



NORDEN MFG

Owner Manual

Euro Bale Spear



EBS-1

MADE IN THE USA 

Read, Understand, and Follow this manual which provides information and procedures to safely operate and maintain the attachment.



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1. Introduction



The Norden Euro Bale Spear is an attachment that mounts to a utility tractor equipped with a loader having the ability to quick attach to attachments following ISO 2326. **It is designed specifically to move large bales of hay or straw.**

Note: The specific term “Attachment” will be referred to simply as “bale spear” or “attachment” throughout the rest of this manual and may refer to any of the models covered by this manual. The term utility tractor will be referred to as “machine” throughout this manual.

Read, understand, and follow the manual carefully to become familiar with your new Norden bale spear. Ultimately it is our desire that you will be operating your bale spear as a seasoned professional in very little time!

1.1 Intended Usage

Do not use this bale spear for any other purpose than its intended use of moving large bales of hay and straw.

Note: Do not use an oversized machine; the attachment is intended to be used on machines rated up to 120 HP or a 3500 pound operating capacity.

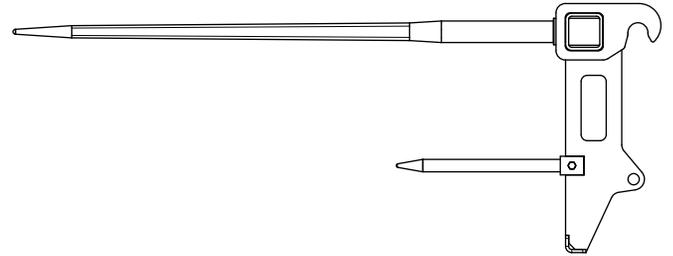
1.2 Operator Orientation

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

1.3 Specifications

Specifications subject to change without notice.

1.3.1 EBS-1 Specifications

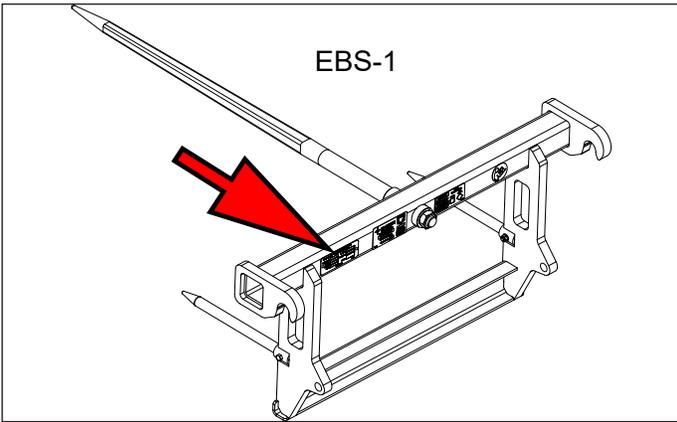


Overall Width	42"
Overall Length	50.25"
Overall Height	20.1"
Overall Approximate Weight	120.8 lb.
Bale Spear Length and Quantity	49" x 1
Bale Spear Socket	Conus 2
Bale Spear Rating (Each)	4,046 lbs.
Front of socket to load point is 19.68"	
Anti-Rotation Spikes - 1" Dia.	2

1.4 Serial Number Location

The bale spear’s serial number and model number decal (1) is located on the back of the bale spear frame. Please use these numbers when requesting service, seeking information, or ordering parts.

1.



Record the serial and model numbers as well as the date of purchase in the space provided for easy reference when contacting Norden Mfg LLC with questions.

Model Number _____

Serial Number _____

Date of Purchase _____

1.5 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 attachments previously sold.

1.6 Disposal of Equipment at End of Useful Life

The Norden Mfg LLC bale spears are designed for the specific purpose of moving large bales of hay and straw. When this bale spear is no longer capable of performing its intended use, it should be dismantled and scrapped. Do not use any materials or components from this bale spear for any other purpose.

1.7 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

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 use and maintain the bale spear you must be alert to potential hazards.

Improper use and/or maintenance of this bale spear could cause a dangerous situation that results in property damage, personal injury, or death.

WARNING



Do not use the bale spear until you read, understand, and follow the information contained in this manual and all related equipment manuals. Do not use the bale spear for anything other than its intended purpose.



Safety precautions and warnings are provided in this manual and on the bale spear. If these precautions and warnings are not followed, 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 attachment will not be damaged or be made unsafe by the use or maintenance 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. The symbol is followed by a signal word such as “WARNING” or “CAUTION” depending on the severity of the potential hazard. Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains WARNINGS, CAUTIONS, NOTICES, SAFETY INSTRUCTIONS, and NOTES. Warnings, Cautions, and Safety Instructions must be followed to prevent the possibility of personal injury or death due to improper operation. Notices and Notes help prevent bale spear or property damage.

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 bale spear or property damage can result if instructions are not followed.

