



Owner's Manual

AlfaTed
AT110TH



MADE IN THE USA 

Read, Understand, and Follow the manual. This manual provides information and procedures to safely operate and maintain the AlfaTed.



CONTENTS

1. INTRODUCTION	4	8. MAINTENANCE	23
1.1Welcome	4	8.1Maintenance Safety.....	23
1.2Description and Intended Use	4	8.2Welding Repairs	24
1.3Safe Operation	4	8.3Lubrication.....	24
1.4Intended Usage	4	8.4... Mechanical Maintenance	25
1.5Operator Orientation.....	4	8.4.1 Replacing Motor Chain	25
1.6Specifications	4	8.4.2 Replacing Eccentric Locking	
1.7Data Plate Location	5	Bearing.....	26
1.8Owner/Operator Manual Storage	5	8.5Replacing Rake Teeth	27
1.9Product Improvements	5	8.6Bolt Torque Requirements.....	27
1.10 ..Disposal of Equipment at End of Useful Life ...	5	8.7Service Record	28
1.11 ..Unanswered Questions	5		
2. SAFETY	6	9. TROUBLESHOOTING	29
2.1General.....	6	10. PARTS.....	30
2.2Safety Alert Symbol.....	6	10.1 ..Ordering Parts	30
2.3Safety Icons Nomenclature	7	10.2 ..Contact Information	30
2.3.1.. Prohibited Actions	7	10.3 ..Decals	30
2.3.2.. Hazard Avoidance	7	10.4 ..Frame Assembly Parts Detail.....	31
2.4General Safety Instruction.....	8	10.5 ..Hub Assembly Parts Detail.....	32
2.5Hydraulic Safety	9	10.6 ..Hitch Assembly Parts Detail	33
2.6Transporting Safety	9	10.7 ..Cam Assembly Parts Detail.....	34
2.7Operating Safety	10	10.8 ..Cam Linkage Parts Detail.....	35
2.8Storage Safety.....	10	10.9 ..Cam Linkage 2 Parts Detail.....	36
2.9Maintenance Safety.....	10	10.10 Drive Sprocket Parts Detail	37
2.10 ..Safety Signs	10	10.11 Bat Assembly Parts Detail	38
2.11 ..Federal Guidelines	11	10.12 Motor Circuit Parts Detail	39
2.12 ..Sign-Off Form	12	10.13 Flow Divider - Life Circuit Parts Detail	40
3. SAFETY SIGNS AND LABELS	13	10.14 Lighting Parts Detail	41
3.1General Information.....	13		
3.2How to Install Replacement Safety Signs	13		
3.3Safety Sign Locations.....	14		
3.4AlfaTed Safety Signs	15		
4. TERMINOLOGY	16		
5. OPERATION	17		
5.1OSHA Training Requirements	17		
5.2Operation Safety	17		
5.3Pre-Operation Checklist	17		
5.4Attaching to Tractor	18		
5.5Height Adjustment	18		
5.6Cam Adjustment.....	19		
5.7Speed Adjustment	19		
5.8Detaching From Tractor	20		
6. TRANSPORTING	21		
6.1Transporting Safety (Road).....	21		
6.2Transporting Procedure.....	21		
7. STORAGE.....	22		
7.1Storage Safety.....	22		
7.2Placing In Storage.....	22		
7.3Removing From Storage	22		

1. Introduction

1.1 Welcome

Congratulations on your choice of a Norden Mfg AlfaTed. This equipment has been designed for the aeration of Alfalfa in a windrow.

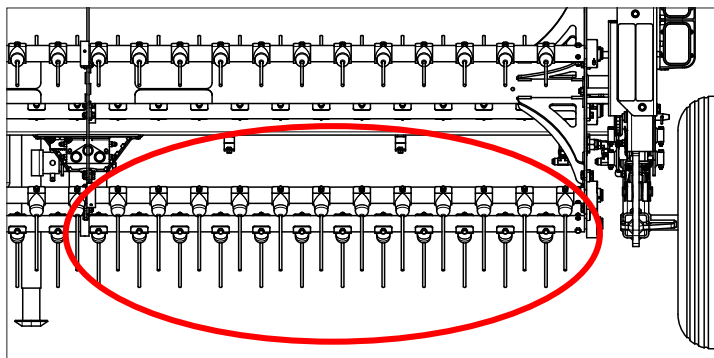


Many features incorporated into this AlfaTed are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the AlfaTed safely and how to set it to provide maximum efficiency.

By following the operating and maintenance instructions in this manual, your Norden Mfg LLC AlfaTed will provide many years of trouble-free service.

1.2 Description and Intended Use

Focusing on alfalfa, the AlfaTed is designed to gently fluff hay, minimizing leaf damage. Offset tines maximizes hay lifting to accelerate drying, and preserving quality.



1.3 Safe Operation

Safe, efficient, and trouble-free operation of your AlfaTed requires that you, and anyone else who will be using or maintaining the unit, read and understand the information contained within this manual and other related OEM equipment manuals.

Use this manual for frequent reference and to pass on to new operators or owners.

⚠ WARNING



Read, Understand, and Follow

To prevent personal injury or even death, be sure you read, understand, and follow all of the instructions in this manual and other related OEM equipment manuals! The AlfaTed, if not used and maintained properly, can be dangerous to users unfamiliar with its operation. Do not allow operating, maintaining, adjusting, or cleaning of this AlfaTed until the user has read this manual and has developed a thorough understanding of the safety precautions and functions of the unit.

This AlfaTed maintained or operated improperly or by untrained personnel can be dangerous; exposing the user and/or bystanders to possible serious injury or death.

1.4 Intended Usage

Do not use this AlfaTed for any other purpose than its intended use of fluffing hay.

1.5 Operator Orientation

The directions left, right, front, and rear, as mentioned throughout this manual, are as seen from the tractor operator's seat and facing in the direction of travel.

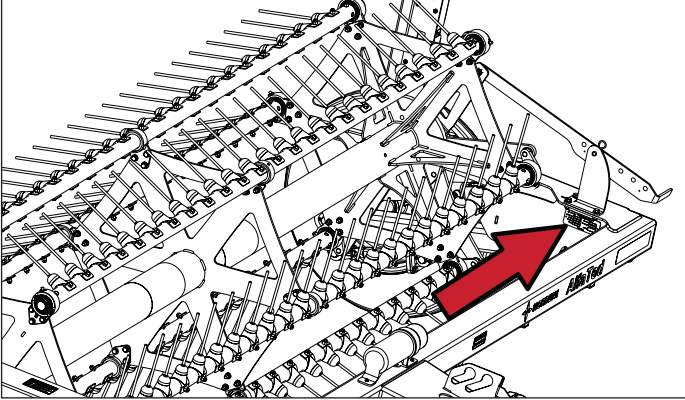
NOTE: The specific term "AlfaTed" will be referred to simply as "unit" throughout the rest of this manual.

1.6 Specifications

Overall Approximate Height	55"
Overall Approximate Width	157"
Overall Approximate Length	100"
Overall Approximate Weight	1250 lb
Tires	9.5L-15SL

1.7 Data Plate Location

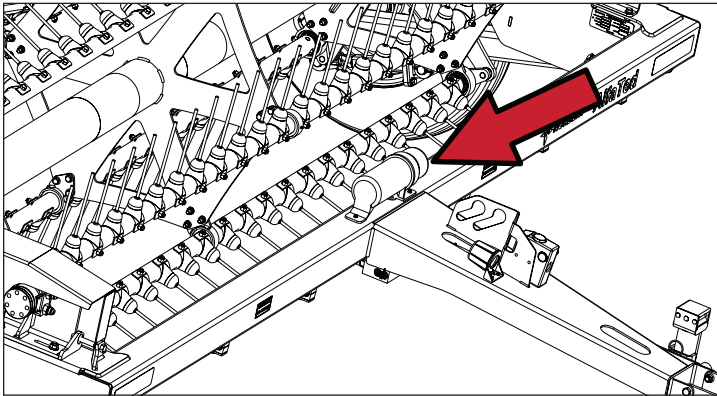
The unit's serial number, or Data Plate is located inside the left front panel. Please use this number when requesting service, seeking information, or ordering parts. Record the serial number in the space provided for easy reference when contacting Norden Mfg LLC with questions.



Serial Number _____

1.8 Owner/Operator Manual Storage

Store the Owner/Operator manual and other operating materials in the document storage tube located on the cross member near the tongue.



1.9 Product Improvements

Because Norden Mfg LLC maintains an ongoing program of product improvement, we reserve the right to make improvements in design or changes in specifications without incurring any obligation to install them on units previously sold.

The information, specifications, and illustrations in this manual are based on the information that was available at the time this material was written and can change at any time.

1.10 Disposal of Equipment at End of Useful Life

The Norden Mfg LLC AlfaTed has been designed for the specific purpose of fluffing hay. When this unit is no longer capable of doing its designed purpose, it should be dismantled and scrapped. Do not use any materials or components from this unit for any other purpose.

1.11 Unanswered Questions

If you have any questions not answered in this manual, require additional copies, or the manual is damaged, please contact your dealer or:

Norden Mfg LLC
4210 Kinsman Rd. NW
North Bloomfield, OH 44450

Phone: 877-296-5851
Fax: 440-693-4336

E-mail: parts@nordenmfg.com

The manual is also available for download at:
www.nordenmfg.com

2. Safety

2.1 General

Most work related accidents are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. As you operate and maintain the unit you must be alert to potential hazards. You should also have the necessary training, skills, and tools to perform any assembly procedure.

Improper operation and/or maintenance of this unit could cause a dangerous situation that results in injury or death.

Do not use this unit until you read and understand the information contained in this manual. Do not use the unit for anything other than its intended purpose.



  **Do not use the unit until you read and understand the information contained in this manual.**

Safety precautions and warnings are provided in this manual and on the unit. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

Norden Mfg LLC cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the product are, therefore, not all-inclusive. If a method of operation not specifically recommended by us is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the unit will not be damaged or be made unsafe by the methods that you choose.

2.2 Safety Alert Symbol



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains WARNINGS, CAUTIONS, IMPORTANT NOTICES, and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury, or death. The following key words call the readers attention to potential hazards.

Hazards are identified by the “Safety Alert Symbol” and followed by a signal word such as “WARNING”, or “CAUTION”.



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



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



Indicates that equipment or property damage can result if instructions are not followed.



Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

NOTE: Contains additional information important to a procedure.

2.3 Safety Icons Nomenclature

This manual and the equipment has numerous safety icons. These safety icons provide important operating instructions which alert you to potential personal injury hazards.

2.3.1 Prohibited Actions

-  Do not alter or modify
-  Do not weld
-  No riders
-  No children
-  No alcohol
-  No drugs

Personal Protection/Important Information

-  Read the manual
-  Maintenance procedure
-  Eye protection
-  Hearing protection
-  Hand protection
-  Foot protection
-  First aid kit
-  Fire extinguisher

-  Inspect equipment
-  Use proper tools
-  Place in neutral
-  Weight rating
-  Use OEM parts
-  Use ROPS and seat belt
-  Maintain safety signs
-  Place in park
-  Remove key
-  Stop engine
-  Stop rotation
-  Visibility
-  Check/Maintain fluid levels
-  Set parking brake

2.3.2 Hazard Avoidance

-  Crushing hazard
-  Crushing hazard
-  Slipping hazard
-  Tripping hazard
-  Entanglement hazard
-  Hot surface

-  Fire hazard
-  Safety alert symbol
-  Zero pressure
-  Sharp object hazard
-  Defective or broken part
-  Maintain safe Distance
-  Pinch point hazard
-  Pinch point hazard
-  Pinch point hazard
-  Overturn hazard
-  Tip over hazard
-  Hose damage hazard
-  Explosive separation hazard
-  High pressure fluid hazard
-  Falling hazard
-  Speed Limit

2.4 General Safety Instruction

The owner/operator is responsible for the SAFE use and maintenance of the unit. Make sure anyone who is operating, maintaining, or working around the unit is familiar with the operating and maintenance procedures and related SAFETY information contained in this manual.

In addition to the design features of the unit, including safety signs, accident prevention is dependent upon the awareness, concern, prudence, and proper training of the people involved in the operation, maintenance, and storage of the unit.

These general safety instructions apply to the overall use and maintenance of the unit.

In addition to this safety section, refer also to safety messages and instructions in each of the appropriate sections of this manual.

More specific instructions on safety are found in the operation, transporting, maintenance, and storage sections of this manual. Refer to these sections before performing any of these tasks.

WARNING

Failure to comply with the following safety instructions could result in serious injury and possibly even death if they are not understood and followed.



Provide User with Literature

Norden Mfg LLC AlfaTed owners must provide operator instructions to anyone using the unit before use, and at least annually thereafter.



Stay Clear

Clear the area of people, especially small children, before using the unit. Under no circumstances should young children be allowed to work with or around the unit.



Impaired User Hazard

Do not attempt to assemble, operate, or maintain this unit under the influence of drugs or alcohol. Consult your doctor before using this unit while taking prescription medications.



Fall or Crush Hazard

Do not allow anyone to ride on the tractor or the unit. Falling or crushing hazards could result in severe injuries or death.



No Unauthorized Modifications

Do not modify the unit or safety devices.

Do not weld on the unit. Unauthorized modifications may impair its function and safety. Personal injury or death could result from unauthorized modifications.

If the unit has been altered in any way from the original design, Norden Mfg LLC does not accept any liability for injury or warranty.



Damaged Parts Hazard

Do not use the unit if any parts are damaged. If the unit has a defect, immediately stop using it and remedy the problem before continuing

CAUTION

The following safety instructions are provided to help prevent potential injury. Not following these instructions may lead to injury.

Personal Protection Equipment

When using this unit, wear appropriate personal protective equipment. This list may include, but is not limited to:



- Protective shoes with slip resistant soles
- Protective eye wear
- Protective clothing and gloves
- Hearing protection



Hearing Loss

Prolonged Exposure To Loud Noise May Cause Permanent Hearing Loss!

Working environments with noise-producing equipment can cause partial to permanent hearing loss. We recommend using hearing protection any time noise levels exceed 80 decibels (dB). Noise levels over 85 dB, on a long-term basis, can cause severe hearing loss. Noise levels over 90 dB over a period of time can cause permanent and even total hearing loss.

Hearing loss from loud noise is cumulative over a lifetime without hope of natural recovery.



Crush Hazard

The tractor should be equipped with a Roll Over Protective Structure (ROPS) and a seat belt. A crushing hazard may occur if the driver is ejected from the seat while the tractor is in motion. Fasten the seat belt whenever the tractor is moving.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.



Safety Signs

Replace any missing or hard-to-read safety signs or instructional labels. Use care when washing or cleaning the unit.

Replacement safety sign locations and part numbers are provided in this manual and are available from an authorized dealer parts department or the factory.



First Aid Kit

Have a first aid kit available for use should the need arise and know how to use it.



Fire Extinguisher

Have a fire extinguisher available for use should the need arise and know how to use it.

