



# Owner's Manual

AF4 Hay Accumulator  
2022 Revision



**MADE IN THE USA** 

Read and understand the manual. This manual provides information and procedures to safely operate and maintain the Hay Accumulator.





## CONTENTS

<b>1. INTRODUCTION</b> .....	<b>4</b>	6.8 Attaching to Baler .....	24
1.1 Intended Usage .....	4	6.9 Operation .....	25
1.2 Operator Orientation .....	4	6.9.1 Break In .....	25
1.3 Specifications .....	4	6.9.2 Stuck Bale Removal .....	25
1.4 Serial Number Location .....	4	6.10 Troubleshooting .....	25
1.5 Owner/Operator Manual Storage .....	5	6.10.1 Cornering .....	25
1.6 Product Improvements .....	5	6.10.2 Hillsides .....	25
1.7 Disposal of Equipment at End of Useful Life .....	5	6.10.3 High Moisture Hay .....	25
1.8 Unanswered Questions .....	5	6.11 Detaching From Baler .....	26
<b>2. SAFETY</b> .....	<b>6</b>	<b>7. TRANSPORTING</b> .....	<b>27</b>
2.1 General .....	6	7.1 General Safety .....	27
2.2 Safety Alert Symbol .....	6	7.2 Safety Chain .....	27
2.3 Safety Icons Nomenclature .....	7	7.3 Highway and Transport Operations .....	28
2.3.1 Personal Protection/Important Information .....	7	7.4 Pre-towing Checklist .....	28
2.3.2 Prohibited Actions .....	7	<b>8. STORAGE</b> .....	<b>29</b>
2.3.3 Hazard Avoidance .....	7	8.1 Placing in Storage .....	29
2.4 General Operating Safety .....	8	8.2 Removing from Storage .....	29
2.5 Safety Signs .....	8	<b>9. MAINTENANCE</b> .....	<b>30</b>
2.6 Practice Safe Maintenance .....	8	9.1 Maintenance Safety .....	30
2.7 Training .....	8	9.2 Wheel Bearings .....	31
2.8 Sign-Off Form .....	9	9.3.1 Inspect Wheel Hubs Monthly .....	31
2.9 Operation Safety .....	10	9.3.2 Hub Components Maintenance: .....	31
2.10 Transporting Safety .....	10	9.3.3 Repacking Procedure: .....	31
2.11 Storage Safety .....	10	9.3.4 Wheel Bearing Preload Adjustment: .....	31
2.12 Maintenance Safety .....	10	9.3 Tire Safety .....	31
<b>3. SAFETY SIGNS AND LABELS</b> .....	<b>11</b>	9.4 Tire Inflation .....	32
3.1 General Information .....	11	9.5 Bolt Torque Requirements .....	32
3.2 Contact Information .....	11	9.6 Standard Torque Values .....	32
3.3 How to Install Replacement Safety Signs .....	11	9.7 Welding Repairs .....	32
3.4 Safety Sign Locations .....	12	9.8 Service Record .....	33
3.5 Hay Accumulator Safety Signs .....	13	<b>10. PARTS SECTION</b> .....	<b>34</b>
<b>4. NOMENCLATURE</b> .....	<b>14</b>	10.1 Ordering Parts .....	34
4.1 Undercarriage .....	15	10.2 Contact Information .....	34
4.2 Accumulator Bed .....	15	10.3 Decals .....	34
4.3 Linkage System .....	15	10.4 AF4 Accumulator Undercarriage .....	35
4.4 Belted Base Chute .....	15	10.5 Hub Assembly .....	36
4.5 Linkage System Operation .....	16	10.6 Gate Section .....	37
<b>5. ASSEMBLY</b> .....	<b>17</b>	10.7 Belt and Tensioner .....	38
<b>6. OPERATION</b> .....	<b>20</b>	10.8 Bale Chamber Extension .....	39
6.1 User Safety Training .....	20	10.9 Bale Section Parts .....	40
6.2 Tractor Requirements .....	20	10.10 Chute Section .....	41
6.2.1 Equipment and Capabilities .....	21		
6.2.2 Tractor Safety Devices .....	21		
6.2.3 ROPS and Seat Belt .....	21		
6.3 Baler Hitch Setup .....	21		
6.4 Relieving Tension .....	21		
6.5 Baler Chamber Settings .....	23		
6.6 Baler Hitch Special Requirements .....	23		
6.6.1 Older New Holland® (NH) Balers .....	23		
6.6.2 Newer New Holland® Balers .....	23		
6.6.3 John Deere® (JD) Balers (1988 and newer) .....	24		
6.5.4 Inline Balers .....	24		
6.7 Pre-Operation Checklist .....	24		

**NORDEN MFG IS THE SUCCESSOR TO KUHNS  
MFG   
AND ALL LIABILITY AND WARRANTY CLAIMS ARE  
TRANSFERABLE. .... 44**

# 1. Introduction



Using no hydraulics or electronics, the Norden Hay Accumulator automatically arranges bales into groups that can then be picked up with a Grabber mounted on a loader. Handling multiple bales of hay at one time allows wagons to be loaded more quickly, as well as quicker stacking in the barn.

Please read the manual carefully to become familiar with your new Norden Hay Accumulator. This manual has been developed through our experience with the equipment and feedback from our customers. Ultimately it is our desire that you will be operating your Hay Accumulator as a seasoned professional in no time!

## 1.1 Intended Usage

Do not use this Hay Accumulator for any other purpose than its intended use of arranging bales into groups that can then be picked up with Grabbers.

## 1.2 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.

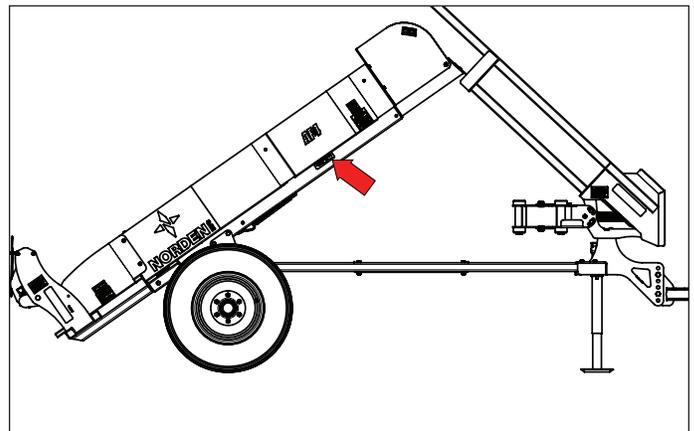
## 1.3 Specifications

Overall Width	88"
Overall Length	155"
Overall Height	84"
Overall Weight	1300 lb.
Bale Capacity	4
Bale Size	14 x 18" or 16 x 18", 32 to 40" long
Tires	9.5L-15SL

Specifications subject to change without notice.

## 1.4 Serial Number Location

The Hay Accumulator's serial number is located near the front of the Hay Accumulator Bed. 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.

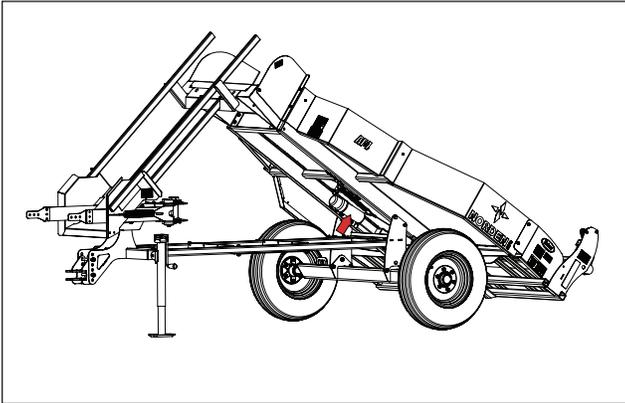


Serial Number \_\_\_\_\_

Date of Purchase \_\_\_\_\_

## 1.5 Owner/Operator Manual Storage

Store the Owner/Operator manual and other operating materials in the document storage tube, located on the left axle frame.



## 1.6 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.

## 1.7 Disposal of Equipment at End of Useful Life

The Norden Mfg LLC Hay Accumulator has been designed for the specific purpose of arranging bales into groups. When this unit is no longer capable of performing its intended use, it should be dismantled and scrapped. Do not use any materials or components from this unit for any other purpose.

## 1.8 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 Road NW  
North Bloomfield, OH 44450

Phone: 877-296-5851  
Fax: 440-693-4336  
E-mail: [parts@nordenmfg.com](mailto:parts@nordenmfg.com)

The manual is also available for download at:  
[www.nordenmfg.com](http://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 Hay Accumulator, 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 Hay Accumulator for anything other than its intended purpose.**

#### **WARNING**



Do not use the unit until you read and understand the information contained in this manual and all related equipment manuals.



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.

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.

### 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, NOTICES, SAFETY INSTRUCTIONS, 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 reader's attention to potential hazards.

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

#### **WARNING**

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

#### **CAUTION**

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

#### **NOTICE**

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

#### **SAFETY INSTRUCTIONS**

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 Personal Protection/Important Information

-  Read the manual
-  Eye protection
-  Hearing protection
-  Hand protection
-  Foot protection
-  First aid kit
-  Fire extinguisher
-  Inspect equipment
-  Use proper tools
-  Use support stands
-  Weight rating
-  Use OEM parts
-  Use ROPS and seat belt
-  Maintain safety signs
-  Place in park
-  Remove key
-  Stop engine
-  Visibility
-  Set parking brake

### 2.3.2 Prohibited Actions

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

### 2.3.3 Hazard Avoidance

-  Crushing hazard
-  Crushing hazard
-  Slipping hazard
-  Tripping hazard
-  Falling hazard
-  Fire hazard
-  Safety alert symbol
-  Maintain tire pressure
-  Defective or broken part
-  Chock wheels
-  Maintain safe distance
-  Pinch point hazard
-  Overturn hazard
-  Negative tongue weight hazard
-  Rollover hazard

## 2.4 General Operating Safety

### **WARNING**



#### **Read And Understand Manual**

To prevent personal injury or even death, be sure you read and understand all of the instructions in this manual and other related OEM equipment manuals! This Hay Accumulator (unit) was designed for a specific application; DO NOT modify or use this unit for any application other than that for which it was designed. Units operated improperly or by untrained personnel can be dangerous! Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate the unit.



#### **Do Not Operate**

Do not use the unit if it is in need of repair. If you believe the unit has a defect which could cause injury or death, you should immediately stop using the unit.



#### **Fall Hazard**

Do not use the unit as a platform. Do not climb on the unit. Do not stand on the unit at any time. Do not ride on the unit or allow others to ride on it.



#### **Pinch Point Hazard**

Keep hands and feet away from any moving parts to prevent them from getting pinched.



#### **Impaired User Hazard**

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



#### **Falling Hazard**

Do not allow riders on the tractor, or Hay Accumulator at any time. Falling can result in severe injuries or death.



#### **Stay Clear**

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

## 2.5 Safety Signs

### **CAUTION**



#### **Legible Safety Signs**

Keep safety signs clean and legible at all times. Replace any safety sign or instruction sign that is missing or not legible. Refer to the Safety Sign Location section for additional information.

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

Replacement safety signs (labels) are available from your authorized Dealer Parts Department or the factory at no cost.

## 2.6 Practice Safe Maintenance

### **SAFETY INSTRUCTIONS**



Understand service procedures before doing any work. Keep the work area clean and dry.



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



Do not modify the unit or its safety devices. Do not weld on the unit. Unauthorized modifications may impair its function and safety.

## 2.7 Training

Anyone who will be using and/or maintaining the Hay Accumulator 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 Hay Accumulator until all information has been reviewed. Annually review this manual before the season start-up.

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



## **2.9 Operation Safety**

Refer to “2.4 General Operating Safety” on page 8 for safety recommendations related to using the Hay Accumulator. All applicable safety recommendations in other sections should also be followed.

## **2.10 Transporting Safety**

Refer to “7. Transporting” on page 27 for safety recommendations related to transporting the Hay Accumulator. All applicable safety recommendations in other sections should also be followed.

## **2.11 Storage Safety**

Refer to “8. Storage” on page 29 for safety recommendations related to storing the Hay Accumulator. All applicable safety recommendations in other sections should also be followed.

## **2.12 Maintenance Safety**

Refer to “9. Maintenance” on page 30 for safety recommendations related to maintaining the Hay Accumulator. All applicable safety recommendations in other sections should also be followed.

## 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, baler, and Hay Accumulator. The safety signs attached to the Hay Accumulator are reproduced in this section. If the Hay Accumulator is missing a label or one is unreadable, replace the label before using the Hay Accumulator.