SAFETY INSTRUCTIONS

Indicates specific safety-related instructions or procedures.

Note: Contains additional information important to operation or a procedure.

2.3 Safety Icons Nomenclature

This manual and the bale spear 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*
-  *Maintenance procedure*
-  *Eye protection*
-  *Hearing protection*
-  *Hand protection*
-  *Foot protection*
-  *First aid kit*
-  *Use proper tools*
-  *Use OEM parts*
-  *Use ROPS and seat belt*
-  *Maintain safety decals*
-  *Place in park*
-  *Remove key*
-  *Stop engine*
-  *Visibility - slow moving vehicle (SMV)*
-  *Set parking brake*

2.3.2 Prohibited Actions

-  *Do not alter or modify*
-  *Do not leave out tools*

-  *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*
-  *Safety alert symbol*
-  *Defective or broken part*
-  *Falling hazard*
-  *Maintain safe distance*
-   *Pinch point hazard*
-  *Crush hazard*
-  *Rollover hazard*
-  *Not a lifting device*
-  *Entanglement hazard*

2.4 General Safety

WARNING



Read, Understand, and Follow Manual

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! This bale spear was designed for a specific application; **DO NOT** modify or use this bale spear for any application other than that for which it was designed.

Attachments used improperly or by untrained personnel can be dangerous! Inexperienced operators should receive instruction from someone familiar with the bale spear and the machine before being allowed to operate the bale spear.



Do Not Operate

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



Fall Hazard

Do not use the attachment as a platform for standing. Do not stand on top of the attachment at any time. Do not hang on the attachment or allow others to hang on it.



Pinch Point Hazard

Keep hands and feet away from the attachment to prevent them from getting pinched or crushed.

2.5 Machine Related Safety



Impaired User Hazard

Do not attempt to use or maintain the attachment under the influence of drugs or alcohol. Consult your doctor before using the bale spear while taking prescription medications.



Falling Hazard

Do not allow riders on the machine or attachment at any time. Falling can result in severe injuries or death.

WARNING



Stay Clear

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



Not A Lifting Device

Do not use the bale spear to lift other objects.

2.6 Safety decals

Refer to section “3. Safety Decals and Labels” on page 11 for safety recommendations related to using the bale spear.

2.7 Operation Safety

Refer to section “6.1 User Safety” on page 15 for safety recommendations related to using the bale spear. All applicable safety recommendations in other sections should also be followed.

2.8 Transporting Safety

Refer to “7. Transporting” on page 20 for safety recommendations related to traveling with a machine and attachment on a public roadway. All applicable safety recommendations in other sections should also be followed.

2.9 Storage Safety

Refer to section “8. Storage” on page 21 for safety recommendations related to storing the bale spear. All applicable safety recommendations in other sections should also be followed.

2.10 Maintenance Safety

Refer to section “9. Maintenance” on page 22 for safety recommendations related to maintaining the bale spear. All applicable safety recommendations in other sections should also be followed.

2.11 Training

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

machine manuals, and the safety decals.

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 attachment 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 bale spear.

2.12 Authorization / Training Sign-Off Form

The authorization and training sign-off form is provided for your records to show that all personnel who will be working with the attachment have read and understand the information in this Operator Manual and have been trained in the operation of the machine the attachment is connected to. The user and the owner should both sign and date the form to indicate acceptance of the risk of using the bale spear.

3. Safety Decals and Labels

3.1 General Information

The types of safety decals (hazard labels) and instructional labels, along with their locations on the bale spear, are shown in the following illustrations. Good safety practices require that you familiarize yourself with the various safety decals, 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 decals and instructional labels attached to the machine and bale spear. The safety decals affixed to the bale spear are reproduced in this section. If the bale spear is missing a label or one is unreadable, replace the label before using the bale spear.

SAFETY INSTRUCTIONS



Safety Decals and Instructional Labels

1. **Keep safety decals 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 decals or instructional labels.**
3. **Use care when washing or cleaning the bale spear not to remove or damage the decals. When using a pressure washer to clean the bale spear, 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 decals and replacement part numbers are shown in this section.**
5. **Replacement parts must have replacement decals attached before the bale spear is used.**
6. **Decals are available from your authorized dealer or from Norden Mfg LLC at no charge.**

3.2 Contact Information

For replacement decals, 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

3.3 How to Install Replacement Safety Decals

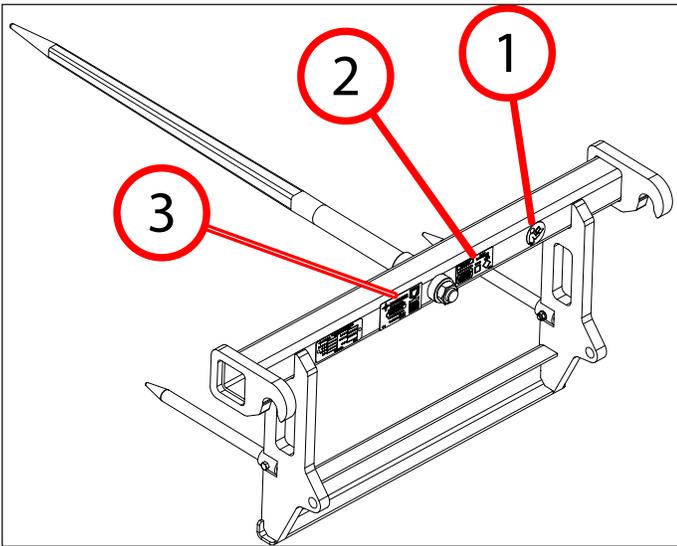
1. Clean and dry the installation area.

