

**Operator's Manual**  
(SN13001-15999)  
**Model JB510**  
Single Pass Round Bale System

D-130704CMA01E  
April, 2015

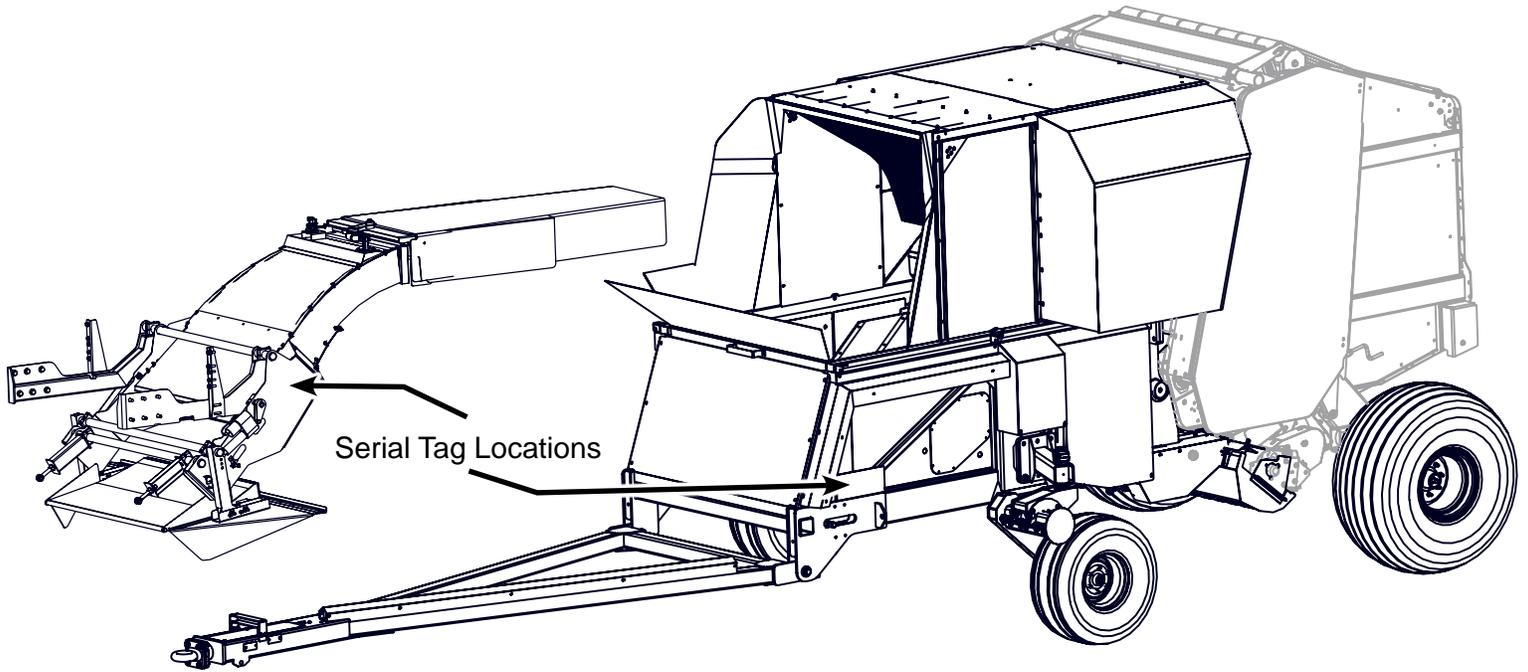
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# Model and Serial Number



Write the serial number and the model number of the Single Pass Round Bale System's Spout, Accumulator and Combine on the lines provided. It is important to reference these numbers when ordering parts or requesting technical support. We suggest that you give the SPRB System serial numbers to your John Deere dealer to be kept with their combine and baler serial number records.

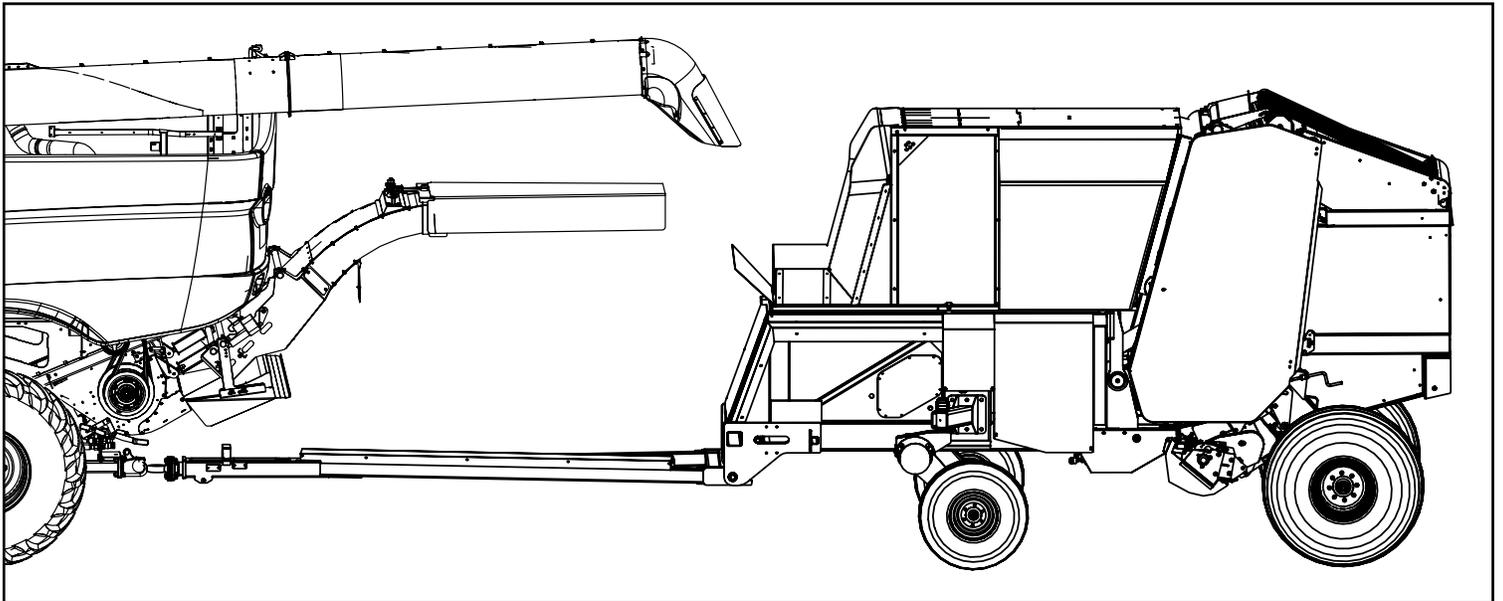
SPRB System Model Number	JB510
Spout Serial Number	JB510C-_____
Accumulator Serial Number	JB510B-_____
Combine Model Number	
Combine Serial Number	

## Introduction

Thank you for choosing the Hillco Technologies' Single Pass Round Bale System to compliment your farming operation. This product has been designed and manufactured to meet the needs of farmers with John Deere S Series combines and John Deere 569 round balers who wish to collect residue from their fields.

Safe, efficient, and trouble-free use of your Single Pass Round Bale System requires that you, and anyone else who will be operating or maintaining the SPRB System, read and understand the safety, operation, and maintenance information contained in the Operator's Manual.

If extra copies of the operator's manual are needed, contact Hillco at 1-800-937-2461 or download it from Hillco Technologies' website at [www.hillcotechnologies.com](http://www.hillcotechnologies.com)



Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Hillco dealer or Hillco if you need assistance or information at 1-800-937-2461.

**OPERATOR ORIENTATION** – The directions left, right, front, and rear, as mentioned throughout this manual, are as seen from the combine operator's seat and facing in the direction of forward travel.

## Maximum Bale Weight

Never exceed a bale weight of 2,200 lbs.



## WARNING

If bale weight exceeds 2,200 lbs damage may occur to the baler or SPRB System.

### SAFETY ALERT SYMBOL



This Safety Alert symbol means  
**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

The Safety Alert symbol identifies important safety messages on the Hillco SPRB System 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.

### Signal Words

Note the use of the signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each message has been selected using the following guidelines:

**DANGER** - An immediate and specific hazard, which WILL result in severe personal injury or death if the proper precautions are not taken.

**WARNING** - A specific hazard or unsafe practice, which COULD result in severe personal injury or death if proper precautions are not taken.

**CAUTION** - Unsafe practices which COULD result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

## **Recommended Fire Prevention**

The machine must be inspected periodically throughout the harvest day. Buildup of crop material and other debris must be removed to ensure proper machine function and to reduce the risk of fire.

Regular and thorough cleaning of machine combined with other routine maintenance procedures listed in the Operator's Manual greatly reduces the risk of fire and decrease the chance of costly downtime.

Always follow all safety procedures posted on the machine and in the Operator's Manual. Before carrying out any inspection or cleaning, always shut OFF engine, set parking brake, and remove key.

The SPRB is equipped with a water fire extinguisher. Extinguishers must be checked daily when entering or exiting the cab and when working around machine to ensure that they are in working condition. Fire extinguishers must be replaced or professionally serviced after any usage.

For further information, refer to Machine Cleanout section.

## In Case of Fire.



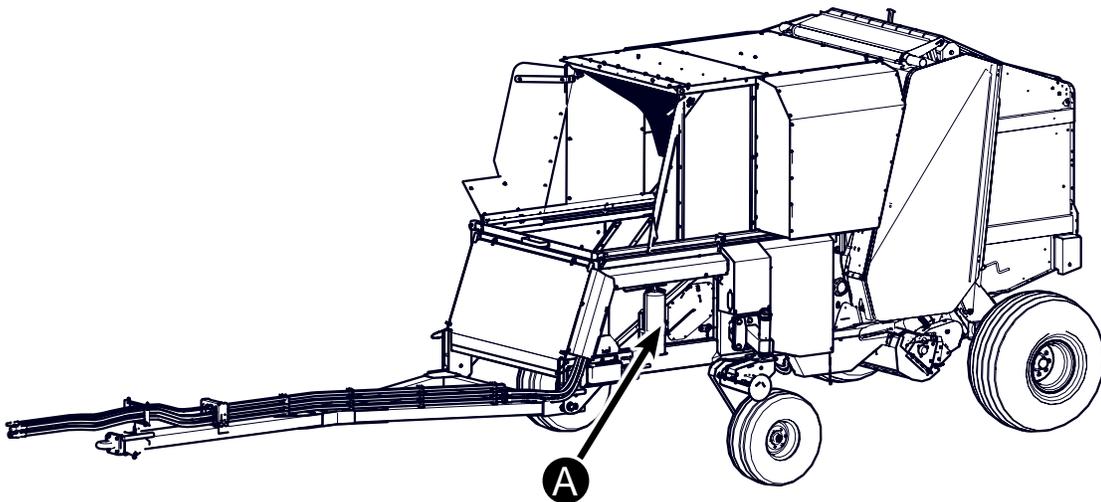
### In Case of Fire - Supplemental Information

Stop baling immediately at the first sign of flames, smoke, scorched smell or an unusual sound.

**CAUTION:** Do not risk personal injury. Be aware that burning tires and heated gas springs can explode unexpectedly. Avoid burns or smoke inhalation. Do not attempt to extinguish a fire that is too far advanced, move safely away from the fire.

If the fire can be extinguished or contained safely, proceed carefully and follow these guidelines.

1. Position the combine upwind from the baler to avoid the fire overtaking the combine.
2. Open the baler gate, eject any crop material from the bale chamber, drive away from the material, disable movement (i.e. neutral), set parking brake or mechanism, and then shutoff the SPRB .
3. Dismount the combine, release the pintle hitch, unhook safety chain(s), disconnect the hydraulic couplers and then drive the combine away from the baler (letting the electrical connections pull free).
4. If possible, call the fire department for help and give them your location.
5. Do not position yourself under an open baler gate. It may fall if the baler is on fire.
6. Stay upwind of the fire; follow instructions on your fire extinguisher when available.



*A - Fire Extinguisher*

## Operation Safety

1. Read and understand the Operator's Manual and all safety labels before operating the SPRB System.
2. Clear the area of all bystanders, especially children, before starting the SPRB System and during operation.
3. Make sure all safety shields are in place before operating the combine. Never operate the machine with the shields removed.
4. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
5. Stay seated in the cab during operation. The SPRB will not operate unless operator is seated.
6. Operate controls only when sitting in the seat of the combine.
7. Always travel at a safe speed. Use caution when making turns or traversing ditches.

## Hydraulic Safety

1. Do not search for high-pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
2. Use cardboard or wood to detect leaks – never your hands!
3. Maintain proper hydraulic fluid levels.
4. Ensure all fittings and hoses are in good repair.
5. Do not make any repairs to the SPRB System's hydraulic system including: valves, hydraulic hoses, adapters, pumps, manifolds, or reservoirs without first contacting your authorized Hillco dealer.

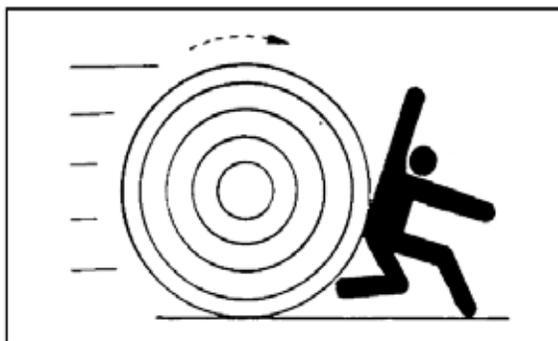


## Service and Maintenance Safety

1. Review the Operator's Manual and all safety items before servicing or maintaining the SPRB System.
2. Stop the combine engine, wait for any moving parts to stop, block the tires, the header, and the cylinder areas before servicing, repairing, adjusting, or maintaining the SPRB System.
3. Hydraulic oil is under pressure. Use caution when dealing with the hydraulic system.
4. Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
5. Clear the area of bystanders, especially children, when carrying out any maintenance, repairs or making any adjustments.

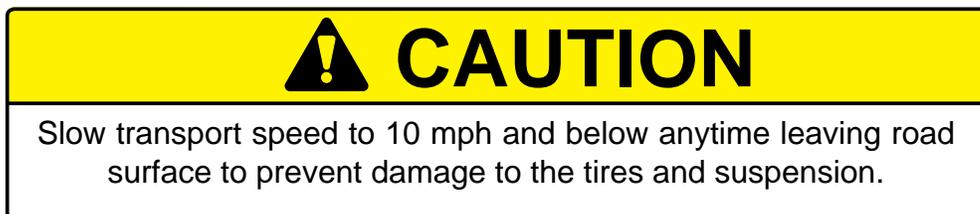
## Operate Safely on Slopes

Do not use Auto Mode on hills. To prevent injury or damage from a rolling bale, discharge bales on level ground or in such a manner that the bale will not roll or use the Semi Auto Mode.



## Highway Operation and Transport Safety

1. Check with local authorities regarding combine transport on public roads. Obey all applicable regulations and laws.
2. Check clearance, elevations and widths of combine for travel near power lines, bridges, trees, etc.
3. Do not transport with the Spout folded up in the “Shoe Access Position”.
4. Do not transport with material in the Accumulator or a bale in the baler.
5. Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible and in good working order. Replace or repair lighting and marking that has been damaged or lost.
6. Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use hand signals or turn signal lights
7. Tow only with a properly ballasted tractor or SPRB equipped Combine and properly attached safety tow chain. Refer to “Towing with a Tractor” section for proper tractor size.
8. Make sure that baler tail and warning lights operate with Combine tail and warning lights and turn signals.

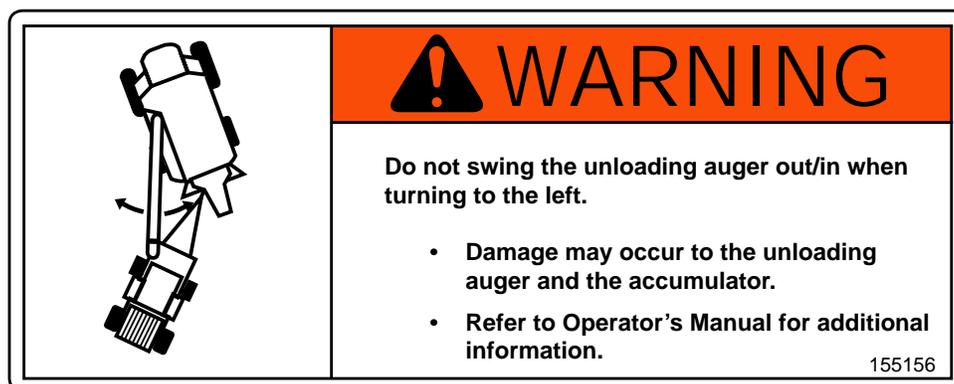


## Receiver Hitch

1. Receiver Hitch is installed on the combine for pulling the SPRB. This hitch is approved for towing a Single Pass Round Baler only and should not be used in any other application.

## Left Turns

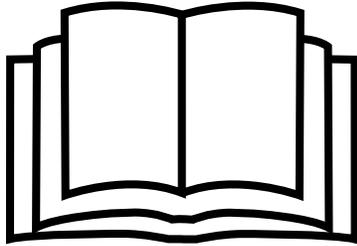
1. Do not swing the unloading auger in or out when making a left turn. It is possible for the unloading auger to come in contact with the accumulator and damage will occur.



## Safety Labels

Familiarize yourself with the location of all safety labels. Read them carefully to understand the safe operation of your machine.

### READ OPERATOR'S MANUAL SYMBOL



Decals, which display the Read Operator's Manual symbol, are intended to direct the operator to the Operator's Manual for further information regarding maintenance, adjustments and/or procedures for particular areas of the SPRB System. When a decal displays this symbol refer to the Operator's Manual for further instructions.

### TO APPLY NEW OR REPLACEMENT LABELS

1. Make sure the label area is smooth by removing any debris such as dirt or old labels.
2. Wash the area with soap and water and then dry it thoroughly.
3. After the area has completely dried, peel the backing off the safety label and place it onto the cleaned area.
4. Make sure all areas of the label have adhered to the machine by pressing down on the entire face of the label, including the corners.

(A)



155136

(B)



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(C)



155139

(D)



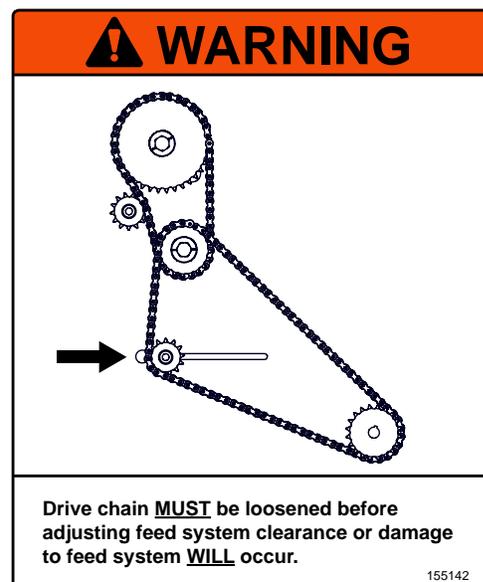
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(E)

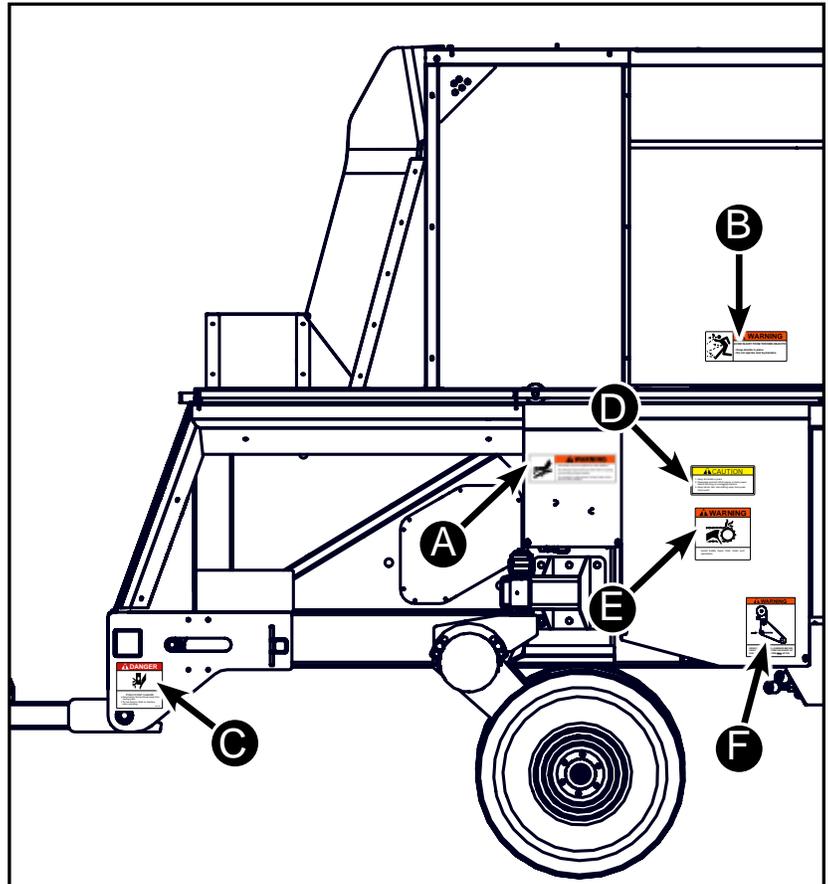


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(F)



155142



(A)

**WARNING**



**AVOID SERIOUS PERSONAL INJURY FROM FIRE.**

DO NOT ATTEMPT TO EXTINGUISH A FIRE THAT IS TOO FAR ADVANCED.

SEE OPERATOR'S MANUAL FOR INFORMATION ABOUT PREVENTING AND EXTINGUISHING FIRES BEFORE OPERATING.

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155144

(D)



Yellow 2" x 12" tape

(C)



**WARNING**

Avoid serious injury or death resulting from loss of control while transporting with this hitch:

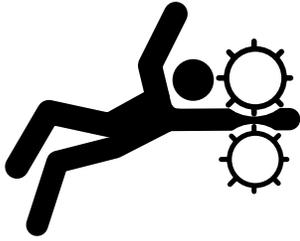
- Do not transport with any material in cart.
- Do not transport at speeds exceeding 32 kph (20 mph)
- Do not exceed 13,000 lb. maximum pull.
- Do not transport with motor vehicle.
- Attach safety chain (minimum 13,000 lb. rating) between combine and cart.

155140

155140

(B)

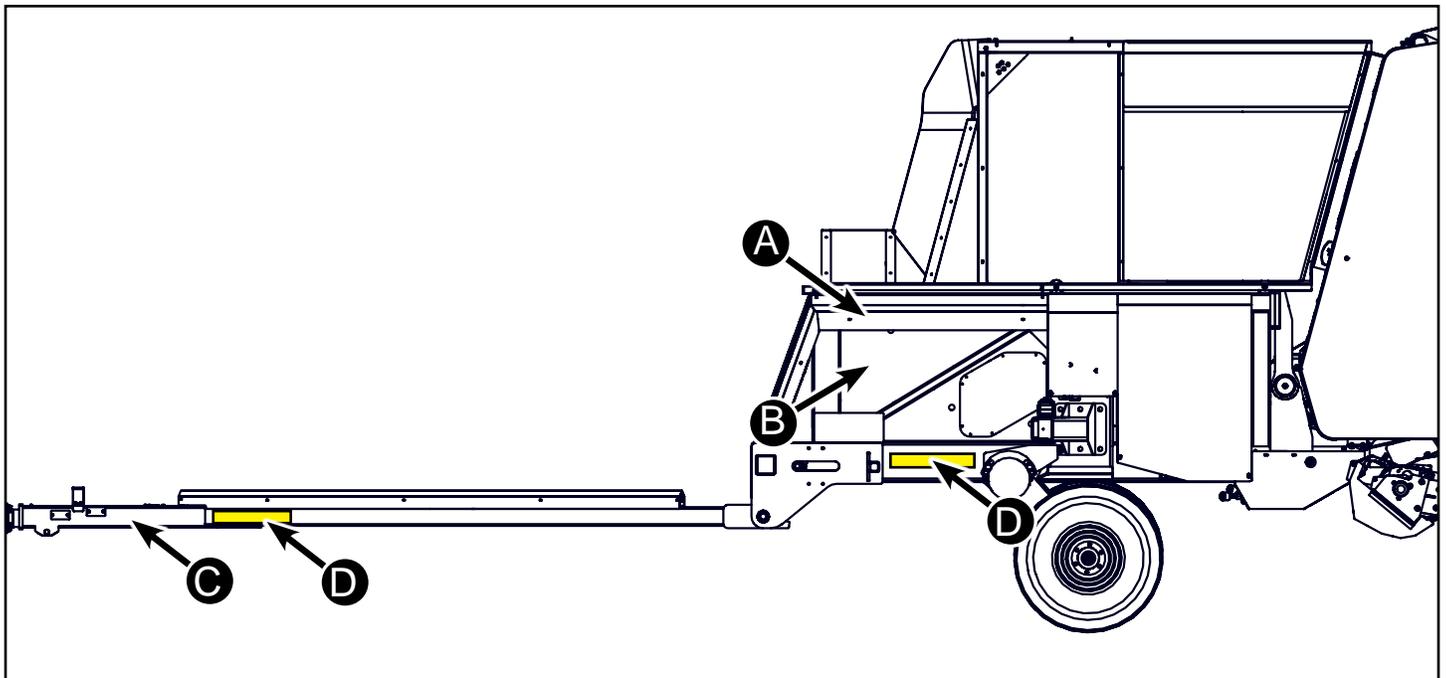
**WARNING**

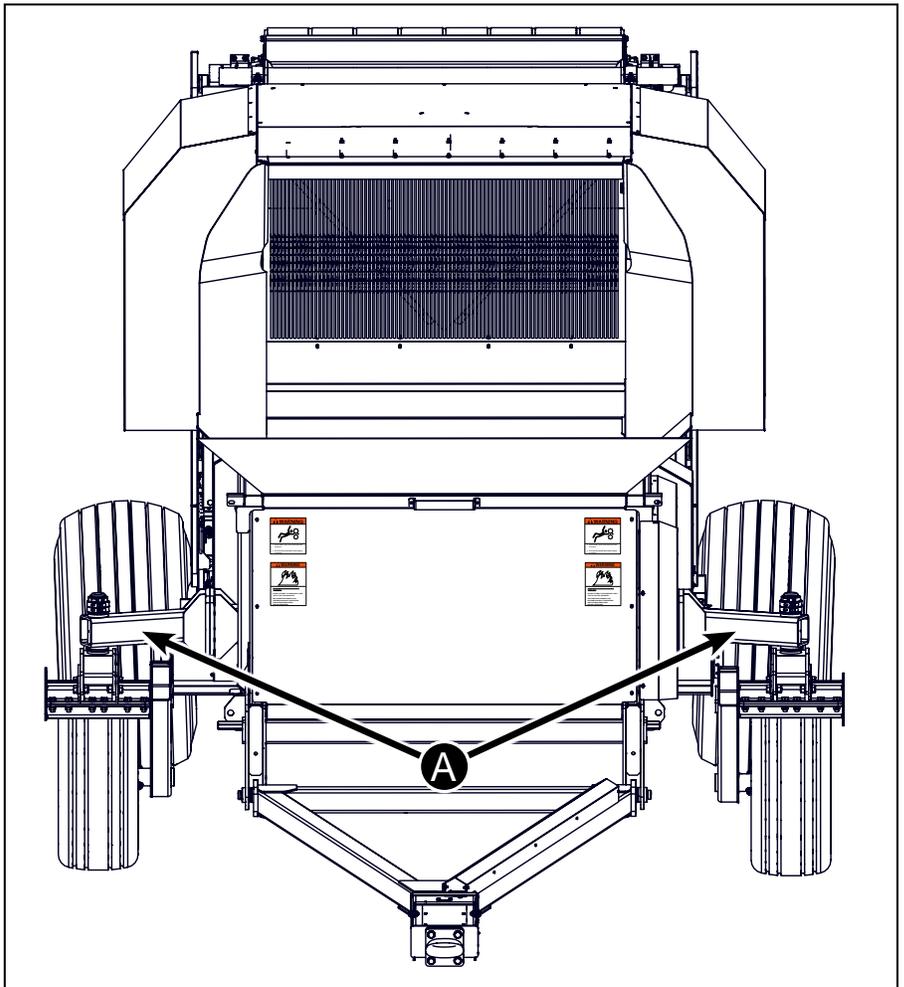


- Avoid bodily injury from feed rolls and conveyor.
- Do not enter accumulator when engine is running.

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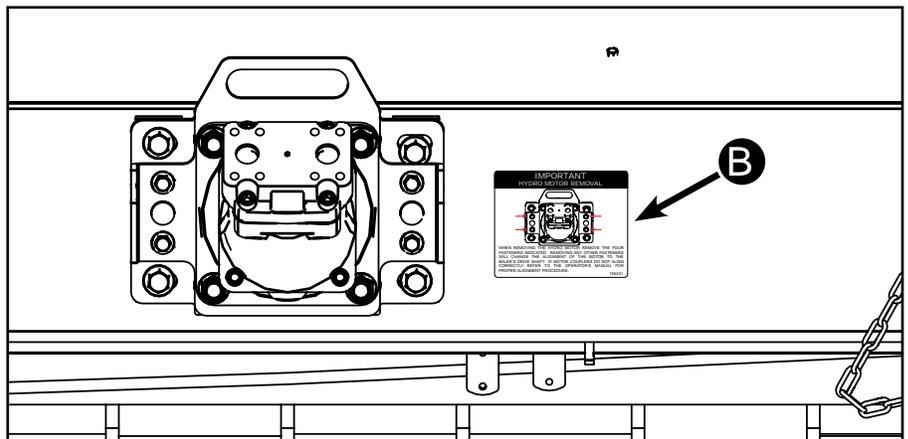
(B)

**IMPORTANT**  
HYDRO MOTOR REMOVAL

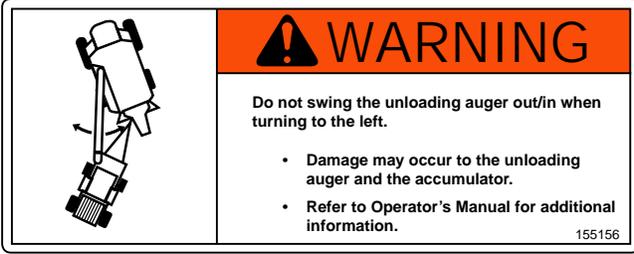
WHEN REMOVING THE HYDRO MOTOR REMOVE THE FOUR FASTENERS INDICATED. REMOVING ANY OTHER FASTENERS WILL CHANGE THE ALIGNMENT OF THE MOTOR TO THE BALER'S DRIVE SHAFT. IF MOTOR COUPLERS DO NOT ALIGN CORRECTLY REFER TO THE OPERATOR'S MANUAL FOR PROPER ALIGNMENT PROCEDURE.

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(A)

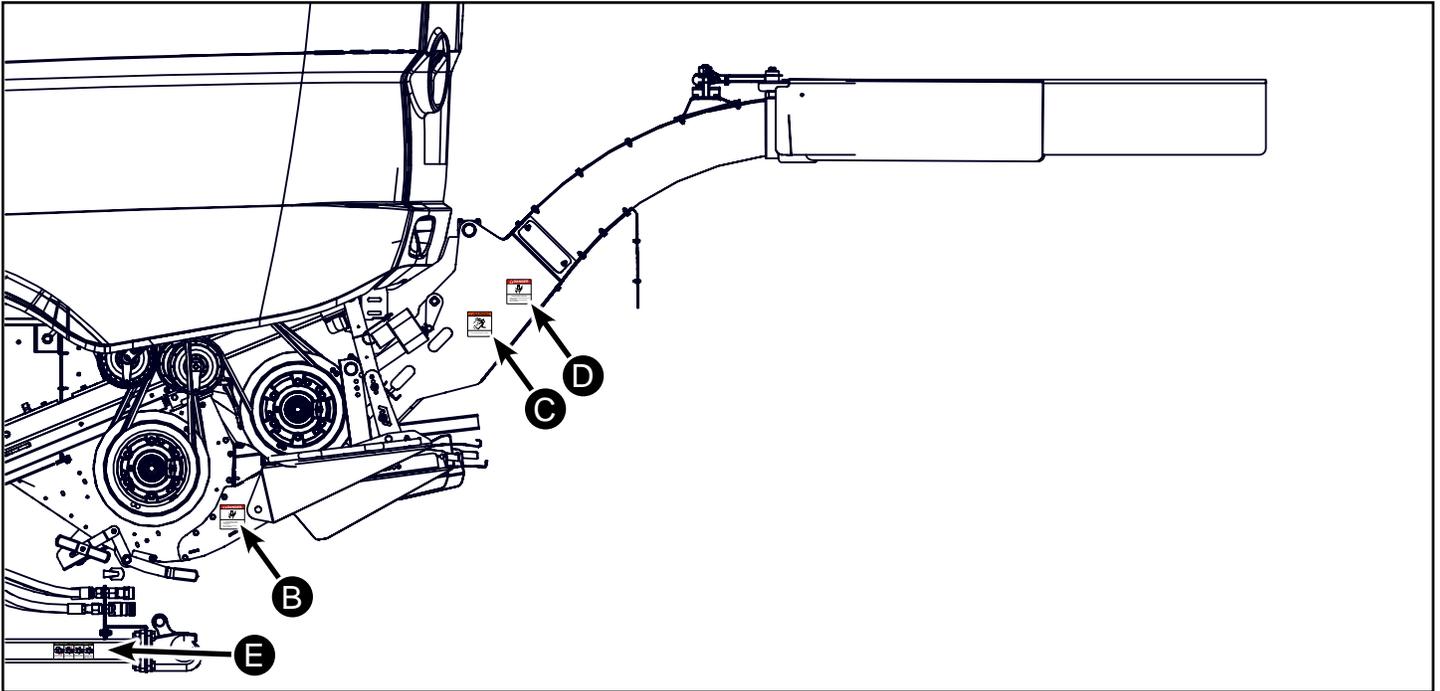
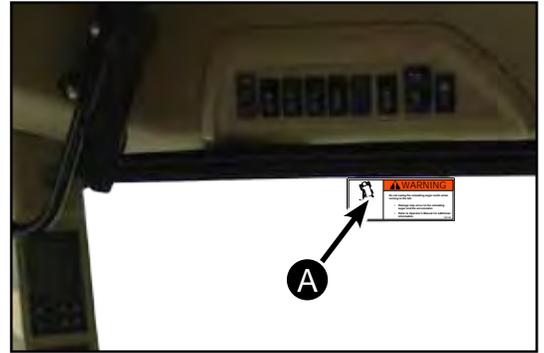


**WARNING**

Do not swing the unloading auger out/in when turning to the left.

