Bale Pro®

BP 965

Operator's Manual

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Highline MANUFACTURING
A DIVISION OF BOURGAULT INDUSTRIES LTD.

E26115_A

Bale Pro®
BP 965
Bale Processor

Operator's Manual

Effective from Serial Number: BP4594601

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Highline Team Message

*Congratulations on your purchase of a **Bale Pro® 965** manufactured by Highline Manufacturing.*

This Operator's Manual has been prepared to provide information necessary for the safe and efficient operation of your Bale Pro® 965. In the manual you will find safety procedures, maintenance routines and detailed operational instructions. We urge you to read through this publication carefully and refer to it as needed. This will help assure you safe and trouble-free operation of your Bale Pro® 965.

If you find that you require information not covered in this manual, please feel free to consult your local dealer. Your dealer is always able to contact Highline for this technical information.

Highline Manufacturing thanks and congratulates you for selecting a Bale Pro® 965 as your machine of choice.

Highline Manufacturing

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1 Introduction

1.1 General Description of the Bale Pro® 965 (BP 965)

The Bale Pro® 965 (BP 965) is a machine to process square and round bales of hay or other animal feed materials. When the BP 965 is engaged, it uses power from the tractor PTO to rotate a flail drum. The flails strike the bale and process it into feed size materials or animal bedding sized materials.

The BP 965 has bale clamping arms on the rear of the machine that allows the BP 965 to pick up and load a square or round bale into the processing tub without the need for manual adjustment. The BP 965 has a Twine Sickle™ for cutting the twine before putting the bale into the tub. The Twine Sickle™ is for square bales that are picked up when the bale is sitting on the twine. (Note: The Twine Sickle™ does not retain the cut twine and does not keep the twine out of the processing tub.) An additional bale may be carried with the bale clamping arms while the bale in the tub is being processed. The high clamping force of the clamping arms allows the operator to lift and load two stacked square bales, making it possible to transport up to 3 square bales directly on the processor. If more than 1 bale is being carried by the bale clamping arms, it should be noted that the twine on the top, un-clamped bale will not be cut by the Twine Sickle™ and may enter the processing tub.

The amount of processing and chopping of material in the processing tub is adjusted by setting the height of the guard rods. The height of the guard rods determine the level of aggression of the flails acting on the bale. The bale is rotated by feed rollers while the flail drum turns to process the material. The rotation of the bale assists in the bale being processed in an even manner.

The processed material is discharged from the BP 965 on the right side of the machine. The height and distance of discharge is adjusted by moving the discharge door. A top discharge deflector door allows the processed material to be placed into a feed bunk or spread to different distances.

The BP 965 has the option of adding a Feed Chopper™ for additional processing of the feed materials. The BP 965 also has the option of adding a Grain Tank to add feed grains in a measured amount to the feed mix to achieve the feed ration needed for the animals.

The operator of the BP 965 is located in the tractor cab to control the speed of driving and the operation of the BP 965.

1.2 Intended Use of the BP 965

The BP 965 is designed to process animal feed and bedding materials from a square or round bale.

1. The BP 965 is intended to process and blow land reclamation materials.
2. The BP 965 is intended for use in farming applications.
3. The BP 965 is intended for off road use only unless used in land reclamation use. (Get appropriate permits from local authorities for land reclamation applications.)
4. The BP 965 is intended for use in locations away from people who could be harmed by the discharged materials.

Any uses of the BP 965 other than the above stated 'Intended Uses' shall be considered misuse of the BP 965. This misuse shall included (but not limited to):

i. Using the BP 965 on public roads (except for land reclamation uses).
ii. Using the BP 965 around people or in public places.
iii. Discharging materials other than for animal bedding, feed materials or land reclamation.

Always use the BP 965 according to the instructions contained in this Operator's Manual and the safety and instruction decals on the machine.

Perform regular maintenance and repair to ensure that the BP 965 operates safely and efficiently.

1.3 Serial Number Location

The serial number is found on the serial number plate (1) attached to the BP 965 on the top left hand side of the front tub wall, as shown below in *Figure 1.1*.

Figure 1.1: Serial Number Plate Location

The serial number plate shows the following information that helps to identify the version of the machine:

Model # - model of the machine

Serial # - serial number

Prod # - production number

Year - model year

It is important to record the serial number for proof of ownership and for any service or maintenance assistance.

Model #: _____ Owner: _____

Serial #: _____ Purchase Date: _____

Production #: _____

Model Year: _____

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2 Safety

2.1 Safety Alert Symbol

This Safety Alert symbol means:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

Why is SAFETY important to you?

<u>3 Big Reasons</u>

- **Accidents Disable and Kill**
- **Accidents Cost**
- **Accidents Can Be Avoided**

The Safety Alert symbol identifies important safety messages on the implement and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

2.2 Safety Signs & Definitions

⚠ DANGER

DANGER: (White letters on Red background) Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

⚠ WARNING

WARNING: (Black letters on Orange background) Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

⚠ CAUTION

CAUTION: (Black letters on Yellow background) Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

2.3 General Safety

YOU are responsible for the SAFE operation and maintenance of your equipment. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program.

YOU must ensure that you and anyone else who is going to operate, maintain or work around the equipment be familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

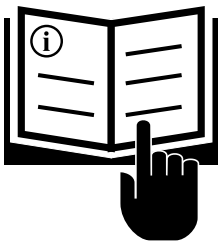
1. Owners must give operating instructions to operators or employees before allowing them to operate the unit, and at least annually thereafter per Occupational Safety and Health Administration (O.S.H.A.) Regulation 1928.57.
2. The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
3. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
4. Do not modify the equipment in any way. Unauthorized modification may impair the unit's function and/or safety of the operator.
5. Remember, YOU are the key to safety. Think SAFETY! Work SAFELY!

Important

This Safety Section covers general safety practices followed for different operations. Refer to each section in this manual for additional safety information.

2.4 Operating Safety

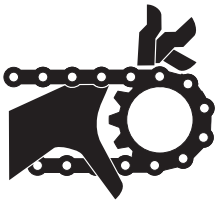
1. Read the Operator's Manual for the tractor and implement(s). Understand all safety signs before operating, maintaining or adjusting the equipment.



2. Only trained competent persons shall operate the unit. An untrained operator is not qualified to operate the machine.

3. Lower machine to the ground, place all controls in neutral, stop engine, turn monitor off, set park brake, remove ignition key, wait for all moving parts to stop before disembarking unit.

4. Install and secure all guards and shields before starting or operating.



5. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.

6. Do not allow riders. Keep unauthorized people off machine. Use care when climbing ladder or working on platform.

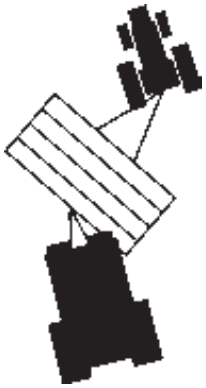
7. Clear the area of all bystanders before starting or operating tractor and implement(s).

8. Attach implement(s) securely to towing unit using a hardened pin with a retainer and a safety chain.

9. Stay clear of obstacles during operation & transport.

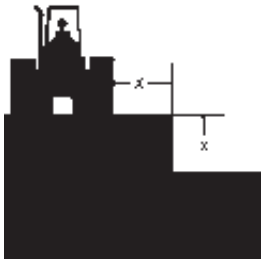
10. Before applying pressure to the hydraulic system, make sure all hydraulic components are securely connected. Use caution when working with or near the hydraulic system.

11. Match the proper tractor for the implement(s). The tractor should be properly weighted and able to control the implement(s), especially when operating up or down slopes. Refer to the Operator's Manual for your equipment.



12. When working on sloping land, add weight to the front and widen the wheel base of the tractor. Avoid sudden turns, uphill turns, or fast turns with a load. Ensure implement(s) are loaded to match field conditions.

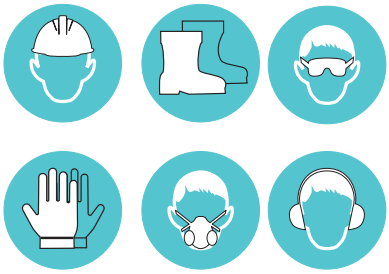
13. Do not operate tractor and implement(s) close to a ditch or embankment. An unstable bank will give way causing a side overturn. Operate at least as far from the edge of a ditch as that ditch is deep.



14. Use a designated signal person to direct the operator when required. Review hand signals prior to operation to avoid confusion. Ensure the signal person is not in the path of the tractor and implement(s).

15. Stay clear of overhead power lines. Electrocution can occur without contacting the power lines.

16. Wear appropriate protective gear. This list includes but is not limited to:



    a. A hard hat
    b. Protective shoes with slip resistant soles
    c. Protective goggles
    d. Heavy gloves
    e. Respirator or filter mask
    f. Hearing protection

17. Do not smoke when refuelling.

18. Each operator must be physically and mentally fit when working. An operator who is sleepy, tired, or not feeling well may not be able to react in time to avoid an accident.

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

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

21. Review safety related items with all personnel annually or more frequently if required.

2.5 Maintenance Safety

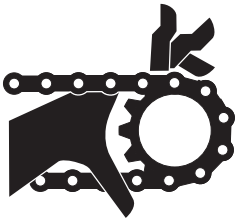
1. Review the Operator's Manual and all safety items before working with, maintaining or operating the implement.

2. Lower machine to the ground, place all controls in neutral, stop engine, turn monitor off, set park brake, remove ignition key, wait for all moving parts to stop, close valves to lockout hydraulic systems before servicing, adjusting, repairing or unplugging.

3. Follow good shop practices:
   a. Keep service area clean and dry.
   b. Be sure electrical outlets and tools are properly grounded.
   c. Use adequate light for the job at hand.
   d. Ensure there is adequate ventilation in the service area.

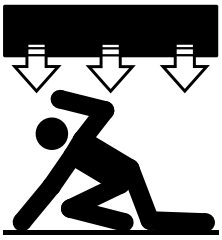
4. Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.

5. Keep hands, feet, clothing and hair away from all moving and/or rotating parts.



6. Clear the area of bystanders when carrying out any maintenance and repairs.

7. Place stands or blocks under the frame and close safety isolation valve on hitch (if equipped) before working beneath the machine or when changing tires.



8. Use only tools, jacks and hoists of sufficient capacity for the job.

9. Be sure all guards are in place and secured when maintenance work is completed.

10. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

2.6 Hydraulic Safety

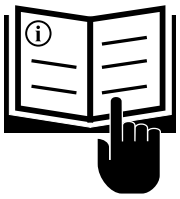
1. Always place all tractor hydraulic controls in neutral before dismounting.
2. Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are in good condition.

3. Replace any worn, cut, abraded, flattened or crimped hoses and steel lines.
4. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

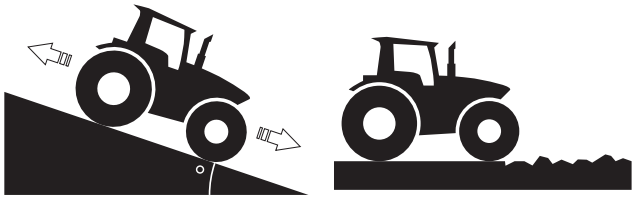
5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.

6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.

2.7 Transport Safety



1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating in the field and/or on the road.
2. Check with local authorities regarding transport on public roads. Obey all applicable laws and regulations.
3. Always travel at a safe speed. Slow down when conditions dictate to do so. Some examples include travelling on rough ground, going up or down a slope when towing, or when entering public roadways.



4. Follow recommended transport speeds.
5. Transport speed while towing is dictated by the implement configuration. Reduce speed and take extra caution when challenges are present, such as rough or wet roads, climbing or descending a slope, or reduced visibility.
6. Implement tire capacity must not be exceeded. Ensure implement tire pressures are at the values specified by the manufacturer of the implement.
7. Make sure the SMV emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic. Daybreak and dusk are particularly dangerous and pilot vehicles are recommended. SMV signs are used on vehicles travelling slower than 40 km/h (25 mph).

8. The weight ratio of the unbraked implement to the towing unit should be kept under 1.5 to 1.
9. The above recommendation is for level ground in optimum conditions. Reduce total weight and take extra caution when challenges are present, such as rough or wet roads, climbing or descending a slope, or reduced visibility.

Important

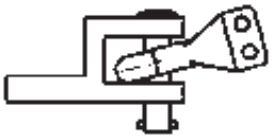
Farm tractor and implement tires are designed for low speed operations.

If tractors or implements are towed at high speeds on the highway, high temperatures may develop under the tread bars and weaken the rubber material and cord fabric. There may be no visible evidence of damage at the time. Later, a premature failure may occur, which experience shows was often started by the overheated condition that developed when the unit was towed at a high speed.

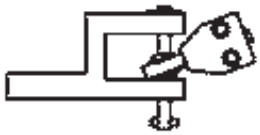
10. Properly configure the implement(s) or tractor to allow proper articulation of the connection(s). Be sure that the implement(s) is hitched positively to the towing vehicle and a retainer is used through the drawbar pin. Always use a safety chain between the machine and the towing unit.

    a. Ensure that all hitch connections allow proper articulation in all directions for the conditions and terrain encountered. Failure to do so may result in hitch or hitch pin failure causing machine damage and serious injury or death.

Proper Hitch Connections

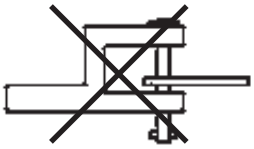


Oversized Hole in Hitch Tongue

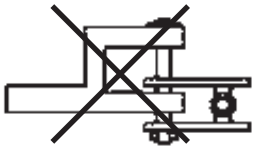


Ball Socket Hitch Tongue

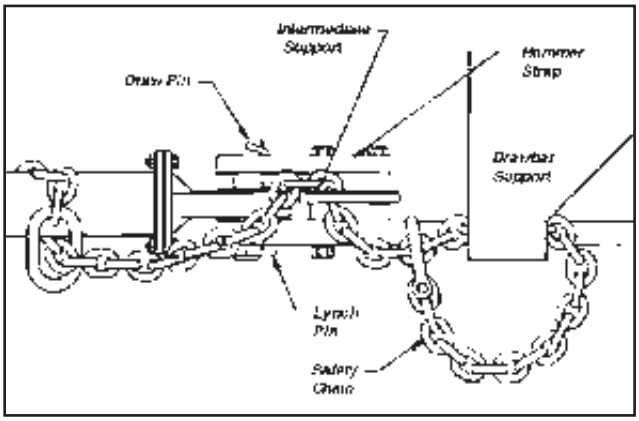
Improper Hitch Connections



Small Hole in Hitch Tongue



Double Clevis Hitch Tongue



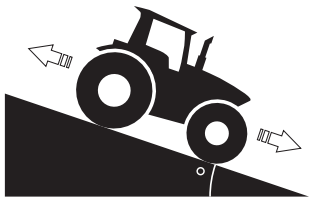
11. Be sure all bystanders are clear of the machine and do not allow riders on machine or tractor.

12. Always use hazard flashers on the tractor when transporting unless prohibited by law.

13. Before entering a roadway, stop and look both directions. Make sure there is no interference with traffic when crossing the road or entering the roadway.

14. Keep to the right and yield the right-of-way to allow faster traffic to pass. Stay on the road.

15. Descend a slope with the same gear that is required to climb the slope. Do not rely on the braking system to avoid accidents. Maintain control of the tractor and implement(s). Improperly loaded implements or too light of a tractor may cause loss of control.



16. Stay away from overhead power lines when transporting equipment. Electrocution can occur without direct contact.

17. Always check behind you when backing up. The width of the towed implement may obscure vision.

18. During periods of limited visibility, use pilot vehicles and use the extra lights on the machine.

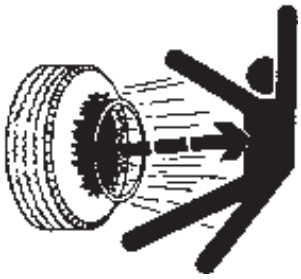
19. This implement is not equipped with a parking brake. Unhooking this implement from the towing vehicle must only be completed on level ground (0° ± 1.5°) and wheel chocks are recommended.

2.8 Storage Safety

1. Store unit in an area away from human activity.
2. Do not permit children to play on or around the stored implements.
3. To ensure the unit's stability, always chock the wheels when decoupling.

2.9 Tire Safety

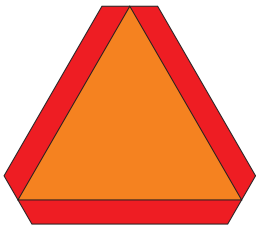
1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.



2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. Before replacing tires, always consult the specification section of the operator's manual and tire information placard to ensure that the replacement tires will have at least the same ply and load carrying capacity as the Original Equipment Manufacturer tires.
    a. Inflate tires to pressure listed in the operator's manual and tire information placard.

2.10 Safety Signs

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.



3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your authorized Highline dealer.
5. How to Install Safety Signs:
    a. Be sure that the surface area is clean and dry.
    b. Decide on the exact position before you remove the backing paper.
    c. Remove the smallest portion of the split backing paper.
    d. Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
    e. Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
    f. Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.11 Chemical Safety

1. Always follow the chemical manufacturer's label instructions exactly.
2. Misuse, including excessive rates, uneven application, wind drift, and label violations can cause injury to crops, livestock, persons and the environment.
3. Follow the manufacturer's instructions for chemical storage.
4. Keep all chemicals out of reach of children and away from livestock and animals.
5. Store chemicals only in their original containers and in a locked area.

Wear gloves

Don't breath vapor

Don't ingest chemical

6. Do not breathe, touch or ingest chemicals. Always wear protective clothing and follow safe handling procedures.

7. Clear the area of all bystanders before handling or using treated seed or chemical.
8. Check with state or provincial environment department regarding the disposal of small quantities of chemicals, chemical containers, and wash water.
9. Do not burn the containers or leave them lying in the field or ditches. Dispose of them by leaving at a pesticide container disposal site.
10. Wash thoroughly before eating.
    a. Use a detergent to remove all chemical residue.
    b. Rinse carefully and dry with disposable towels.
11. Do not eat in the field when applying chemicals.
12. In case of chemical poisoning, get immediate medical attention. Have container label handy when seeking medical attention.
13. Post the Poison Control Emergency telephone number for your area on sprayer before using Agricultural chemicals.
14. Document the Poison Control Emergency telephone number in this manual in the space below for future reference.

Poison Control Emergency Telephone Number:

15. Thoroughly wash clothing and equipment contaminated by chemicals.
16. Do not allow children or workers on contaminated machines.
17. Clean machine while still in the field. Wash down the machine immediately after field work.
    a. Dispose of the wash water in an environmentally safe manner.
    b. Wash water can contaminate the soil or a clean water supply.

2.12 Sign-Off Form

Highline Manufacturing follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the implement must read and clearly understand ALL Safety, Operating, and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Review this information before the season start-up.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment.