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 safety decal or instructional label 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 plastic card.

3.4 Safety Decal Locations



3.

INFORMATIONAL — Manufacturer Placard

Item	Type	Description	Qty.
1	INFORMATIONAL	Read the Manual	1
2	NOTICE	Spear Orientation	1
3	INFORMATIONAL	Mfg Placard	1

3.5 Safety decals

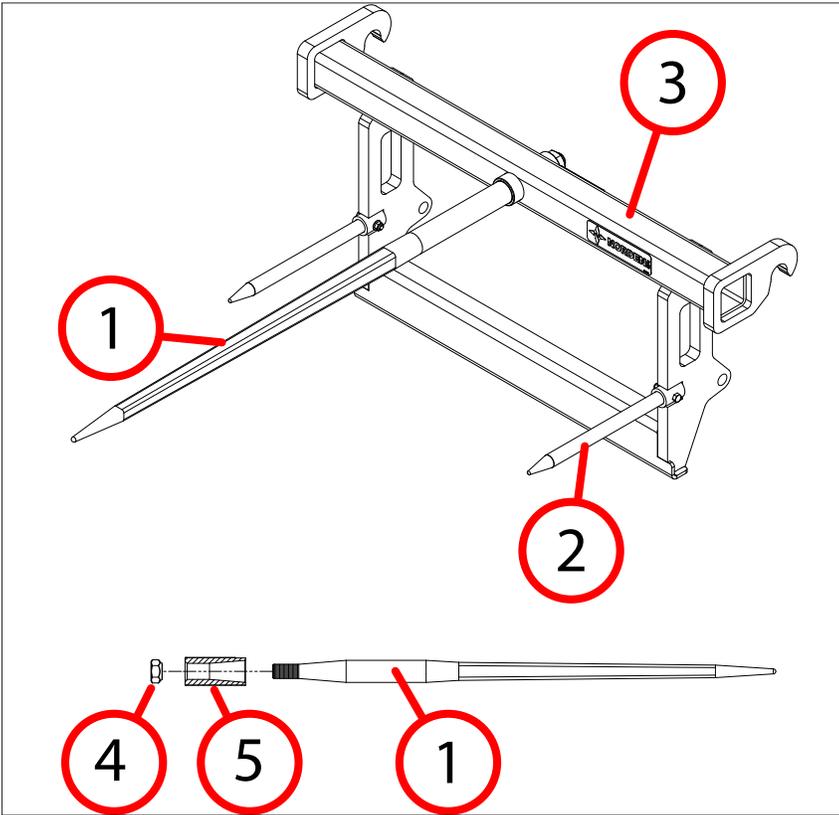


1. INFORMATIONAL — Read the Manual

2.

NOTICE — Spear Orientation

4. Nomenclature



Item	Description
1	Spear
2	Anti-Rotation Spike
3	Frame (weldment)
4	Spear Nut
5	Spear Sleeve (part of weldment)

5. Assembly and Setup

The factory will perform complete assembly of the bale spears. Upon receipt, the operator must conduct an initial visual inspection of the attachment. If applicable, the operator must ensure that all nuts and bolts are appropriately torqued before using the attachment.

To orient the spear, the operator should place the flat face upwards and tighten the nut to 516 ft/lb or 700 N·m. It is critical to ensure that the tapered side of the nut is facing the socket, as failure to do so may cause premature failure of the spear. A 41 mm socket fits the nut – be sure correct tools are used.

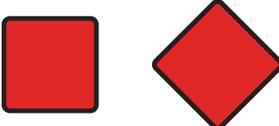
NOTICE

Do NOT weld spears.

For maximum longevity, tighten nut to 516 ft/lb torque every 6 months.

