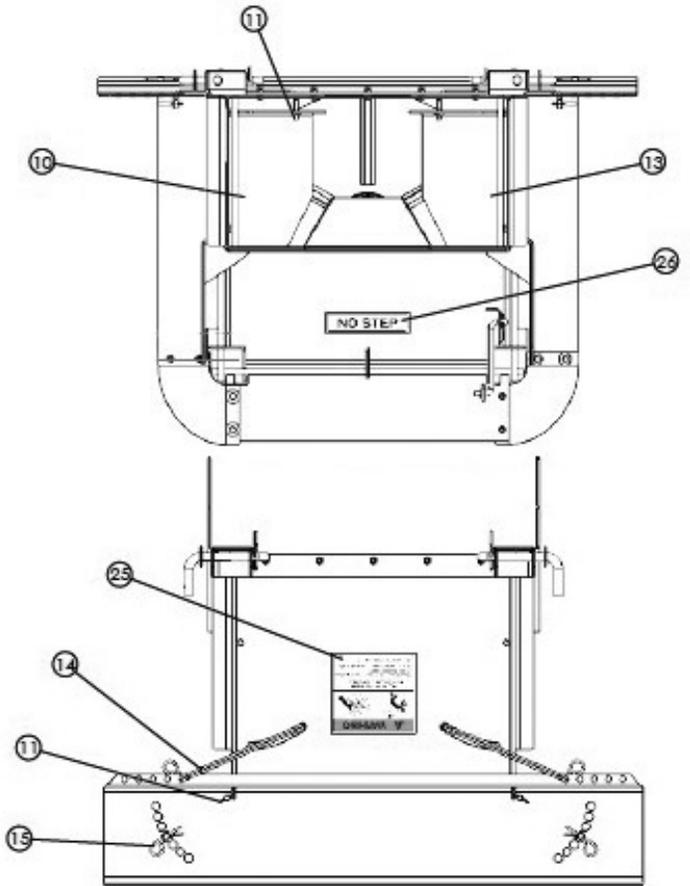
ITEM	PART NO.	DESCRIPTION	QTY
	73492	SPINNER - ASSY UNDERSLUNG 304 STEEL DISC	
1	9098	DISC - DISTRIBUTOR 20	1
2	4731	FIN - FORMED 20 FANS	6
3	20003	CAPSCREW - .25-20NC X .75GR5	12
4	20676	NUT - LOCK .25-20NC ZN	18
5	20004	CAPSCREW - .25-20NC X .875 GR5	6
6	74122	HUB - DISC SPINNER	1





ITEM	PART NO.	DESCRIPTION	QTY
	90831	DISC - ASSY 20 CW POLY UNDERSLUNG	
1	74122	HUB - DISC SPINNER	1
2	34853	SPINNER - URETHANE 20 CW	1
3	39178	PLATE - SPINNER MOUNTING POLY	1
4	21423	WASHER - FLAT .25 SPECIAL	6
5	20007	CAPSCREW - .25-20NC X 1.5 GR5	6
6	20676	NUT - LOCK .25-20NC ZN	6

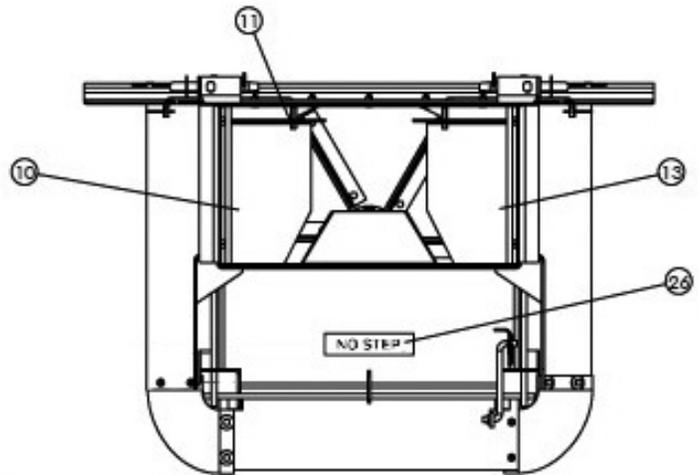
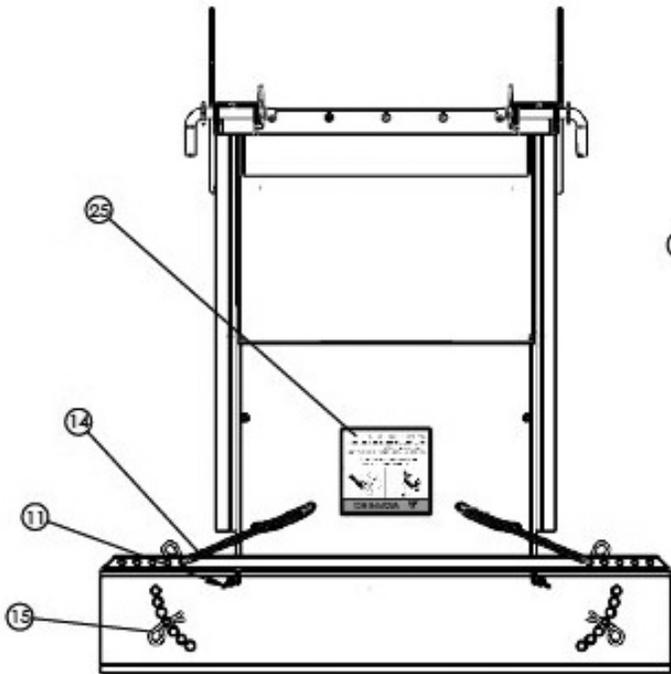
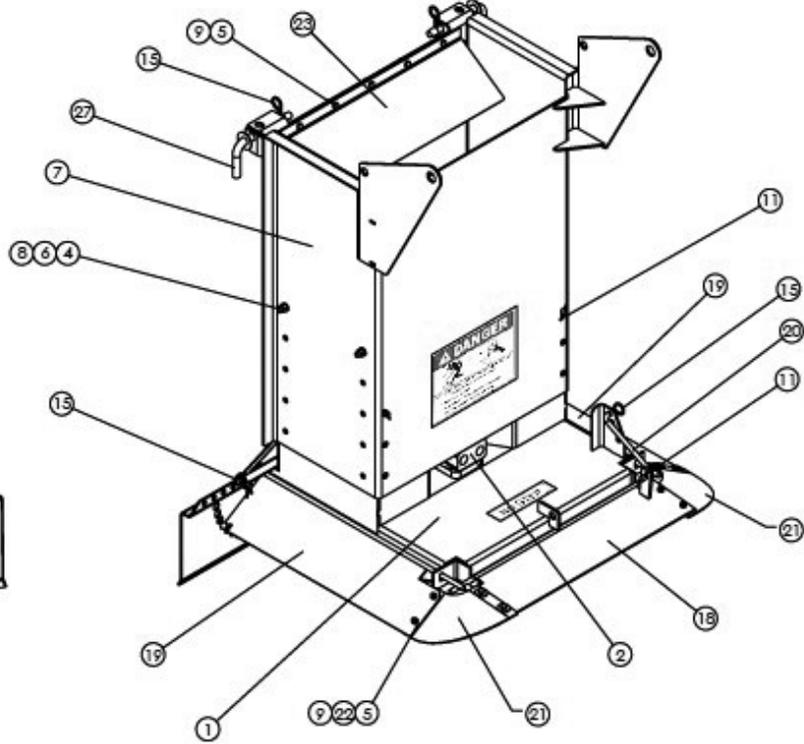
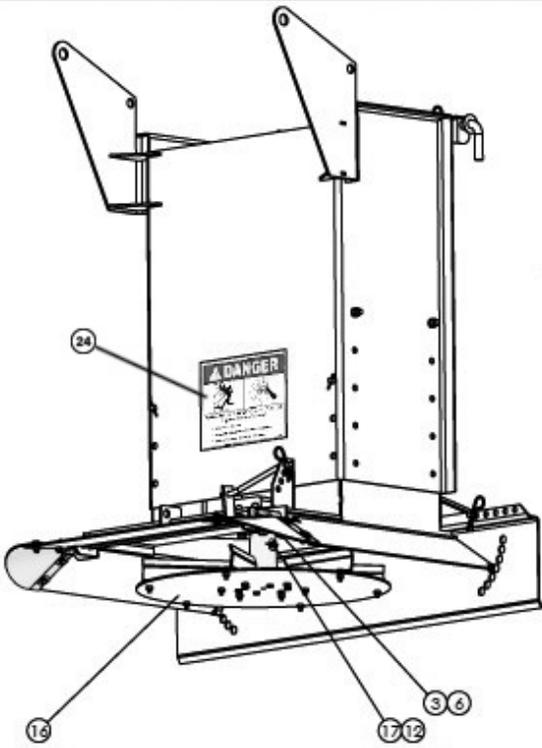
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Spinner - Direct Drive

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	318994	SPINNER - WLDMT LOWER 304	1
2	58806	MOTOR - HYDRAULIC	1
3	36293	CAPSCREW - .375-16NC X .75 SS	4
4	36398	CAPSCREW - .375-16NC X 1 SS	4
5	36393	CAPSCREW - .25-20NC X .75 SS	13
6	36420	WASHER - LOCK .375 SS	8
7	318990	SPINNER - WLDMT UPPER 304	1
8	36414	NUT - HEX .375-16NC SS	4
9	42034	NUT - LOCK .25-20NC SS	13
10	319000	BAFFLE - WLDMT INNER LH 304	1
11	36427	PIN - COTTER .125 X 1 SS	7
12	20817	PIN - COTTER .125 X 1 ZN	1
13	319002	BAFFLE - WLDMT RH 304	1
14	88444	ROD - CONTROL FRONT 304	2
15	36429	PIN - HAIR .148 X 2.688 SS	7
16	87757	DISC - ASSY SPINNER STEEL CW TOP	1
	88396	DISC - ASSY POLY CW TOP	1
17	6123	PIN - CLEVIS .375 X 2.25 ZN	1
18	88462	BAFFLE - WLDMT REAR 304	1
19	88464	BAFFLE - WLDMT SIDE 304	2
20	318999	ROD - 304	1
21	87801	DEFLECTOR - BELT	2
22	21423-X1	WASHER - FLAT .25 SPECIAL SS	8
23	319005	PLATE - 304	1
24	368	DECAL - DANGER FLYING MATERIAL	1
25	71807	DECAL - WARNING FALLING	1
26	39017	DECAL - NO STEP	1
27	319029	PIN - WLDMT 304	2

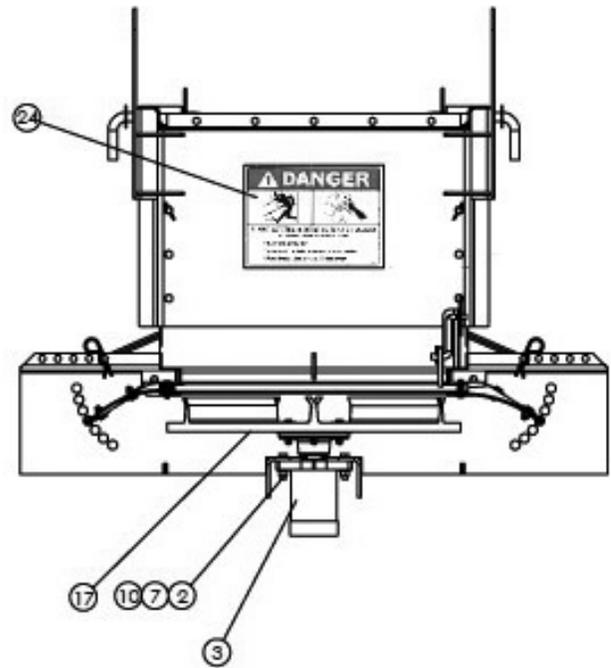
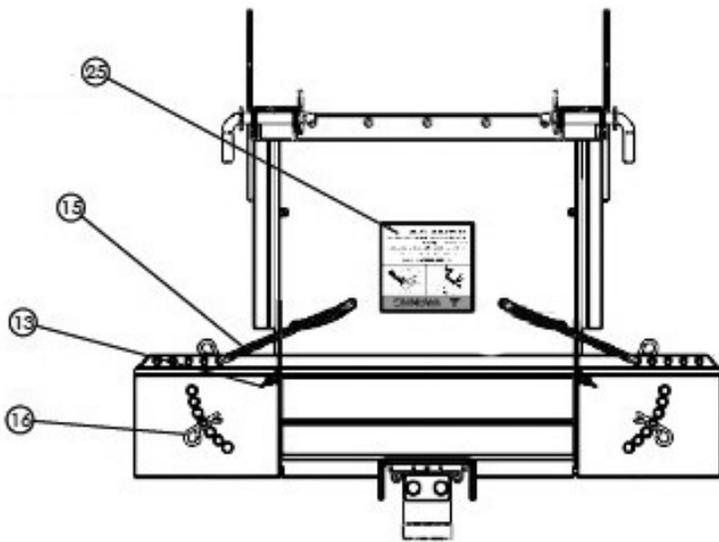
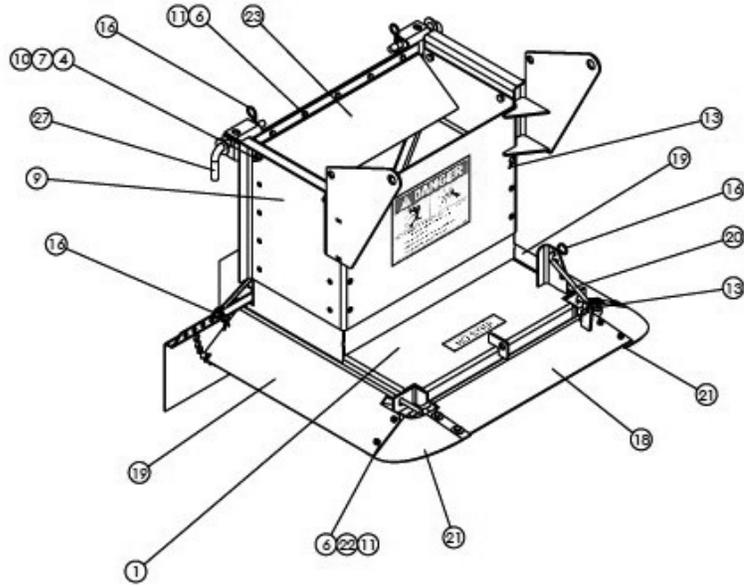
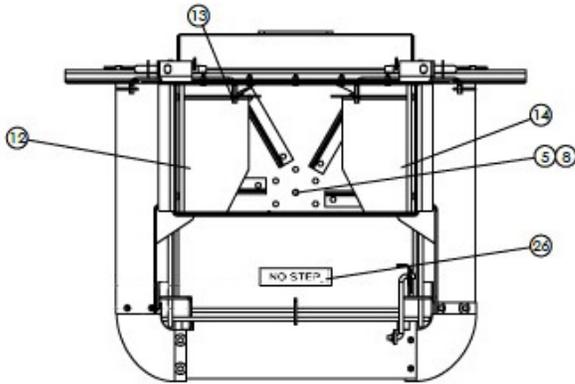