- Damage may occur to the unloading auger and the accumulator.
- Refer to Operator's Manual for additional information.

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(B)



**DANGER**

**PINCH POINT HAZARD**

- Keep hands, feet and body away from moving parts.
- Do not stand or climb on machine when operating.

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(C)



**WARNING**

Stay clear while engine is running.

155145

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(D)



**DANGER**

**PINCH POINT HAZARD**

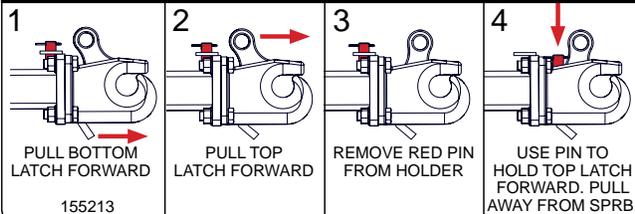
- Keep hands, feet and body away from moving parts.
- Do not stand or climb on machine when operating.

155139

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(E)

**IMPORTANT - HITCH DISCONNECT**



- 1 PULL BOTTOM LATCH FORWARD
- 2 PULL TOP LATCH FORWARD
- 3 REMOVE RED PIN FROM HOLDER
- 4 USE PIN TO HOLD TOP LATCH FORWARD. PULL AWAY FROM SPRB.

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155213

## Product Description

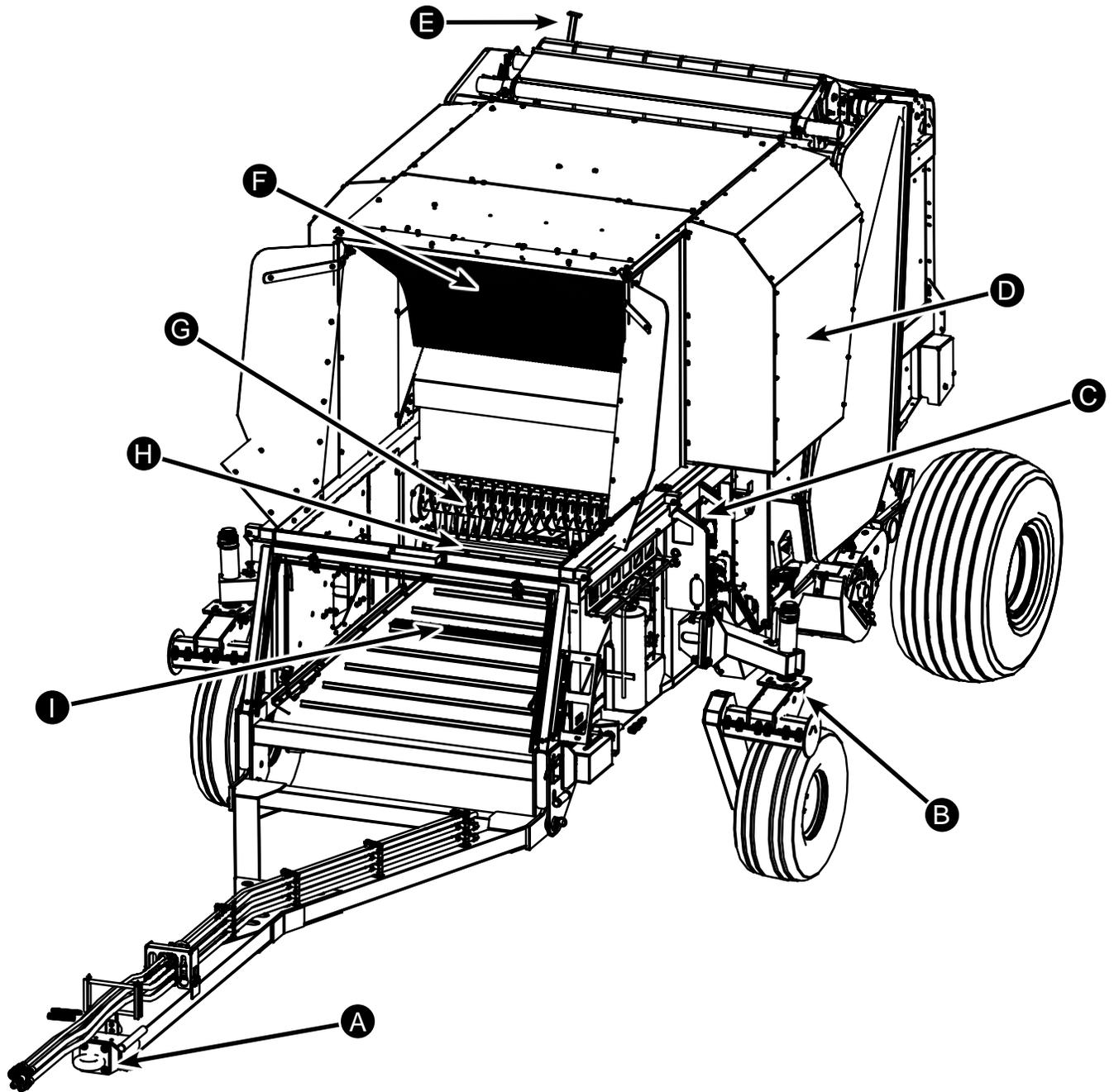


The Hillco Single Pass Round Bale System is designed for John Deere S-Series S670, S680 & S690 ProDrive Combines and 569 Standard Round Balers. Hillco designed the SPRB System to allow for continuous round baling of crop residue known as Material Other than Grain (MOG).

The SPRB System consists of an adjustable Spout mounted to the back of the combine, and an Accumulator mounted to the front of the baler. The Spout directs MOG from the combine into the Accumulator. The Accumulator has a conveyor that feeds the baler. MOG builds up in the Accumulator and, once it becomes full, the baler's feed system engages. The Accumulator empties and then shuts off while the bale is wrapping. Once the baler has ejected the bale, the conveyor begins to run and continues to feed material from the Accumulator into the baler starting a new bale.

# Accumulator Components

## Accumulator Location Reference

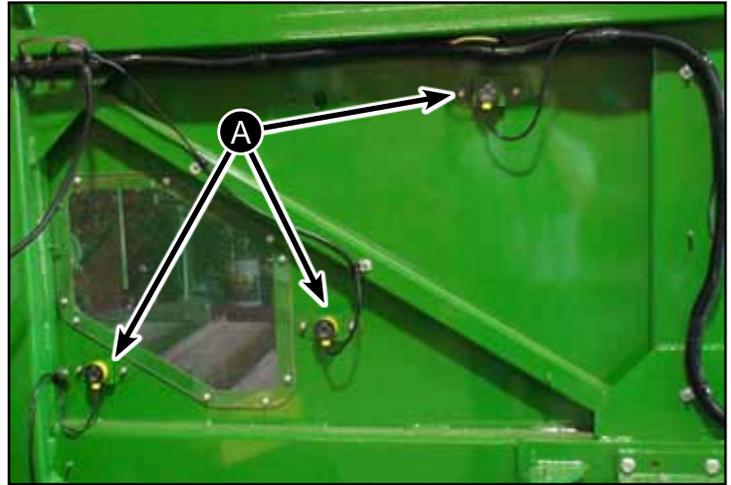


- A - Pintle Hitch
- B - Caster Wheels
- C - Hydraulic Manifold
- D - Air Vents
- E - Rear View Camera
- F - Air Screen
- G - Rotary Feeder
- H - Metering Roll
- I - Conveyor

## Accumulator Level Sensors

There are three infrared sensors located on each side that send signals to the controller telling it how full the Accumulator is. The transmitter is mounted on the left side of the baler. The receiver is mounted on the right side of the baler.

When the transmitter and receiver are powered up, a small green LED lights up on the back of the sensor housing. When the beam is detected by the receiver, a small yellow LED lights up on the back of the receiver housing.



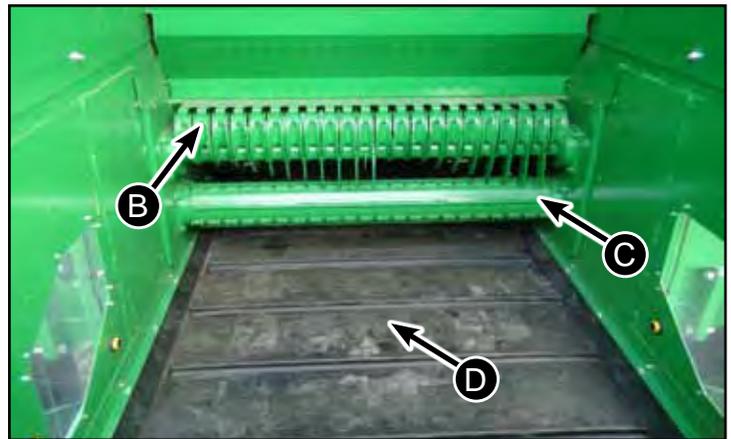
A - Accumulator Level Sensors

## Feed System

The feed system consists of the Conveyor Belt (D) and the Rotary Feeder (B) and the Metering Roll (C).

The Metering Roll (C) is less aggressive and rotates at 450 rpm. Its purpose is to lightly compress the crop mat as it passes under the wind guard. The Rotary Feeder (B) is more aggressive and is intended to throw the material that cannot pass under the metering roller forward. This is what causes the 'rolling' motion of the crop in the Accumulator.

The Conveyor Belt feeds material to the baler. The feed rolls allow for even feeding of material into the baler.

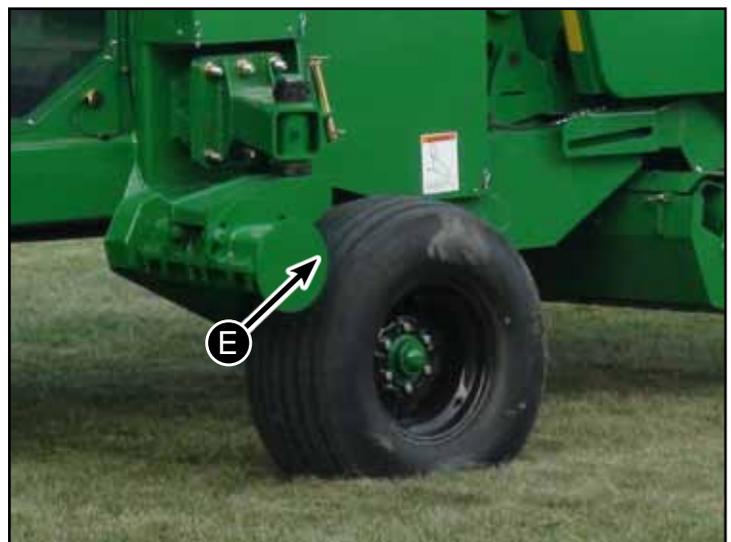


B - Rotary Feeder  
C - Meter Roll  
D - Conveyor Belt

## Caster Wheels

Located on each side of the SPRB System are caster wheels (E). The axles have torsion suspension and have a locking pin to prevent them from pivoting when backing into a shed or loading.

In order for the center of the tire to line up with the center of the king pin the wheel must be dished inward.



E - Caster Wheel

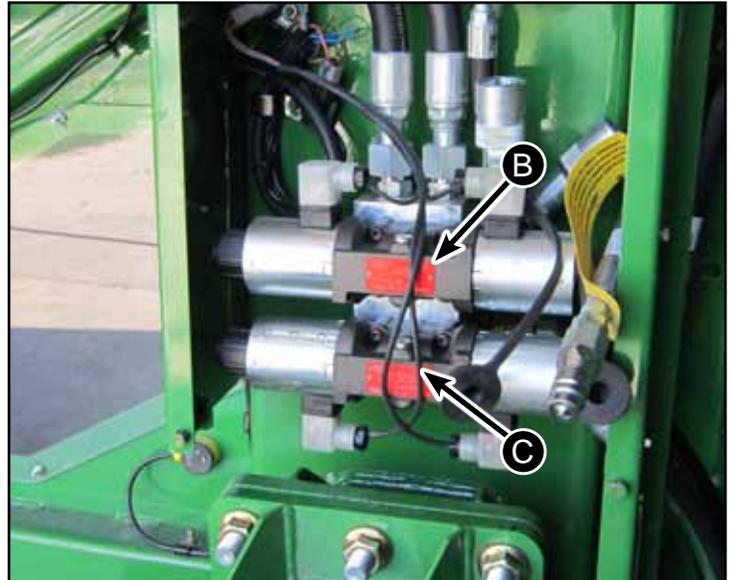


## WARNING

If the wheel is dished outward the wheel will not track correctly and damage may occur.

## SPRB Hydraulic Manifold

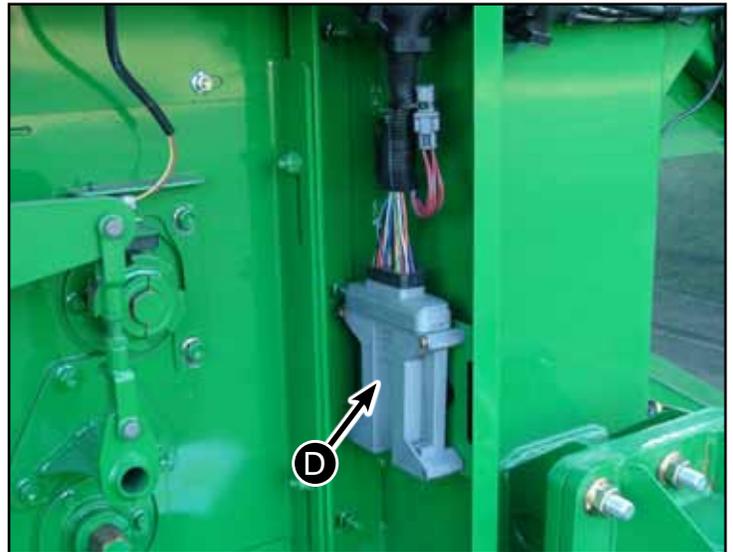
The hydraulic manifold is located above the left caster wheel. The top valve (B) controls the baler gate. The bottom valve (C) controls the feed system.



B - Top Valve (Baler Gate)  
C - Bottom Valve (Feed System)

## Controller

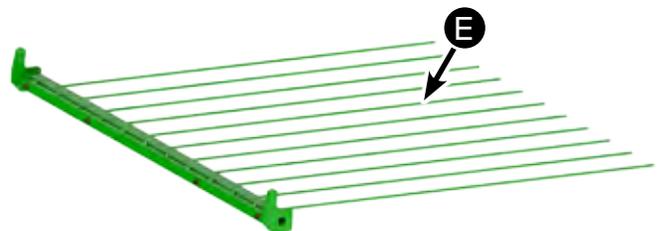
The electronic controller controls both the baler and the SPRB System. It is located behind the right caster wheel.



D - Controller

## Wind Guard

The wind guard is in the back of the Accumulator behind the feed rolls and consists of a framework supporting a series of spring steel rods (E). These rods are used to keep the crop engaged with the conveyor belt as it feeds the material into the baler.



## Air Screen

A screen (A) mounted in the Accumulator directs the material being projected from the spout downward while allowing air to pass through.



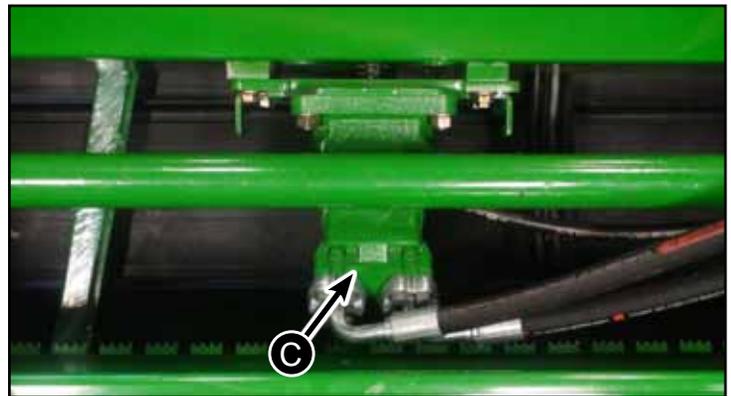
## Air Vents

Air escapes from the Accumulator through air vents (B) on each side of the SPRB System.



## Hydro Motor

The hydro motor (C) is located on the input shaft of the baler where the original PTO would have attached. It drives the baler during operation.



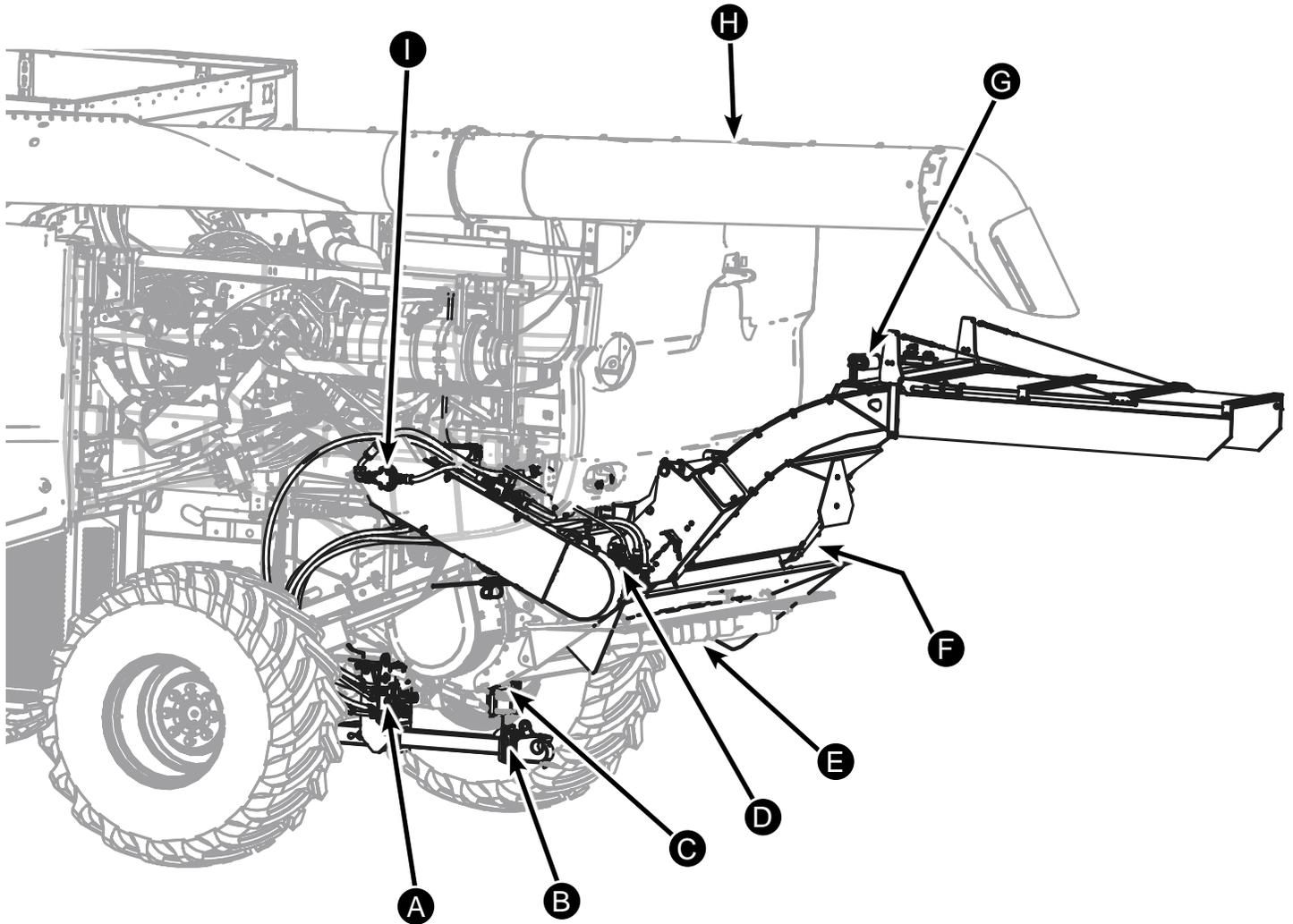
## Accumulator Hitch

The Accumulator connects to the combine using a pintle hitch. All hydraulic and electrical couplers are quick connect.



# Combine & Spout Components

## Combine & Spout Location Reference



- A - Hydraulic and Electrical Quick Couplers
- B - Pintle Hitch
- C - Hitch View Camera
- D - Hydrostatic Pump (Baler Drive)
- E - Vane Tailboard
- F - Spread/Collect Actuator
- G - Spout Side to Side Actuator
- H - Rear View Camera
- I - Gear Pump (Feed System Drive)

## SPRB & Baler Controls

The control switches for the SPRB System (A) are mounted above the combine's CommandTouch™ Monitor.

The Display (B) for the SPRB System is mounted above the right window. The SPRB Display allows the operator to control and manage the SPRB System and baler functions. The programming provides manual or fully automated baling.

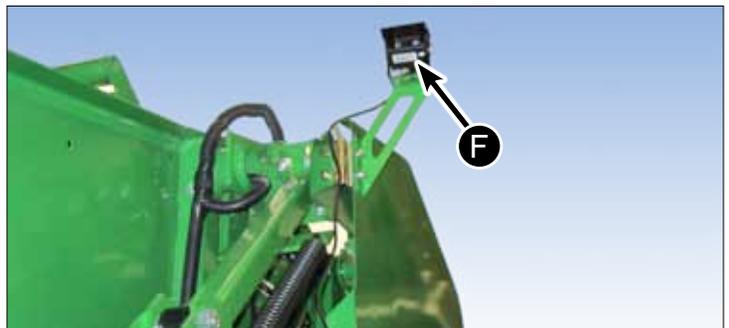
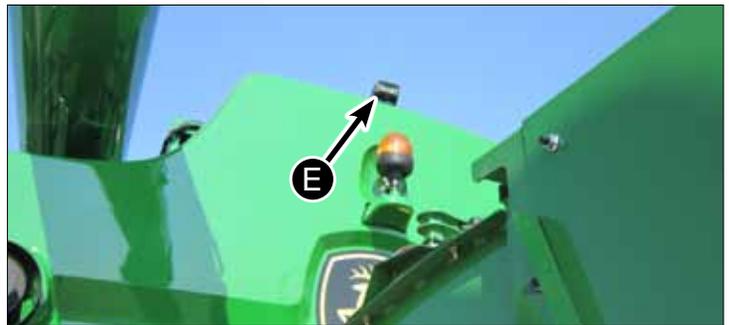
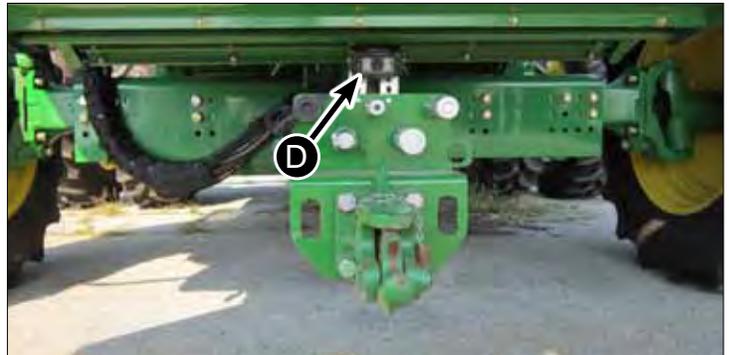
For a detailed description of the SPRB Display screen and modes see Cab Controls section.

- A - SPRB Controls
- B - SPRB Display
- C - Video Monitor



## Monitor and Cameras

Located above the SPRB Controls & Monitor is the video monitor (C). The monitor toggles between three cameras located on the hitch (D), back of the combine (E) and the back of baler (F). The SPRB monitor has settings which allow the operator to set the monitor so that it automatically toggles to the baler camera when ejecting a bale or backing up.

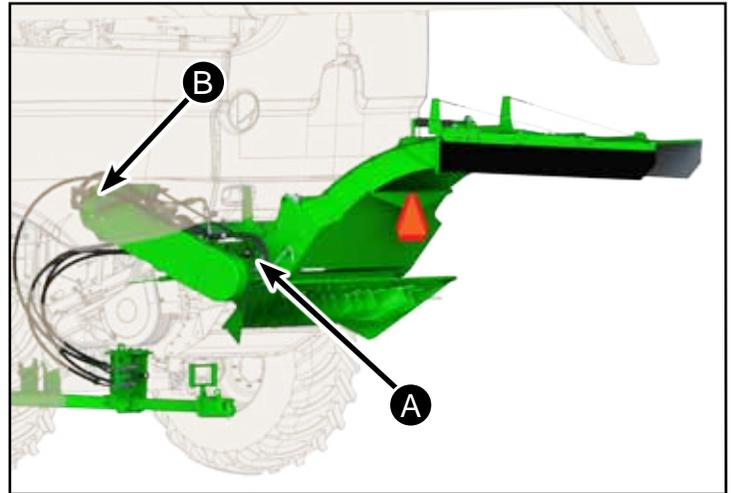


## Baler Hydraulic Flow

Hydraulic flow for the John Deere Baler is produced by a hydrostatic pump mounted at the rear of the combine and is powered by the straw chopper jack shaft (A).

## Feed System Hydraulic Flow

Hydraulic flow for the SPRB Feed System is produced by a gear pump mounted to the chopper jack shaft (B).



- A - Hydrostatic Pump
- B - Gear Pump

## Combine Hitch

A hitch is mounted to the chassis of the combine. The hitch is equipped with a pintle hitch and quick disconnect hydraulic and electrical connectors.

A disconnect pin is stored below the couplers for use when disconnecting the SPRB System from the combine.



## Power Distribution Module (PDM)

The PDM (C) is located on the left side of the combine above the rotor and below the grain tank.

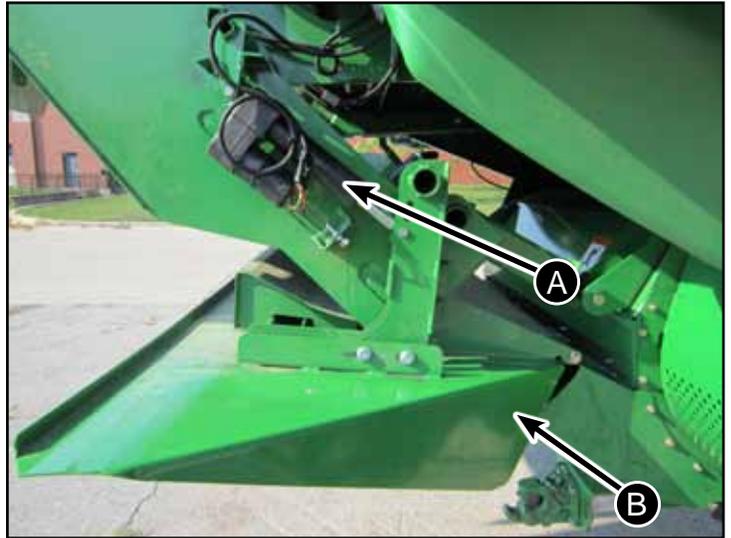
The PDM is responsible for providing power to the combine SPRB components including the Spout actuators and both the baler drive pump as well as the SPRB diverter valve. Additionally, the PDM controls the baler net wrap actuator and the power cast solenoids (if equipped).



- C - Power Distribution Module (PDM)

## Spread/Collect Actuator

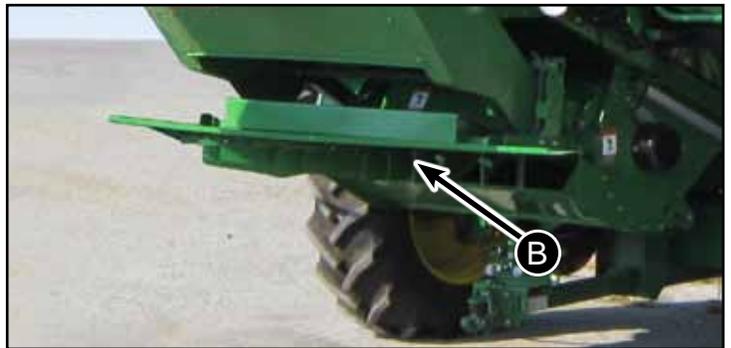
The spout is equipped with an actuator (A) that pivots the tailboard (B) up or down deflecting the flow of residue. When the tailboard is down material is spread using the vane or PowerCast tailboard. When the tailboard is up material is directed into the spout.



A - Spout Actuator

## Tailboard

The spout is compatible with either Vane (B) or PowerCast (C) tailboards. If the combine is equipped with a PowerCast tailboard refer to the adjustment section of this manual for proper adjustment.

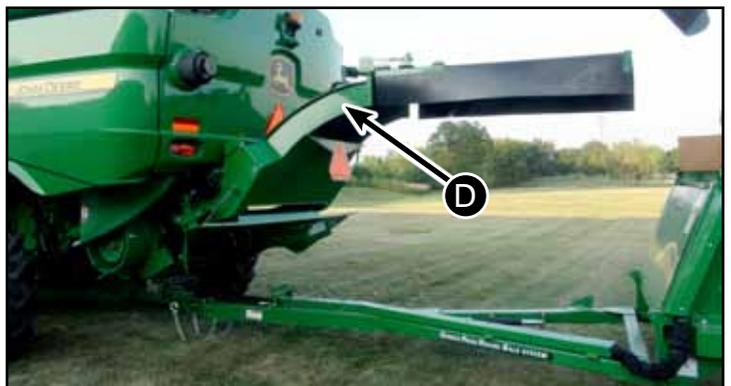


B - Vane Tailboard  
C - PowerCast Tailboard



## Spout

The spout (D) directs the material into the Accumulator. The spout can be adjusted side to side from the cab and up and down manually.



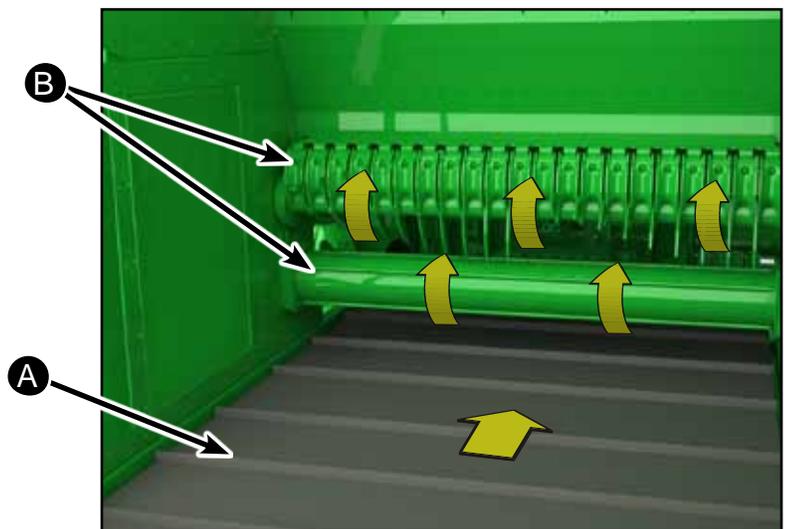
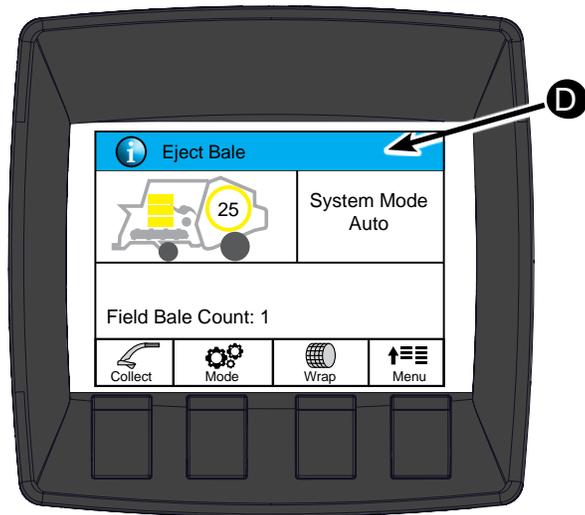
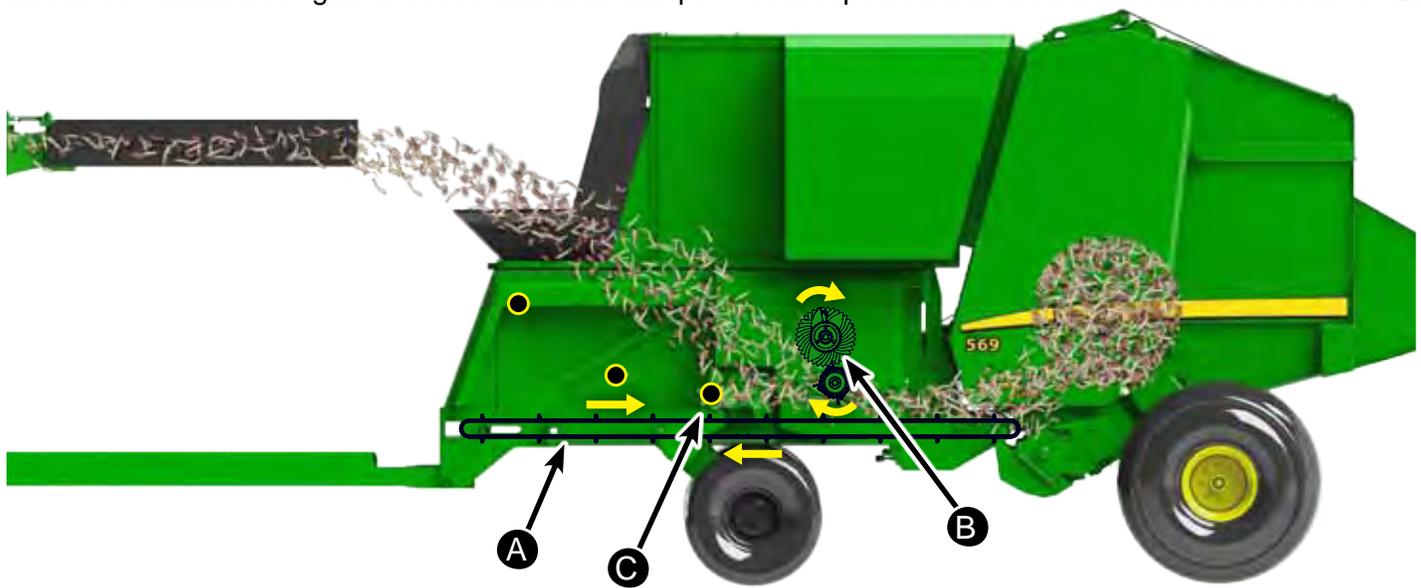
D - Spout

# How the SPRB System Works

When the Spread/Collect Gate is in Collect Mode, "Material Other than Grain" (MOG) is propelled by the straw chopper into the spout, which directs the material into the Accumulator. The Accumulator's feed system is off while material builds in it. The Accumulator is equipped with three (3) infra-red fill level sensors (A) that indicate how full it is. In Automatic Mode, when MOG blocks the light path of the top infrared sensor (3) the controller engages the baler and feed system. The feed system and baler also engage if the bale is at 90% of the desired size and the middle sensor's (2) light path is blocked. This allows the Accumulator to collect MOG when the baler is wrapping and ejecting a bale. Additional settings are available for heavy residue crops, which engage the feed system and baler at the lower sensors.