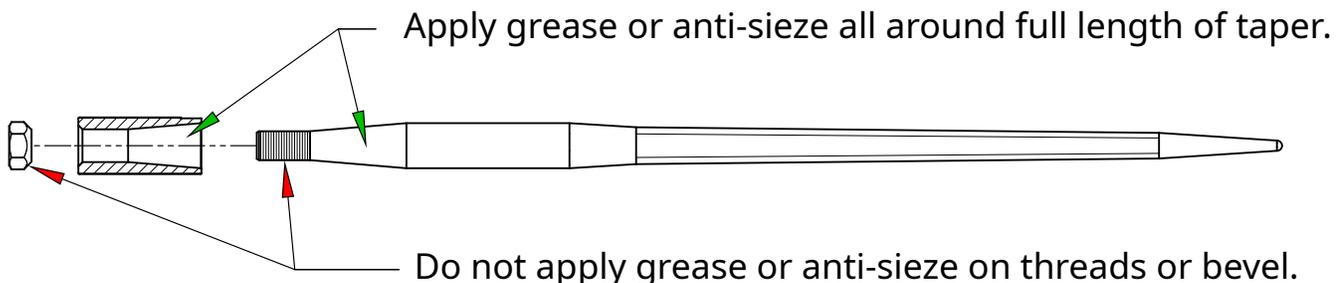
Proper Spear Alignment

Correct Not Correct



1027360

Note: To prevent oxidation from seizing the spear into the socket, the operator must apply grease or an anti-seizing compound onto the primary taper of the replacement spear.



NOTICE

Premature failure of spear may result from improper tightening of the spear nut.

The operator should periodically make sure the nut is properly tightened (516 ft/lb or 700 N·m). Failure to do so may shorten the life of the spear.

6. Usage

6.1 User Safety

Refer to “2.4 General Safety” on page 8 for additional safety information.

6.1.1 Machine Operation Recommendations

WARNING



Roll Away Hazard

Before leaving the operator’s seat, make

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



Rollover Hazard

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



Crush Hazard

The machine must be equipped with a Roll Over Protective

Structure (ROPS) and a seat belt. A crushing hazard could occur if the operator is ejected from the seat while the tractor is in motion. Fasten the seat belt whenever the tractor is moving.



Entanglement Hazard

If using a small compact or utility tractor, keep hands and clothing clear of any rotating parts. Stay clear of the bale spear while the machine is moving.

SAFETY INSTRUCTIONS

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

SI *It is the owner’s responsibility to make sure any person using a machine with the attachment, especially if it is loaned or rented, has been thoroughly trained on its proper and safe use.*

SI *Be certain only physically-able persons will use the attachment.*

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

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

SI *Never allow children to use the attachment.*

SI *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.*

SI *Be careful at the edge of ditches or gullies. Be careful when working on inclines.*

SI *Do not use excessive speed when moving bales.*

SI *Allow for bale spear length when making turns.*

6.1.2 Machine Requirements

WARNING



Machine Operator Manual

Always refer to the machine’s operator manual to ensure compatibility and maximum safety.

The machine must be equipped with a front-end loader with Euro attachment mounting style rated to lift the bale spear which can weigh up to 122 pounds plus the weight of the bale.

SAFETY INSTRUCTIONS

SI *Do not use an oversized machine; the bale spears are intended to be used on machines rated up to 120 HP or a 3500 pound operating capacity.*

SI *Using the bale spear with a machine that exceeds the specified requirements may cause machine or attachment damage, be a potential danger to the operator or bystanders, and will void any warranty.*

SI *Always review the “controls” section of the machine’s Operator Manual to be familiar with the location, settings, and function of the controls. Be familiar with all controls before using this attachment.*

6.2 Machine Specifications

This section is provided to give the operator general safety information for the machine. Always follow the OEM instructions given in the operator's manual for the machine.

WARNING



Rollover Hazard

To avoid serious injury or death from falling, rollover, or crushing, the machine must have an approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.

1. The machine must be equipped with an approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
 - a. If equipped with a folding ROPS structure, keep it locked in the UP position.
 - b. Only operate the machine when seated in the operator seat.
 - c. Always fasten seat belt whenever the machine is moving.
2. If working around dry grass or vegetation, to reduce the risk of fire, do not use a machine with an under-frame exhaust.
3. Whenever traveling on a public roadway, follow guidance given in "7. Transporting" on page 20.
4. Maintain all manufacturer's safety shields and guards

6.3 Attaching to Machine

WARNING



Pinch Point Hazard

Use caution when connecting the attachment to the machine. Keep hands and feet from under the attachment and clear of pinch points between attachment and machine. Do not allow anyone to stand between the machine and pallet fork during attachment process.

1. Ensure there are no potential unintended collisions between the attachment and the loader before connecting them for the first time.
2. Tilt the tool carrier forward completely to angle the carrier arms downward toward the attachment. Position the tool carrier an inch below the

attachment hooks.

3. Drive the machine forwards slowly, centering the carrier arms between the hooks on the attachment.
4. When the tool carrier makes contact with the attachment, raise the loader to engage both hooks of the attachment on the tool carrier.
5. Roll the tool carrier back toward the machine.
6. If equipped, the hydraulic or electronic powered locking pins can be engaged. In this case; skip Steps 7, 8, and 9.
7. If your loader requires manual locking, perform a full roll back to automatically lock the attachment onto the tool carrier.
8. If your loader requires a fully manual locking process:

WARNING



Roll Away Hazard
Before leaving the operator's seat, make sure the engine is stopped, the transmission is placed in park, the key is removed, and the parking brake is set.