Spinner - Extended - Direct Drive

ITEM	PART NO.	DESCRIPTION	QTY
1	318994	SPINNER - WLDMT LOWER 304	1
2	58806	MOTOR - HYDRAULIC	1
3	36293	CAPSCREW - .375-16NC X .75 SS	4
4	36398	CAPSCREW - .375-16NC X 1 SS	4
5	36393	CAPSCREW - .25-20NC X .75 SS	13
6	36420	WASHER - LOCK .375 SS	8
7	318984	SPINNER - WLDMT UPPER 304	1
8	36414	NUT - HEX .375-16NC SS	4
9	42034	NUT - LOCK .25-20NC SS	13
10	319000	BAFFLE - WLDMT INNER LH 304	1
11	36427	PIN - COTTER .125 X 1 SS	7
12	20817	PIN - COTTER .125 X 1 ZN	1
13	319002	BAFFLE - WLDMT RH 304	1
14	88444	ROD - CONTROL FRONT 304	2
15	36429	PIN - HAIR .148 X 2.688 SS	7
16	87757	DISC - ASSY SPINNER STEEL CW TOP	1
	88396	DISC - ASSY POLY CW TOP	1
17	6123	PIN - CLEVIS .375 X 2.25 ZN	1
18	88462	BAFFLE - WLDMT REAR 304	1
19	88464	BAFFLE - WLDMT SIDE 304	2
20	318999	ROD - 304	1
21	87801	DEFLECTOR - BELT	2
22	21423-X1	WASHER - FLAT .25 SPECIAL SS	8
23	39005	GUSSET - BOLTING	1
24	368	DECAL - DANGER FLYING MATERIAL	1
25	71807	DECAL - WARNING FALLING	1
26	39017	DECAL - NO STEP	1
27	319029	PIN - WLDMT 304	2





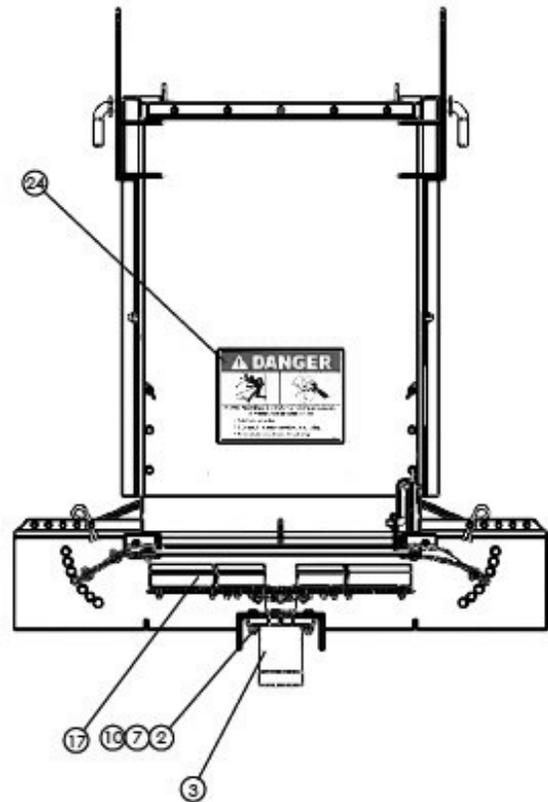
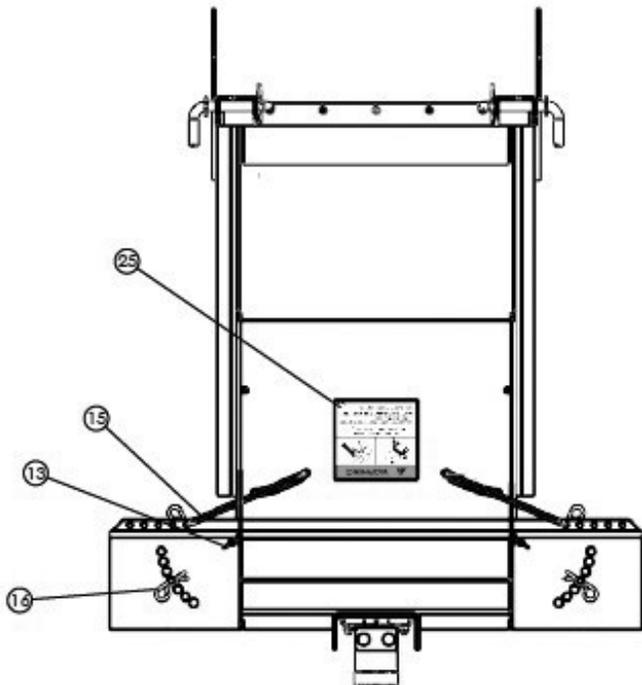
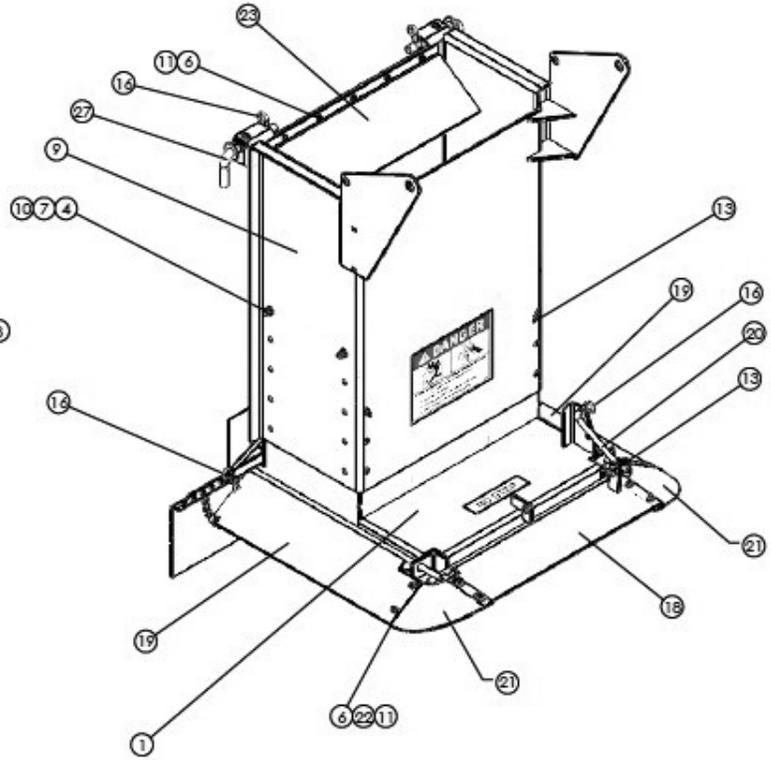
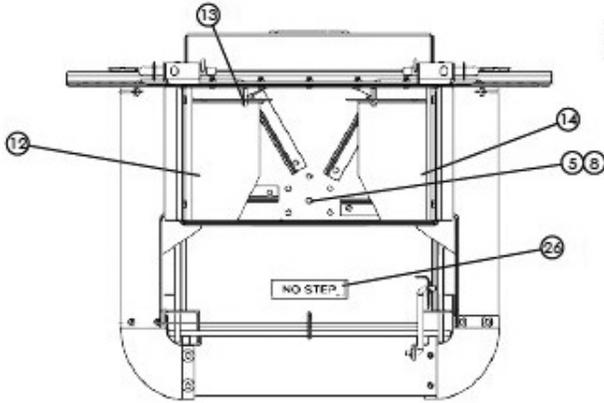
Spinner - Direct Drive - Underslung

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	318987	SPINNER - WLDMT LOWER 304	1
2	34858	CAPSCREW - .375-16NC X 1.5 SS	2
3	37339	MOTOR - HYDRAULIC .25	1
4	36398	CAPSCREW - .375-16NC X 1 SS	4
5	20003	CAPSCREW - .25-20NC X .75GR5	1
6	36393	CAPSCREW - .25-20NC X .75 SS	13
7	36420	WASHER - LOCK .375 SS	6
8	20710	WASHER - LOCK .25 ZN	1
9	318990	SPINNER - WLDMT UPPER 304	1
10	36414	NUT - HEX .375-16NC SS	6
11	42034	NUT - LOCK .25-20NC SS	13
12	319000	BAFFLE - WLDMT INNER LH 304	1
13	36427	PIN - COTTER .125 X 1 SS	7
14	319002	BAFFLE - WLDMT RH 304	1
15	88444	ROD - CONTROL FRONT 304	2
16	36429	PIN - HAIR .148 X 2.688 SS	7
17	73492	DISC - SPINNER ASSY STEEL	1
	90831	DISC - ASSY POLY CW TOP	1
18	88462	BAFFLE - WLDMT REAR 304	1
19	88464	BAFFLE - WLDMT SIDE 304	2
20	318999	ROD - 304	1
21	87801	DEFLECTOR - BELT	2
22	21423-X1	WASHER - FLAT .25 SPECIAL SS	8
23	319005	PLATE - 304	1
24	368	DECAL - DANGER FLYING MATERIAL	1
25	71807	DECAL - WARNING FALLING	1
26	39017	DECAL - NO STEP	1
27	319029	PIN - WLDMT 304	2



Spinner - Direct Drive - Extended Underslung

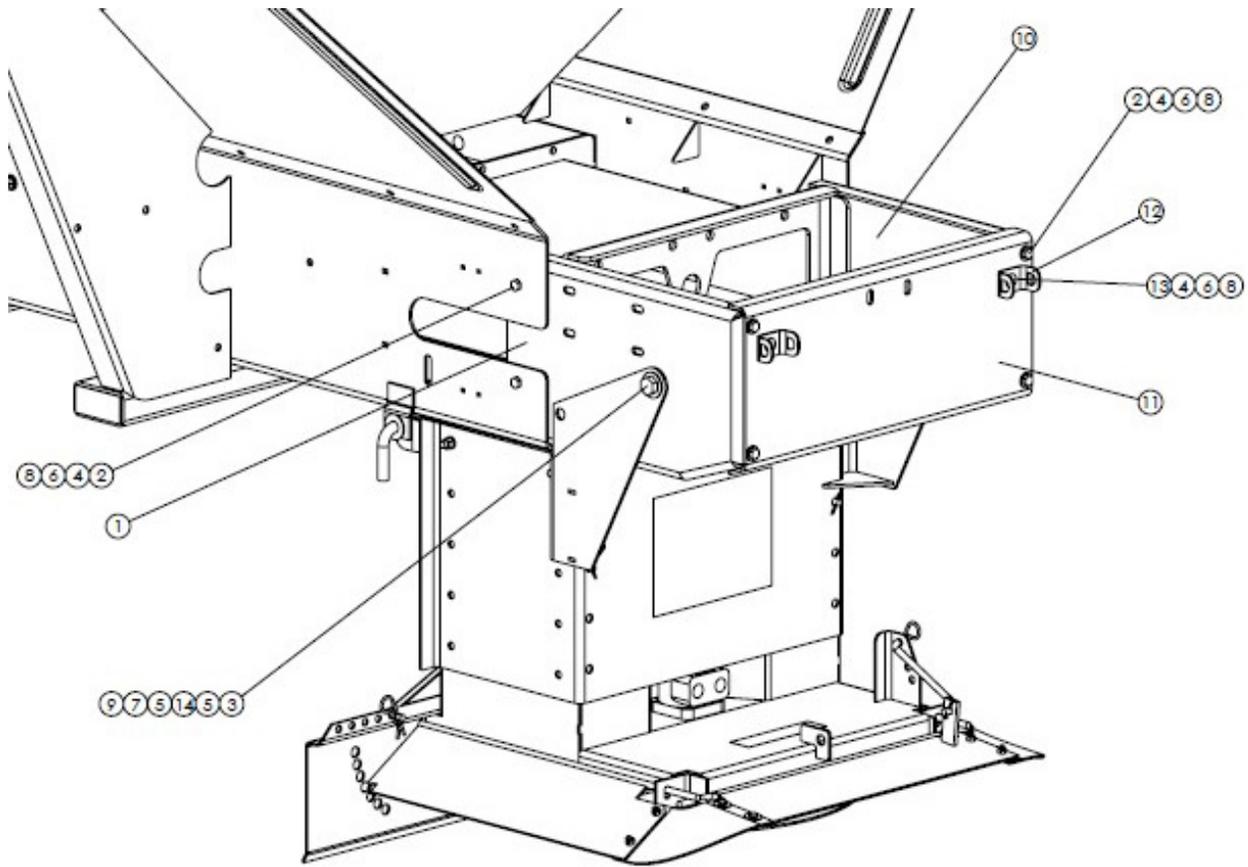
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Spinner - Direct Drive - Extended Underslung