- Refer to “5.1 OSHA Training Requirements” on page 17 for safety recommendations related to using the unit. All applicable safety recommendations in other sections should also be followed.
- Anyone who will be using and/or maintaining the unit must read, clearly understand, and follow ALL safety, operation, and maintenance information presented in this manual, other related OEM manuals, and the safety signs
- If you do not understand any information in this manual, see your dealer or contact Norden Mfg LLC before proceeding.
- Do not use or allow anyone else to use this unit until all information has been reviewed. Annually review this manual before the season start-up.
- Make periodic reviews of SAFETY and OPERATION of the unit a standard practice. An untrained operator is not qualified to use this unit.

2.5 Hydraulic Safety

⚠ WARNING

Failure to understand and follow these safety instructions could result in serious injury and possibly even death.



High-Pressure Fluid Hazard

Relieve pressure on hydraulic system servicing or disconnecting hoses.

Hydraulic fluid escaping under pressure can

penetrate the skin. Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Without immediate medical treatment, serious infection or toxic reaction can develop if hydraulic fluid penetrates the surface of the skin.



Visual Inspection

Before applying pressure to the system, make sure all components are tight and that the hydraulic lines, hoses, and couplings are not damaged. Replace any worn, cut, abraded, flattened, or crimped hoses.



Personal Protective Equipment

Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to identify and isolate a leak.



Trapped Air Hazard

When installing, replacing, or repairing hydraulic system cylinders or parts, make sure that the entire system is charged and free of air before resuming operations. Failure to bleed the system of all air can result in improper machine operation, causing severe injury.



Explosive Separation Hazard

Do not make any temporary repairs to the hydraulic lines, fittings, or hoses using tape, clamps, or adhesives. The hydraulic system operates under extremely high pressure and temporary repairs may fail suddenly and create a hazardous/dangerous situation.

NOTICE

Make sure components in the hydraulic system are kept clean and in good working condition. The most common reason for hydraulic component failure is contamination of the oil.

- Keep all hydraulic fittings completely clean.
- Repair any fittings, hoses, or other components where leakage is observed.
- Clean up any spilled hydraulic oil.

2.6 Transporting Safety

Refer to “6.1 Transporting Safety (Road)” on page 21 for safety recommendations related to transporting the unit. All applicable safety recommendations in other sections should also be followed.

2.7 Operating Safety

Refer to “5.1 OSHA Training Requirements” on page 17 for safety recommendations related to operation. All applicable safety recommendations in other sections should also be followed.

2.8 Storage Safety

Refer to “7.1 Storage Safety” on page 22 for safety recommendations related to storing the unit. All applicable safety recommendations in other sections should also be followed.

2.9 Maintenance Safety

Refer to “8.1 Maintenance Safety” on page 23 for safety recommendations related to maintaining the unit. All applicable safety recommendations in other sections should also be followed.

2.10 Safety Signs

Refer to “3.3 Safety Sign Locations” on page 14 for safety recommendations related to safety decal location and replacement. All applicable safety recommendations in other sections should also be followed.

2.11 Federal Guidelines

IMPORTANT FEDERAL LAWS AND REGULATIONS CONCERNING EMPLOYERS, EMPLOYEES AND OPERATORS

This section is intended to explain in broad terms the concept and effect of the following federal laws and regulations. It is not intended as a legal interpretation of the laws and should not be considered as such.

U.S. PUBLIC LAW 91-596 (The Williams-Steiger Occupational Safety and Health Act of 1970) OSHA

This Act Seeks:

“ ... to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources ... “

DUTIES

Sec. 5(a) Each Employer -

- (1) shall furnish to each of its employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to its employees.
- (2) shall comply with occupational safety and health standards promulgated under this Act.
 - (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his or her own actions and conduct.

OSHA Regulations

Current OSHA regulations state in part: “At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved.” These will include (but are not limited to) instructions to:

Keep all guards in place when the machine is in operation;

Permit no riders on equipment;

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain equipment.

Make sure no one is within 300 feet of machinery before starting the engine, engaging power, or operating the machine.

EMPLOYEE TRACTOR OPERATING INSTRUCTIONS:

Securely fasten your seat belt if the tractor has a ROPS.

Where possible, avoid operating the tractor near ditches, embankments, and holes.

Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.

Stay off slopes too steep for safe operation.

Watch where you are going, especially at row ends, on roads, and around trees.

Do not permit others to ride.

Operate the tractor smoothly - no jerky turns, starts, or stops.

Hitch only to the draw-bar and hitch points recommended by tractor manufacturers.

When tractor is stopped, set brakes securely and use park lock if available.

Child Labor Under 16 Years Old

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102).

2.12 Sign-Off Form

Norden Mfg LLC follows the general Safety Standards specified by the Farm Equipment Manufacturers Association (F.E.M.A.), the American National Standards Institute (ANSI) and the American Society of Agricultural and Biological Engineers (ASABE). Anyone who will be using and/or maintaining the unit must read and clearly understand ALL safety, operation and maintenance information presented in this manual.

Do not use or allow anyone else to use this unit until all information has been reviewed. Annually review this manual before the season start-up.

Make periodic reviews of SAFETY and OPERATION of the unit a standard practice. An untrained operator is not qualified to use this unit.

This sign-off sheet is provided for your records to show that all personnel who will be working with the equipment have read and understand the information in this Owner's Manual and have been instructed in the operation of the equipment.

[illegible]

3. SAFETY SIGNS AND LABELS

3.1 General Information

The types of safety signs (hazard labels) and instructional labels, along with their locations on the equipment, are shown in the following illustrations. Good safety practices require that you familiarize yourself with the various safety signs, the type of warning, and the area or particular operation related to that area that requires your SAFETY AWARENESS.



Think SAFETY!

Work SAFELY!

Pay close attention to the safety signs and instructional labels attached to the tractor and the unit. Duplicate safety signs, which are attached to the unit, can also be found in this section. If the unit is missing a label or one is unreadable, replace the label before using the unit.

**SAFETY
INSTRUCTIONS**



Safety Signs and Instructional Labels

1. **Keep safety signs or instructional labels clean and legible at all times. Use a clean, damp cloth to clean safety decals.**
2. **Replace any missing or hard-to-read safety signs or instructional labels.**
3. **Use care when washing or cleaning the equipment not to remove or damage the labels. When using a pressure washer to clean the unit, avoid spraying too close to decals; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.**
4. **Locations for the labels and replacement part numbers are shown in this section.**
5. **Replacement parts must have replacement labels attached during installation and/or before the unit is used.**
6. **Labels are available from your authorized dealer or from Norden Mfg LLC at no charge.**

3.2 How to Install Replacement Safety Signs

Clean and dry the installation area.

NOTE: Do not install the signs if the temperature is below 50°F.

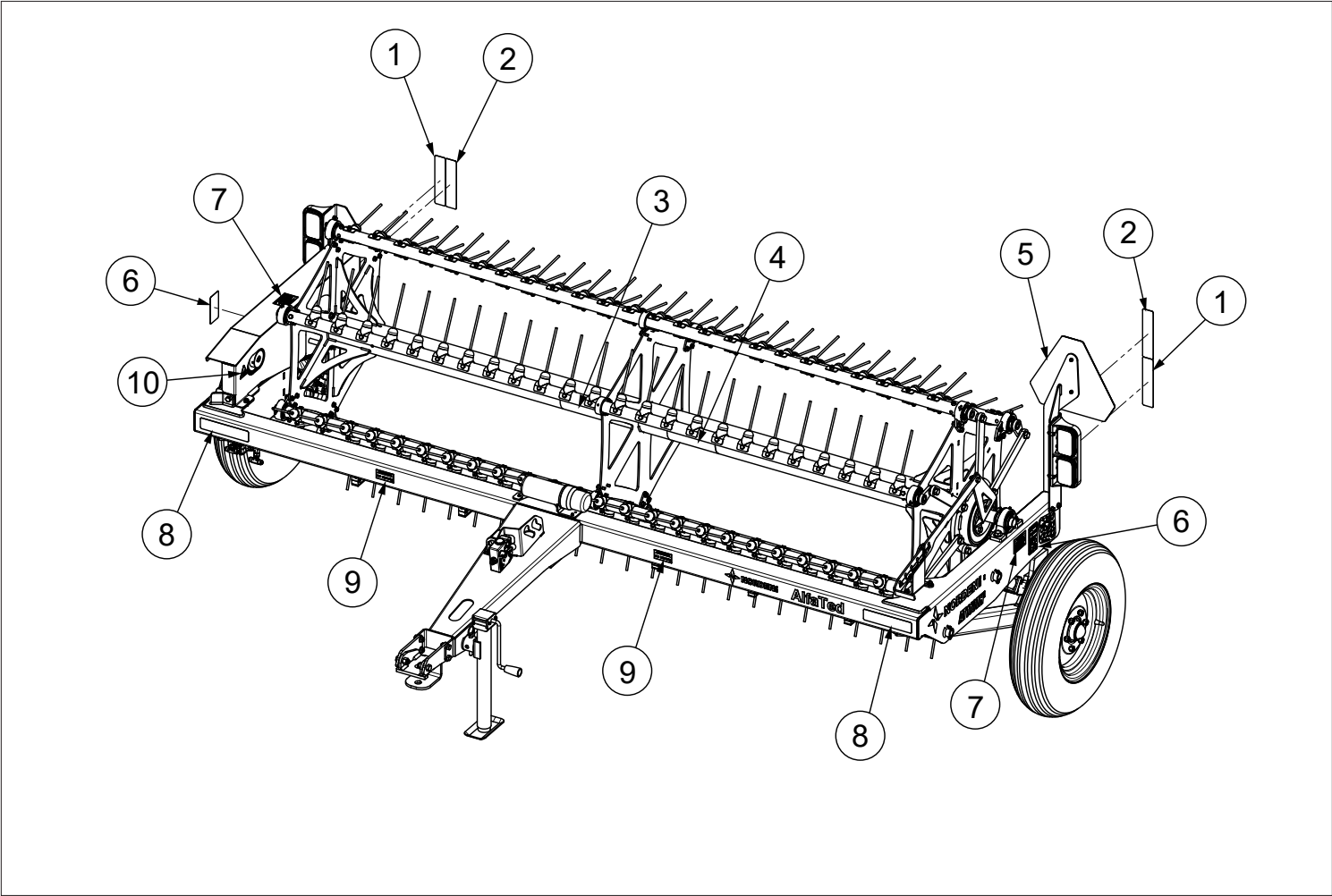
Determine the exact position before you remove the backing paper.

Remove the backing paper.

Align the sign over the specified area and carefully press the sign to the part/frame.

NOTE: Small air pockets can be pierced with a pin and smoothed out using the piece of backing paper or card.

3.3 Safety Sign Locations



Item	Type	Part Number	Description	Qty.
1	DANGER	1007990	Red Reflector	2
2	DANGER	1008000	Fluorescent Orange Reflector	2
3	DANGER	1034080	Reflective Tape, Red 9" X 15.6"	1
4	DANGER	1034090	Reflective Tape, Orange 9" x 15.6"	1
5	WARNING	1003750	SMV Triangle	1
6	WARNING	1036540	Warning Shut Off Reel Power	2
7	CAUTION	1030140	Caution Pinch Points	2
8	DANGER	1007980	Yellow Reflector	2
9	WARNING	1028630	Warning No Riders	2
10	CAUTION	1036080	Caution Chain Pinch	1

3.4 AlfaTed Safety Signs

1. DANGER—1007790 Red Reflector



2. DANGER—1008000 Fluorescent Orange Reflector



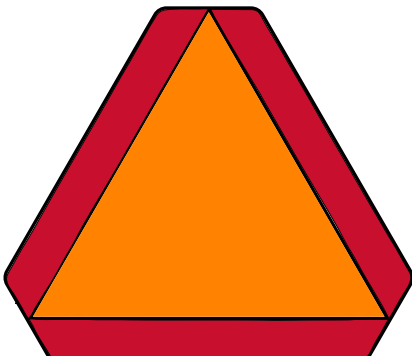
3. DANGER—1034080 Reflective Tape, Red
9" X 15.6"



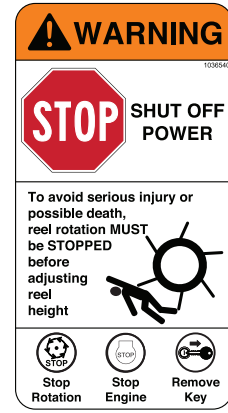
4. DANGER—1034090 Reflective Tape, Orange
9" X 15.6"



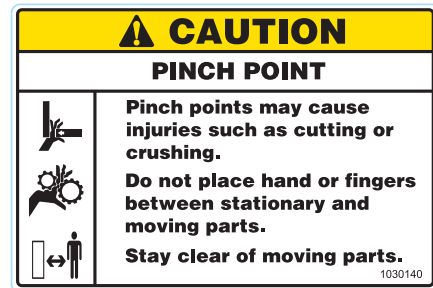
5. WARNING—1003750 SMV Triangle



6. WARNING— 1036540 Decal - Warning Shut Off Reel Power



7. CAUTION—1030140 Decal - Caution Pinch Point



8. DANGER— 1007980 Decal - Yellow Reflector



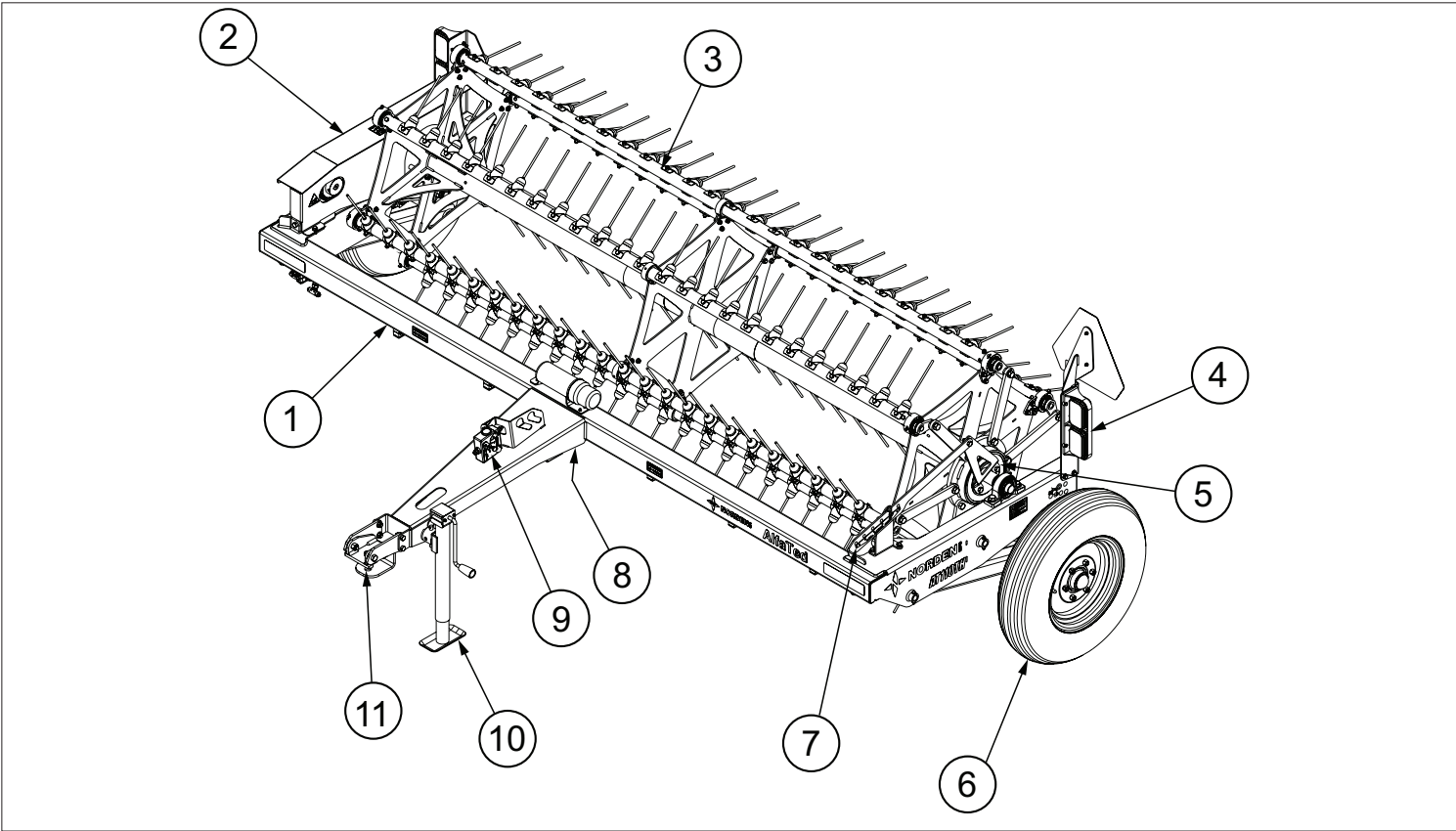
9. WARNING—1028630 Decal - Warning No Riders