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

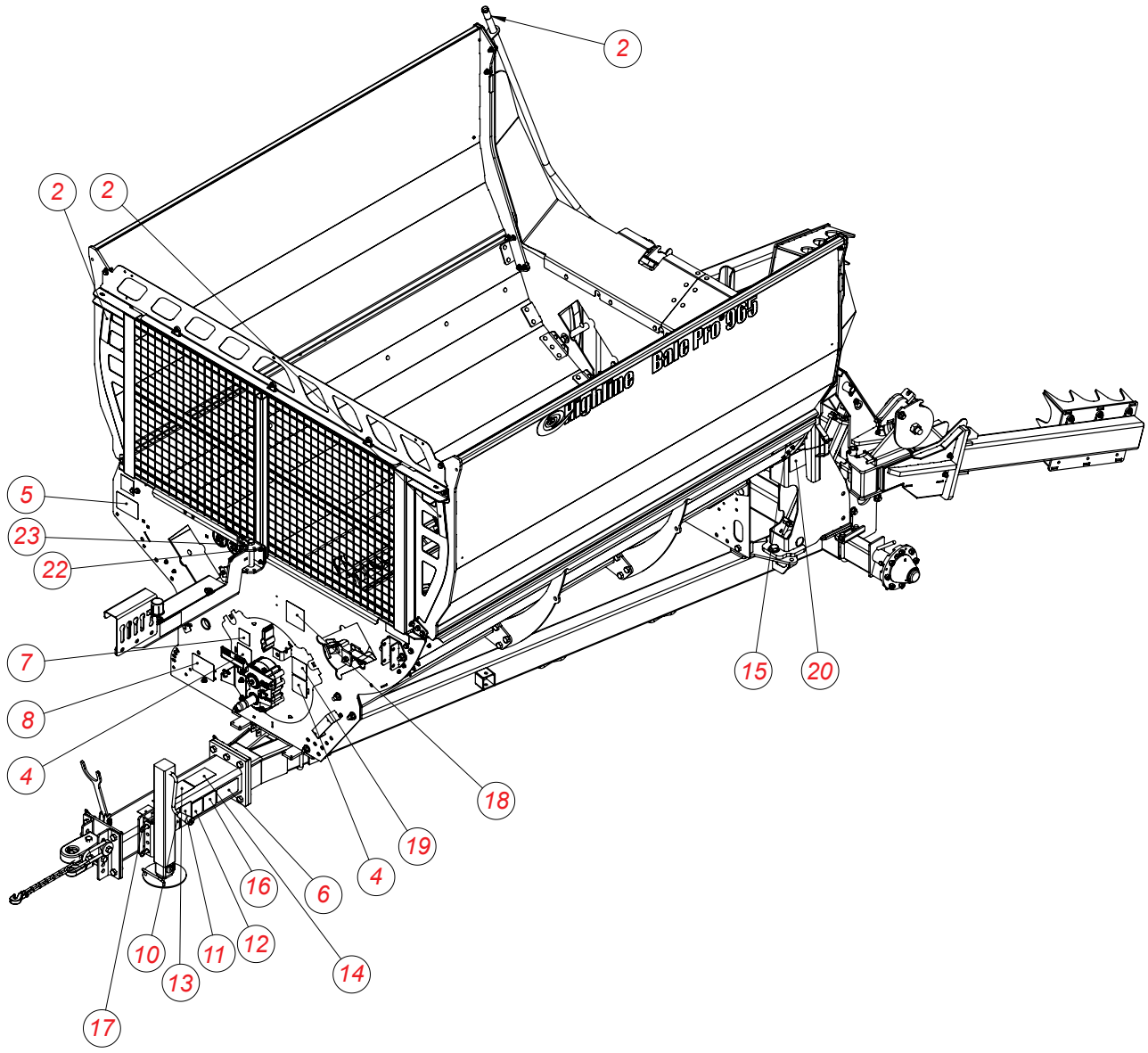
Sign-Off Form		
Date	Employee's Signature	Employer's Signature

3 Decals Locations

The types of safety signs and locations on the equipment are shown in the in this section. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!

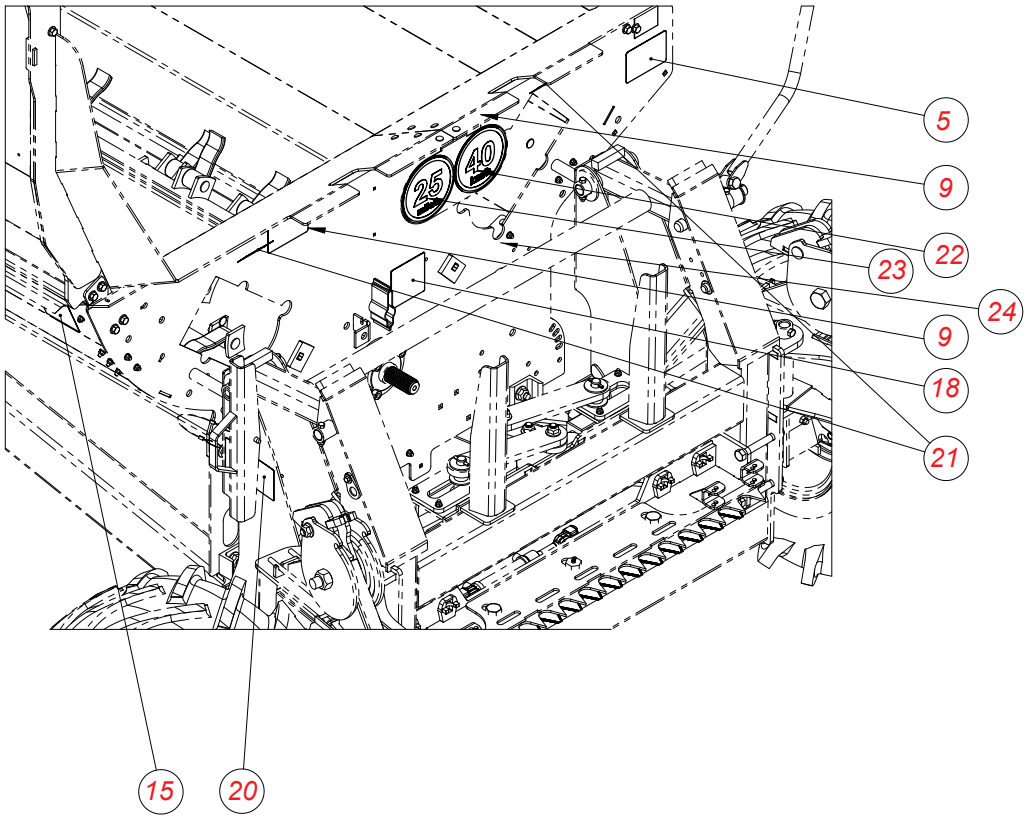
Front View



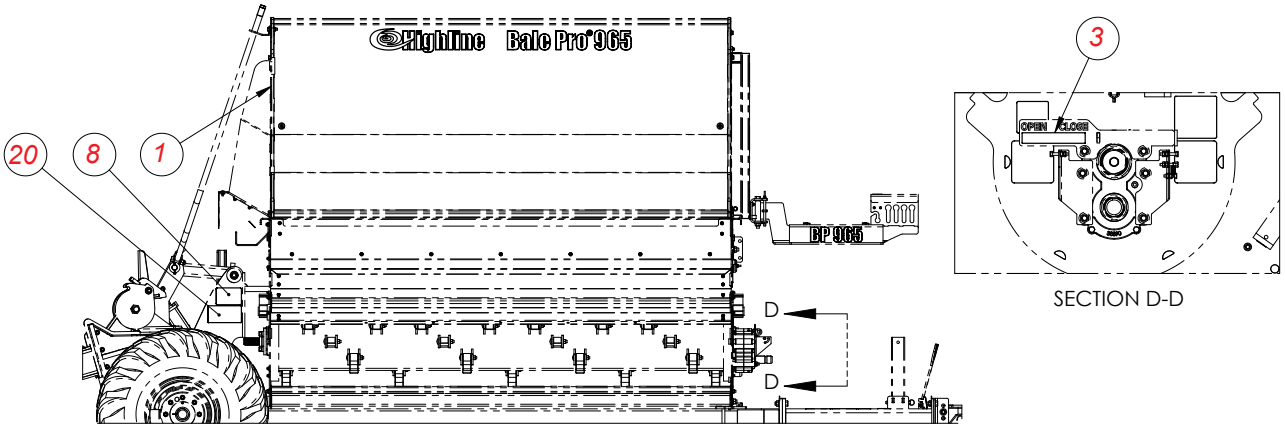
REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

Section 3 - Decals Locations

Rear View



Right Side View



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

Section 3 - Decals Locations

1 - Red Reflective Safety Decal, 2" x 9"

2 - Amber Reflective Safety Decal, 2" x 9"

3 - Amber Reflective Safety Decal, 1" x 6"

4 - Danger - Do Not Contact Rotating Drive Shaft

Contact with rotating drive shaft will cause serious injury or death.

Keep all drive shaft guards in place.

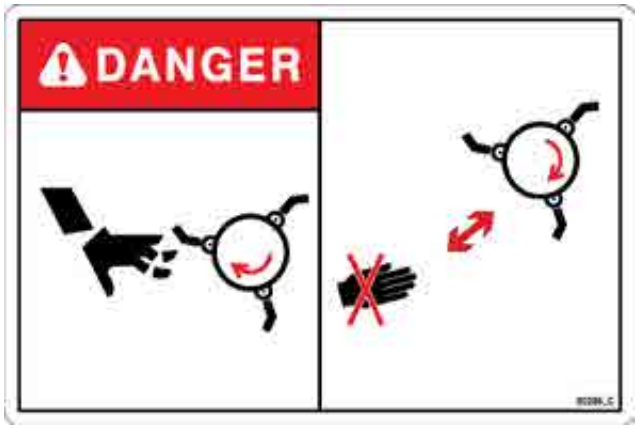
Securely attach drive shafts at both ends.

Check that the drive shaft guards turn freely on the drive shaft.

DO NOT operate with shields missing.

Stop engine and ensure the PTO drive shaft is stopped before working on drive shaft.

5 - Danger - Do Not Contact Rotating Flails



Contact with moving parts can cause serious injury or death.

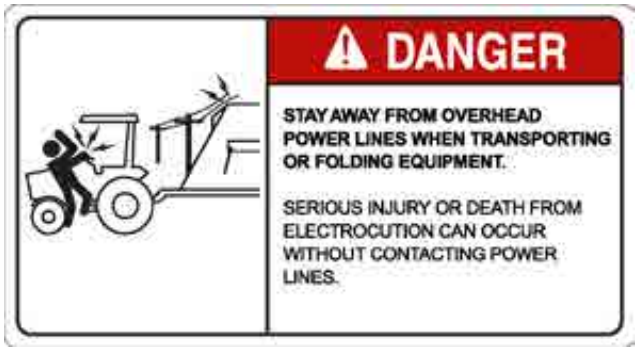
Keep hands out of the cutting area and processor tub when the flail drum is rotating.

Always disengage tractor power takeoff, set park brake, lower bale lift to the ground, shut off tractor engine, remove key, and wait for PTO to stop turning before unplugging by hand or servicing.

Stay out of the processor tub when the PTO is connected to the tractor.

Keep guards in place and in good condition.

6 - Danger - Stay Away from Overhead Power Lines



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

7 - Danger - Do Not Stand

DO NOT stand on the PTO shield.

Contact with the moving PTO could result in serious injury or death.

8 - Danger - Stay Back from Operating Machine

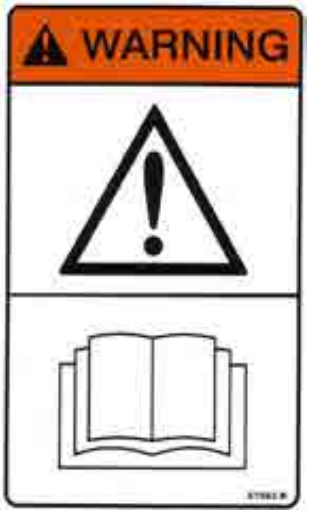
Stay clear from discharge side when PTO is engaged.

Thrown material or objects leaving the discharge area can cause serious injury or death.

Do not operate within 100 ft (30 m) of any person.

9 - Danger - Do No Enter Tub While Parts are Rotating

10 - Warning - Read, Understand & Follow Safety Instructions



Read, understand and follow all instructions and safety messages included in this manual and on decals attached to the machine.

These instructions and safety messages contain important information.

Allow only responsible, properly instructed individuals to operate and service the machine.

Failure to follow the instructions and safety messages in this manual and on the decals attached to the machine could result in serious injury or death.

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

11 - Warning - Shut Down Tractor Before Dismounting Tractor

Shut down the tractor and remove the key before repairing, servicing, lubricating or cleaning the machine.

Relieve all hydraulic pressure in the hoses before going near the machine. Leave the hydraulics in the “float” position.

12 - Warning - Off Road Use Only

13 - Warning - High Pressure Fluid Hazard

14 - Warning - Do Not Ride on Machine

15 - Warning - Install Cylinder Lock Before Going Under Raised Bale Lift

Install and secure the cylinder lock before going under raised bale lift.

Install and secure cylinder lock before using the twine cutter.

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

16 - Caution - Do Not Exceed PTO Speed

17 - Caution - Do Not Exceed Jack Capacity

DO NOT exceed maximum load capacity of 7000 lb (3175 kg) on the jack.

DO NOT attempt to lift the hitch without using the jack.

18 - Caution - Shut Down Tractor and Lock Bale Lift and Flail Drum Before Using Twine Cutter

Use the shutdown procedure to ensure no movement of the flail drum will occur while cutting twine or netwrap.

Lock bale lift in the upright position before going under the raised clamping arms.

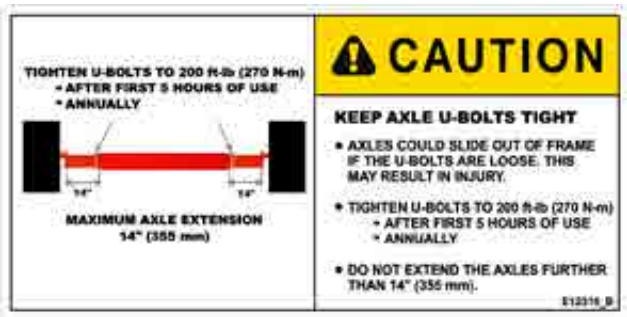
Lock the flail drum to ensure no movement of the flail drum will occur while cutting twine or netwrap.

19 - Caution - Do Not Exceed 80° Turns in Operation

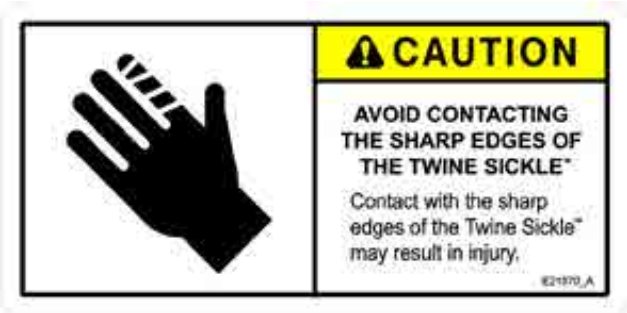
DO NOT operate the Constant Velocity (CV) drive shaft at greater than 80° to prevent damage to the drive shaft.

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

20 - Caution - Keep Axle U-Bolts Tight



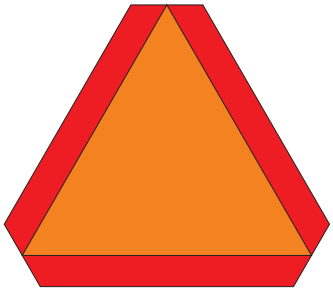
21 - Caution - Avoid Contacting the Twine Sickle™



22 - Speed Information Sign, 40 km/h

23 - Speed Information Sign, 25 mile/h

24 - Slow Moving Vehicle Sign



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

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REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

4 Pre-Operation

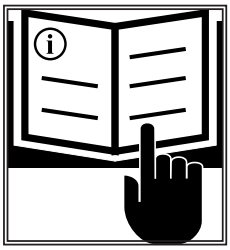
4.1 To the New Operator or Owner

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, transport, maintenance and storage of equipment or in the use and maintenance of facilities.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum field efficiency. By following the operating instructions in conjunction with a good maintenance program, your BP 965 unit will provide many years of trouble-free service.

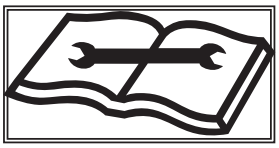
Important



It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine.

Refer to the *Section 2 - Safety* in this manual. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site.

WARNING



Untrained operators are not qualified to operate the machine.

Read all Service, Maintenance and Operator's Manuals before operating.

Figure 4.1: Bale Pro® 965 (BP 965)

4.2 Transport

4.2.1 Connecting to the Tractor

1. Tractor Requirements
   a. Roll Over Protection System (ROPS)
   b. Working seat belts
   c. 1-⅜ in 21 spline PTO
   d. PTO requirement
      i. Refer to *Section 9 - Specifications* for the PTO requirements.
   e. 3 Spool Control Valves (SCV)

2. To transport a loaded BP 965 on public roads at 40 km/h (25 mph), use a properly sized and equipped tractor with a weight of 67 % or more than the loaded weight of the processor. Refer to *Table 4.1*.
   a. Only tow behind an appropriately sized agricultural or highway tractor.
   b. Check with local traffic regulations to transport on public roads.
   c. Do not transport on public roads with a bale on the bale lift.
   d. If bales are heavier or the material in the grain tank is other than barley, adjust the loaded BP weight and the tractor weight accordingly.

Configuration	Tractor Weight at 67 % greater than the BP 965 loaded weight
Base BP 965 - 1,800 lb (816 kg) square bale	15,960 lb (7,239 kg)
BP 965 With Feed Chopper - 1,800 lb (816 kg) square bale	17,650 lb (8,006 kg)
BP 965 With Grain Tank - 1,800 lb (816 kg) square bale - Tank filled with barley (48 lb/bushel)	21,400 lb (9,707 kg)
BP 965 With Feed Chopper and Grain Tank - 1,800 lb (816 kg) square bale - Tank filled with barley (48 lb/bushel)	23,100 lb (10,478 kg)

Table 4.1: Tractor Weight for Transport at 40 km/h (25 mph)

3. Ensure the correct PTO speed.

   a. Ensure that the tractor PTO speed matches the BP 965's gearbox speed of 1000 rpm.

   b. Do not attempt to operate the BP 965 at a different PTO speed.

   Note: Do not use PTO adapters. PTO adapters will cause a drive shaft failure and possible tractor damage. Your BP 965 warranty will also be invalid.

4. Adjust the tractor draw bar length; see *Figure 4.2*.

   a. Set the draw bar length to 16 in (406 mm) for a 1-⅜ in 21 spline PTO.

   b. This length is measured from the tip of the PTO shaft end to the center of the draw bar hole. (Refer to your tractor's operator manual for draw bar adjustment procedures.)

   Note: To prevent damage to the tractor draw bar, avoid traveling at high speeds and over rough terrain.

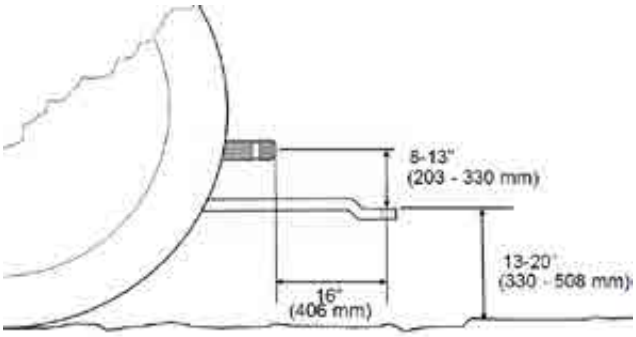


Figure 4.2: Tractor Drawback Adjustment

5. Lift the hitch with the jack; see *Figure 4.3*.

   a. The hitch is heavy. Do not attempt to lift it without using the jack.

Figure 4.3: Lift Hitch with the Jack

6. If necessary, adjust the height of the hitch tongue; see *Figure 4.4*.

   Note: Do this procedure on level ground.

   a. Level the frame of the BP 965 to ensure the bale lift can lower for loading a bale.

   b. Adjust the hitch tongue height to connect with the tractor draw bar while keeping the frame level.

   c. Fasten the tongue in place and torque the bolts (1) to 265 ft-lb (359 Nm).

Figure 4.4: Adjust the Hitch Tongue

7. Connect the hitch to the tractor draw bar; see *Figure 4.5*.

   a. Use a 1 in (25 mm) pin.

   b. Secure with a hitch pin clip.

8. Connect the safety chain (1); see *Figure 4.5*.

   a. Ensure the safety chain rating is equal or greater than the gross weight of the BP 965.

   b. Attach the safety chain to a secure location on the tractor.

   c. Fasten the safety chain hook with the hook lock.