Material is fed from the Accumulator into the baler by the conveyor(A). The feed rolls (B) rotate in the opposite direction of the conveyor, creating a rolling action. This allows for even feeding of the material into the baler. When the Accumulator's fill level is below the bottom infrared light sensor, the feed system and baler disengage and the Accumulator begins to collect material. This process is repeated until the bale reaches the desired size.



When the bale reaches the desired size, the baler wraps and ejects the bale while the Accumulator collects the MOG. This allows for nonstop harvesting.

The Display in the cab notifies the operator when the bale is wrapping and also when the bale is being ejected (D).



# Cab Controls

## General Overview of Controls

On power up the display will show a welcome screen with the Hillco logo for 5 seconds. The welcome screen displays the following:

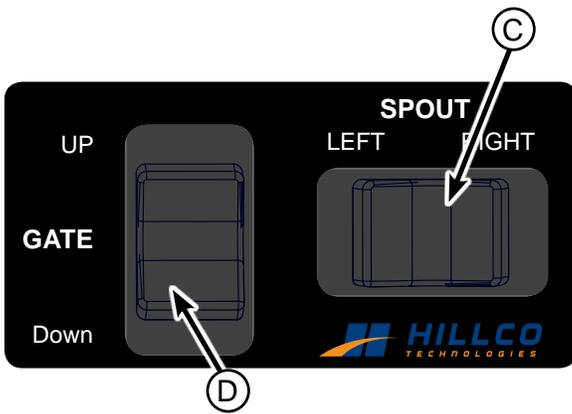
A - Green light means there is a CAN connection with the PDM

B - Green light means there is a CAN connection with the controller mounted on the Accumulator.

C - Total Bale Count

D - Controller Software version

E - Display Software version

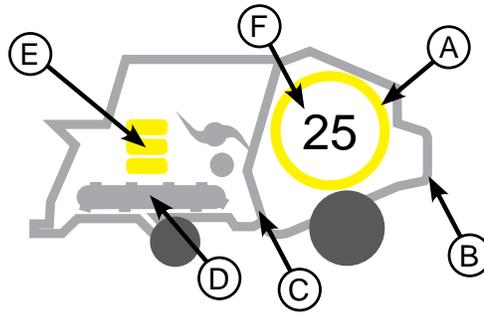


- A - Monitor
- B - Monitor Control Buttons
- C - \*Spout Control
- D - \*Baler Gate Control



\*The baler drives and spout functions will only be activated if the separator switch on the combine is engaged, the operator is seated in the seat, and the combine is at high idle.

# Display Icon Identification

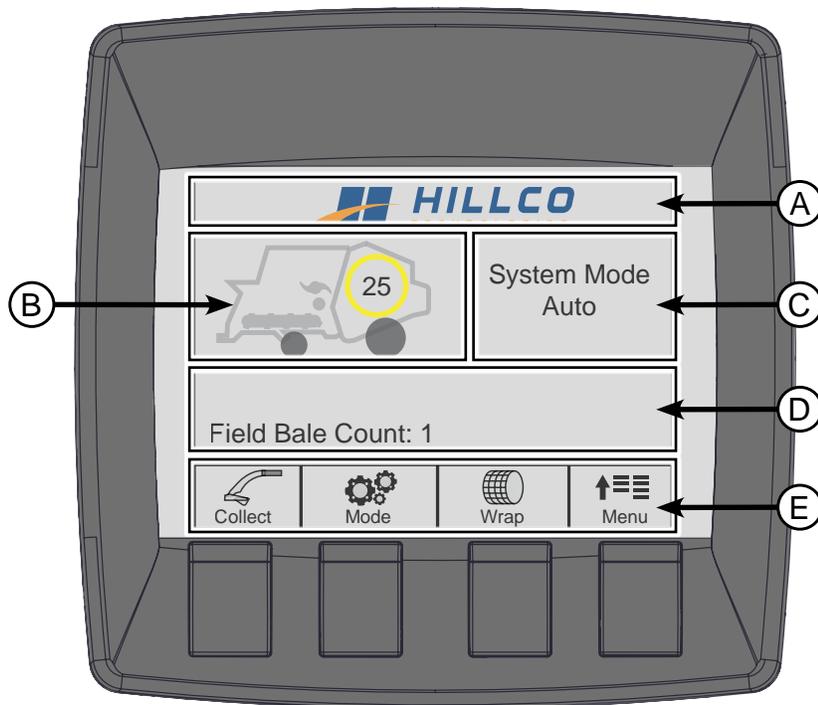


Standby    Operational    Error    Note: See Trouble Shooting section for errors.

Standby	Operational	Error	Note: See Trouble Shooting section for errors.
			<b>A - Bale Wrap Icon</b> Icon turns green when wrapping (it is normal for the green to flash when wrapping). If bale turns red then an oversized bale is in the chamber.
			<b>B - Bale Eject</b> The bale gate icon shows the baler gate open. When the baler gate is open and green it is functioning properly. If there is an error the baler gate icon will turn red.
			<b>C - Baler Icon</b> When the baler is engaged either making a bale or wrapping a bale it will turn green. If there is an error the baler will turn red.
			<b>D - Feed System</b> The Icon turns green when the feed system is engaged. If there is an error with the feed system the icon turns red.
			<b>E - Accumulator Fill Level</b> The three bars indicate how full the Accumulator is.
			<b>F - Bale Size Icon</b> Bale Size Icon gives the current reading of the bale size in inches. Range varies from 22-76. An empty baler will read between 22-25 in.

	<b>Spread/Collect</b> This Icon shows what mode the Spread/Collect Gate is in. If it is in Spread Mode the icon has a white background. If it is in Collect Mode the background is green
	<b>Mode</b> Toggles between Auto and Semi Auto Mode.
	<b>Wrap</b> The background color changes green when the net switch is depressed by the net wrap paddle. It is used as a confirmation that net wrap is actually being applied.
	<b>Menu</b> Allows the operator to enter the Main Menu which displays settings, calibrations and diagnostics.

## Display Region Layout



Display is divided into five areas:

A - **Information Bar** - Displays information when the system is waiting for an operator's response.

B - **Baler Status** - Shows the current bale size, and when functions such as the feed system, baler, netwrap, accumulator fill level, and baler gate engage and any errors associated with the functions.

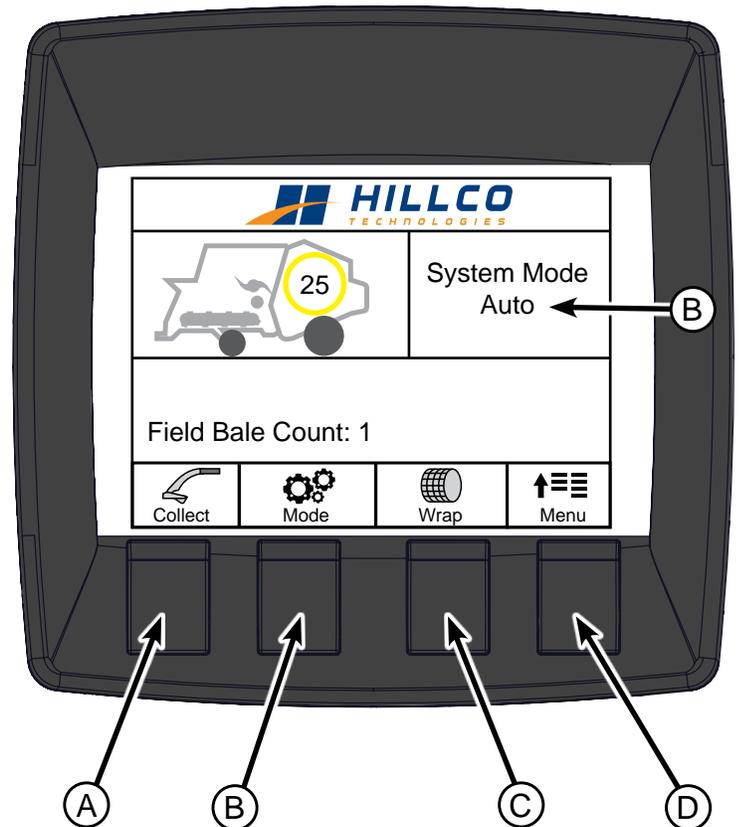
C - **System Mode** - Shows the current system mode. Two modes are Auto and Semi Auto. Refer to the System Mode Section for details regarding the two modes.

D - **Field Bale Count/Warning** - Shows the current field bale count. This number can be reset at any time. Error messages will display in this area.

E - **Toggle Icons/Buttons** - These Icons/Buttons allow the operator to make adjustments, enter the menu, check diagnostics, calibrate sensors, and toggle between modes.

## Monitor Main Screen

- A - Toggles between Spread and Collect Mode. When in Collect Mode the background behind the icon is green. If the combine is equipped with a PowerCast Tailboard and the system is in Spread Mode the PowerCast Tailboard control screen will appear.
- B - Toggles between Auto and Semi Auto Mode. Current Mode appears in upper right corner. Refer to System Mode Section for details.
- C - Manually initiates the wrap cycle. Note: Baler must be on and combine must be at high idle.
- D - Enters the system menu. See Main Menu section for a list of all the menus.



## Main Menu

Select the Main Menu by pressing the button below the  icon.

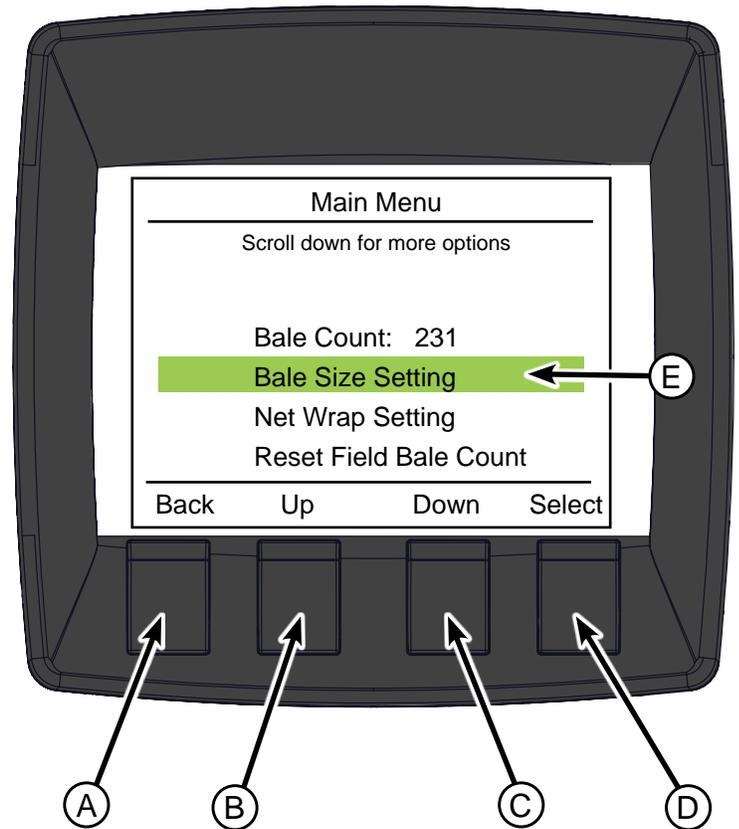
To go back to the Home screen press the (A) button.

Toggle up and down using the Up (B) and Down (C) buttons. The item backlit with the green bar is the item that will be selected. To select the highlighted item press the Select (D) button.

From the Main Menu list you can access:

- Bale Count
- Bale Size Setting
- Net Wrap Setting
- Reset Field Bale Count
- Feed System Settings
- Baler Diagnostics
- SPRB Diagnostics
- CAN Bus Diagnostics
- Baler Gate Calibration
- Camera Settings
- Audio Settings
- Configure PDM
- Net Wrap Calibration
- Spout Calibration
- Service Mode

The following pages describe each item in the Main Menu.



## Bale Count

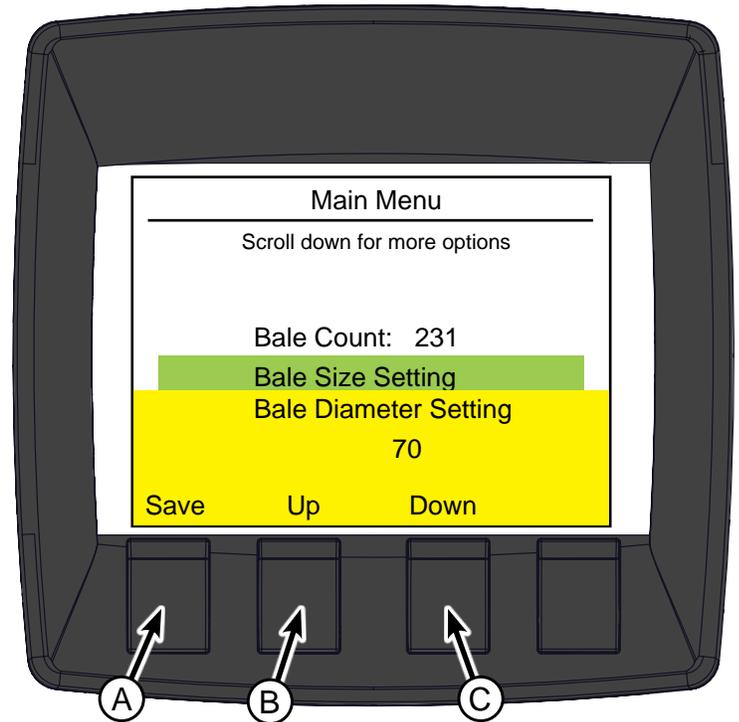
The total bale count is displayed on the Main Menu screen. This number cannot be reset. The Field Bale Count can be reset. Select Reset Field Bale count in the Main Menu to reset it.

## Bale Size Setting

Select the Bale Size Setting from the Main Menu.

The size displayed is in inches. To adjust this size toggle using the Up (B) and Down (C) buttons. Once the desired size is selected press the Save (A) button.

Note: Max bale size is 70 inches and Minimum size is 40 inches.



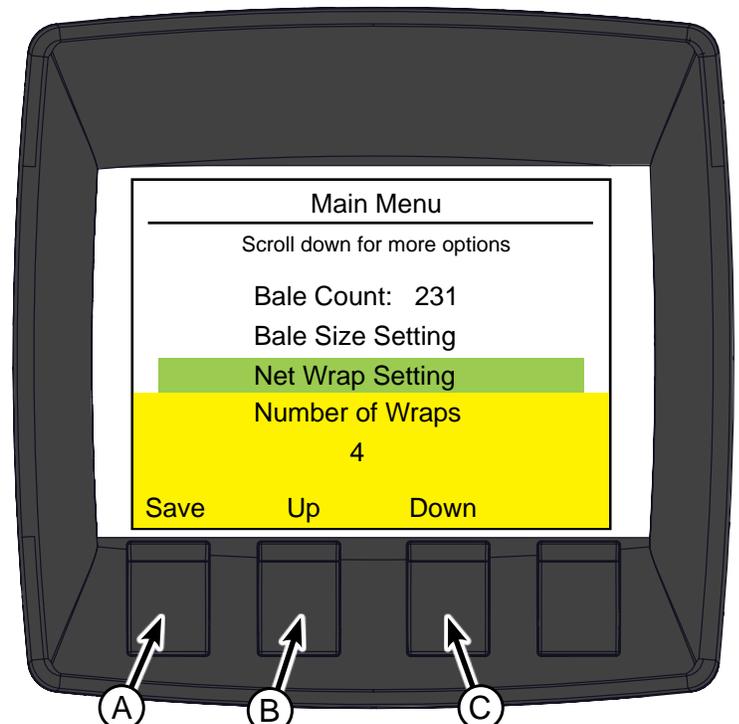
## Net Wrap Setting

Select the Net Wrap Setting from the Main Menu.

The number of times the bale will be wrapped with net wrap is displayed. To adjust the number of wraps toggle using the Up (B) and Down (C) buttons. Once the desired number is selected press the Save (A) button.

Note: Minimum number of wraps per bale is one. **Recommended number of wraps is four.**

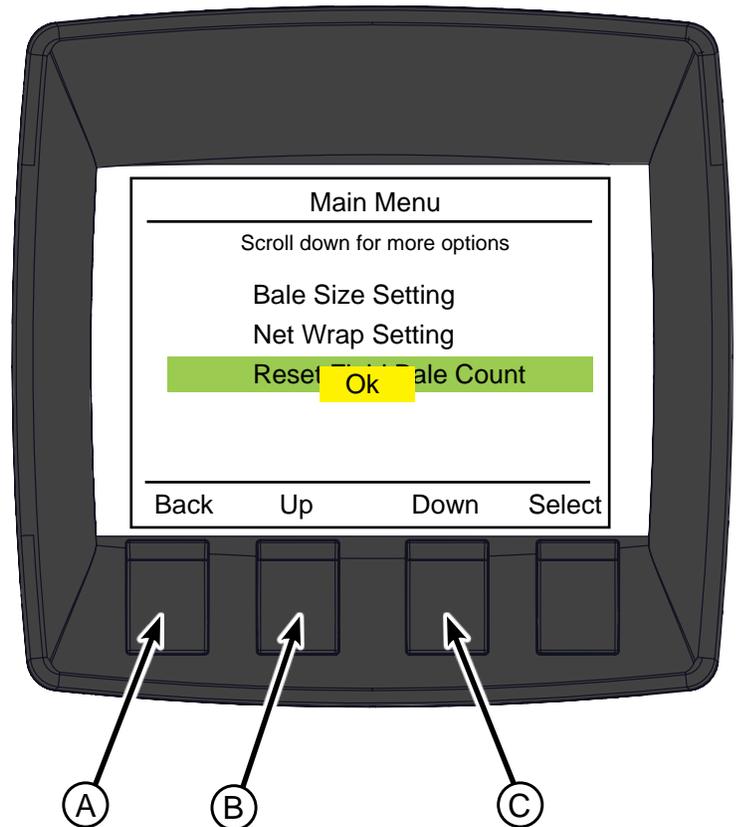
Bales stored with less than three wraps of net wrap can be damaged by handling or weather conditions.



## Reset Field Bale Count

Select the Reset Field Bale Count from the Main Menu.

OK will appear in a yellow box on screen notifying the operator that the Field Bale Count has been reset.



## Feed System Settings

Select the Feed System Settings from the Main Menu.

This setting allows you to adjust the Sensor Mode, Cleanout Timer, & Continuous Baling Size.

The following pages describe how to adjust the Feed System Settings.



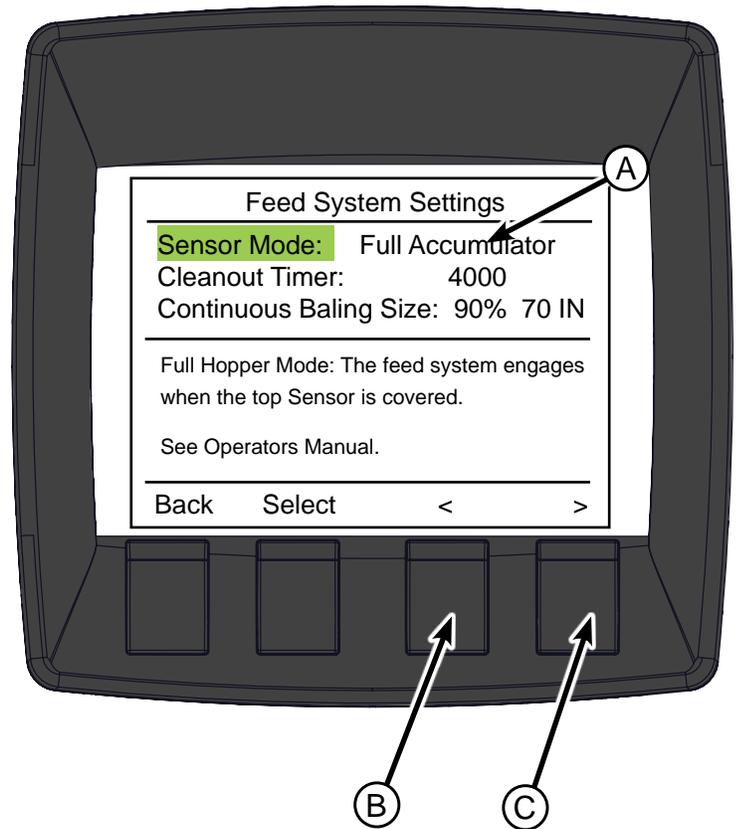
## Sensor Mode

There are two Sensor Modes:

**Full Accumulator (A):** In Full Accumulator Mode the feed system and baler will automatically engage when the top sensor is covered with material. Full Accumulator Mode is recommended in light residue crops such as corn.

**Half Accumulator:** In Half Accumulator mode the feed system and baler will automatically engage when the middle sensor is covered with material. Half Accumulator Mode is recommended in heavy residue crops such as wheat and barley.

To toggle between Half and Full Mode use the arrows above buttons B & C with Sensor Mode highlighted.



## Cleanout Timer

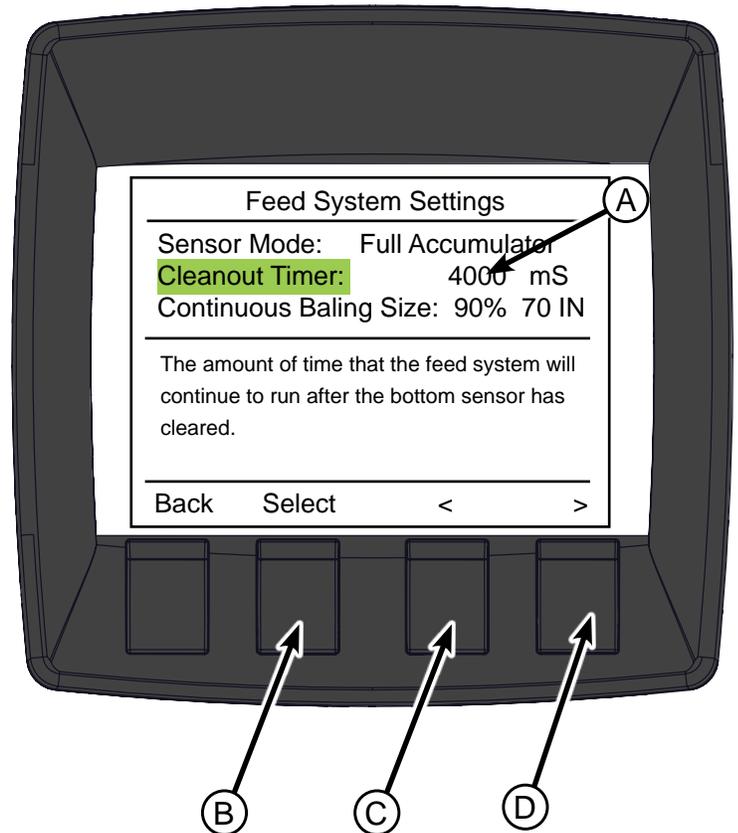
To toggle down to the Cleanout Timer press the Select Button (B).

The Cleanout Timer value (A) is the amount of time in milliseconds that the feed system will continue to run after the material level goes below the bottom sensor.

This time allows the Accumulator to fully empty. If accumulator is not completely empty after feed system shuts off increase the cleanout timer.

Note: If Cleanout Timer value is too high poor bale formation may occur.

For example 4000 milliseconds equals 4 seconds. You can adjust the value by 500 milliseconds or .5 seconds. With the Cleanout Timer highlighted use the arrows above buttons C & D to adjust the value.



## Continuous Baling Size

To toggle down to the Cleanout Timer press the Select Button (C).

With the Continuous Baling Size highlighted use the the arrows above buttons D & E to adjust the value. The % value (A) adjusts by 5% increments. The value (B) is the bale size in inches. To adjust the bale size go to the Bale Size Setting in the main menu.

The Continuous Baling Size value indicates at what size bale the feed system and baler will run continuously until a bale is wrapped and ejected. It is defaulted at 90%.

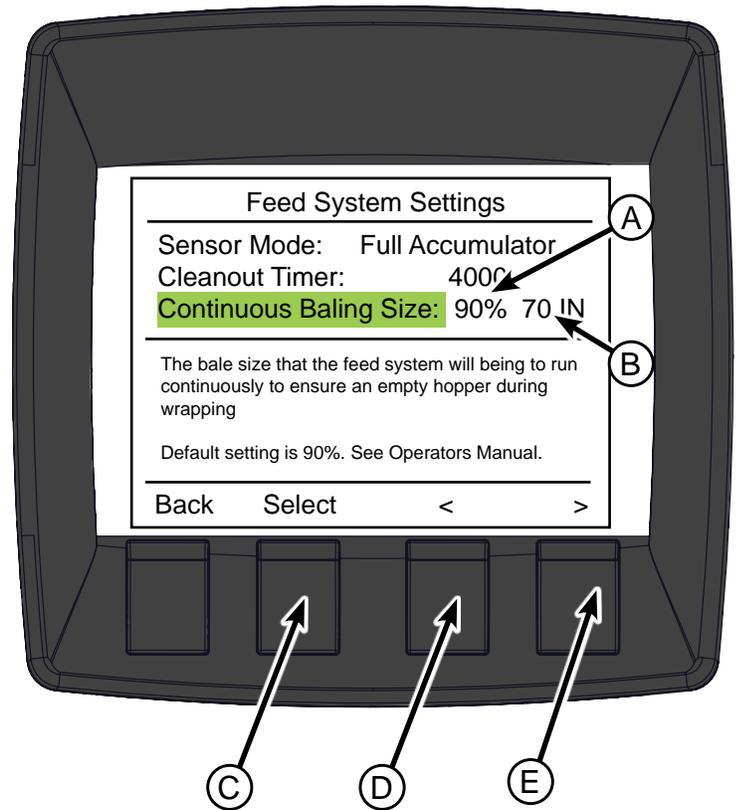
In heavy crops the percentage should be set low so that the baler runs continuously at a smaller bale diameter. This ensures the Accumulator is as empty as possible while the baler is wrapping and ejecting a bale. In light crops, or when capacity is not a concern, a higher percentage setting can be used, resulting in the baler's feed system running less.

In Full Accumulator Mode the Continuous Baling Size value indicates when the feed system will start engaging at the middle sensor. In Half Accumulator Mode the feed system will engage when the bottom sensor is covered.

Note: If the Continuous Baling Size value is too low relative to the amount of residue being collected the feed system and baler will run more than is necessary, consuming extra power. This may also result in poor bale formation.

The value entered is a percent of the volume of the bale. Refer to the chart below to determine when the baler will continuously run based on percent and bale size.

For example, if you are making a 66 inch bale and the Continuous Baling Size is set at 50% (by volume) then the baler will continuously run once the bale is over the size of 44 inches.



		Bale size when Baler will Continuously Operate				
Bale Size Setting in Inches		50%	60%	70%	80%	90%
	72		46	51	55	59
66		44	49	53	56	60
60		42	46	50	54	57
54		40	44	48	51	54
48		38	42	45	48	51

## Baler Diagnostics

Select the Baler Diagnostics from the Main Menu.

The Baler Diagnostics screen displays electrical diagnostics for the Baler. The following page displays where the sensors are located on the baler. For more information refer to the John Deere Operator's Manual.



### Bale Size Sensor Output

It displays the current mV for the Bale Size Sensor. The value is proportional to the diameter of the bale.

### Baler Speed

The baler speed is displayed in RPM's. The system should only be operated at high idle. Depending on the load the RPM at high idle will range between 225 - 275.

### Net Wrap Switch

When the net wrap actuator is engaged wrapping a bale the switch is depressed. The diagnostics will read "Wrapping". When the switch is released the diagnostics will read "Not Wrapping".

### Oversized Bale Sensor:

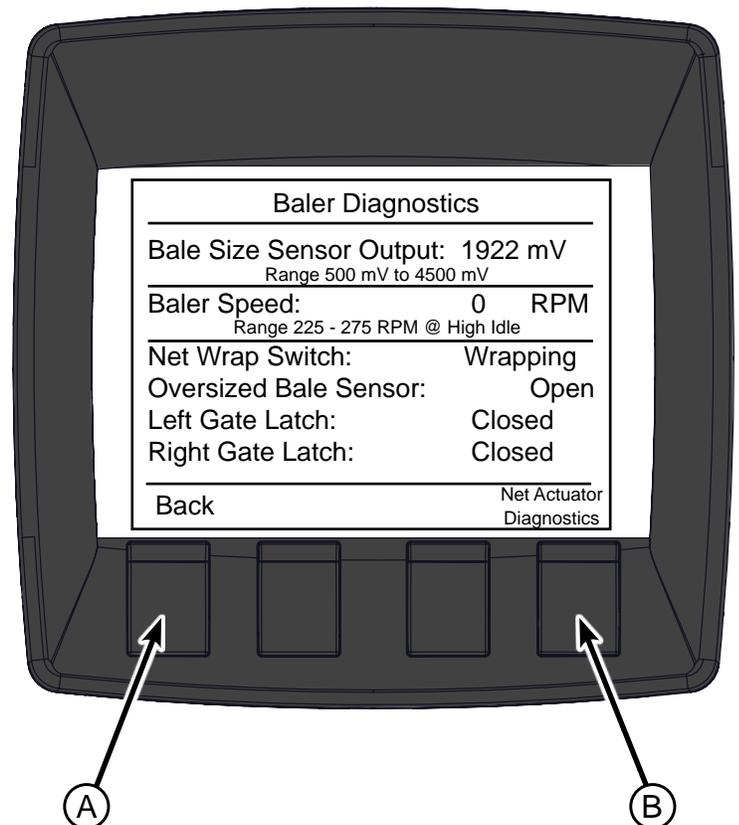
When the switch is released the diagnostics will read "Open". When the switch is depressed it will read "Closed"

### Left Gate Latch:

When the gate is open the diagnostics will read "Open". When the gate is closed the diagnostics will read "Closed".

### Right Gate Latch:

When the gate is open the diagnostics will read "Open". When the gate is closed the diagnostics will read "Closed".



## Net Wrap Actuator Diagnostics

Use EXTEND key (B) and RETRACT key (C) to operate actuator in both directions. Display must show a current flow reading between 1000 and 8000 while actuator motor is operating during mid stroke (no load).

Below normal readings indicate low combine voltage, or poor or corroded harness connections

Above normal readings indicate binding linkage or partially shorted motor windings

Current spike reading indicates mechanical obstruction to linkage

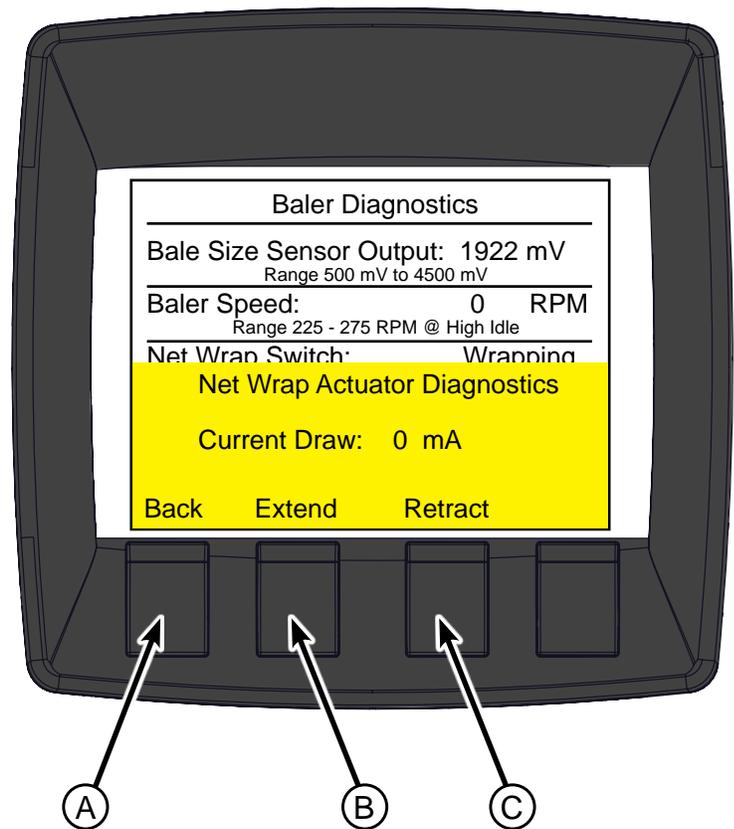
Continue to operate actuator to fully retracted position. Maximum current is 18000 mA. If the actuator draws more than 18000 mA the PDM will shut down the output automatically to protect the system. To reset the output release the button.

Below normal reading indicates bad or corroded harness connections

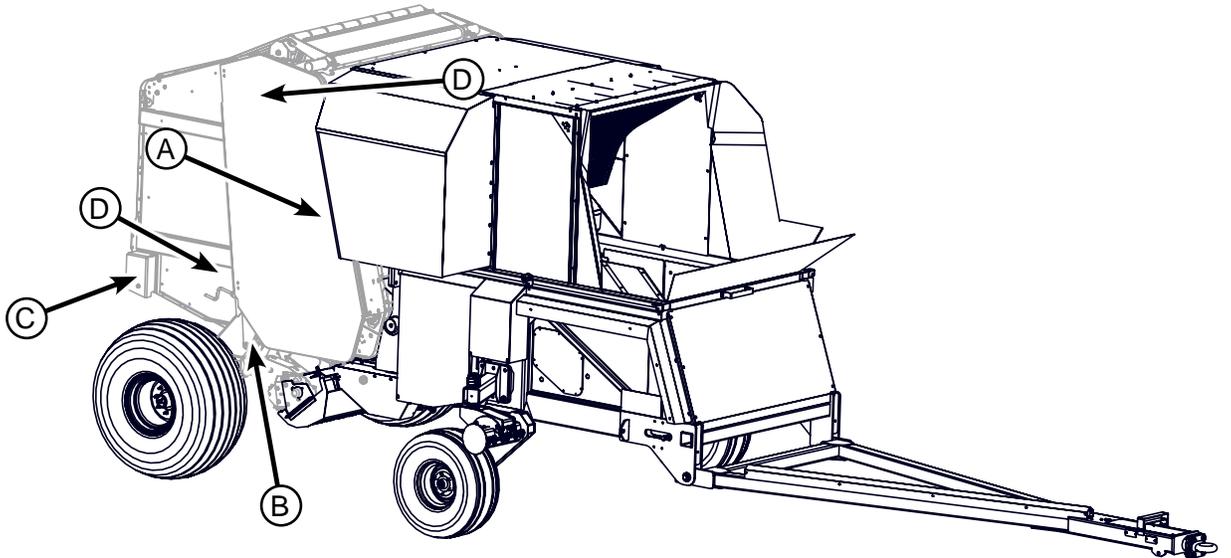
Above normal reading indicates partially shorted motor windings or actuator binding

Press RETRACT key (C) to move actuator to home position.