10. CAUTION— 1036080 Decal - Caution Chain Shield Pinch



4. Terminology



Item	Description
1	Frame
2	Chain Shield
3	Reel Assembly
4	Tail Lights
5	Cam Assembly
6	Rear Tires, 9.5L-15SL
7	Cam Adjustment
8	Flow Divider
9	Flow Control
10	Jack
11	Tongue

5. Operation

5.1 OSHA Training Requirements

The following training requirements have been taken from Title 29, Code of Federal Regulations Part 1928.57 (a) (6). www.osha.gov.

Operator instructions. At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee who operates an agricultural tractor and implements in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.

WARNING

Failure to comply with the following safety instructions could result in serious injury and possibly even death if they are not understood and followed.



Roll Away Hazard

Before leaving the tractor seat, make sure the engine

is stopped, the transmission is placed in park, the key is removed, and the parking brake is set.



The weight of the tractor, plus the unit, if it rolls onto a person, could cause serious crushing injury or death.



Crush Hazard

The tractor should be equipped with a Roll Over Protective Structure (ROPS)

and a seat belt. A crushing hazard could occur if the driver is ejected from the seat while the tractor is in motion. Fasten the seat belt whenever the tractor is moving.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.



Train Unfamiliar Users

It is the unit's owner's responsibility to make sure any person using the unit, especially if it is loaned or rented, has been thoroughly trained on its proper and safe use.

Be certain only physically-able persons will use the unit.

Users who have not read and understood all operating and safety instructions are not qualified to use the unit.

If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.

Never allow children to operate equipment.

CAUTION

The following safety instructions are provided to help prevent potential injury. Not following these instructions may lead to injury.

5.2 Operation Safety

WARNING

Not following these safety instructions could result in death or serious injury.



Roll Away Hazard

Never leave equipment running unattended. When

halting operation, even for a short time, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine, and remove the ignition key.



Fall Hazard

Do not climb or stand on the unit for any reason. Falling can result in serious injury or death.

5.3 Pre-Operation Checklist

Before each use of the unit, the following areas should be checked.

Checklist Before Each Use	
✓	Task
	Make sure the reel height is adjusted properly. Refer to "5.5 Height Adjustment" on page 18.
	Make sure the tires are inflated properly and the lug nuts are tight. Manufacturer recommends 15 PSI.
	Check all hydraulic hoses and connections for damage or evidence of leaks
	Visually inspect the unit for any loose bolts, worn parts or cracked welds, and make necessary repairs.
	Make sure all retainer clips and pins are in place.
	Make sure the operating area is clear, especially of children and animals.

5.4 Attaching to Tractor

WARNING

Failure to comply with the following safety instructions could result in serious injury and possibly even death if they are not understood and followed.

Refer to “2.5 Hydraulic Safety” on page 9 for instructions and recommended care of the hydraulic system on your unit.

Crush Hazard



Do not allow anyone to stand between the hitch and the unit during hook-up operations. Unexpected separation of the unit from the tractor could cause death or serious injury. Use only an OEM high strength draw-bar pin. Do not use a homemade or shop made pin.

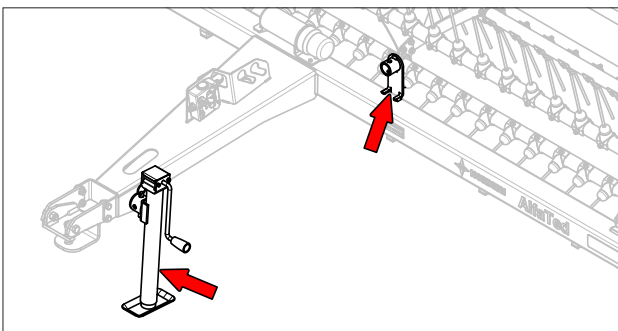
Use caution when connecting the unit to the tractor. The unit should be securely resting at ground. Keep hands and feet clear of pinch points between the tractor draw-bar and unit hitch.

1. Use the jack to adjust the hitch to the height of the tractor draw-bar.

Board the tractor and start the engine. Back the tractor up to the unit hitch clevis until the holes in the draw-bar and clevis are aligned.

2. Turn off the tractor engine and dismount.
3. Insert a 3/4" or 1" hitch pin with retaining clip through the clevis and draw-bar holes and install retaining clip. Do not use a homemade or shop made pin.
4. Retract the jack, remove the locking pin and move jack to the jack mount on the front frame and secure with the locking pin.

NOTE: Moving the jack to the mount on the frame while in use will prevent the machine's tires from hitting the jack.

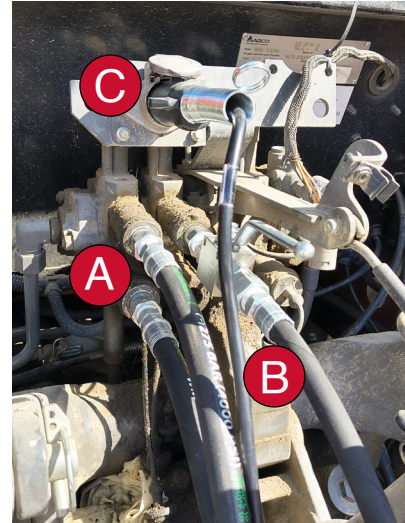


5. Inspect all the hydraulic hoses to ensure they are in good condition. Make sure the fittings are clean, and attach 1/2" hoses to the tractor to power the reel motor of the unit. These should be in the same port side as each other. It is not possible to cause the reel to rotate backwards.

NOTE: It is preferred, when possible, the reel hoses be attached to a locking control handle to ensure constant hydraulic flow. **A**

6. Attach 3/8" hose to the tractor to control lifting the unit. Make sure the hoses are adequately supported so they cannot come in contact with other parts or the ground, then open the valve. **B**

NOTE: It is preferred, when possible, the lifting hoses take priority (often to the left) over the motor drive.



7. Remove Light Cable from its holder and attach to the tractor. **C**



5.5 Height Adjustment

Adjust the height of the unit to achieve proper ground clearance. The tines should be slightly above ground as to not kick up earth, which not only wears the tines, but contaminates the hay with debris, but low enough to the ground to lift the hay. A 1-2" clearance is

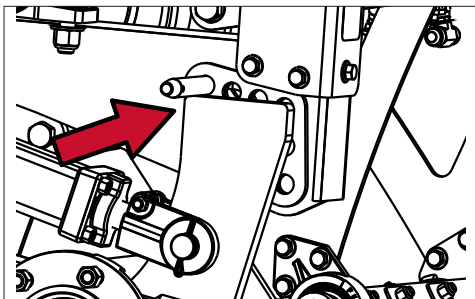
recommended.

⚠ WARNING



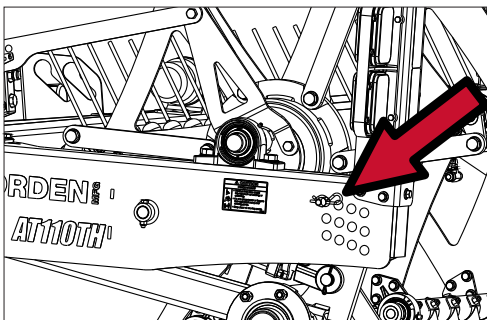
To avoid serious injury or possible death, reel rotation must be stopped before adjusting reel height. Turn off machine and remove key.

- The Pin stops the Height Adjustment plate on each axle weldment from going any further.

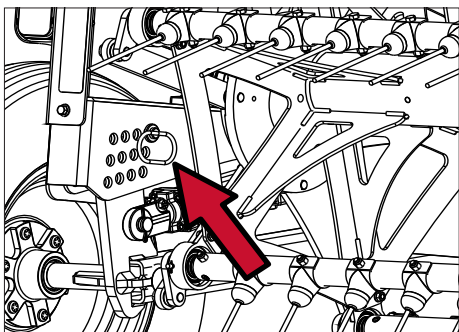


NOTE: parts are hidden for clarity

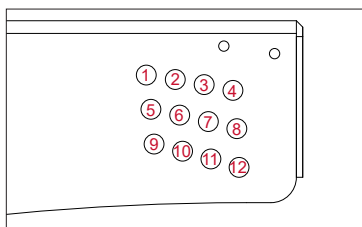
- Remove the pin and place into desired hole, then replace the pin. Be sure to use the same hole on each side to ensure the reel is level.



NOTE: parts are hidden for clarity



- Moving the pin from one hole to the next allows 1/4" of movement - **1** being the lowest reel setting and **12** being the highest reel setting.



5.6 Cam Adjustment

The Cam Adjuster sets the angle of the teeth relative to the ground, therefore affecting the aggressiveness of the fluffing action.

Set the Cam Adjuster according to the current needs. 'More' action (4-6) causes the teeth to carry the hay longer causing it to be lifted higher. 'Less' action (1-3) causes the teeth to drop the hay sooner for a more gentle fluff. Suggested Factory setting is 3, adjust as needed.



5.7 Speed Adjustment

The reel should be run at 10-15% faster than the ground speed. Adjust the Flow Control valve accordingly. The higher the number, the more oil is allowing to flow to the motor. Suggested Factory setting for start up is #4 (4 gallons per minute).



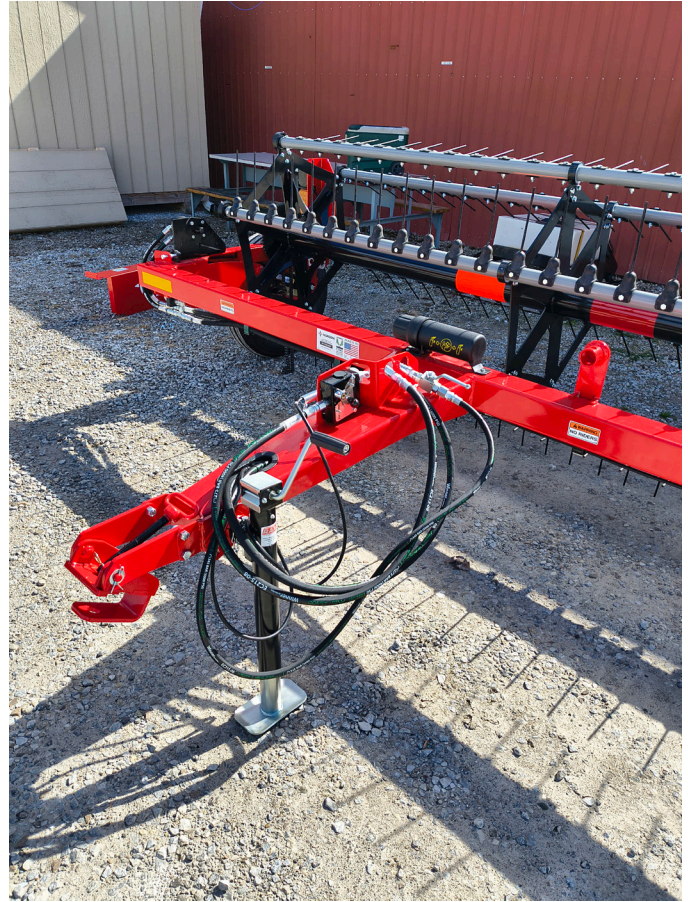
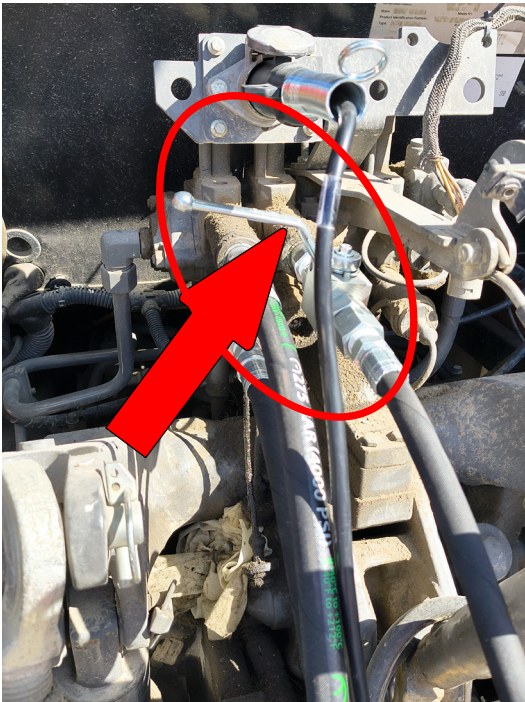
5.8 Detaching From Tractor

WARNING

 Be sure all hydraulic pressure is relieved before disconnecting hydraulic lines or fittings between the unit and the tractor hydraulic system.

Escaping hydraulic fluid under pressure, even a pinhole size leak, can penetrate body tissue, causing serious injury and possible death. If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

1. Lower AlfaTed with hydraulic controls.
2. Close the valve on the lift hose.



3. Park the tractor, place the transmission in park or neutral, and apply the parking brake. Shut down the engine, remove the key, and move the cylinder operating lever in both directions to relieve hydraulic pressure.
4. Remove the jack from the main frame and secure it to the hitch by fully inserting the locking pin through the jack and the hitch bracket. Use the jack to raise the unit hitch to the height needed to disconnect the clevis from the draw-bar.
5. Disconnect the hydraulic hoses from the tractor. Secure the hoses to the unit frame off the ground.
6. Remove the Lighting Cable from the Tractor and place it in the holder on the unit frame.
7. Remove the hitch pin.