Figure 4.5: Connect to the Tractor Drawbar and Connect the Safety Chain

WARNING

Shut off the tractor engine before attaching PTO drive shaft.

Entanglement in the rotating drive shaft can cause serious injury or death.

DANGER

The BP 965 shall not be operated without the drive shaft shields in place.

Contact with rotating drive shaft will cause serious injury or death.

9. Attach the drive shaft to the tractor PTO.
    a. Shut off the tractor engine and remove the key.
    b. Check that the drive shaft telescopes easily and that the shields are in good condition and rotate freely.
    c. Lift the tractor PTO shield.
    d. Support the drive shaft, pull back on the yoke collar, align the splines by rotating the BP 965 drive shaft and push the drive shaft into the tractor PTO shaft until the collar snaps into place.
        i. Push and pull the yoke several times to ensure the drive shaft is locked. Do not pull on the collar as this will release the lock.
        ii. Lower the tractor & hitch PTO shields into place.

10. Connect the chains on the drive shaft guards to the drive shaft shield and the tractor.

11. Fold down the PTO support holder.
    a. Failure to fold down the support may result in damage to the drive shaft.

12. Attach the hydraulics.
    a. Clean the end of the hoses and the connection.
    b. Firmly push the hoses into the tractor receptacle according to user preference.
        i. Refer to the decal on the hose holder, shown in *Figure 4.6*.
    c. Route the hoses so they do not interfere with moving parts.

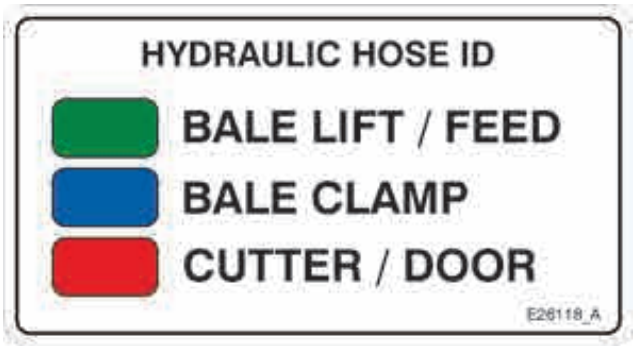


Figure 4.6: Hydraulic Hose Identification Decal

13. Connect the lights.
    a. Connect the light plug into the appropriate tractor receptacle.
    b. Ensure the light cable does not interfere with or contact moving parts.

14. Connect the electrical harness for the Loading/ Processing switch.
    a. Connect the in-cab portion of the harness to the machine mounted portion of the harness.
    b. Ensure the harness does not interfere with or contact moving parts.
    c. Connect the switch harness to the appropriate receptacle in the cab.

15. Place the hitch jack in the storage location; see *Figure 4.7*.
    a. Remove all weight from the jack.
    b. Remove the quick release pins (1) holding the jack onto the hitch.
    c. Place the jack into the mount on the front tub wall.
    d. Fasten the jack in place with the quick release pins (1).

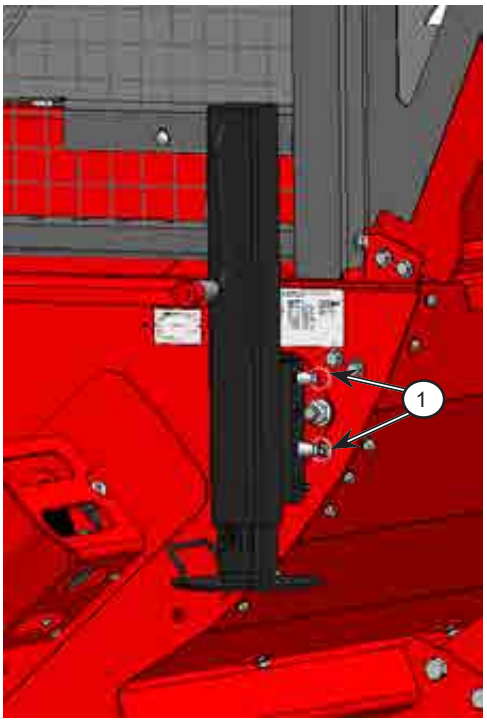


Figure 4.7: Hitch Jack in Storage Location

4.2.2 Prepare the Unit for Transport

1. Adjust the wheel stance settings; see *Figure 4.8*.

   a. Increase the rear wheel stance to maintain stability when working on hilly terrain or rough ground.

      Note: Ensure the bale processing tub is empty before adjusting wheel stance.

   b. Raise the main axle under the cylinder mount and support.

   c. Loosen the u-bolts (1) that hold the axle tubes in place.

   d. Slide the axle to achieve the desired wheel stance setting. Ensure there is adequate clearance for the clamping arms to operate without interference with the tires.

      Note: Maximum axle extension is 14 in (355 mm). Axles may bend if extended beyond this amount.

   e. Tighten the u-bolts (1) that hold the axle tubes in place to 200 ft-lb (270 Nm).

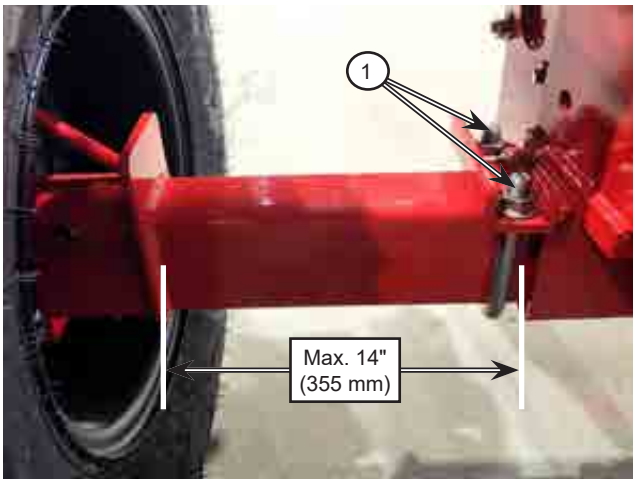


Figure 4.8: Wheel Tread Width

CAUTION

Axles could slide out of frame if the U-bolts are loose. This may result in injury or machine damage.

2. Check the condition of the tires.

   a. Ensure that the lug nuts have the cone side of the lug nut against the wheel rim.

   b. Torque the lug nuts as needed.

      i. Refer to *Section 9 - Specifications* for the torque specs.

   c. To determine the tire pressure, check the tire sidewalls for the tire plys. Fill the tires as needed.

      i. Refer to *Section 9 - Specifications* for recommendations.


Figure 4.9: Check the Tires

3. Extend the bale lift cylinders to raise the bale lift to the highest position.

   a. Ensure that the Loading/Processing switch is in the OFF / Loading position.

4. Remove the bale lift cylinder lock from the storage position on the side of the machine, next to the cylinder; see *Figure 4.10*.

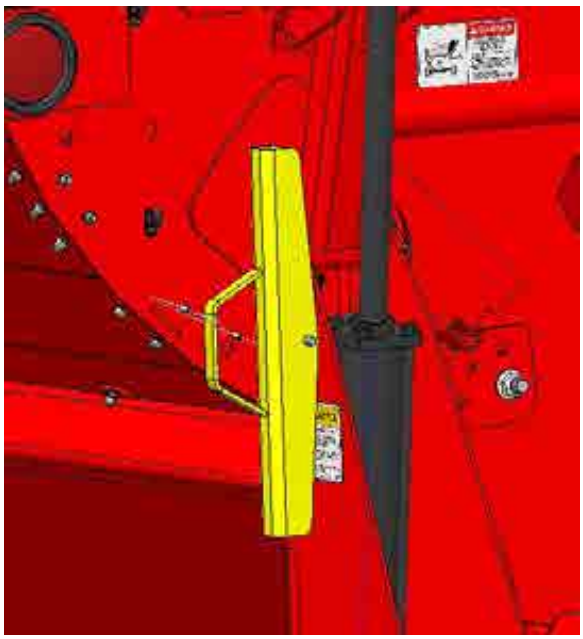


Figure 4.10: Lift Lock Storage Position

5. Install the bale lift cylinder lock (1) on the lift cylinder of the bale clamping arms; see *Figure 4.11*.

   a. Fasten the cylinder lock in place with the locking pin (2).

6. Slowly lower the bale lift onto the stops to relieve hydraulic pressure and to prevent any movement during transport.

Figure 4.11: Lift Cylinder Locked

7. Retract the door cylinder to raise the discharge deflector door to the transport position; see *Figure 4.12*.

   a. Switch the Loading/Processing switch to the ON / Processing position.

   b. Flip the rubber deflector onto the top of the door before raising the door. This will secure the rubber between the tub wall and the door.

   c. Ensure the side curtains are rolled up and secured with the rubber holding straps (1).

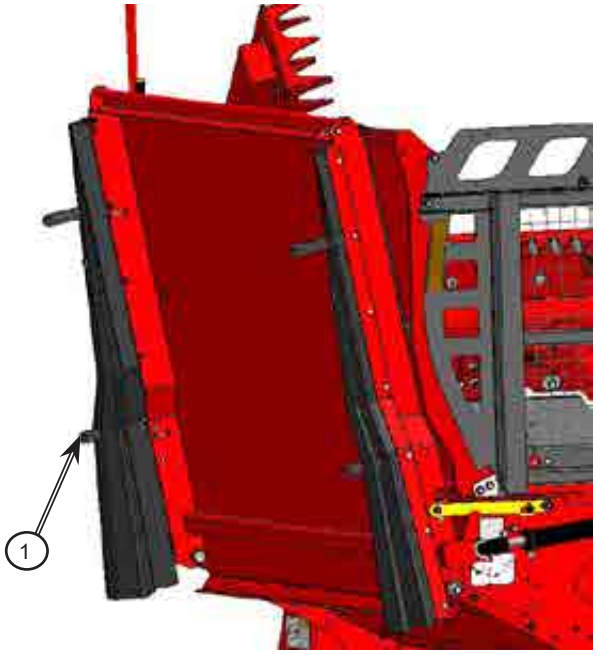


Figure 4.12: Raise Discharge Door and Secure Side Curtains

8. Install the discharge door transport lock; see *Figure 4.13*.

   a. Rotate the lock (1) toward the door.

   b. Place the lock onto the pin on the door.

   c. Secure with the clip pin (2).

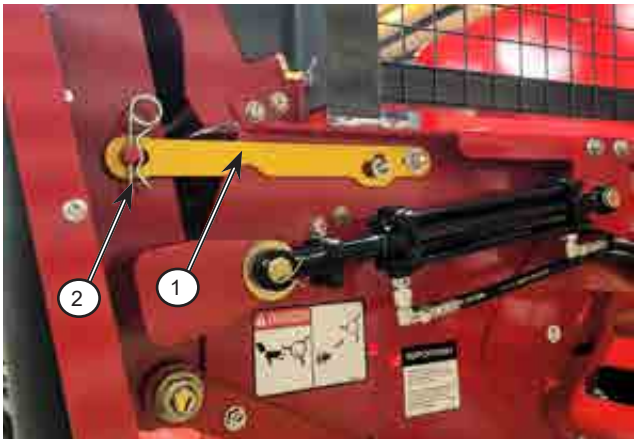


Figure 4.13: Discharge Door Lock

9. Ensure that the Slow Moving Vehicle (SMV) sign (1) on the rear tub wall is clean and visible; see *Figure 4.14*.

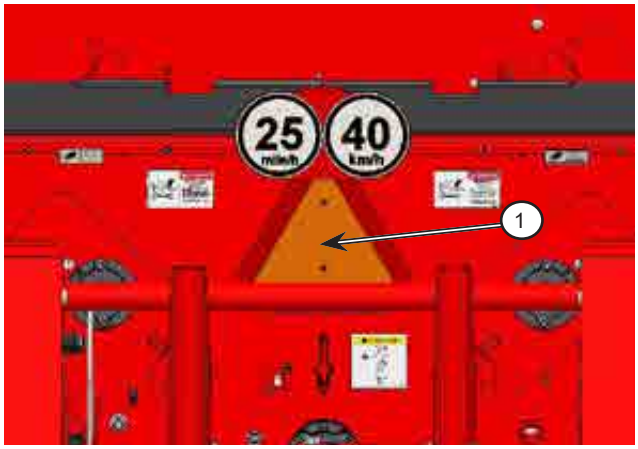


Figure 4.14: Ensure SMV Sign is Visible

10. To transport a loaded BP 965 on public roads at 40 km/h (25 mph), use a properly sized and equipped tractor.
    a. Refer to *Table 4.1* at the beginning of this section.
    b. Only tow behind an appropriately sized agricultural or highway tractor.
    c. Check with local traffic regulations to transport on public roads.
    d. Do not transport on public roads with a bale on the bale lift.
    e. If bales are heavier or the material in the grain tank is other than barley, adjust the loaded BP weight and the tractor weight accordingly.

DANGER

Stay away from overhead power lines when transporting equipment. Electrocution can occur without contacting power lines.

WARNING

DO NOT allow any person to ride on the outside of the tractor or BP 965. Falling off can result in serious injury or death.

4.3 Pre-Operation Checklist

Check these items each time before using the machine.

1. Ensure that the tractor and BP 965 are parked on level ground.
   a. Engage the tractor parking brake and shut down the tractor before performing the pre-operation inspection.
2. Ensure that all decals are clean and in place.
3. Ensure that the Slow Moving Vehicle (SMV) sign is clean and visible.
4. Check the condition of the flail drum; see *Figure 4.15*.
5. Clean debris and material buildup from the flail drum area and the processor tub.
   a. DO NOT use the twine/wrap cutter tool to dislodge jammed material.

Figure 4.15: Check and Clean Flail Drum Area

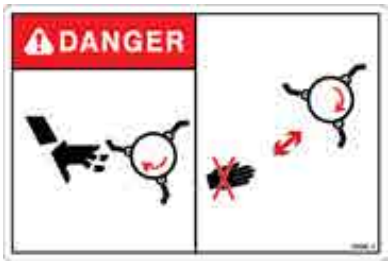
WARNING

Shut down the tractor completely and set the parking brake.

Disconnect the PTO from the tractor before doing any work near the flail drum.

DANGER

DO NOT place hands in the BP 965 when it is rotating. Contact with exposed rotating flails will cause serious injury or death.



6. Check the condition of the flails (1); see *Figure 4.16*.

   a. Inspect the flails daily.

   b. Spin the drum by hand to check all the flails.

   c. Check that the flails swing freely.

   d. Check if they are broken or worn to the point that they would not properly process the material.

   e. See *Section 6.4 - Flail Replacement Procedure* for flail replacement information.

      i. Replace the flails in pairs.

      ii. Replace on opposite sides of the drum to maintain drum balance.

   f. Check the condition of the flail mounting bolts. Ensure the mounting bolts are tight.

Figure 4.16: Check the Flails

7. Remove twine or other materials that is wrapped around the flail drum or drum bearings; see *Figure 4.17*.

   Note: Remove the twine/wrap from the flail drum every 25 bales.

   Premature bearing failure can occur if twine/wrap or other materials is allowed to build up on the flail drum.

   a. See *Section 4.5 - Twine/Wrap Removal Procedure*.


Figure 4.17: Remove Twine/Wrap

8. Check that the feed rollers are resting on the adjustment plates (1); see *Figures 4.18* and *4.19*.

   a. The feed roller is to be resting on a side of the adjustment plate (2) that has a cutout.

      Note: The front and back of the feed rollers need to be resting on the same adjustment plate settings.

   b. The default positions for the plates are for the left roller (non-discharge side) to be higher than the right roller (discharge side).

      i. These default positions are for improved material flow from the machine.

      ii. Adjustment from these positions is possible.

   c. Check that all the adjustment plate fasteners (3) are tight.

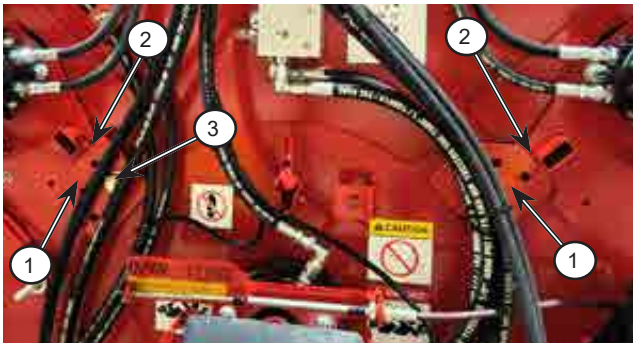


Figure 4.18: Feed Rollers Resting on the Adjustment Plates (Front Shown)

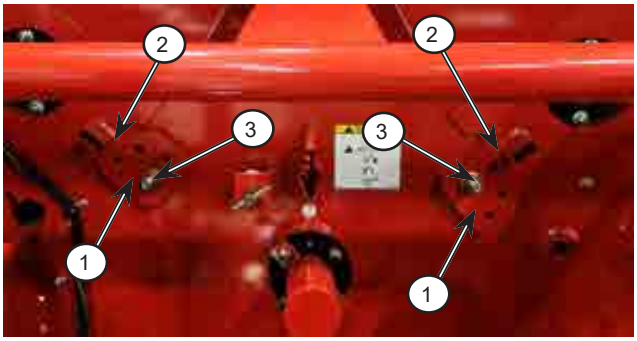


Figure 4.19: Feed Rollers Resting on Adjustment Plates (Rear Shown)

9. Check that the Twine Sickle™ moves back and forth by using the tractor control lever; see *Figure 4.20*.

   a. Ensure that the Loading /Processing switch is in the OFF / Loading position.

   b. Check that the sickle moves through the entire stroke.

      i. If the stroke is limited, remove any material that is built up at the end of the sickle blade that is limiting the movement.

Figure 4.20: Check that the Twine Sickle™ Moves

CAUTION

DO NOT contact the Twine Sickle™.

Contact with the sharp edges of the Twine Sickle™ may result in injury.

DO NOT contact the Twine Sickle™ when it is operating. Contact with the moving sickle may result in injury.

10. Check the condition of the Twine Sickle™ knives. Replace any that seem worn or damaged.

    a. Refer to *Section 6.5 - Twine Sickle™ Knife Replacement Procedure* for information.

11. Inspect all the hydraulic motors, cylinders, hoses and fittings.

    a. Visually inspect all the hydraulic hoses and fittings.

        i. See *Section 6 - Service and Maintenance* for conditions indicating that replacement is needed.

    b. Ensure that the cylinder pins are properly secured and do not show any noticeable wear.

Figure 4.21: Check all the Hydraulics

WARNING

Use a piece of cardboard or heavy paper to check for leaks. Do not use your hand. Wear proper hand and eye protection when searching for leaks.

Relieve pressure on the hydraulic system before repairing, adjusting or disconnecting.

12. Check the condition of the clamping arm hinge springs (1); see *Figure 4.22*.

    a. Ensure the springs are in good condition and are not broken.

    b. Refer to *Section 6.9 - Changing the Clamping Arm Hinge Springs* if replacement is required.

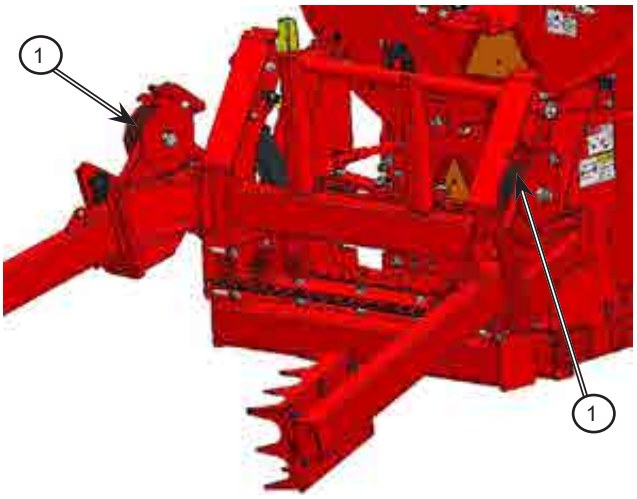


Figure 4.22: Check the Hinge Springs

13. Inspect the wheels and tires for damage or foreign objects. Repair or replace as necessary.
    a. Ensure that the lug nuts have the cone side of the lug nut against the wheel rim.
    b. Torque the lug nuts as needed.
        i. Refer to *Section 9 - Specifications* for the torque specs.
    c. To determine the tire pressure, check the tire sidewalls for the tire plys. Fill the tires with air as needed.
        i. Refer to *Section 9 - Specifications* for recommendations.