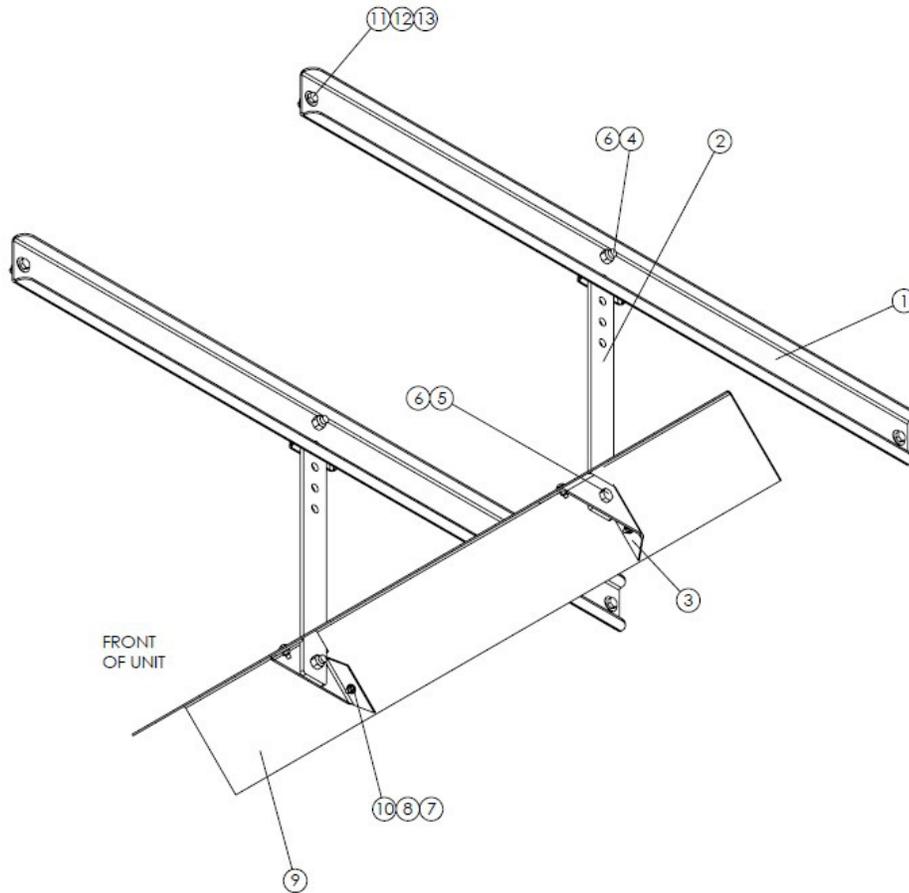
ITEM	PART NO.	DESCRIPTION	QTY
1	318987	SPINNER - WLDMT LOWER 304	1
2	34858	CAPSCREW - .375-16NC X 1.5 SS	2
3	37339	MOTOR - HYDRAULIC .25	1
4	36398	CAPSCREW - .375-16NC X 1 SS	4
5	20003	CAPSCREW - .25-20NC X .75GR5	1
6	36393	CAPSCREW - .25-20NC X .75 SS	13
7	36420	WASHER - LOCK .375 SS	6
8	20710	WASHER - LOCK .25 ZN	1
9	318984	SPINNER - WLDMT UPPER 304	1
10	36414	NUT - HEX .375-16NC SS	6
11	42034	NUT - LOCK .25-20NC SS	13
12	319000	BAFFLE - WLDMT INNER LH 304	1
13	36427	PIN - COTTER .125 X 1 SS	7
14	319002	BAFFLE - WLDMT RH 304	1
15	88444	ROD - CONTROL FRONT 304	2
16	36429	PIN - HAIR .148 X 2.688 SS	7
17	73492	DISC - SPINNER ASSY STEEL	1
	90831	DISC - ASSY POLY CW TOP	1
18	88462	BAFFLE - WLDMT REAR 304	1
19	88464	BAFFLE - WLDMT SIDE 304	2
20	318999	ROD - 304	1
21	87801	DEFLECTOR - BELT	2
22	21423-X1	WASHER - FLAT .25 SPECIAL SS	8
23	319005	PLATE - 304	1
24	368	DECAL - DANGER FLYING MATERIAL	1
25	71807	DECAL - WARNING FALLING	1
26	39017	DECAL - NO STEP	1
27	319029	PIN - WLDMT 304	2





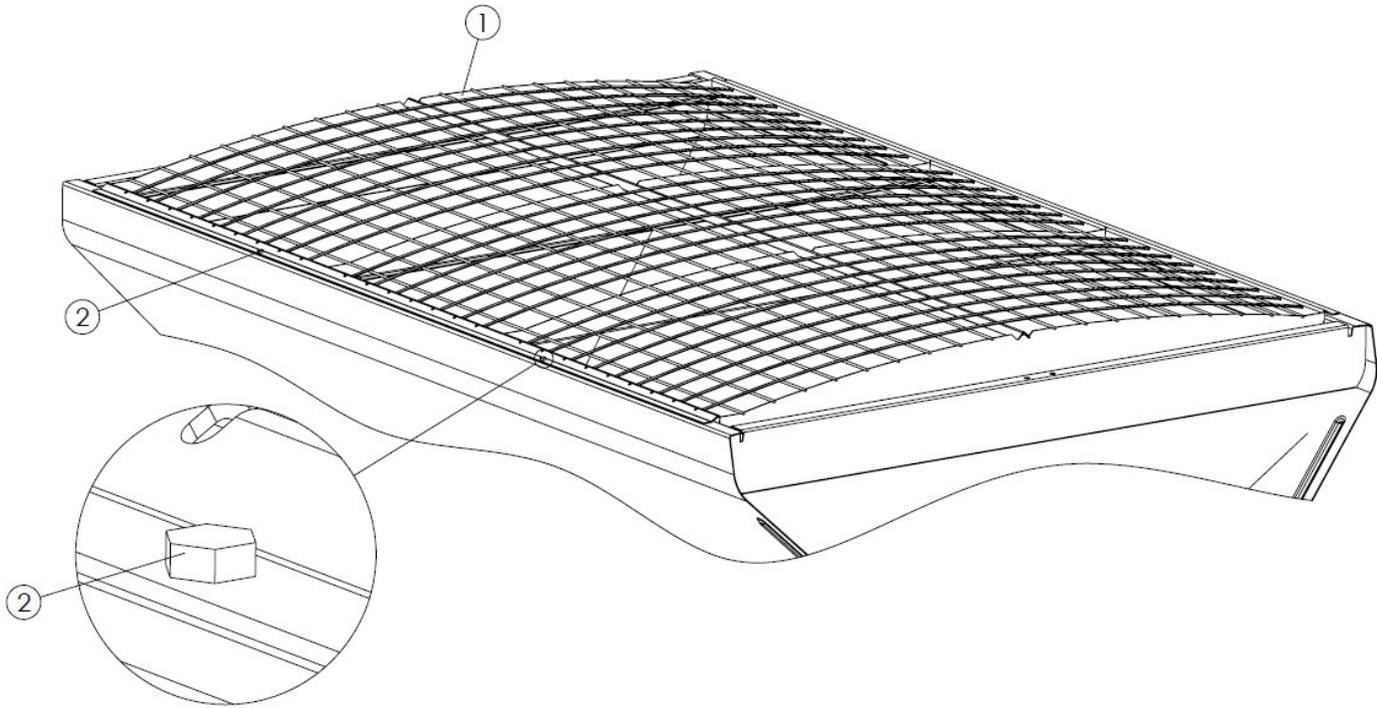
ITEM	PART NO.	DESCRIPTION	QTY
1	319008	SUPPORT - LH 304	1
2	36398	CAPSCREW - .375-16NC X 1 SS	8
3	58800	CAPSCREW - .625-11NC X 1.75 SS	2
4	36425	WASHER - FLAT .375 SS	10
5	56857	WASHER - FLAT .625 SS	4
6	36420	WASHER - LOCK .375 SS	10
7	40597	WASHER - LOCK .625 SS	2
8	36414	NUT - HEX .375-16NC SS	10
9	36417	NUT - HEX .625-11NC SS	2
10	319009	SUPPORT - RH 304	1
11	319007	PLATE - 304	1
12	319011	BRACKET - 304	2
13	36408	BOLT - CARRIAGE .375-16NC X 1	2
14	319010	SPACER - 304	2



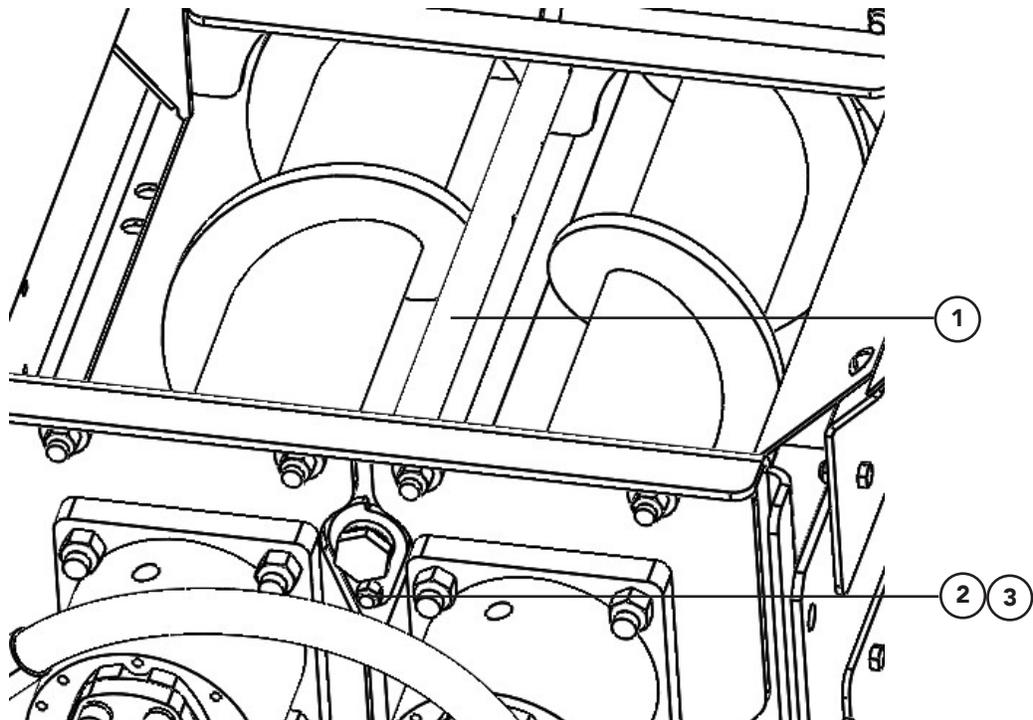


ITEM	PART NO.	DESCRIPTION	QTY	
			9'-12'	13'-14'
1	81263	HANGER - WLDMT V 304	2	3
2	319046	BAR - MOUNTING 304	2	3
3	302371	BRACKET - V BOLT-ON 304	2	3
4	58800	CAPSCREW - .625-11NC X 1.75 SS	2	3
5	307960	CAPSCREW - .625-11NC X 1.5 SS	2	3
6	41762	NUT - LOCK .625-11NC SS	4	6
7	42221	NUT - LOCK .313-18NC SS	4	6
8	36424	WASHER - FLAT .313 SS	4	6
9	82621	V - INVERTED 5' 304	1	-
-	82622	V - INVERTED 7' 304 16 X 84	1	-
-	82623	V - INVERTED 9' 304 16 X 108	-	1
10	42639	BOLT - CARRIAGE .313-18NC X 1	4	6
11	39016	NUT - LOCK .5-13NC SS	4	6
12	36426	WASHER - FLAT .5 SS	4	6
13	36402	CAPSCREW - .5-13NC X 1.25 SS	4	6

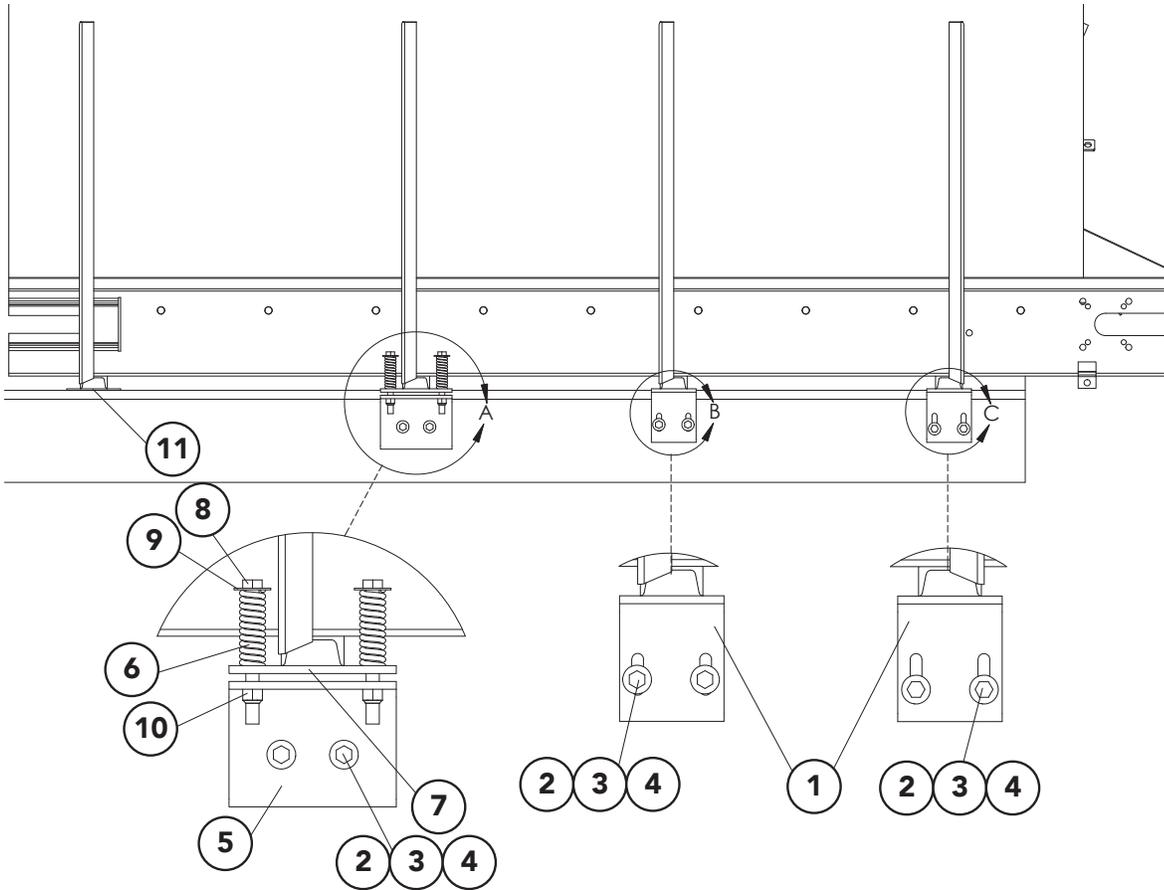




ITEM	PART NO.	DESCRIPTION	QTY	
			9'-12'	13'-14'
1	308228	SCREEN - 10' X 82 GALVANIZED	1	-
-	308324	SCREEN - 12' X 82 GALVANIZED	1	-
-	319582	SCREEN - 13' X 82 GALVANIZED	-	1
-	308325	SCREEN - 14' X 82 GALVANIZED	-	1
2	36293	CAPSCREW - .375-16NC X .75 SS (10'-12')	2	3