6. Transporting

6.1 Transporting Safety (Road)

WARNING

Failure to understand and follow these safety instructions could result in serious injury and possibly even death.

 **Operating the Tractor**
Before attaching the unit to the tractor, be familiar with its controls and how to stop it quickly in the event of an emergency. Read and understand this manual and the one provided with your tractor before transporting the unit.

 **Fall and Crush Hazard**
Do not allow riders on the unit or tractor.

 **Maximum Transporting Speed**
Do not exceed 20 MPH when transporting the unit. Slow down for corners and rough terrain.

 **Visibility**
Clean reflectors, SMV or SIS sign, and tractor tail lights before towing. Make sure all the lights and reflectors required by highway and transport authorities are in place and can be seen clearly by all overtaking and oncoming traffic.

Regulations

Make sure all local, state, and federal regulations, regarding the transport of equipment on public roads and highways, are met. Check with the local authorities regarding transporting the unit on public roads.

Obey all applicable laws and regulations.

 **Rollover Protection**
The tractor should be equipped with a Roll Over Protective Structure (ROPS) and a seat belt.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.

 **Drive Safely**
Be a safe and courteous driver. Anticipate what other drivers will do and drive accordingly.

 **Allow Extra Distance**
Apply brakes early. Leave extra distance between your vehicle and the one(s) ahead to provide adequate stopping space. Extra distance will be required to stop the vehicle.

 **Clear Vision**
Remove all objects from the area that would prevent clear vision of the complete work area or would present an obstacle when moving the unit.

 **Hitch Attachment**
Be sure the unit is securely attached to the tractor and in good operating condition before using.

 **Working Taillights**
Make sure lights on the tractor are working properly.

 **Hazard Flashers**
Use hazard flashers on the tractor when transporting unless prohibited by law.

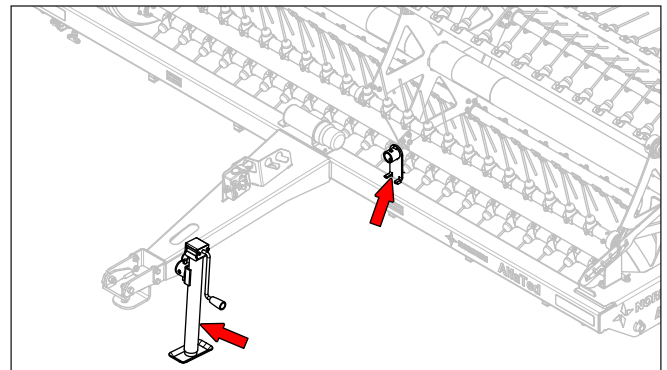
 **Right-of-Way**
When traveling below the posted speed limit, keep to the right and yield the right-of-way to allow faster traffic to pass.

6.2 Transporting Procedure

WARNING

 **Do not place hands or fingers between moving and/or stationary parts. The weight of the unit could easily cause serious bodily injury.**

Prior to towing, make sure the running lights, turn signals, and hazard lights on the tractor are operating correctly. Make sure the jack stand is secured in its storage location on the left side or front of the frame.



7. Storage

7.1 Storage Safety

At the end of the season, the unit should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary downtime at the beginning of the next season.



 **Store the unit in an area away from human activity. To prevent the possibility of serious injury, do not permit children to play on or around the stored unit.**



To prevent damage to the unit, store it in a dry, level area.

7.2 Placing In Storage

To extend the life of the cylinders and hoses, store the unit inside a building.

1. Remove all entangled vegetation.
2. Thoroughly wash the unit with a pressure washer or water hose to remove all clippings, dirt, mud, or debris. Be sure to avoid too much water pressure on or near any decals. Refer to “3. SAFETY SIGNS AND LABELS” on page 13
3. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the unit to its storage area. Disconnect the unit from the tractor. Refer to “5.8 Detaching From Tractor” on page 20.
4. Lubricate all grease points. Make sure all grease cavities have been filled with grease to remove any remaining water from washing. Refer to “8.3 Lubrication” on page 24.
5. Touch up all paint nicks and scratches to prevent rusting.

7.3 Removing From Storage

Grease all lubrication points. “8.3 Lubrication” on page 24.

Before placing the unit back into service, replace any worn or defective parts and perform the “5.3 Pre-Operation Checklist” on page 17.

8. Maintenance

8.1 Maintenance Safety

WARNING

Failure to comply with the following safety instructions could result in serious injury and possibly even death.



Personal Protection Equipment

Wear close fitting and belted clothing to avoid getting caught in moving parts. Wear personal protection equipment (PPE), which may include hard hat, safety glasses, safety shoes, gloves, etc. appropriate for the work site and working conditions.



Damaged Parts Hazard

Do not use the unit if any parts are damaged. If the unit is believed to have a defect which could cause it to work improperly, immediately stop using it and remedy the problem before continuing.



No Unauthorized Modifications

Do not modify the unit or safety devices. Do not weld on the unit. Unauthorized modifications may impair the cutter's function, or create safety hazards, and will void the warranty.

If the unit has been altered in any way from the original design, the manufacturer does not accept any liability for injury or warranty.



Crush Hazard

Always set the unit on safety stands or on the ground and chock the wheels when performing maintenance.



Good Working Condition

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts.



Replacement Parts

If replacement parts are necessary, genuine factory replacement parts must be used to restore the unit to its original specifications. Unapproved parts could create a safety hazard. The manufacturer will not accept responsibility for damages as a result of the use of unapproved parts.



Trapped Air Hazard

When installing, replacing, or repairing hydraulic system cylinders or parts, make sure that the entire system is charged and free of air before resuming operations. Failure to bleed the system of all air can result in improper machine operation, causing severe injury.



Zero Pressure

Relieve pressure from the hydraulic system before servicing or disconnecting from the tractor.



Explosive Separation Hazard

Replace any worn, cut, abraded, flattened, or crimped hoses.



High-Pressure Fluid Hazard

Keep all hydraulic lines, fittings, and couplers tightly secured and free of leaks.

Do not make any temporary repairs to the hydraulic lines, fittings, or hoses using tape, clamps, or cement. The hydraulic system operates under extremely high pressure and temporary repairs may fail suddenly and create a hazardous/dangerous situation.

DO NOT use your bare hand to check for potential leaks. Always use a board or cardboard when checking for a leak.

Escaping hydraulic fluid under pressure, even a pinhole size leak, can penetrate body tissue, causing serious injury and possible death. If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.



Safety Equipment

A fire extinguisher and first aid kit should be readily accessible while performing maintenance on this equipment.



Clean Work Area

Do not leave tools lying around the work area. Follow good shop practices. Keep service area clean and dry. Be sure electrical outlets and tools are properly grounded. Use adequate light.



Use the Correct Tools

Use the correct tools, jacks, hoists, or other tools that have the capacity for the job.



Proper Support

Use certified safety stands rated to support the load when working beneath the unit, or performing repairs, service, or maintenance.

The unit weighs approximately 1200 lbs. Before working underneath, place it on a minimum of four jack stands, with a load rating of at least 2000 lbs. each.

Do not position the jack stands under wheels, axles, or wheel supports, as they may rotate and cause the unit to fall.

Make sure the jack stands are stable and the unit deck is approximately level. Test the stability of the unit before working underneath.

If the unit is attached to the tractor, set the brakes, remove the key, chock the tractor wheels, and block the unit before working underneath.

8.2 Welding Repairs



Before performing any type of welding repair to the unit, contact Norden Mfg LLC for approval. Repair welding must be done with care and with procedures that may be beyond the capabilities of the ordinary welder.

WARNING

Personal Injury Hazard

Repairs or modifications to the unit can result in serious injury or death should these repairs fail.

NOTICE

Anyone performing a welding repair should be certified in accordance to the American Welding Society (AWS) standards.

8.3 Lubrication

WARNING

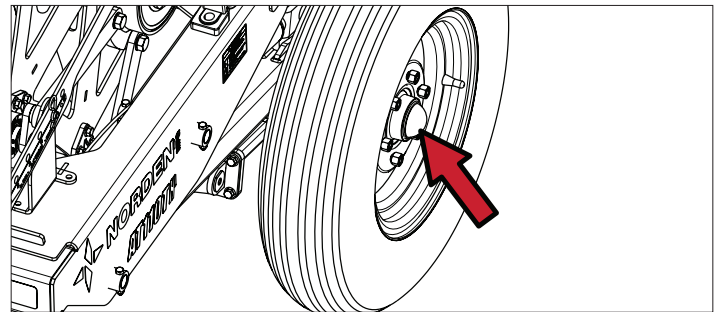
Failure to follow safety instructions in this owner's manual can result in serious injury or death.



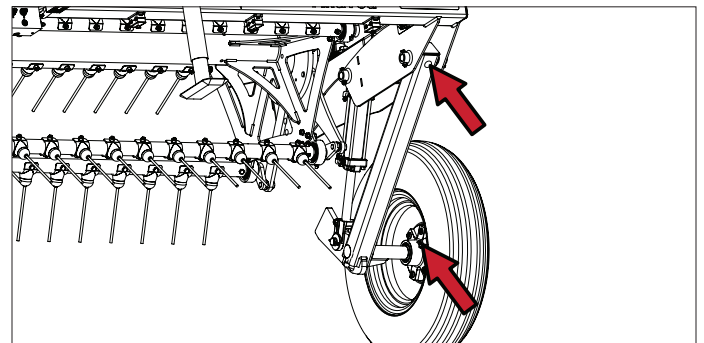
Turn off the machine prior to lubricating. Never lubricate while operating the unit.

To adjust wheel bearing, remove dust cap and cotter pin. Lift tire and slowly rotate while tightening the spindle nut. Tighten only until a slight drag is felt on the rotating wheel. Re-install cotter pin and dust cap.

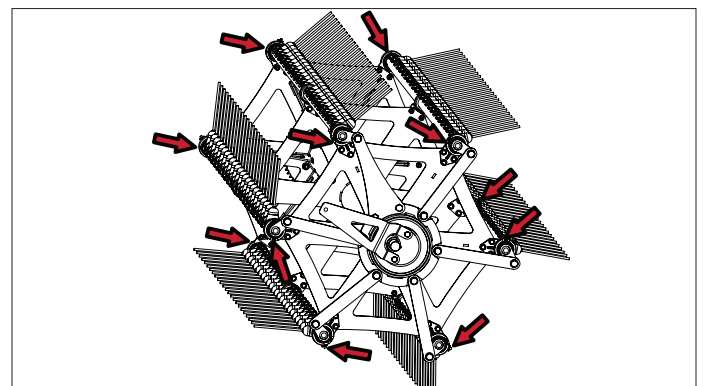
NOTE: May need to repack, and adjust the wheel bearings every 5 years. Use only wheel bearing grease when repacking these units. Check for excessive end play.



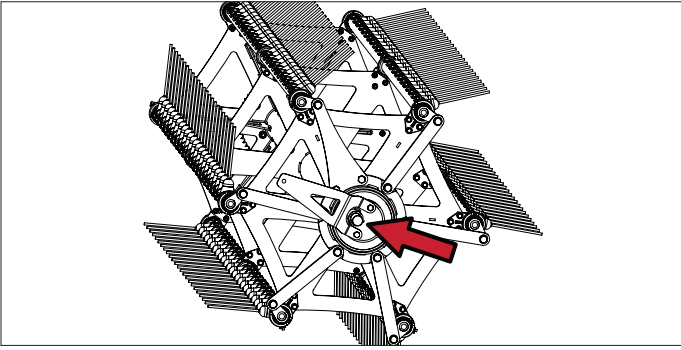
1. Grease the zerks on the wheel hub on the inside of each wheel.



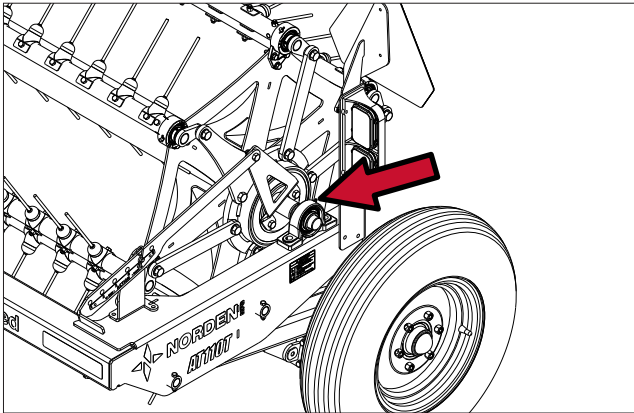
2. Grease the bearings at the ends of each tube, (12 places total).



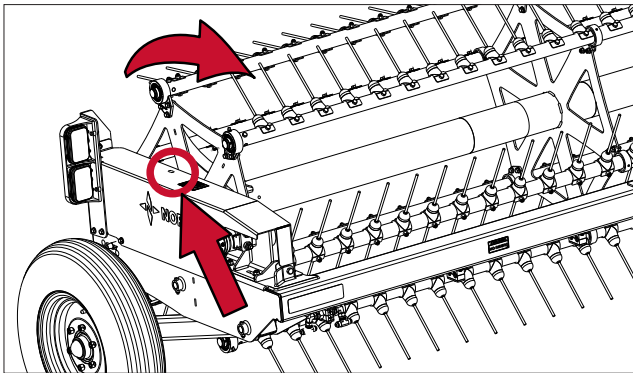
- Grease the Cam Shaft grease fitting where the reel shaft passes through the Cam assembly.



- Grease the bearings that hold the cam shaft on each side of the reel.



- Manually turn the reel by hand to oil the chain.



- Using the hole provided, oil is applied with an oil-can at least once every 8 hours of operation. The frequency of application should be sufficient to keep the chain wet with oil. The use of aerosol-can lubricant is also satisfactory. It is important that the lubricant used is of a type specified for roller chains, most of which include P.T.F.E. or other additive to reduce friction, suggested SAE 40.

CAUTION

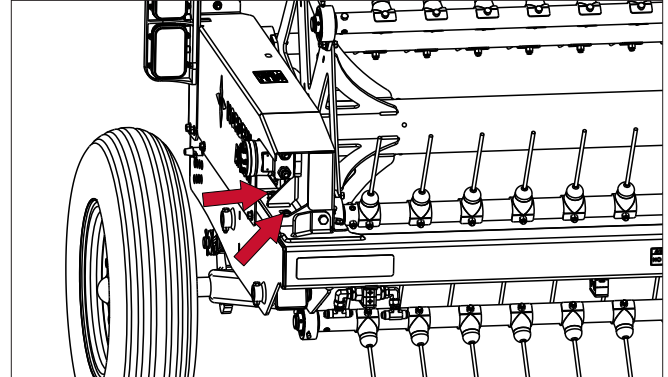
Manual types of lubrication must never be applied while drive is in operation.