**SAFETY  
INSTRUCTIONS**



**Safety Signs and Instructional Labels**

**Keep safety signs or instructional labels clean and legible at all times. Use a clean, damp cloth to clean safety decals.**

1. **Replace any missing or hard-to-read safety signs or instructional labels.**
2. **Use care when washing or cleaning the equipment. Make sure not to remove or damage the labels. When using a pressure washer to clean the Hay Accumulator, 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.**
3. **Locations for the labels and replacement part numbers are shown in this section.**
4. **Replacement parts must have replacement labels attached before the Hay Accumulator is used.**
5. **Labels are available from your authorized dealer or from Norden Mfg LLC at no charge.**

### 3.2 Contact Information

For replacement decals, contact:

Norden Mfg  
4210 Kinsman Road NW  
North Bloomfield, OH 44450

Phone: 877-296-5851  
Fax: 440-693-4336  
E-mail: [parts@nordenmfg.com](mailto:parts@nordenmfg.com)

### 3.3 How to Install Replacement Safety Signs

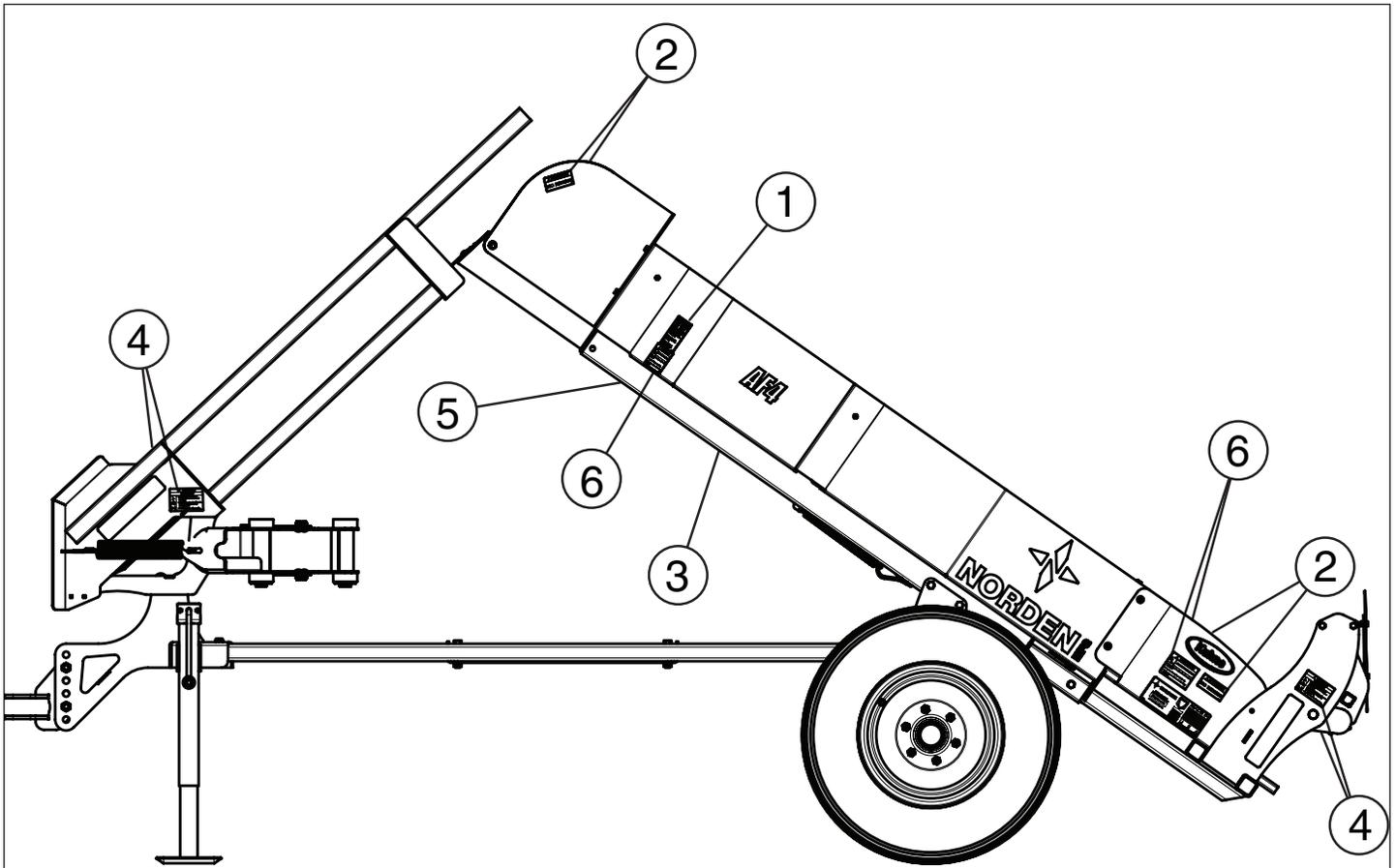
1. Clean and dry the installation area.

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

2. Determine the exact position before you remove the backing paper.
3. Remove the backing paper.
4. 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.

### 3.4 Safety Sign Locations



Item	Type	Description	Qty.
1	WARNING	Read the Manual	1
2	WARNING	No Riders	4
3	INFORMATIONAL	Serial Number	1
4	WARNING	Pinch Point	4
5	WARNING	Do Not Transport at Speeds Over 20 MPH	1
6	WARNING	Fall Hazard	4

3.5 Hay Accumulator Safety Signs

1.

2.

3.

4.

4.

5.

5.

6.

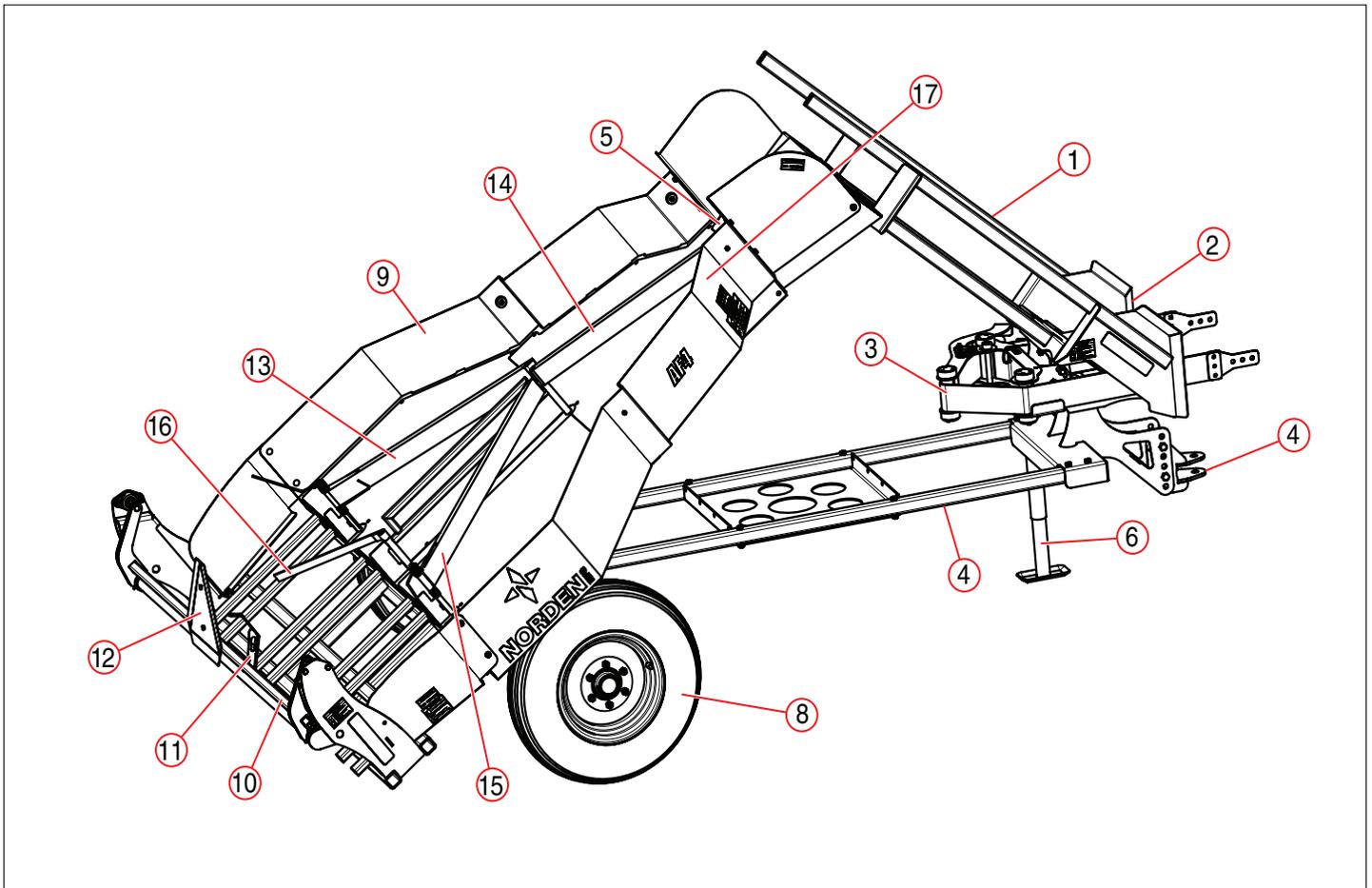
6.

7.

1024360

7.

## 4. Nomenclature

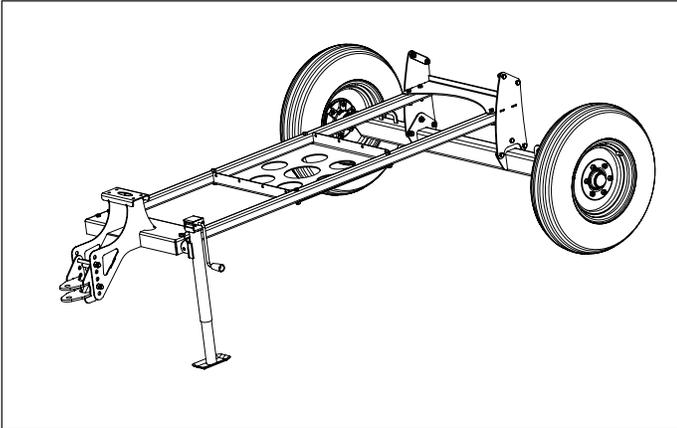


Item	Description
1	Main Chute
2	Belted Base Chute
3	Belt Tensioner
4	Hitch
5	Chute Platform
6	Jack
7	Undercarraige
8	Tires, 9.5L-15SL
9	Accumulator Bed

Item	Description
10	Back Gate
11	Back Gate Paddle
12	Slow Moving Vehicle Sign
13	Gate #1
14	Gate #2
15	Gate #3
16	Gate Flipper
17	Side Panels

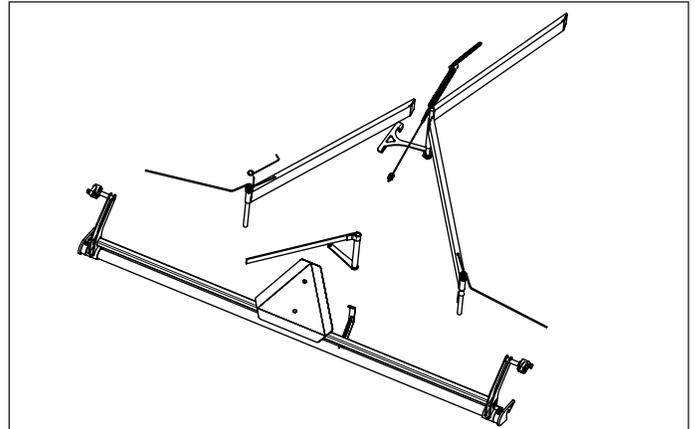
#### 4.1 Undercarriage

The Hay Accumulator's undercarriage supports the overall unit and includes the axle frames, wheel assemblies, reach poles, base chute bottom, and the hitch.



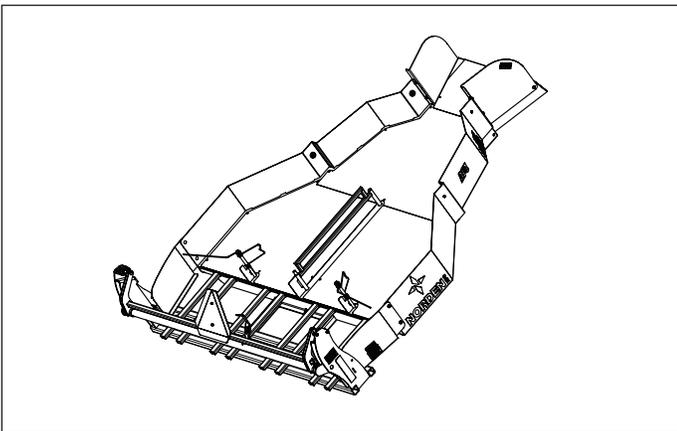
#### 4.3 Linkage System

The linkage system directs the bales through the accumulator bed. The system consists of three gates, one gate flipper, a back gate, and six springs.



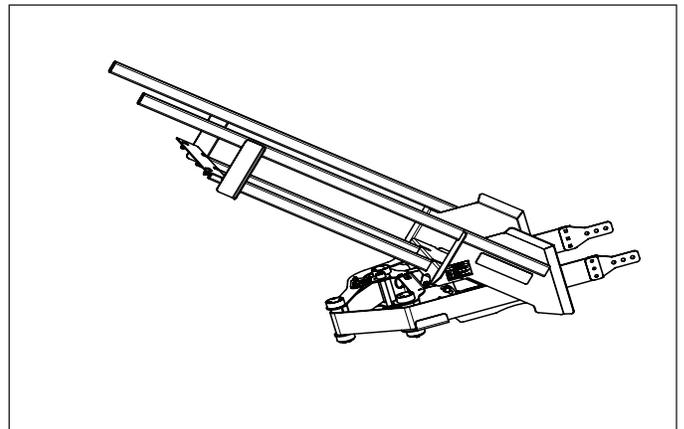
#### 4.2 Accumulator Bed

The accumulator bed guides and positions the bales on the accumulator.



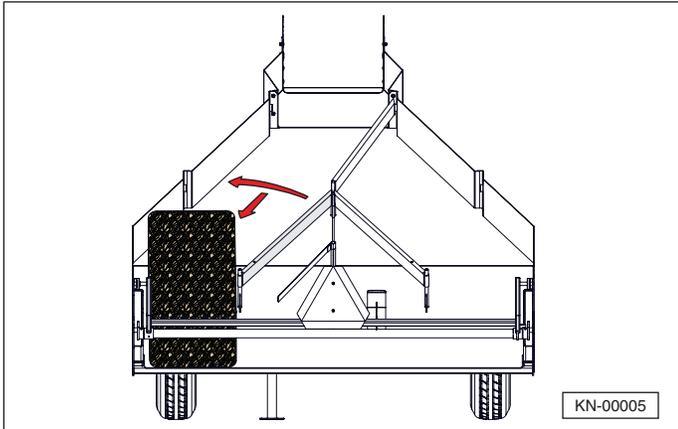
#### 4.4 Belted Base Chute

The belted base chute is standard equipment on the AF4 Hay Accumulator and will eliminate cornering issues.