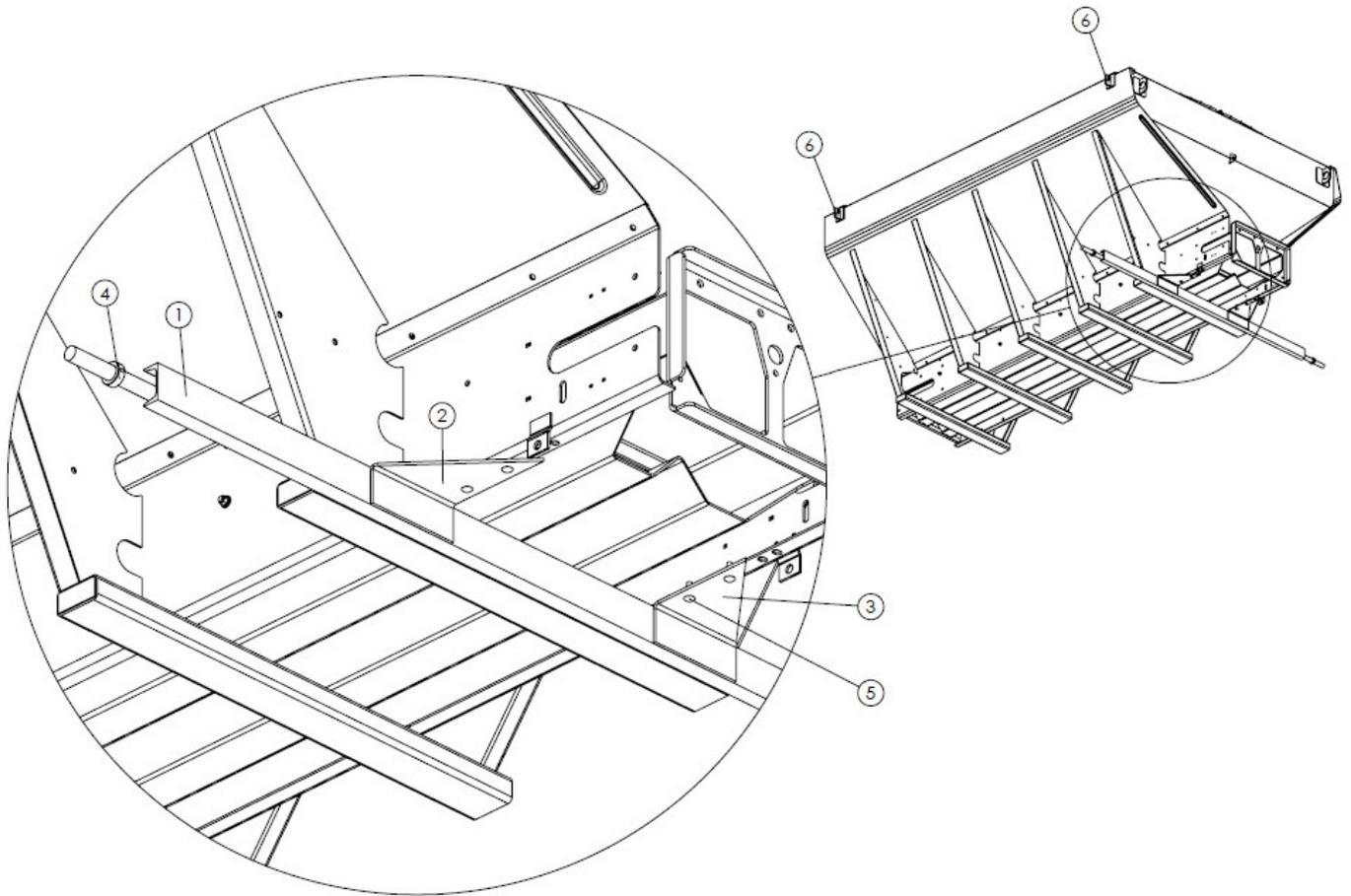
ITEM	PART NO.	DESCRIPTION	QTY
1	318076	PREWET - ASSY 304	1
2	36398	CAPSCREW - .375-16NC X 1 SS	1
3	72054	NUT - LOCK .375-16NC SS	1



ITEM	PART NO.	DESCRIPTION	QTY
1	31856	Angle – Mounting	4
2	20131	Cap Screw – 1/2 x 2	12
3	20695	Washer – Flat 1/2	12
4	20680	Nut – Lock 1/2-13	12
5	81847	Angle – Tie Down	2
6	81000	Spring	4
7	81848	Mounting – Bar	2
8	20195	Cap Screw – 5/8 x 6 1/2	4
9	20697	Washer – Flat 5/8	4
10	41762	Nut – Lock 5/8	4
11	* 72071	Screw – Self Tapping 1/4 x 3/4	8
12	* 39942	Strap – Retainer	8

* - Not Shown

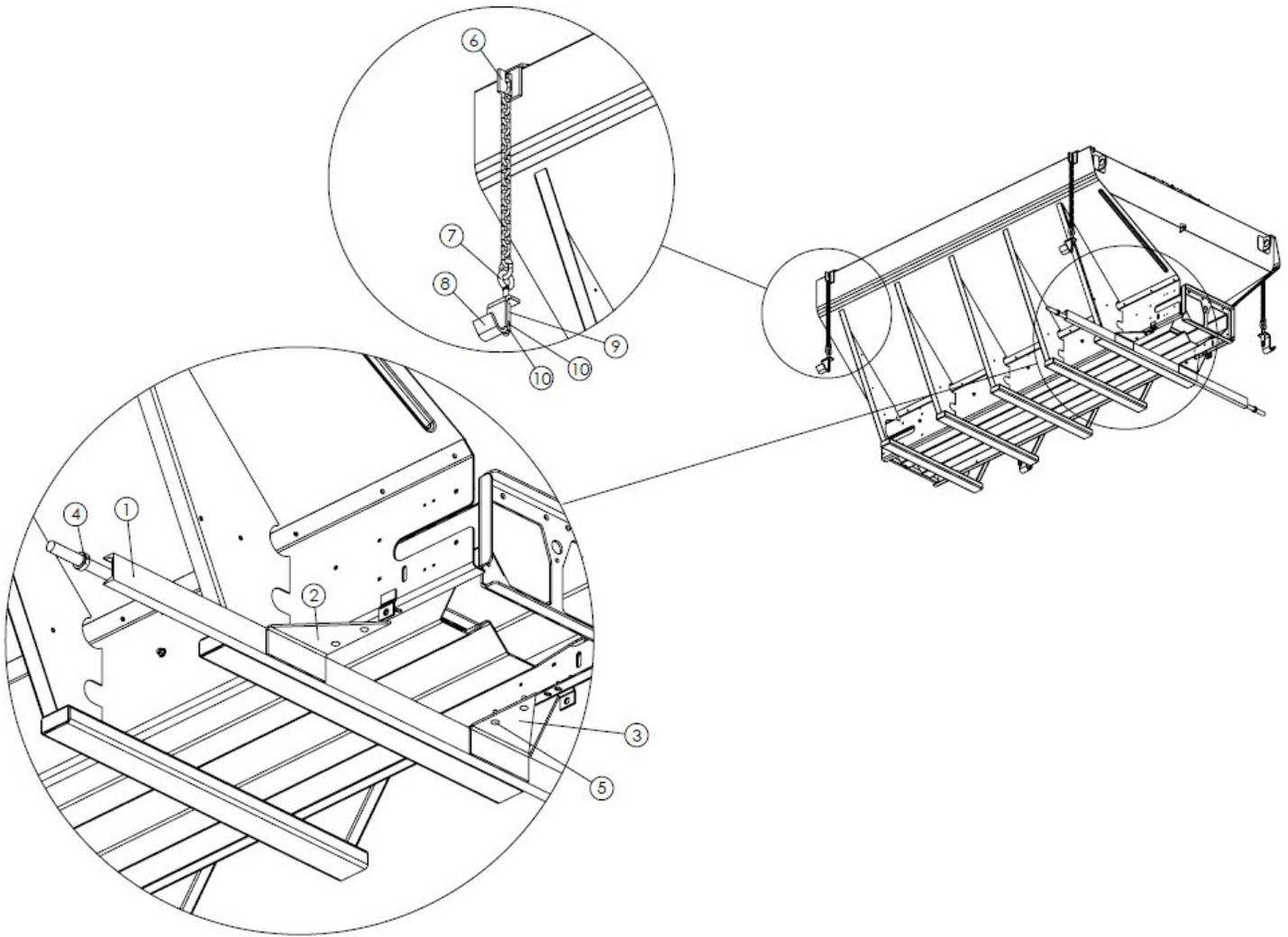




ITEM	PART NO.	DESCRIPTION	QTY
1	39946	LATCH - WLDMT TAILGATE	1
2	71254	GUSSET - MOUNTING RH	1
3	71255	GUSSET - MOUNTING LH	1
4	21055	COLLAR - SET 1 1/8 ID	2
5	11745	HARDWARE - KIT TAILGATE	1
6	318956	HOOK - WLDMT UPPER	4
7	*88291	STRAP - W/3 RATCHET	4

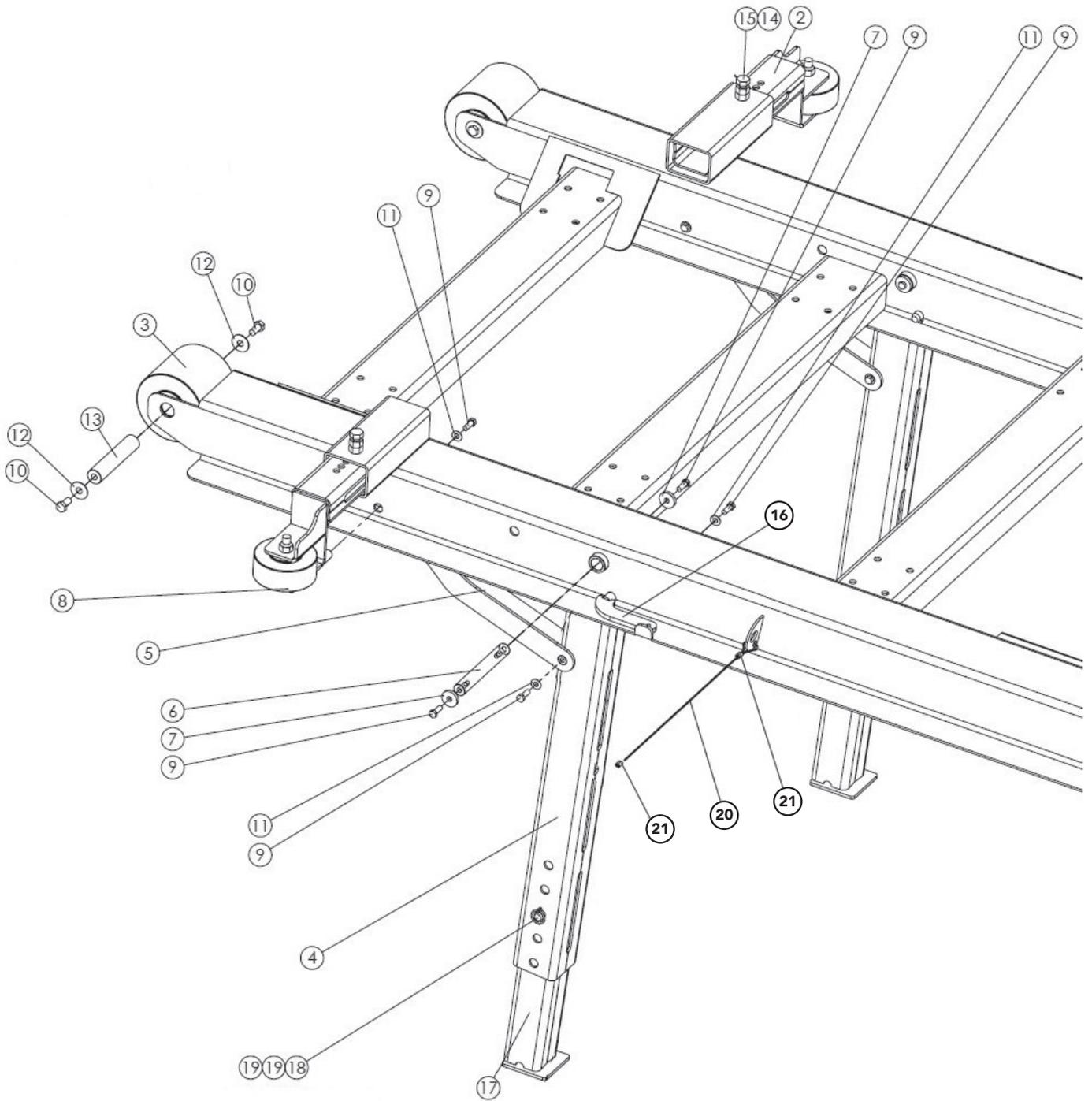
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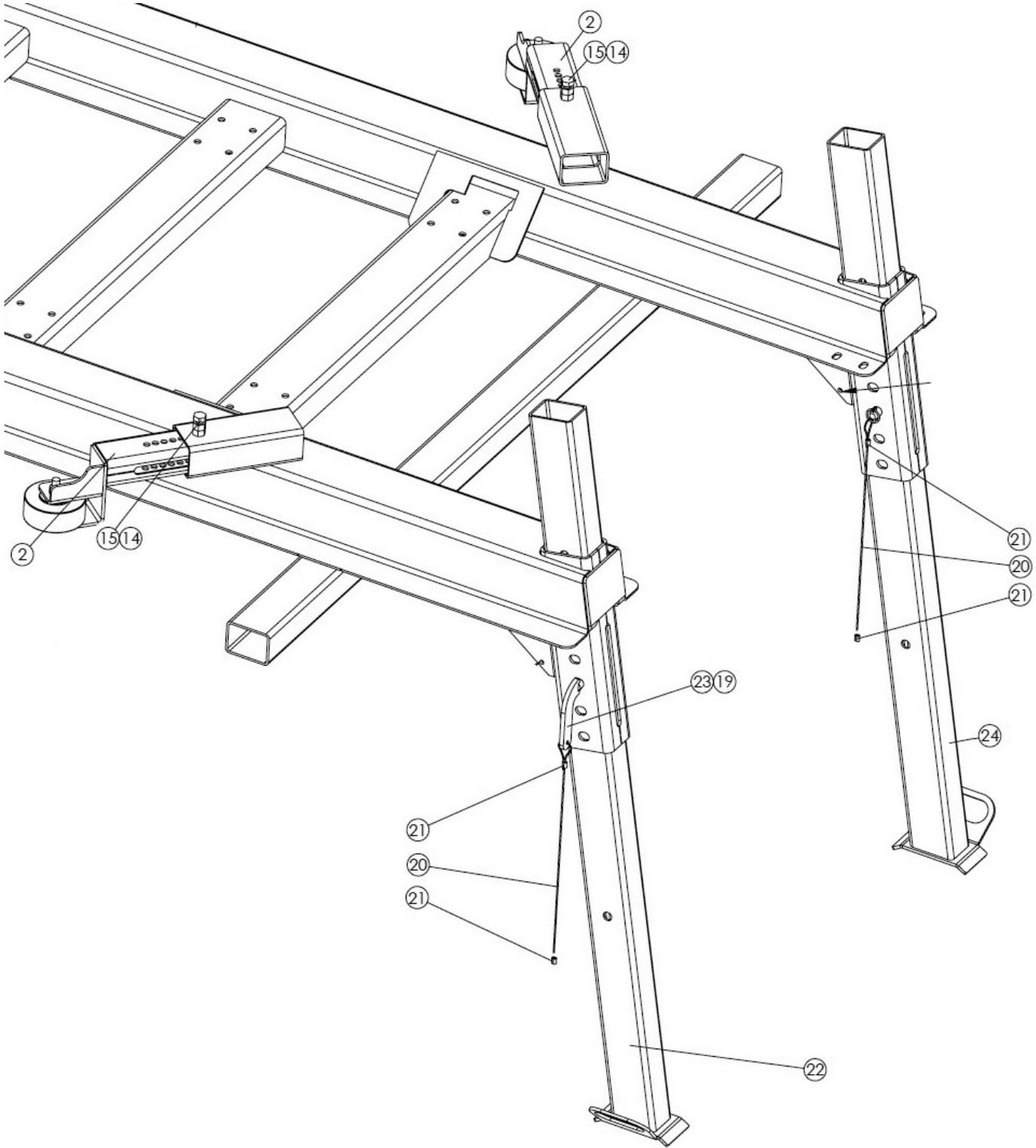