- a. Raise the back of the attachment slightly off the ground and angle it back to apply pressure against the stops.
- b. Shut off the machine.
- c. Apply the parking brake.
- d. Manually lock the attachment to the carrier assembly.

WARNING



Injury Hazard

To avoid serious injury or death caused from falling attachment: lock pins must completely engage attachment eyes.



Crush Hazard

Do not stand under raised attachment.

9. If equipped, the attachment's locking lug will impact/push aside the Click-on system on the tool carrier, automatically locking the attachment in position. The lock lever is released and moves to the "locked attachment" position.

10. Raise the loader arms until the tool carrier is clearly visible from the driver's cab. Inspect alignment and verify positioning.
11. Pay attention to the tool carrier lock indicators, which may differ depending on the type of tool carrier installed on the loader. Carefully observe how your specific tool carrier indicates a locked attachment.
12. Before starting work with the loader/attachment, read "6.4 Pre-Operation Checklist" on page 17 to ensure the attachment is correctly locked onto the loader's tool carrier:
 - Visually check that the locking lever indicates a locked attachment.
 - Visually check that the tool carrier locking pins are in the locked position.
13. Verify that the attachment is locked in place on the tool carrier by pressing the front of the attachment against the ground.
14. Before using the attachment, the operator must operate it through its full range of motion and confirm that the attachment is secure and safe.

6.4 Pre-Operation Checklist

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

Checklist Before Each Use	
<input checked="" type="checkbox"/>	Task
<input type="checkbox"/>	Make sure the bale spear is positively attached to the machine. Refer to "6.3 Attaching to Machine" on page 16.
<input type="checkbox"/>	If the machine uses tires, make sure they are inflated properly and the lug nuts are tight.
<input type="checkbox"/>	Visually inspect the attachment for any loose bolts, worn parts, or cracked welds. Make necessary repairs before using the attachment.
<input type="checkbox"/>	Make sure the bale spear is not bent or cracked.
<input type="checkbox"/>	Make sure the operating area is clear, especially of children and animals.

6.5 Usage

Before using the attachment, the operator must have a complete understanding of how to operate the machine including all controls, and how to use the attachment.

The operator should read and understand the Safety and Operation Sections of the machine operator's manual. It is important to note that these manuals must be read and explained to any operator who cannot read. It is crucial to never allow anyone to operate the machine or use the attachment without

complete operating instructions.

To ensure safety to the operator, bystanders, and equipment, the operator must become familiar with the surrounding work area and any obstacles and hazards contained within before starting any operation. Special attention should be paid to foreign debris, rough terrain, steep slopes, bystanders, or animals in the area.

If the operator is not already familiar with the process, it is recommended to practice lifting, lowering, maneuvering, and placing a bale on a level site until the confidence and skill needed to safely move bales. It is important to follow the safety operating procedures that are spelled out in this Operator's Manual.

WARNING



Crush Hazard

When handling round bales, improper use of the machine can result in serious injury or death to the machine operator. This could be caused by the bale rolling backwards into the operator's station. Therefore, it is important to handle round bales safely.

CAUTION



Tip Over Hazard

It is important not to exceed 3,500 lbs. or the lift capacity of the machine. The operator should not lift the bale too high, creating an unstable and unsafe situation. The operator should also avoid tilting the bale too far forward, setting up a situation that could cause the bale to prematurely slide off the spear(s).

The operator must travel at a safe speed for ground conditions. Travel slowly over rough ground or when making turns. Working on or around slippery or sloped areas could cause the operator to lose control of the machine.

The operator must not allow bystanders, pets, or livestock to approach the danger zone of the working area.

The operator must not leave the machine with the attachment raised off the ground.

6.5.1 Picking Up a Bale

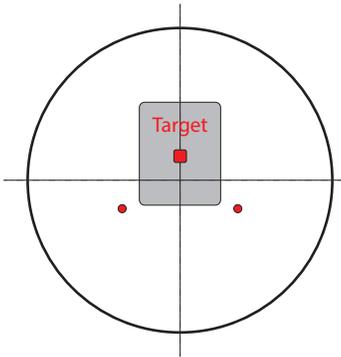
1. Ensure that the weight of the bale does not exceed the smaller of the two lift capacities below:
 - The rated lift capacity of the spears (4,046 lbs at 19.68" from the front of the spear sleeve).
 - 83% of the rated lift capacity of the machine.

Note: This calculation accounts for the increased loader stresses caused by the added extension of the attachment and ensures that the front tires on your tractor are rated properly for the job. Always fully insert the spear into the bale before lifting it, as lifting heavy or frozen bales without fully inserting the spear can damage the unit and void its warranty.