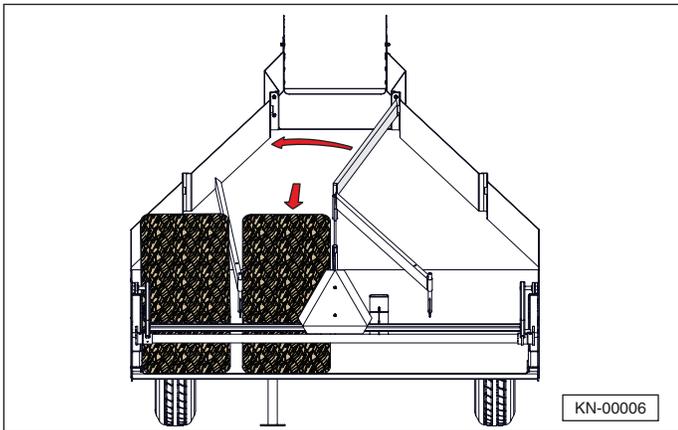


## 4.5 Linkage System Operation

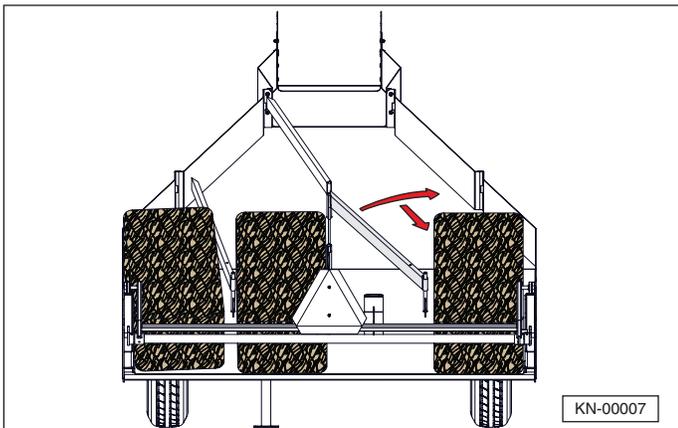
1. Bale #1 enters the Hay Accumulator and slides downward and into position, rotating the left gate to open row #2.



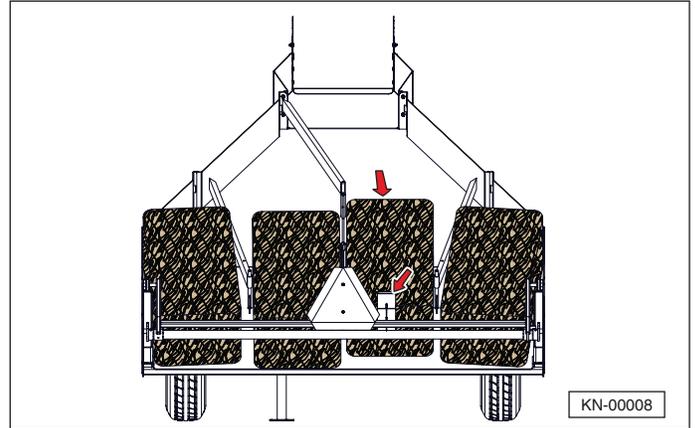
2. Bale #2 enters the Hay Accumulator and slides downward and into position, rotating the gate flipper and shifting the center gate to open row #3.



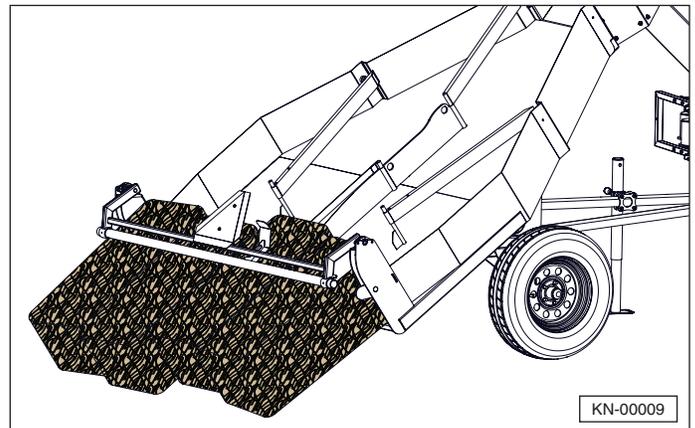
3. Bale #3 enters the Hay Accumulator and slides downward and into position, rotating the right gate to open row #4.



4. Bale #4 enters the Hay Accumulator and slides downward. As it slides into position, it depresses the back gate paddle, releasing the gate.



5. Once the back gate is open, the bales drop to the ground. When all bales are clear, the back gate returns to its original position and latches. All gates return to their original position.

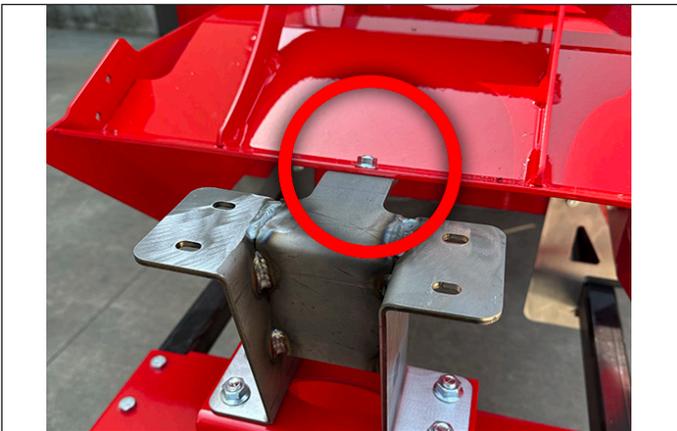


## 5. Assembly

1. Select an open location that is flat, level and free of debris.



2. Loosen bolt and lift chute assembly off of accumulator. Place it to the side.



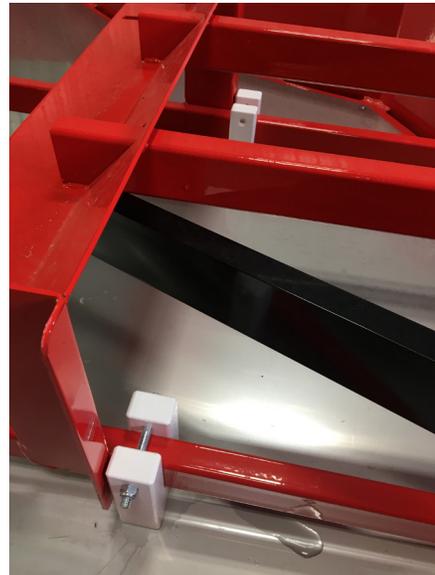
3. Remove bracket from the chute mounting plate. Keep the bolts handy as they will be used to fasten the chute assembly.



4. Remove the shipping brackets holding the front of the bed to the reach poles.



5. Remove Shipping brackets holding Chute in and remove the Chute.



6. Lift the front of the accumulator..



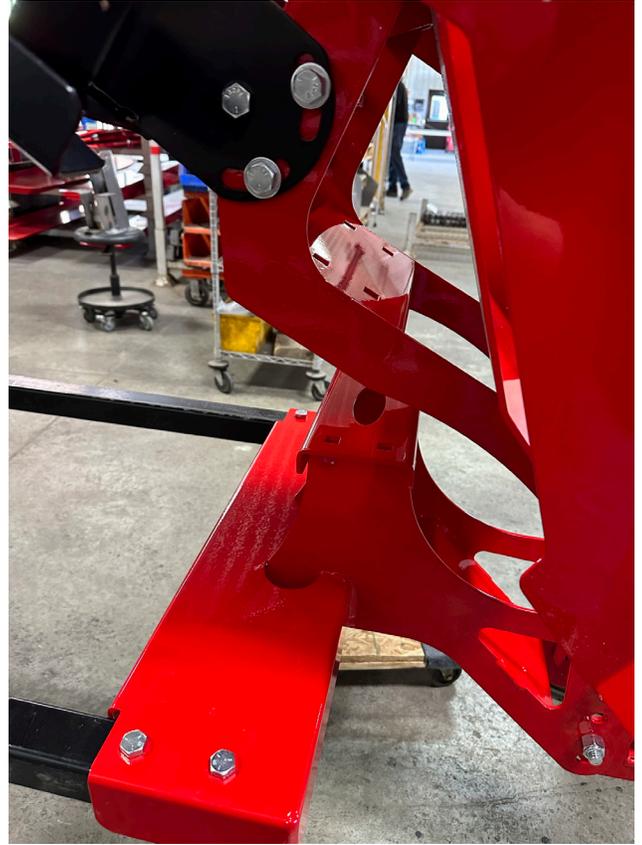
7. Remove the hardware boxes and open the white one. It contains needed hardware for the next setup steps..



8. Lift the chute into position.



9. Set the chute assembly onto the frame, line up the bolt holes at the bottom.



10. Place four 1/2" x 1" Carriage bolts into the chute, fastening it onto the frame. Install the flange nuts but do not tighten nuts until after the top bolts are also in place.



11. The top of the chute is fastened to the accumulator with two 3/8" x 1" Carriage bolts. Use an alignment tool to position the chute and bed to allow placement of first bolt.

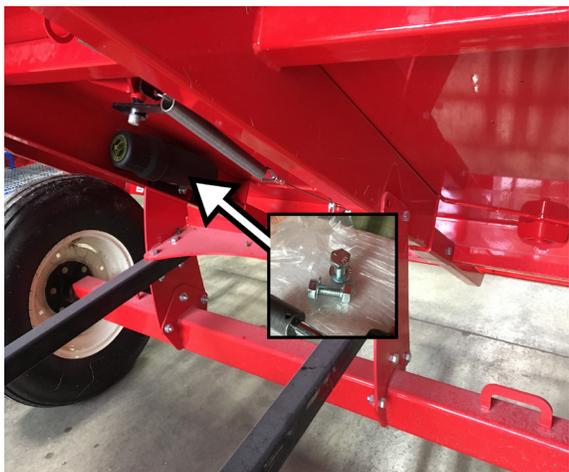


12. Place bolts into holes. You can tighten these right away.

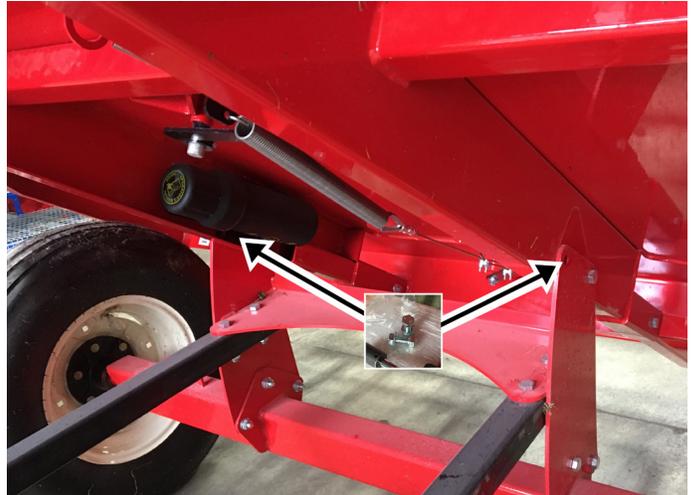


13. Tighten the (4) bolts at the bottom of the chute you placed in step 9.

14. Remove bolts and nuts from Manual Canister



15. Place bolts into holes and tighten.



## 6. Operation

### 6.1 User Safety Training

Refer to “2.4 General Operating Safety” on page 8 for user safety training requirements.

#### **WARNING**



**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.



**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.



**Crush Hazard**

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



**Stay Clear**

Keep hands and clothing clear of moving parts. Do not clean, lubricate, or adjust your equipment while it is moving.

#### **SAFETY INSTRUCTIONS**

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



**Train Unfamiliar Users**

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

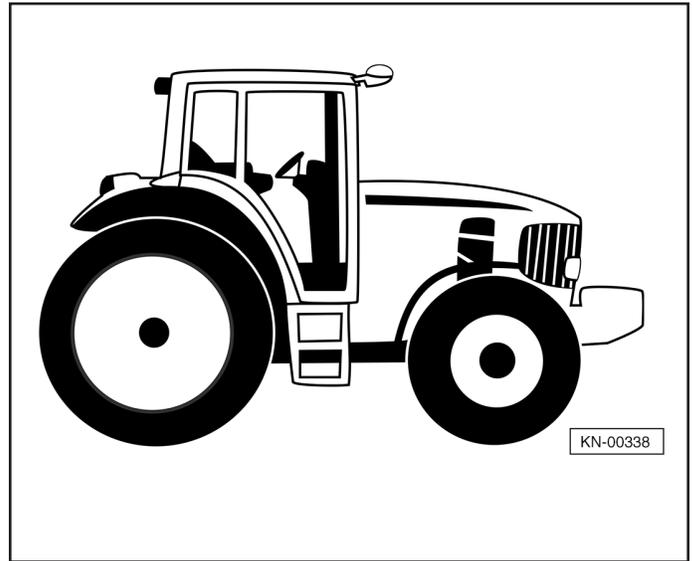
Be certain only physically-able persons will use the Hay Accumulator.

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

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

Never allow children to operate equipment.

### 6.2 Tractor Requirements



**Tractor Owner/Operator Manual**

Always refer to the tractor owner's manual to ensure compatibility and maximum safety.

Refer to the tractor and baler Operator's Manual to make sure the tractor used has the power to pull and operate the baler. There is no extra horsepower required for the Hay Accumulator.