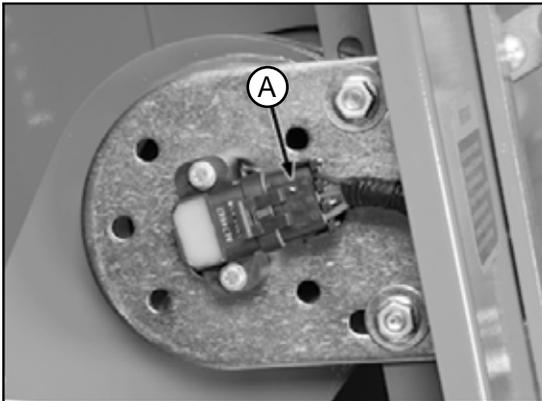
Press BACK key (A) to return to Baler Diagnostics Screen.



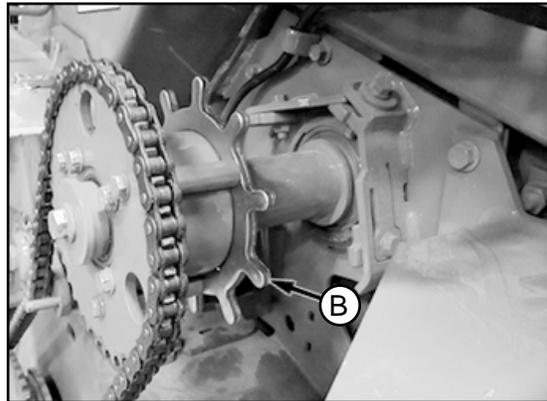
# Baler Sensor Locations



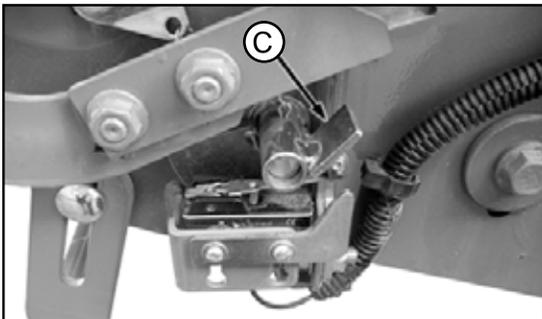
A - Bale Size Sensor



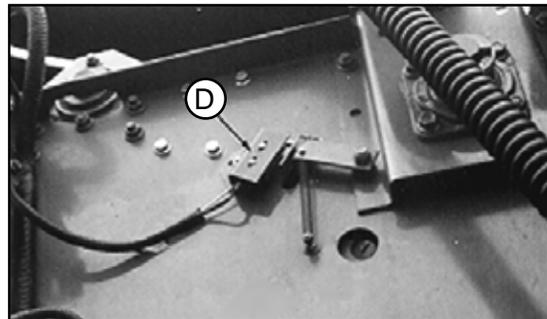
B - Baler Speed



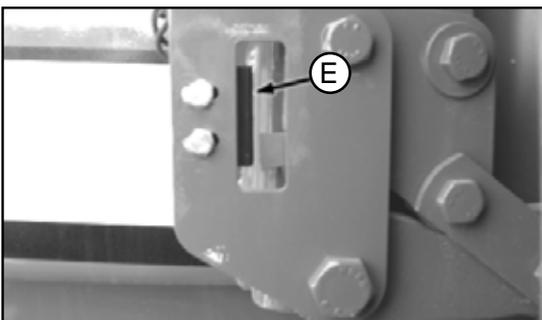
C - Net Wrap Switch



D - Oversized Bale Sensor



E - Gate Latch Sensor (Right Shown)



# SPRB Diagnostics

Select the SPRB Diagnostics from the Main Menu.

The SPRB Diagnostics screen displays electrical diagnostics for the SPRB. The following page displays where the sensors are located at on the SPRB System.



## Feed System Speed:

The Feed System Speed is displayed in RPM's. The system should only be operated at High Idle. Depending on the load the RPM at high idle will range between 200-250 RPM.

## Conveyor Speed

The Conveyor Speed is displayed in RPM's. The system should only be operated at High Idle. Depending on the load, the RPM at high idle will range between 425-500 RPM.

## Slip Alarm Speed

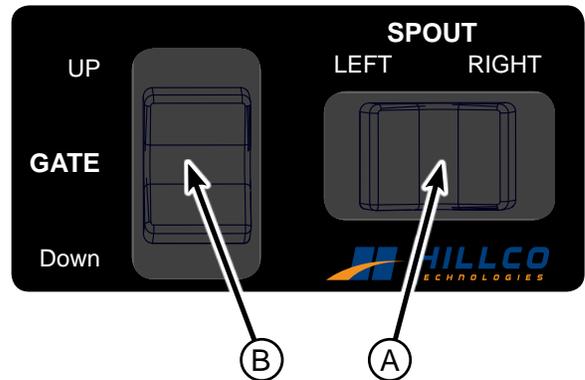
The Slip Alarm Speed is displayed in RPM's. The system should only be operated at High Idle. Depending on the load, the RPM at high idle will range between 100-200 RPM.

## Spout Tip Switch

When the Spout Tip Switch (A) is pressed LEFT or RIGHT the corresponding direction should appear to the right of the "Spout Tip Switch:" text. If switch does not match the direction displayed see trouble shooting guide.

## Baler Gate Switch

When the Baler Gate Switch (B) is pressed UP or DOWN the corresponding direction should appear to the right of the "Baler Gate Switch:" text. If switch does not match the direction displayed see trouble shooting guide.



## Spread Actuator Diagnostics

Use EXTEND key (B) and RETRACT key (C) to operate actuator in both directions. Display must show a current flow reading between 1000 and 8000 while actuator motor is operating during mid stroke (no load).

Below normal readings indicate low combine voltage, or poor or corroded harness connections

Above normal readings indicate binding linkage or partially shorted motor windings

Current spike reading indicates mechanical obstruction to linkage

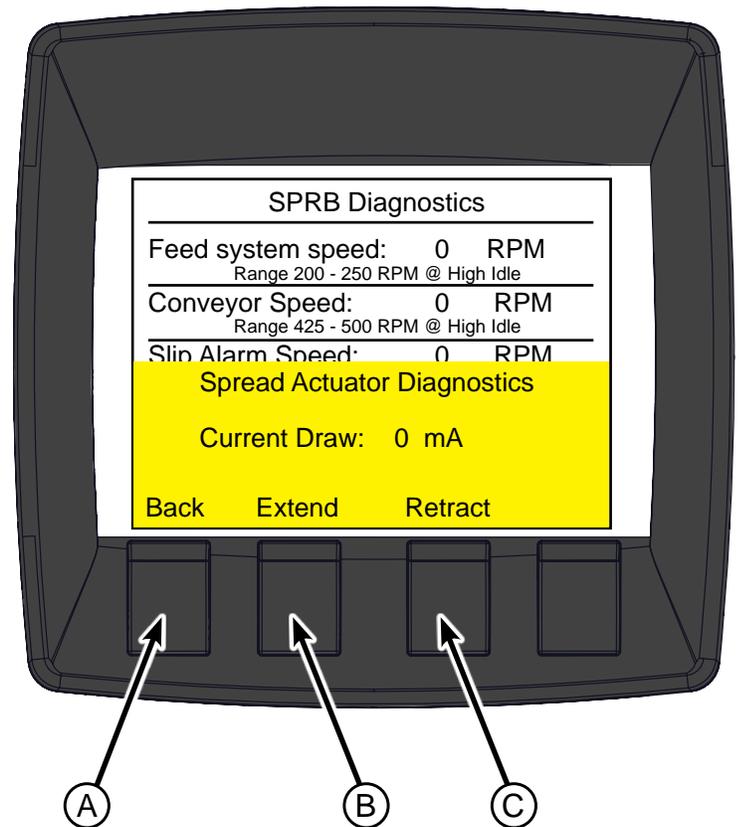
Continue to operate actuator to fully retracted position. Maximum current is 18000 mA. If the actuator draws more than 18000 mA the PDM will shut down the output automatically to protect the system. To reset the output release the button.

Below normal reading indicates bad or corroded harness connections

Above normal reading indicates partially shorted motor windings or actuator binding

Press RETRACT key (C) to move actuator to start position.

Press BACK key (A) to return to SPRB Diagnostics Screen.



## Spout Tip Actuator Diagnostics

Use EXTEND key (B) and RETRACT key (C) to operate actuator in both directions. Display must show a current flow reading between 1000 and 8000 while actuator motor is operating during mid stroke (no load).

Below normal readings indicate low combine voltage, or poor or corroded harness connections

Above normal readings indicate binding linkage or partially shorted motor windings

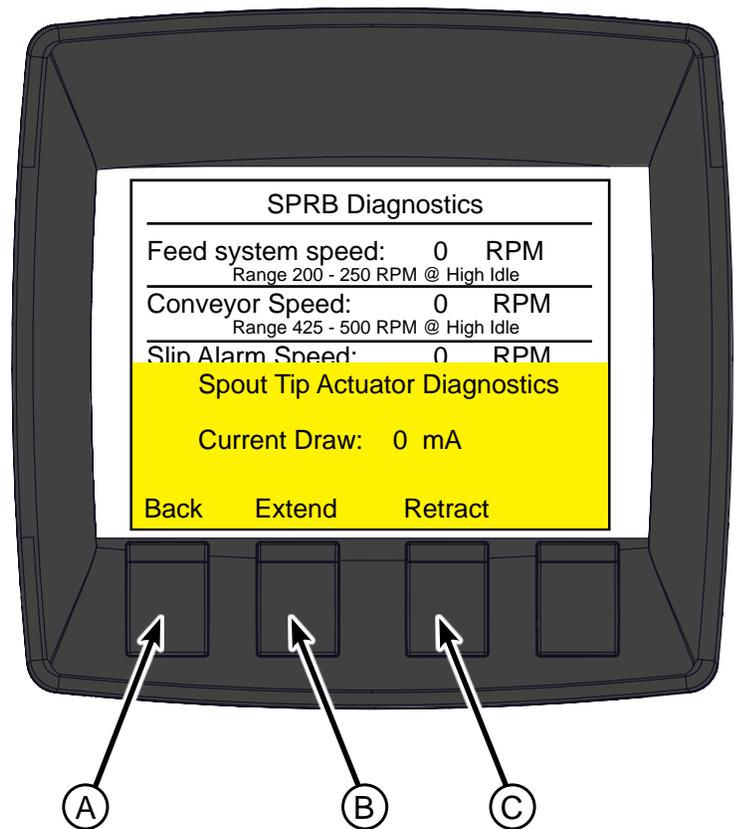
Current spike reading indicates mechanical obstruction to linkage

Continue to operate actuator to fully retracted position. Maximum current is 18000 mA. If the actuator draws more than 18000 mA the PDM will shut down the output automatically to protect the system. To reset the output release the button.

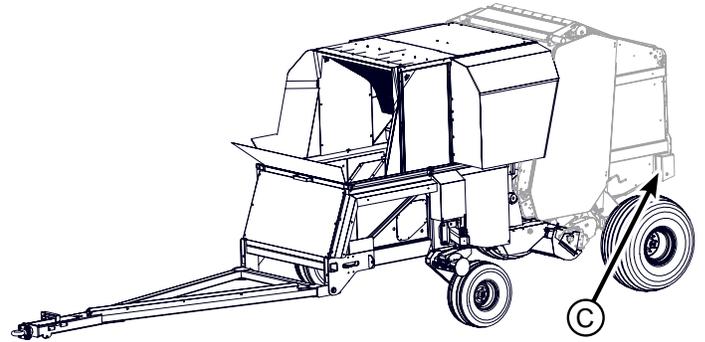
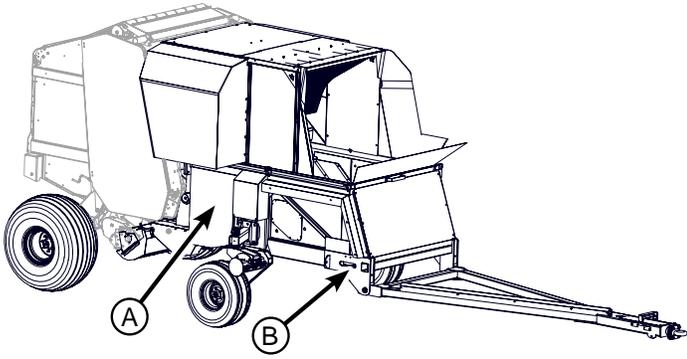
Below normal reading indicates bad or corroded harness connections

Above normal reading indicates partially shorted motor windings or actuator binding

Press BACK key (A) to return to SPRB Diagnostics Screen.

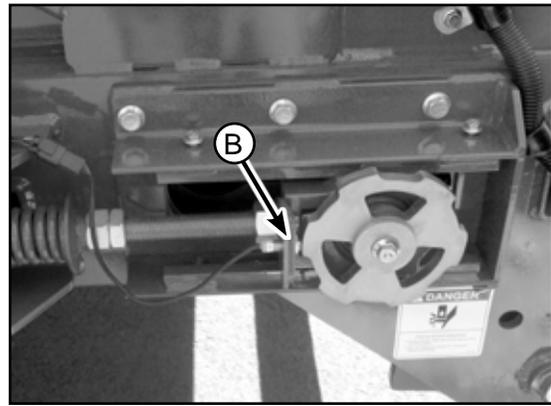
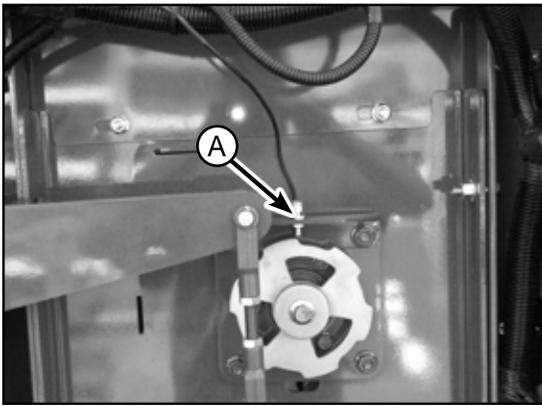


# SPRB Sensor Locations

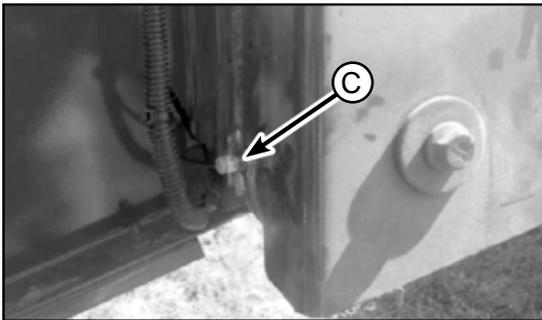


A - Feed System Speed Sensor

B - Conveyor Speed Sensor



C - Belt Slip Sensor



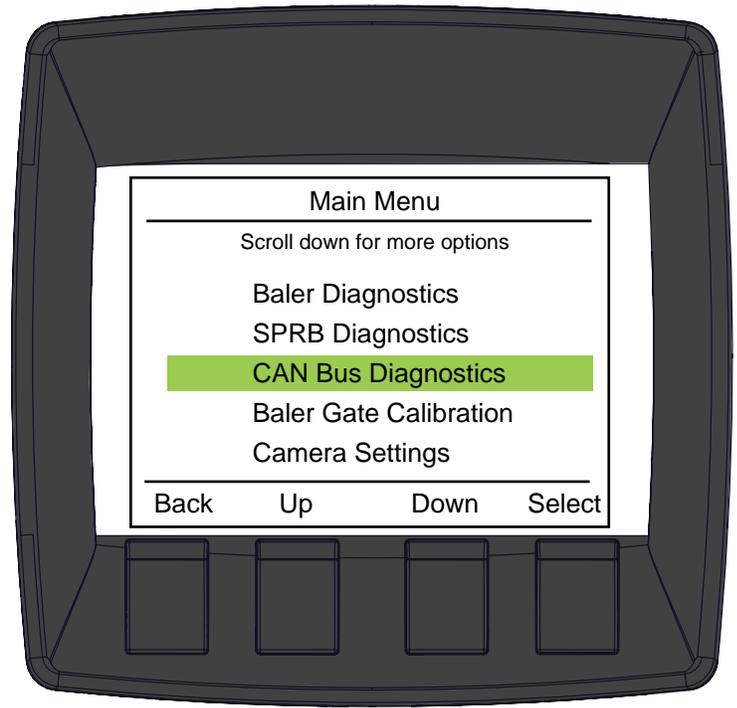
## CAN Bus Diagnostics

Select the CAN Bus Diagnostics from the Main Menu.

The CAN Bus Diagnostics screen displays all diagnostics for the CAN Bus System.

The green light (A) at the upper left corner of the monitor signifies that the Monitor has a CAN Connection with the PDM located on the left side of the combine near the rotor. If the light is not on then there is no CAN Connection with the PDM.

The green light (B) at the upper right corner of the monitor signifies that the Monitor has a CAN Connection with the Controller mounted on the right side of the SPRB Accumulator. If the light is not on then there is no CAN Connection with the Controller.



### Road Mode

The CAN Bus Diagnostics displays if the combine is or is not in Road Mode. In order to operate the SPRB System Road Mode must be off.

### Field Lights

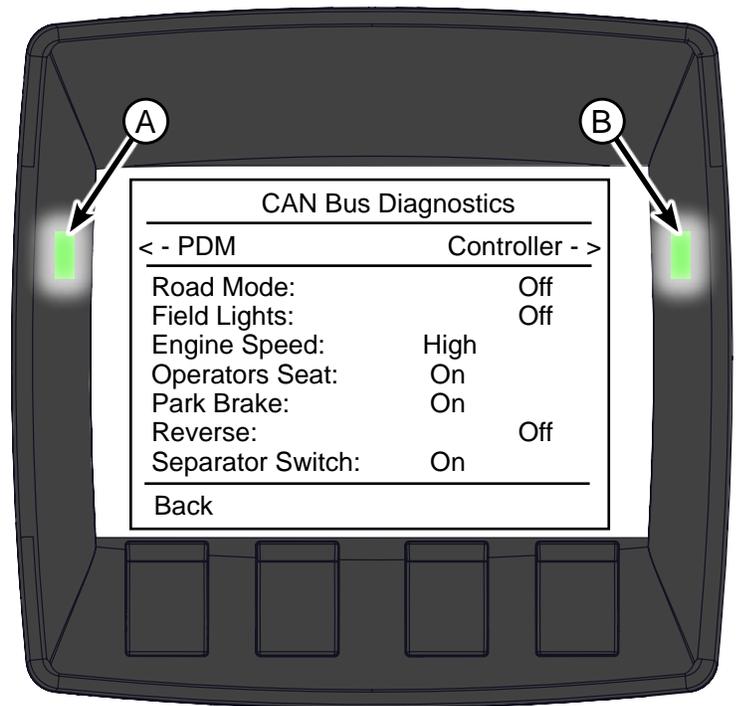
The CAN Bus Diagnostics displays if the combine's field lights are ON or OFF. If the SPRB is equipped with auxiliary lights they should turn on when the combine's field lights are on.

### Engine Speed

The CAN Bus Diagnostics displays the combine's current idle position. The SPRB System should only be operated on high idle. High idle is defined as above 1900 engine RPMs.

### Operators Seat

The CAN Bus Diagnostics display indicates whether the operator is sitting in the combine's seat. If the operator is seated the Diagnostics say ON. If the operator is not seated they say OFF. All spout functions as well as the baler drives will be disabled if the operators' seat is not occupied. A notice will appear on the screen if the operator is not seated and the system is active.



*Continued on next page.*

Continued from previous page.

### Park Brake

The CAN Bus Diagnostics displays if the combine's Park Brake is ON or OFF. The SPRB System auto-eject feature can only be operated if the park brake is off. The combine's park brake will activate if the combine is in neutral for a set period of time. See combine' operator's manual.

### Reverse

The CAN Bus Diagnostics displays if the combine's hydro handle is in the reverse position. The operator will not be able to eject a bale if the hydro handle is in reverse.

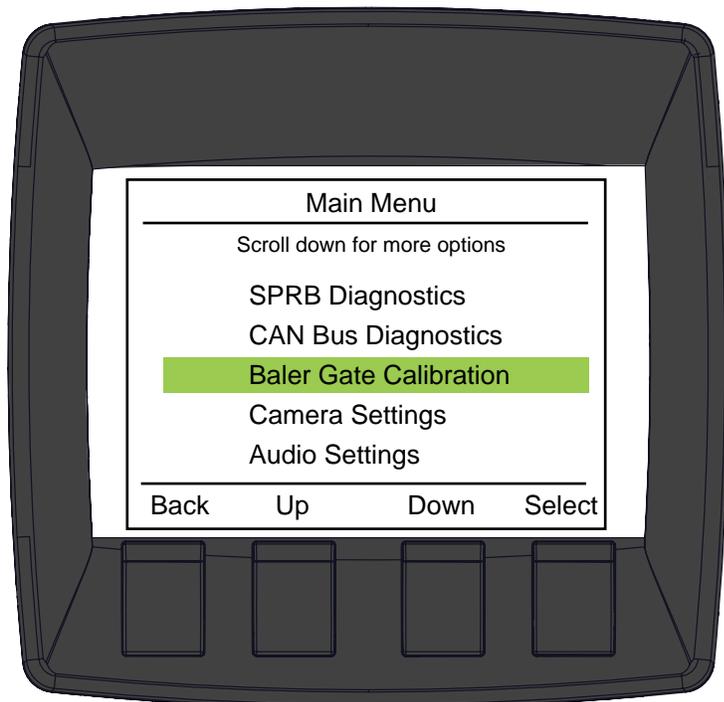
### Separator Switch

The CAN Bus Diagnostics displays if the combine's current separator switch position. The SPRB is powered hydraulically from the combines' separator system. The separator system must be engaged to activate the SPRB's drive pumps.



### Baler Gate Calibration

Select the Baler Gate Calibration from the Main Menu.

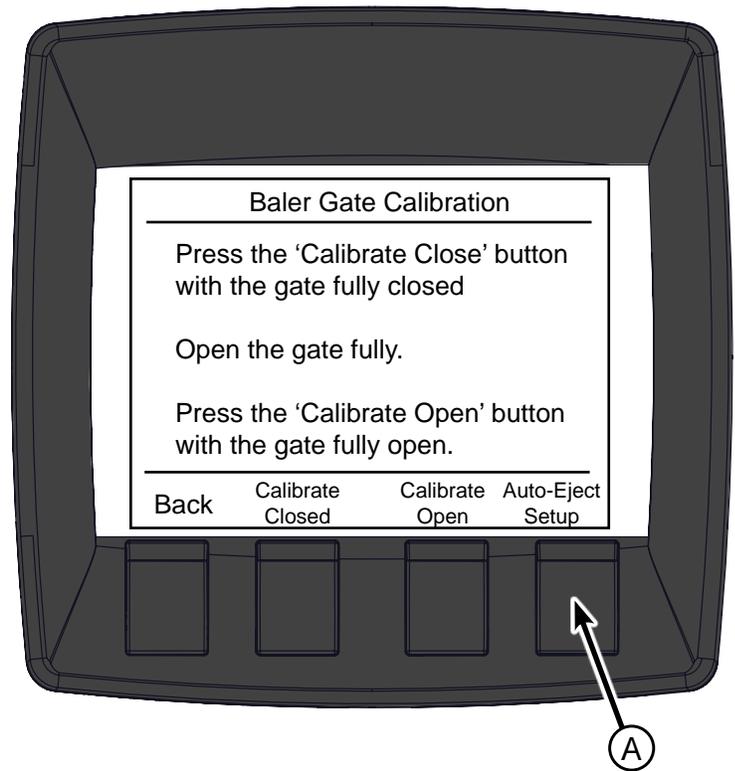


## Baler Gate Calibration

The baler gate is mechanically connected to the bale size sensor. When the gate is closed the sensor output corresponds to a 22 inch bale. When the gate is open the sensor output corresponds to a 75 inch bale.

The software uses these two calibrated points to determine the current size of the bale in the baler chamber.

Follow the on screen instructions for calibrating the Baler Gate.

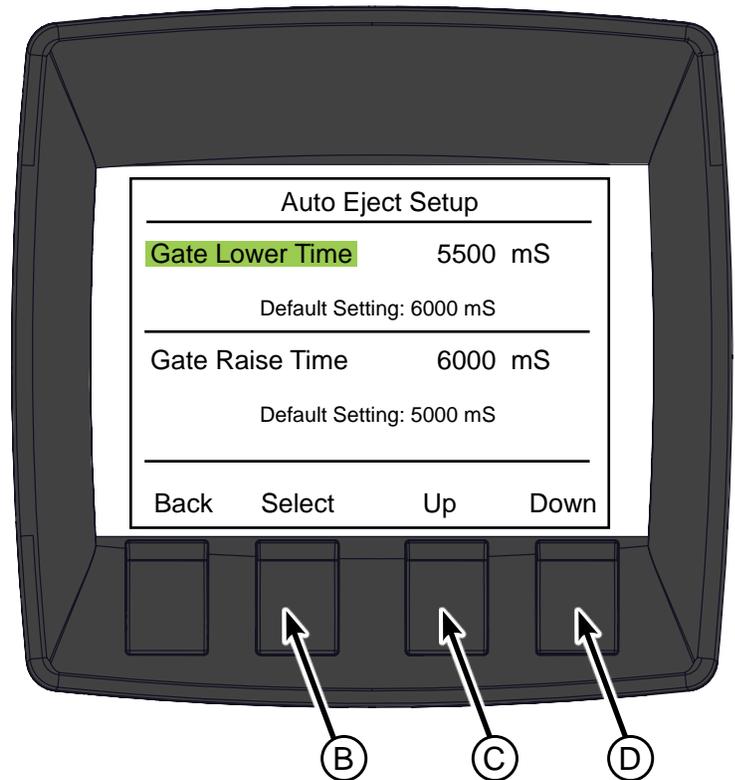


## Auto-Eject Setup

To enter the Auto-Eject Setup press the Auto-Eject Setup button (A) on the Baler Gate Calibration screen.

The Auto-Eject Setup is a programmed length of time for controlling the valve that opens and closes the baler gate. When the system is in Auto mode it will automatically open and close the gate to eject the bale once the bale has successfully been wrapped. When the gate is opening and closing, material is building up in the accumulator. The lowest amount of time possible to open and close the gate reduces the amount of material built up on the accumulator; increasing system capacity.

Use the SELECT button (B) to toggle between Gate Lower Time and Gate Raise Time. Use the UP (C) and DOWN (D) buttons to increase or decrease the time. 1000 mS is the same as one second. The times adjust by 500 mS (.5 seconds).



## WARNING

If the Gate Raise Time is set too low the gate may hit and damage the bale.

## Camera Settings

Select the Camera Settings from the Main Menu.



Use the UP (A) and DOWN (B) buttons to toggle between settings. When the desired setting is highlighted press the ENTER (C) button to toggle ON or OFF or to increase the amount of seconds for the Bale View Timer.

### Bale View on Eject

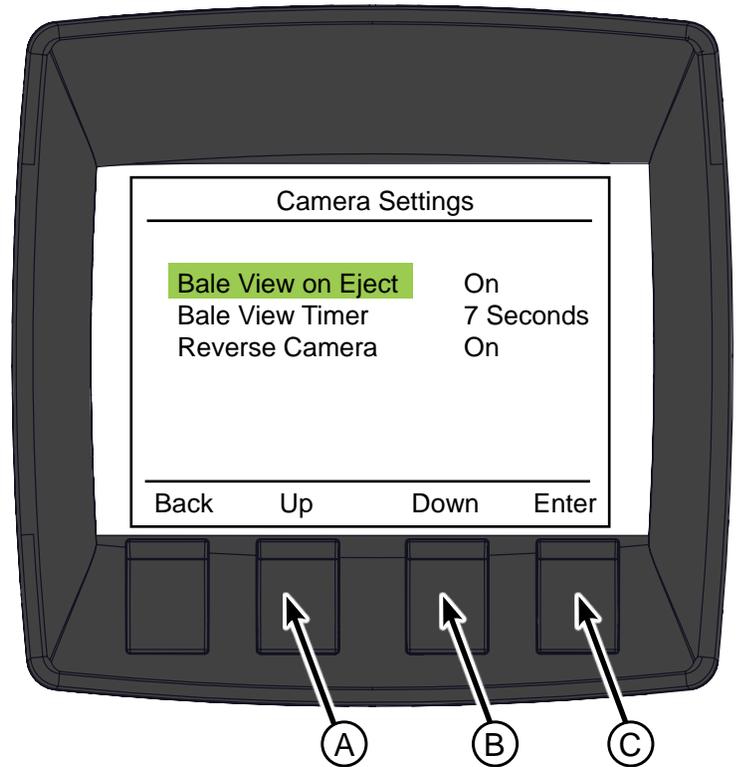
When the Bale View on Eject is ON the monitor automatically switches the camera view to the camera on the back of the baler when the bale gate opens. If the Bale View on Eject is OFF the Monitor will not automatically switch when ejecting a bale.

### Bale View Timer

The Bale View Timer sets the amount of time that the monitor switches to the camera on the baler when a bale is ejected. The range is from 1 to 20 seconds. With the Bale View Timer highlighted, pressing the ENTER (C) button increases the time by one second until the max of 20 is reached. By pressing it again, it will roll over to 1 second.

### Reverse Camera

When the Reverse Camera is ON the monitor automatically switches the camera view to the camera on the back of the baler when the hydro handle is in the Reverse position. If the Reverse Camera is OFF the Monitor will not automatically switch when the hydro handle is in the reverse position.



For the Bale View on Eject and the Reverse Camera features to work, the baler backup camera must be connected to channel #3 in the camera system to make these two features work.

## Audio Settings

Select the Audio Settings from the Main Menu.



Use the UP (A) and DOWN (B) buttons to toggle between settings. When the desired setting is highlighted press the ENTER (C) button to toggle ON or OFF.

### Notify on near full

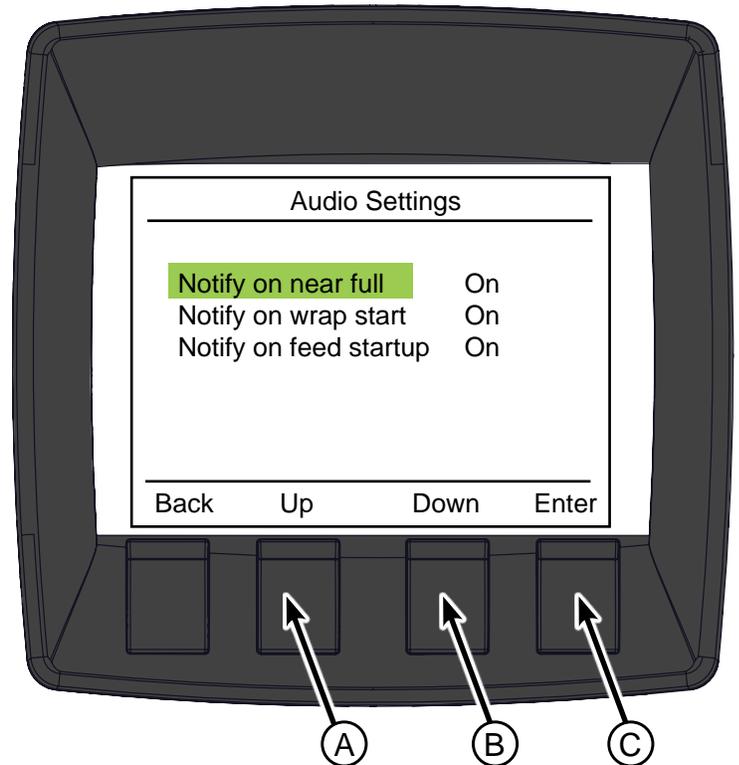
When the alarm is on it will beep twice when a bale is near completion and ready to wrap.

### Notify on wrap start

When the alarm is on it will beep three times when the wrapping process starts.

### Notify on feed startup

When the alarm is on it will beep once when the feed system starts up.



## Configure PDM

Select Configure PDM from the Main Menu.

Note: The PDM should have been configured during the initial Pre-Delivery Inspection by the dealership.

The Power Distribution Module must be configured through the Can Bus during setup or if replaced. Once it has been configured it will not require configuring again.



When the Configuration is Complete a yellow box stating CONFIGURATION COMPLETE will appear.



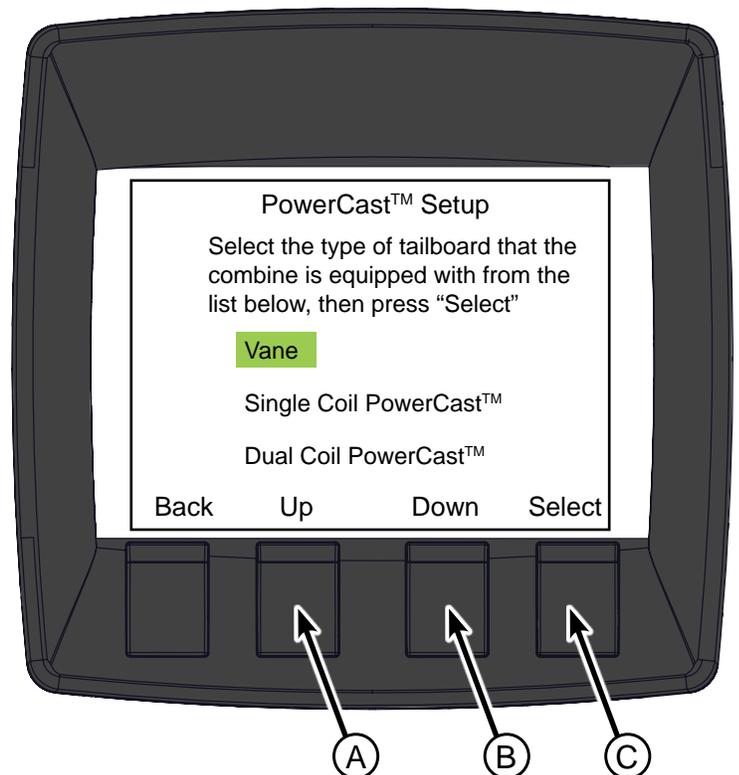
## PowerCast

Select PowerCast from the Main Menu.