NOTICE

Care must be taken to ensure there is enough overhead clearance and no potential hazards or obstructions that could interfere with the lifting and placing of the bales.

2. Position the bale spear and push it into the bale until it is firmly against the frame of the attachment. Always center the bale horizontally on the spear points to optimize stability while transporting.

3.  Drive the spear into the bale with the spear level, centered horizontally, and the point of the spear at, or slightly above, the vertical center of the bale, until the spear is fully inserted and the bale is against the bale spear frame.

This will allow the anti-rotation spikes to stabilize the bale.

Note: Soft center bales will tend to droop after being lifted by a single spear. Placing the spear in a lower position in the bale will allow for more lifting height and lessen the load on the stabilizer spikes.

NOTICE Potential Machine Damage

Do not attempt to spear a round bale down from the top if it is lying on its flat face, as excessive movement of the machine while operating the loader can seriously damage the machine and/or its hydraulic cylinders or hoses. Instead, first tip the bale up on the round side.

SAFETY INSTRUCTIONS

Transport bales at a height that maintains a clear line of sight and keep the bale low to the ground when possible to enhance stability.

4. Advanced operators should spear bales with a slightly downward motion at a 5° downward angle of the spear, and lower the boom as the spear enters the bale to pinch the bale to the ground, preventing it from sliding away. This method also makes it easier to slide the bale off the spear.
5. After lifting the bale a short distance, tilt the spear points up 5-10 degrees from horizontal to reduce the likelihood of the bale accidentally sliding off the spear. Always check to ensure that the bale is stable before traveling.

Note: Partial engagement of the spear(s) can damage the spear(s), as it locates the weight of the bale on the outer end of the spear(s).

Raise and roll back the bale just high enough to provide ground clearance. If the bale appears unstable, lower it, remove the spears, and repeat the first steps until the bale is secure. To minimize jerking, stop and start the loader gradually when lowering or lifting loads.

SAFETY INSTRUCTIONS

Always ensure the tractor is properly ballasted before attempting to lift any load with the attachment. If handling bales with both the front-end loader and the 3 point hitch on the tractor, always load the 3 point attachment first and unload it last.

SI Make sure that the work area is clear of children, animals, and other obstacles before using the attachment. This is particularly important in areas with higher noise levels or quiet cabs, as you may not hear people shouting.

6.5.2 Moving with a Bale

Refer to "7. Transporting" on page 22 for additional highway safety information.

CAUTION



Crush / Tip Over Hazard
Never attempt to stop a rolling bale with the machine.

SAFETY INSTRUCTIONS

SI Watch for overhead obstructions and side clearances while moving bales.

SI Utilize tractors with wide front axles and move all wheels to their maximum width position to achieve the highest stability.

SI Ensure tractors are correctly ballasted according to the load being transported to prevent the loss of steering control caused by improper ballasting.

1. Raise the bale to the minimum height required for the terrain that must be crossed with the bale.
2. During transport, keep the bale as close to the ground as possible.
3. When transporting empty, ensure the spear points are at a safe height and angle that does not pose a risk of impaling people or livestock.
4. Transport bales fully against the spear frame and with the spear points raised 5 to 10 degrees from horizontal. Do not transport bales halfway or more out on the spear points.
5. Lower the spear points to the ground when stopped to prevent people or livestock from being impaled. If the spear cannot rest on the ground, point it downward for protection.
6. Use gradual acceleration, turning, and braking to prevent any loss of control.
7. Reduce ground speed when turning and maintain sufficient clearance to avoid obstacles such as buildings, trees, and fences.
8. Avoid any obstacles, bumps, or holes in the path to maintain stability.
9. Transporting bales over ramps, grades, bumpy ground, soft surfaces, or slippery surfaces can reduce machine stability and lift capacity and is extremely dangerous.
10. Always travel straight up and down inclines, avoid making turns, and keep the spear points tilted up 5 to 10 degrees from horizontal regardless of the angle of the incline.
11. When traveling on inclines greater than 10 percent, place the bale on the uphill side of the machine, when necessary, drivers should drive up and back down steep inclines.
12. Keep equipment away from electrical power lines and place orange warning signs under overhead electrical power lines to indicate the danger.

13. Frequently check the bale to make sure that it has not become unstable during transport.

6.5.3 Placing the Bale

After the bale has been positioned and stabilized in the desired location, tilt the spear slightly downward to enable the bale to slide off the spear. To prevent the bale from sliding on the ground, it may be necessary to apply a small amount of downward pressure to it.

6.6 Detaching from Machine

CAUTION



Pinch / Crush Hazard

Use caution when disconnecting the attachment from the machine.

Keep hands and feet from under the attachment and clear of pinch points. Do not allow anyone to stand near the machine or attachment when disconnecting.