Operating the baler with a tractor that does not have adequate power may damage the tractor engine.

Operating the equipment with a tractor that does not meet the following requirements may cause tractor or implement damage and be a potential danger to the operator and passersby.

Always review the “controls” section of the tractor operator's manual to be familiar with the location, settings, and function of the tractor controls. Be familiar with all controls before using this equipment.

### 6.2.1 Equipment and Capabilities

- Approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
- Tractor Safety Devices; Slow Moving Vehicle (SMV) emblem, lighting, PTO master shield.
- Front end weight, as needed, to maintain 20% weight on front axle.
- To reduce the risk of fire, do not use a tractor with an underframe exhaust.

### 6.2.2 Tractor Safety Devices

If transporting or operating the tractor and implement on a public roadway, the tractor and/or implement must be equipped with proper warning lighting and a Slow Moving Vehicle (SMV) emblem which are clearly visible from the rear of the unit. Lights and a SMV emblem must be attached directly to the implement if the visibility of the tractor warning signals are obscured.

Maintain all manufacturer-equipped safety shields and guards. Always replace shields and guards that were removed for access to connect, service, or repair the tractor or implement. Never operate the tractor PTO with the PTO master shield missing or in the raised position.

### 6.2.3 ROPS and Seat Belt

#### **WARNING**



#### **Rollover Hazard**

To avoid serious injury or death from falling off tractor, equipment runaway, rollover, or crushing:

1. Use ROPS equipped tractor.
2. Keep ROPS locked in the UP position.
3. Only operate the equipment when seated in the tractor seat.
4. Always fasten seat belt when operating the tractor.
5. Use caution when transporting over uneven terrain and slow down for turns.

The tractor must be equipped with a Roll Over Protective Structure (ROPS) (tractor cab or roll bar) and seat belt to protect the operator from falling off the tractor, especially during a roll-over where the driver could be crushed and killed. Only operate the tractor with the ROPS in the raised position and seat belt fastened.

### 6.3 Baler Hitch Setup

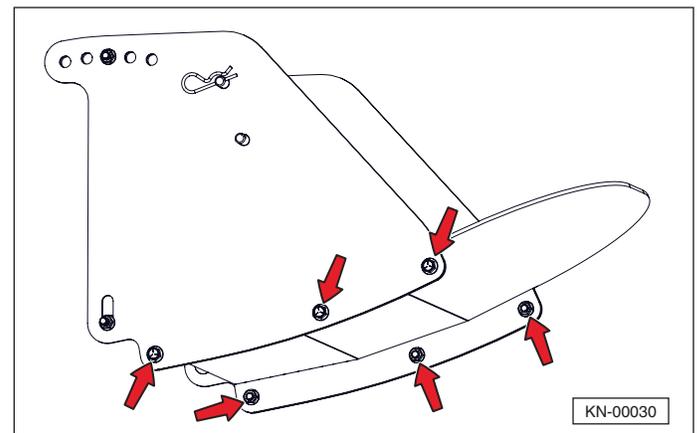
Proper baler hitch set up is essential to successful cornering with the Hay Accumulator.

#### **WARNING**

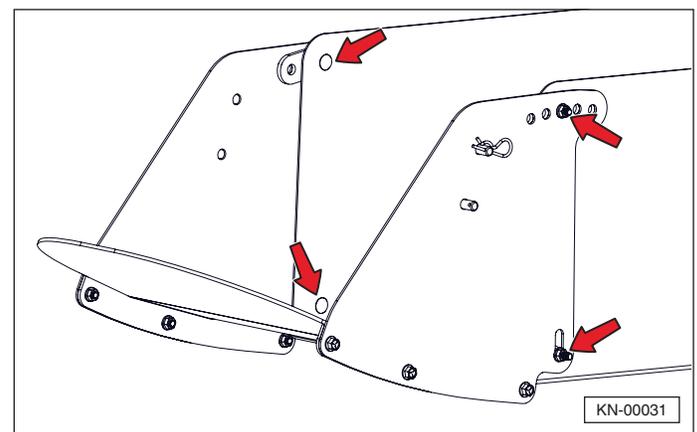


Use caution when connecting the accumulator to the baler. The Hay Accumulator wheels should be securely chocked. Keep hands and feet clear of pinch points between the baler drawbar and Hay Accumulator.

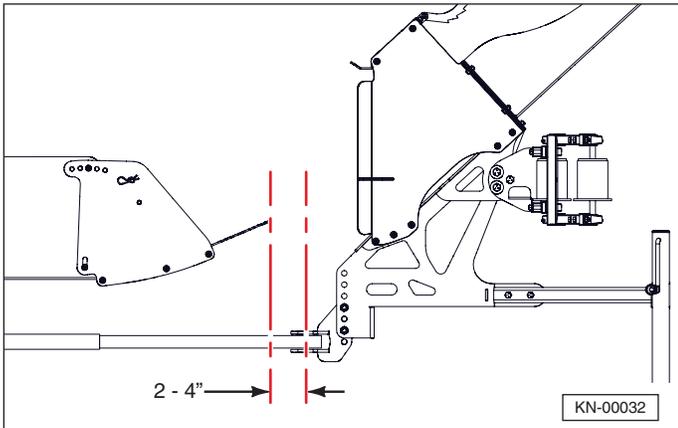
1. Make sure the baler and Hay Accumulator are on level ground, and remove all chutes/mechanisms from the back end of the bale chamber.
2. Assemble the three piece chamber extension using six 3/8 x 1" flange bolts and 3/8" flange nuts provided. Do not fully tighten the bolts at this time.



3. Loosely bolt the chamber extension onto the baler using four 3/8 x 1-1/4" carriage bolts and 3/8" flange nuts provided. Make sure the carriage bolt heads are on the inside.

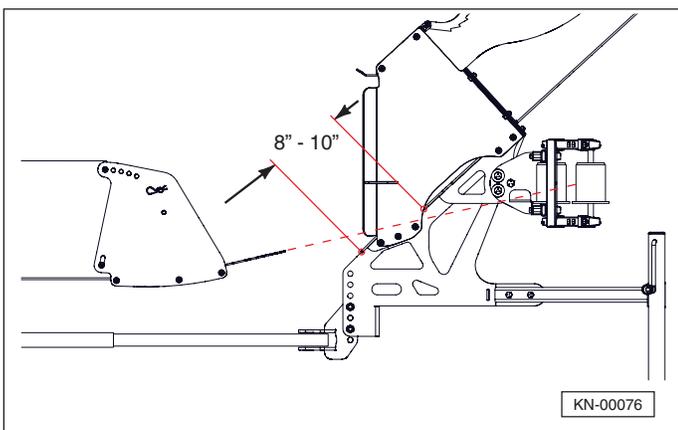


- Set the length of the baler hitch so that the hitch pin is 0-2" (on conventional balers), 2-4" (on inline balers) behind the tip of the chamber extension. If necessary, add a hitch length setting by drilling a hole in the drawbar. The baler hitch must be centered left/right below the chamber. If it is not centered, you will need a Norden centering hitch adapter. Some John Deere® balers may need a hitch extension for the proper hitch length. This can be purchased from a dealer or Norden Mfg. See 6.6.3

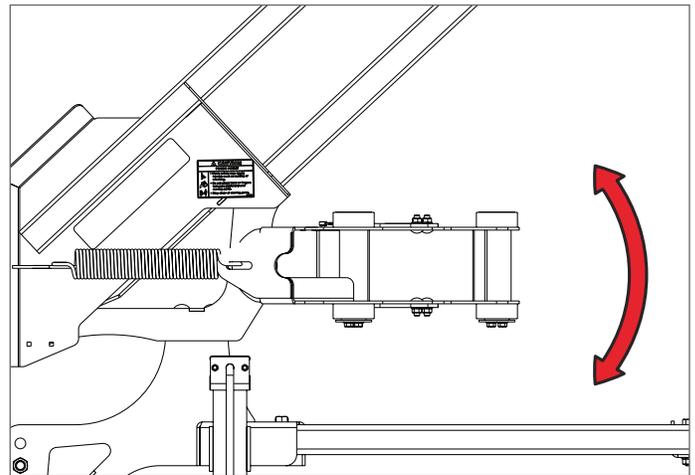


- Select one of the five holes on the adjustable bale chamber extension that will best guide the bales into the Hay Accumulator base chute.

For the initial adjustment, select the hole that aligns the bottom plate of the bale chamber extension to a point 8-10" back from the base chute bottom edge as shown below. This can be fine tuned later if needed to achieve optimum results. If there is a gap between the bale chamber and the chamber extension, use washers (not included) as spacers. Tighten the four carriage bolts on the sides of the chamber extension first, then the six flange bolts on the bottom.

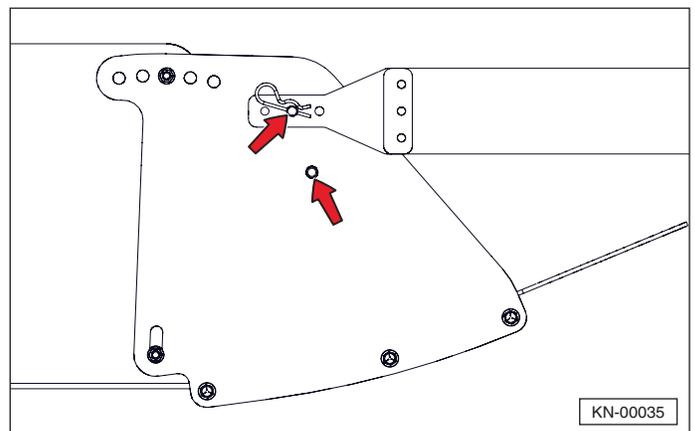


- Ensure that the belt tensioner assembly is square with the belt by adjusting the angle of the belt tensioner assembly at its mounting point on the base chute.

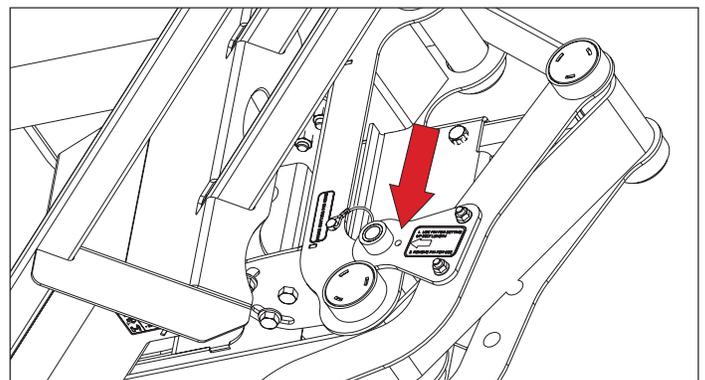


- On level ground, fasten the belt plates to the pins on the side of the chamber extension. There are two sets of pins; use the set that makes the belt most nearly level.

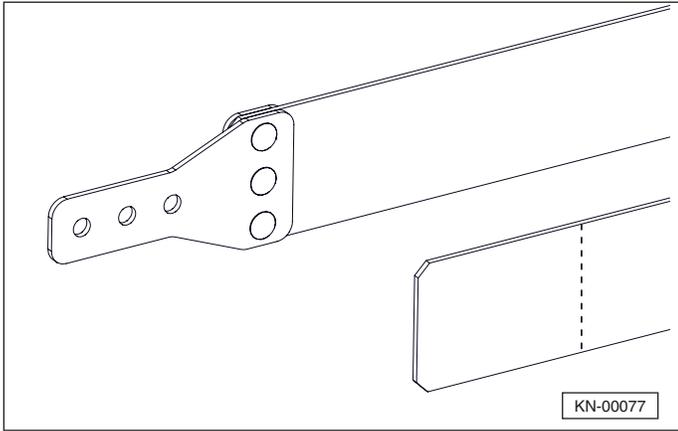
**Note:** Position the belt with the large belt plate next to the Chamber Extension



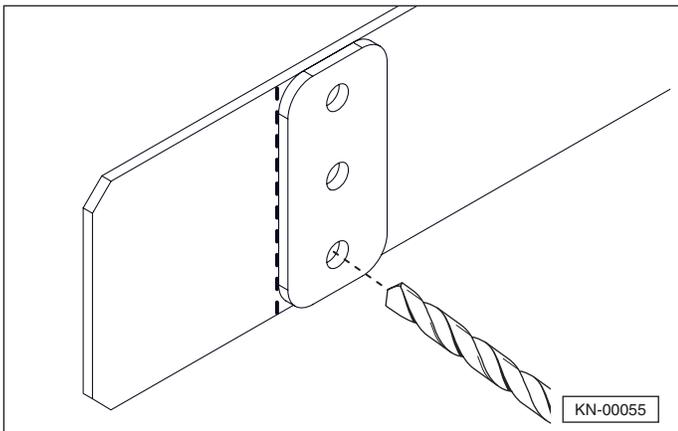
- Use pin for setting up belt length. Remove pin after belt is cut to proper length.



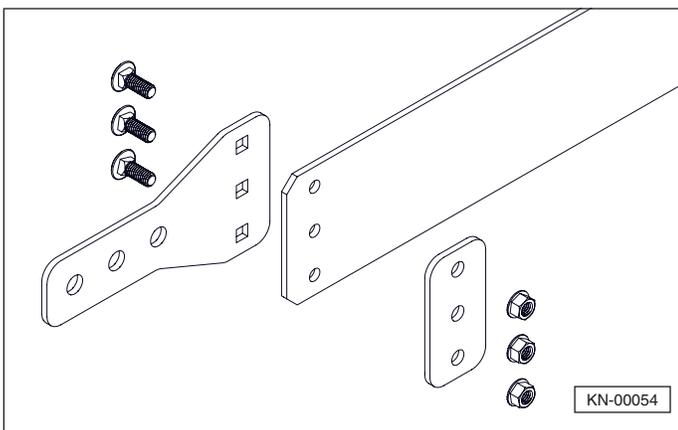
9. Mark the free end of the belt at the required length.