The correct tailboard must be selected. If the combine is equipped with a single or dual coil PowerCast tailboard, the PowerCast Spread Mode options will appear on the monitor when the SPRB System is in Spread Mode.



Use the UP (A) and DOWN (B) buttons to toggle to the correct tailboard. Press the SELECT (C) button when the correct tailboard is highlighted.



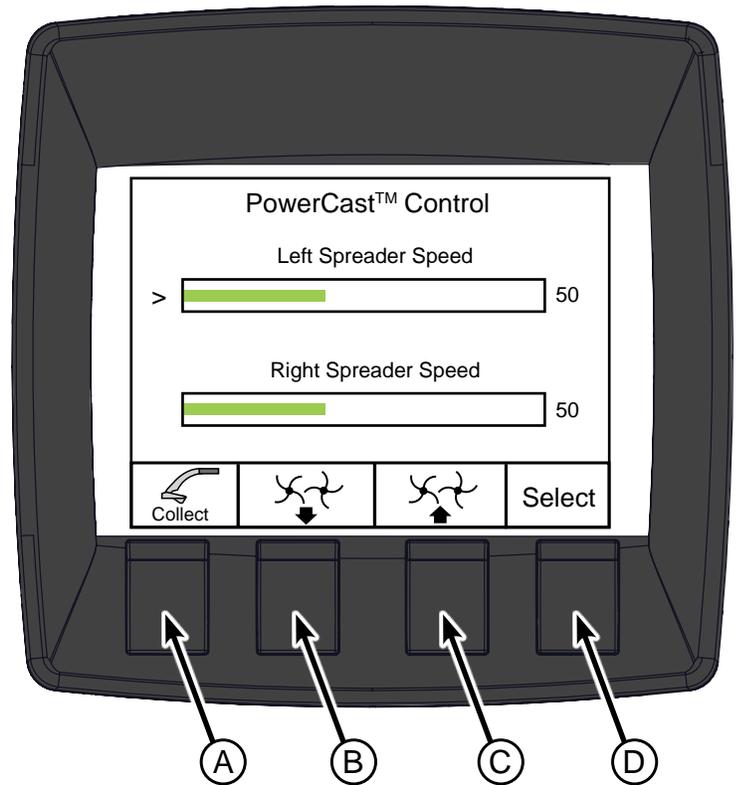
## PowerCast Setup

Combines equipped with both Power Cast tailboards and SPRB systems require that the Power Cast option be disabled in the COMBINE software. This prevents alarms in the combine system from triggering while collecting material. The Power Cast system is controlled through the SPRB display.

When the Spread/Collect Gate is in Spread Mode, the PowerCast Control Screen appears. From this screen you can individually adjust the left and right spreader speeds.

To adjust the speed use the SELECT button to toggle with the arrow (D) between the Left and Right Spreader Speeds. Use the  (B)  (C) buttons to increase or decrease the spreader speeds. To return to Collect mode select the  (A) button.

Collect



## Net Wrap Calibration

Select Net Wrap Calibration from the Main Menu.



## Net Retract/Extend Time:

The wrapping process is automated so the controller must be calibrated to the actuator on the baler. This process must be repeated if the actuator is ever replaced. The Net Wrap Calibration Screen allows the operator to adjust these times. To manually extend and retract the actuator the operator will have to go to the Net Actuator Diagnostics page.

1. From the cab with the engine at idle and the separator off navigate to:

 → Baler Diagnostics → Net Actuator Diagnostics

(the engine is at idle to provide adequate voltage to the actuator).

2. Make sure the Net Actuator is all the way retracted. Press and hold the Extend button (B), an assistant near the net wrap actuator should measure and record the time it takes for the actuator to fully extend. The internal slip clutch in the actuator will make a clicking noise when the actuator has fully extended.
3. Press and hold the Retract button (C). The assistant should measure and record the time it takes the net actuator to fully retract. Enter the recorded times in the Net Wrap Timers Settings screen in mS. (1 second = 1000 mS) Round up to the nearest 500 mS (1/2 seconds) if necessary.

### NOTE:

If the net wrap timers are not properly set then the number of wraps may be incorrect or frequent net alarms may be triggered.

## Wrap Time Calibration:

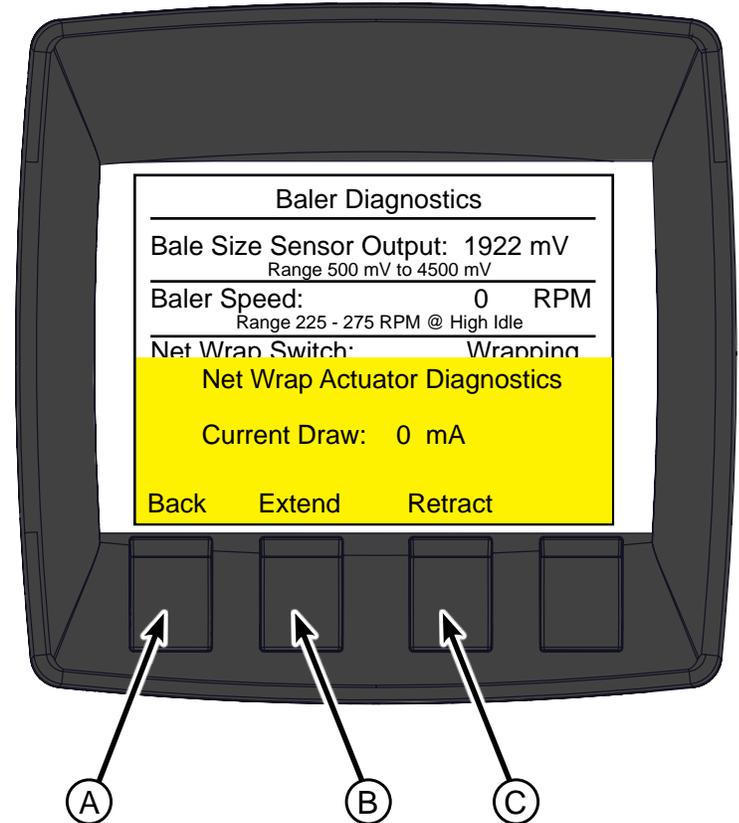
The wrap time calibration setting is used to match the amount of netwrap set to the amount actually applied to the bale. If the bale has fewer wraps than desired, increase the value; if the bale has more wraps than desired, then decrease the setting. Use the following formula to determine the proper value:

$$\frac{\text{Set \# wraps}}{\text{Measured \# wraps}} \times 100 = \text{Wrap Time Calibration}$$

Round up to the nearest whole number.

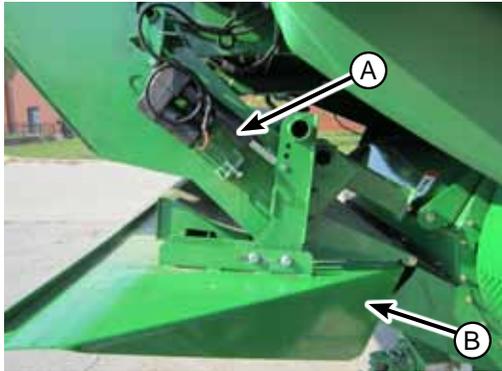
For example, if the Net Wrap setting was at 4 and the actual amount applied was 3.5 you would have the following equation:

$$\frac{4}{3.5} \times 100 = 114$$



# Spout Calibration

Select Spout Calibration from the Main Menu.



In this image the gate is in the spread position

The Spread Gate Timer sets the amount of time it takes for the Spread/Collect actuator (A) to Extend and Retract. The operation is automated so that by pressing the Spread/Collect button once, the controller knows to send the correct amount of amps for a set time to the actuator to fully extend or retract.

Because the process is automated the controller must be calibrated to the actuator on the gate. This process must be repeated if the actuator is ever replaced.

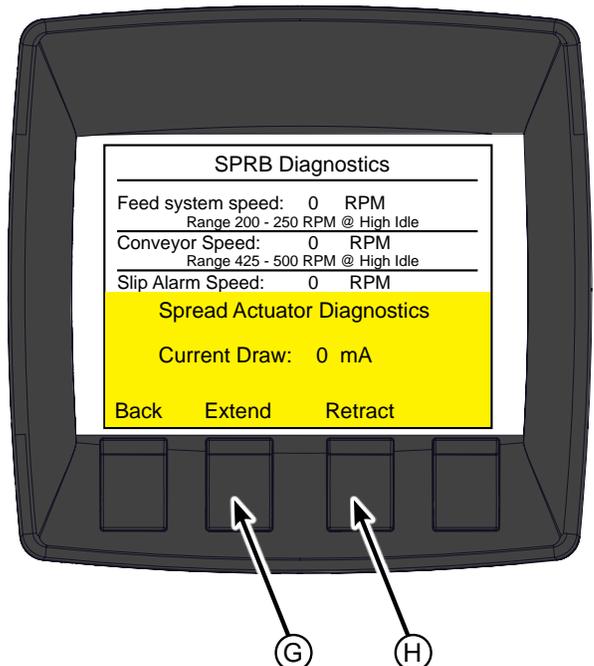
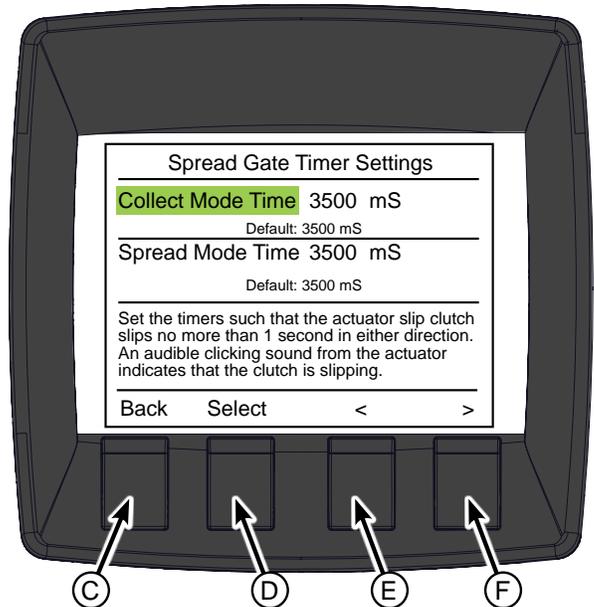
To adjust the timers use the Select button (D) to toggle to the timer you want to change. Use the arrows < (E) and > (F) to adjust the time up or down. Timers adjust by 500 mS units. 500 mS is the same as .5 seconds.

## Setting Collect and Spread Mode Times

1. From the cab, with the engine at idle and the separator off, navigate to:

☰ → SPRB Diagnostics → Spread Actuator Diagnostics Menu

- (the engine is at idle to provide adequate voltage to the actuator).
2. Make sure the Spread Actuator is completely retracted. Press and hold the Extend button (G), an assistant near the net wrap actuator should measure and record the time it takes for the actuator to fully extend. The internal slip clutch in the actuator will make a clicking noise when the actuator has fully extended.
3. Press and hold the Retract button (H). The assistant should measure and record the time it takes the net actuator to fully retract. Enter the recorded times in the Spread Gate Timer Settings screen in mS. (1 second = 1000 mS) Round up to the nearest 500 mS (1/2 seconds) if necessary.



## Service Mode

Select Service Mode from the Main Menu.



Service Mode allows for manual control of the baler gate, accumulator feed system and baler drive. The screen shows the current RPM's.

This mode is for service only.

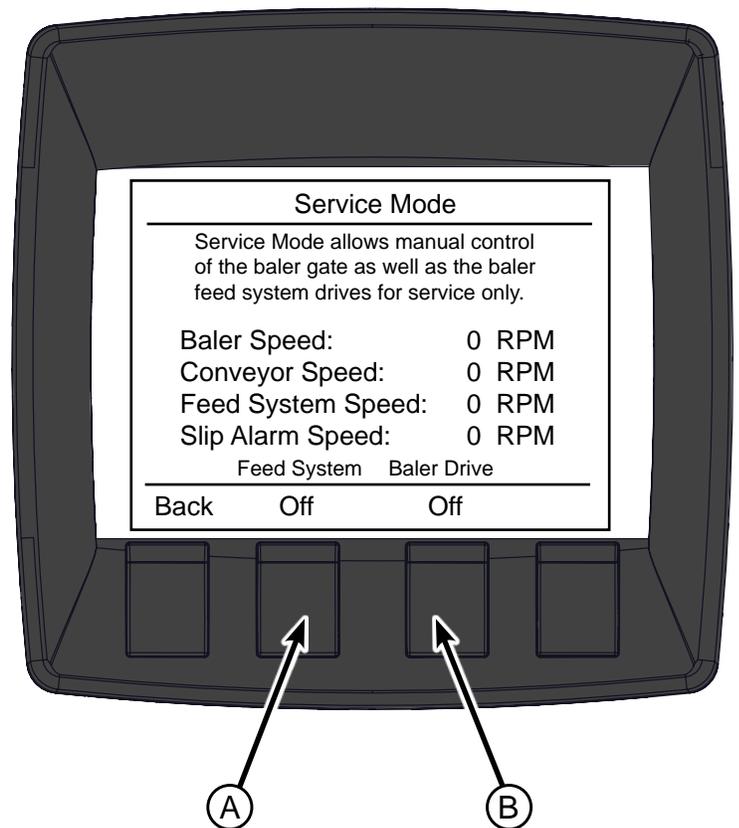
To engage the Feed System press the (A) button. OFF will switch to ON.

To engage the Baler Drive press the (B) button. OFF will switch to ON.

Do not attempt to bale material with the SPRB System in Service Mode.

Alarms may sound but system will not automatically shut down. **All safety overrides are disabled during Service Mode.**

Operator also has manual control of baler gate with the baler gate switches.



## WARNING

When closing Baler Gate always have baler running and combine at high idle. Damage may occur to belts otherwise.

Visually inspect baler gate is closed without pinched belts and all actuators are in the correct position.

## Monitor Warning Messages

### Baler Belts Slipping

If the belts slip for more than 0.5 seconds the baler and feed system drives will automatically shut down. This prevents permanent damage to baler belts.

#### NOTE

When closing Baler Gate always have baler running and combine at high idle. Damage may occur to belts otherwise.



### Low Baler Speed

Low Baler Speed Warning flashes and Baler turns red.

See Trouble Shooting section regarding this issue.



## Baler Gate Ajar

Baler Gate Ajar message appears when one of the baler gate latches is closed and one is open. Feed System will not engage with Baler Gate ajar.

Check gate area for obstruction. See John Deere 569 Baler Operators' Manuals for more information.



## Oversized Bale

Oversized Bale Warning sign appears and baler and feed system automatically disengage. The warning comes on when the tension arm contacts the oversize switch.

Eject the current bale and reduce the size of the bale being made. If problem persists recalibrate the bale size sensor. See John Deere 569 Baler Operators' Manuals for more information.



## Net Wrap Not Cut

While retracting the net wrap actuator, the controller is expecting the net wrap switch to disengage. If the net wrap switch fails to disengage at least one time before the net wrap actuator retract timer ends then the net not cut alarm is activated. Inspect the bale by looking between the baler belts to determine if wrap was applied. If not, inspect the wrap mechanism to make sure there is adequate net wrap available, or that the net is not wrapped around one of the rollers. If wrap was applied but the net was not cut properly adjust the net wrap counter knife and net wrap brake per the instructions in the John Deere 569 operators' manual. Also verify that the net wrap switch is fully released when the paddle is not pressed down by net wrap. If the switch remains engaged when the paddle is not pushed down by net wrap, lower the switch slightly.

To clear the alarm, manually wrap the bale.



## Net Wrap Not Applied

While extending the net wrap actuator, the controller is expecting the net wrap switch to engage. If the net wrap switch fails to engage at least one time before the net wrap actuator extend timer ends, then the net not applied alarm is activated. Inspect the bale by looking between the baler belts to determine if wrap was applied. If not, inspect the wrap mechanism to make sure there is adequate net wrap available, or that the net is not wrapped around one of the rollers. If wrap was applied, adjust the net wrap switch upwards towards the paddle.

See the John Deere 569 Operators' manual for more information.

To clear the alarm, manually wrap the bale.



## CAN Connection With Combine Lost

The SPRB system requires information from the combine to operate properly. If the connection with the combine CAN bus is not functioning properly, operation of the SPRB system is prevented.

If this alarm appears, check the electrical connection in the cab below the radio where the Green star usually plugs in. The Green star will plug into an adapter on the SPRB harness.



# Operation

## System Power-Up

1 - Start the combine's engine (A) following the "Operating the Engine" section in the combine's operators manual.

Sound horn before starting engine to warn others to stay clear from machine.

To avoid the possibility of personal injury or death, start engine **ONLY** from operator seat.

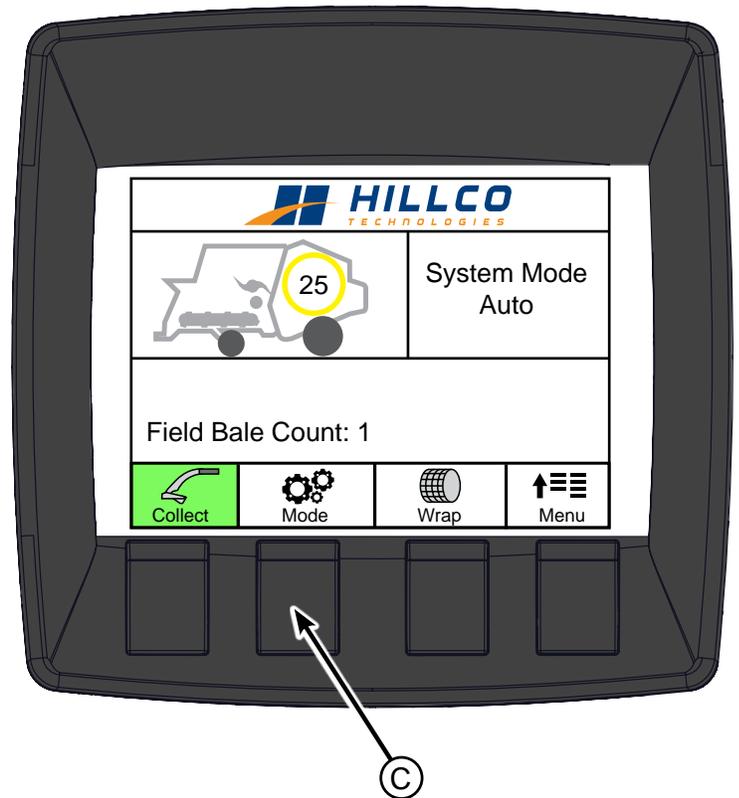
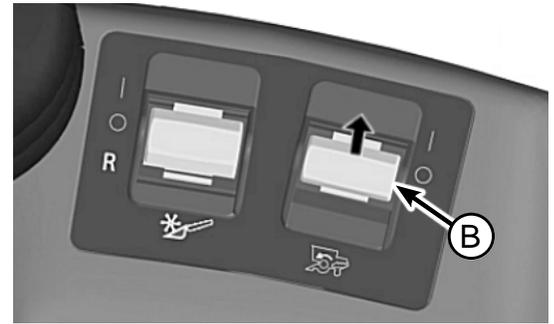
2 - Engage Separator Engage Switch (B) following the "CommandTouch Armrest Console" section in the combine's operator's manual.

### System Requirements:

- Engine is running at low idle.
- Separator engage switch must be OFF to start machine.
- Road transport disconnect switch must be in field position.

3 - Verify that the SPRB system is in Collect mode (See Spread/Collect Gate Section on the following page). From this point onward the SPRB system will be activated automatically by the Accumulator level sensors provided that the following conditions are met:

- Combine Operator is seated
- Combine engine is at high idle (>1900 RPM)
- Baler gate is closed



## WARNING

If the Spread Collect gate on the SPRB is in Collect Mode the Feed System and baler may engage if the following criteria are met:

- Material in the Accumulator is above the top sensor.
- Material in the Accumulator is above the middle sensor if bale is 90% of desired size.
- Material in the Accumulator is above the bottom sensor if in Half Accumulator Mode and Continuous Baling Size value is low.

## Spread/Collect Gate

The Spread/Collect Gate diverts the material from the back of the combine into either the SPRB's Accumulator or spreads it with the tailboard. The operator controls the spread collect gate from the monitor by pressing the (B) button. If the background is green (A) then the gate is in Collect Mode. When in Spread Mode the monitor screens will vary depending on whether the combine has a vane or PowerCast Tailboard. With a Vane tailboard you will see the home screen and a white background behind the Spread/Collect Gate button. With a PowerCast tailboard the the PowerCast Controls screen appears.

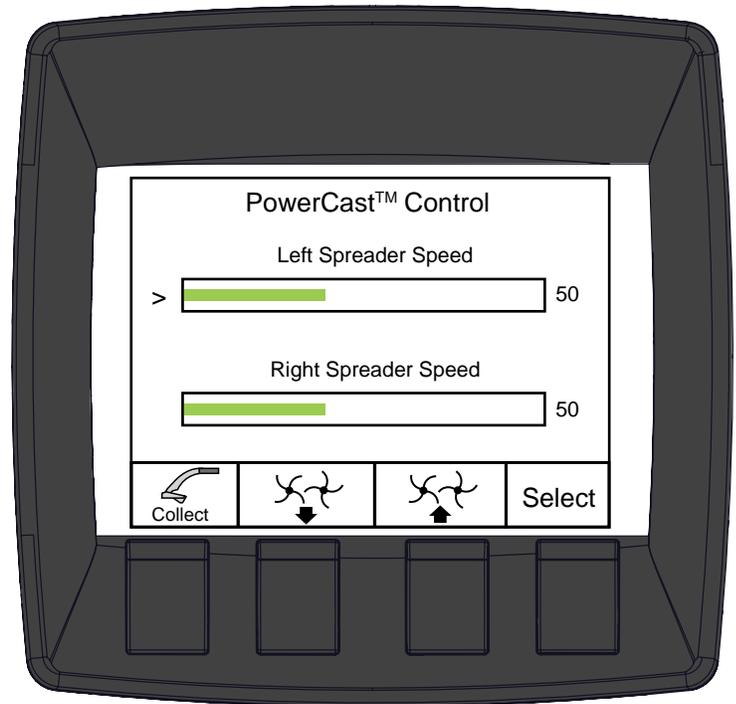
### Vane Tailboard

A Green backlight icon (A) indicates when the Spread/Collect Gate is in Collect Mode. To switch from Collect Mode to Spread Mode press the bottom left button on the monitor (B). Press the button again to switch back to Collect Mode. When in Spread Mode the green backlighting disappears.

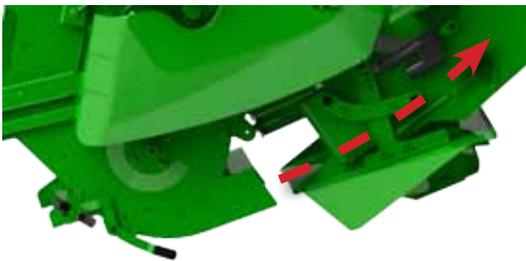
### PowerCast Tailboard

A Green backlight icon (A) indicates when the Spread/Collect Gate is in Collect Mode. To switch from Collect Mode to Spread Mode press the bottom left button on the monitor (B). When in Spread Mode the screen changes to the PowerCast Control screen so the operator can control the PowerCast Tailboard.

Note: The original John Deere PowerCast controls are disabled and instead are controlled through the Hillco SPRB Monitor.



Collect



Spread Mode



## IMPORTANT

Harvesting in wet conditions may cause the material to plug the chopper when changing from Spread to Collect or vice versa.

# System Mode

## Auto Mode

When in AUTO Mode the text AUTO (A) will appear below the System Mode. In Auto Mode the Feed System and baler automatically turn on and off and when the bale is the desired size it is automatically wrapped & ejected.

See Auto Mode Settings for additional information.

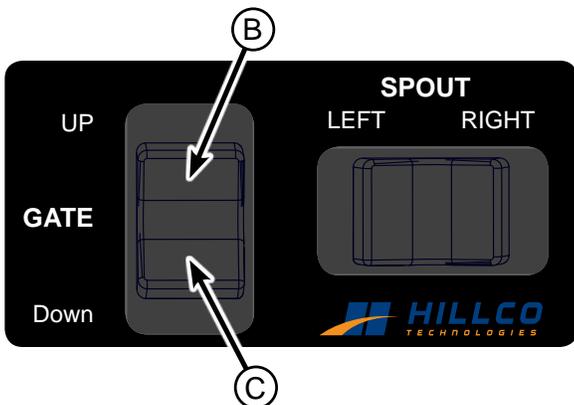
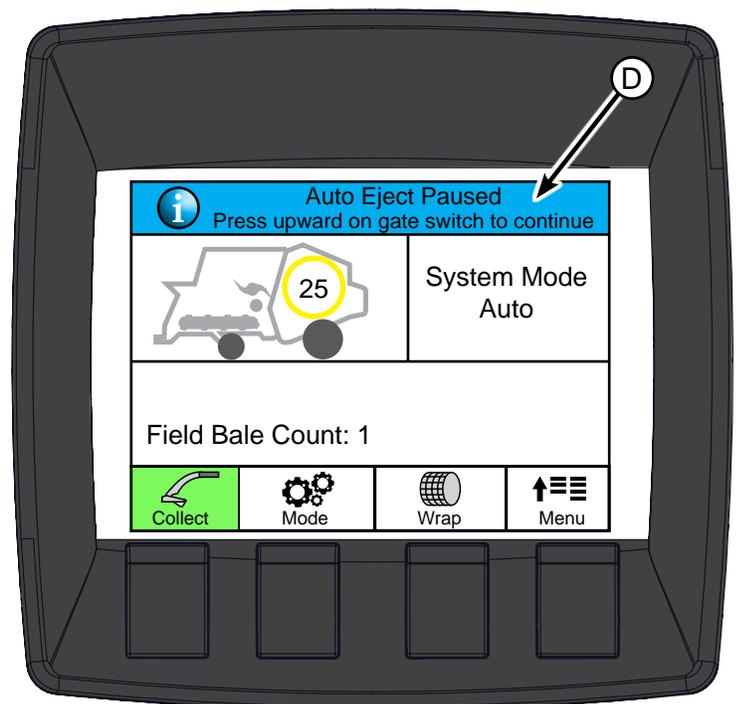
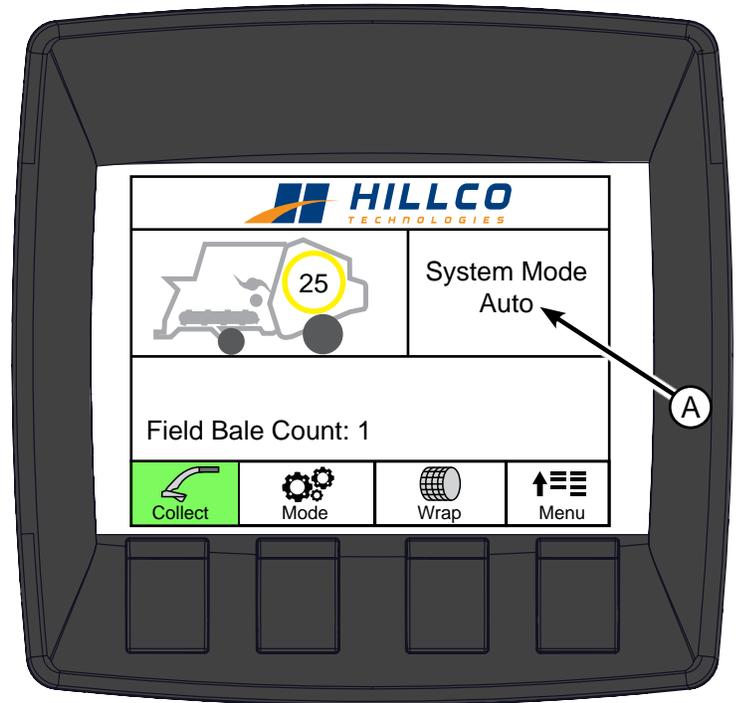
In Auto Mode, when a bale has finished wrapping, the monitor will briefly display "Eject Bale" and will then automatically eject the bale.

## Pausing Bale Ejection

Press down on the gate button (C) at any bale size to pause the ejection. The baler and feed system will continue to build the bale to the desired size and wrap the bale. The wrapped bale will then stay in the chamber and two messages will flash, EJECT BALE and AUTO EJECT PAUSED (D) until the operator pushes the Gate Up button (B).

With a fully formed bale in the chamber, material will continue to build up in the Accumulator.

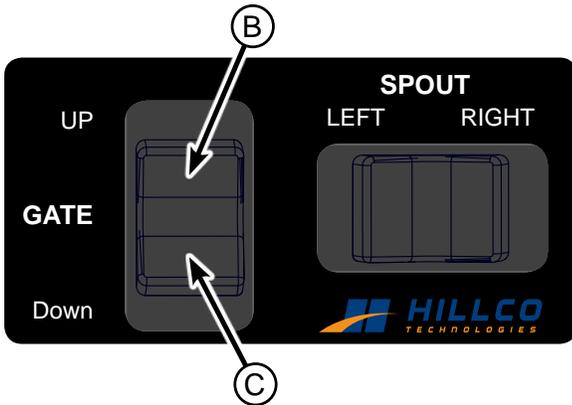
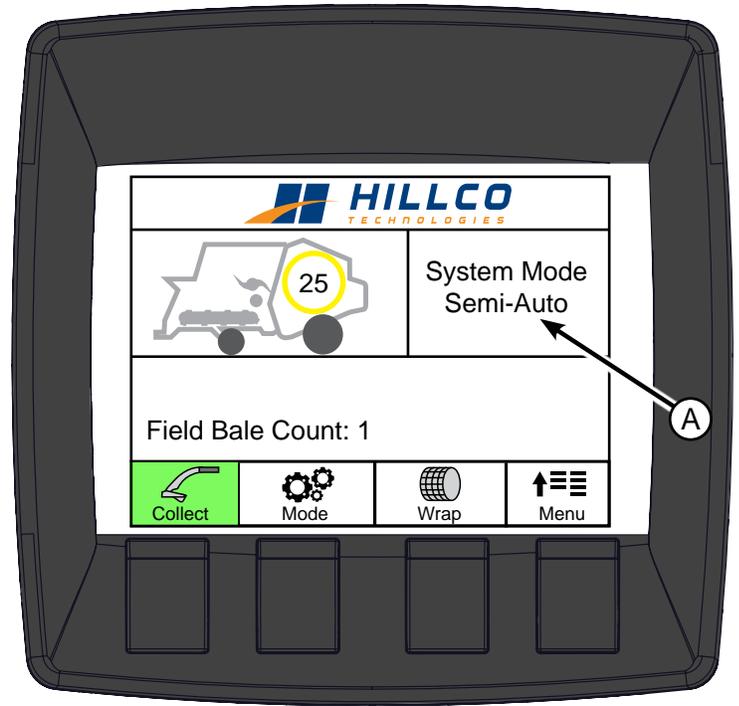
This feature is useful on outside rounds of fields so that a bale is not dumped in a spot where it will be in the way.



## Semi-Auto Mode

When in SEMI-AUTO Mode, the text SEMI-AUTO (A) will appear below the System Mode. In Semi-Auto Mode, the Feed System and baler automatically turn on and off. When the bale is the desired size it is automatically wrapped. Once wrapping is complete a message will appear in the information bar saying "EJECT BALE". The operator can then press the Gate UP button (B) to eject the bale.

If the operator decides to not eject the bale because of the terrain, or if it will be in the way, they can continue to collect residue in the Accumulator.



## Manual Wrap

To manually wrap a bale, press the (A) button on the monitor. In order for a bale to be wrapped it must be bigger than 40 inches.

To adjust the automatic bale wrap size, go to the Main Menu and select Bale Size Setting. The size is in inches. To adjust the number of wraps, go to the Main Menu and select Net Wrap Setting

The green background behind the Wrap Icon (A) indicates the netwrap switch is depressed and the baler is wrapping.

The Bale will turn green (B) when the system is trying to wrap a bale. The green background icon (A) is the feedback saying that the system is actually wrapping.

Note: It is normal for the green background to flicker while wrapping.

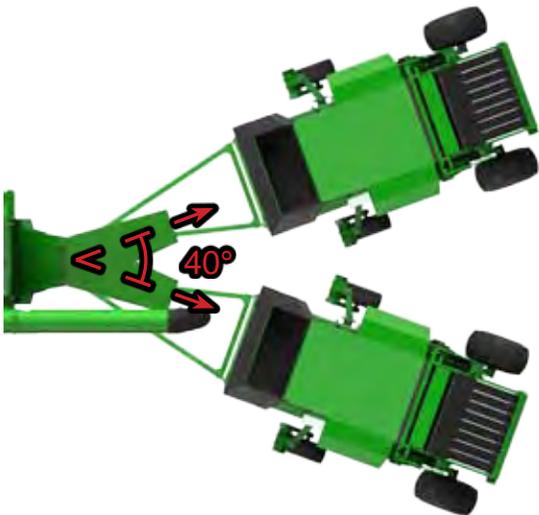
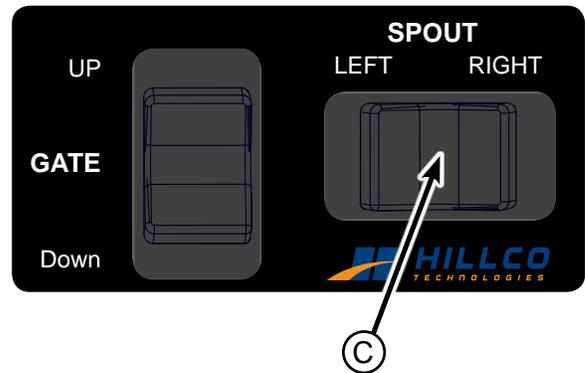


## Spout Rotate

To Manually rotate the spout, press the spout rotate rocker switch (C). Pressing the switch to the left rotates the spout to the left direction. Pressing the switch to the right rotates the spout to the right direction. The spout can rotate a total of 40°.