1. Move the machine onto a flat, level, solid surface. Lower the attachment slightly above the surface with the hitch angled, front of the attachment slightly higher than the rear.
2. If your machine is equipped with hydraulically operated locking pins, retract the coupler lock at this time. In this case; lower the attachment to the ground and skip Steps 3, 4, and 5.
3. Shut down the machine and set the parking brake properly without lowering the attachment.

WARNING



Unintended Movement

Before leaving the

- operator's seat, make sure the engine is stopped, the transmission is placed in park, the key is removed, and the parking brake is set.**
4. Move the locking lever to disengage the locking pins.
 5. Start the engine and lower the attachment to the ground.
 6. Tilt the tool carrier forward to allow the tool carrier to clear the hooks on the attachment.
 7. Make sure the area is clear of bystanders and animals, then slowly back the machine away from the attachment, ensuring that the tool carrier does not interfere with the attachment.

7. Transporting

7.1 Highway and Transport Safety

This section is provided to give the operator general safety information for the machine. Always follow the OEM instructions given in the operator's manual for the machine.

Refer to "2.4 General Safety" on page 8 for additional safety information.

SAFETY INSTRUCTIONS

SI *Make sure the machine used is in good operating condition according to the OEM user's manual.*

SI  *When traveling the attachment on the highway, make sure the machine has a clearly visible "Slow Moving Vehicle" placard.*

SI *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 the OEM of your machine.*

SI *Do not allow anyone to ride on the machine or the bale spear.*

SI *Always drive at a safe speed relative to conditions, and ensure that the speed is low enough for an emergency stop. Keep speed to a minimum.*

SI *Reduce speed prior to turns to avoid the risk of overturning.*

SI *Always keep the machine in gear to provide engine braking when going downhill. Do not coast.*

SI *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.*

SI *Travel on roadways in such a way that faster moving vehicles can pass safely.*

SI *Always travel with the attachment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the bale spear when making turns, stopping, etc.*

7.2 Pre-transport Checklist

1. Before transporting, make sure the maintenance on the machine is current.
2. If applicable, check the tire pressures on the machine, and correct if necessary.
3. Make sure the attachment is securely attached to the machine. Always inspect the bale spear and frame for damage or abnormal wear before attaching.
4. Prior to traveling on a public road, have an observer confirm all running lights, brake lights, turn signals, and hazard lights are working on the machine.
5. Verify the brakes are operating correctly.

8. Storage

Refer to “2.4 General Safety” on page 8 for additional safety information.

CAUTION



Stay Clear

Do not permit anyone, especially children to play on or around the stored bale spear. Store the bale spear in an area away from human activity.

SAFETY INSTRUCTIONS

SI *Do not store the bale spear where it will be exposed to livestock. Damage and livestock injury could result.*

8.1 Placing in Storage

1. Thoroughly wash the attachment with a pressure washer or water hose to remove all loose dirt, mud, or debris.
2. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the bale spear to its storage area.
3. Follow instructions in “6.6 Detaching from Machine” on page 19.

8.2 Removing from Storage

1. Attach the bale spear to the machine following the procedure in section “6.3 Attaching to Machine” on page 16.
2. Before placing the bale spear back into service, replace any worn or defective parts and perform the “6.4 Pre-Operation Checklist” on page 17.

9. Maintenance

Good maintenance is the owner's and operator's responsibility. Poor maintenance shortens bale spear life and is an invitation for problems.

Norden Mfg LLC will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

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

9.1 Maintenance Safety

WARNING



Roll Away Hazard

If the attachment is attached to a

machine, make sure the engine is stopped, the transmission is placed in park, the key is removed, and the parking brake is set.



Personal Protection Equipment

Wear personal

protection equipment (PPE), which may include safety glasses, safety shoes, gloves, etc. appropriate for the work site and working conditions.



No Unauthorized Modifications

Do not modify the attachment or safety devices. Unauthorized

modifications may impair the function of the attachment, or create safety hazards, and will void the warranty. If the bale spear 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 attachment if any parts are damaged. If the bale spear is believed to have a defect which could cause it to work improperly, immediately stop using it and remedy the problem before continuing.



Unintended Consequences

Do not weld on the bale spear. Doing so will cause a stress point which will result in failure of the bale spear.

WARNING



Crush Hazard

Always set the bale spear on blocks or on the ground when performing maintenance.



Good Working Condition

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



OEM Replacement Parts

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

9.2 Practice Safe Service Procedures

CAUTION



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.



A first aid kit should be readily accessible while performing maintenance on the bale spear.



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. After servicing, be sure all tools, parts and service equipment are removed.



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

9.3 Bolt Torque Requirements

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.

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.

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

9.4 Welding Repairs



Before performing any type of welding repair to the attachment frame, 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 attachment frame could result in serious injury or death to the operator or bystander should these repairs fail. Do not weld or repair bale spear. If damaged, replace spears with new OEM parts.