10. Using the small end plate as a guide, drill three 7/16" holes through the belt. Remove the excess length.

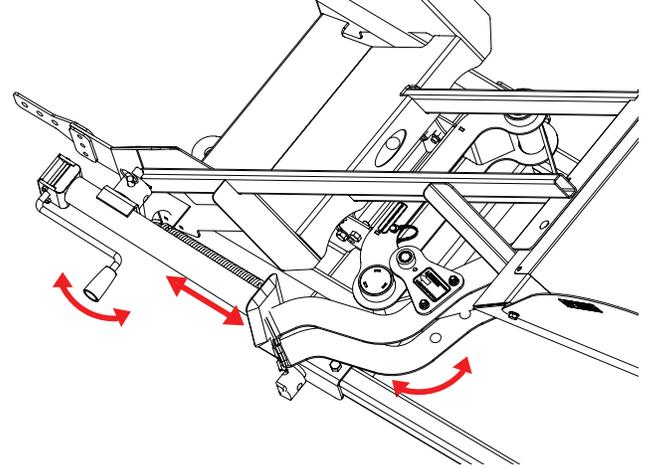


11. Install the belt end plates using three 3/8 x 1" carriage bolts and flange nuts. Position the large end plate on the inside (nearest to the bale chamber).



## 6.4 Relieving Tension

To make attaching belt to the Chamber Extension easier, mount Jack (included) on the Jack Mount above the Spring. Place bottom of the jack against the Tensioner Arm as shown. Turn Jack handle to relieve tension to the Spring (Remove after attaching belt to the Chamber Extension.)



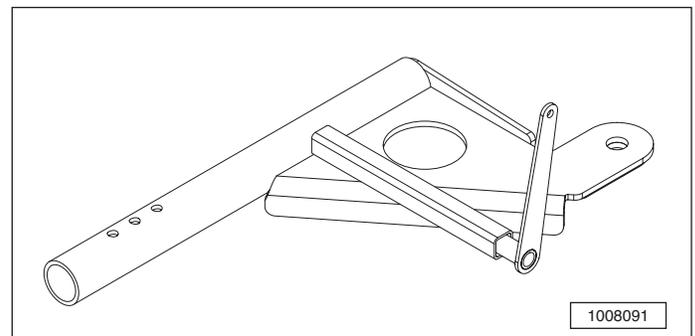
## 6.5 Baler Chamber Settings

This is dependent on your requirements for the size of bale that you want to make. First loosen the bale chamber nearly all the way to compensate for the backpressure caused by the chute. You can then adjust the chamber pressure to reach the desired bale size. You may need to remove all the wedges from the chamber.

## 6.6 Baler Hitch Special Requirements

### 6.6.1 Older New Holland® (NH) Balers

Older NH balers have the hitch on the right hand side of the chamber. Norden Mfg offers a center hitch adaptor to center the hitch (for 10 7/8" offset).

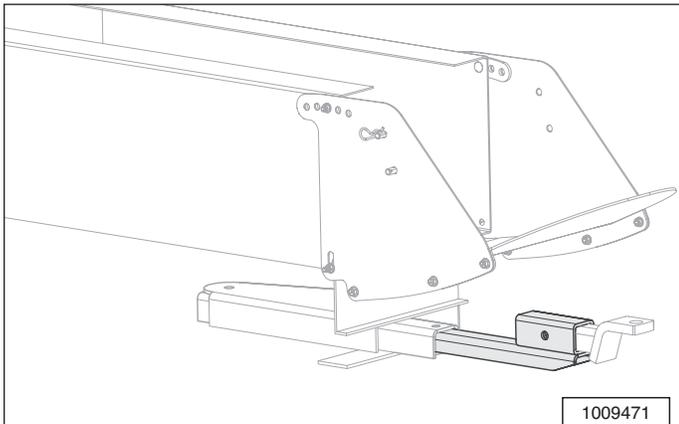


### 6.6.2 Newer New Holland® Balers

Newer NH balers have a hitch centered underneath the chamber. The hitch may need to be modified to meet the dimensions given in "6.3 Baler Hitch Setup" on page 21.

### 6.6.3 John Deere® (JD) Balers (1988 and newer)

The hitch on the JD baler may need to be modified to meet the dimensions given in “6.3 Baler Hitch Setup” on page 21. Norden Mfg offers a special hitch extension for John Deere® balers.



Order from a Dealer or Norden Mfg.

### 6.6.4 Inline Balers

Inline balers should need little or no modifications. It is best to have hitch 2-4” past the end of the Chamber Extension vs 0-2” on Conventional.

### 6.7 Pre-Operation Checklist

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

Checklist Before Each Use	
4	Task
	Make sure the Hay accumulator is positively attached to the baler drawbar. Refer to “6.7 Attaching to Baler” on page 24.
	Make sure that the tires are inflated properly and the lug nuts are tight.
	Check the condition of the belt.
	Visually inspect the Hay Accumulator 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 gates and gate flipper, are lubricated. Refer to “9.2 Lubrication” on page 30.
	Make sure the belted base chute tensioner and end gate operate freely.
	Make sure the operating area is clear, especially of children and animals.



### 6.8 Attaching to Baler

Use caution when connecting the Hay Accumulator to the baler. Keep hands and feet from under the equipment and clear of pinch points between the drawbar and accumulator hitch.

#### ⚠ WARNING



#### Crush Hazard

Crush hazard between hitch and implement. Do not allow anyone to stand between the hitch and implement during hook-up operations.

1. Use the jack to adjust the hitch to the height of the baler drawbar.
2. Board the tractor and start the engine. Back the baler up to the accumulator hitch until the holes in the drawbar and clevis are aligned.
3. Stop the tractor, place the transmission in park or neutral, apply the parking brake, shut down the engine, and remove the key. Wait for all motion to come to a complete stop before exiting the tractor.
4. Insert a high strength drawbar pin through the clevis and drawbar holes and install the retaining pin. Do not use a homemade or shop made pin.

#### ⚠ WARNING



#### Crush Hazard

Unexpected separation of the accumulator from the baler could cause death or serious injury. Use only an OEM high strength drawbar pin. Do not use a homemade or shop made pin.

5. Fasten the guide belt plates to the pins on the side of the chute extension using the pins and hairpin retainers.

- Retract the jack, remove the locking pin, rotate the jack to its storage position, and secure it with the locking pin.

## 6.9 Operation

### **WARNING**



**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 Hay Accumulator for any reason. Falling can result in serious injury or death.



#### **Overturn Hazard**

DO NOT operate on steep slopes as overturn may result. Overturn can result in serious injury or death.

### **SAFETY INSTRUCTIONS**



Be especially observant of the operating area and terrain – watch for loose fill, holes, rocks, or other hidden hazards. Always inspect the area prior to operation.



Pick the most level route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides. Be extra careful when working on inclines.



Periodically clear the Hay Accumulator of loose hay to prevent buildup of dry, combustible materials.



Maneuver the tractor or towing vehicle at safe speeds.



Allow for the unit's length when making turns.

### 6.9.1 Break In

To quickly and effectively “break in” the Hay Accumulator, apply silicone or cooking spray to the surface of the bed to make the bales slide easier. After a couple dozen bales have been through the Hay Accumulator, the powder coated finish will be

buffed enough to slide without spray.

### 6.9.2 Stuck Bale Removal

If a bale should get caught in the chute, stop baling, place the transmission in park or neutral, apply the parking brake, shut down the engine, and remove the key. Wait for all motion to come to a complete stop before exiting the tractor to safely remove the bale. Use a pole, broomstick, or other suitable tool to remove the bale. Do not climb or stand on the accumulator to remove a bale.

If the bale cannot be manually dislodged, break the bale and remove the loose hay from the accumulator.

### **WARNING**



#### **Fall Hazard**

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

## 6.10 Troubleshooting

### 6.10.1 Cornering

When properly set up, the Hay Accumulator will corner without difficulty. If the hitch configuration is not as specified in this manual, problems may occur. Refer to “6.3 Baler Hitch Setup” on page 21. Once you have ensured that everything is properly configured, if you are still experiencing trouble, contact Norden Mfg for additional help.

### 6.10.2 Hillside

### **WARNING**



#### **Overturn Hazard**

DO NOT operate on steep slopes as overturn may result. Overturn can result in serious injury or death.

The Norden Hay Accumulator works well on moderate hillsides. Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops. If problems persist, call Norden Mfg for service.

### 6.10.3 High Moisture Hay

If you are baling hay with a moisture content of 20% or over, you may need to cover the bed floor with the stainless steel kit available from Norden Mfg to help the bales to slide.

## 6.11 Detaching From Baler

Use caution when disconnecting the Hay Accumulator from the baler. Keep hands and feet from under the equipment and clear of pinch points between the drawbar and Hay Accumulator hitch.

### **WARNING**



#### **Crush Hazard**

**Crush hazard between hitch and implement. Do not allow anyone to stand between the hitch and implement while detaching the Hay Accumulator.**

1. Park the tractor, place the transmission in park or neutral, apply the parking brake, shut down the engine, and remove the key. Wait for all motion to come to a complete stop before exiting the tractor.
2. Chock the Hay Accumulator wheels before attempting to disconnect it from the baler. Use extreme care to keep feet and hands clear of any pinch points caused by the drawbar and hitch.
3. Remove the jack locking pin, rotate the jack from its storage position to its usage position, and secure it with the locking pin.
4. Use the jack to support the accumulator hitch at the height needed to disconnect the clevis from the drawbar.
5. Detach the guide belt from the pins on the sides of the bale chamber.
6. Remove the drawbar pin from the clevis and drawbar.
7. Board the tractor and start the engine. Drive the tractor and baler away.

## 7. Transporting

### 7.1 General Safety

#### SAFETY INSTRUCTIONS

-  Towing the Hay Accumulator requires care! Both the unit and tow vehicle must be in good working condition. Securely attach the unit to the tow vehicle using a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chain.
-  Make sure the safety chain from the unit is securely fastened to the tow vehicle.
-  Check the tires for tread wear, inflation pressure, and overall condition before towing the unit.
-  Inspect the hitch and coupling for wear or damage. **DO NOT** tow the unit using a defective hitch or coupling!
-  Make sure the lug nuts holding the wheels are tight and that none are missing.
-  When towing the unit on the highway, make sure the “Slow Moving Vehicle” placard is clearly visible.
-  Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the unit.
-  Make sure that the area is clear of children, animals, and other obstacles before moving the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
-  Do not allow anyone to ride on the unit.

### 7.2 Safety Chain

#### WARNING

-  **Unexpected Separation Hazard**  
If the safety chain does not have a current certification tag, do not tow the unit until properly certified chains are installed. Substandard safety chains could allow the unit to separate from the tow vehicle, resulting in equipment damage and personal injury.

#### SAFETY INSTRUCTIONS

- If the unit will be transported on a public highway, a safety chain must be attached to the tow vehicle.
-  Always follow state and local regulations regarding a safety chain when towing farm equipment on a public highway.
-  Be sure to check with local law enforcement agencies for any local regulations or restrictions.
- Do not use any device other than an approved safety chain. Only a safety chain (not an elastic or nylon/plastic tow strap) should be used to retain the connection between the tow vehicle and the unit in the event of separation of the primary attaching system. Install the safety chains by crossing the chains under the tongue and secure to the hitch.

## 7.3 Highway and Transport Operations

### **SAFETY INSTRUCTIONS**

- Operate the towing vehicle from the operator's seat only.
- Never use independent braking when towing the unit, as loss of control and/or upset of the unit may result.
- Always drive at a safe speed relative to local conditions, and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.
- Reduce speed prior to turns to avoid the risk of overturning.
- Avoid sudden uphill turns on steep slopes.
- Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
- Use approved accessory lighting, flags, or other necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.
- When driving the tractor and equipment on the road or highway, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Some localities prohibit the use of flashing amber lights. Local laws should be checked for all highway lighting and marking requirements.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Plan your route to avoid heavy traffic.
- Be observant of bridge load restrictions. Do not cross bridges rated lower than the gross weight at which you are operating.
- Watch for overhead obstructions and side clearances while transporting.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping, etc.

## 7.4 Pre-towing Checklist

1. Before towing, make sure the maintenance on the tow vehicle and the unit are current. This is very important because towing puts additional stress on the tow vehicle.
2. Check and correct the tire pressures on the tow vehicle and the unit.
3. Make sure the hitch, clevis, and any other equipment that connects the unit and the tow vehicle are properly secured and adjusted. Always inspect the hitch and tongue for cracks or abnormal wear when hooking up.

### **WARNING**



#### **Substandard Parts Hazard**

Use only an OEM certified, hardened drawbar pin with a retainer clip. Do not use homemade pins, bolts, or any other type of retaining device. Always install the retainer clip, making sure the hitch and unit are securely fastened to the tow vehicle.

Using a pin not intended for this type of towing can result in unexpected separation of the unit from the tow vehicle, resulting in equipment damage and personal injury.

4. Attach the safety chain from the unit to the tow vehicle. The safety chain should be long enough for tight turns. Don't allow the chain to drag on the pavement because it will wear the chain links, causing an unsafe condition.
5. Prior to towing, have an observer confirm all running lights, brake lights, turn signals, and hazard lights are working on the tow vehicle.
6. Verify the brakes on the tow vehicle are operating correctly.