Criteria to rotate the spout:

- Operator Seated in the seat
- Separator engaged



## Baler Gate

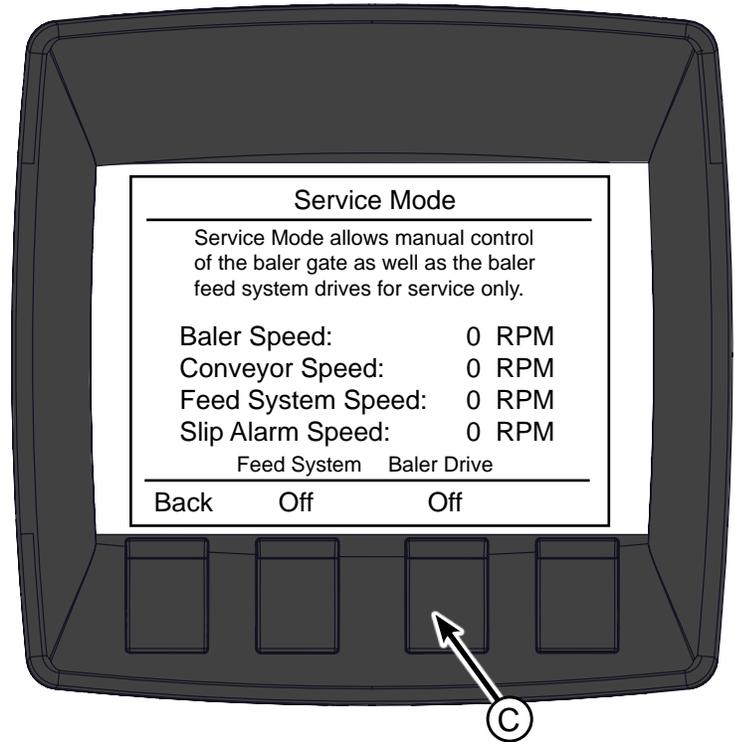
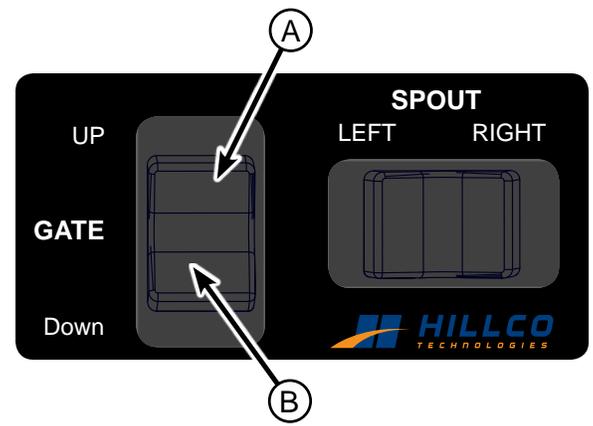
In Auto Mode the Baler Gate will automatically open and close to eject bales. In Semi-Auto Mode the System will wait to eject until the operator hits the Gate Up button (A) and then it will automatically close when the bale has ejected.

To manually open or close the gate the operator must enter Service Mode. To do this go to:

 → Service Mode  
Menu

- Once in Service Mode engage the combine's Separator. This provides hydraulic flow because the hydraulic pump is driven off the straw chopper.
- Engage the Baler Drive (C) by pressing the button below the text. The OFF will turn to ON and the baler will engage.
- Increase engine speed to high idle (>1900 rpms)
- Press Gate Up (B) to open the gate.
- Press Gate Down (C) to lower the gate. Engine must always be at HIGH IDLE when closing the gate.

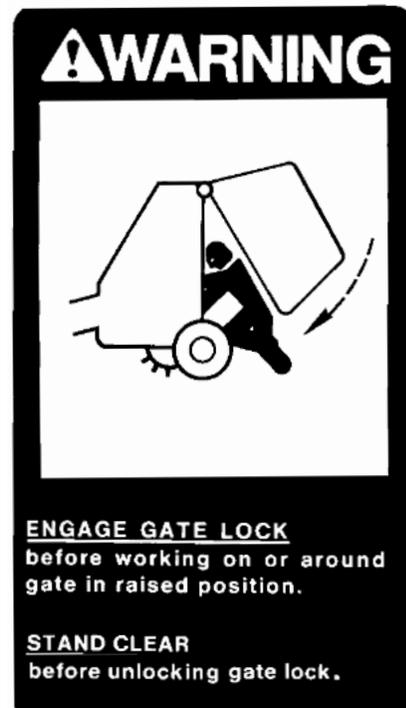
Note: If there is an unwrapped bale in baler and the gate is opened the unwrapped bale will be ejected.



### NOTE

Baler Gate cannot be opened manually when in Auto Mode or Semi-Auto Mode. Baler Gate can only be opened manually in Service Mode.

When closing Baler Gate always have baler running and combine at high idle. Damage may occur to belts otherwise.



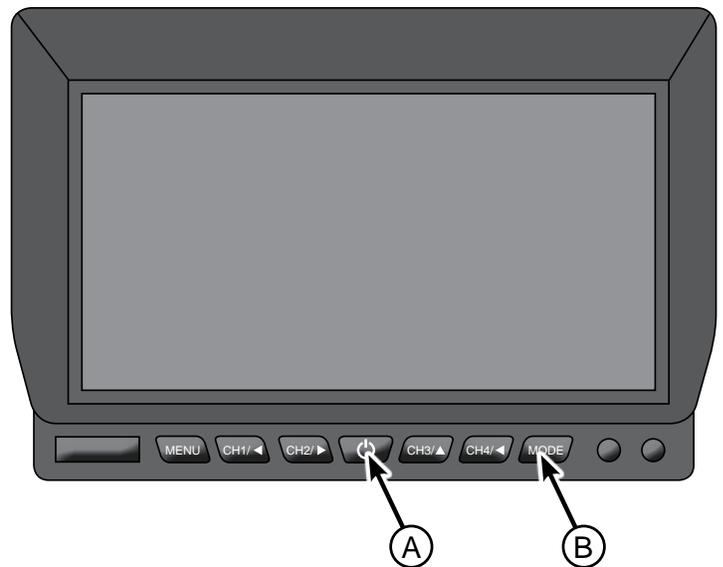
## Camera Monitor

The Monitor allows the operator to use three cameras to view the hitch, into the accumulator, and behind the baler.

To use the Camera Monitor:

- Power Up Monitor by pressing the Power Button (A).
- To toggle between the cameras press:
  - CH1 button for the camera mounted to the Hitch
  - CH2 button for the camera looking into the Accumulator
  - CH3 button for the camera behind the baler.
- By pressing the Mode button (B) the operator can toggle between the channels and also change the view. The view options allow the operator to see two, or all three camera views at one time.

Note: Camera may be distorted when engine is off.



## Harvesting Hints

Don't bale green or wet material:

Typically bales made with over 25% moisture will be prone to molding and high dry matter losses. It is up to the operator to determine the storability of the crop being harvested.

Don't bale in the rain:

Crops with high surface moisture or baling in the rain may cause frequent net wrap problems. The moisture is transferred from the crop to the baler belts and this causes the net wrap to cling to the belts and baler rollers instead of adhering to the bale.

In hilly terrain watch for bales being automatically ejected.

Use semi-auto gate mode when harvesting in hilly terrain to avoid bales rolling. Disabling the bale kicker may be necessary as well.

## Recommended Combine Settings

Setting	Pros	Cons
Chopper Speed	High chopper speed improves material conveyance in windy or high moisture conditions.	Increases horsepower consumption. In corn cobs can damage shoe elements .
Chopper Knives	Increasing knife engagement improves SPRB feeding .	Material that is too fine results in bales that are difficult to handle .
Corn head speed	Slowing down the header can increase the amount of material collected in cob dominant corn.	If the header is operated to slow plugging can occur.
Corn Head Deck Spacing	Closing the deck plates can increase the amount of material collected in cob dominant corn.	If deck plates are too narrow or not set up per the header operators' manual plugging may occur.

## Recommended SPRB System Settings

Setting	Recommendation
Feed Roller Height	The feed rollers can be adjusted vertically from 6 inches to 9 inches of clearance, they should be operated as high as conditions will allow. If plugging occurs behind the rollers they can be lowered but baler productivity will be reduced.
Wind Guard Angle	The angle of the wind guard behind the feed rollers can be adjusted to compensate for the feed roller height. <u>The wind guard should be at high as possible without contacting the baler frame.</u>
Spout Angle	The spout angle can be adjusted to account for combine tire options. The spout should be angled so the spout <u>tip pivot structure is parallel with the ground.</u>
Spout Tip Angle	The spout tip is supported by cables or chains. The tip angle should be adjusted so it is angled slightly downward to help control the crop exiting the spout.

## Baler Setup

The baler should be setup per the John Deere operators' manual.

The bale density adjustment should be set at the maximum (Completely screw in the adjustment knob).

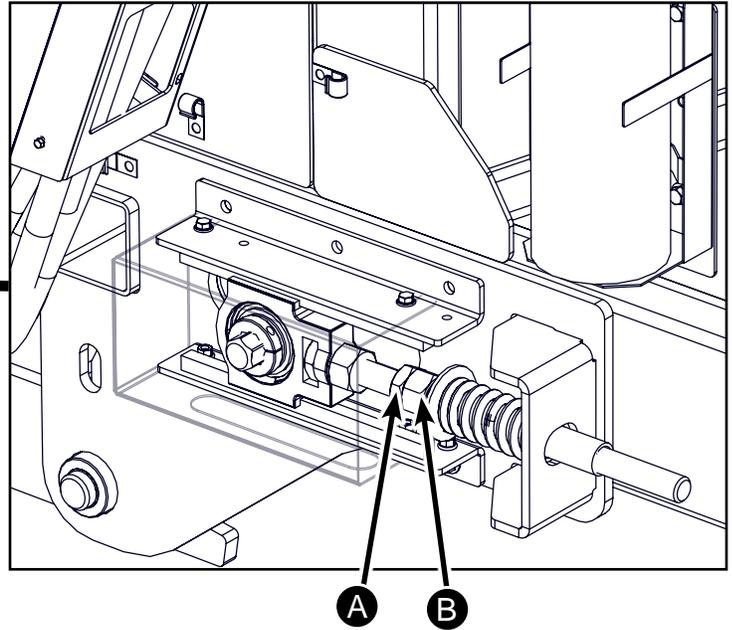
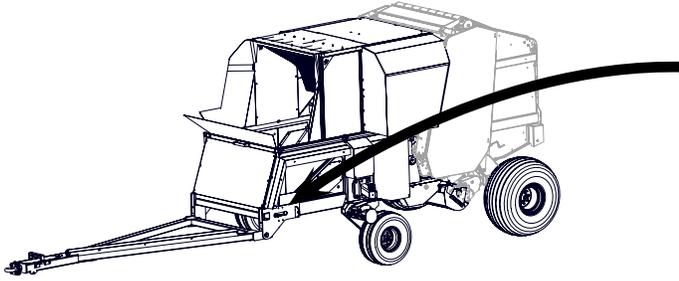
### Important!

The net wrap mechanism on new balers is not properly set up from the factory. If the baler is equipped with the twine components they will have to be removed.

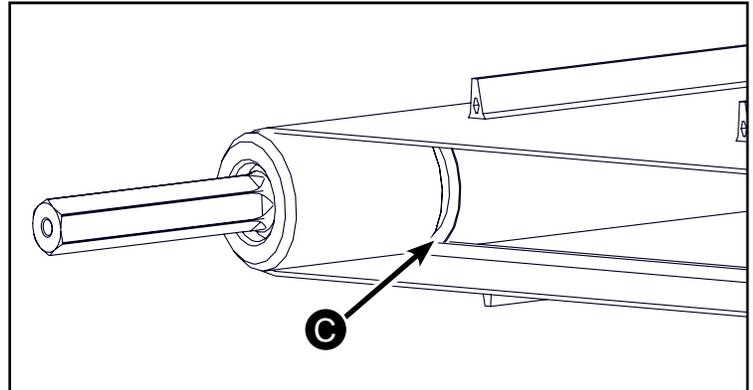
# Adjustments

## Belt Tension

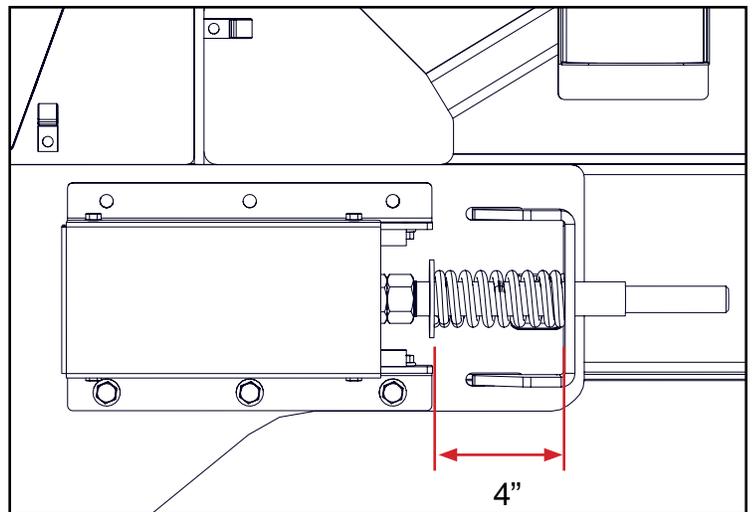
The conveyor belt tensioner is located at the front of the accumulator.



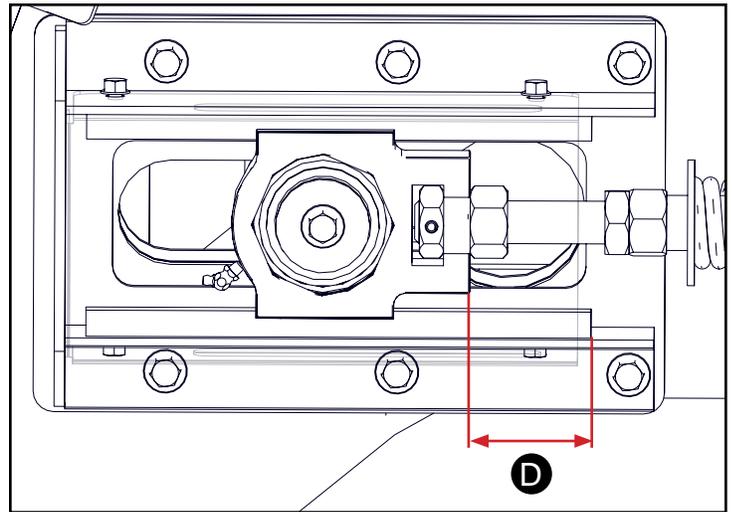
1. Loosen the conveyor belt tensioning jam nuts (A) and (B) until there is approximately 10 inches of sag below the SPRB's frame.
2. Ensure that the v-belt rib is sitting in the v-guide grooves (C) on both the front and rear rollers. If they are not slide the belt until the v rib is in the groove.



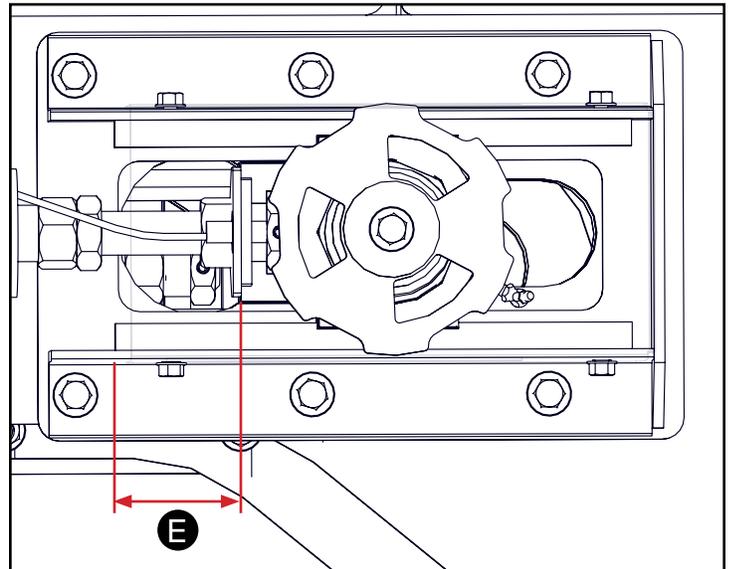
3. Tension the belt evenly, using the belt tensioning nuts, by moving from side to side and keeping the dimension from the guide washer to the adjusting bracket within  $\frac{1}{4}$ " of each other through the tensioning process. Continue tensioning until this dimension is 4" on each side.



- On the left side (v-guide side) of the SPRB, measure the distance from the rear surface of the take up bearing casting to the end of the key stock (D) that it is riding on and note this dimension.



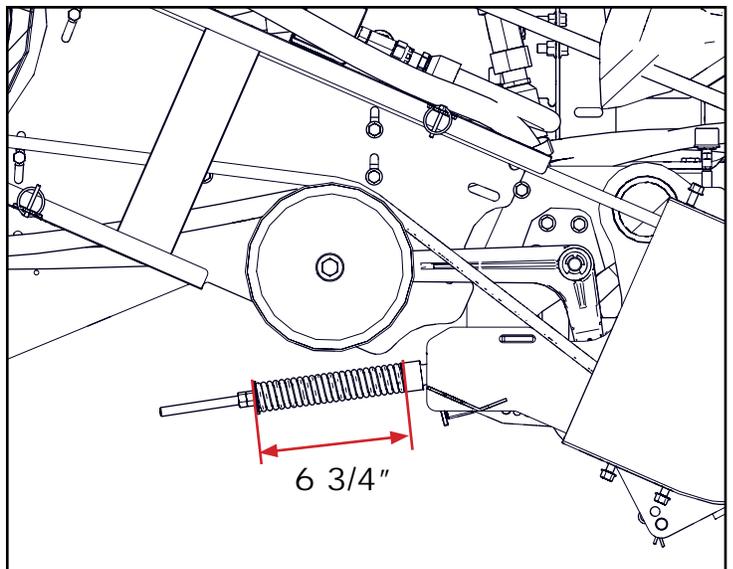
- Move to the right side of the SPRB and loosen the belt tension until the measurement from the take up bearing casting to the end of the key stock (E) matches that of the left side (D). This ensures that the rear roller and front roller are parallel to each other. Make sure to measure from back of bearing casting and not the sensor mount. As a reference only this dimension should be approximately 4 3/8" on the right side.
- Operate the SPRB feed system empty, first at low speed, then at high speed to ensure that v-belt rib stays in the groove.
- Do not concern yourself that the sag in the conveyor belt under the left and right side of the SPRB frame is not the same.



The key to proper belt tracking is keeping the front and rear conveyor rollers parallel. It is not critical that each side of the belt have equal tension. The v-guide side of the belt does not stretch as quickly as the right side of the belt and if you try to equally tension the belt it results in the right side of the roller being further from the rear roller than the left side. This lack of parallelism causes the belt to track to the left side (v-guide side) of the machine.

### Hydro Pump Drive Belt

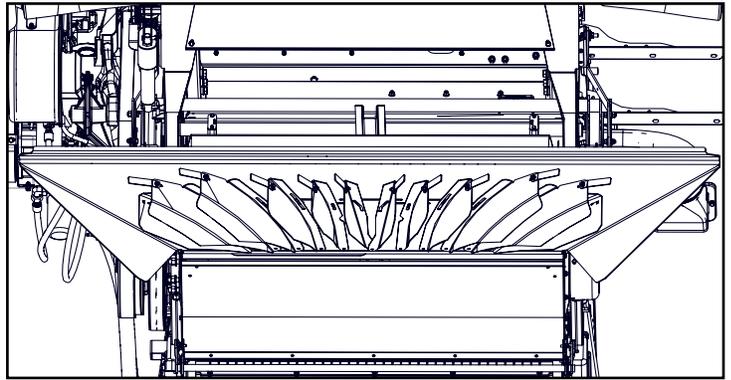
The drive belts should be properly tensioned when the spring is compressed to 6 3/4".



## Tailboard Adjustment

### Vane Tailboard

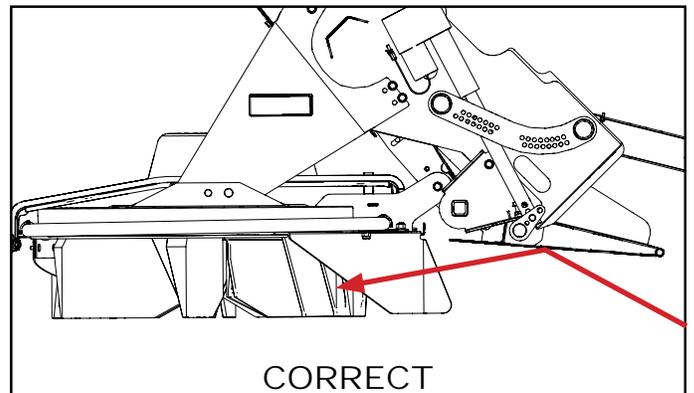
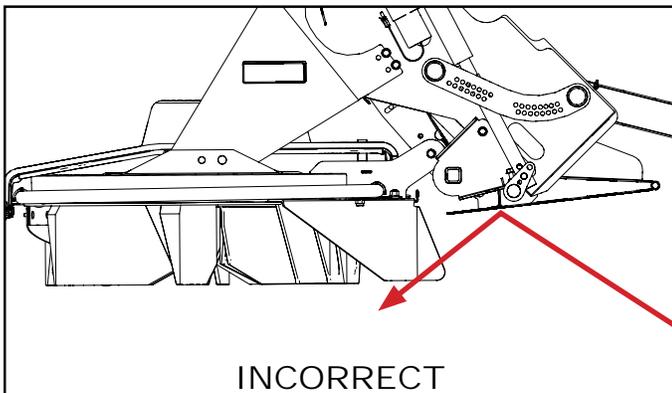
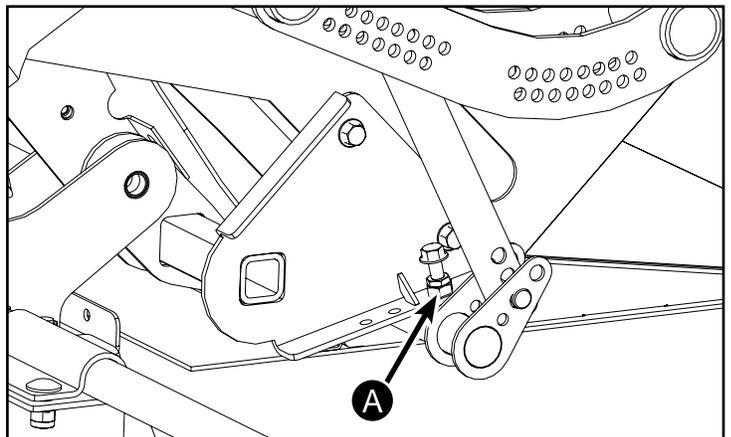
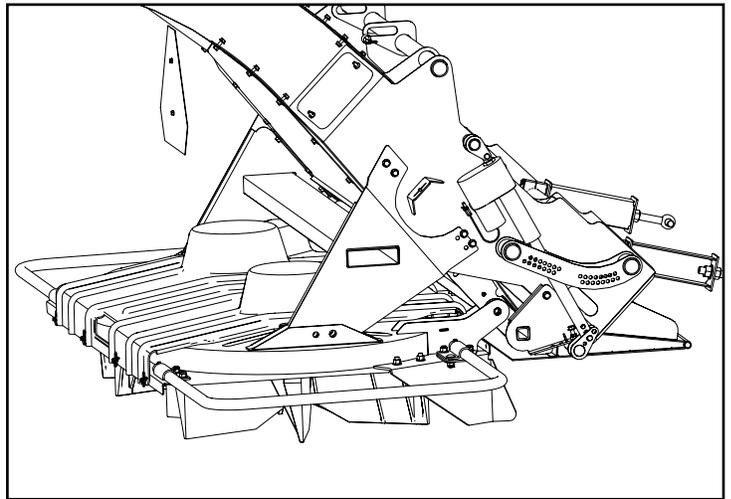
Refer to the combine operator's manual to adjust the vane tailboard.



### PowerCast Tailboard

There is an adjustable stop (A) on the right side of the gate that limits how far up the gate will go. If the gate raises too high material from the chopper hits the bottom of the gate and is deflected downward instead of into the spreaders of the PowerCast Tailboard.

The speed of the spreaders is adjusted through the Hillco display. When in Spread Mode the PowerCast Control screen appears. See the PowerCast Control section under Operation for more details.



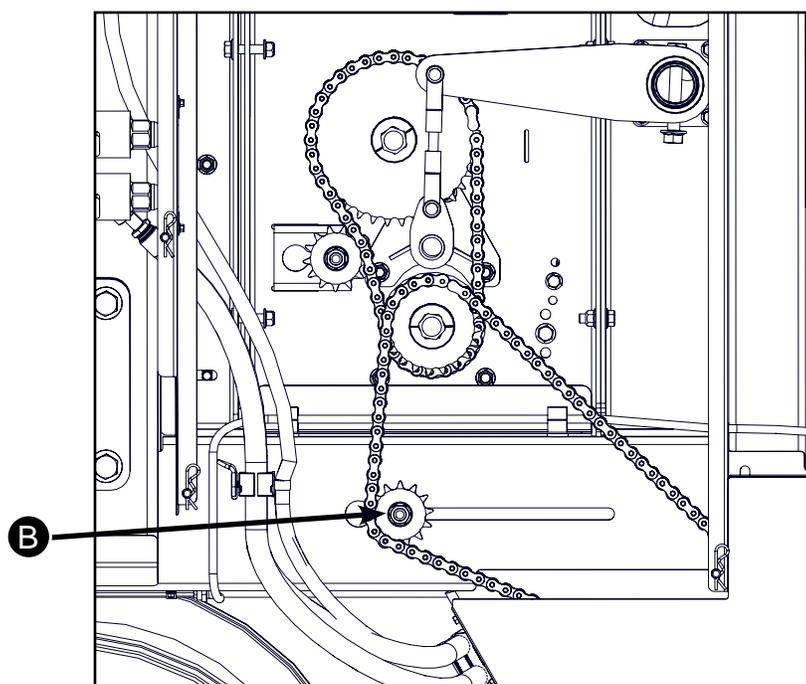
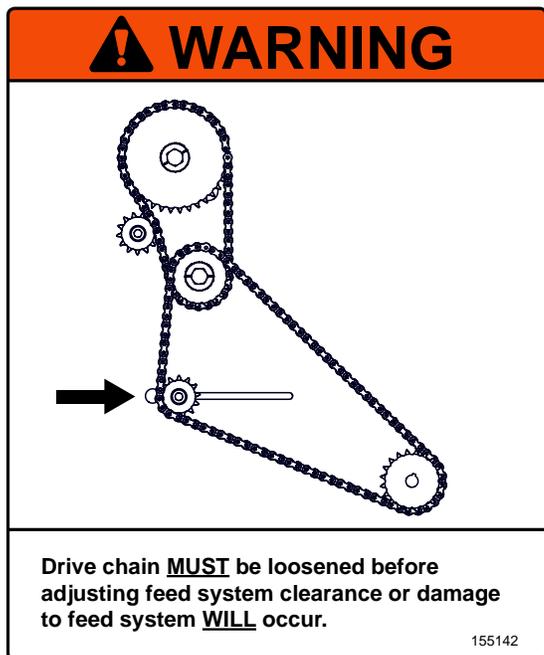
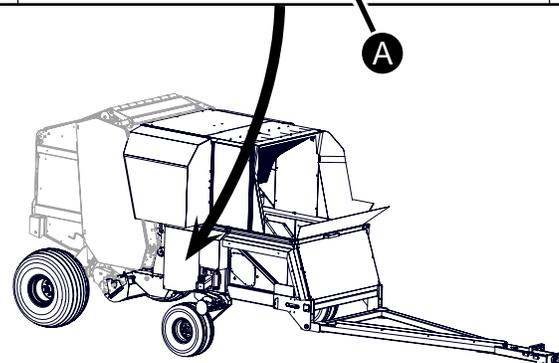
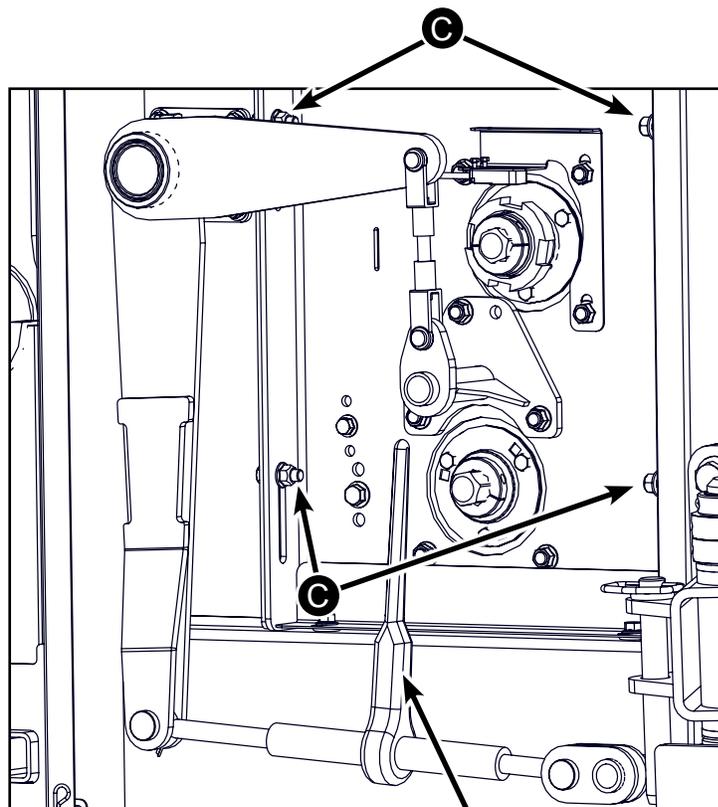
## Feed Roll Height (SN13001-14999 only)

The Feed Roll Height adjustment (A) is located on the right side of the Accumulator. To access the adjustment remove the safety shield.

Prior to adjusting the drive chain, tension must be released on the opposite side of the Accumulator (B).

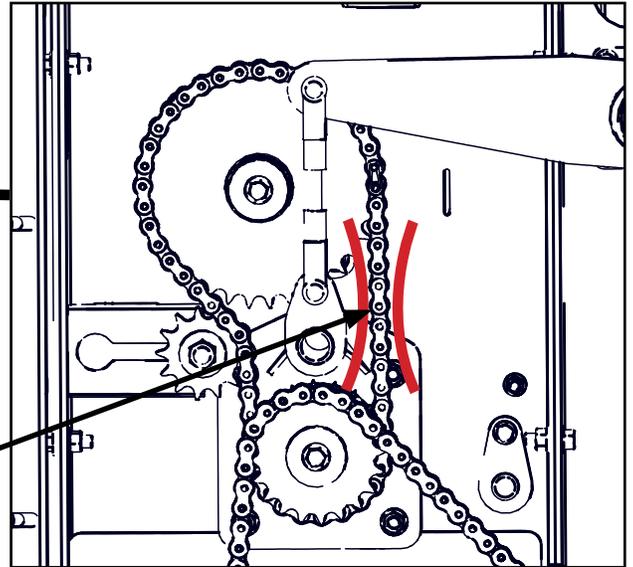
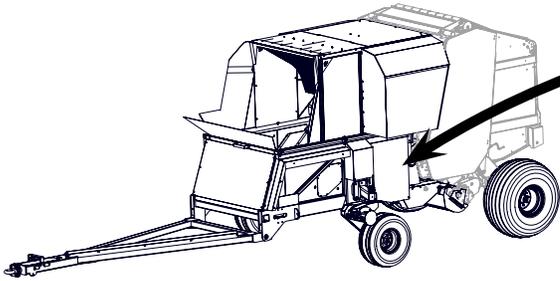
Set bolts (C) need to be loosened to adjust feed roll height.

Ratchet the load binder to adjust the feed rolls to the desired height. Retension the drive chain. In heavy crops raise the feed rolls. In thin crops lower the feed rolls.

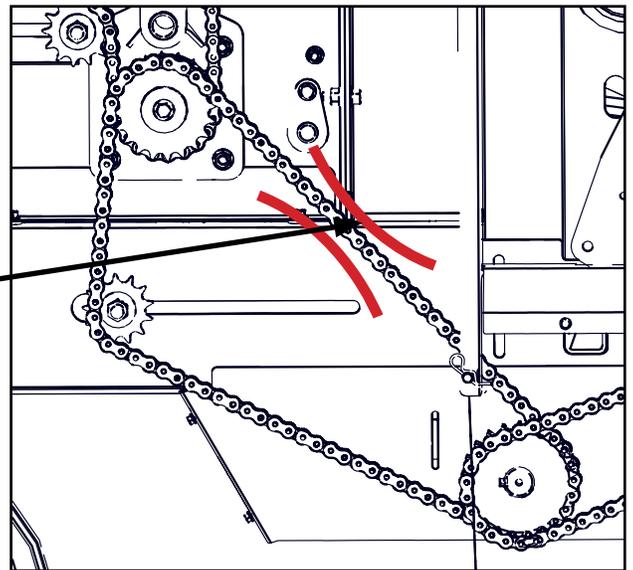
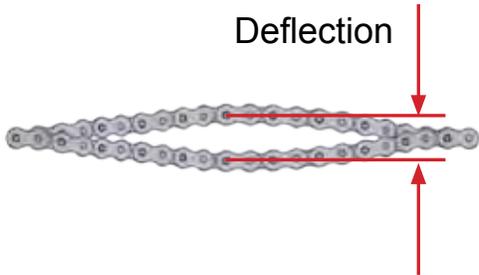


# Chain Tension

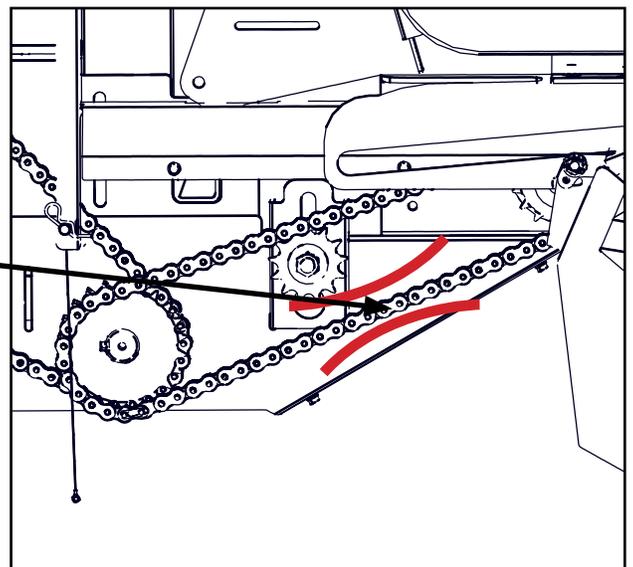
Adjust the chain tension accordingly for each chain.