NOTICE

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

9.5 Service Record

The service 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													
Every 8 Hours of Use													
Visually inspect the spear(s) for hairline cracks.													
Visually inspect the spikes and spike bolts for wear and damage. Replace if needed.													
Every 120 Hours of Use													
Tighten the nuts on the spear(s) to proper torque. Refer to "5. Assembly and Setup" on page 14.													
Re-torque the nuts on the bolts holding the spikes to proper torque. Refer to "9.3 Bolt Torque Requirements" on page 23.													
Annually													
Make sure all fasteners are tightened to proper torque. Refer to "9.3 Bolt Torque Requirements" on page 23.													
Inspect and replace damaged safety decals or instructional labels.													
Wash the attachment.													
Inspect attachment frame for cracking or damage.													

10. Parts Section

10.1 Ordering Parts

Norden Mfg LLC manufactures 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 bale spear 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 Safety Decals and Instructional Labels

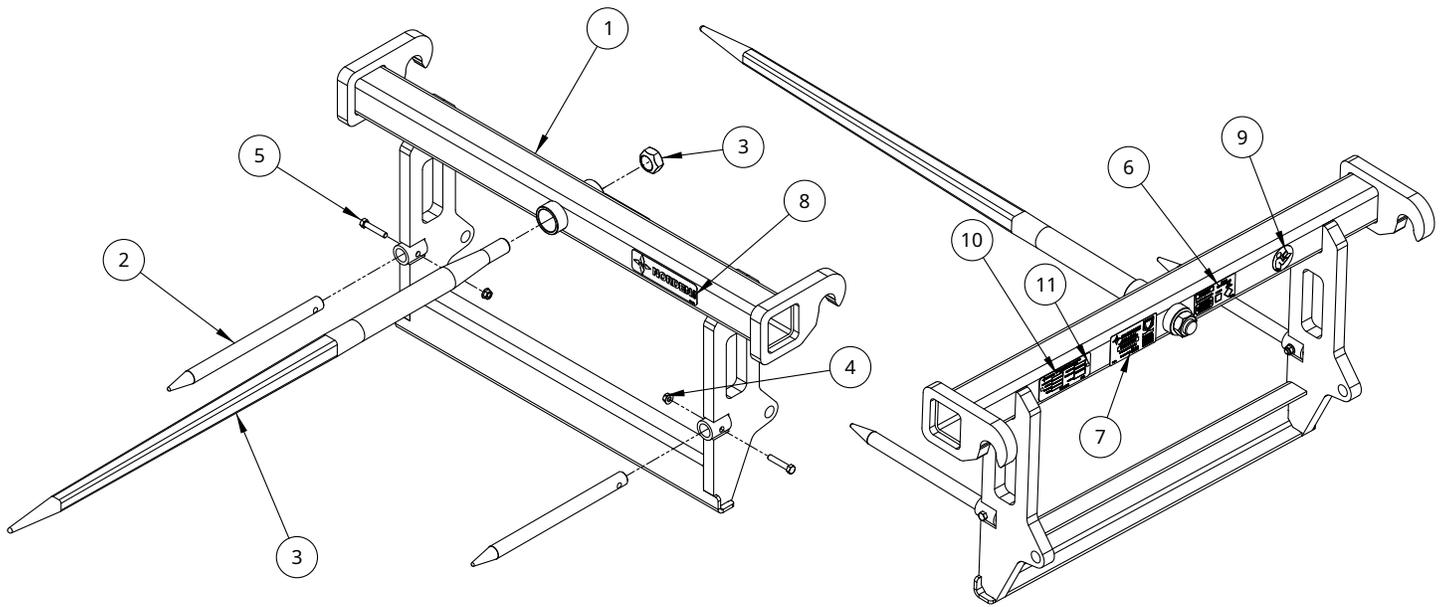
Safety decals and instructional labels provide a vital role in helping to reduce injuries and/or possibly even death. To ensure the greatest level of safety, all decals must be in place and legible or all warranties are void. Remember, it is the user's responsibility to maintain these decals and labels.

WARNING



To prevent serious injury or death which could result from not following posted safety instructions, make sure all decals are attached to any replacement part.

10.4 EBS-1 Parts Detail



Item	Quantity	Part number	Name	Finish
1	1		Euro Bale Spear Weldment	Black
2	2	1027600	Bale Spear Spike, 1x15 Bolted	Gray
3	1	1026630	SHW Bale Spear, 49" C2 with M28x1.5 Nut	Red
4	2	1006090	3/8" Nylock Nut	Zinc
5	2	1007550	Hex bolt 3/8-16 x 2	Zinc
6	1	1027360	Decal - Spear Notice	Plain
7	1	1027180	Decal - Manufacturing Small	Plain
8	1	1027640	1.75 Logo Decal	Plain
9	1	1024330	Decal - Read Manual	Plain
10	1	1027460	Data Plate	Plain
11	2	1027680	#6-7 x 1/4" Round Head Zinc Finish Grade Steel U-Drive Drive Screw	Zinc



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