## 8. Storage

---

### **WARNING**

**Not following these safety instructions can result in serious injury and possible death.**



**Read and understand the Operator's Manual and all safety signs before moving the unit.**



**Do not permit anyone, especially children to play on or around the stored unit.**

**Store the unit in an area away from human activity.**

**Do not park the equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.**

### 8.1 Placing in Storage

1. Remove all bales and loose hay from the Hay Accumulator.
2. Thoroughly wash the Hay Accumulator with a pressure washer or water hose to remove all dirt, mud, or debris.
3. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the Hay Accumulator to its storage area. Disconnect the Hay Accumulator from the baler following the procedure in "6.10 Detaching From Baler" on page 26.
4. Lubricate all grease points. Make sure all grease cavities have been filled with grease to displace any trapped water from washing.
5. Touch up all paint nicks and scratches to prevent rusting.

### 8.2 Removing from Storage

1. Grease all lubrication points. Refer to "9.2 Lubrication" on page 30.
2. Attach the accumulator to the baler following the procedure in "6.7 Attaching to Baler" on page 24.
3. Before placing the accumulator back into service, replace any worn or defective parts and perform the Pre-Operation Checklist.

## 9. Maintenance

### 9.1 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 safety glasses, safety shoes, gloves, etc. appropriate for the work site and working conditions.



#### **Damaged Parts Hazard**

Do not use the Hay Accumulator if any parts are damaged. If the Hay Accumulator 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 Hay Accumulator or safety devices. Do not weld on the unit. Unauthorized modifications may impair the unit's function, or create safety hazards, and will void the warranty.

If the Hay Accumulator 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 Hay Accumulator 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.

#### **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 Right 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 equipment, or performing repairs, service, or maintenance.

The Hay Accumulator weighs 1300 lbs. Before working underneath, place it on a minimum of three 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 is approximately level. Test the stability of the load before working underneath.

If the Hay Accumulator is attached to the tractor and baler, set the brakes, disengage the PTO and all power drives, shut off the engine, remove the ignition key, chock the tractor wheels, and block the Hay Accumulator before working underneath.

Good maintenance is your responsibility. Poor maintenance shortens equipment life and is an invitation for problems.

Before working on the Hay Accumulator, stop the towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine, and remove the ignition key. After servicing, be sure all tools, parts, and service equipment are removed. Never replace hex bolts with less than grade five bolts. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

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

## 9.2 Wheel Bearings

The wheel bearings require lubrication twice a month during hay season:

### 9.2.1 Inspect Wheel Hubs Monthly

To perform the inspection, follow these steps:

1. Elevate the empty accumulator off the ground and support it securely with suitable jack stands.
2. On each wheel assembly, perform the following checks:
  - Apply forward and backward force to detect any unusual movement or chatter.
  - Ensure the wheel spins freely without any grinding noise.
3. If any issues are identified during the inspection, it is recommended to perform repacking of the bearings.

### 9.2.2 Hub Components Maintenance:

The wheel bearings, seals, and cups require cleaning, inspection, repacking, and adjustment according to the following guidelines:

- Anytime issues are detected during inspection.
- Every 600 hours of operation.

At least once every other year, regardless of usage.

### 9.2.3 Repacking Procedure:

Repacking should be carried out by qualified personnel using the following steps:

1. Disassemble the hub and remove all old grease.
2. Thoroughly clean and inspect the bearing seal for any signs of wear or damage, replacing it if necessary.
3. Clean and inspect the bearings for any wear or damage, replacing them if required.
4. Examine the bearing cups for wear or damage, replacing them if needed.

### 9.2.4 Wheel Bearing Preload Adjustment:

After inspection or repacking, it is crucial to correctly set the wheel bearing preload. Qualified personnel should perform the adjustment using the following steps:

1. Install the washer and nut.
2. Tighten the nut with a wrench until the hub can barely be turned by hand. This step ensures proper seating of the bearings.
3. Loosen the nut approximately ½ turn.
4. Retighten the nut until it aligns with the correct cotter pin hole, allowing the hub to rotate with one hand. This establishes the desired bearing preload.
5. Install a new cotter pin for secure fastening.
6. Apply 2-3 beads of grease around the inside diameter of the dust cap, avoiding the center or end. The dust cap should be filled to approximately one-third of its capacity.
7. Install the dust cap and ensure there is no grease on the outside of the cap or hub. In some models, a bolt-on dust cap with a gasket may be used.
8. After assembly, rotate the hub to ensure smooth operation.

For replacement parts and detailed repacking procedures, please contact your authorized dealer.

## 9.3 Tire Safety



Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.

## 9.4 Tire Inflation

Check the tire pressure before each use. The recommended tire inflation pressure is 34 psi (235 kPa).

## 9.5 Bolt Torque Requirements

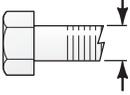
It is extremely important to apply and maintain proper torque on all bolts. Use a torque wrench to assure the proper amount of torque is being applied to the fastener.

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%.

The 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 tightness of bolts periodically, using the bolt torque chart as a guide. Always replace hardware with the same Grade bolt.

## 9.6 Standard Torque Values

Bolt Diameter 	English Bolt Torque Specifications			
	Grade 5  3 Radial Lines		Grade 8  6 Radial Lines	
	ft.lbs.	N·m	ft.lbs.	N·m
1/4"	9	12	12	17
5/16"	19	25	27	36
3/8"	33	45	45	63
7/16"	53	72	75	100
1/2"	80	110	115	155
9/16"	115	155	165	220
5/8"	158	215	220	305
3/4"	290	390	398	540
7/8"	420	570	650	880
1"	630	850	970	1320

## 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 can result in injury or death. Always use replacement bolts with the same Grade markings as the removed bolt.

## 9.7 Welding Repairs



Before performing any type of welding repair to the Hay Accumulator, contact Norden Mfg 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 Hay Accumulator 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.

## 9.8 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														
<b>Maintenance</b>														
<b>Every 8 Hours</b>														
Make sure that the tires are inflated properly and the lug nuts are tight.														
Make sure all retainer clips and pins are in place.														
Inspect the belted base chute and gates for wear and damage.														
<b>Weekly</b>														
Make sure all fasteners are tightened to proper torque. Refer to "9.6 Bolt Torque Requirements" on page 32.														
Oil the three gate pivot points and gate flipper pivot point. Refer to "9.2 Lubrication" on page 30.														
<b>Annually</b>														
Grease the belt tensioner bearings and end gate bearings. Refer to "9.2 Lubrication" on page 30.														
Inspect the wheel bearings for excessive end play. Refer to "9.3 Wheel Bearings" on page 31.														
Make sure all fasteners are tightened to proper torque. Refer to "9.6 Bolt Torque Requirements" on page 32.														
Check accumulator bed, gates, and linkage for damage.														
Inspect the belted base chute and tensioner for wear and damage.														
Make sure the hitch, hitch bolts, and hitch pin are in good condition. Do not use homemade or shop made pins.														
Wash the accumulator.														

## 10. Parts Section

---

### 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](mailto:parts@Nordenmfg.com)**

### 10.3 Decals

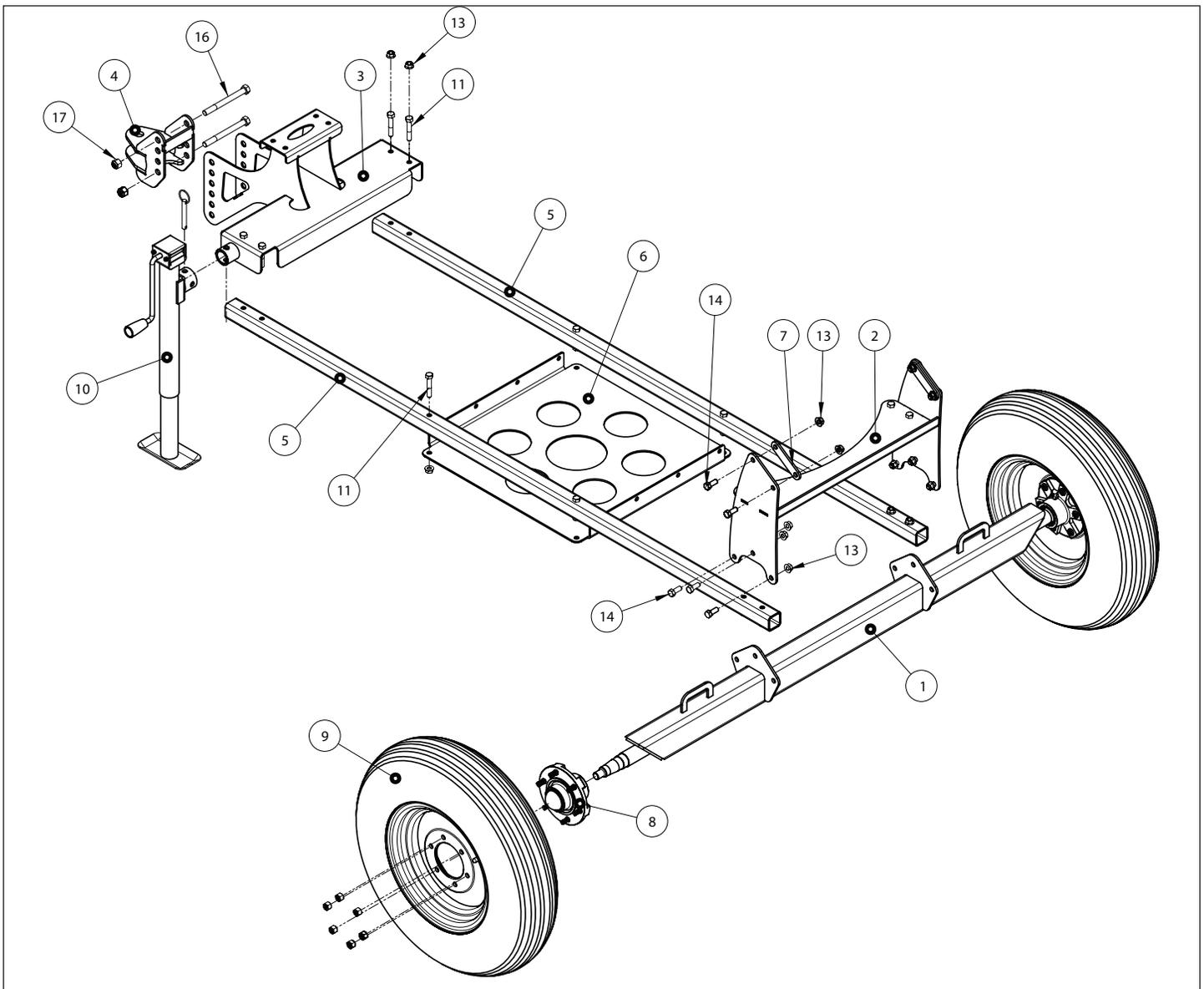


**To prevent serious injury or death from not following posted safety instructions, make sure all decals are attached to the unit and are legible at all times.**

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 Accumulator Undercarriage

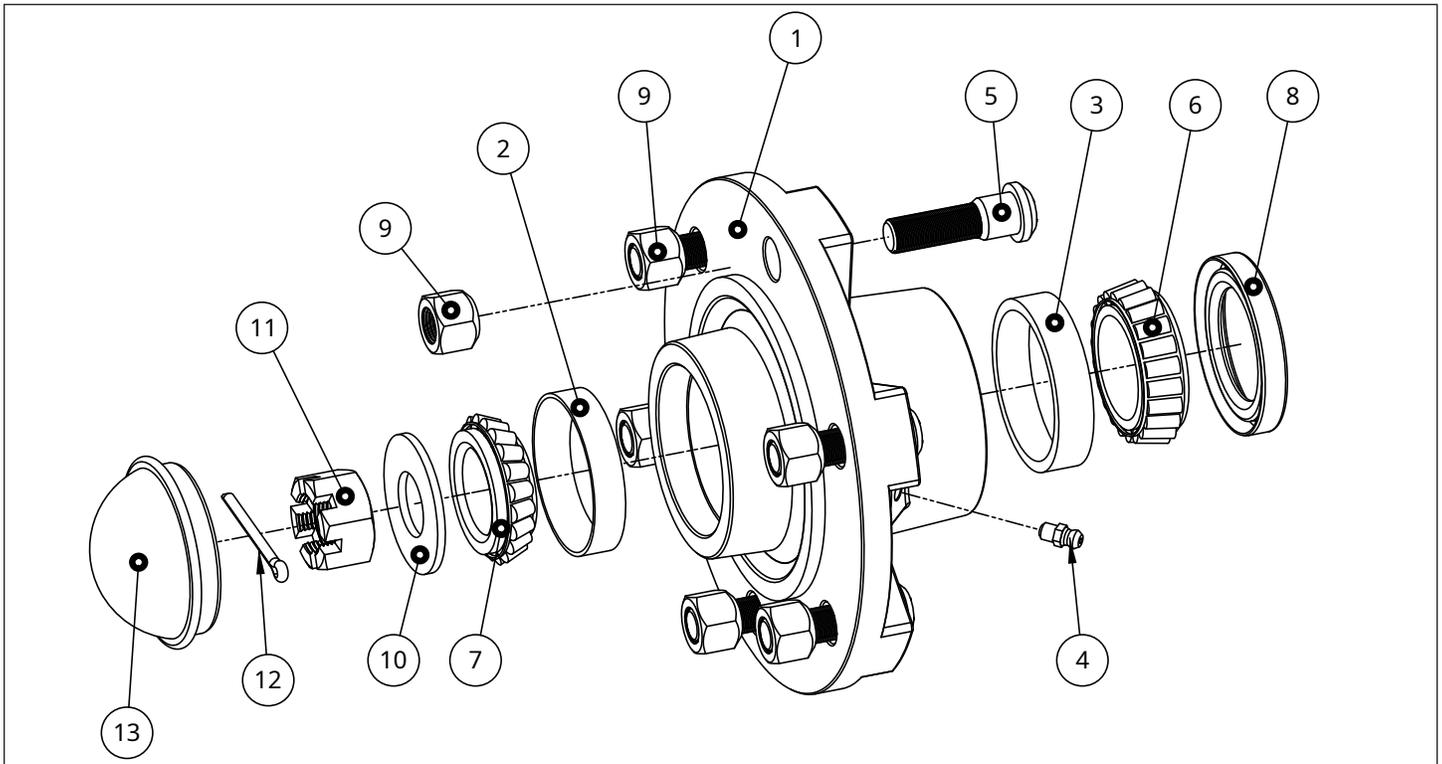


Item	Qty	Part number	Name	Finish
1	1	1001281	Rear Axle, Narrow	Red
2	1	1021510	Axle Connector, AF4	Red
3	1	1021470	Front Frame, AF4	Red
4	1	1004390	AF4 Hitch	Red
5	2	1001220	Reach Pole, AE10	Black
6	1	1001190	Reach Pole Connector	Black
7	2	1021500	Connector Clamp, AF4	Black
8*	2	1005200*	Wheel Hub Assembly, 6 bolt* (888 Ag Hub)	Black
9	2	1001000	Large Wheel Assembly	-
		1003580	9.5L-15SL Accumulator Tire	