ITEM	PART NO.	DESCRIPTION	QTY
1	39946	LATCH - WLDMT TAILGATE	1
2	71254	GUSSET - MOUNTING RH	1
3	71255	GUSSET - MOUNTING LH	1
4	21055	COLLAR - SET 1 1/8 ID	2
5	11745	HARDWARE - KIT TAILGATE	1
6	318957	HOOK - WLDMT UPPER	4
7	39867	CHAIN - W/EYE BOLT	4
8	46400	HOOK - TIE DOWN	4
9	39866	PIPE - .75 SCH40 X 2.5	4
10	40700	NUT - HEX OVERSIZED GALVANIZED	8



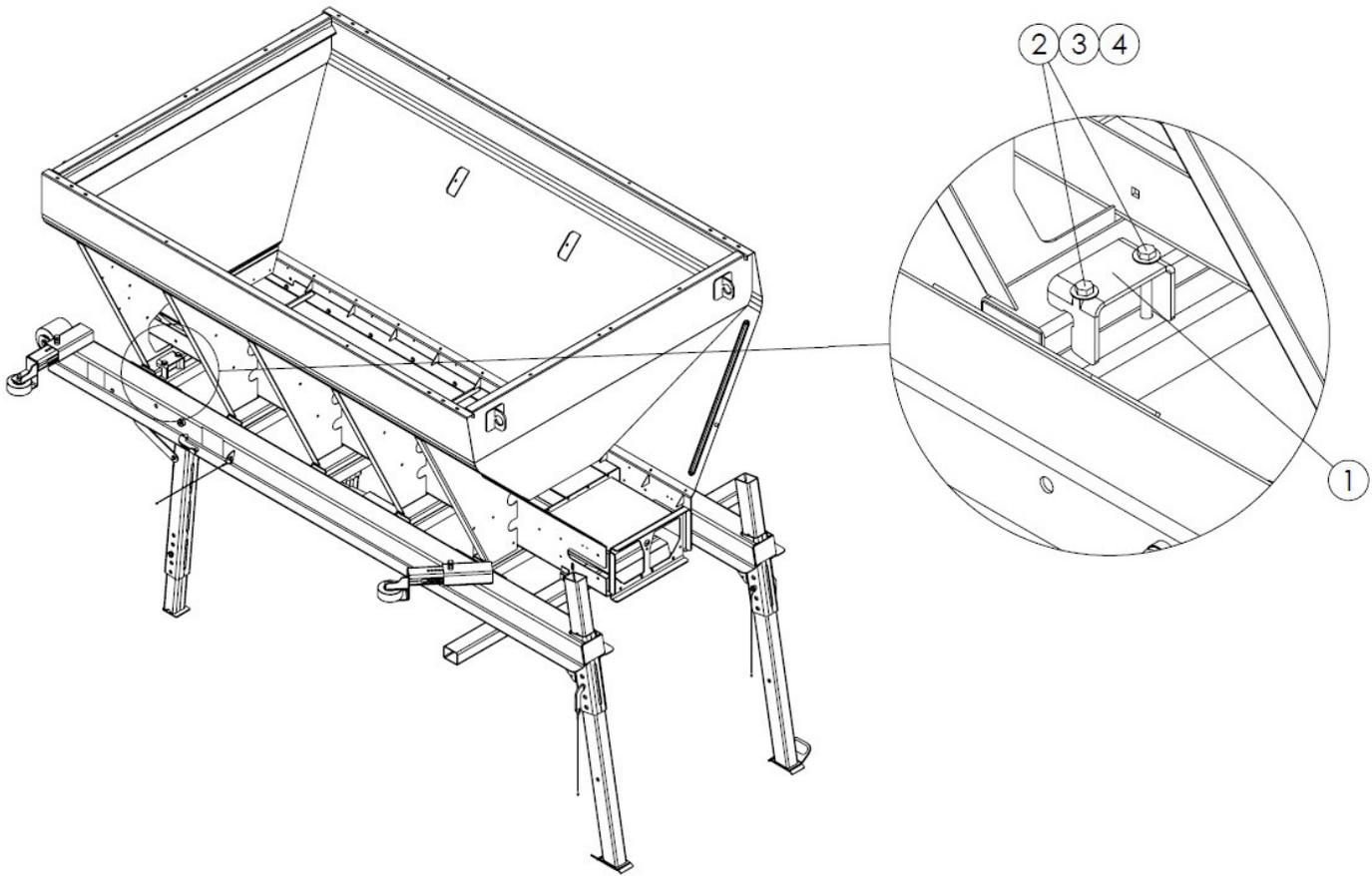




Subframe

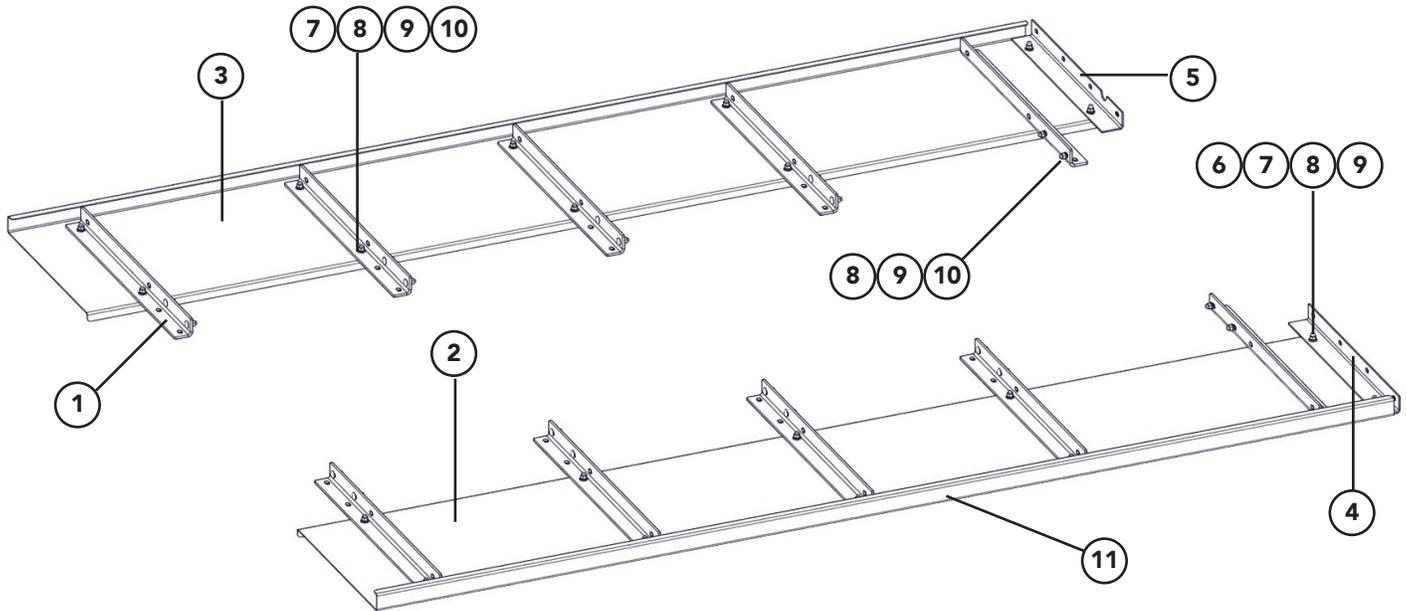
ITEM	PART NO.	DESCRIPTION	QTY
1	319997	FRAME - WLDMT 304 10'	1
-	318685	FRAME - WLDMT 12' 304	1
-	318882	FRAME - WLDMT 13' 304	1
-	318686	FRAME - WLDMT 14' 304	1
2	318092	WHEEL - ASSY GUIDE 304	4
3	307764	WHEEL - MOUNT ROLL-ON	2
4	318093	LEG - WLDMT 304	2
5	318094	BRACE - WLDMT 304	2
6	307808	PIN - HINGE LEG 304	2
7	307746	SPACER - .438ID X .25 304	4
8	318095	ROUND - .75 X 6.125 304	2
9	36398	CAPSCREW - .375-16NC X 1 SS	10
10	36401	CAPSCREW - .5-13NC X 1 SS	4
11	36425	WASHER - FLAT .375 SS	6
12	318694	WASHER - FLAT .5 X 1.5 SS	4
13	318096	AXLE - WHEEL SUB-FRAME 304	2
14	36417	NUT - HEX .625-11NC SS	4
15	307997	CAPSCREW - .625-11NC X 2 SS	4
16	318098	PIN - WLDMT 304	2
17	318099	LEG - WLDMT 304	2
18	317961	ROUND - .75 X 5 304	2
19	310732	PIN - LYNCH .188 X 1.25 SS	6
20	308084	CABLE - .094 X 24 COATED	6
21	317522	SLEEVE - ALUMINUM .094 X .5	12
22	318100	LEG - WLDMT LH 304	1
23	318101	PIN - WLDMT 304	2
24	318102	LEG - WLDMT RH 304	1





ITEM	PART NO.	DESCRIPTION	QTY
1	318217	CLAMP - 304	4
2	318229	CAPSCREW - .5-13NC X 4.5 SS	8
3	36426	WASHER - FLAT .5 SS	8
4	39016	NUT - LOCK .5-13NC SS	8

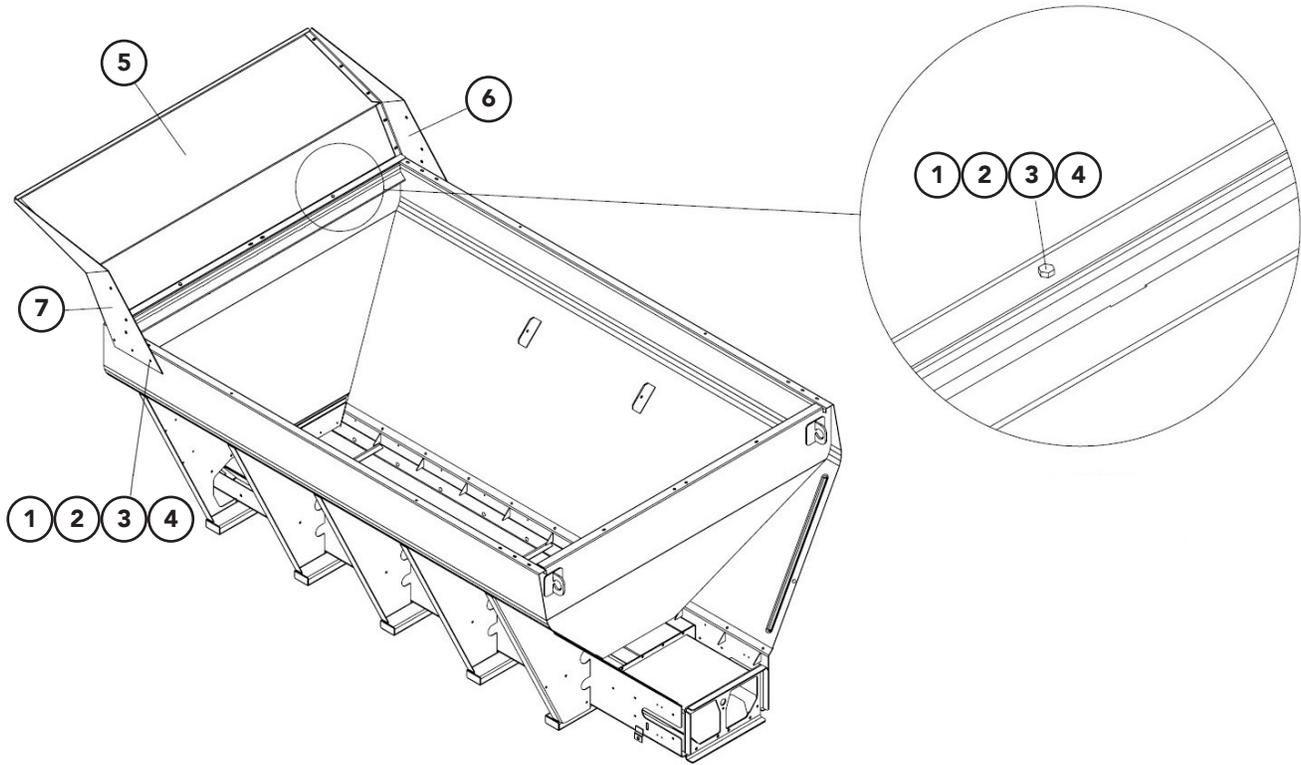
Fenders



ITEM	PART NO.	DESCRIPTION	QTY			
			10'	12'	13'	14'
1	98070	ANGLE - FENDER 96 24 BTM 304	10	12	12	14
2	318704	FENDER - PANEL 10' 96 RH 201	1			
-	318706	FENDER - PANEL 12' 96 RH 201		1		
	319556	FENDER - PANEL 13' 96 RH 201			1	
-	318708	FENDER - PANEL 14' 96 RH 201				1
3	318705	FENDER - PANEL 10' 96 LH 201	1			
-	318707	FENDER - PANEL 12' 96 LH 201		1		
	319557	FENDER - PANEL 13' 96 LH 201			1	
-	318709	FENDER - PANEL 14' 96 LH 201				1
4	71872	BRACKET - MUDFLAP RH 304	1	1	1	1
5	71873	BRACKET - MUDFLAP LH 304	1	1	1	1
6	36398	CAPSCREW - .375-16NC X 1 SS	4	4	4	4
7	36425	WASHER - FLAT .375 SS	24	28	28	32
8	36420	WASHER - LOCK .375 SS	44	52	52	60
9	36414	NUT - HEX .375-16NC SS	44	52	52	60
10	36408	BOLT - CARRIAGE .375-16NC X 1	40	48	48	56
11	39200	DECAL - WARNING SLIPPINGHAZAR	2	2	2	2
12	*21699	SKID FABRIC - SPECIFY LENGTH	2	2	2	2