.2" Deflection



.4" Deflection

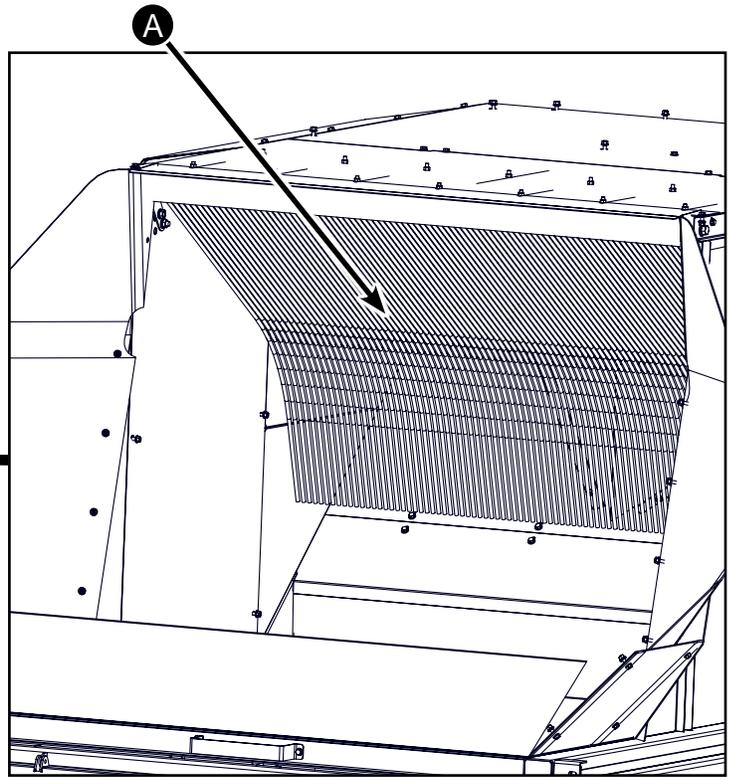
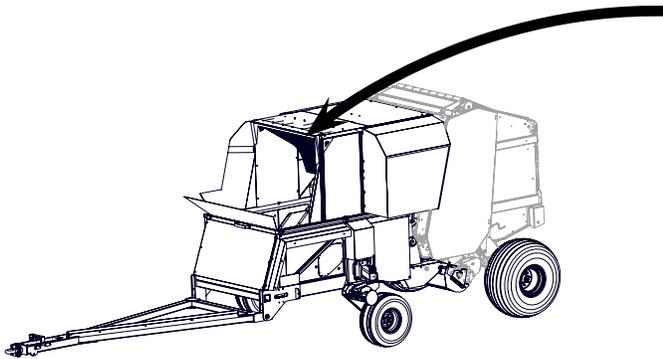


.4" Deflection

## Air Screen Adjustment (SN13001-14999)

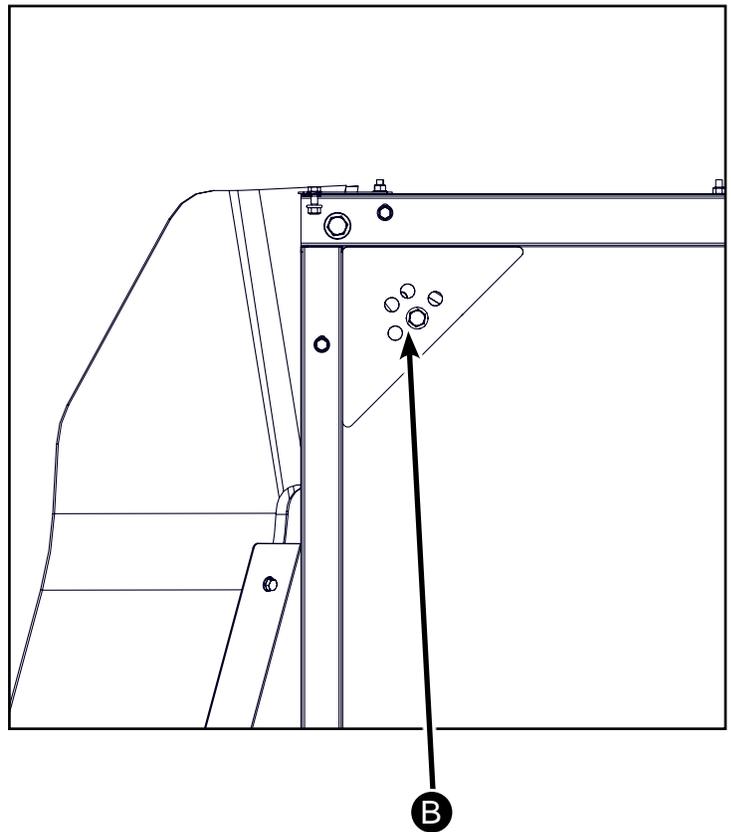
The Air Screen (A) is located at the top of the Accumulator. It can be adjusted up and down depending on crop conditions.

To adjust the Air Screen remove the bolts (B) from each of the sides and pivot the rods up or down and refasten.



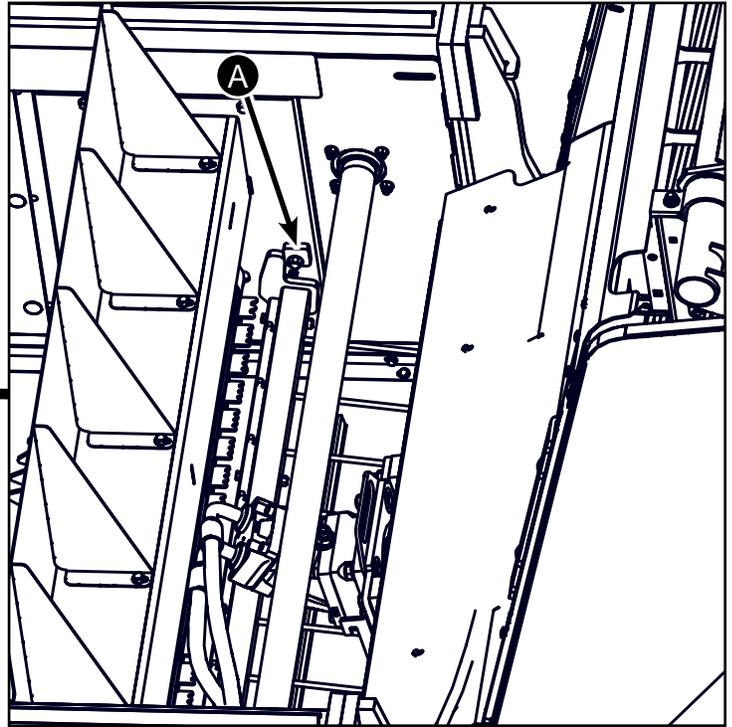
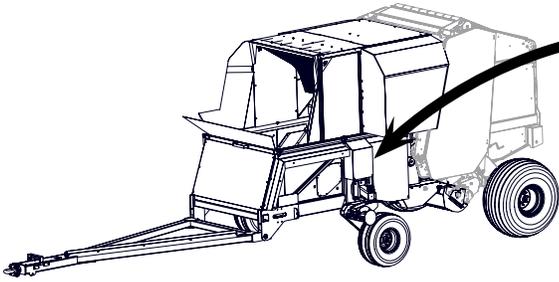
### NOTE

If the Air Screen is adjusted too low material can build up behind the rods.

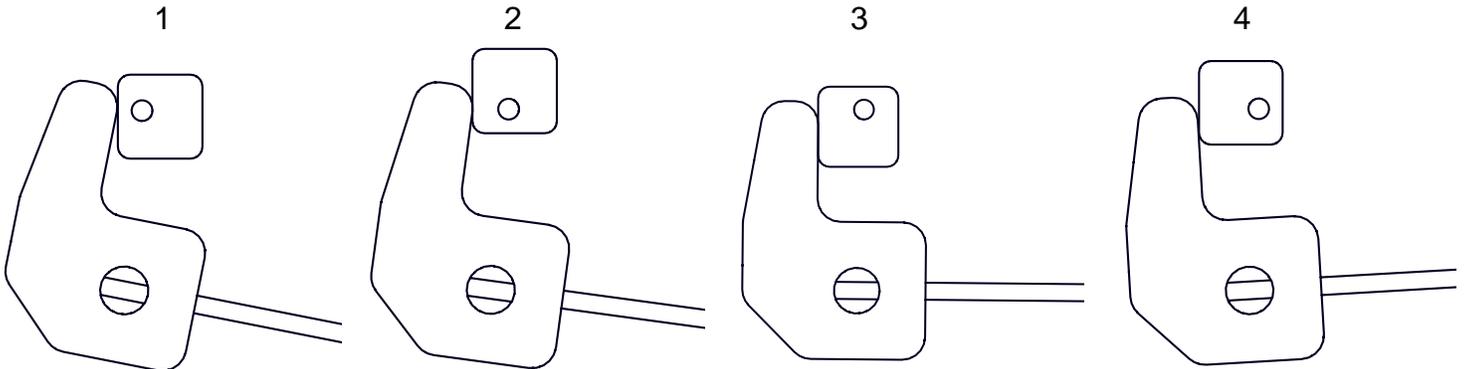


## Wind Guard Adjustment

Stops inside the feed module frame prevent the wind guard from dropping down onto the conveyor belt. These stops allow the wind guard to be positioned in 4 positions.



## Wind Guard Positions



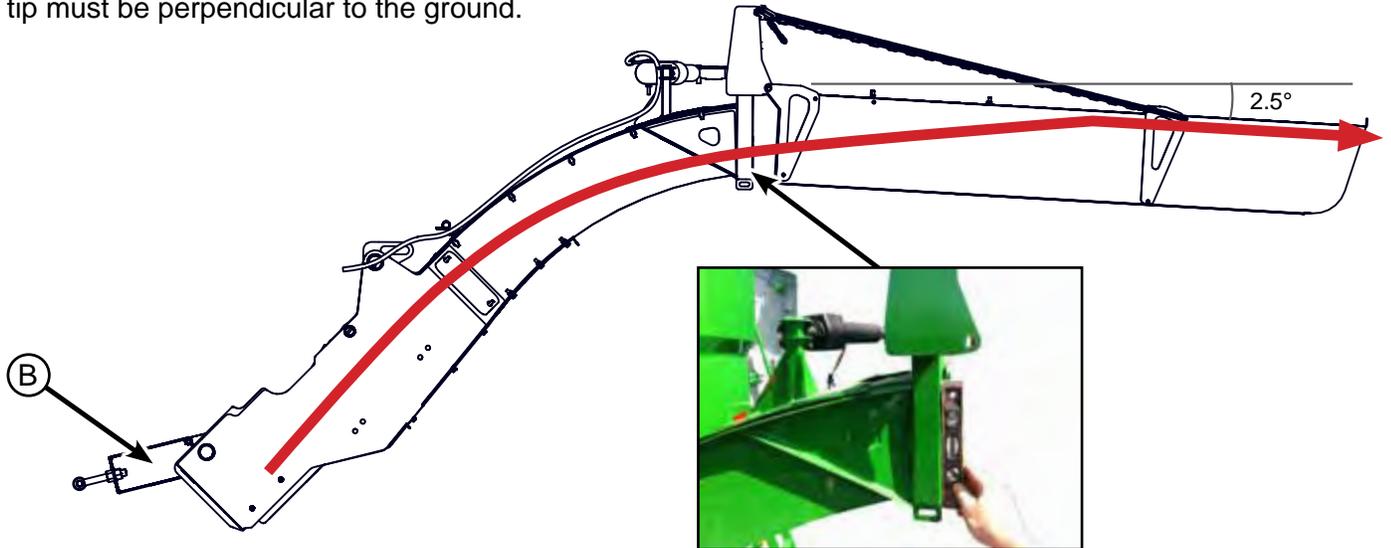
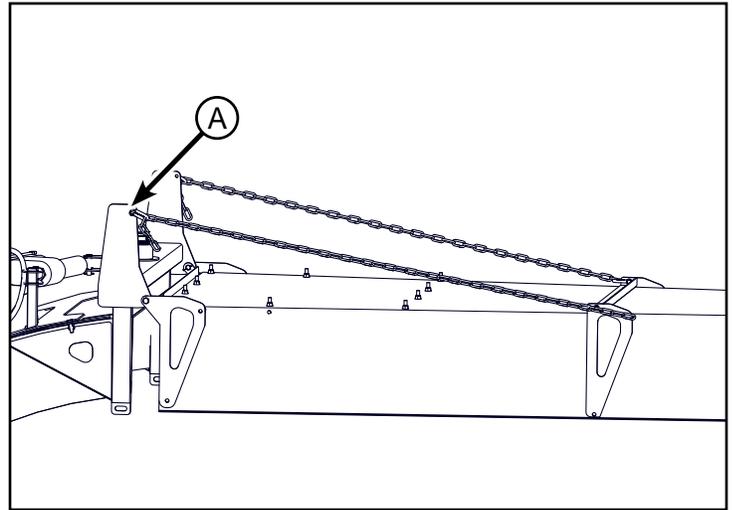
It is recommended that it is run in the highest position (4).

## Spout Up/Down Adjustment

To adjust the spout up and down either remove or add links to the amount chain between the D-Shackle (A) and the spout tip.

The spout is to be slightly pointed downward so that material hits the spout and is directed into the SPRB Accumulator. The material coming up the spout will hit the spout tip at a  $5^\circ$  angle. In order to deflect it into the Accumulator the spout tip should be pointed downward at roughly a  $2.5^\circ$  or one chain link below level.

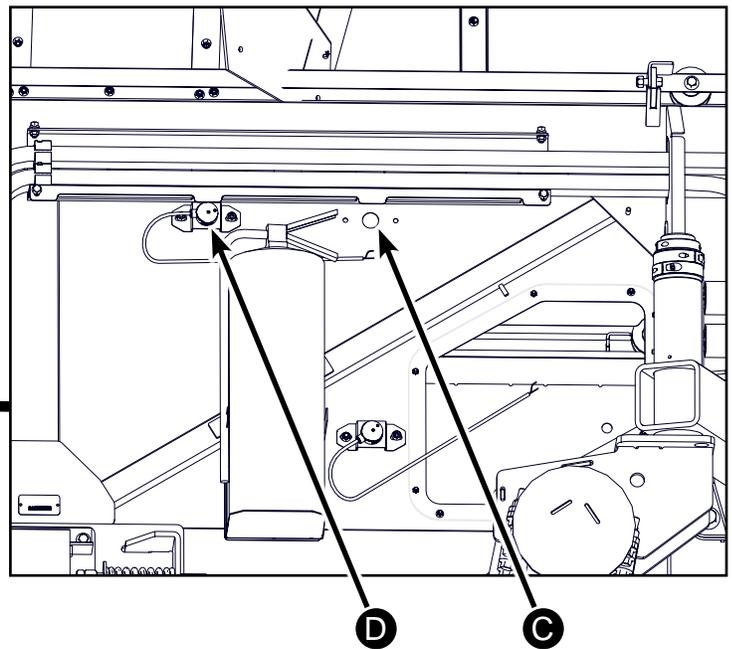
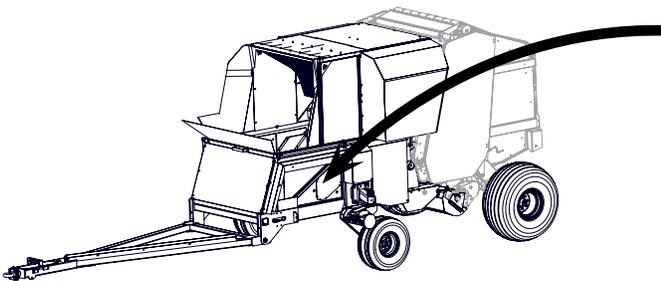
The spout also must be adjusted correctly. The drag lines at the base of the spout can be adjusted in and out which changes the angle of the spout. For a reference on level ground the vertical mount for the spout tip must be perpendicular to the ground.



## Infra-Red Sensor Adjustment

The top sensors can be moved to the back position (C) which will cause the feed system to engage sooner. This is used in heavy residue crops. Default position is the front location (D).

Note: The sensors on both sides will have to be adjusted in order for the receiver and the transmitter to function properly.



## Cleaning Out Machine (Periodic Cleanout)

The photographs in this section show areas of the machine that require regular inspection and cleaning. While there are other areas that require regular cleaning, frequent attention to these areas provides the greatest impact on fire prevention.

**IMPORTANT:** These areas may require more frequent cleaning, even multiple times per day, depending on harvest conditions. Be aware of harvest conditions and adjust your cleaning schedule to ensure proper machine function and to reduce the risk of fire.

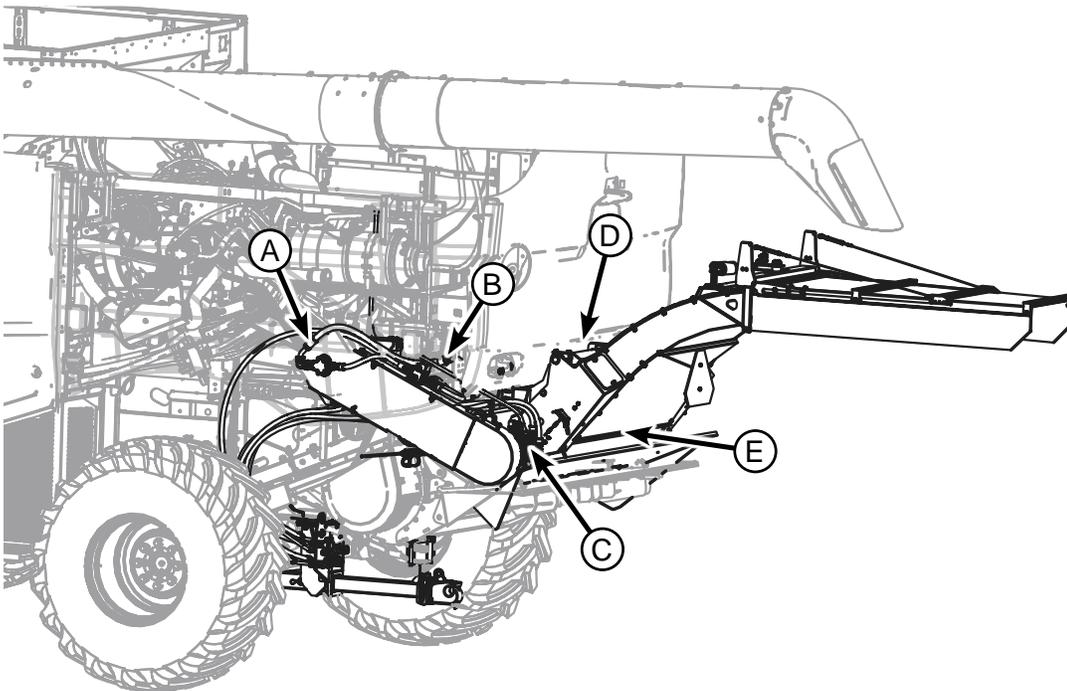
Other areas not covered in this section may also collect crop debris and **MUST** be cleaned periodically for machine function and appearance. Thoroughly inspect the entire machine on a regular basis throughout the harvest season.

Always follow all safety procedures posted on the machine and in the Operator's Manual. Before carrying out any inspection or cleaning, always shut OFF combine engine, set park brake and remove key.

Thoroughly clean combine, SPRB and baler from top to bottom with compressed air. First clean all areas accessible from engine deck. Start with spout and pump drives, then work outwards and counterclockwise to other areas around engine compartment. Then repeat the procedure for the SPRB and baler. Once top areas of machine are clean, proceed to cleaning areas accessible from ground level.

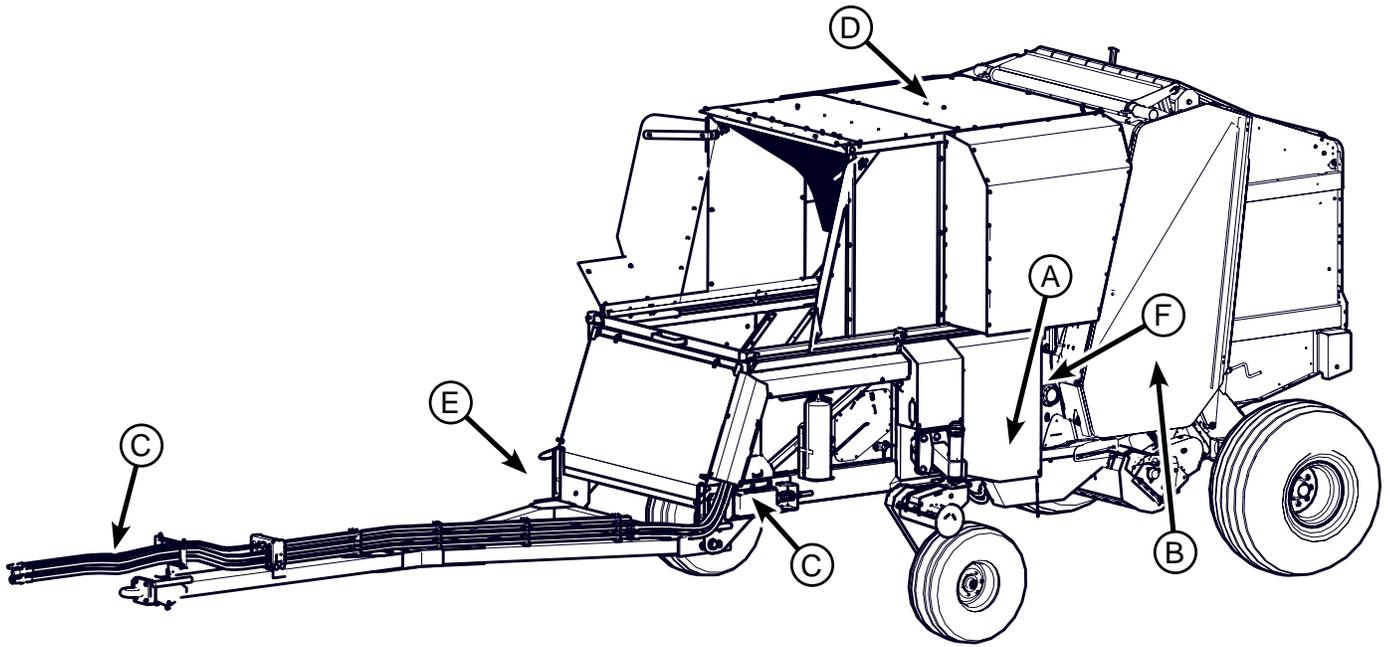
Once the cleaning from ground level is finished, recheck engine compartment for any crop debris that could have blown in from ground level cleaning.

**NOTE:** When blowing off the SPRB components, make sure the debris is not relocated to the combine or baler components.



*A - Above Gear Pump  
B - Above Diverter Valve  
C - Around Hydrostatic Pump*

*D - Above Spout  
E - Around Spread Collect Spout*



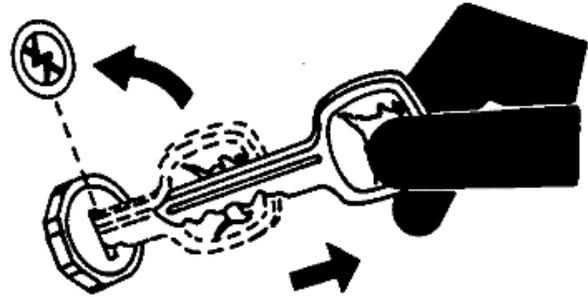
*A - Behind SPRB shields (Both Sides)  
B - Behind Baler Side Doors (Both Sides)  
C - Around Hydraulic Couplers*

*D - Top of SPRB & Baler  
E - Hitch Frame  
F - Around Hydro Motor*

## Lubricating and Maintenance

To help prevent personal injury caused by unexpected movement, be sure to service machine on a level surface.

Do not lubricate or maintain the machine while it is in motion.



If SPRB System is connected to combine, engage combine park brake, shut off engine and remove key.

If SPRB System is detached from combine, block wheels to prevent movement.

**IMPORTANT:** Service times are for average conditions. Service more often if machine is used in extreme conditions.

**NOTE:** See Break-In Service section for information on Service Intervals for First 100 Hours of SPRB System Operation.

## Hydraulic Hose Replacement

Hydraulic hoses should be inspected frequently for leakage, kinking, cuts, cracks, abrasion, corrosion, exposed wire braid, or any other signs of wear or damage. Worn or damaged hose assemblies can fail during use and should be replaced immediately. See your John Deere dealer for replacement hoses.

**CAUTION:** If incorrectly rated hose is used, machine damage, injury or death could occur.

If hoses are to be fabricated, ensure that hoses are the same rating as one being replaced. See your John Deere dealer for correct hose rating replacements.

Incorrect hose length or routing can increase chance of hose wear or damage. Use old hose as guide for length and hose routing. Incorrect fittings can damage mating parts or cause leaks. Make sure to use steel fittings approved for use with hose manufacture. Use correct size and thread type as replaced hose.

## Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval. John Deere SD Polyurea Grease is preferred.

The following greases are also recommended:

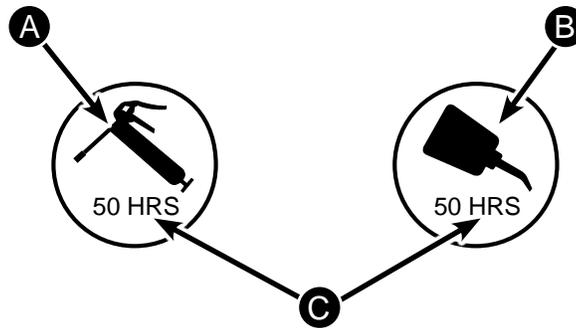
- John Deere HD Lithium Complex Grease
- John Deere HD Water Resistant Grease
- John Deere GREASE-GARD™

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB

**IMPORTANT:** Some types of grease thickeners are not compatible with others. Consult your grease supplier before mixing different types of grease.

## Lubrication Symbols

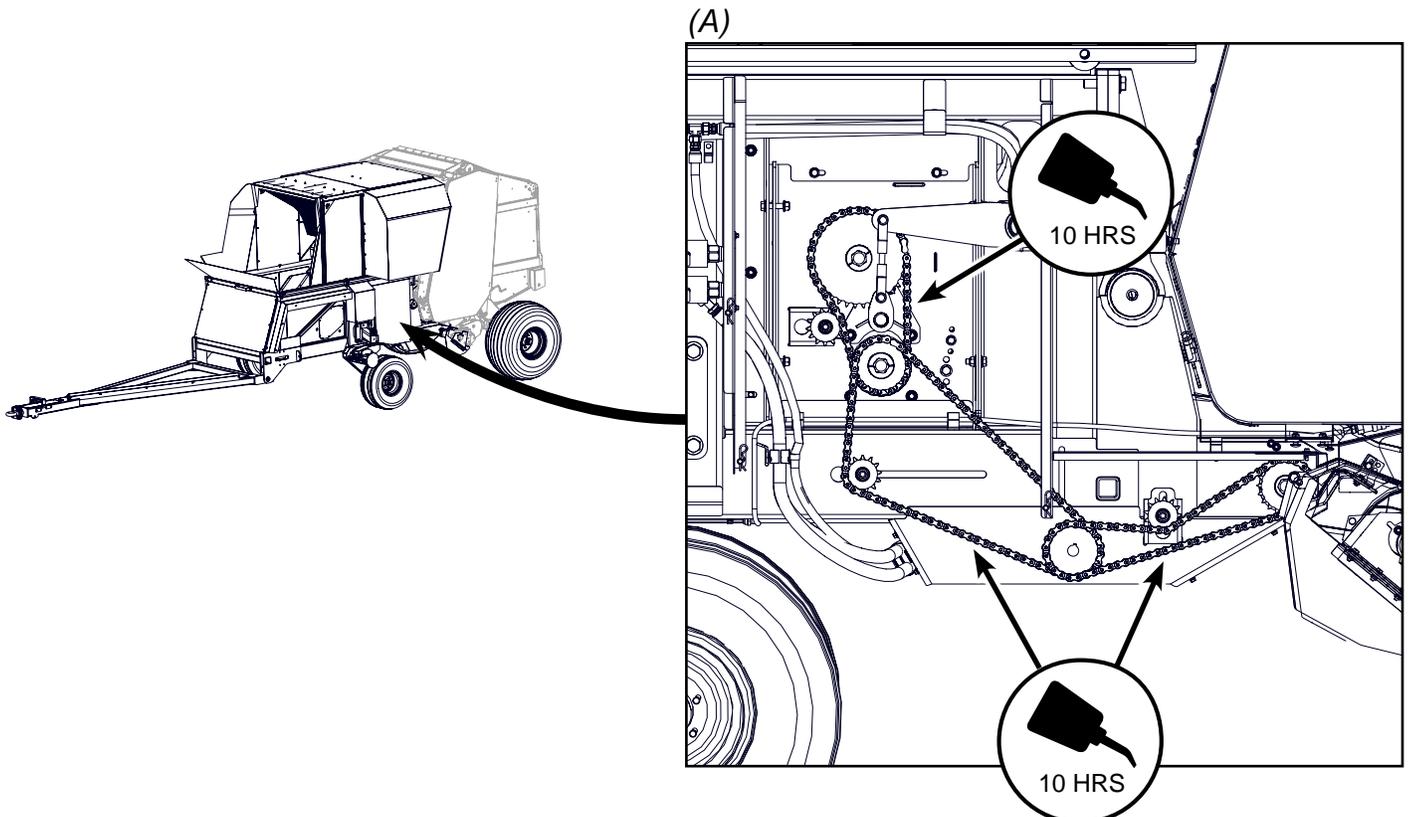


- A - Lubricate with John Deere Multipurpose SD Polyurea Grease High Temperature/Extreme Pressure lubricant or an equal SAE Multipurpose High Temperature Grease with Extreme Pressure (EP) performance at hours shown on the symbol.
- B - Lubricate with John Deere SAE 30 oil or heavier oil at hourly intervals indicated on the symbols.
- C - Service interval.

## Lubrication - 10 Hours

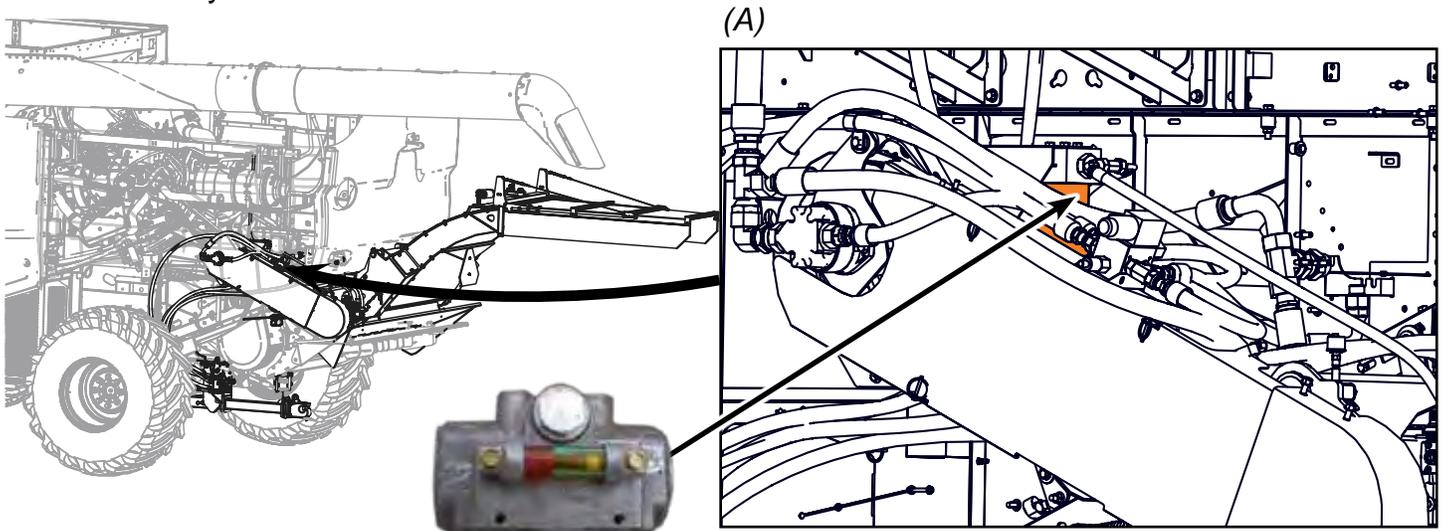
Refer to baler's operator's manual for maintenance.

- A - Lubricate drive chains on left side of Accumulator.



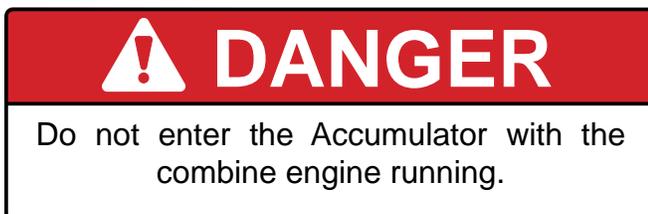
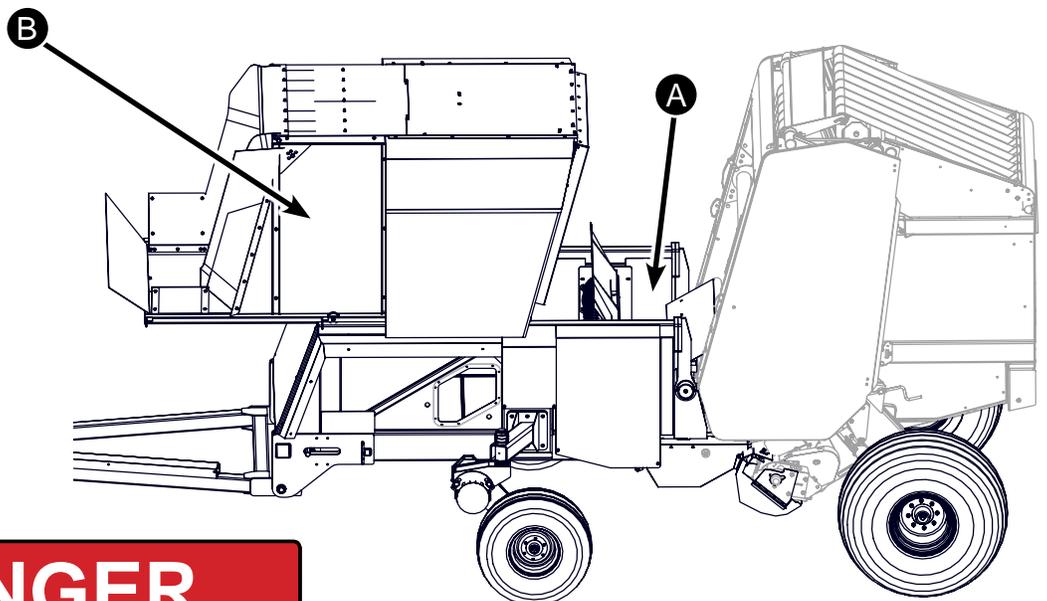
## Lubrication - 10 Hours

- A - Check the visual indicator on the filter heads. If the yellow bar is in the red replace filter immediately.