8.4 Mechanical Maintenance

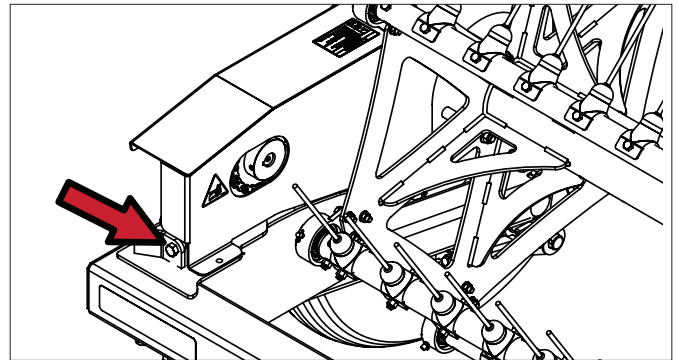
- Periodically check the tension on the chain. There should only be a slight sag (1-2% of the center distance)

If it has loosened:

- Loosen the Motor Mounting Bolts.



- Turn the tensioning bolt clockwise to tighten. Make sure to re-tighten motor mounting bolts.



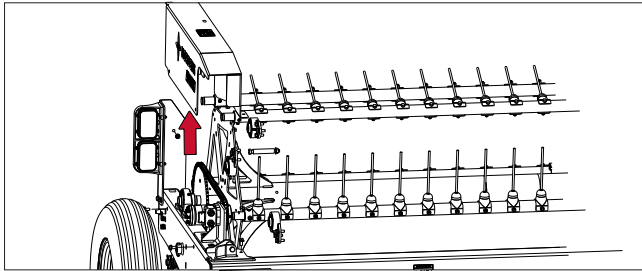
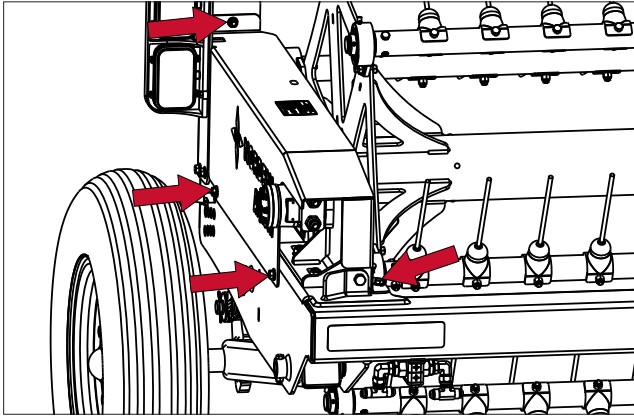
- Check tightness of lug bolts after one hour of operation and every six months thereafter. Check tire pressure whenever maintenance is performed
- Check the hydraulic hoses periodically for cracks, abrasions or leaks. Replace defective hoses immediately with factory replacement parts only.

8.4.1 Replacing Motor Chain

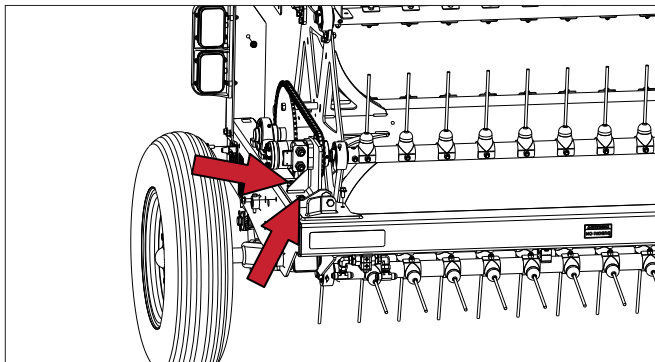
Replace chain when elongated due to wear exceeds 2%. Order a replacement chain from your dealer or Norden Mfg. (Chain, #50 x 67" PN#1017470). Refer to "10. Parts" on page 30.

- If the unit is attached to the tractor, make sure all power is disconnected.

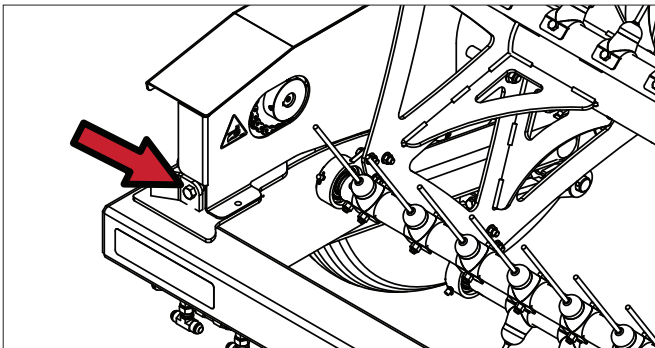
2. Loosen four (4) bolts and remove Chain Shield.



3. Loosen motor mounting bolts.



4. Loosen tension to the chain by turning tensioning bolt counterclockwise.

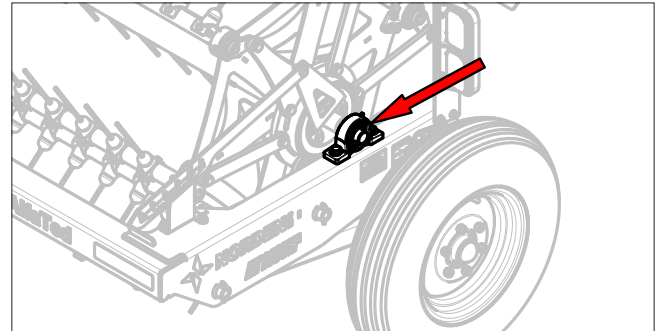


5. Replace old chain with new chain.
6. Tighten the chain by turning the tensioning bolt clockwise. There should only be a slight sag ($1/4$ "- $3/8$ " of the center distance)

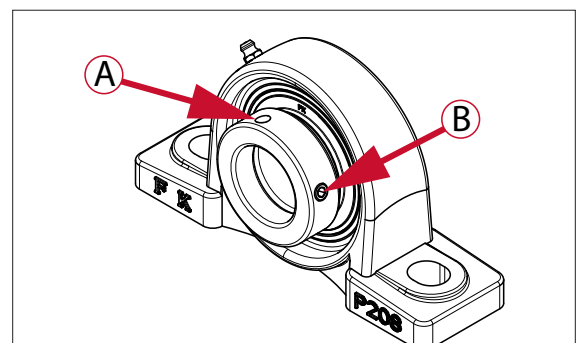
7. Tighten motor mounting bolts.
8. Oil Chain while manually rotating reel.
9. Replace Chain Shield.

8.4.2 Replacing Eccentric Locking Bearing

The Reel Shaft is held in by two (2) Eccentric Locking Bearings. If you need to replace these make sure to follow these installation instructions.



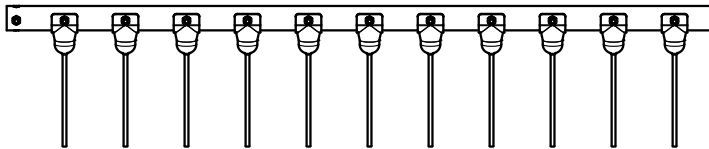
1. Remove eccentric locking collar.
2. Inspect the shaft to ensure it is clean and free of any debris and apply a film of light weight oil.
3. Slide the new eccentric locking collar onto the shaft. Then slide the bearing on the shaft (do not hammer on). Bolt in place onto the frame.
4. Rotate the shaft to ensure it rotates smooth and freely.
5. Place the eccentric locking collar on the track of the inner bearing ring.
6. Rotate the collar by hand **in the direction of rotation** until the eccentric cam is engaged.
7. Insert a straight punch in the hole on the O.D. of the collar 'A' and strike with a small hammer to positively engage the collar **in the direction of rotation**.



8. Tighten the set screw 'B' using torque 208 (in-lbf).

8.5 Replacing Rake Teeth

Check teeth after each use for wear and tear. If there are cracks, replace tooth to avoid it breaking off completely. If not found, it could end up in hay bales or puncturing a tire. Refer to “10.11 Bat Assembly Parts Detail” on page 38 for parts detail.



8.6 Bolt Torque Requirements

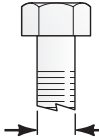
It is extremely important to apply and maintain proper torque on all bolts. Use a torque wrench to assure the proper amount of torque is being applied to the fastener.

Start all bolts or nuts by hand to prevent cross threading.

Torque figures indicated in the chart are used for non-greased or non-oiled threads, unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

This chart gives correct torque values for various bolts and cap screws. Tighten all bolts to the torque specified in the chart, unless otherwise noted. Check the tightness of the bolts periodically, using the bolt torque chart as a guide. Always replace hardware with the same Grade bolt.

Standard Torque Values

Bolt Diameter 	English Bolt Torque Specifications					
	Grade 5 3 Radial Lines Grade 5		Grade 8 6 Radial Lines Grade 8		ASTM A574  Socket Head Cap Screw	
	ft.lbs.	N·m	ft.lbs.	N·m	ft.lbs.	N·m
1/4"	9	12	12	17	14	18
5/16"	19	25	27	36	29	38
3/8"	33	45	45	63	51	69
7/16"	53	72	75	100	81	109
1/2"	80	110	115	155	124	168
9/16"	115	155	165	220		
5/8"	158	215	220	305	238	322
3/4"	290	390	398	540	423	573
7/8"	420	570	650	880	682	924
1"	630	850	970	1320	1022	1385

 WARNING

 **Equipment Failure**
The proper torque value for bolts and cap screws is identified by their head markings. Replacing higher “Grade” bolts (Grade 5) with lower Grade bolts will lead to equipment failure and could result in injury or death. Always use replacement bolts with the same Grade markings as the removed bolt.

8.7 Service Record

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent service.

Copy this page to continue record.

Hours and Serviced By Maintenance												
Daily												
Make sure the tires are inflated properly and the lug nuts are tight.												
Make sure all retainer clips and pins are in place.												
Make sure motor chain is properly oiled. Refer to "8.3 Lubrication" on page 24												
Check Rake teeth for any cracks, replace if needed.												
Weekly												
Make sure all fasteners are tightened to proper torque. Refer to "Standard Torque Values" on page 27												
Grease the wheel bearings. Refer to "8.3 Lubrication" on page 24 .												
Annually												
Inspect the wheel bearings for excessive end play. Refer to "8.3 Lubrication" on page 24.												
Make sure all fasteners are tightened to proper torque. Refer to "Standard Torque Values" on page 27.												
Make sure the hitch, hitch bolts, and hitch pin are in good condition. Do not use homemade or shop made pins.												

9. Troubleshooting

Problem	Possible Solution
Teeth are kicking up debris and/or getting damaged	Reel is set too low to the ground. Refer to “5.5 Height Adjustment” on page 18
Oil is too hot	
Hay is spreading too far	Increase ground speed or decrease oil flow to reel. Refer to “5.7 Speed Adjustment” on page 19
Hay is not fluffing enough	Cam Adjuster is set too low Refer to “5.6 Cam Adjustment” on page 19
Parts are seizing up or not turning correctly	Parts/chain needs to be greased/oiled. Refer to “8.3 Lubrication” on page 24
Tedder bounces in the field	Reduce tire pressure to 15 PSI.

10. Parts

10.1 Ordering Parts

We manufacture a quality product that requires very little maintenance or repair. However, should a part break or become damaged, our knowledgeable staff can make sure you receive the part(s) to put your unit back into operation.

10.2 Contact Information

For replacement decals, questions, or to order parts, contact:

Norden Mfg. LLC
4210 Kinsman Road NW
North Bloomfield, OH 44450

Phone: 877-296-5851
Fax: 440-693-4336

E-mail: parts@nordenmfg.com

10.3 Decals

WARNING

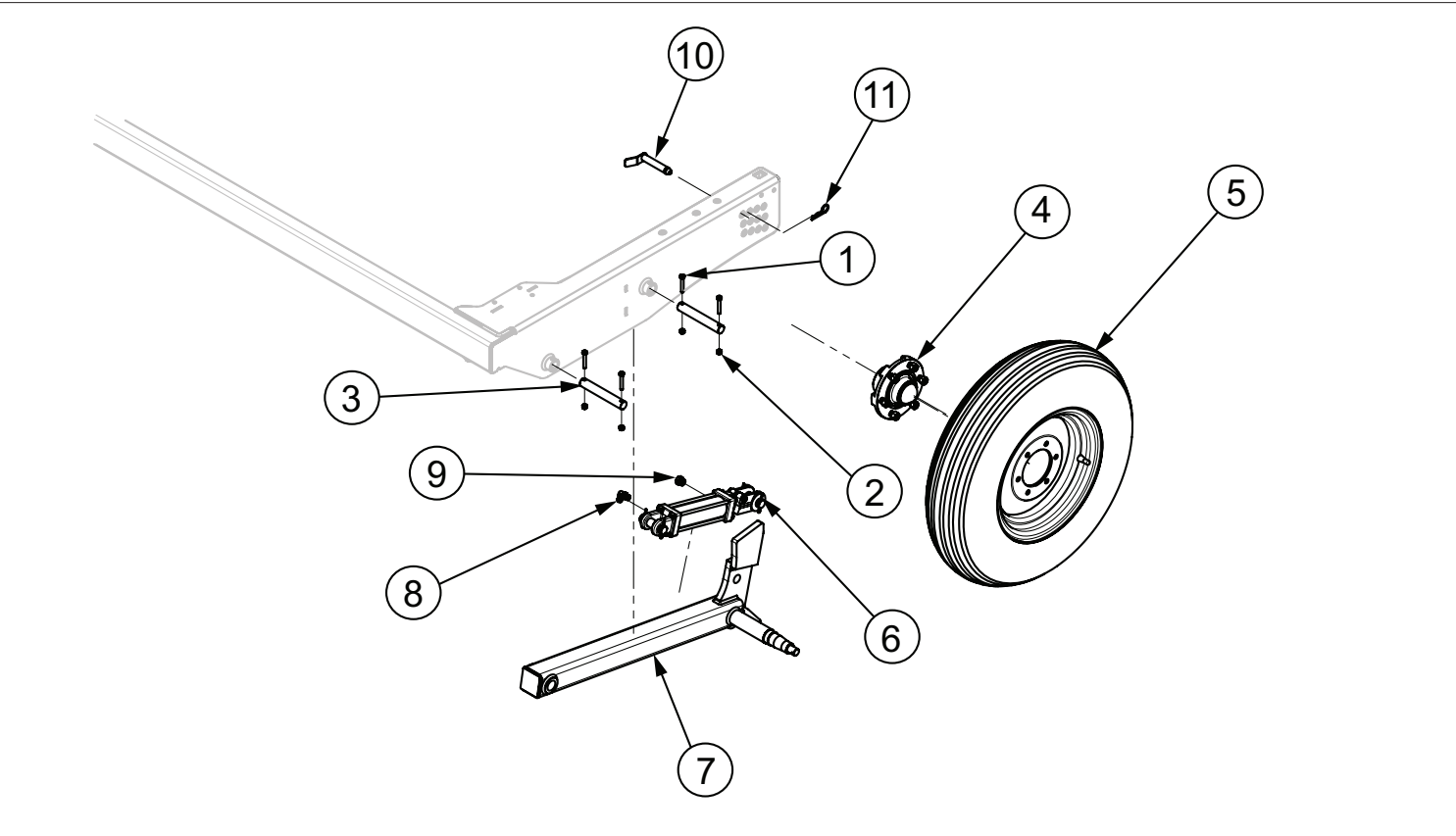


To prevent serious injury or death from not following posted safety instructions, make sure all decals are attached to the unit and are legible at all times.