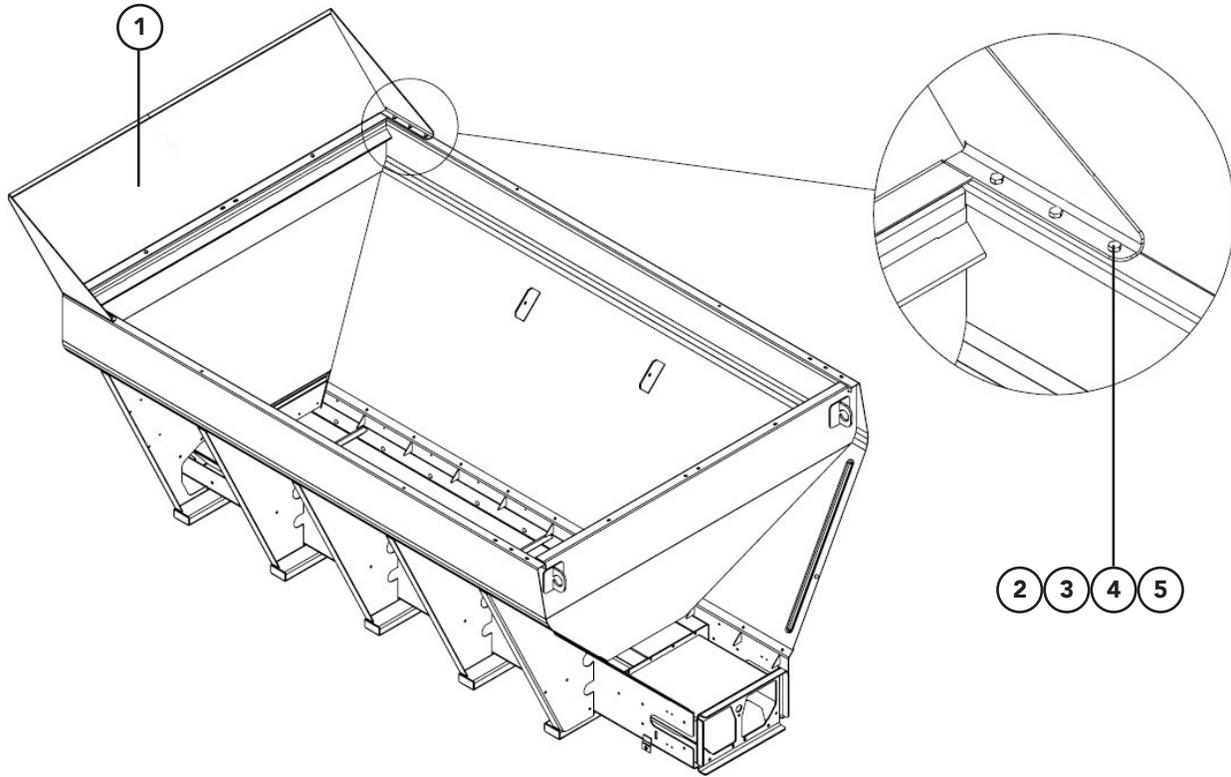
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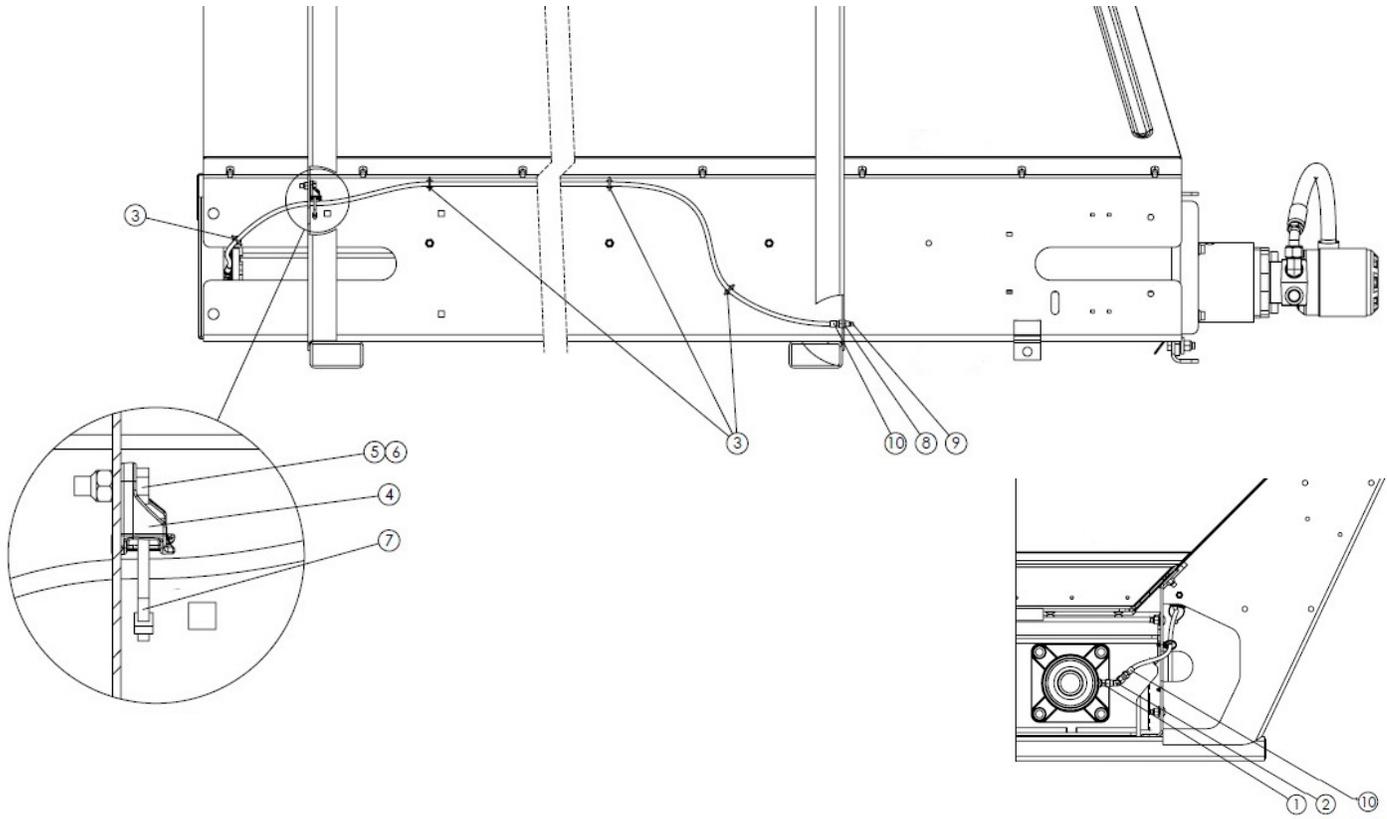
ITEM	PART NO.	DESCRIPTION	QTY
1	36398	Cap Screw – 3/8 x 1	AR
2	36425	Washer – Flat 3/8	AR
3	36420	Washer – Lock 3/8	AR
4	36414	Nut – Hex 3/8	AR
5	318776	Panel – Shield 57" Cab Height	1
-	318777	Panel – Shield 63" Cab Height	1
-	318778	Panel – Shield 69" Cab Height	1
6	79170	Support – RH 57" Cab Height	1
-	79174	Support – RH 63" Cab Height	1
-	79178	Support – RH 69" Cab Height	1
7	79172	Support – LH 57" Cab Height	1
-	79176	Support – LH 63" Cab Height	1
-	79180	Support – LH 69" Cab Height	1

Spill Shield



ITEM	PART NO.	DESCRIPTION	QTY
1	318715	SHIELD - WLDMT SPILL 304	1
2	36398	CAPSCREW - .375-16NC X 1 SS	8
3	36420	WASHER - LOCK .375 SS	8
4	36414	NUT - HEX .375-16NC SS	8
5	36425	WASHER - FLAT .375 SS	8

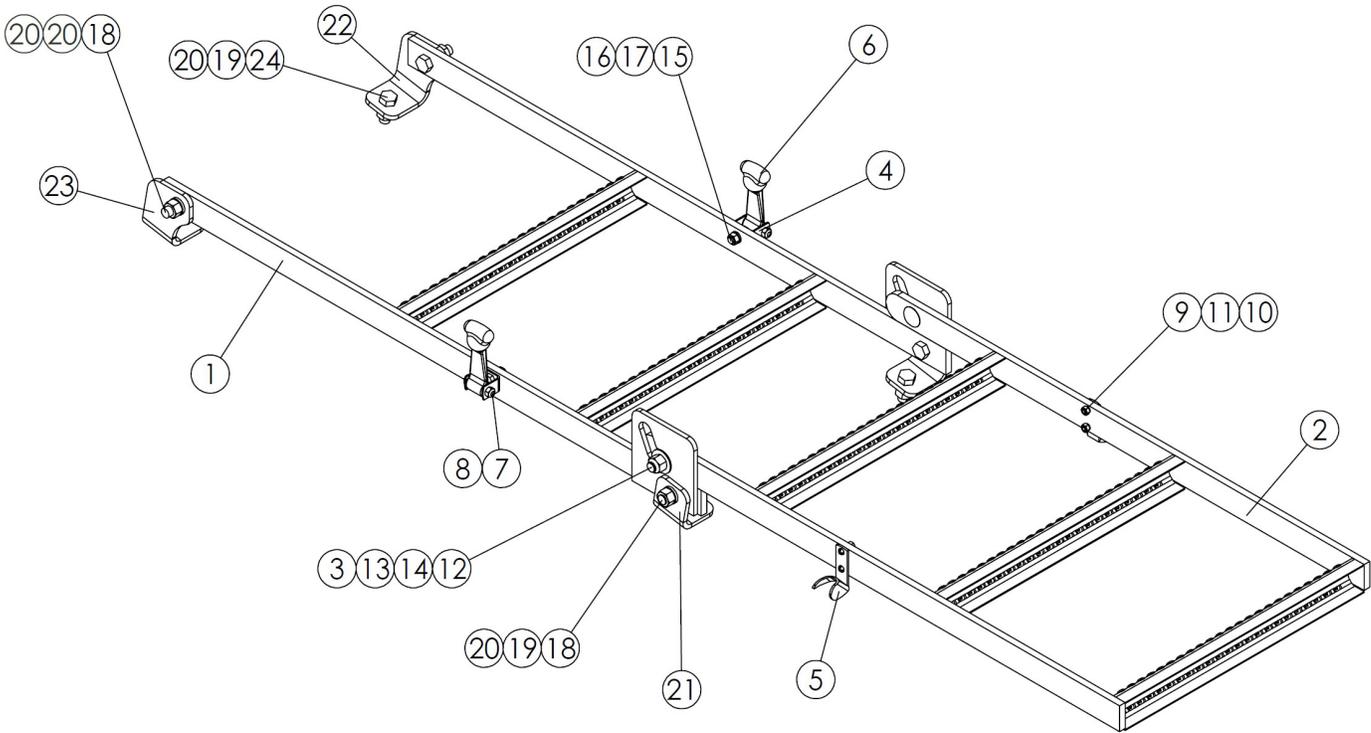




Lubrication

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	34787	FITTING - 4-2 070102	2
2	313501	FITTING - 4-4 070321	2
3	311806	TIE - WIRE FIR TREE	26
4	312964	CLIP - HARNESS MOUNTING	2
5	34580	CAPSCREW - .313-18NC X 1 SS	2
6	42221	NUT - LOCK .313-18NC SS	2
7	99674	STRAP - ZIP TIE 8 BLACK	2
8	310471	NUT - BULKHEAD .125-27	2
9	311663	ZERK - GREASE .25-28 STRAIGHT	2
10	318448	HOSE - ASSY .125 X 117 HLB (10')	2
-	318697	HOSE - ASSY .125 X 141 HLB (12')	2
-	319558	HOSE - ASSY .125 X 153 HLB (13')	2
-	318698	HOSE - ASSY .125 X 165 HLB (14')	2



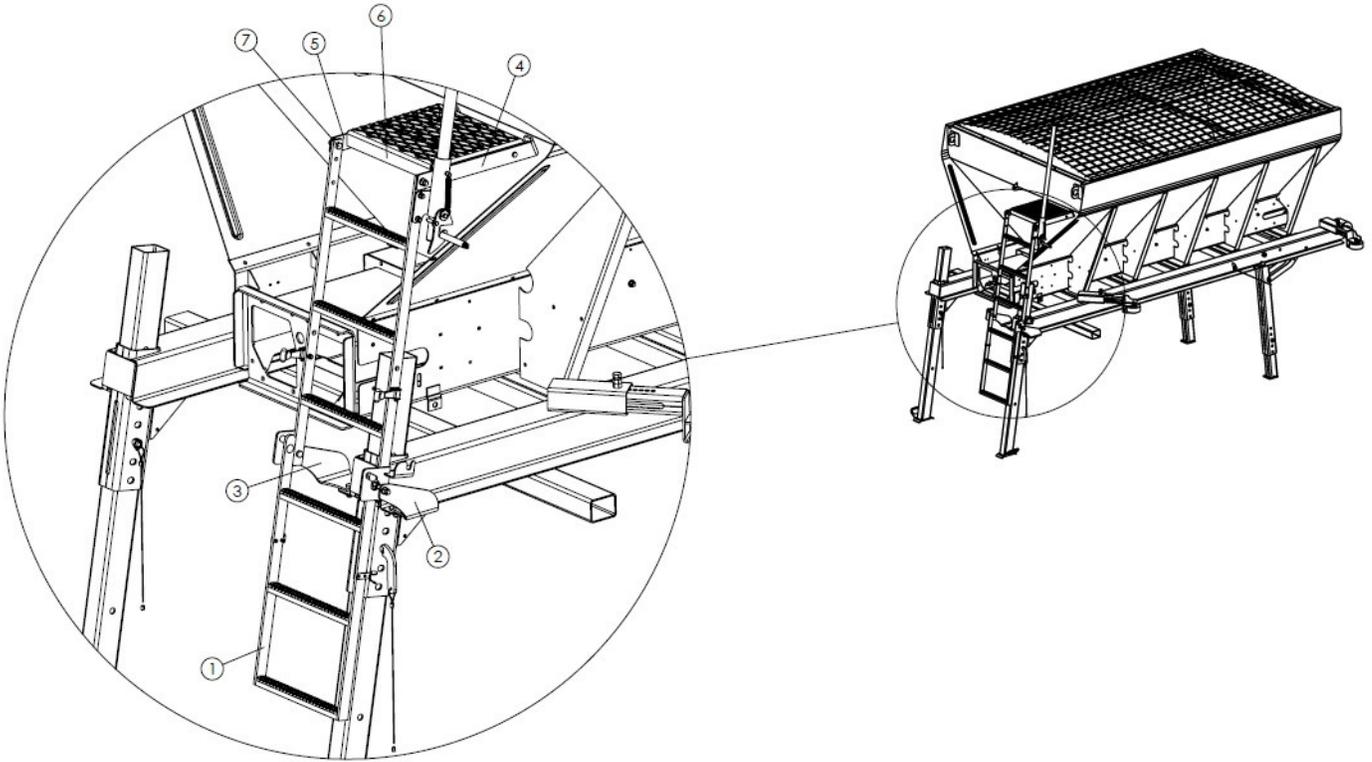


Side Ladder

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	300454	LADDER - WLDMT INSP UPPER 304	1
2	300456	LADDER - WLDMT INSP LOWER 304	1
-	304096	LADDER - WLDMT LOWER 44 304 - EXTENDED	1
3	88638	TUBE - .75OD X .75 X .375 SS	2
4	73344	BRACKET - ANCHOR	2
5	150043	BRACKET - HOOD	2
6	73343	HOOK - RUBBER	2
7	42448	CAPSCREW - .25-20NC X 1.5 SS	2
8	42034	NUT - LOCK .25-20NC SS	2
9	44483	SCREW - ROUND HEAD #10-24NC X	4
10	44451	WASHER - LOCK #10 SS	4
11	47295	NUT - HEX #10-24NC SS	4
12	304484	SCREW - BUTTONHEAD .5-13NC X 1.5 SS	2
13	36426	WASHER - FLAT .5 SS	2
14	39016	NUT - LOCK .5-13NC SS	2
15	300458	CAPSCREW - .313-18NC X .875 SS	2
16	36419	WASHER - LOCK .313 SS	2
17	36413	NUT - HEX .313-18NC SS	2
18	36539	CAPSCREW - .5-13NC X 1.5 SS	4
19	36422	WASHER - LOCK .5 SS	8
20	36416	NUT - HEX .5-13NC SS	8
21	318781	BRACKET - MOUNT LADDER 304	2
22	318782	BRACKET - MOUNT LADDER RH 304	1
23	318783	BRACKET - MOUNT LADDER LH 304	1
24	36402	CAPSCREW - .5-13NC X 1.25 SS	4