Item	Qty	Part number	Name	Finish
		1003610	Large Accumulator Rim	
10	1	1004540	Lift Jack, 3k Sidewind	-
11	12	1007580	Hex bolt 1/2-13 x 2.75 x 1.25	Zinc
12	10	1006230	Hex bolt 1/2-13 x 1.25	Zinc
13	22	1006210	Hex flange nut 1/2-13	Zinc
14	2	1006410	Hex bolt 5/8-11 x 6.5 x 1.75	Zinc
15	2	1006120	5/8" Nylock Nut	Zinc

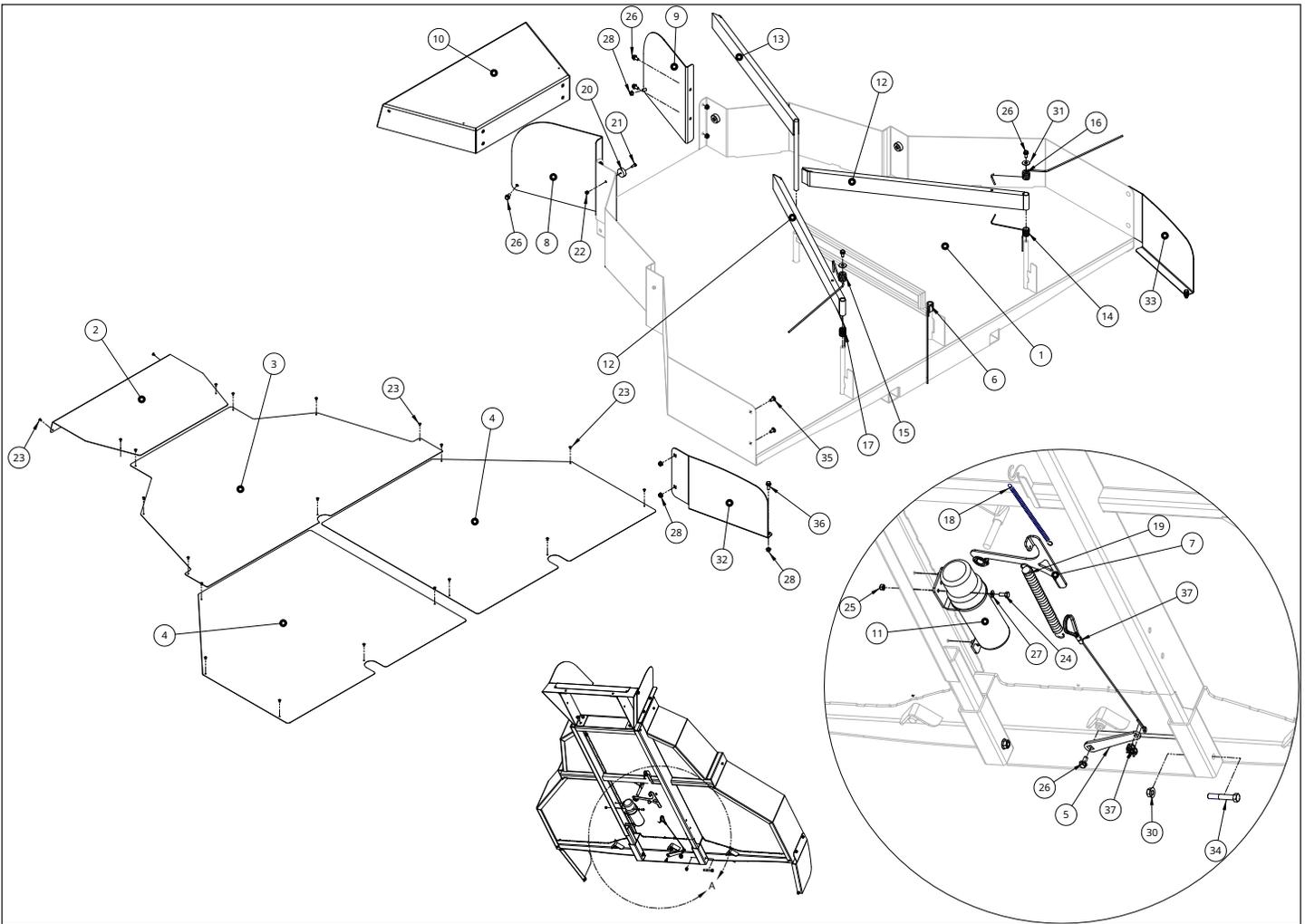
\* Refer to separate page for parts.

## 10.5 Hub Assembly



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

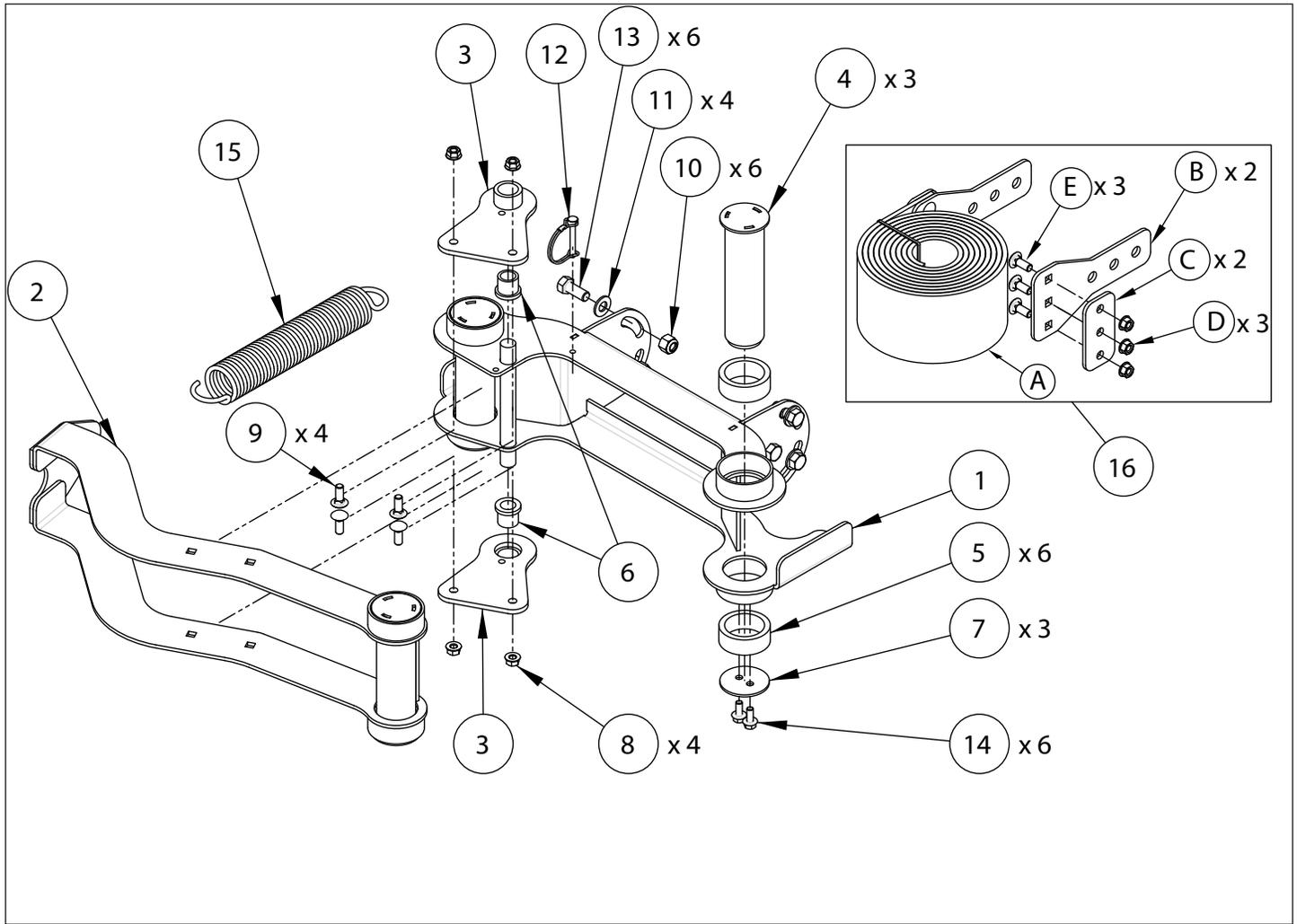
## 10.6 Gate Section



Item	Qty	Part number	Name	Finish
1	1	1001052	4F Gate Platform	Red
2	1	1021630	SS Hat, AF4	Plain
3	1	1006621	SS Top Sheet, 4F	Plain
4	2	1006631	SS Bottom Sheet, 4F	Plain
5	1	1022550	Switch Arm SqHd	Black
6	1	1022520	Switch Arm Weldment	Black
7	1	1007091	Gate Arm	Black
8	1	1000810	Chute Platform Side, Left	Red
9	1	1000820	Chute Platform Side, Right	Red
10	1	1021490	Chute Platform, AF4	Red
11	2	1006430	Document Canister	Plain
12	2	1000991	Aluminum Sleeve Gate, Flat	Black
13	1	1000950	Gate, Aluminum Shaft Flat Top Left	Black
14	1	1005680	Gate Spring Return, Right	Black
15	1	1010250	Gate Actuating Spring, Left	Black
16	1	1010260	Gate Actuating Spring, Right	Black
17	1	1005670	Gate Spring Return, Left	Black
18	1	1005180	8.5" Return Spring	Plain
19	1	1005170	12" Action Spring	Plain

Item	Qty	Part number	Name	Finish
20	4	1003560	Butyl Rubber Bumper	Plain
21	4	1006420	Hex bolt 1/4-20 x 0.75	Zinc
22	4	1006070	1/4" Nylock Nut	Zinc
23	21	1007470	3/16" x 1/4" Aluminum Rivet	Plain
24	3	1006290	Hex bolt 5/16-18 x 0.75	Zinc
25	3	1006080	5/16" Nylock Nut	Zinc
26	9	1006330	Hex flange bolt 3/8-16 x 0.75	Zinc
27	3	1006140	Type A flat washer 5/16	Zinc
28	12	1006190	Hex flange nut 3/8-16	Zinc
29	4	1006230	Hex bolt 1/2-13 x 1.25	Zinc
30	6	1006210	Hex flange nut 1/2-13	Zinc
31	2	1006160	Type A flat washer 7/16	Zinc
32	1	1021520	Outside Panel Left, AF4	Red
33	1	1021530	Outside Panel Right, AF4	Red
34	2	1006250	Hex bolt 1/2-13 x 3 x 1.25	Zinc
35	4	1006300	Round head short square neck bolt 3/8-16 x 0.75	Zinc
36	2	1006340	Hex flange bolt 3/8-16 x 1	Zinc
37	1	1007800	Cable Assembly	Plain