Safety decals provide a vital role in helping to reduce injuries and/or possibly even death. To ensure the greatest level of safety, all decals must be in place and legible at all times. Remember, it is the users responsibility to maintain these decals.

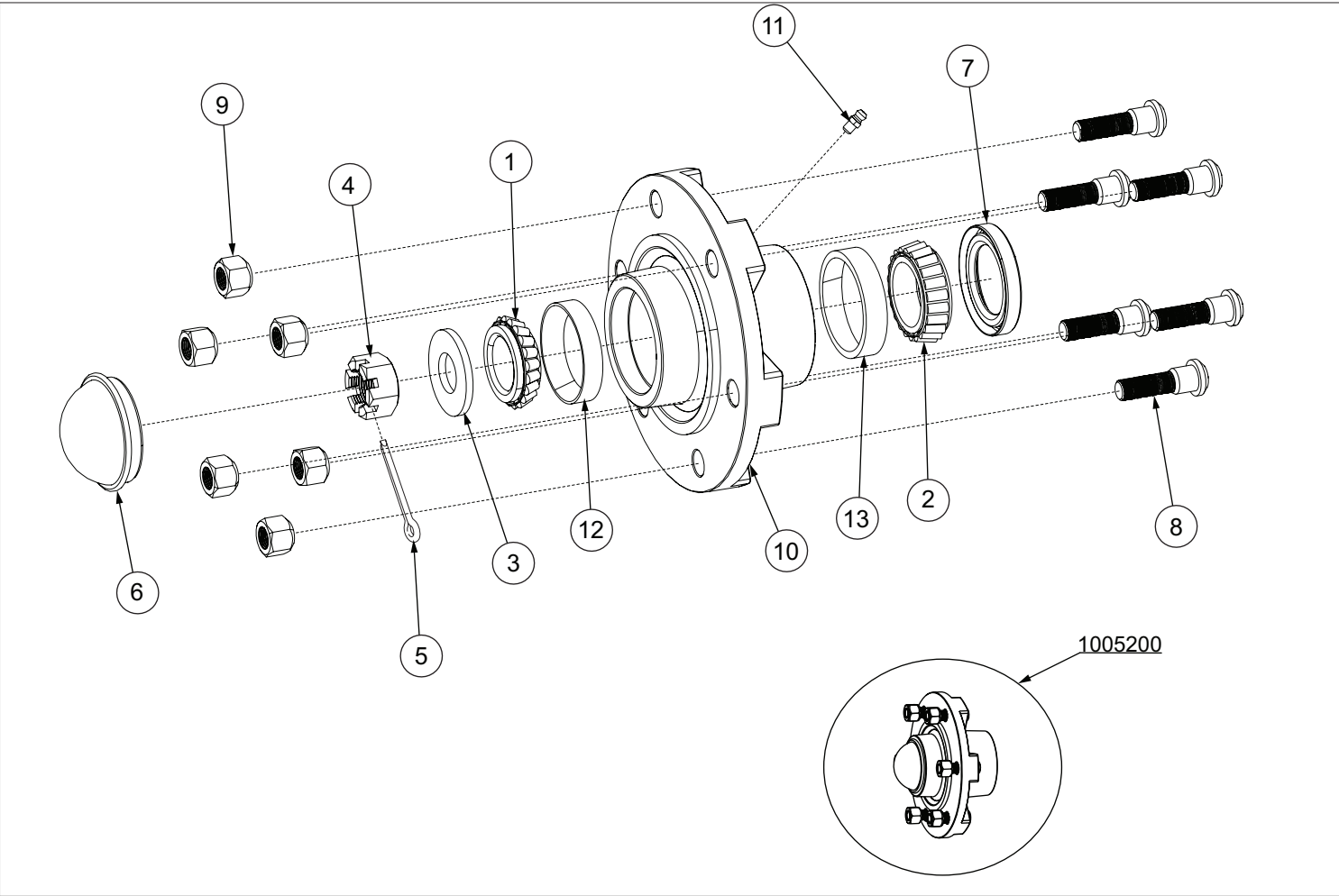
All decals must be in place and legible or all warranties are void.

10.4 Frame Assembly Parts Detail



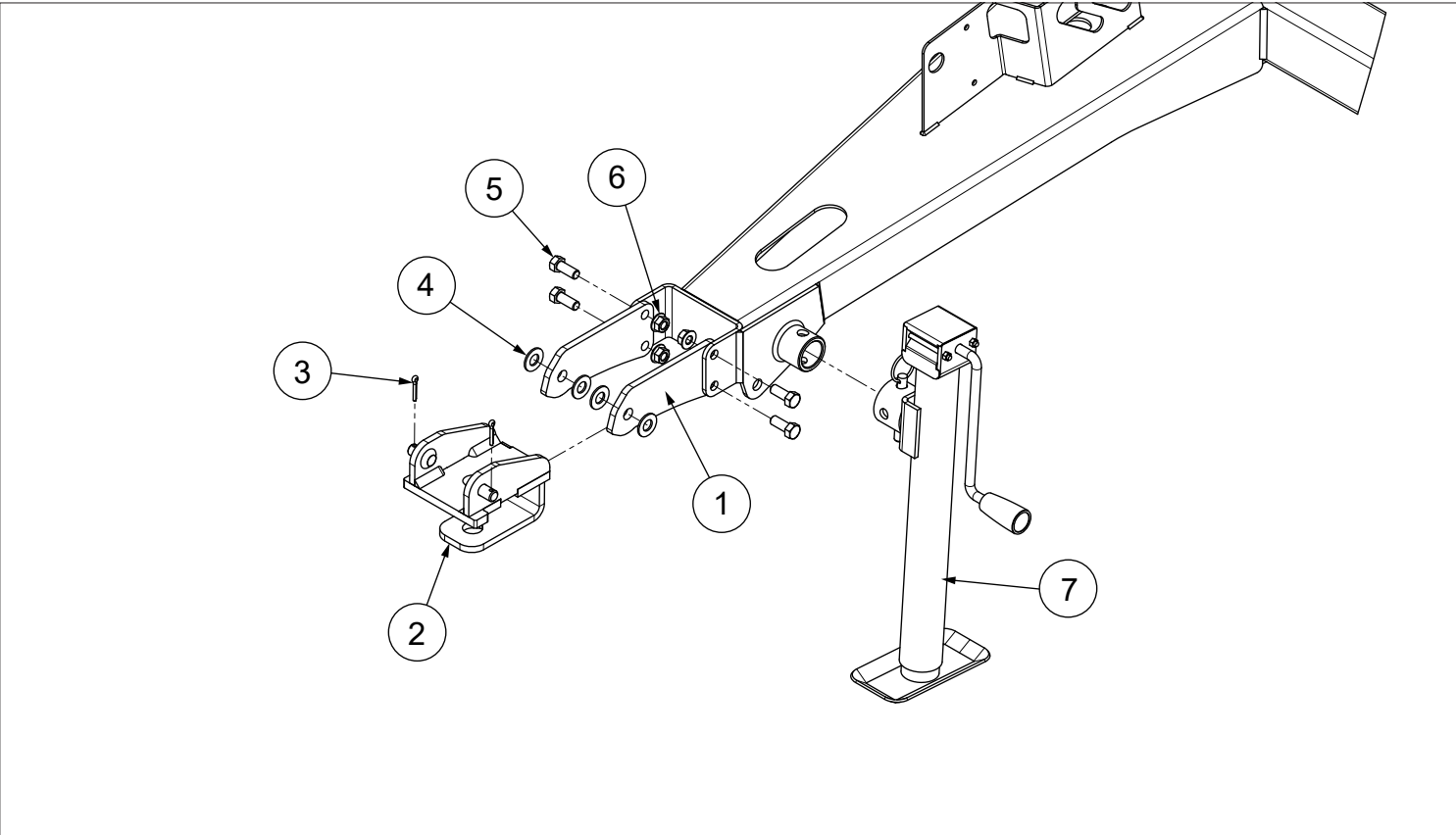
Item	Part Number	Description	Qty
1	1007400	Hex Bolt 5/16" x 2" (Grade 5)	8
2	1006080	Nylock Nut 5/16"	8
3	1031060	Pivot Pin	4
4	1005200	Hub Assembly, 6 bolt; "10.5 Hub Assembly Parts Detail" on page 32	2
5	1001000	Tire on Rim, 9.5L-15 - 6 hole on 6 B.C.	2
6	1023100	2x6 Hydraulic Cylinder	2
7	1034220	Axle Left Weldment	1
	1034230	Axle Right Weldment	1
8	1009690	6MJ-6MB90 Adapter	2
9	1037850	Breather Plug 6MB	2
10	1038650	Pin Weldment, 3/4" x 3.625"	
	1006910	Cotter Pin, 0.148" x 2-11/16"	

10.5 Hub Assembly Parts Detail



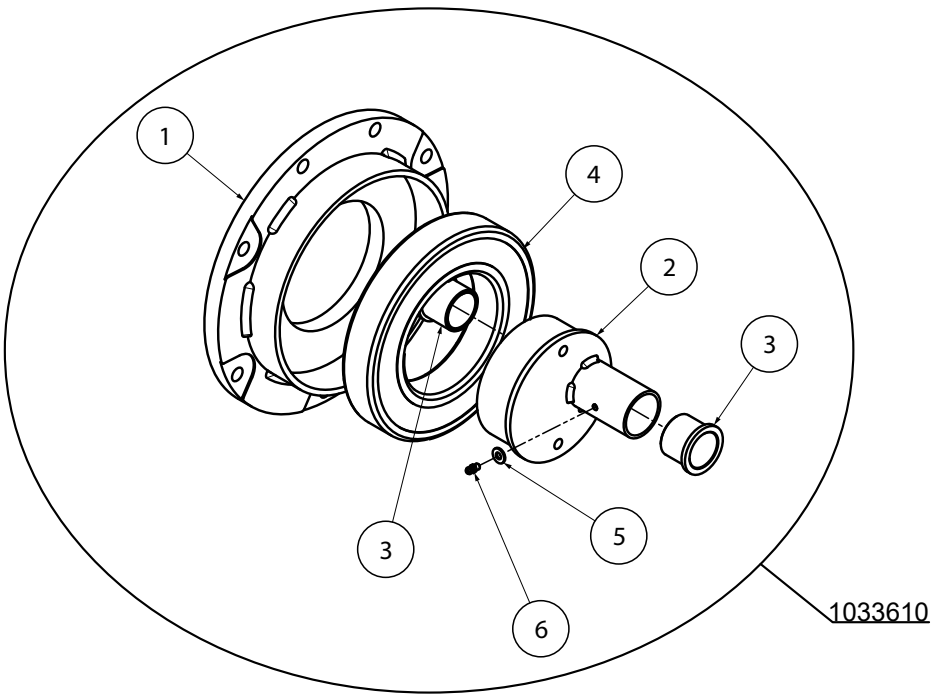
Item	Part Number	Description	Qty
1	1003640	Wheel Hub Small (Outer Bearing) LM67048	1
2	1003630	Wheel Hub large (Inner Bearing) JL69349	1
3	1003660	Wheel Hub Washer	1
4	1003700	Nut, Hex, Slotted, 7/8-14	1
5	1003720	Pin, Cotter, 1/8 x 1-1/2"	1
6	1003690	Wheel Hub Cap	1
7	1003710	Wheel Hub Rear Seal AG-GS-2566162 5SL	1
8	1003670	Wheel Hub Lug Bolt	6
9	1003680	Wheel Hub Lug Nut 1/2"- 20	6
10	1003650	Wheel Hub Frame, 888 6" Bolt Circle	1
11	1003730	Self Tapping Grease Zerk, 1/4	1
12	1005220	Small Bearing Race LM-67010	1
13	1005210	Large Bearing Race JL-69310	1
—	1009450	Service Kit, Includes items 1, 2, 3, 4, 5, 6, 7, 12, and 13	—

10.6 Hitch Assembly Parts Detail



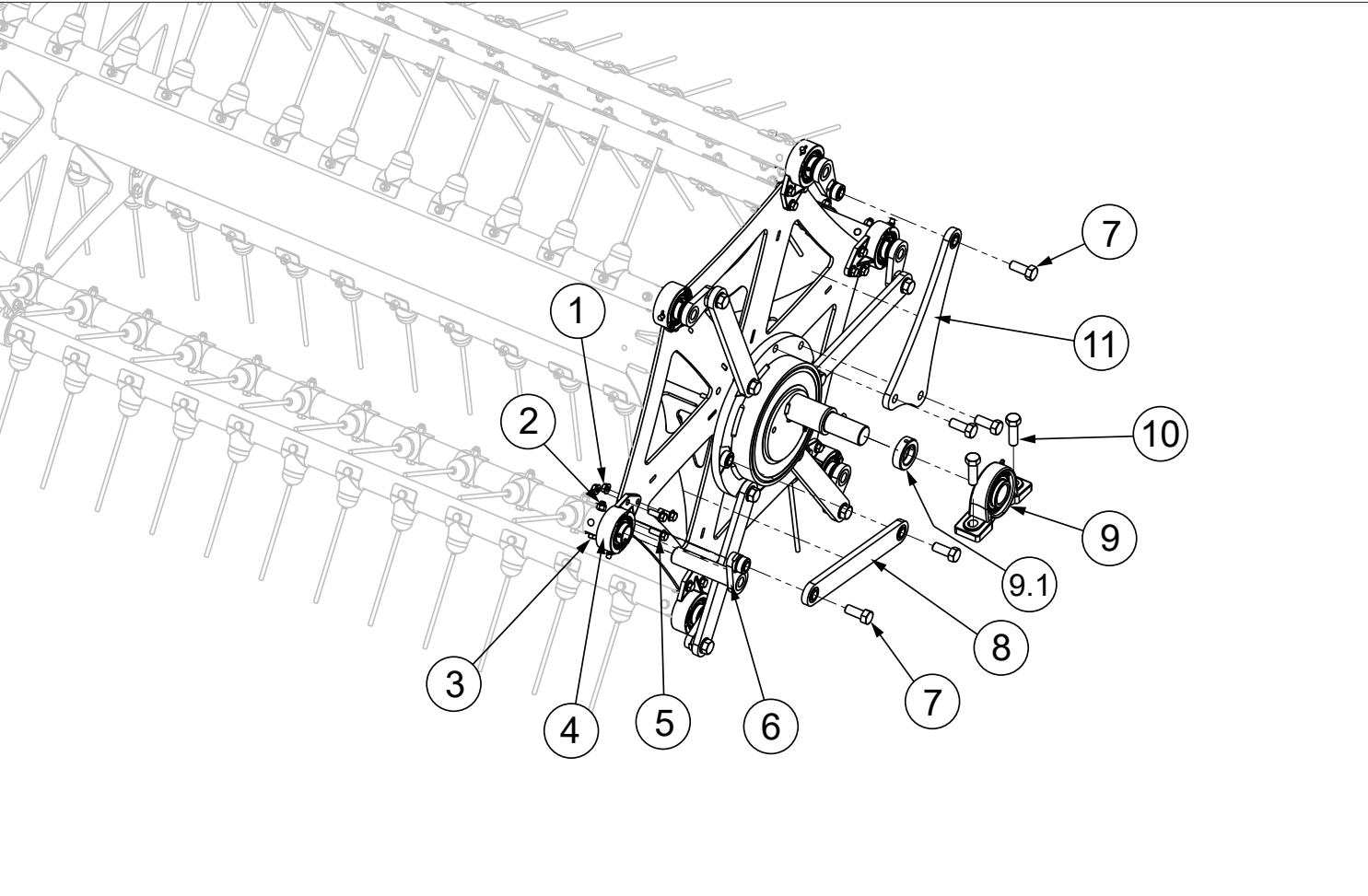
Item	Part Number	Description	Qty
1	1031041	Clevis Side Plate	2
2	1034161	Clevis Hitch Weldment	1
3	1018210	Cotter Pin, 0.188 x 1.00	2
4	1006180	5/8" SAE Washer	4
5	1006230	Hex Bolt 1/2" x 1.25" (Grade 5)	4
6	1006210	Serrated Flange Nut 1/2"	4
7	1004540	Jack Assembly, 3000 lb	1