Figure 4.23: Check the Wheels and Tires

14. Check that the axle u-bolts (1) are tight; see *Figure 4.24*.
    a. Torque the axle u-bolts (1) to 200 ft-lb (270 Nm) to ensure the axles do not slide out of the frame.
    b. Maximum axle extension is 14 in (355 mm) from the main tube edge to the inside face of the spindle plate.
    c. Refer to *Section 4.2.2 - Prepare the Unit for Transport* to adjust the wheel stance settings, as needed.

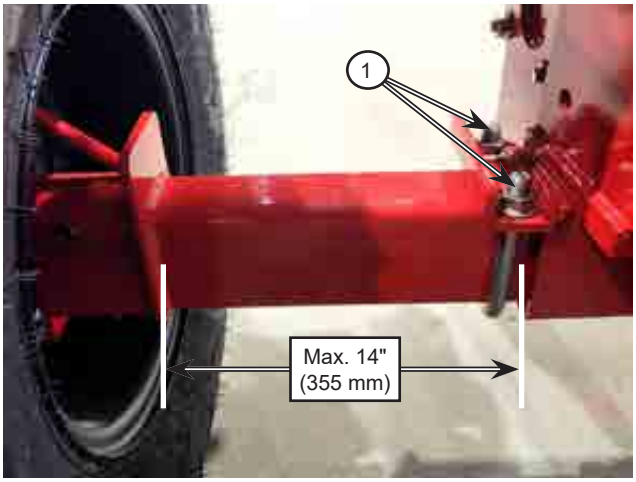


Figure 4.24: Check That Axle U-bolts are Tight

CAUTION

Axles could slide out of frame if the U-bolts are loose. This may result in injury or machine damage.

15. Remove any twine/wrap that is built up around the axle spindle and hub; see *Figure 4.25*.

    a. Be careful to not damage the bearing grease seal while removing twine/wrap.

Figure 4.25: Remove Twine/Wrap from Spindle & Hub

16. Ensure the drive shaft shields are lowered into place and are in good repair to prevent injuries; see *Figure 4.26*.

Figure 4.26: Ensure Drive Shaft Shield is in Place

DANGER

The BP 965 shall not be operated without the drive shaft shields in place.

Contact with rotating drive shaft will cause serious injury or death.

17. Lubricate all grease fittings as per their recommended service intervals, and check the fluid level in the gearbox.

    a. See *Section 6.1 - Lubrication - Grease* and *Section 6.3 - Gearbox Oil* for details.

18. Ensure all fasteners are tightened.

4.4 Changing the Claw Positions

The clamping arm claw positions can be adjusted for the size of bale being processed.

WARNING

Shut down the tractor completely and set the parking brake. Disconnect the hydraulics before working between the clamping arms.

1. Each claw can be adjusted vertically to accommodate different bale sizes.
   a. To adjust the claw:
      i. Remove the hardware (1) fastening the claw to the clamping arm and remove the claw; see *Figure 4.27*.
      ii. Place the claw in the desired position, ensuring all 6 holes on the claw line up with the holes on the mounting plate; see *Figure 4.28*.
      iii. Re-install the fasteners and torque the bolts to 75 ft-lb (102 Nm).

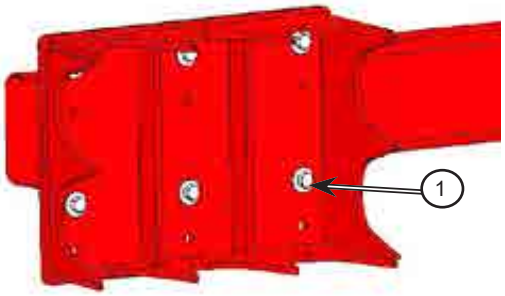


Figure 4.27: Adjust the Claw

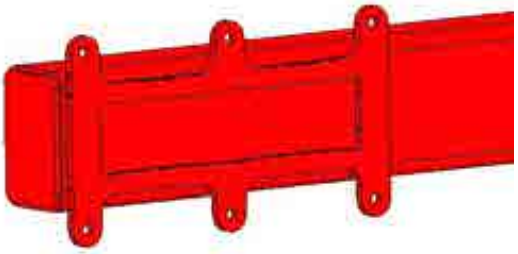


Figure 4.28: Claw Mounting Plate

2. Each claw can also be flipped end to end to accommodate different bale sizes; see *Figure 4.29*.
   a. If processing bales 4 ft (1.2 m) wide or less, it is recommended to have the claw installed in the narrow bale clamping orientation, with the larger end towards the machine. The installation process is the same as detailed in step *1.a*.
   b. If processing bales greater than 4 ft (1.2 m) wide, including round bales, it is recommended to have the claw installed in the wide bale clamping orientation, with the smaller end toward the machine. The installation process is the same as detailed in step *1.a*.

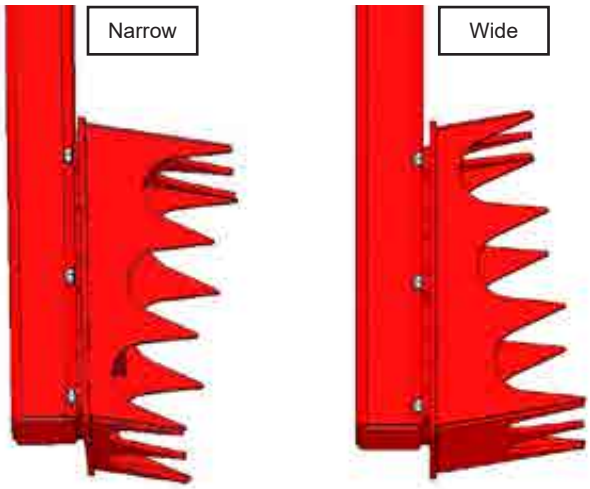


Figure 4.29: Bale Clamping Orientations

4.5 Twine/Wrap Removal Procedure

Remove twine/wrap that is around the flail drum and feed rollers every 25 bales. Premature bearing failure can occur if twine/wrap is allowed to build up.

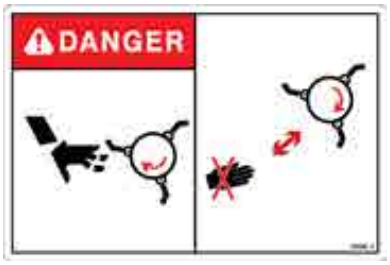
WARNING

Shut down the tractor completely and set the parking brake.

Disconnect the PTO from the tractor before doing any work near the flail drum.

DANGER

DO NOT place hands in the BP 965 when it is rotating. Contact with exposed rotating flails will cause serious injury or death.



1. Raise the bale lift to the fully raised position.
   a. Switch the Loading/Processing switch to the OFF / Loading position.
2. Remove the bale lift cylinder lock from the storage position on the side of the machine, next to the cylinder.
3. Install the bale lift cylinder lock (1) on the bale lift cylinder; see *Figure 4.30*.
   a. Fasten the cylinder lock in place with the locking pin.

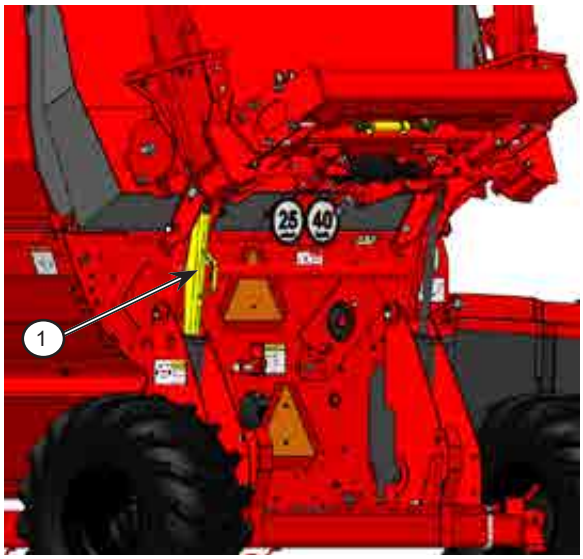


Figure 4.30: Raise Bale Lift and Lock

WARNING

Install and secure the cylinder lock before going under raised bale clamping arms.

4. Slowly lower the bale lift onto the stops to relieve hydraulic pressure and to prevent any movement during service.

5. Move the flail guard rod adjustment lever (1) to a number between 1 and 4; see *Figure 4.31*.

   Note: Having the lever at position 5 will result in damage to the twine/wrap cutter blade.

6. Align the flail drum knife path with the tub opening on the rear wall.

Figure 4.31: Move Flail Guard Rod Lever

7. Engage the flail drum lock; see *Figure 4.32*.

   a. Turn the lock pin (1) to release the roll pin (2) from the slot.

   b. Allow the spring (3) to push the lock pin into the processing chamber.

   c. Manually rotate the drive shaft until the lock pin snaps into place locking the flail drum.

   Note: The flail drum lock pin is located on the front of the machine if equipped with a Feed Chopper™.

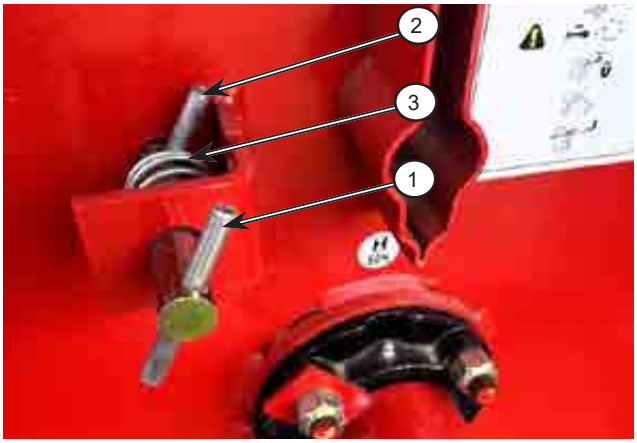


Figure 4.32: Engage Flail Drum Lock

8. Move flails blocking the knife path; see *Figure 4.33*.

   a. Failure to do so will result in damage to the twine/wrap cutter blade.

Figure 4.33: Move Flails Blocking the Knife Path

9. Remove the twine/wrap cutter (1) from the storage position.

    a. The twine/wrap cutter is located on the non-discharge side of the rear tub wall; see *Figure 4.34*.

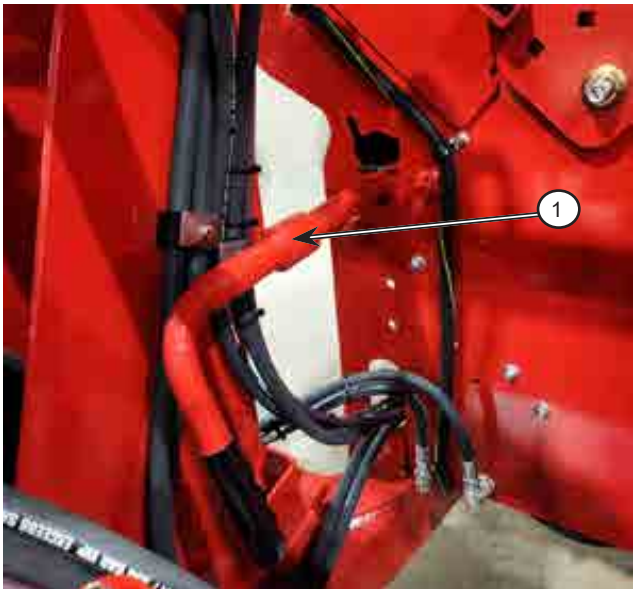


Figure 4.34: Remove Twine/Wrap Cutter from Storage

10. Insert the twine/wrap cutter with the blade up; see *Figure 4.35*.

    a. Insert the twine/wrap cutter into the guide (1) at the back of the processor tub; see *Figure 4.36*.

    Note: On machines with a Feed Chopper™ installed, release the Feed Chopper™ door latch. Swing open the door to access the twine/wrap cutter opening.

Figure 4.35: Twine/Wrap Cutter with the Blade Up

11. Cut through the twine/wrap.

    a. Use a “saw” like action along the entire length of the drum.

12. Place the twine/wrap cutter back into the storage position; see *Figure 4.34*.

    a. Ensure the handle is facing down and is locked into the key hole slot.

    Note: The blade of the twine cutter is replaceable. Contact your local Highline dealer for a replacement if it is damaged or becomes dull.

Figure 4.36: Insert Twine/Wrap Cutter into the Guide

13. Unlock the flail drum; see *Figure 4.37*.
    a. Disengage the drum clutch pin from the flail drum drive plate.
        i. Pull the spring loaded pin (1) out of the processing chamber.
        ii. Rotate the pin so that the roll pin (2) is in the lock out slot.
    b. Failure to unlock the flail drum will result in damage to the machine during start up.

Figure 4.37: Remove the Flail Drum Lock

14. Remove the cut twine/wrap from the flail drum.


Figure 4.38: Remove Twine/Wrap

15. Remove the bale lift lock from the hydraulic cylinder and place in the storage location; see *Figure 4.39*.
    a. Raise the bale lift with the hydraulics to remove the weight from the lock.
        i. Ensure that the Loading /Processing switch is in the OFF / Loading position.
    b. Remove the locking pin and bale lift lock.
    c. Lower the bale lift.
    d. Store the bale lift lock on the storage tab on the side of the machine, next to the cylinder.
        i. Secure with the locking pin.

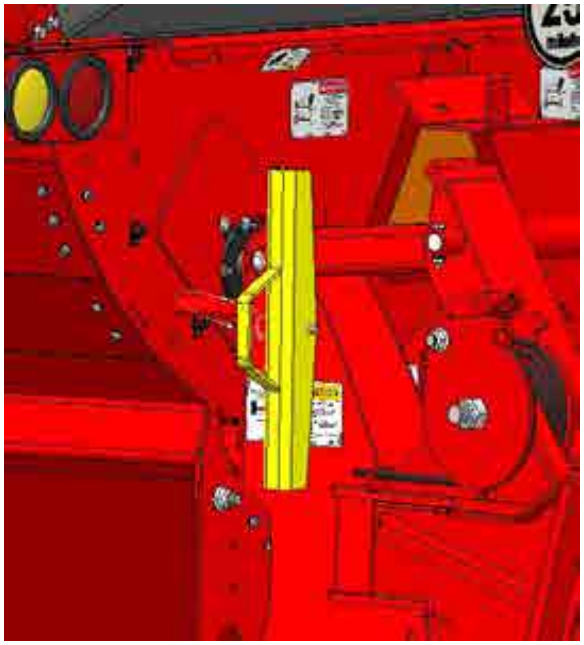


Figure 4.39: Bale Lift Lock in Storage Location

16. Remove any twine/wrap from around the feed rollers.

    a. Cut the twine from the rollers.

        i. DO NOT score the paint on the rollers while cutting. Scoring the paint may result in rusting.

Figure 4.40: Remove Wrap/Twine from Feed Rollers

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5 Operation

5.1 Setting up the Processor

1. Prior to operating the BP 965, ensure you have followed all of the steps in *Section 4.3 - Pre-Operation Checklist*.

2. Set the positions of the clamping arm claws for the size of bales being processed, following *Section 4.4 - Changing the Claw Positions*.

3. Unlock the flail drum; see *Figure 5.1*.

   a. Disengage the drum clutch pin from the flail drum drive plate.

      i. Pull the spring loaded pin (1) out of the processing chamber.

      ii. Rotate the pin so that the roll pin (2) is in the lock out slot.

   b. Failure to unlock the flail drum will result in damage to the machine during start up.

   Note: The flail drum lock pin is located on the front of the machine if equipped with a Feed Chopper™.

Figure 5.1: Remove the Flail Drum Lock

4. Remove the bale lift cylinder lock from the hydraulic cylinder and place in storage; see *Figure 5.2*.

   a. Raise the bale lift with the hydraulics to remove the weight from the lock.

      i. Ensure that the Loading /Processing switch is in the OFF / Loading position.

   b. Remove the locking pin and bale lift lock.

   c. Lower the bale lift.

   d. Store the bale lift lock on the storage tab on the side of the machine, next to the cylinder.

      i. Secure with the locking pin.

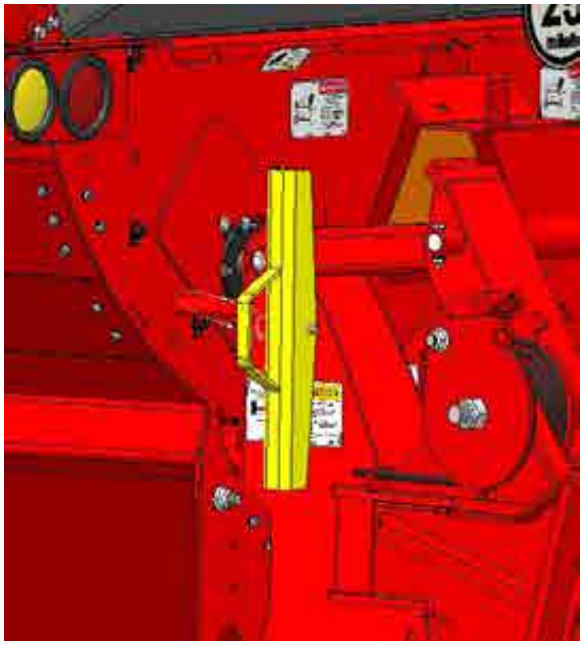

Figure 5.2: Store the Bale Lift Lock

5.1.1 Twine Sickle™

To ensure proper loading and processing of square bales, 1 or 2 strings **must** be retained.

WARNING

Shut down the tractor, disengage the PTO and remove the key.

Relieve all hydraulic pressure in the hoses. Disconnect the hydraulic hoses from the tractor before going near the machine.

Securely block the machine before any work is done to prevent the machine from moving during servicing.

1. Determine which Twine Sickle™ knives need to be removed in order to retain 1-2 strings; see *Figure 5.3*.

   a. To retain a single center string, remove 3-4 knives (1) from the center of the cutter bar.

   b. To retain the outer 2 strings, remove 3-4 knives (2) from either end of the cutter bar.

   c. Other knives can be removed based on string configuration and operator preference.

   Note: The cylinder shown in *Figure 5.3* is retracted. Ensure to note the position of the cylinder when determining which knives to remove. The cylinder stroke is equal to the width of two knives, therefore, when extended, the above noted knife sections (1, 2) would be shifted.

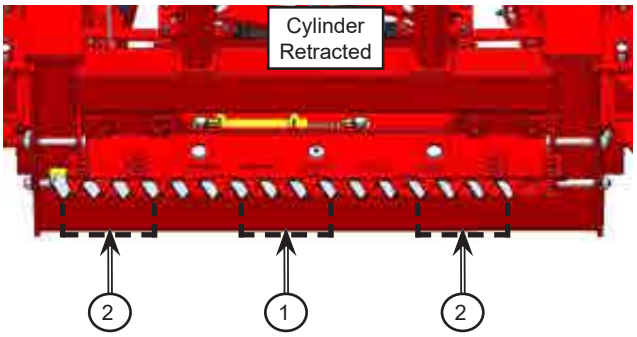

Figure 5.3: Remove Knives from the Bar

CAUTION

DO NOT contact the Twine Sickle™.

Contact with the sharp edges of the Twine Sickle™ may result in injury.

DO NOT contact the Twine Sickle™ when it is operating. Contact with the moving sickle may result in injury.

2. Begin removing the desired knives. Refer to *Figures 5.4* and *5.5*.
   a. Loosen the 3 guide bolts (1) until the guard plate (2) becomes loose.
   b. Carefully slide the guard plate (2) forward to expose knife screw faces (3) through the holes.
   c. Remove the first set of screws (3) and nuts from the knives (4) in the desired locations.