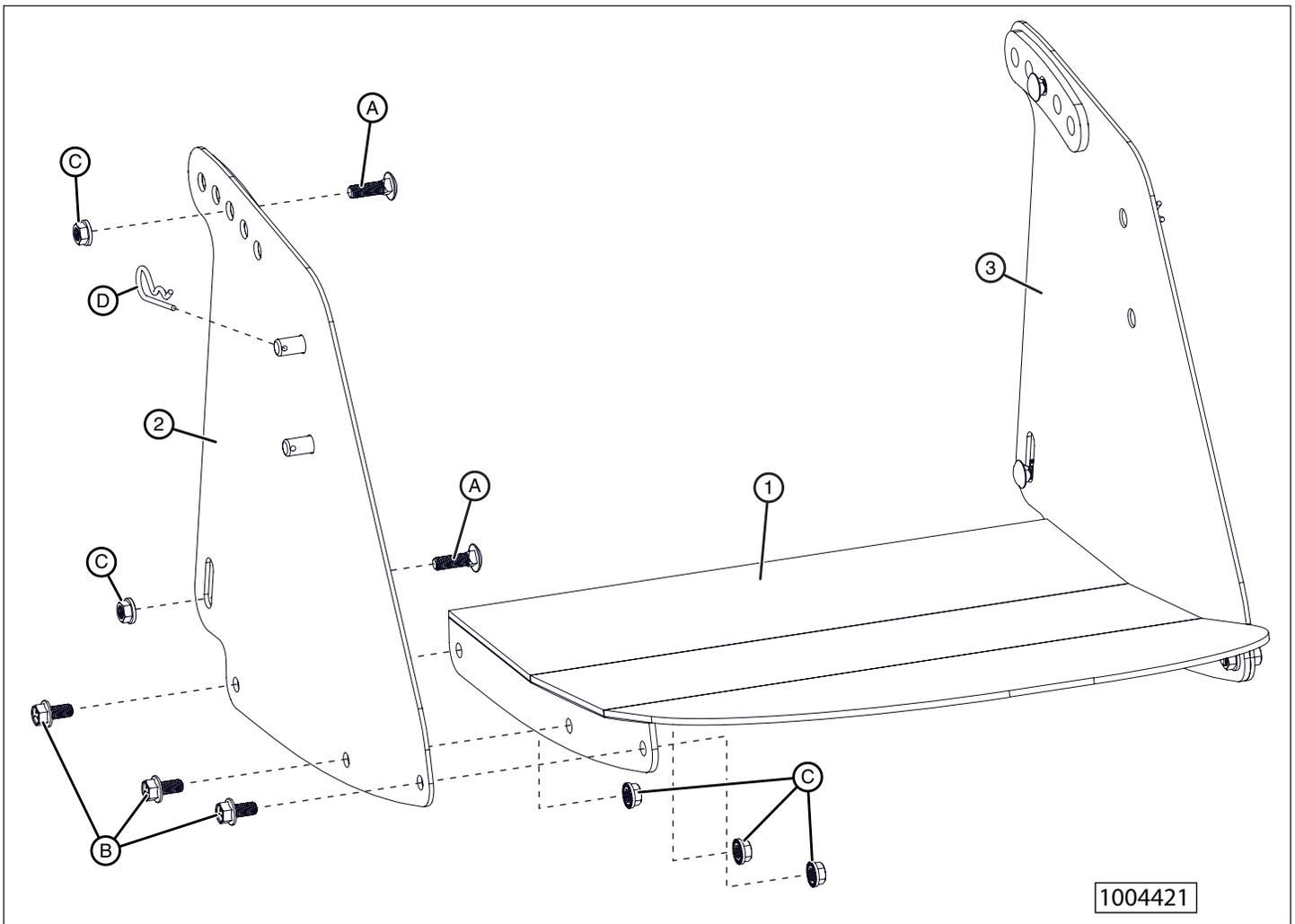
## 10.7 Belt and Tensioner



Item	Qty	Part number	Name	Finish
1	1	1021580	Roller Frame weldment	Black
2	1	1021590	Tensioner Frame weldment	Black
3	2	1021600	Tensioner Frame Bracket weldment	Black
4	3	1021570	Belt Roller weldment	Black
5	6	1021610	Roller UHMW Bushing	Black
6	2	1021620	Roller Flange Bushing	Plain
7	3	1013790	Pivot Pin Washer	Black
8	4	1006190	Hex flange nut 3/8-16	Zinc
9	4	1006310	Round head square neck bolt 3/8-16 x 1	Zinc
10	6	1006110	1/2" Nylock Nut	Zinc
11	4	1006170	Type A flat washer 1/2	Zinc
12	1	1016540	Clevis Pin 0.25 x 1.75 Round	Zinc
13	6	1006230	Hex bolt 1/2-13 x 1.25	Zinc
14	6	1024820	Hex flange bolt 5/16-18 x 0.75	Zinc
15	1	1006590	BBC Spring	Zinc

Item	Qty	Part number	Name	Finish
16	1	1016950	Belt with ends and hardware	No Value
A	1	1009580	BBC Rubber Belt, 12'	
B	2	1006760	BBC Belt Large End Plate	Black
C	2	1006770	BBC Belt Small End Plate	Black
D	3	1006190	3/8" serrated flange nut	Zinc
E	3	1006310	3/8"x1" carriage bolt (Grade 5)	Zinc

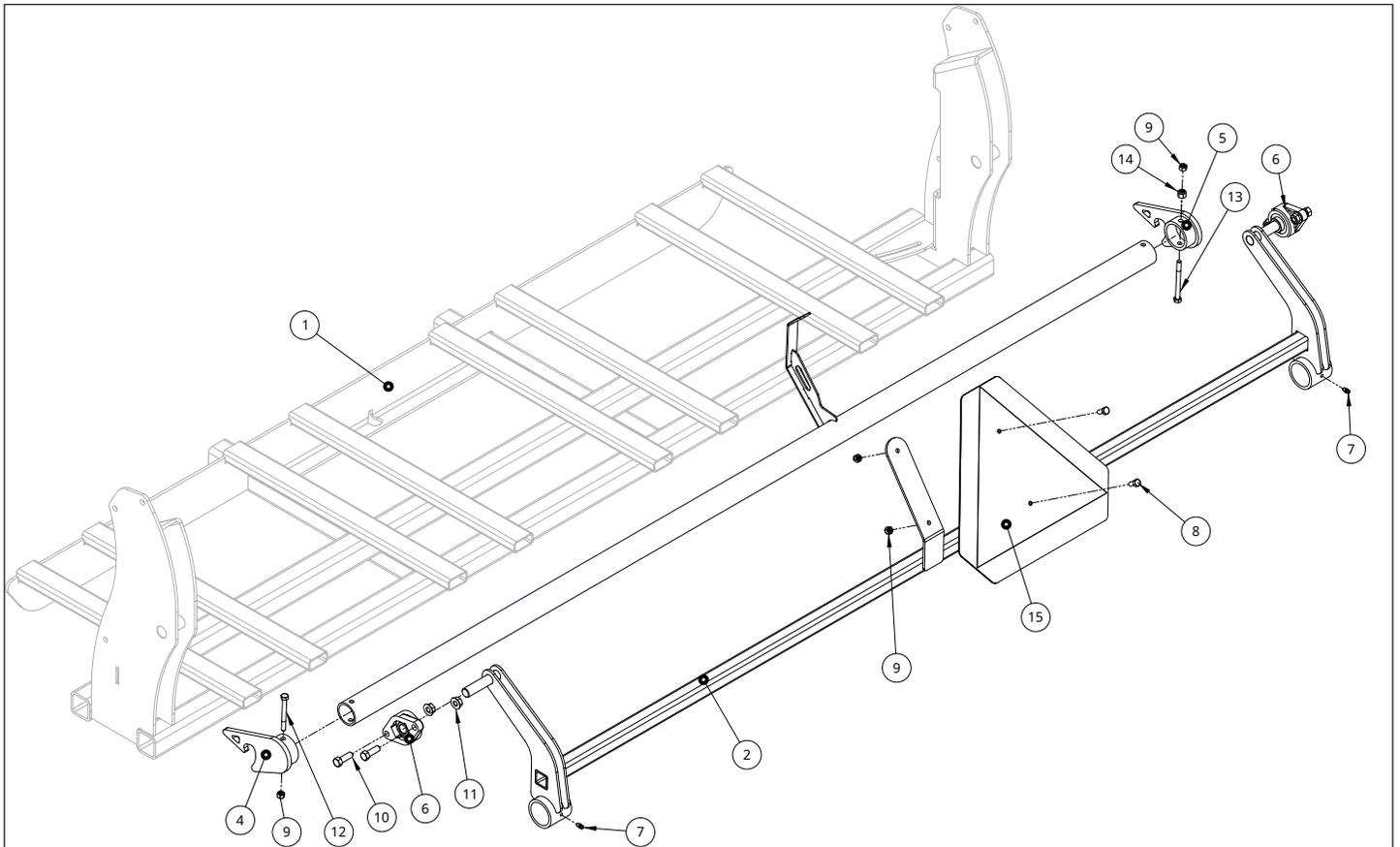
## 10.8 Bale Chamber Extension



1004421

Item	Part Number	Description	Qty.
1	1004421	Bottom, Chamber Extension	1
2	1004430	Side, Chamber Extension, Left	1
3	1004440	Side, Chamber Extension, Right	1
	1004510	Chamber Extension Hardware Kit	
A	1006320	Bolt, Carriage, 3/8 x 1-1/4", Grade 5	4
B	1006330	Bolt, Serrated Flange, 3/8 x 3/4", Grade 5	6
C	1006190	Nut, Serrated Flange, 3/8-16, Grade 5	10
D	1006910	Pin, Cotter, Reuseable	2

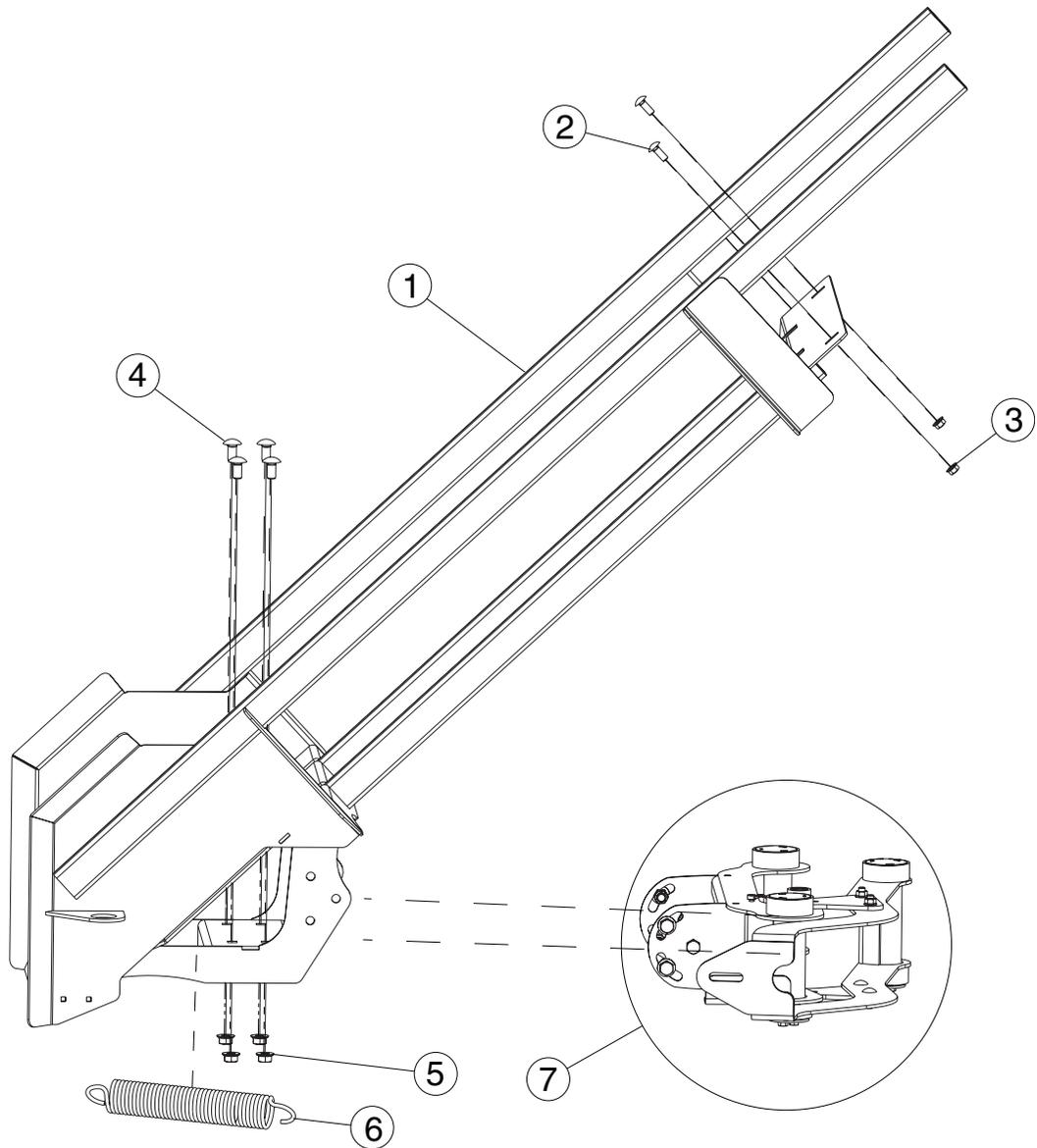
## 10.9 Bale Section Parts



Item	Qty	Part number	Name	Finish
1	1	1021540	Bale Section, AF4	Red
2	1	1004342	Back Gate Frame, AF4	Black
3	1	1004351	Backgate Bar, AF4	Black
4	1	1004360	Back Gate Hook, AF4 Left	Black
5	1	1004370	Back Gate Hook, AF4 Right	Black
6	2	1003110	UCFLU204-12 Flange Bearing	Black
7	1	1003750	SMV Triangle	Plain
8	2	1003730	Self Tapping Grease Zerk, 1/4"	Zinc
9	2	1006290	Hex bolt 5/16-18 x 0.75	Zinc
10	4	1006080	5/16" Nylock Nut	Zinc
11	4	1007270	Hex bolt 7/16-14 x 1.25	Zinc
12	4	1006200	Hex flange nut 7/16-14	Zinc

Item	Qty	Part number	Name	Finish
13	1	1007410	Hex bolt 5/16-18 x 3 x 0.875	Zinc
14	1	1022780	Hex bolt 5/16-18 x 3.5 x 0.875	Zinc
15	1	1006090	3/8" Nylock Nut	Zinc

## 10.10 Chute Section



Item	Qty	Part number	Name	Finish
1	1	1021480	Chute, Straight	Red
2	2	1006310	3/8" x 1" carriage bolt (Grade 5)	Zinc
3	2	1006190	3/8" serrated flange nut	Zinc
4	4	1007520	1/2" x 1" carriage bolt (grade 5)	Zinc
5	4	1006210	1/2" serrated flange nut	Zinc
6	1	1006590	BBC spring	Zinc
7		1022770	Tensioner Assembly (Section 10.7 pg 38)	Black







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

**(877) 296-5851**  
[www.nordenmfg.com](http://www.nordenmfg.com)  
[support@nordenmfg.com](mailto:support@nordenmfg.com)

Norden Mfg is the successor to Kuhns Mfg  
Kuhns  
All liability and warranty claims are transferable.

1030300 Rev. A  
Revised 09-7-2023