10.7 Cam Assembly Parts Detail



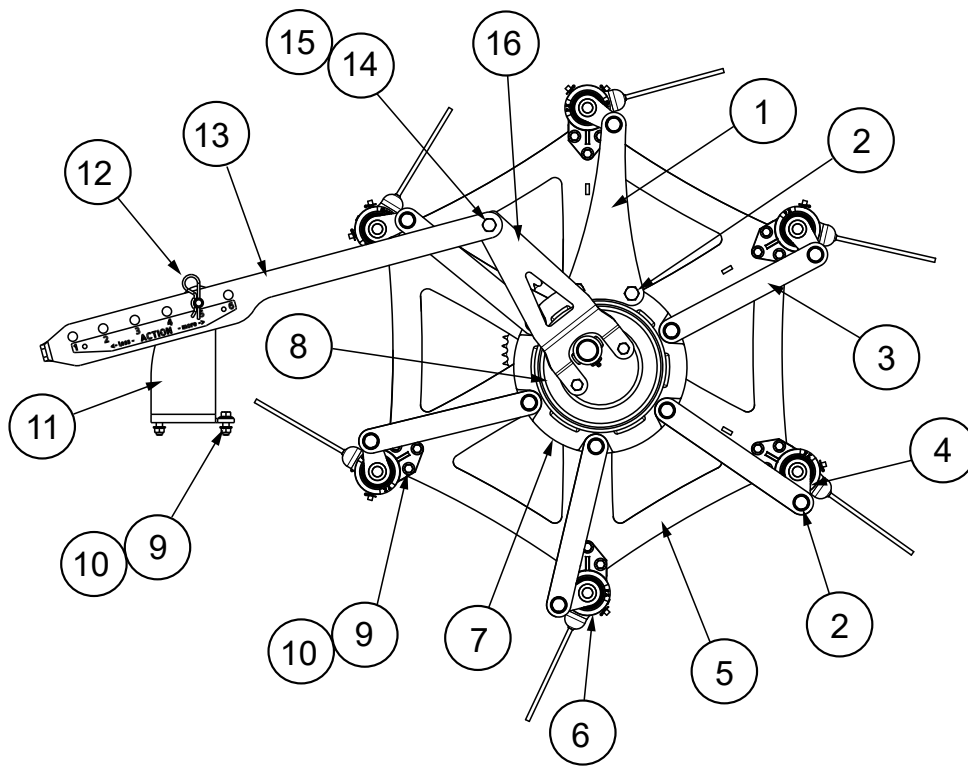
Item	Part Number	Description	Qty
1	1031600	Cam Hub Weldment	1
2	1033580	Cam Center Weldment	1
3	1033590	Flanged Bushing, 1.754 OD x 1.503 ID x 1.5 L	2
4	1033600	Ball Bearing, 6226-2RS	1
5	1035850	Washer, #12	1
6	1003730	Self Tapping Grease Zerk, 1/4"	1

10.8 Cam Linkage Parts Detail



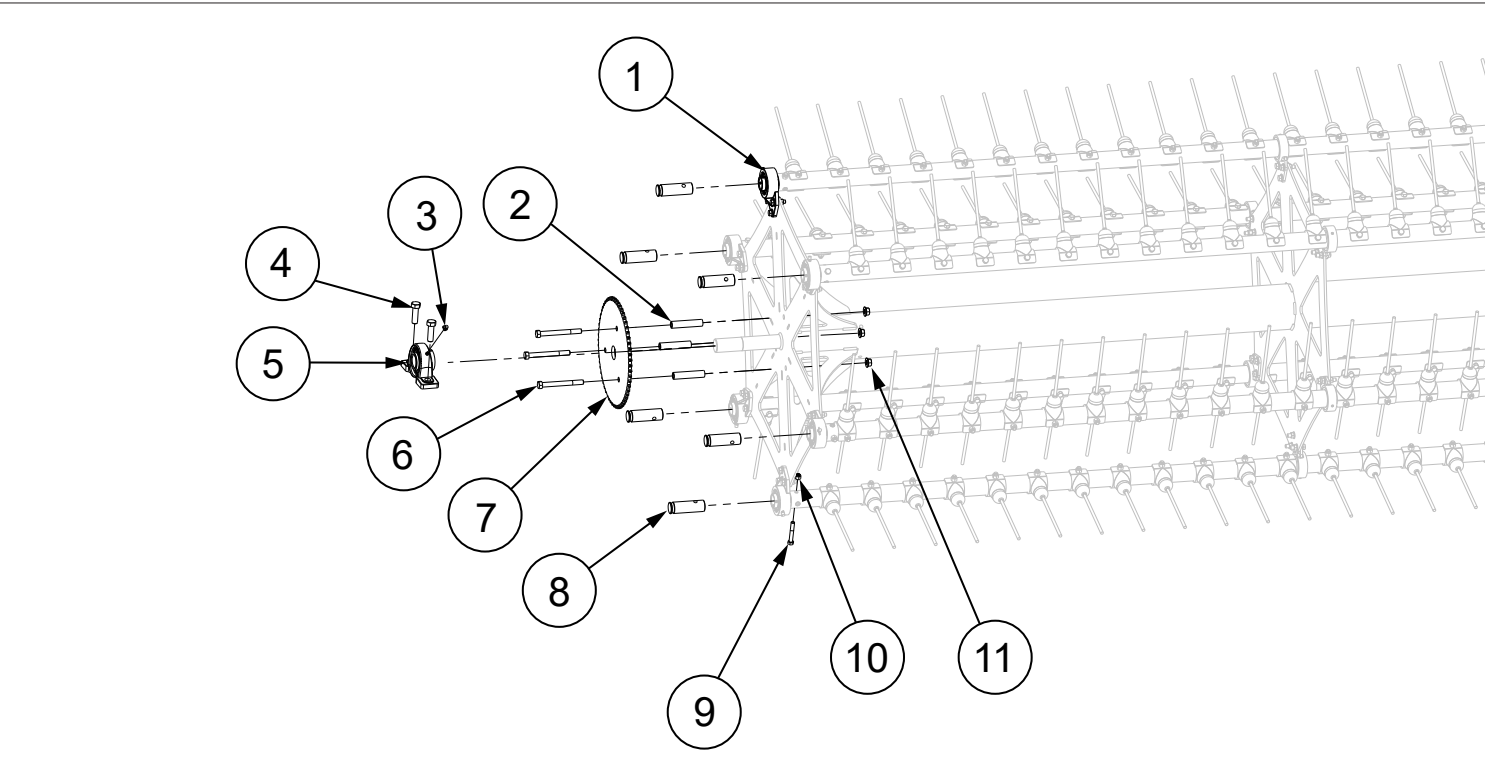
Item	Part Number	Description	Qty
1	1006190	Serrated Flange Nut 3/8"	18
2	1006090	Nylock Nut 3/8"-16	6
3	1006860	Hex Bolt 3/8" x 2.5" (Grade 5)	6
4	1033630	Flange Bearing, 1.25" UCFB206-20 NOTE: (6) on Drive End (6) on Cam end	12
5	1006340	Serrated Flange Bolt 3/8" x 1" (Grade 5)	18
6	1030630	Bat Arm Weldment	6
7	1033670	Hex Bolt 5/8"-18 x 1.5" (Grade 5)	13
8	1033720	Cam Link Assembly (includes Spherical Bearing)	5
9	1033640	Pillow Block Bearing with Eccentric Locking Collar	1
9.1	-	Eccentric Lock with Set Screw	
10	1007330	Hex Bolt 5/8-11 x 2"	2
11	1003370	Cam Rigid Link Assembly (includes Spherical Bearing)	1

10.9 Cam Linkage 2 Parts Detail



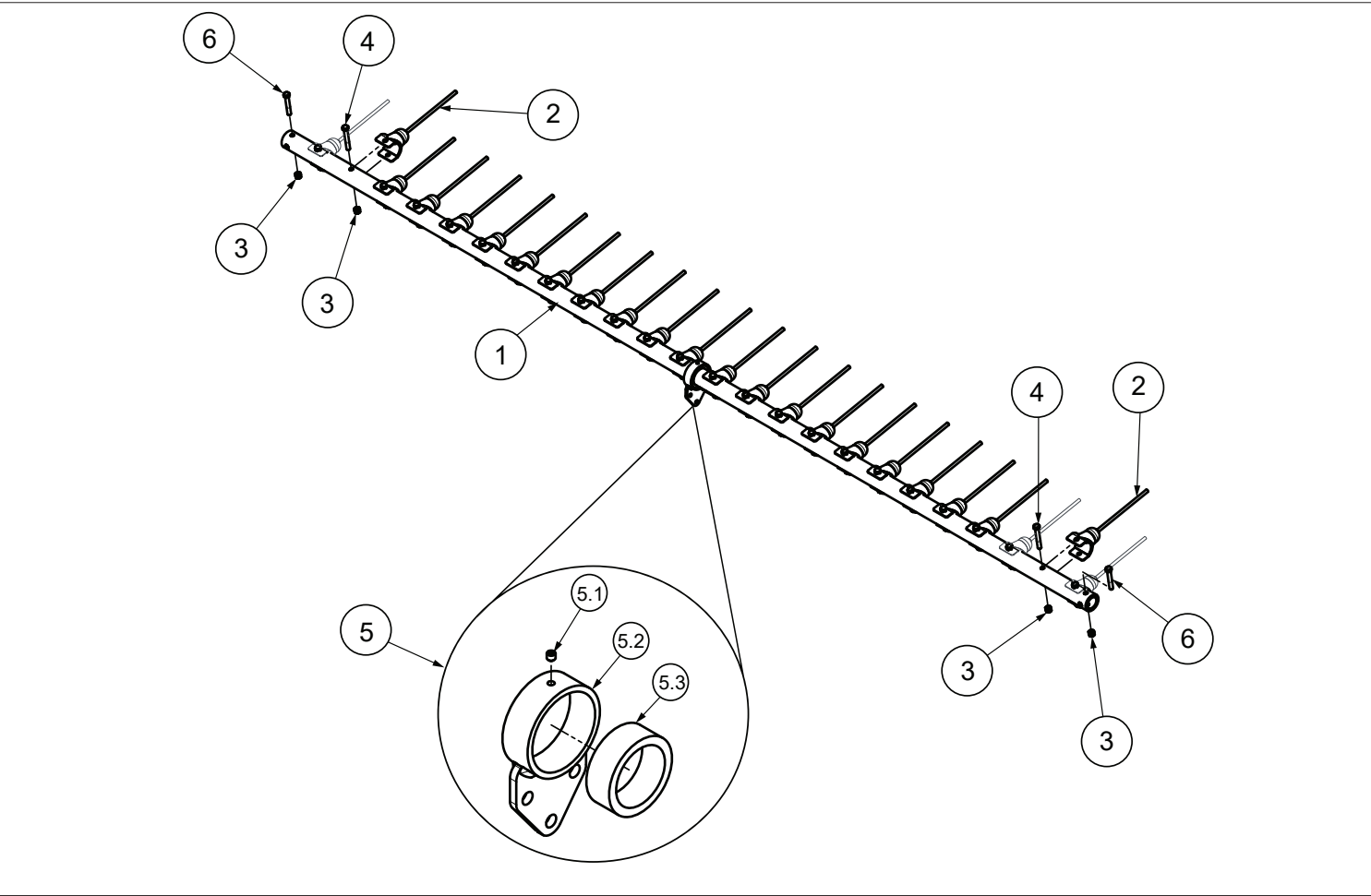
Item	Part Number	Description	Qty
1	1033730	Cam Rigid Link Assembly	1
2	1033670	Hex Bolt 5/8-18" x 1.5" (Grade 5)	13
3	1033720	Cam Link Assembly (includes Spherical Bearing)	5
4	1030630	Bat Arm Weldment	6
5	1033410	Reel Weldment, 10'	1
6	1033630	Flange Bearing, 1.25" UCFB206-20 NOTE: (6) on Drive End (6) on Cam end	12
7	1033610	Tedder Cam Assembly	1
8	1006220	Hex Bolt 1/2" x 1" (Grade 5)	2
9	1006340	Serrated Flange Bolt 3/8" x 1" (Grade 5)	57
10	1006190	Serrated Flange Nut 3/8"	11
11	1030940	Cam Set Bracket	1
12	1006910	Cotter Pin, 0.148" x 2-11/16"	1
13	1034400	Cam Set Link Assembly (includes Spherical Bearing)	1
14	1006230	Hex Bolt 1/2" x 1.25" (Grade 5)	1
15	1006110	Nylock Nut 1/2"	1
16	1031080	Cam Set Arm	1