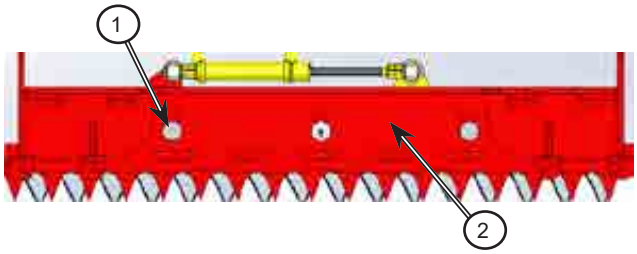

Figure 5.4: Loosen the Guide Bolts

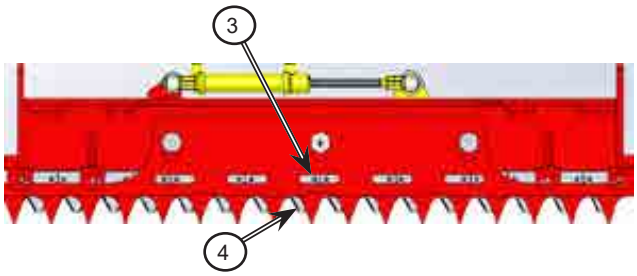

Figure 5.5: Remove the Screws and Knives

3. To access and remove the second set of screws, the cutter bar (1) will need to be moved so that the screws align with the holes in the guard plate (2); see *Figure 5.6*.
   a. Remove the cylinder pin (3) from the cutter bar.
      i. Remove the cotter pin from the cylinder pin.
      ii. Remove the cylinder pin and the washers from between the cylinder and cutter bar mount.
   b. Rotate the cylinder out of the way, being mindful of the hydraulic hoses.
   c. Using a pry bar or other appropriate tool, slide the cutter bar over so that the second set of screws are accessible.

      Note: DO NOT grab the cutter bar with your hand. Contact with the sharp edges of the Twine Sickle™ may result in injury. Wear appropriate hand protection.
   d. Remove the second set of screws and nuts, and then the knives. Refer to *Figure 5.7* for an example.

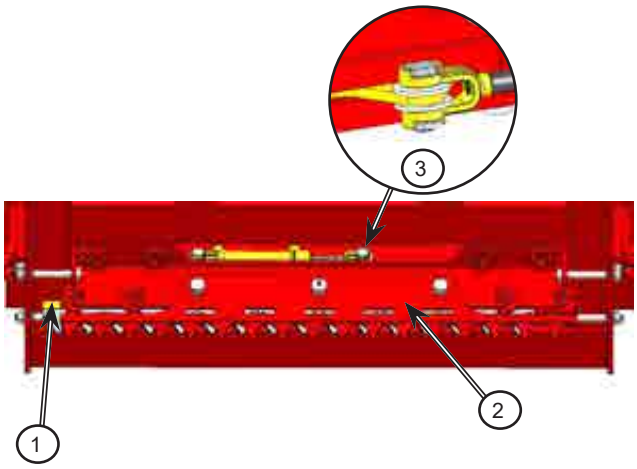

Figure 5.6: Move the Cutter Bar

4. Once all of the desired knives are removed, carefully slide the guard plate (2) back until it hits the stop, and tighten the 3 guide bolts (1); see *Figures 5.4*.

5. Rotate the cylinder back in place and replace the cylinder pin (and washers).

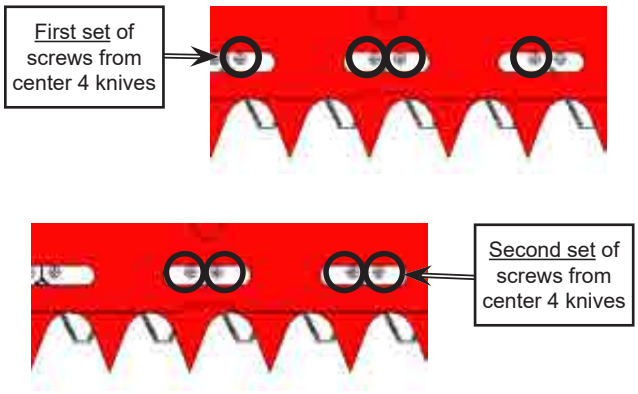

Figure 5.7: *Example:* Remove Screws from Center 4 Knives

5.1.2 Discharge Rate Settings

There are 2 settings that determine the rate at which material is discharged:

a. The aggression level of the flails acting on the bale.

b. The speed of the feed rollers which feed the bale into the flail drum.

1. Set the aggression level of the flails.

   Adjusting the aggression level is done with the guard rod adjustment handle.

   The bale rests on the guard rods. The amount of contact between the bale and the flails is determined by the guard rod setting. There are five guard rod settings. To adjust the setting:

   a. Pull the upper handle (1) out of the handle lock; see *Figure 5.8*.

   b. Raise or lower the handle to the desired discharge setting.

      i. To increase the discharge rate, raise the handle to a higher number.

      ii. To decrease the discharge rate, lower the handle to a lower number.

   c. Lock the handle in the notch.

   If the Hydraulic Aggression Control option is installed:

   a. Activate the hydraulic cylinder to change the position of the guard rods; see *Figure 5.9*.

      i. To increase the discharge rate, raise the pointer (1) to a higher number.

      ii. To decrease the discharge rate, lower the pointer (1) to a lower number.

Figure 5.8: Set the Aggression of the Flails

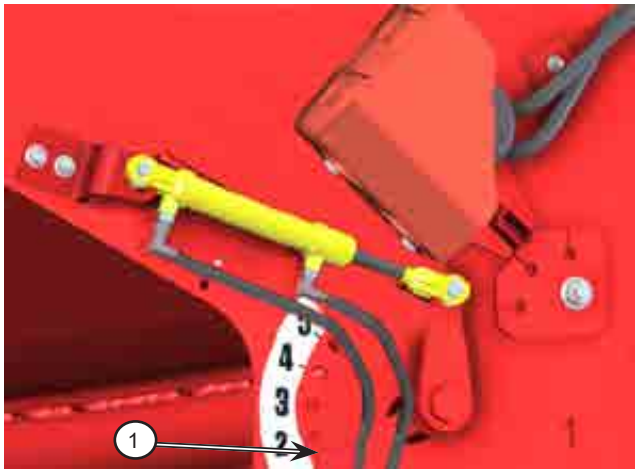

Figure 5.9: Hydraulic Aggression Control option

2. Set the speed of the feed rollers.

   Adjust the feed roller speed to a maximum of 40 rpm. DO NOT exceed 40 rpm.

   a. Adjust using the tractor flow control settings.

      i. Ensure that the Loading /Processing switch is in the ON / Processing position.

   b. Faster feed roller speeds will result in a faster discharge of material.

   c. Slower feed roller speeds will result in a slower discharge of material.

Figure 5.10: Set Feed Roller Speed

5.1.3 Discharge Door

Set the position of the discharge door and side curtains.

1. Remove the discharge door transport lock; see *Figure 5.11*.

   a. Remove the clip pin (2).

   b. Rotate the lock (1) away from the door.

2. Raise or lower the discharge door to adjust the amount of spreading of material.

   a. Use the hydraulic cylinder to adjust the door.

      i. Ensure to switch the Loading/ Processing switch to the ON / Processing position.

   b. Door Lowered (see *Figure 5.12*):

      i. The material will be left in a windrow or directed into a feed bunk.

      ii. Allow the rubber deflector to hang down.

      iii. Adjust the rubber to one of the three settings to adjust feed distribution.

      - Pin (1) the rubber in place.

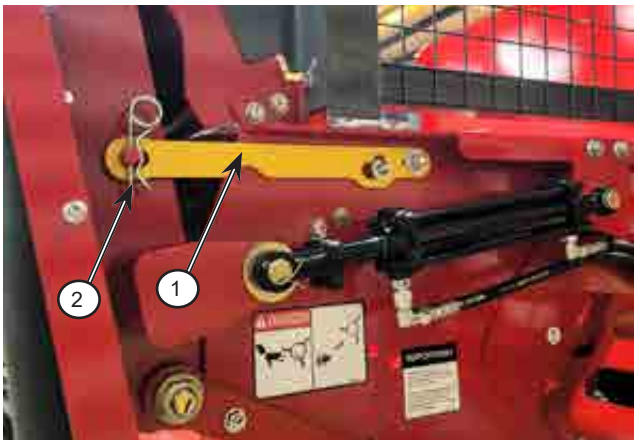

Figure 5.11: Discharge Door Lock

Figure 5.12: Rubber Down, Link Curtain Magnets for Bunk/Windrow Feeding

c. Door Midway:

   i. Discharge door will control the height and distance of discharge.

   ii. Place the rubber deflector onto the top of the door, as shown in *Figure 5.13*.

d. Door Raised:

   i. Bedding material will be spread out over a wide area.

   ii. Place the rubber deflector onto the top of the door.

Figure 5.13: Rubber on Top of Door for Bedding

3. Position the side curtains.

   a. If bunk feeding or windrowing, loosen the rubber straps holding the side curtains so the curtains hang down; see *Figure 5.14*.

      i. Link the side curtains to the front rubber with the curtain magnets.

   b. If bedding or performing an operation not requiring the side curtains, roll up the side curtains and fasten with the rubber holding straps (1); see *Figure 5.15*.

Figure 5.14: Side Curtains Loosened for Bunk or Windrow Feeding

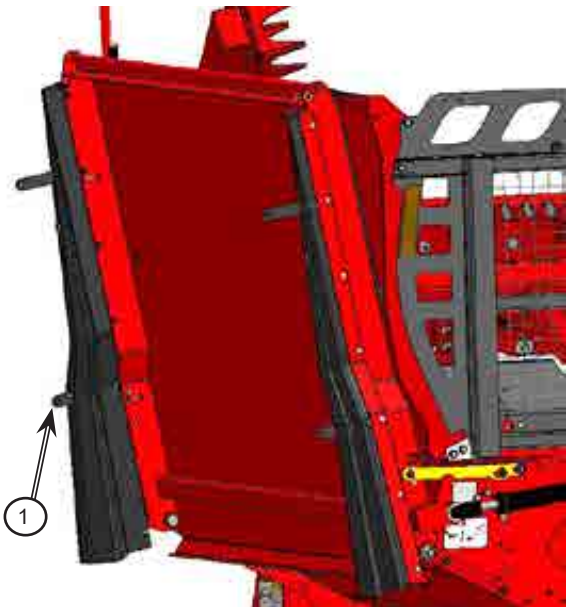

Figure 5.15: Fasten Side Curtains for Bedding

5.1.4 Lower Discharge Deflector

Set the lower discharge deflector.

1. Raise or lower the lower deflector to adjust the discharge height and distance of material travel; see *Figure 5.16*.
   a. To increase discharge height and distance, move the deflector up using the bottom handle (1).
   b. To decrease discharge height and distance, move the deflector down using the bottom handle (1).

Figure 5.16: Set the Lower Discharge Deflector

5.2 Picking Up and Loading Bales

Pick up a bale using the bale lift and clamping arms.

1. Lower the bale lift completely.
   a. Switch the Loading/Processing switch to the OFF / Loading position.
   b. The bale lift height indicator rod (1) gives a visual indication if the bale lift is raised or lowered to the ground; see *Figure 5.17*.
      i. The indicator rod will be at its highest point when the bale lift is raised and at its lowest point when the bale lift is lowered.

WARNING

To prevent serious injury or death, DO NOT go under the machine while an operator is in the tractor.

DO NOT go near the machine when lowering the bale lift and backing up to a bale.

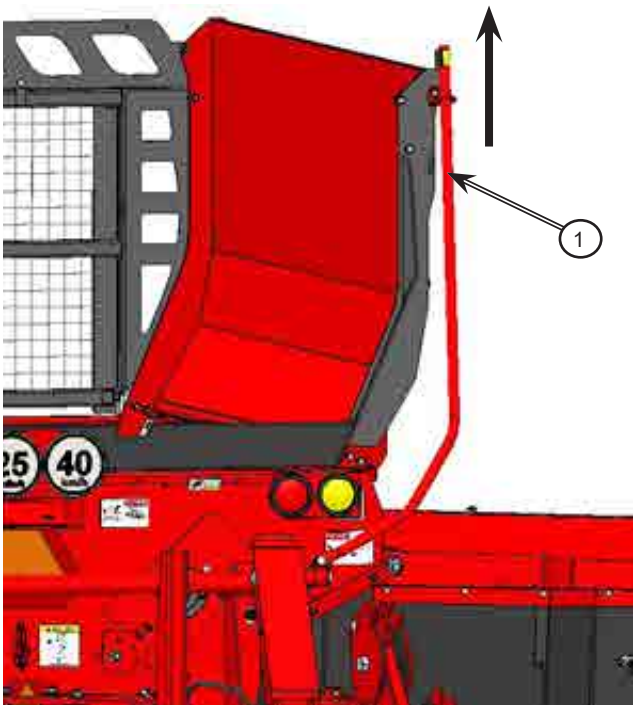

Figure 5.17: Bale Lift Height Indicator

WARNING

DO NOT allow anyone to ride on the BP 965 or the outside of the tractor.

Falling from the machine can cause serious injury or death.

2. Slowly back up to the bale until the bale contacts the Twine Sickle™.

   Note: Load square bales "on string" (twine on the ground). This will enable the Twine Sickle™ to cut the twine.

3. Actuate the clamping cylinder to squeeze the bale; see *Figure 5.18*.

   a. The clamping arm position indicator (1), located on the front of the machine, near the gearbox, gives a visual indication if the bale clamp is activated; see *Figure 5.19*.

      i. The indicator will move to the 'CLOSE' position when the clamp is activated.

      Note: Depending on the size of the bale and the clamping force applied, the indicator may not be centered on 'CLOSE'.

Figure 5.18: Back up to the Bale, Squeeze the Bale

Figure 5.19: Clamping Arm Position Indicator

4. Raise the bale lift so the bale is close to vertical; see *Figure 5.20*.

   Note: If a bale is frozen to the ground, dislodge it by rocking the machine to impact the bale and loosen it.

   Note: Ensure flail drum and feed rollers are NOT turning while loading a bale.

Figure 5.20: Raise the Bale Lift

5. On square bales, operate the Twine Sickle™ with the tractor remote to cut the twine.

   Note: The Twine Sickle™ does NOT retain the cut twine and does not keep the twine out of the processing tub.

6. Raise the bale lift to its highest position. The clamping arms will hinge to lessen the impact of the bale into the tub; see *Figure 5.21*.

   a. The bale lift height indicator rod will be at its highest point when the bale lift is raised.

   Note: If the clamping arms do not hinge, refer to *Section 8 - Troubleshooting*.

   Note: If livestock is being fed, it is the operator's responsibility to ensure that the materials in the processed feed mix are suitable. Some of the wrapping material (twine, net wrap or other materials) may be discharged with the feed if the wrapping materials are not removed prior to processing.

Figure 5.21: Raise the Bale Lift to its Highest Position

7. Load the bale into the processor tub.

   a. Release the clamping arms.

      i. The clamping arm position indicator will move to the 'OPEN' position when the clamp is released.

8. If desired, load a second bale on the bale lift while a bale is in the processor tub following steps 1 - 4; see *Figure 5.22*.

   Note: Load square bales "on string" (twine on the ground). This will enable the Twine Sickle™ to cut the twine when it is time to load the second bale.

   a. If a second bale is loaded onto the bale lift, raise the lift as high as possible.

      i. Make sure the bale on the lift does not interfere with the bale already in the tub.

      ii. Raising the bale lift will reduce the pressure on the hydraulic lift assembly and more securely hold the bale.

   Note: DO NOT transport on public roads with a bale on the bale lift.

Figure 5.22: Second Bale Loaded on Bale Lift

WARNING

To prevent serious injury or death, DO NOT go under the machine while an operator is in the tractor.

DO NOT go near the machine when raising or lowering the bale lift, and backing up to a bale.

9. If desired, 2 stacked square bales can be loaded on the bale lift; see *Figure 5.23*.

   a. Slowly back up to the 2 stacked square bales until the bottom bale contacts the Twine Sickle™.

      Note: Load square bales "on string" (twine on the ground). This will enable the Twine Sickle™ to cut the twine on the bottom bale.

      Note: The maximum TOTAL weight of the 2 stacked square bales should be NO MORE than 2,400 lb (1,089 kg).

Figure 5.23: 2 Bales Loaded on Bale Lift

b. Actuate the clamping cylinder to squeeze the bottom bale.

   i. The clamping arm position indicator will move to the 'CLOSE' position when the clamp is activated.

c. Raise the bale lift as high as possible.

   i. If there is a bale already in the processing tub, make sure the bales on the lift do not interfere with the bale already in the tub.

   ii. Raising the bale lift will reduce the pressure on the hydraulic lift assembly and more securely hold the bottom bale.

   iii. The bale lift height indicator rod will be at its highest point when the bale lift is raised.

   Note: DO NOT transport on public roads with bales on the bale lift.

   Note: The top bale is NOT secured and therefore may be unstable during transport to the processing area.

d. To load the top bale into the processing tub, raise the bale lift until the top bale falls into the tub.

   Note: The Twine Sickle™ will **NOT** cut through the twine on the top bale. The twine **WILL** end up in the processing tub.

e. Lower the bale lift slightly to ensure that the bale that is still on the lift does not interfere with the bale now in the tub.

WARNING

To prevent serious injury or death, DO NOT go under the machine while an operator is in the tractor.

DO NOT go near the machine when raising or lowering the bale lift, and backing up to a bale.

5.3 Processing the Bale

1. Start the PTO to engage the flail drum.

   a. Engage the tractor PTO at an idle.

   b. Increase the tractor RPM until 1000 PTO speed is reached.

   Note: If applicable, ensure that the bale(s) carried on the bale lift do not interfere with the bale in the tub.

DANGER

Stay clear from discharge side when PTO is engaged. Discharged material or objects leaving the discharge area can cause serious injury or death.

DO NOT operate within 100 ft (30 m) of any person.

DANGER

The BP 965 shall not be operated without the guards in place or in good condition.

2. Begin processing the material; see *Figure 5.24*.

   Note: If livestock is being fed, it is the operator's responsibility to ensure that the materials in the processed feed mix are suitable. Some of the wrapping material (twine, net wrap or other materials) may be discharged with the feed if the wrapping materials are not removed prior to processing.

   a. Switch the Loading/Processing switch to the ON / Processing position.

   b. Slowly start rotating the bale with the feed rollers.

      i. Bring the feed rollers up to a speed where the material is being fully processed.

   Note: If the processor vibrates excessively, immediately disengage PTO and stop the tractor.

Figure 5.24: Process the Bale

WARNING

Wait for all flail drum rotation to stop before approaching the processor.

Inspect for blockages, missing flails or other causes of the vibration.

3. Adjust the direction of bale rotation.
   a. Rotate the bale with the feed rollers so that the top of the bale moves toward the discharge side of the processor.
   b. If material begins to bunch up near the top of the bale, reverse the direction of bale rotation.
   c. If the bale stops rotating, reverse the direction of the feed rollers.

Figure 5.25: Adjust Direction of Bale Rotation

DANGER

DO NOT enter the tub while parts are rotating, with or without a bale in the tub. The Bale is unstable and may cause entrapment.

Contact with the moving feed mechanism will cause serious injury or death.

Contact with the rotating flail drum will cause serious injury or death.

Use caution if entering the tub with a bale in it - even after all rotation has stopped. The bale is unstable.