Rear Ladder



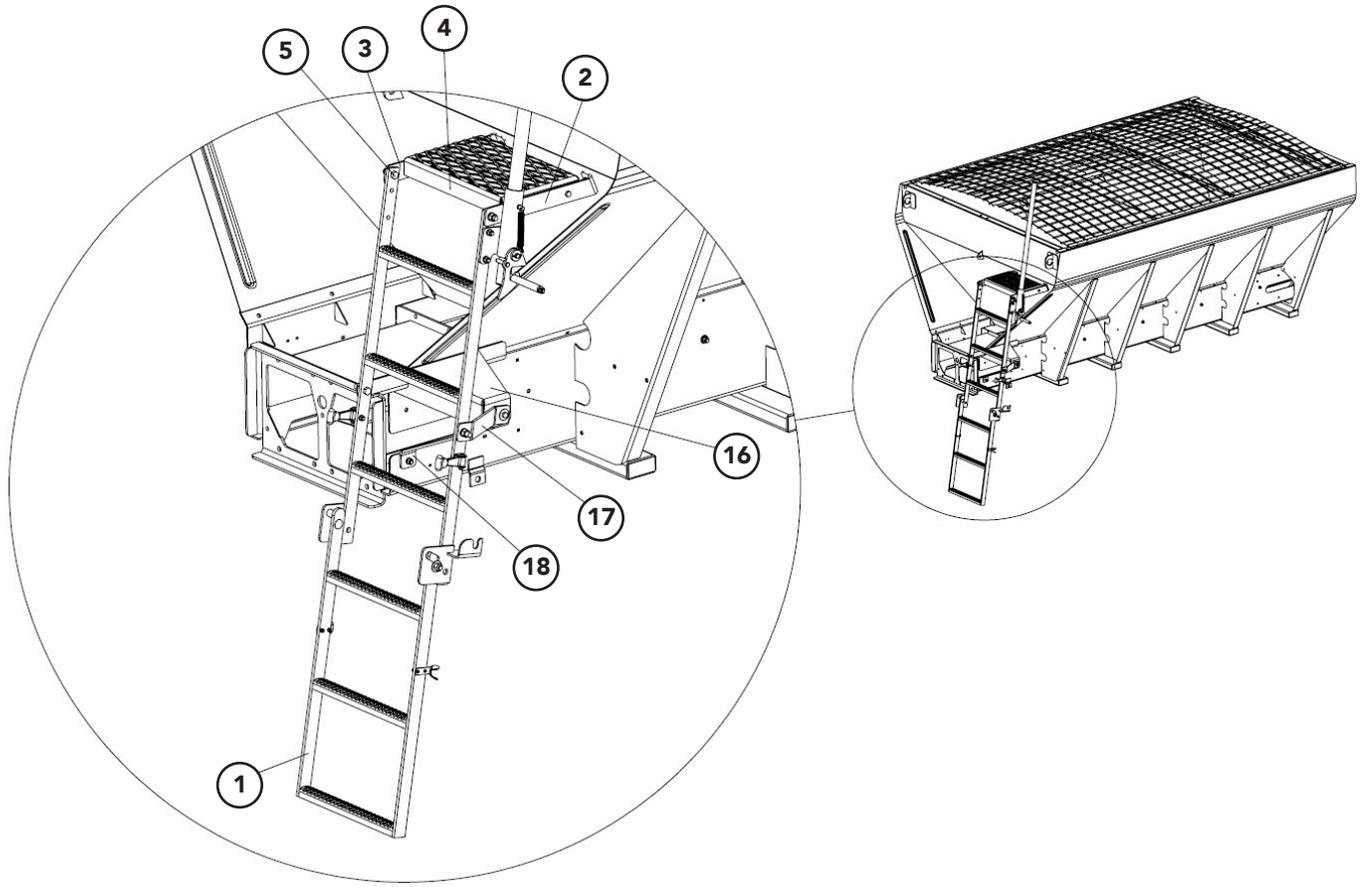
Rear Ladder

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	318918	LADDER - ASSY REAR 304	1
-	318919	LADDER - ASSY REAR +12 304 - EXTENDED	1
2	318931	MOUNT - LADDER LOWER RH 304	1
3	318932	MOUNT - LADDER LOWER LH 304	1
4	318933	MOUNT - LADDER UPPER RH 304	1
5	318934	MOUNT - LADDER UPPER LH 304	1
6	318935	PLATFORM - WLDMT 14.80 X 16.75	1
7	318951	LADDER - KIT HDW W/LEGS SS INCLUDES ITEMS 8-16	1
8	*71832	CAPSCREW - .5-13NC X 1.75 SS	2
9	*36422	WASHER - LOCK .5 SS	10
10	*36416	NUT - HEX .5-13NC SS	10
11	*36402	CAPSCREW - .5-13NC X 1.25 SS	6
12	*36426	WASHER - FLAT .5 SS	6
13	*36539	CAPSCREW - .5-13NC X 1.5 SS	2
14	*36398	CAPSCREW - .375-16NC X 1 SS	4
15	*36420	WASHER - LOCK .375 SS	4
16	*36414	NUT - HEX .375-16NC SS	4

* NOT SHOWN



Rear Ladder W/O Legs



Rear Ladder W/O Legs

ITEM	PART NO.	DESCRIPTION	QTY
1	318918	LADDER - ASSY REAR 304	1
-	318919	LADDER - ASSY REAR +12 304 - EXTENDED	1
2	318944	MOUNT - LADDER UPPER RH 304	1
3	318945	MOUNT - LADDER UPPER LH 304	1
4	318941	PLATFORM - WLDMT 10.80 X 16.75	1
5	318952	LADDER - KIT HDWW/O LEGS SS INCLUDES ITEMS 6-15	1
6	*71832	CAPSCREW - .5-13NC X 1.75 SS	2
7	*36422	WASHER - LOCK .5 SS	7
8	*36416	NUT - HEX .5-13NC SS	7
9	*36539	CAPSCREW - .5-13NC X 1.5 SS	2
10	*36402	CAPSCREW - .5-13NC X 1.25 SS	2
11	*36426	WASHER - FLAT .5 SS	4
12	*36398	CAPSCREW - .375-16NC X 1 SS	7
13	*36420	WASHER - LOCK .375 SS	7
14	*36414	NUT - HEX .375-16NC SS	7
15	*36399	CAPSCREW - .375-16NC X 1.25 SS	1
16	318946	SUPPORT - WLDMT LADDER 304	1
17	318949	BRACE - LADDER 304	1
18	318950	BRACE - LADDER 304	1



LIGHTS & REFLECTORS

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	39830	Light – Kit Truck Chassis Mount	1
2	39852	Light – Kit Dump Body Mount	1

DIRECTIONAL LIGHTS

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	72734	Light – Kit Directional w/o Controls	1

WARNING LIGHTS

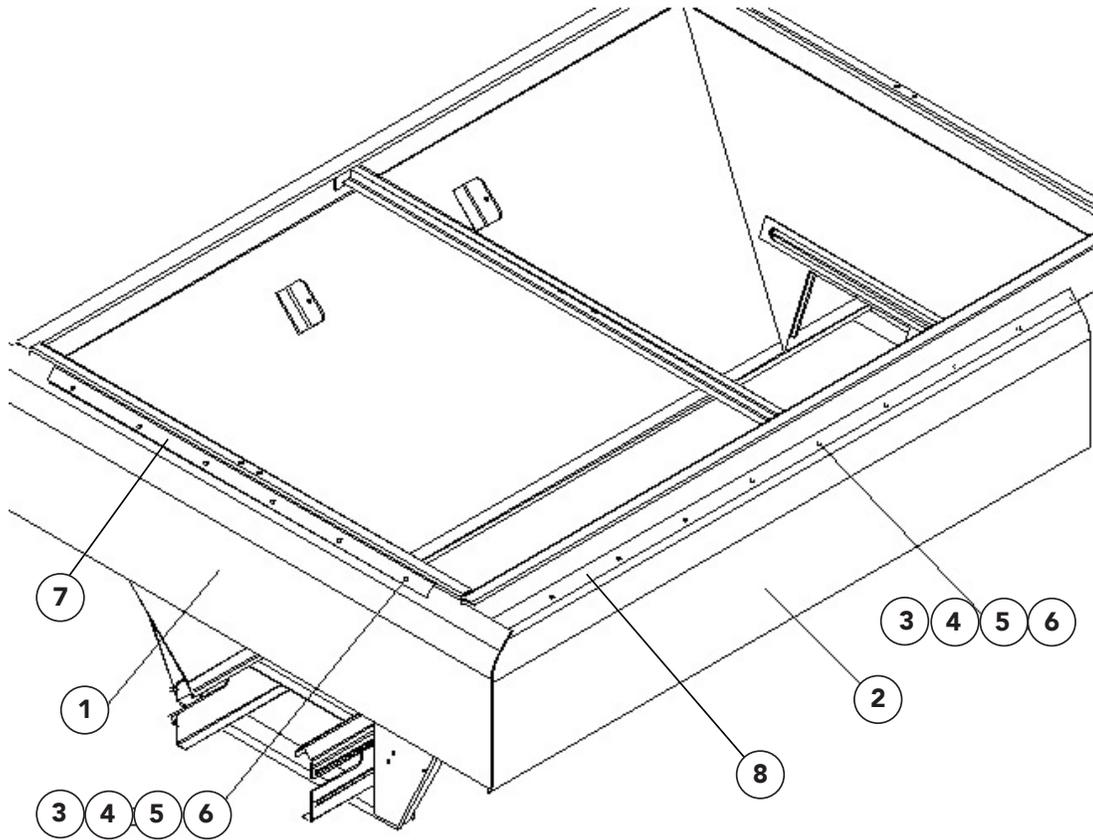
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	29496	Light – Kit 1 Red Flashing	1
2	26421	Light – Kit 2 Red Flashing	1
3	29494	Light – Kit 1 Amber Flashing	1
4	26422	Light – Kit 2 Amber Flashing	1

FLOOD LIGHTS

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	21606	Light – Kit 1 Flood	1
2	21605	Light – Kit 2 Flood	1

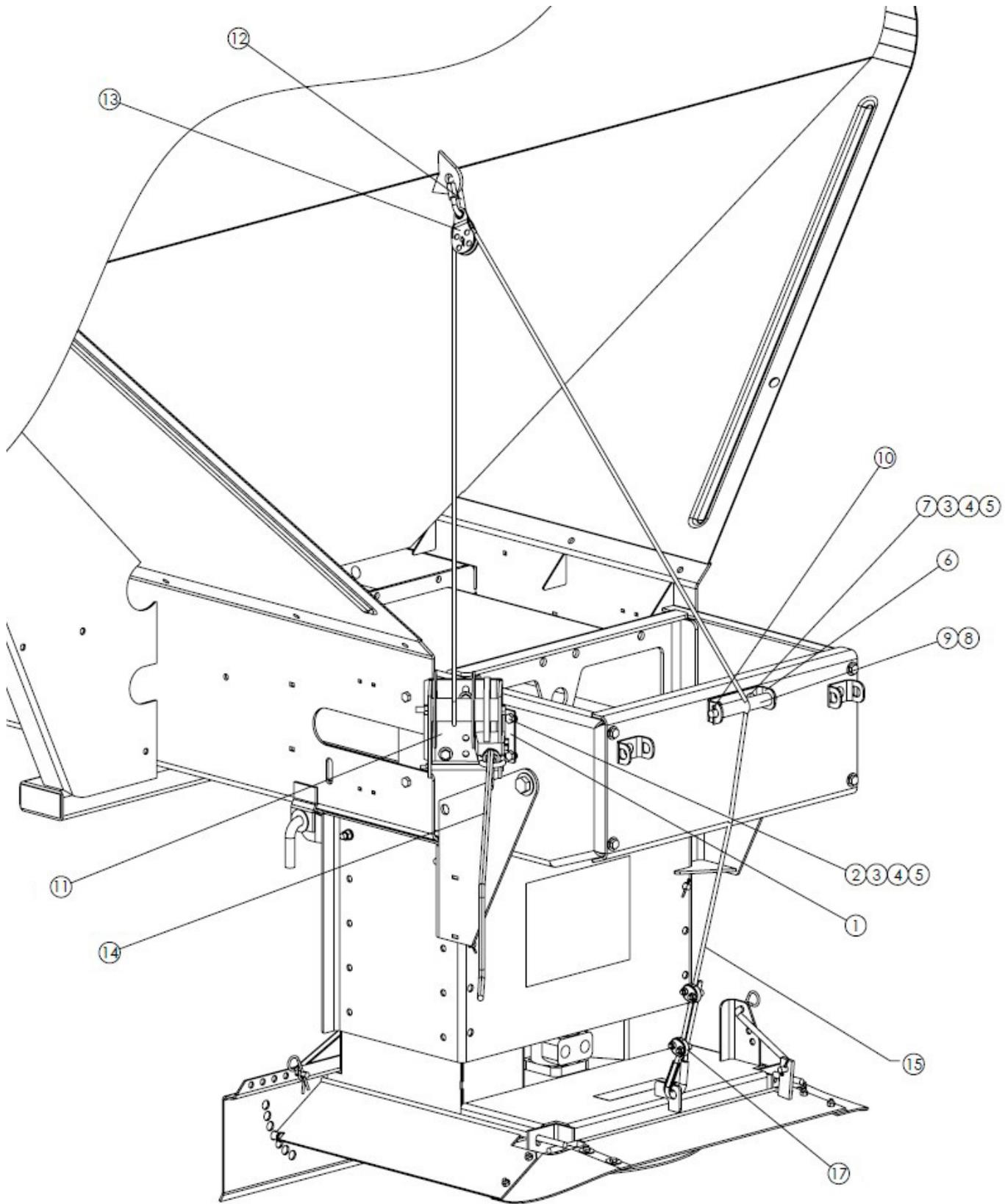
Install lights and reflective devices to conform to FMVSS-108 and state requirements.