10.10 Drive Sprocket Parts Detail



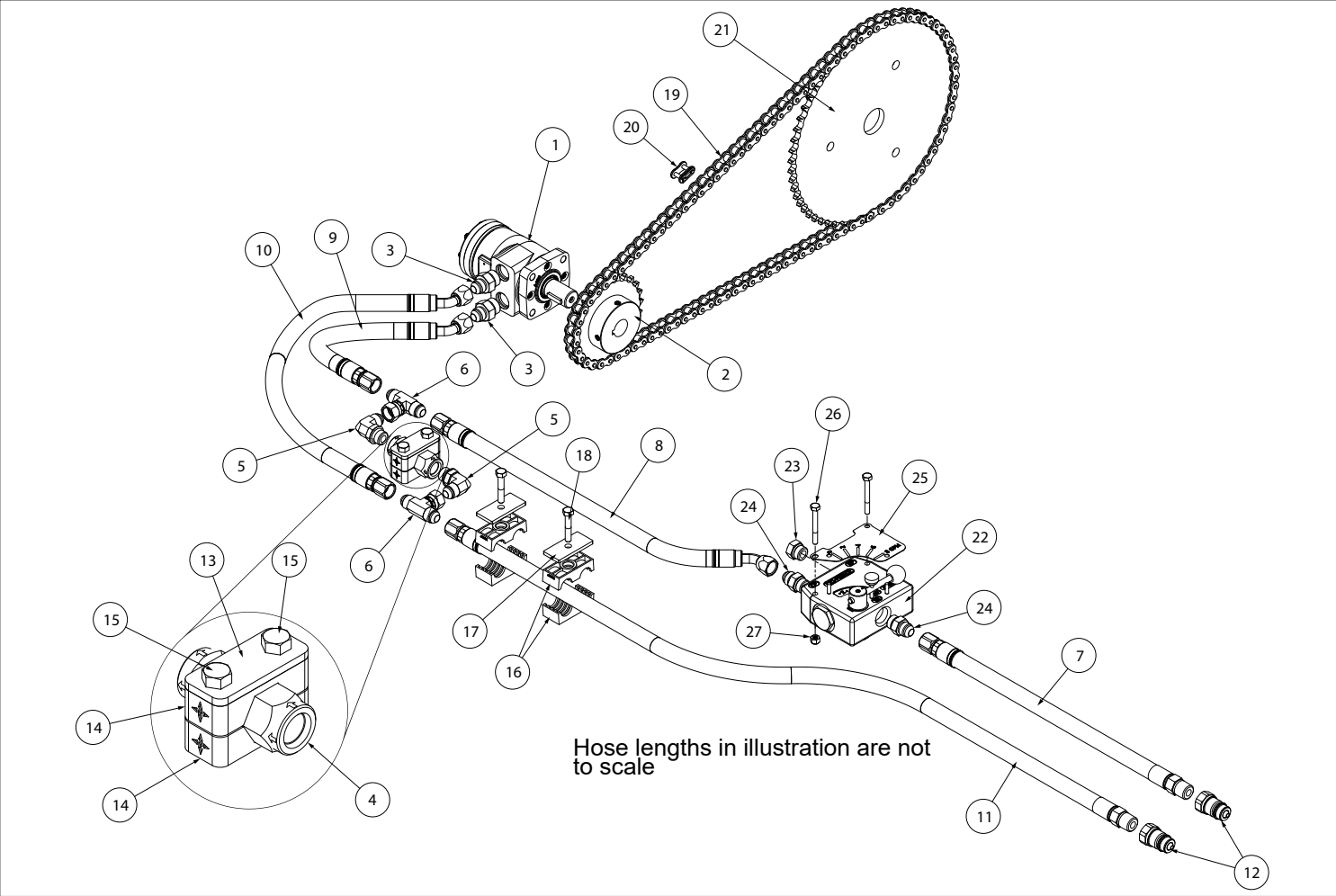
Item	Part Number	Description	Qty
1	1033630	Flange Bearing, 1.25" UCFB206-20 NOTE: (6) on Drive End (6) on Cam end	12
2	1031070	Reel Sprocket Spacer	3
3	1036280	Grease Zerk, 90°, 1/8"-27 NPT	1
4	1007330	Hex Bolt 5/8-11 x 2"	2
5	1033640	Pillow Block Bearing with Eccentric Locking Collar (with 90° Grease Fitting)	1
6	1033680	Hex Bolt 1/2-13 x 4.75 Steel (Grade 5)	3
7	1031240	Reel Sprocket, 50x60	1
8	1031100	Bat Shaft	6
9	1006860	Hex Bolt 3/8" x 2.5" (Grade 5)	6
10	1006090	Nylock Nut 3/8"-16	6
11	1006210	Serrated Flange Nut 1/2"	3

10.11 Bat Assembly Parts Detail



Item	Part Number	Description	Qty	Complete Unit Qty
1	1033420	Bat Tube Weldment, 10'	1	6
2	1032640	Rake Tooth, Single Rubber Molded	24	144
3	1006090	Nylock Nut 3/8"-16	26	156
4	1006370	Hex Bolt 3/8" x 2.75" (Grade 5)	24	144
5	1033650	Center Bushing Assembly	1	6
5.1	1033660	Cup point hex socket set screw 1/4-20 x 0.25 Steel Zinc Plated	1	6
5.2	1030640	Center Bushing Weldment	1	6
5.3	1021610	Roller UHMW Bushing	1	6
6	1006860	Hex Bolt 3/8" x 2.5" (Grade 5)	2	12

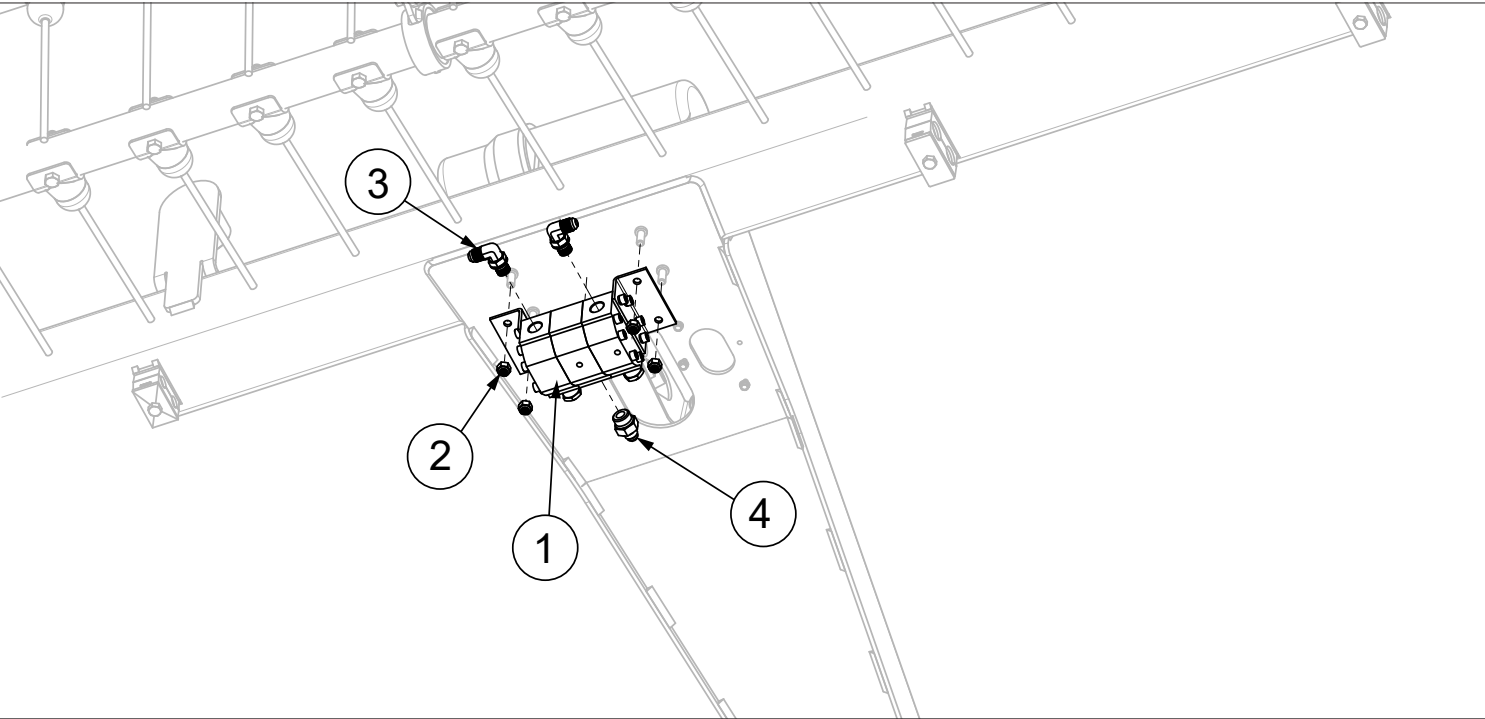
10.12 Motor Circuit Parts Detail



Item	Part Number	Description	Qty
1	1033930	Tedder Reel Motor	1
2	1033940	Sprocket, #50 x 25 Teeth, 1" Shaft	1
3	1033840	8MJ-10MB Straight Adapter	2
4	1033900	In-Line Check Valve, SAE8 NOTE: Arrow indicates direction of free flow	1
5	1033870	8MJ-8MB90 Adapter	2
6	1033880	8MJ-8MJ-8FJX Branch Adapter	2
7	1034980	Hydraulic Hose Assembly - 1/2" x 63" OAL 8FJX-8MP	1
8	1034990	Hydraulic Hose Assembly - 1/2" x 74" OAL 8FJX-8FJX45	1
9	1035000	Hydraulic Hose Assembly - 1/2" x 19" OAL 8FJX-8FJX45	1
10	1035010	Hydraulic Hose Assembly - 1/2" x 26" OAL 8FJX-8FJX45	1
11	1035020	Hydraulic Hose Assembly - 1/2" x 135" OAL 8FJX-8MP	1
12	1015840	Male Pioneer Ends	2

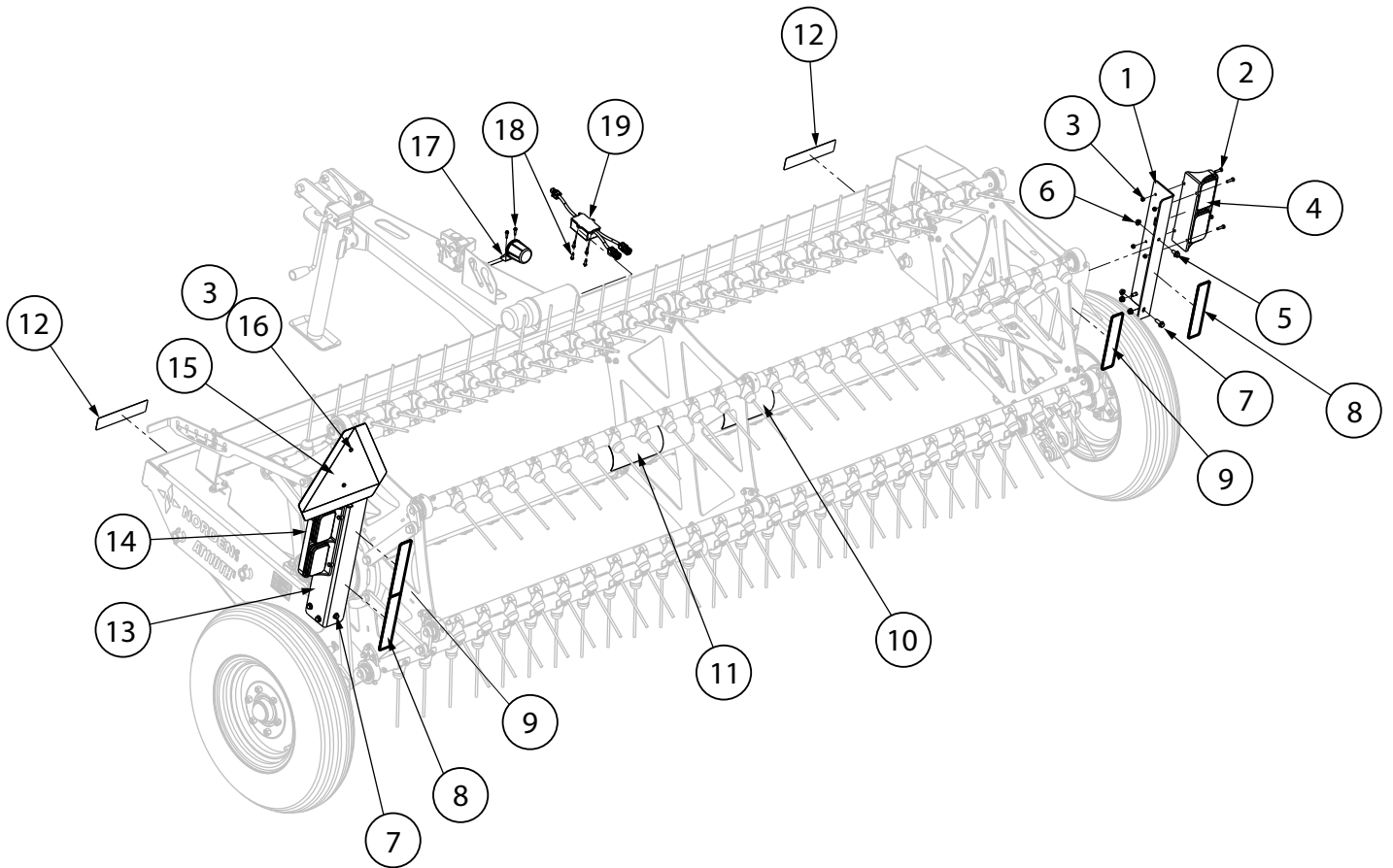
Item	Part Number	Description	Qty
13	1034890	Stauff 4S Cap	1
14	1034940	Stucci VUZ 12 Check Valve Block	2
15	1007550	Hex Bolt 3/8" x 2" (Grade 5)	2
16	1034900	Hose Clamp Body, 21.3mm (1/2" Hose)	4
17	1034920	Stauff 3D Group Single Hole Cap	2
18	1026530	Hex Bolt 5/16" x 1.75" (Grade 5)	2
19	1017470	Chain, #50 (inches)	67
20	1016330	Master Link, #50	1
21	1031240	Reel Sprocket, 50x60	1
22	1035050	Flow Control Valve, 3-Port SAE8	1
23	1035150	Plug, 08 MB	1
24	1033850	8MJ-8MB Straight Adapter	2
25	1035140	Valve Label, 0-8 GPM	1
26	1037780	Hex bolt 1/4-20 x 2.5 Grade 5	2
27	1006070	Nylock Nut 1/4"	2

10.13 Flow Divider - Life Circuit Parts Detail



Item	Part Number	Description	Qty
1	1036240	Flow Divider - Rotary Gear	1
2	1006080	Nylock Nut 5/16"	4
3	1009690	6MJ-6MB90 Adapter	2
4	1037830	6MJ-8MB Straight Adapter	2

10.14 Lighting Parts Detail



Item	Part Number	Description	Qty
1	1031170	Safety Bracket Right	1
2	1007620	1/4" x 1" bolt (grade 5)	8
3	1006070	1/4" Nylock Nut	10
4	1011050	Right Light, 4SQ	1
5	1006330	Serrated Flange Bolt 3/8" x 3/4" (Grade 5)	4
6	1006190	Serrated Flange Nut 3/8"	11
7	1006340	Serrated Flange Bolt 3/8" x 1" (Grade 5)	9
8	1007990	Red Reflector Tape 2"x9"	2
9	1008000	Fluorescent Orange Tape 2"x9"	2
10	1034090	Reflective Tape, Orange 9" x 15.6"	1
11	1034080	Reflective Tape, Red 9" X 15.6"	1
12	1007980	Yellow Reflector 2"x9"	2
13	1034150	Safety Bracket Left weldment	1
14	1011040	Left Light, 4SQ	1
15	1003750	SMV triangle	1
16	1006420	Hex Bolt 1/4" x 3/4" (Grade 5)	2
17	1010910	Lighting Plug Holder	1
18	1007480	Driller Screw #12 x 7/8"	9
19	1011060	Enhance Module, 4SQ	1
20	1038660	Main cable, 4SQ, 96" (Not Shown)	1
21	1037840	Left Cable, 4SQ. 104" (Not Shown)	1
22	1011010	Right Cable, 4SQ. 91" (Not Shown)	1



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