4. If needed, re-adjust the guard rod adjustment handle (1) if a different rate of material discharge is desired; see *Figure 5.26*.

    a. Stop the tractor and remove the key.

    b. Wait until all flail drum rotation has stopped.

    c. Move the guard rod adjustment handle (1).

        i. Higher Number = More material discharged

        ii. Lower Number = Less material discharged

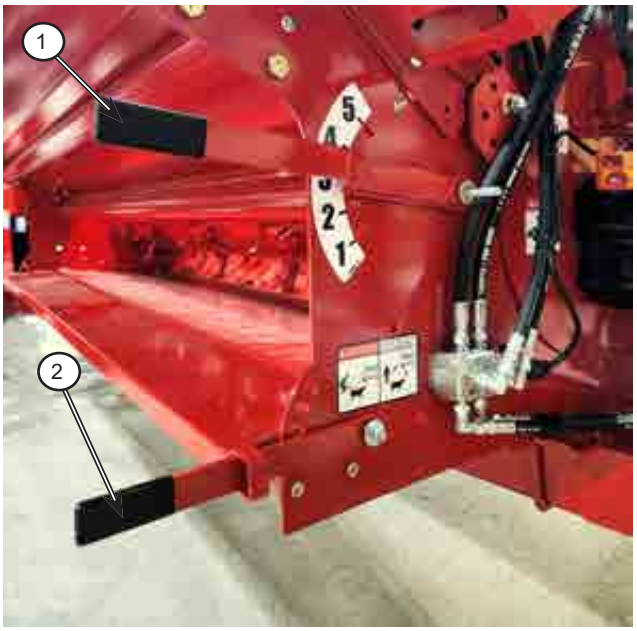

Figure 5.26: Re-Adjust Guard Rod Adjustment Handle and/or Lower Deflector

5. If needed, re-adjust the lower discharge deflector; see *Figure 5.26*.

    a. To increase the discharge height, raise the deflector to one of the upper slots.

        i. Pull the lower handle (2) to raise or lower the deflector as required.

6. Before loading another bale into the processing tub, stop the feed rollers.

    a. For square bales, operate the Twine Sickle™ before the bale is loaded into the tub.

        i. Switch the Loading/Processing switch to the OFF / Loading position.

    Note: The Twine Sickle™ does NOT retain the cut twine and does not keep the twine out of the processing tub.

    Note: If livestock is being fed, it is the operator's responsibility to ensure that the materials in the processed feed mix are suitable. Some of the wrapping material (twine, net wrap or other materials) may be discharged with the feed if the wrapping materials are not removed prior to processing.

Figure 5.27: Loading Another Bale

5.4 Maneuvering the Processor

1. Crossing Ditches and Steep Inclines:

   a. Cross ditches or inclines at about a 30° approach angle; see *Figure 5.28*.

   b. DO NOT approach a ditch or steep incline straight on as this may collapse the drive shaft to its shortest length, causing damage by pushing the PTO into the tractor or into the gearbox or downward onto the PTO shaft, breaking it off; see *Figure 5.29*.

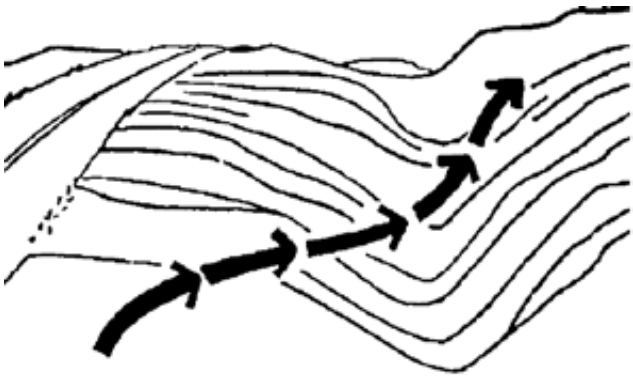

Figure 5.28: Cross Ditch at 30° Angle

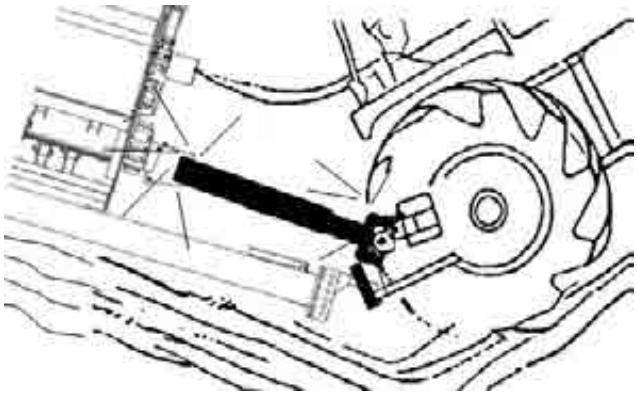

Figure 5.29: Drive Shaft Collapsed in Steep Ditch

2. Making Turns:

   a. DO NOT make turns sharper than 80°; see *Figure 5.30*.

   b. Angles greater than 80° can result in damage to the constant velocity joint and other drive shaft components.

   c. Ensure that the tractor tire does not contact the BP 965 deck or tongue.

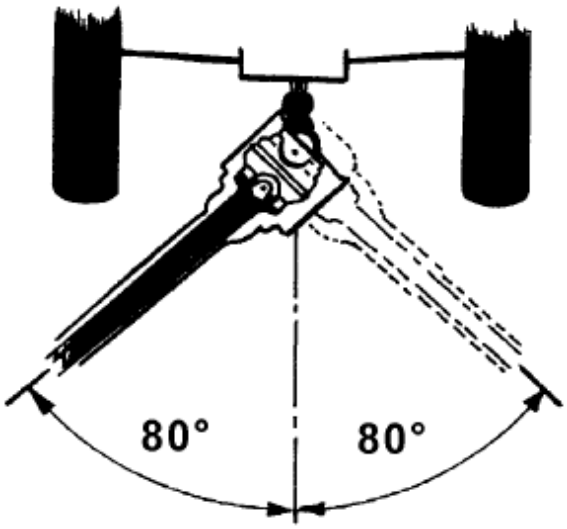

Figure 5.30: Turn Less than 80°

5.5 Shutdown Procedure

For your safety and the safety of others, this shutdown procedure must be followed before dismounting from the tractor for inspecting, repairing, servicing, cleaning, or lubricating the machine.

1. Reduce the engine speed to idle.
2. Disengage the tractor power takeoff.
3. Set the tractor park brake.
4. Lower the bale lift to the ground or raise and lock.
5. Shut off the tractor engine and remove the key.
6. Cycle the tractor controls to relieve any residual hydraulic circuit pressure.
7. Wait for the flail drum to stop turning.

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6 Service and Maintenance

WARNING

Shut down the tractor, disengage the PTO and remove the key before repairing, servicing, lubricating or cleaning the machine.

Relieve all hydraulic pressure in the hoses. Disconnect the hydraulic hoses from the tractor before going near the machine.

Securely block the machine before any work is done to prevent the machine from moving during servicing.

6.1 Lubrication - Grease

Lubricate all grease fittings with a quality lithium soap compatible E.P. grease meeting the N.L.G.I. #2 specifications and containing no more than 1% molybdenum disulfide.

6.1.1 Every 8 Hours

1. Lubricate 7 points on the PTO drive shaft; see *Figure 6.1*.
   a. 3 points at the constant velocity (CV) joint.
      i. Continued angled operation will require lubrication every 4 hours.
   b. 1 point at the implement end.
   c. 3 points on the shield.

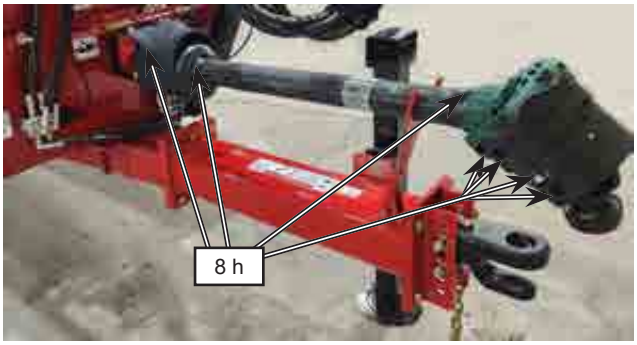


Figure 6.1: Grease Points on PTO Drive Shaft

6.1.2 Every 50 Hours

1. Lubricate 1 point on the rear flail drum bearing at the back of the machine; see *Figure 6.2*.

   Note: If the Feed Chopper™ is installed, unlatch the rear shield and open it to access the rear flail drum grease point.

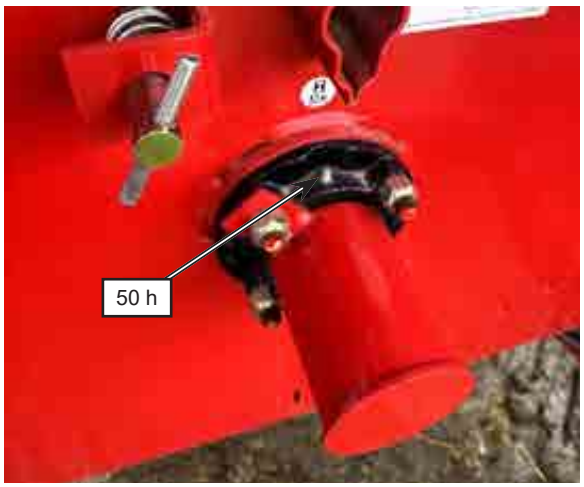


Figure 6.2: Grease Rear Flail Drum Bearing

6.1.3 Every 100 Hours

1. Lubricate 1 point at the front of each feed roller; see *Figure 6.3*.

Figure 6.3: Grease Front Feed Roller Bearings

2. Lubricate 1 point at the rear of each feed roller; see *Figure 6.4*.

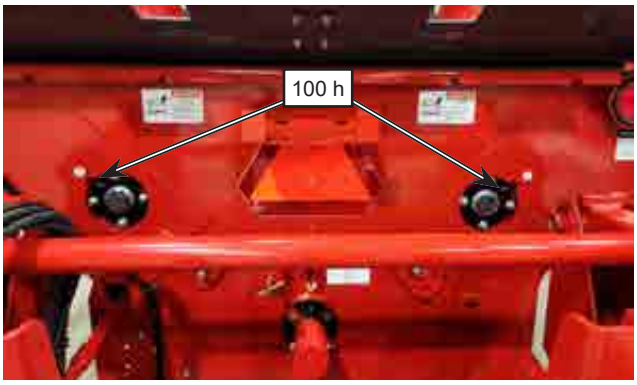


Figure 6.4: Grease Rear Feed Roller Bearings

3. Lubricate the hubs on spindles; see *Figure 6.5*.

Figure 6.5: Grease Hubs on Spindles

4. Twine Sickle™ blade:
    a. Remove any material that has built up at the ends of the Twine Sickle™ blade.
        i. This material build up will prevent the full stroke of the Twine Sickle™ blade.
    b. Grease one point on the top of the Twine Sickle™; see *Figure 6.6*.

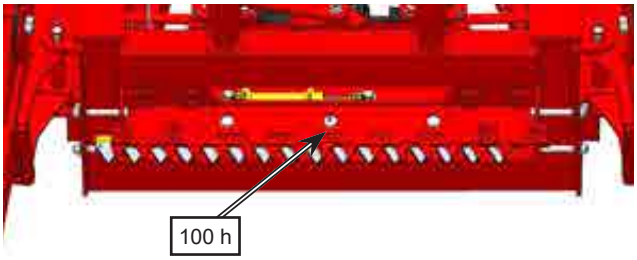


Figure 6.6: Grease the Twine Sickle™

6.1.4 Annually

1. Grease the telescoping section of the drive shaft going to the tractor; see *Figure 6.7*.
    a. Remove the drive shaft from the machine.
    b. Slide apart the inner and outer sections of the drive shaft into 2 pieces.
    c. Place grease on the portion of the drive shaft that slides into the other portion of the drive shaft.
    d. Reassemble the drive shaft and attach to the machine.

Figure 6.7: Grease the Sliding Portion of the Drive Shaft

6.2 Visually Inspect Hydraulic Hoses, Fittings and Cylinders

1. Shut down the machine. Relieve the pressure on the hydraulic hoses and disconnect them.

2. Visually inspect all hydraulic hoses for the conditions below, and replace any and all hoses that fit any of those conditions. Conditions include:

   a. Fitting slippage on hose.

   b. Damaged, cracked, cut or abraded cover (any reinforcement exposed).

   c. Hard, stiff, heat cracked, charred hose.

   d. Cracked, damaged, badly corroded fittings.

   e. Leaks at fitting or in hose.

   f. Kinked, crushed, flattened, twisted hose.

   g. Blistered, soft, degraded, loose cover.

3. Visually inspect all hydraulic cylinders, looking for leaks and/or other damage.

   a. Ensure the cylinder pins are securely inserted and are in good condition with no signs of wear.

   b. If hydraulic cylinder damage is found, make all necessary repairs or replace before operating the machine.

4. Refer to *Section 6.10 - Recommended Service Intervals* for additional information.

WARNING

Use a piece of cardboard or heavy paper to check for leaks. DO NOT use your hand. Wear proper hand and eye protection when searching for leaks.

Relieve pressure on hydraulic system before repairing, adjusting or disconnecting.

Hydraulic oil leaking under pressure can penetrate the skin, causing serious injury or infection.

6.3 Gearbox Oil

6.3.1 Checking the Oil Level

1. Check the oil fluid level by removing the oil level plug (1) in the center of the gearbox; see *Figure 6.8*.

   a. The oil should be at the level of the plug.

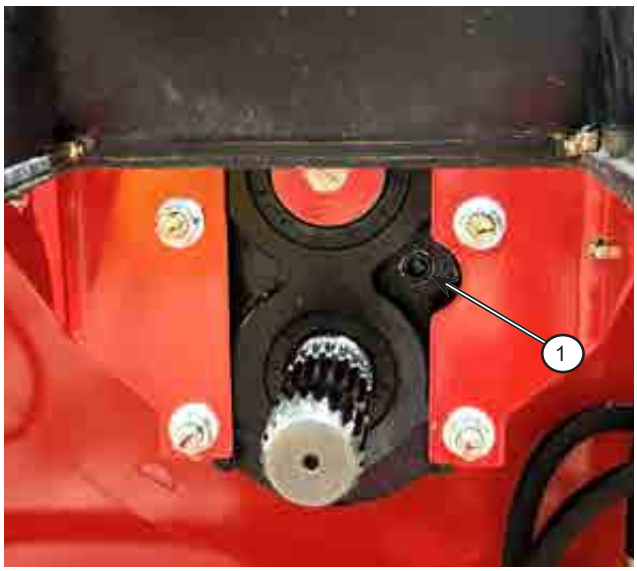


Figure 6.8: Check Gearbox Oil Level

(Drive shaft shown removed for clarity)

2. If oil needs to be added, remove the breather extension (1) and add through the hole (2) on the top of the gearbox; see *Figure 6.9*. Replace the breather extension (1) once complete.

   a. Use gear oil Grade 80W90 that meets or exceeds API service classification GL-4.

   b. Use EP150 or EP220 synthetic gear oil if one notices high gearbox temperatures.

3. Refer to *Section 6.10 - Recommended Service Intervals* for additional information.

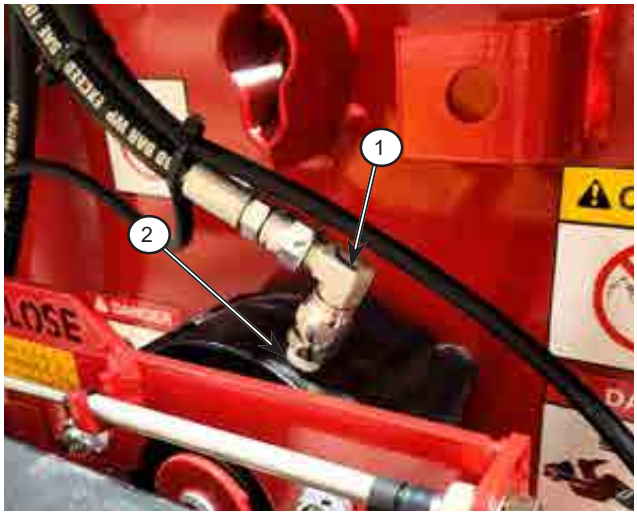


Figure 6.9: Add Oil at Top of Gearbox

6.3.2 Oil Changing Procedure

Change the gearbox oil annually and before storing the unit for the season.

1. Drain the oil from the gearbox; see *Figure 6.10*.
   a. Remove the drain plug (1) on the bottom of the gearbox.
   b. Allow the oil to drain completely from the gearbox.
   c. Catch the oil in an appropriately sized container.
2. Replace the drain plug and tighten.
3. Fill the gearbox; see *Figure 6.11*.
   a. Remove the breather extension (1).
   b. Fill with 80W90 gear oil that meets or exceeds API service classification GL-4 through the top fill plug (2) until level with the inspection hole.
   c. Use EP150 or EP220 synthetic gear oil if one notices high gearbox temperatures.
4. Check the oil level in the gearbox; see *Figure 6.12*.
   a. Removing the oil level plug (1) in the center of the gearbox.
   b. The oil should be at the level of the plug.
   c. If oil needs to be added, add through the plug on the top of the gearbox.
5. Replace the breather extension.
6. Refer to *Section 6.10 - Recommended Service Intervals* for additional information.

Figure 6.10: Drain Oil from Gearbox

(Drive shaft shown removed for clarity)

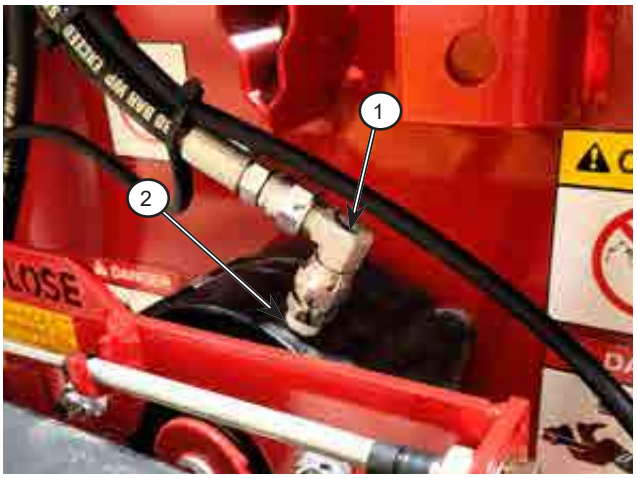


Figure 6.11: Add Oil at Top of Gearbox

Figure 6.12: Check Gearbox Oil Level

(Drive shaft shown removed for clarity)

6.4 Flail Replacement Procedure

Replace flails that are broken or worn to the point that they will not process material properly.

Refer to *Figure 6.13*.

1. Remove the flail to be replaced.
   a. Remove the nut (1) and bolt (2) that holds the flail (3) to the drum (4).
2. Remove the bushing (5) inside the flail (3).
   a. This bushing will be used again.
3. Remove the flail that is on the opposite side of the flail drum.

   Note: To maintain rotary balance, the flail on the opposite side of the drum MUST be replaced at the same time.
4. Install 2 new flails with the bushing, bolt and nut between the tabs on the drum.
   a. Ensure that the bent portion of the flail leads into the rotation of the drum.
5. Torque the bolts to minimum of 180 ft-lb (244 Nm) (maximum of 240 ft-lb (325 Nm)).
6. Check that the flails freely move between the tabs on the drum.