Skirting



ITEM	PART NO.	DESCRIPTION	QTY
1	84191	SKIRT – FRONT	1
2	84203	SKIRT – SIDE 10' UNIT	2
-	84205	SKIRT – SIDE 12' UNIT	2
-	84206	SKIRTING - SIDE 13' UNIT	2
-	84207	SKIRT – SIDE 14' UNIT	2
3	36395	CAPSCREW - .25-20NC X 1 SS	AR
4	36412	NUT - HEX .25-20NC SS	AR
5	36423	WASHER - FLAT .25 SS	AR
6	36418	WASHER - LOCK .25 SS	AR
7	77622	BAR - SKIRT FRONT 304	1
8	77628	BAR - SKIRT 107 304 10' UNIT	2
-	77632	BAR - SKIRT 131 304 12' UNIT	2
-	77634	BAR - SKIRT 143 304 13' UNIT-	2
-	77630	BAR - SKIRT 119 304 14' UNIT	2
-	87863	BAR - SKIRT EXT 36 304 14' UNIT	2



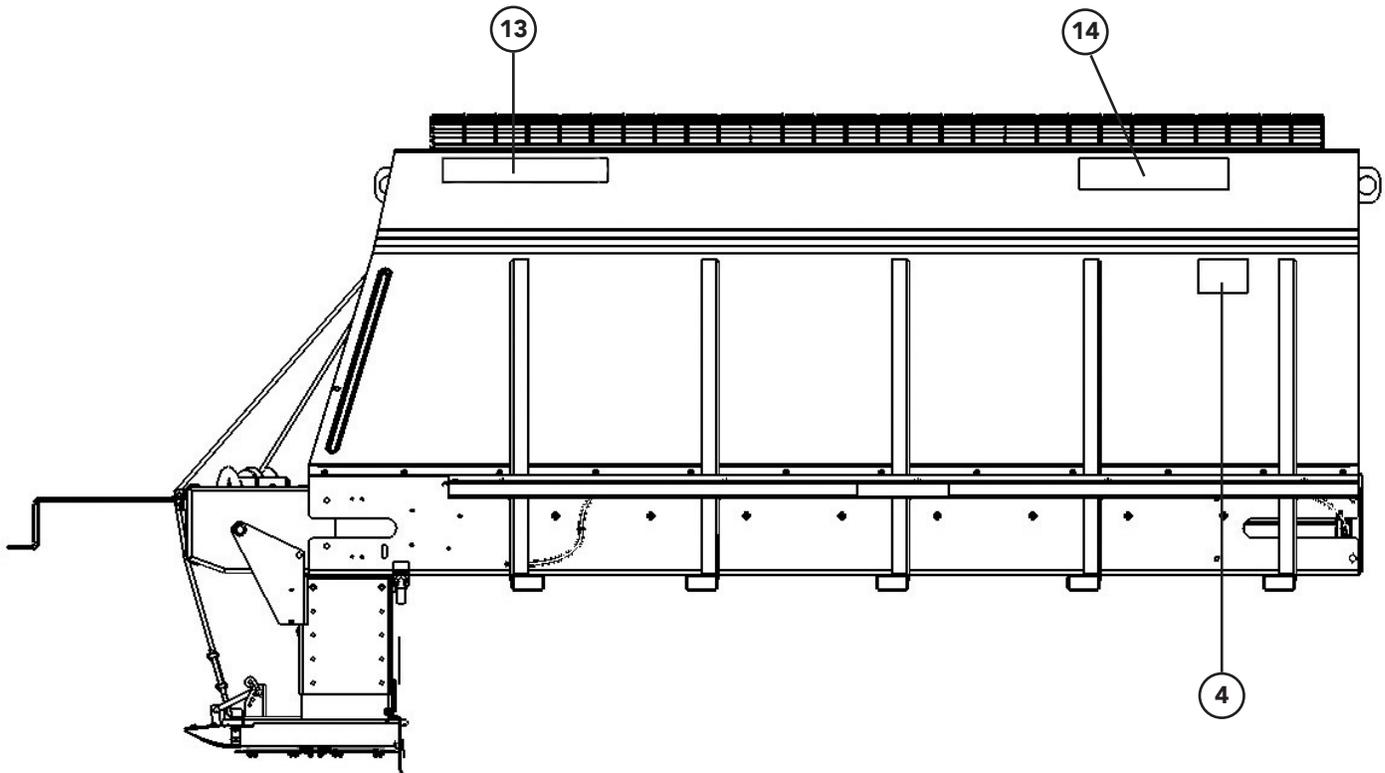
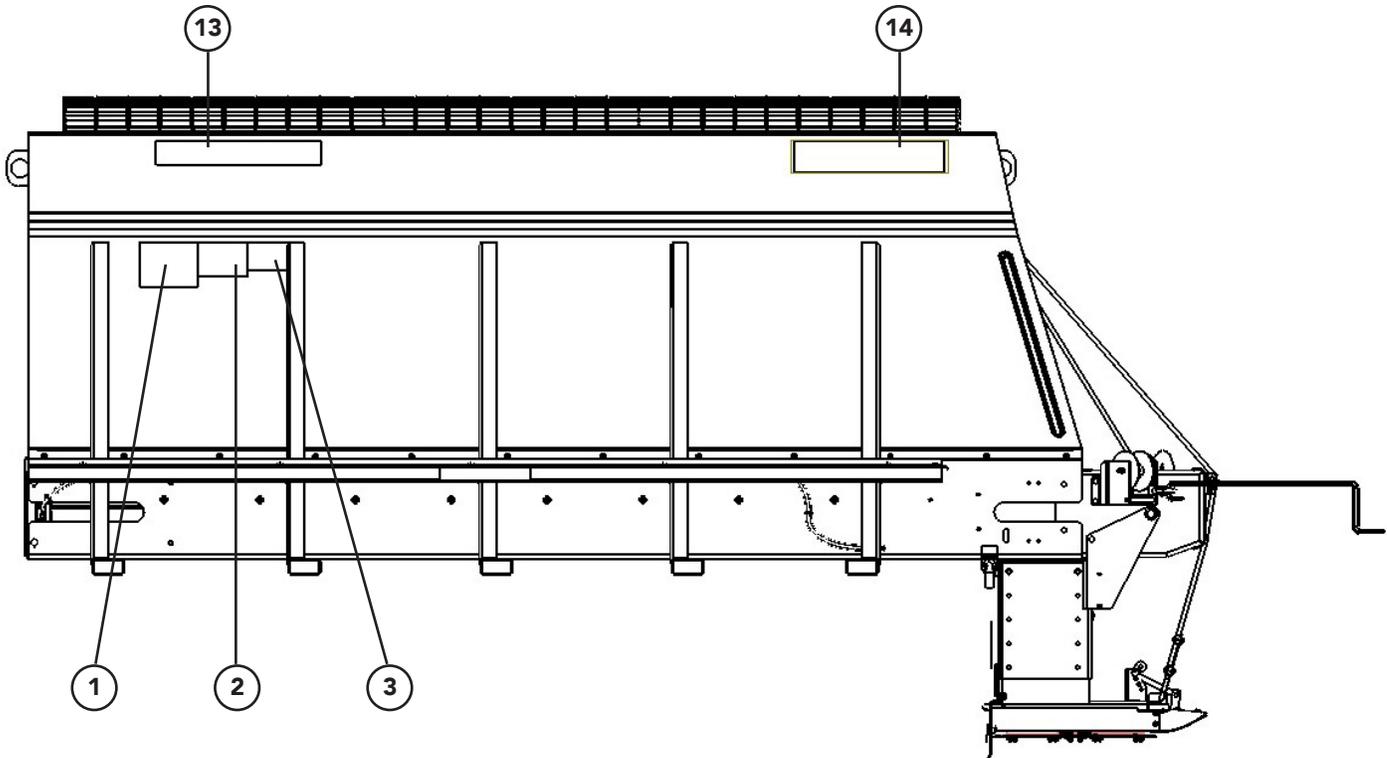


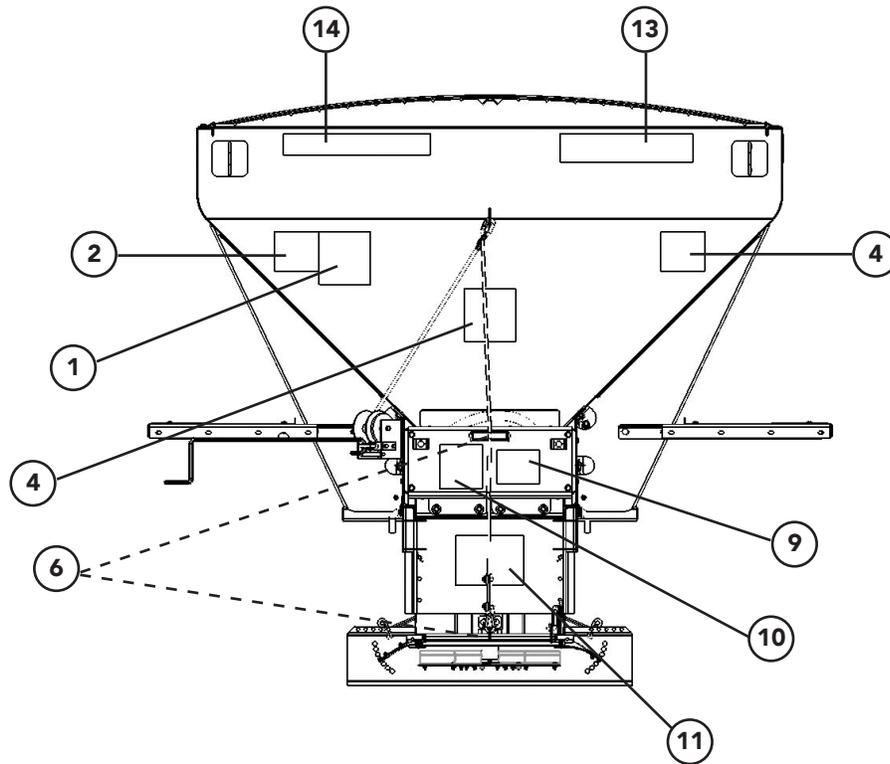
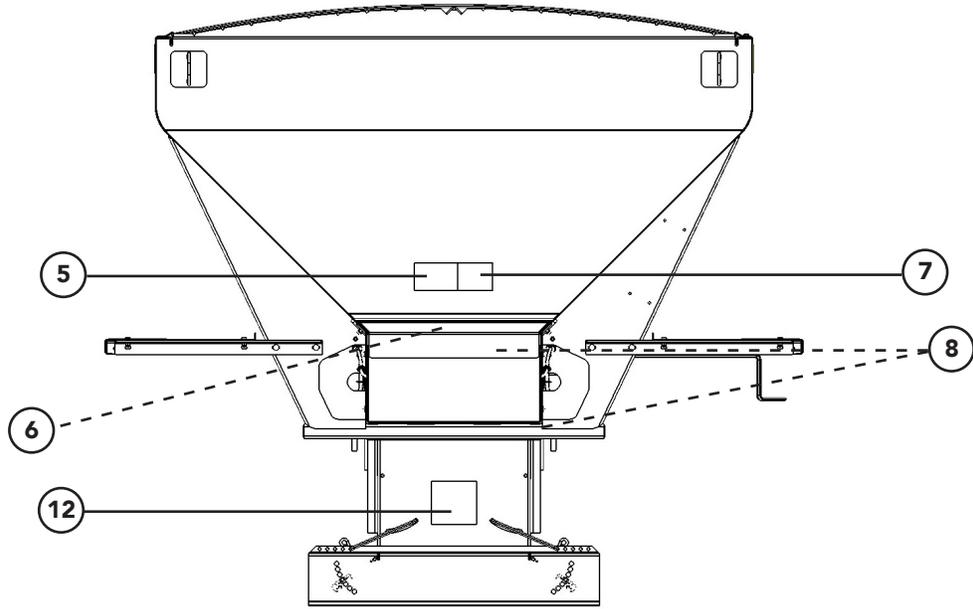
Winch

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	319013	BRACKET - WINCH 304	1
2	36398	CAPSCREW - .375-16NC X 1 SS	7
3	36425	WASHER - FLAT .375 SS	9
4	36420	WASHER - LOCK .375 SS	9
5	36414	NUT - HEX .375-16NC SS	9
6	319014	BRACKET - 304	1
7	36408	BOLT - CARRIAGE .375-16NC X 1	2
8	319015	ROUND - 304	1
9	319016	PIPE - SCH80 .5 X 4.625 304	1
10	36427	PIN - COTTER .125 X 1 SS	2
11	88269	WINCH - WORM GEAR LOOP DRIVE	1
12	319038	LINK - QUICK .313 SS	1
13	319017	PULLEY - .25 X 1.75 OD SS	1
14	88270	HANDLE - WINCH SHEPHERDS HOOK	1
15	319039	CABLE - WIRE ROPE .25 7 X 7 SS	1
16	*311082	COMPOUND - ANTISEIZE HEAVY	0
17	319037	CLAMP - .25 THIMBLE SS	1

* Not Shown







Decals Cont.

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	150034	DECAL - CAUTION OPER & MAINT	2
2	55997	DECAL - DANGER MOVING PART	4
3	321	DECAL - CAUTION HAZARD MATL	1
4	39138	DECAL - WARNING HIGH PRESSURE	1
5	55631	DECAL - WARNING MOVING PART	1
6	39017	DECAL - NO STEP	2
7	308194	DECAL - DANGER CRUSHING HAZARD	1
8	55630	DECAL - WARNING FALLING HAZARD	1
9	308191	DECAL - GUARD IS MISSING	2
10	55241	DECAL - DANGER PINCH POINT	1
11	368	DECAL - DANGER FLYING MATERIAL HAZARD	1
12	71807	DECAL - WARNING FALLING SPINNER HAZARD	1
13	315810	DECAL - HIWAY 3 BLACK	3
14	318227	DECAL - DECOR E2020A2	3