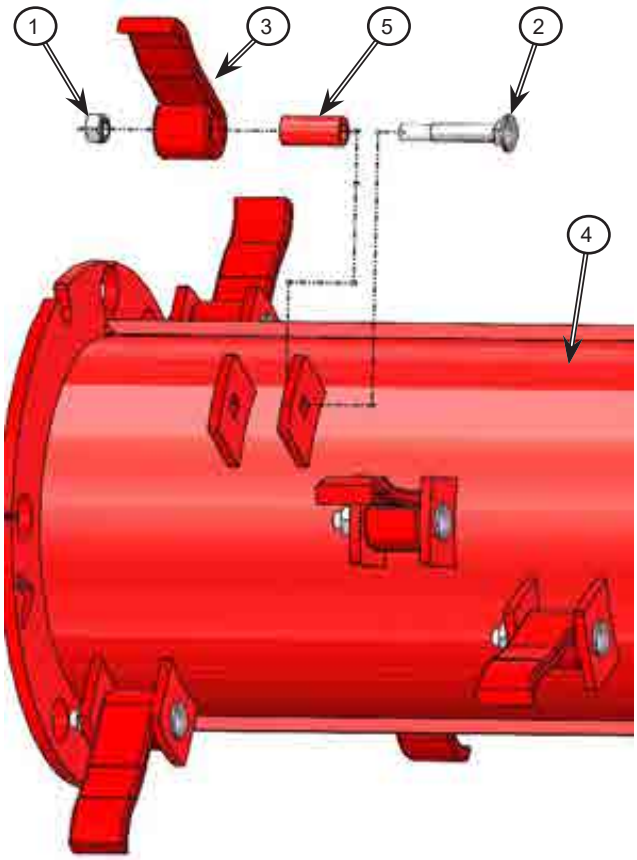


Figure 6.13: Flail Replacement

6.5 Twine Sickle™ Knife Replacement Procedure

Replace knives that are broken or worn to the point where they will not cut twine.

CAUTION

DO NOT contact the Twine Sickle™.

Contact with the sharp edges of the Twine Sickle™ may result in injury.

DO NOT contact the Twine Sickle™ when it is operating. Contact with the moving sickle may result in injury.

1. Remove the first set of screws from the knives. Refer to *Figures 6.14* and *6.15*.
   a. Loosen the 3 guide bolts (1) until the guard plate (2) becomes loose.
   b. Carefully slide the guard plate (2) forward to expose knife screw faces (3) through the holes.
   c. Remove the first set of screws (3) and nuts from the broken or worn knives (4).

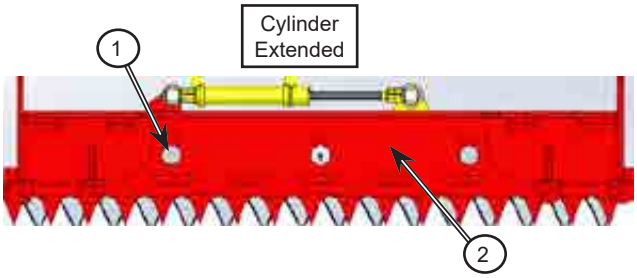


Figure 6.14: Loosen the Guide Bolts

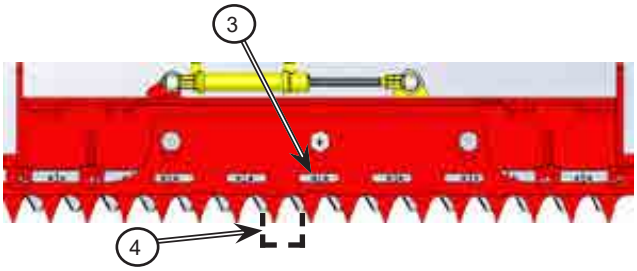


Figure 6.15: Remove the Screws and Knives

2. To access and remove the second set of screws, the cutter bar (1) will need to be moved so that the screws align with the holes in the guard plate (2); see *Figure 6.16*.
   a. Remove the cylinder pin (3) from the cutter bar.
      i. Remove the cotter pin from the cylinder pin.
      ii. Remove the cylinder pin and the washers from between the cylinder and cutter bar mount.
   b. Rotate the cylinder out of the way, being mindful of the hydraulic hoses.
   c. Using a pry bar or other appropriate tool, slide the cutter bar over so that the second set of screws are accessible.

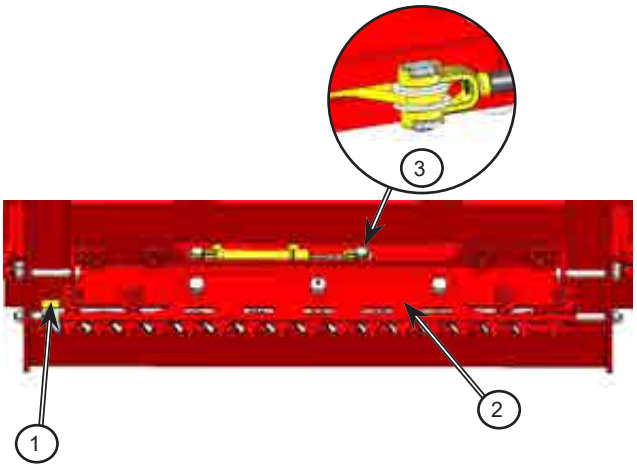


Figure 6.16: Move the Cutter Bar

Note: DO NOT grab the cutter bar with your hand. Contact with the sharp edges of the Twine Sickle™ may result in injury. Wear appropriate hand protection.

d. Remove the second set of screws and nuts, and then the broken or worn knives. Refer to *Figure 6.17* for an example.

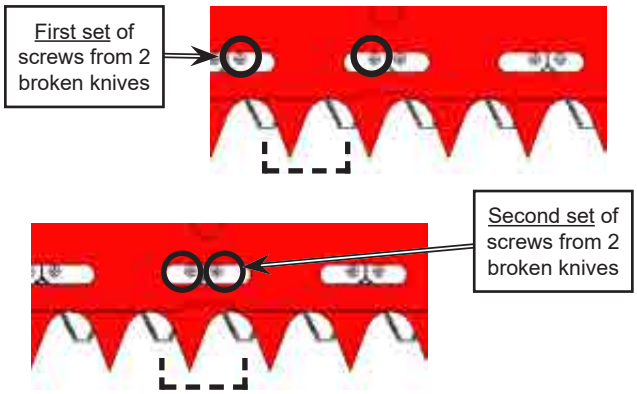


Figure 6.17: *Example:* Replace 2 broken knives

3. Place the new knives in place and fasten using the previously removed hardware.

4. With the first set of screws installed, move the cutter bar so that the second set of screw holes align with the holes in the guard plate.

   a. Using a pry bar or other appropriate tool, slide the cutter bar over so that the second set of screw holes are accessible.

   Note: DO NOT grab the cutter bar with your hand. Contact with the sharp edges of the Twine Sickle™ may result in injury. Wear appropriate hand protection.

5. Install the second set of screws and nuts onto the knives.

6. Carefully slide the guard plate (1) back until it hits the stop, and tighten the 3 guide bolts (2); see *Figure 6.18*.

7. Rotate the cylinder back in place and replace the cylinder pin (and washers).

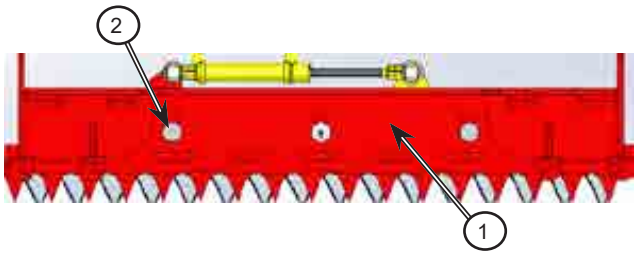


Figure 6.18: Replace the Guard Plate

6.6 Tires

1. Check the condition of the tires.
   a. Replace any tires that have cuts or bubbles.
   b. If replacement is needed:
      i. Mount the rim so that the air valve will be facing outward when mounted on the machine.
      ii. Place the cone side of the lug nut against the wheel rim; see *Figure 6.20*.

2. When replacing the tires, refer to *Section 9 - Specifications* for the size and type of tires.

   Note: It is recommended to have the tires mounted by a tire technician.

3. Torque the lug nuts to 85 - 92 ft-lb (115 - 124 Nm).

4. To determine the tire pressure, check the tire sidewalls for the tire plys. Fill the tires as needed.
   a. Refer to *Section 9 - Specifications* for recommendations.
   b. If tire pressure is not maintained, severe tire damage may result.

Important

Do not inflate tires above recommended pressure.

Never lean over a tire when inflating it.

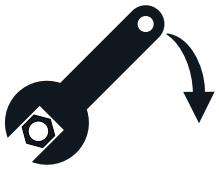
Maintain tire pressure to avoid possible tire damage.

5. Refer to *Section 6.10 - Recommended Service Intervals* for additional information.

Figure 6.19: Tires

Figure 6.20: Tire Mounting

WARNING



It is critical to frequently check wheel bolt torque until the proper torque is held. Failure to do so could result in wheel fastener failure and wheel loss.

6.7 Axles

1. Check that the axle u-bolts are tight; see *Figure 6.21*.

   a. Torque the axle u-bolts (1) to 200 ft-lb (270 Nm) to ensure the axles do not slide out of the frame.

   b. The maximum axle extension is 14 in (355 mm) from the main tube edge to the inside face of the spindle plate.

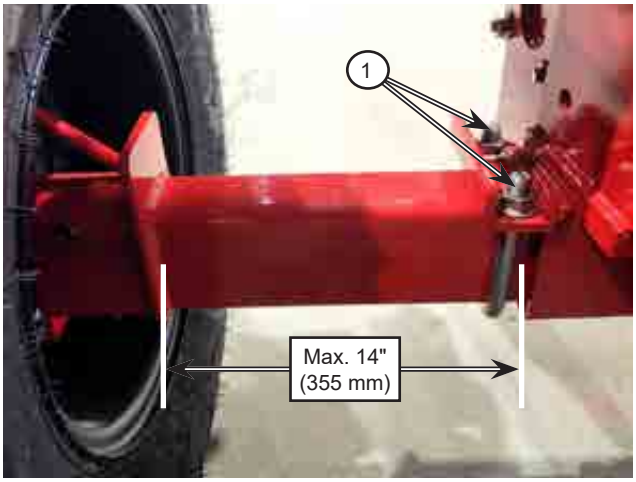


Figure 6.21: Check that Axle U-Bolts are Tight

CAUTION

Axles could slide out of frame if the U-bolts are loose. This may result in injury or machine damage.

2. Remove any twine/wrap that is built up around the axle spindle and hub; see *Figure 6.22*.

   a. Be careful to not damage the grease seal on the bearing while removing twine/wrap.

Figure 6.22: Remove Twine/Wrap from Spindle & Hub

6.8 Adjusting Pressure of Clamping Cylinder

Adjust the pressure of the clamping cylinder to have sufficient clamping force to carry the bale to the processing area.

WARNING

DO NOT adjust the clamping cylinder pressure when there is a bale loaded on the bale lift, and / or when the clamping arms are closed. Contact with the clamping arms could result in injury.

Ensure that the tractor is shut down and the key is removed before entering the area.

CAUTION

DO NOT contact the Twine Sickle™.

Contact with the sharp edges of the Twine Sickle™ may result in injury.

DO NOT contact the Twine Sickle™ when it is operating. Contact with the moving sickle may result in injury.

1. Turn the adjustment knob (1) counter clockwise to reduce the pressure; see *Figure 6.23*.

   a. The adjustment knob is located above the clamping cylinder in the center of the bale lift.

2. Turn the adjustment knob (1) clockwise to increase the pressure; see *Figure 6.23*.

   a. Too high of a pressure setting will prevent the arms from hinging to drop the bale more gently into the tub.

   Note: The valve is factory set to 1750 psi (121 bar) and has a range of 300 - 3500 psi (21 - 241 bar). Each full revolution of the adjustment knob is 10 % of the adjustment range, i.e. 320 psi (22 bar) per revolution.

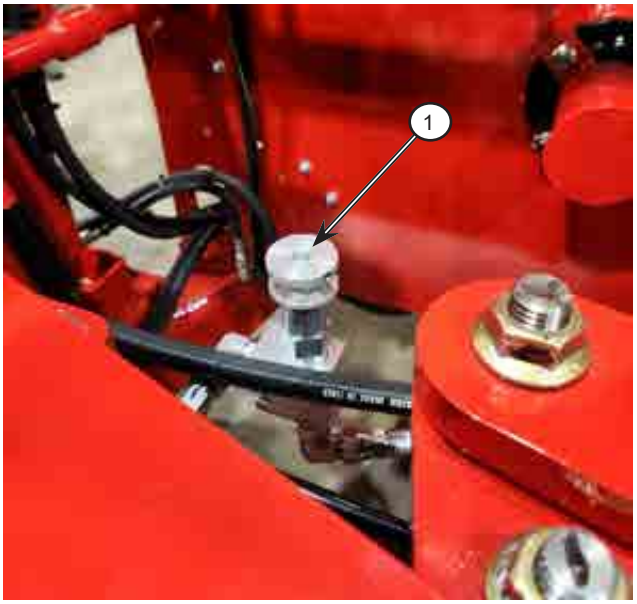


Figure 6.23: Turn the Adjustment Knob

6.9 Changing the Clamping Arm Hinge Springs

Change the clamping arm hinge springs as needed.

One torsion hinge spring can be removed from either clamp arm if it is noticed that the clamping arms are not hinging properly due to the weight of the bales being processed. This should be done after reducing the clamping cylinder pressure as much as possible and should only be done with bales that weigh 800 lb (363 kg) or less. Refer to *Section 6.8 - Adjusting Pressure of Clamping Cylinder*.

6.9.1 Removing the Springs

1. Before proceeding, ensure there is no spring pressure on the clamping arms.
   a. Position the clamping arms so that they will lower under their own weight.
   b. Ensure the bale lift is lowered to its lowest position; see *Figure 6.24*.

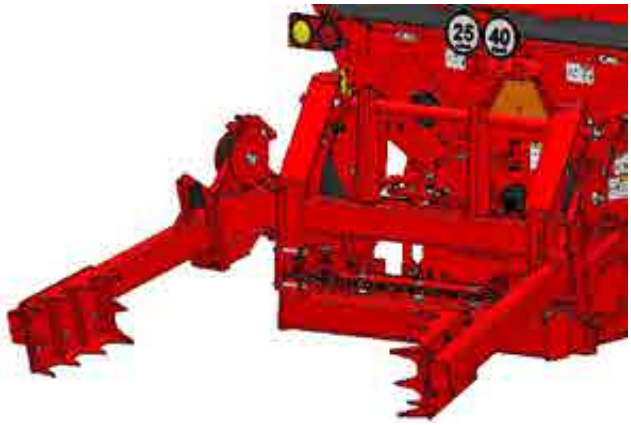


Figure 6.24: Lower the Bale Lift

2. Support the full weight of the arm to ensure that it does not move, drop or rotate once the locking cross bolt is removed.
   a. Place sufficient blocks under the arm or support the arm using mechanical assistance and a strap or chain.

WARNING

To prevent serious injury, DO NOT go under the machine while changing the springs.

Place stands or blocks under the clamping arms before working on the machine.

Use only tools, jacks and hoists of sufficient capacity for the job.

WARNING

Shut down the tractor and remove the key before repairing, servicing, lubricating or cleaning the machine. Disengaged the PTO.

Relieve all hydraulic pressure in the hoses. Disconnect the hydraulic hoses from the tractor before going near the machine.

Securely block the machine before any work is done to prevent the machine from moving during servicing.

3. Retrieve the tension bolt and bar, shown in *Figure 6.25*, from the document holder.

Figure 6.25: Tension Bolt & Bar

4. Install a tension bolt (1) and bar (2) into the cover plate notches as per *Figure 6.26*.

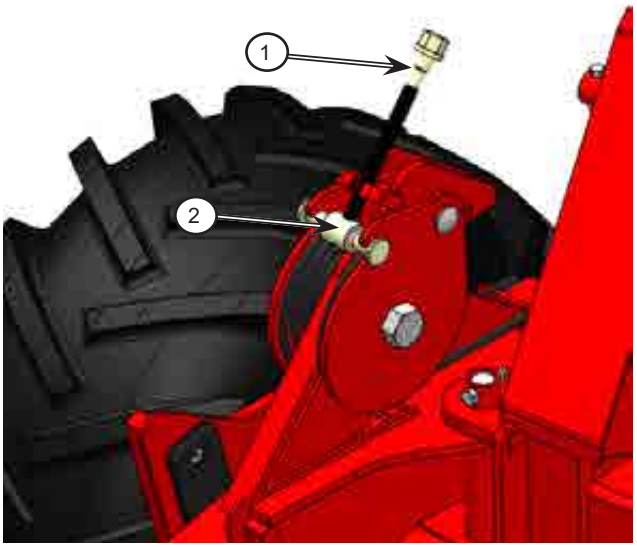


Figure 6.26: Install Tension Bolt & Bar

5. Tighten the tension bolt until the locking cross bolt (1) become loose; see *Figure 6.27*.

6. Remove the locking cross bolt.

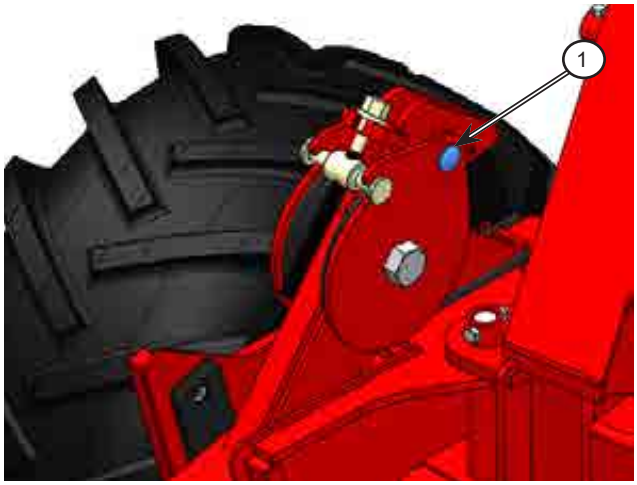


Figure 6.27: Tension until Locking Bolt is Loose

7. Use the tension bolt to relieve the spring tension by threading the tension bolt out; see *Figure 6.28*.

   Note: If the arm is NOT fully supported, as the spring pressure is released, the arm WILL drop and rotate. Ensure the arm is FULLY supported to reduce this movement. Be in a position so that this movement will not cause personal harm.

Figure 6.28: Relieve the Spring Tension

8. Remove the tension bolt and bar (1), the pivot bolt (2), cover plates (3) and springs (4); see *Figure 6.29*.

   a. If removing only one torsion spring, leave the opposite spring in place unless replacement is needed.

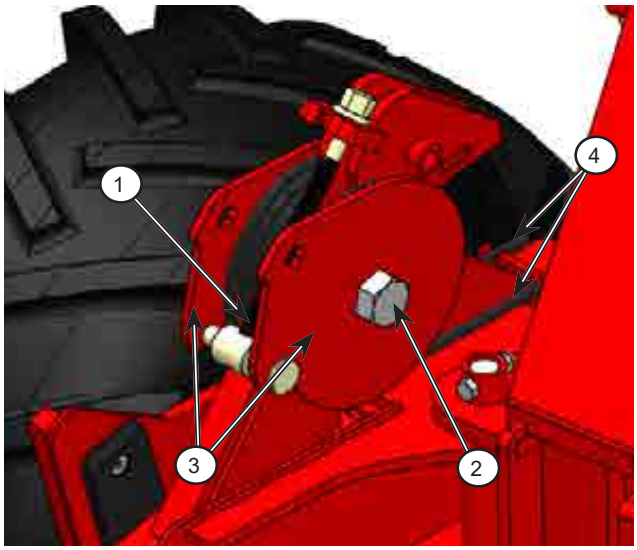


Figure 6.29: Remove the Springs

6.9.2 Installing the Springs

1. Place the curled end of the new spring into the spring holder (cover) plate; see *Figure 6.30*.

   a. Place the straight short end (1) of the spring into the slot of the holder.

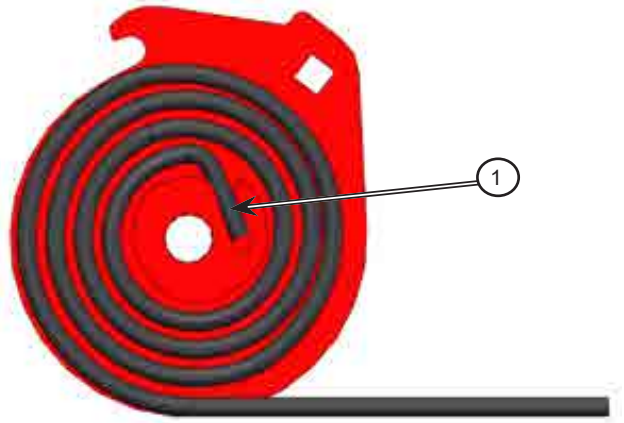


Figure 6.30: Place Spring in Holder and Tabs

2. Replace the cover plates and pivot bolt; see *Figure 6.31*.

   a. Place the cover plates (1) with new spring(s) onto the clamping arm.

   b. Fasten the long straight end of the spring into the spring tab (2) located on the arm.

   c. Insert the cover plate pivot bolt into the hole (3) and loosely thread on the nut.

      i. Do not fully tighten at this time.

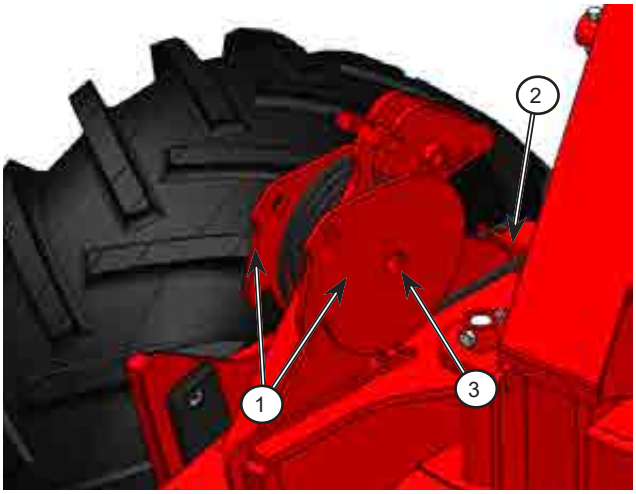


Figure 6.31: Replace Cover Plates and Pivot Bolt

3. Install the tension bolt and bar into the cover plate notches; see *Figure 6.32*. Tighten to place tension onto the spring(s).

   Note: As pressure is applied to the springs, the clamping arm will raise. Be in a position so that this movement will not cause personal harm.

Figure 6.32: Install the Tension Bolt and Bar

4. Install the locking bolt (1); see *Figure 6.33*.

5. Tighten the cover plate pivot bolt (2); see *Figure 6.33*.

6. Remove the tension bolt and bar and replace in the document holder, for storage.

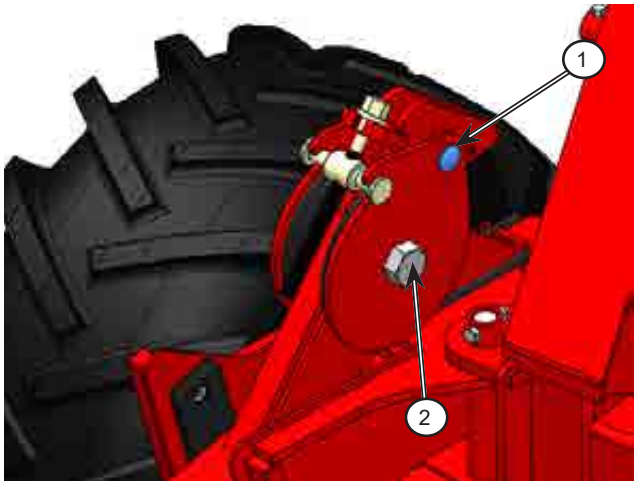


Figure 6.33: Install the Locking Bolt

6.10 Recommended Service Intervals

Daily (As Used)
Check the condition of the flail drum and flails
Remove twine or other material from flail drum, processor tub, Twine Sickle™ and axles
Check the feed rollers
Check the Twine Sickle™
Check the condition of the hydraulic motors, hoses, fittings and cylinders, and check for leaks
Check the condition of the clamping arm hinge springs
Check the condition of the tires, including the lug nuts and the tire inflation
Check the axle u-bolts
Check the oil level in the gearbox

Every 8 Hours
Grease the PTO joints

Every 50 Hours
Grease the rear flail drum bearing
Check and adjust the tire air pressure

Every 100 Hours
Grease the front and rear of each feed roller
Grease the wheel hubs
Grease the Twine Sickle™
Fully inspect the hydraulic hoses, fittings and cylinders

Annually
Grease the telescoping section of the drive shaft
Change the gearbox oil
Torque the tire lug nuts

As Needed
Replace the flails and / or the Twine Sickle™ knives
Change the clamping arm hinge springs

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7 Storage

7.1 Pre-Storage Checklist

If the Bale Pro® is going to be stored for an extended period of time, follow the below steps.

1. Clean all the debris from the tub area and off the outside of the BP 965.

2. Park the BP 965 on level ground.

3. Lock the BP 965 flail drum; see *Figure 7.1*.
   a. Turn the lock pin (1) to release the roll pin (2) from the slot.
   b. Allow the spring (3) to push the lock pin into the processing chamber.
   c. Manually rotate the drive shaft until the lock pin snaps into place locking the flail drum.

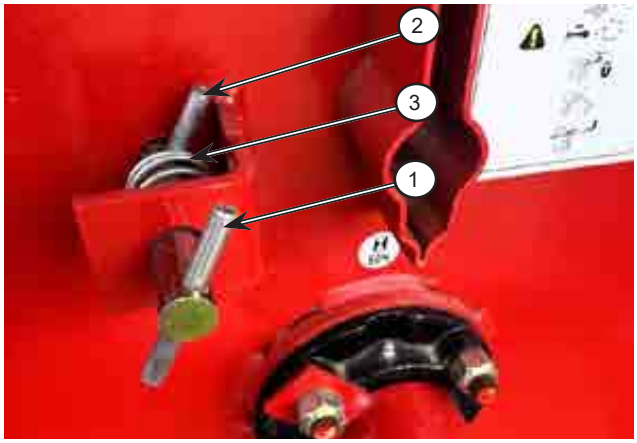

Figure 7.1: Lock the Flail Drum

4. Choose the appropriate bale lift/clamping arm storage position based on your storage requirements. There are 2 different options:
   a. Bale lift lowered; see *Figure 7.2*
      i. Switch the Loading/Processing switch to the OFF / Loading position.
      ii. Lower the bale lift to the ground.
   b. Bale lift raised; see *Figure 7.3*
      i. Switch the Loading/Processing switch to the OFF / Loading position.
      ii. Raise the bale lift to the highest position.
      iii. Install the cylinder lock on the lift cylinder of the bale clamping arms.
         • Fasten the cylinder lock in place with the pin.
      iv. Slowly lower the bale lift onto the stops to relieve hydraulic pressure and to prevent any movement.


Figure 7.2: Bale Lift Lowered


Figure 7.3: Bale Lift Raised

5. Remove debris built up around the bale lift.

    a. Ensure that the area around the base of the lift cylinders and the area around the clamping arm hinge points is clear of debris.

6. Raise the discharge door to the transport position; see *Figure 7.4*.

    a. The discharge door is operated by a hydraulic cylinder.

        i. Switch the Loading/Processing switch to the ON / Processing position.

    b. Flip the rubber deflector onto the top of the door before raising the door. This will secure the rubber between the tub wall and the door.

    c. Roll up the side curtains and secure them with the rubber holding straps (1).

Figure 7.4: Raise Discharge Door & Secure Curtains

7. Install the discharge door transport lock; see *Figure 7.5*.

    a. Rotate the lock (1) toward the door.

    b. Place the lock onto the pin on the door.

    c. Secure with the clip pin (2).

Figure 7.5: Discharge Door Lock

8. Place the jack onto the hitch; see *Figure 7.6*.
    a. Remove the jack from the storage position.
    b. Pin the jack in place on the hitch.
    c. Ensure that the jack is resting on solid level ground or resting on a wood block.
    d. Raise the hitch until the weight is supported by the jack.
        i. The hitch is heavy. Do not attempt to lift it without using the jack.

Figure 7.6: Lift Hitch with the Jack

9. Remove the drive shaft from the tractor PTO.
    a. Disconnect the chain on the drive shaft guard from the tractor.

10. Place the drive shaft in the PTO support holder (1); see *Figure 7.6*.

11. Disconnect the safety chain (1) from the tractor; see *Figure 7.7*.

Figure 7.7: Disconnect the Safety Chain

12. Disconnect the hitch from the tractor.
    a. Remove the hitch pin.

13. Relieve the pressure on the hydraulic hoses and disconnect them.

14. Disconnect the electrical connections.

15. Secure the hydraulic hoses and electrical connectors to the hose holder to keep them off the ground and clean; see *Figure 7.8*.

    a. Use the plug cover for the 7 - pin light harness plug to reduce the amount of dust and/or material that could enter the plug during storage.

Figure 7.8: Hoses and Electrical Connectors Secured

7.1.1 Pre-Storage Maintenance

1. Lubricate all required grease points detailed in *Section 6.1 - Lubrication - Grease*.

2. Tighten all bolts to the recommended torque.

3. Change the oil in the gearbox.

    a. Refer to *Section 6.3.2 - Oil Changing Procedure* for details.

    b. Fill the gearbox to the oil level as outlined in the above noted section.

4. Check the BP 965 for worn and damaged parts. Replace as needed.

5. Touch-up the paint to prevent rusting.

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8 Troubleshooting

SYMPTOM	PROBABLE CAUSE	SOLUTION
Bale lifting problems	Bale lift does not raise	Check hydraulic connections and lines. Flip the Loading/Processing switch to the OFF/Loading position.
	Bale hung up on rear tub deflector - not going into the tub	Cycle feed rollers left to right to pull bale into tub.
Square bale falling apart while loading	Twine Sickle™ cutting all strings	Remove sufficient knives from the Twine Sickle™ to retain 1 or 2 strings. Refer to *Section 5.1.1 - Twine Sickle™*.
Clamping arms not hinging	Clamping cylinder is over pressured	Reduce clamping cylinder pressure. Refer to *Section 6.8 - Adjusting Pressure of Clamping Cylinder* for proper procedure. Retract the clamping cylinder very slightly to reduce the clamping force.
	Bales too light	Remove one torsion hinge spring from either clamp arm. Refer to *Section 6.9 - Changing the Clamping Arm Hinge Springs* for proper procedure.
	Outer arms binding in pockets	Identify and correct any loose, misaligned, or bent parts.
Plugging in discharge area	Snow and ice on bales causes blockage in tub	Have flail drum rotating while loading bale to clear out discharge area.
	Trying to “lift” thrown material too much	Reduce the lower discharge deflector height.
Material builds up on one side of bale in tub	Bale unwrapping in tub	Reverse direction of feed rollers to consume material buildup.

SYMPTOM	PROBABLE CAUSE	SOLUTION
Difficult to rotate bale in tub	Feed rollers not fully engaging bale	Increase aggression of flails to help rotate bale.
		Roll bale into the direction of the discharge area.
	Bale on lift contacting bale in tub	Lower the bale lift.
	Twine buildup on rollers	Remove twine from rollers.
	Majority of twines on bale not cut before loading into the tub	Use the Twine Cutter™ to cut all but one or two twines. Inspect the Twine Cutter™ for proper function and correct as necessary.
Bale not rotating	Feed rollers not engaged	Slowly engage the feed rollers to get the bale rotating.
	Feed rollers running too fast	Slow feed rollers to approx. 40 rpm.
PTO and flail drum not turning	Flail drum lock engaged	Disengage flail drum lock.
	Drive shaft shear bolt	Replace drive shaft shear bolt.
Feed rollers not turning	SCV not supplying enough hydraulic flow	Increase the flow rate at the SCV
	Selector valve not set for feed roller function (Loading/ Processing switch)	Flip the switch to the ON/ Processing position to enable feed roller function. Check for electrical power at selector valve solenoids.
Not able to get sufficient throw distance	Lower discharge deflector is not raised	Raise the lower discharge deflector.
		Throw with the wind.
	Discharge door preventing “lift” of material	Raise the discharge door.
	Rubber not on top of door	Flip the rubber onto the top of the door.

SYMPTOM	PROBABLE CAUSE	SOLUTION
Upper deflector door not operating	Hydraulic cylinder	Check hydraulic connections.
		Check the electrical connection to the solenoid.
	Discharge door transport lock	Remove door transport lock.
Twine Sickle™ not operating	Hydraulic	Check the hydraulic connections.
		Move the SCV in the tractor back and forth.
	Sliding mechanism	Check the Twine Sickle™ can slide easily. Remove any build of material in the Twine Sickle™ carrier. Grease the Twine Sickle™.
Oil weeping from the flail drive gearbox	Gearbox is too hot	Ensure flail drive gearbox breather extension hose is in place.
		Use EP150 or EP220 synthetic gear oil.

If problems persist, please contact your local Highline dealer.

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9 Specifications

Width	
Base BP 965	126" (3.20 m)
BP 965 With Feed Chopper™	126" (3.20 m)
BP 965 With Grain Tank	141 ½" (3.59 m)
BP 965 With Feed Chopper™ & Grain Tank	141 ½" (3.59 m)

Length & Height	
Length	
To End of Tires	210" (5.33 m)
To End of Clamp Arms	261" (6.63 m)
Transport Height	
Lift Down	117" (2.97 m)
Lift Up	146" (3.71 m)
Working Maximum Height (Plus bale length beyond clamping arms)	146" (3.71 m)

Weight	
Base BP 965	7775 lb (3527 kg)
Tongue weight (Unloaded)	2400 lb (1089 kg)
BP 965 With Feed Chopper™	8790 lb (3987 kg)
Tongue weight (Unloaded)	2760 lb (1252 kg)
BP 965 With Grain Tank	8880 lb (4028 kg)
Tongue weight (Unloaded)	2715 lb (1232 kg)
BP 965 With Feed Chopper™ & Grain Tank	9895 lb (4488 kg)
Tongue weight (Unloaded)	3070 lb (1393 kg)

PTO	
Category 8	1000 rpm - 1 3/8" 21 spline
Constant Velocity Turning Range	Maximum 80 degrees

	PTO HP	
	Minimum	**Recommended**
Base BP 965	100 hp (75 kW)	115 hp (86 kW)
BP 965 With Feed Chopper™	140 hp (105 kW)	165 hp (122 kW)
BP 965 With Grain Tank	100 hp (75 kW)	125 hp (94 kW)
BP 965 With Feed Chopper™ & Grain Tank	140 hp (105 kW)	165 hp (122 kW)

Gearbox Rating	180 hp (134 kW)

Bale Size	
Maximum Size of Round Bale	6 ft (1.8 m) diameter
Maximum Size of Square Bale	4' x 4' x 9' (1.2 x 1.2 x 2.7 m)

Tires	
Size	16.5L x 16.1
Air Pressure for 10 ply tires (As shown on tire sidewall)	36 psi (248 kPa)
Wheel Nut Torque	85 - 92 lb-ft (115 - 124 Nm)

Note: Right/left hand is determined by sitting in the tractor looking forward.

Highline New Equipment Limited Warranty Policy

One (1) Year / 12 Months - Parts and Labour

Highline Manufacturing (hereinafter "Highline") warrants this new product of Highline's manufacturer to be free from defects in material and workmanship, under normal use and service for one (1) full year after initial purchase/retail sale. Highline will warrant its product for one (1) year parts and labor, if performed by a qualified Dealer. This Limited Warranty shall apply only to complete machines of Highline's manufacture. Parts are covered by a separate Limited Warranty.

EQUIPMENT AND ACCESSORIES NOT OF HIGHLINE'S MANUFACTURE ARE WARRANTED ONLY TO THE EXTENT OF THE ORIGINAL MANUFACTURER'S WARRANTY AND SUBJECT TO THEIR ALLOWANCE TO HIGHLINE ONLY IF FOUND DEFECTIVE BY SUCH MANUFACTURER.

During the Limited Warranty period specified above, any defect in material or workmanship in any warranted item of Highline Equipment not excluded below shall be repaired or replaced at Highline's option without charge by any authorized independent Highline Dealer. An authorized Dealer must make the warranty repair or replacement. Labour is paid in accordance with Highline's Labour reimbursement policy. Highline reserves the right to supply remanufactured replacement parts as it deems appropriate.

RETAIL PURCHASER RESPONSIBILITY
This Limited Warranty requires proper maintenance and periodic inspections of the Equipment as indicated in the Operator's Manual furnished with each piece of new Equipment. The cost of routine or required maintenance and services is the responsibility of the retail purchaser. The retail purchaser is required to keep documented evidence that these services were performed. This Highline New Equipment Limited Warranty may be subject to cancellation if the above requirements are not performed.

EXCLUSIONS AND LIMITATIONS
The warranties contained herein shall NOT APPLY TO:

1. Any defect which was caused (in Highline's sole judgement) by other than normal use and service of the Equipment, or by any of the following:
    a. accident
    b. misuse or negligence
    c. overloading
    d. lack of reasonable and proper maintenance
    e. improper repair or installation
    f. unsuitable storage
    g. non-Highline approved alteration or modification
    h. natural calamities
    I. vandalism
    j. parts or accessories installed on Equipment which were not manufactured or installed by Highline authorized Dealers
    k. the elements
    l. collision or other accident.
2. Any Equipment whose identification numbers or marks have been altered or removed.

3. Any Equipment which any of the required or recommended periodic inspection or services have been performed using parts not manufactured or supplied by Highline or meeting Highline Specifications including, but without limitation, lubricants (oil, grease), belt lacings, and hydraulic fluids.

4. Any Equipment used in demonstrations not performed by a Highline Dealer. Warranty will be at the discretion of Highline for all other demonstration warranty.

5. New Equipment delivered to the retail purchaser in which the warranty registration has not been completed and returned to Highline within ten (10) days from the date of purchase.

6. Any defect that was caused (in Highline's sole judgement) by operation of the Equipment not abiding by standard operating procedures outlined in the Operator's Manual.

7. Tire Limited Warranties and support are the responsibility of the respective product's manufacturer.

8. Transportation costs, if any, of transporting to the Highline Dealer.

9. In no event shall Highline's liability exceed the purchase price of the product.

10. Highline shall not be liable to any person under any circumstances for any incidental or consequential damages (including but not limited to, loss of profits, out of service time and damage to equipment which this equipment may be attached) occurring for any reason at any time.

11. Diagnostic and overtime Labour premiums are not covered under this Limited Warranty Policy.

12. Depreciation damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, and/or lack of proper protection during storage.

13. Accessory systems and electronics not of Highline's manufacture are warranted only to the extent of such manufacturer's respective Limited Warranty if any.

14. Wear items which are listed by product group below:

COMMON WEAR ITEMS
Roller chain, sprockets, clutches, shear bolts, clutch components, chains, belts, gearbox housings bolts/torqued parts, flails, feed roller belting, coupler chain, DRV couplers, bogie wheels, apron tines and hoses, blades and blade pans, blade bolts and nuts, skid shoes, chain guards, clutches and clutch components.

PARTS WARRANTY
Parts replaced in the warranty period will receive the balance of the one year New Equipment Limited Warranty.
Replacement parts after the original machine warranty are warranted to be free from defects of material for ninety (90) days or the part will be repaired or replaced, without Labour coverage for removal and reinstallation.

EXCLUSION OF WARRANTIES
UNLESS OTHERWISE REQUIRED BY LAW, AND EXCEPT FOR THE WARRANTIES EXPRESSLY AND SPECIFICALLY MADE HEREIN, HIGHLINE MAKES NO OTHER WARRANTIES, AND ANY POSSIBLE LIABILITY OF HIGHLINE HEREIN UNDER IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HIGHLINE RESERVES THE RIGHT TO MODIFY, ALTER AND IMPROVE ANY PRODUCT WITHOUT INCURRING ANY OBLIGATION TO REPLACE ANY PRODUCT PREVIOUSLY SOLD WITH SUCH MODIFICATION. NO PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY, OR TO ASSUME ANY ADDITIONAL OBLIGATION ON HIGHLINE'S BEHALF.