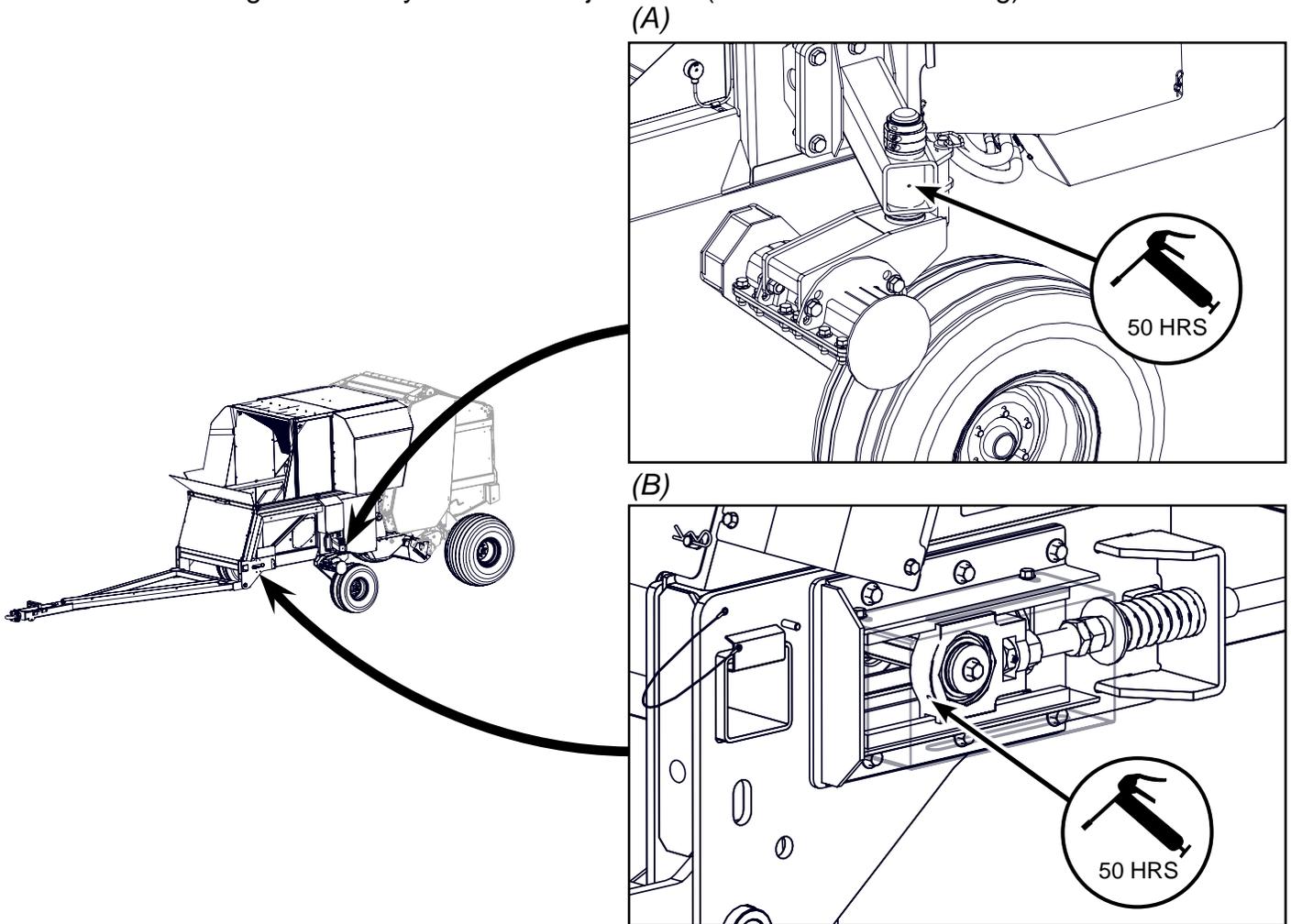
## Maintenance - 10 Hours

- A - Remove built up material on Spout, Accumulator and baler near potentially hot areas such as bearings. Also remove any debris near pump drive and hydrostatic pump. See Cleaning Out Machine Section.
- B - Check conveyor belt alignment.
- C - Remove dust and debris from Hydro Motor area (A). To access Hydro Motor slide Accumulator (B) forward. Remove any dust and debris from the spout.

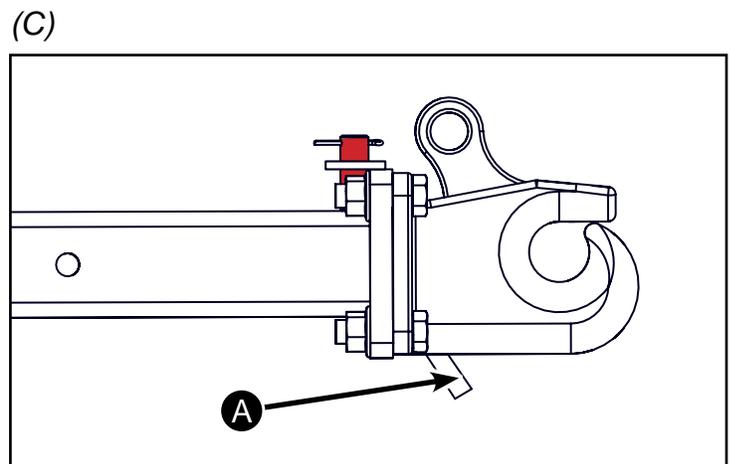


## Lubrication - 50 Hours

- A - Grease Caster wheels (1 zerk on each Caster wheel Assembly).
- B - Grease bearings on conveyor tension adjustment (1 zerk on each bearing)

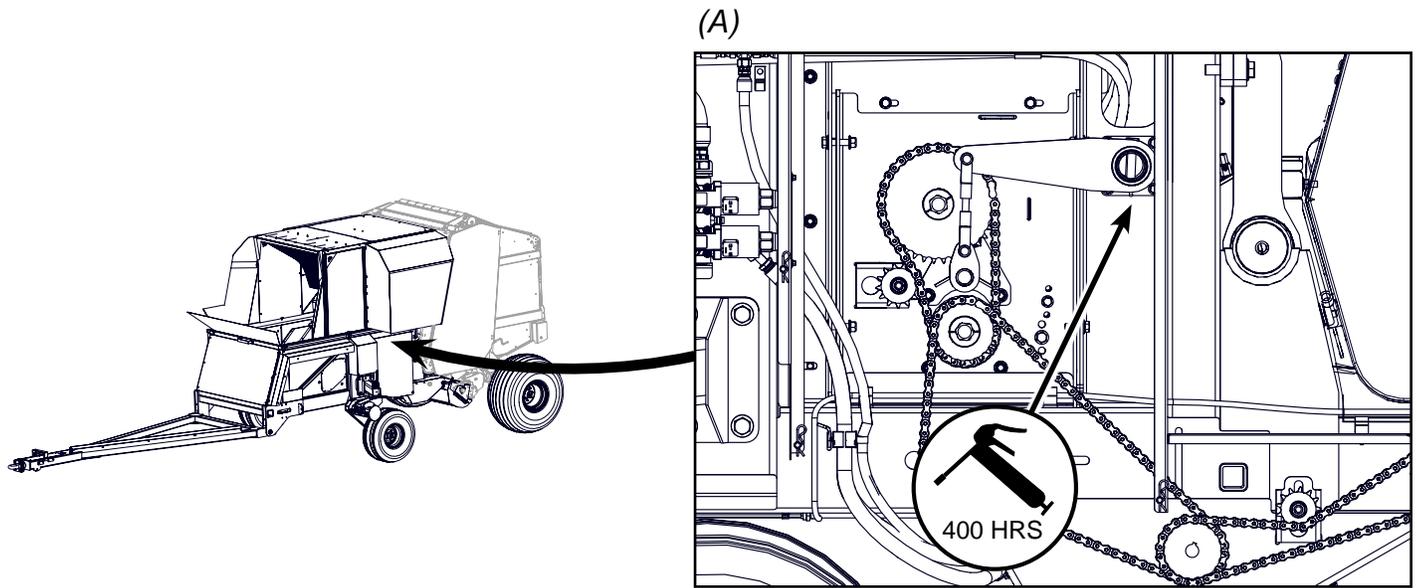


- C - Clean debris from pintle hitch so hitch safety lock (A) can latch.

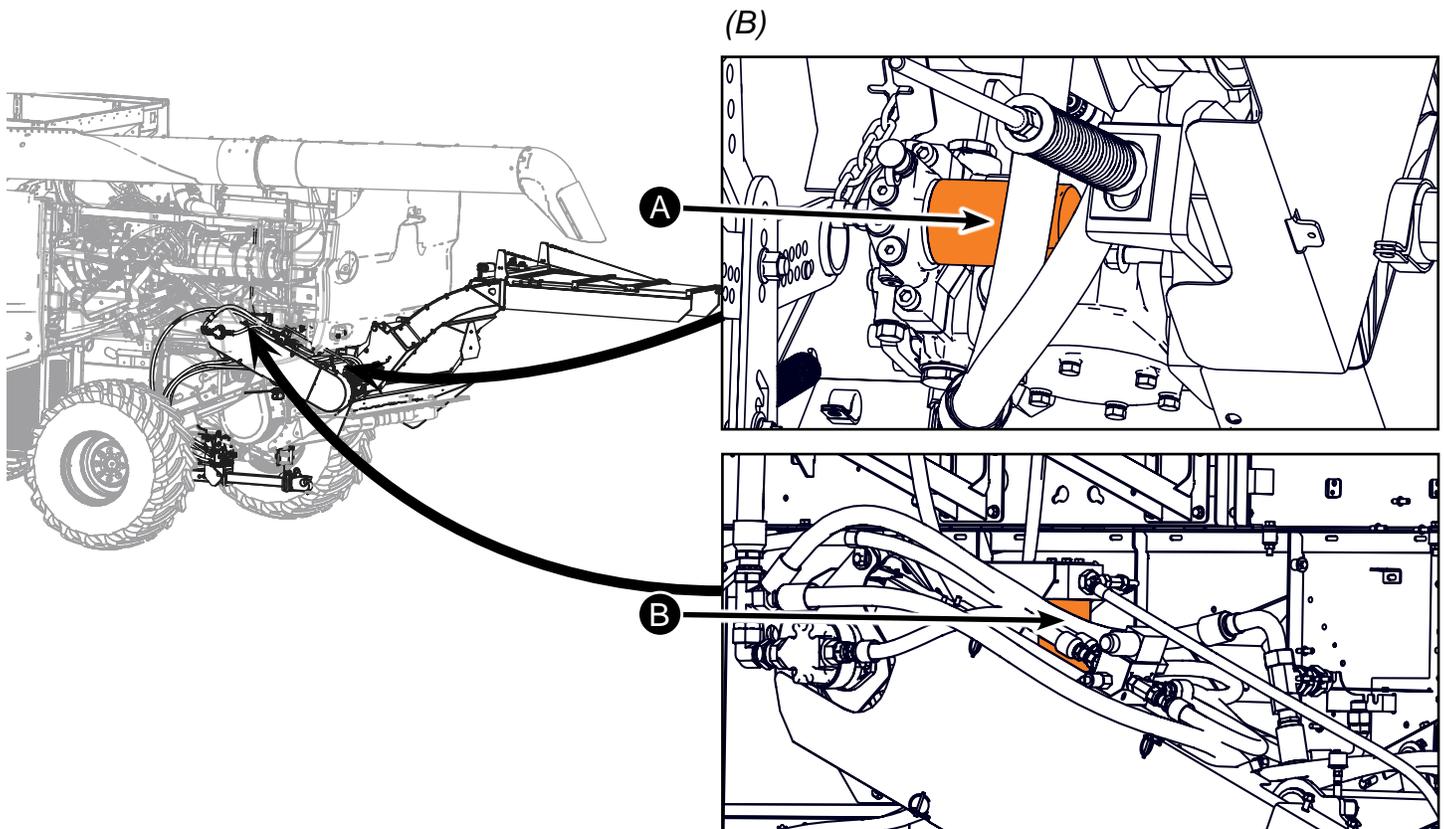


## Lubrication - 400 Hours (SN14001-14999 only)

A - Grease rocker shaft for feed roll height adjustment (1 zerk on each rocker shaftt).



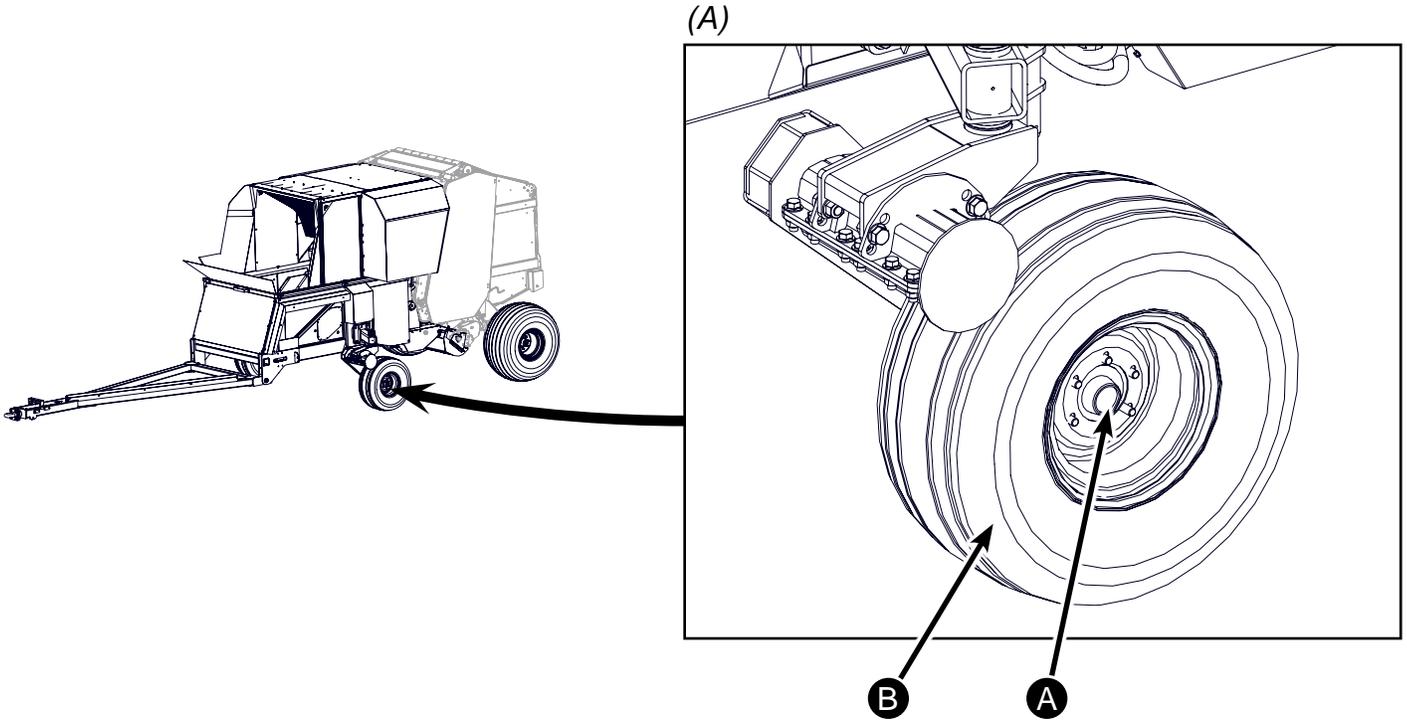
B - Remove the filter element on the hydro pump (A). Remove and replace filter (B) behind the belt drive for the hydro pump. Coat seal on new filter with oil. Hand tighten, then tighten 1/2 turn more. Hillco Part No for filter - HC-152091. Check combine hydraulic oil level.



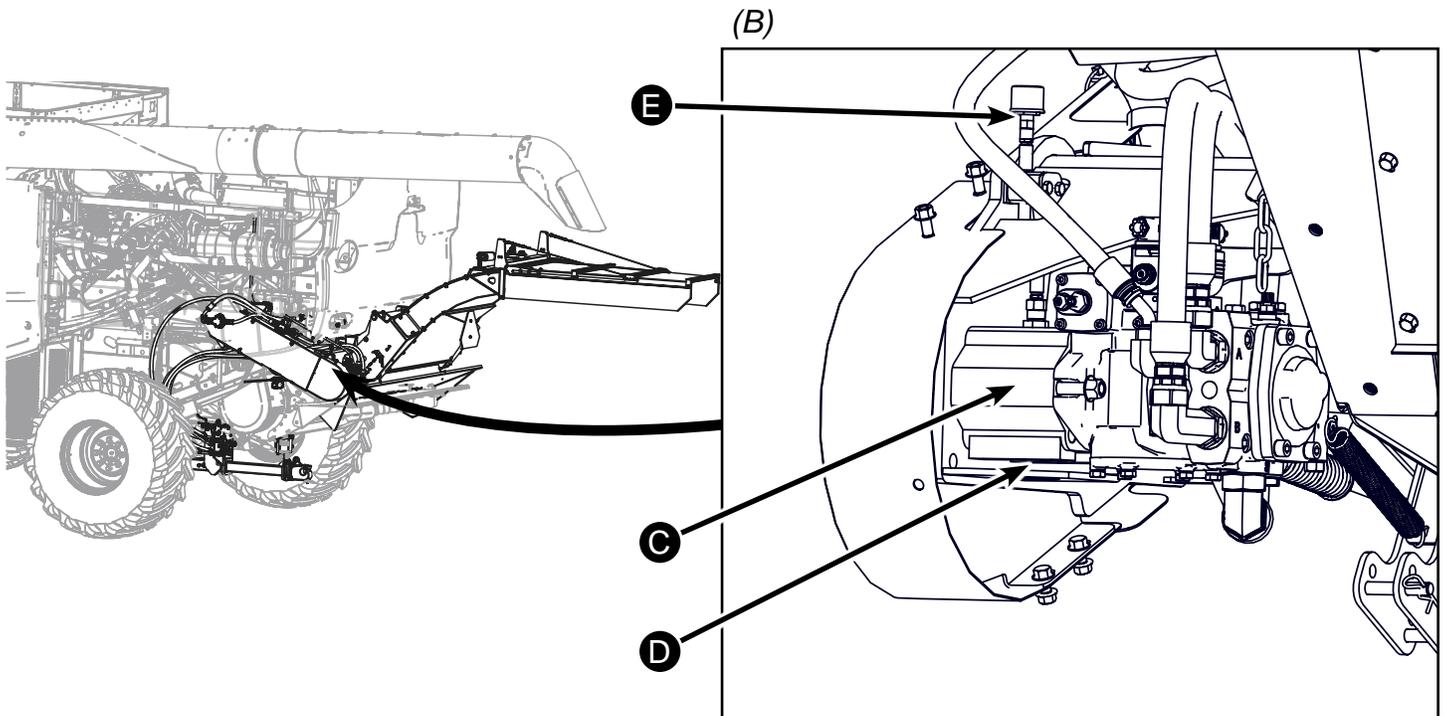
## Lubrication - 400 Hours (SN14001-14999)

A - Check wheel bearings (A) on caster wheels.

Check caster tire pressure (B). Recommended pressure is 30 psi.



B - Replace oil in Overhung Load Adapter (C) by draining the oil through plug (D). Refill with 5 oz of John Deere Hygard Hydraulic oil through the vent (E). The purpose of the Overhung Load Adapter is to take any side load off of the hydrostatic pump drive shaft.

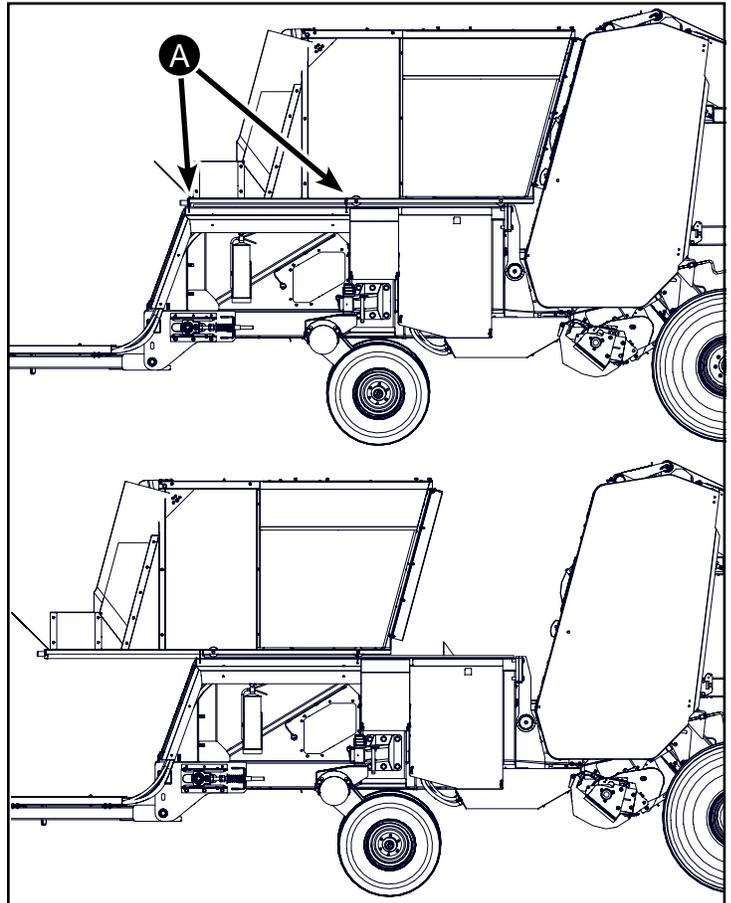


## Accumulator Access Points

### Accumulator Access

To slide the Accumulator Hood forward, remove the two bolts (A) on each side of the Accumulator. Slide Accumulator forward. This allows for access to the hydrostatic motor and the baler manifold.

Make sure to replace bolts that secure the Accumulator Hood in place.

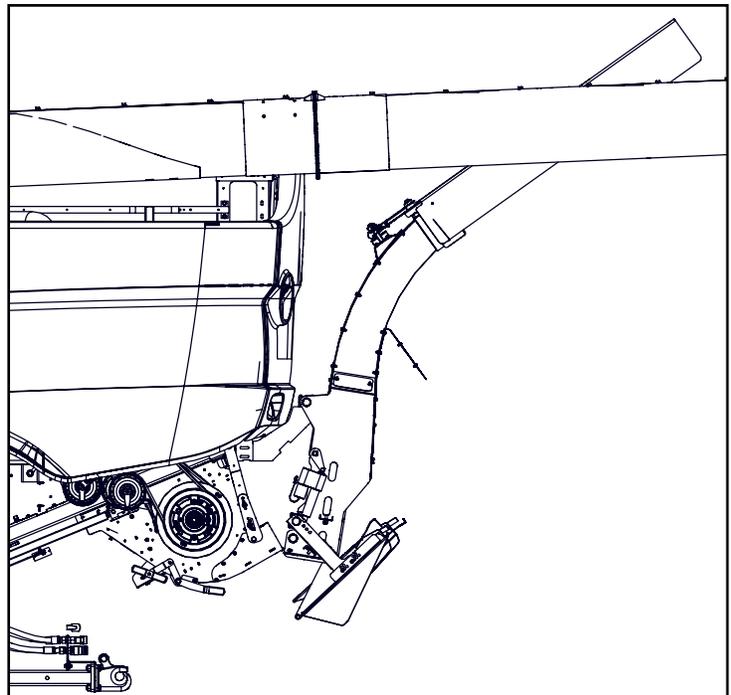
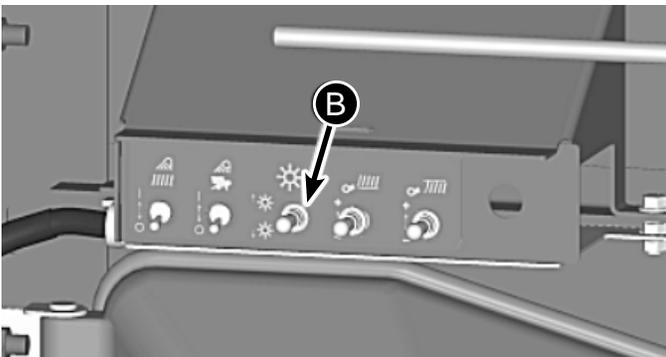


### Cleaning Shoe Access

Refer to the John Deere Operator's Manual to move the straw chopper upward (B) to access the shoe. When the straw chopper moves upward, the spout pivots upward automatically.

Do not transport the combine with the spout in the upward position.

**Important:** Spread/Collect gate must be in collect position when moving straw chopper upward.

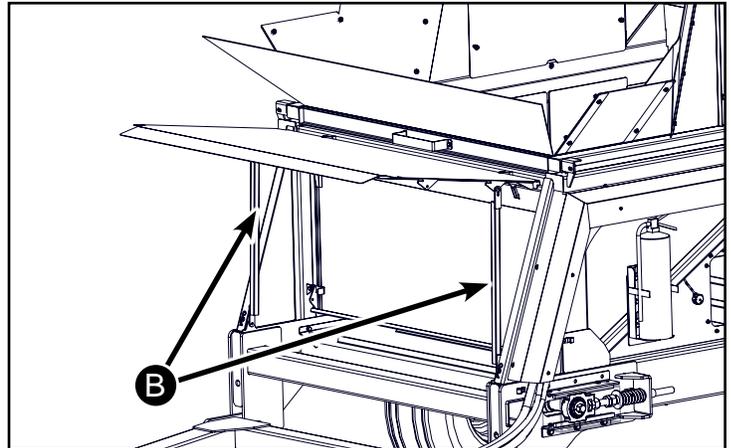
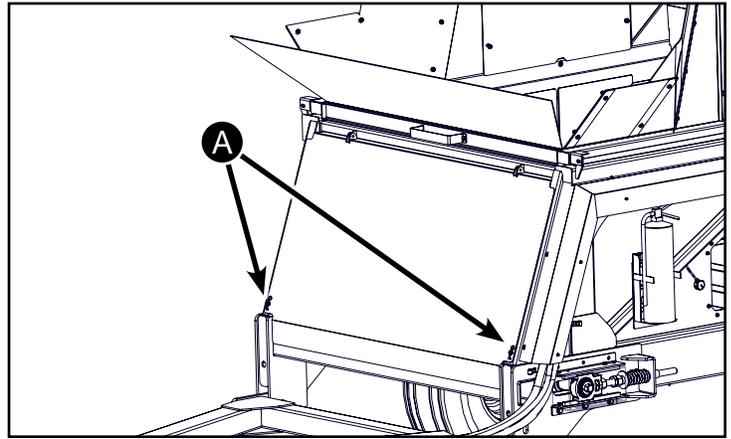


#### NOTE

Spout must be straight back when accessing cleaning shoe otherwise spout can come in contact with unloading auger. Spread Collect gate must be in Collect Position.

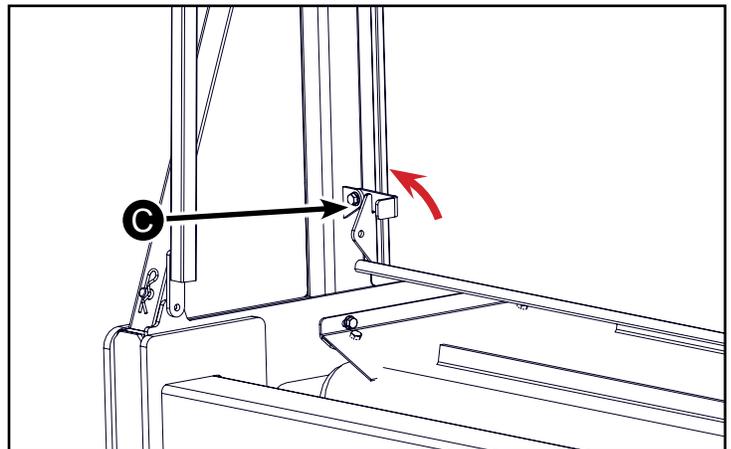
## Conveyor Access

To access the front of the conveyor remove the clips (A) from the front shield. The front shield pivots up. Rods (B) hold shield up.

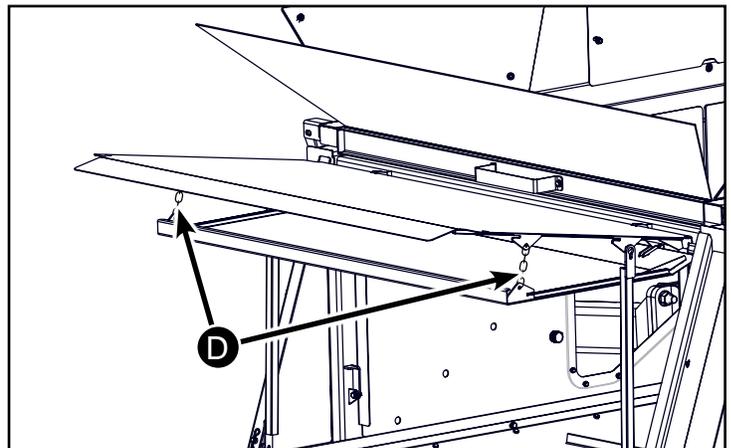


Flip up latches (C) on inner gate swing gate forward.

On the model year 2015 units the inner wall is bolted to the door.



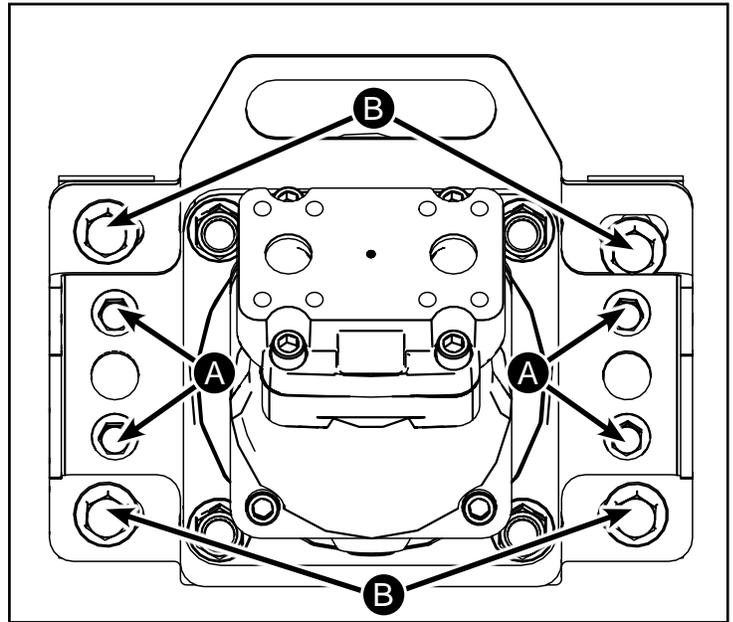
Pin inner gate to holes on outer gate with the chain hooks (D).



# Repair Guide

## Hydro Motor Removal

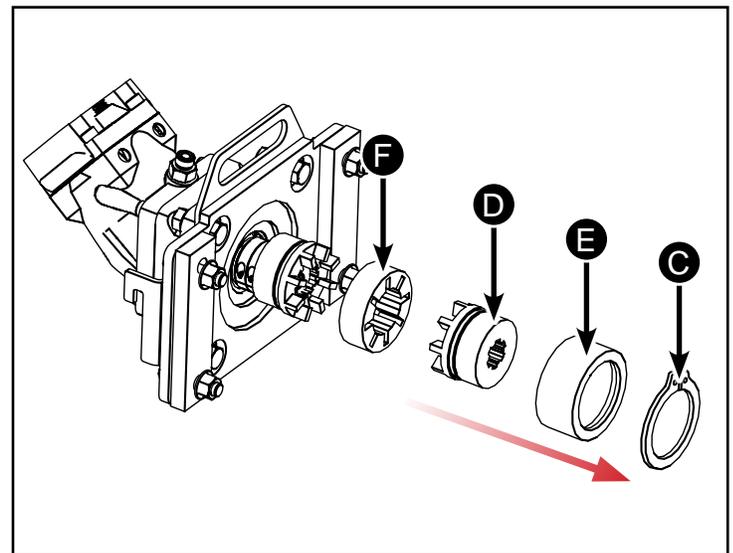
To remove the Hydro Motor remove the 4 fasteners (A) indicated. Do not remove any other fasteners securing the motor because they hold the correct alignment for the motor to the baler drive shaft.



## Removal of Hydro Motor Coupler

To disassemble the coupler the collar must be slid towards the baler. The collar is held in place by a snap ring. The collar holds the coupler insert (F) in place.

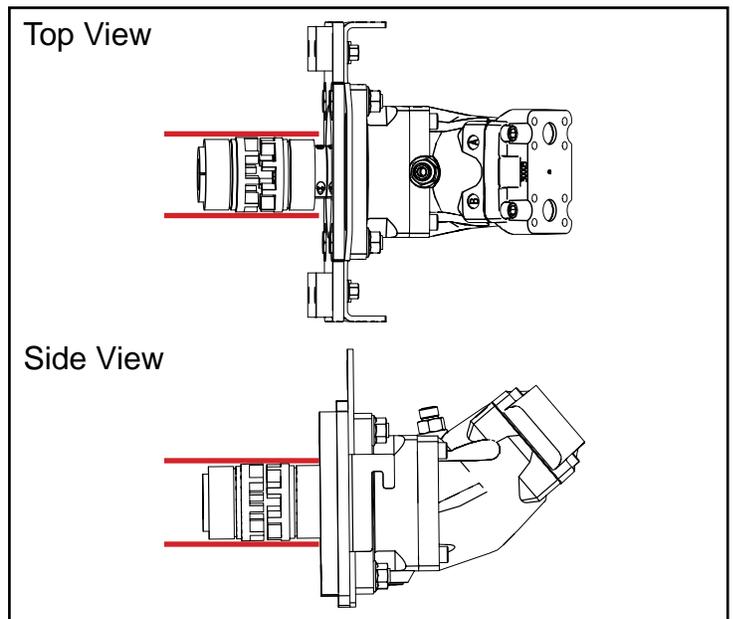
- 1 - Remove snap ring (C) from coupler with split taper (D).
- 2 - Slide off collar (E) towards the baler to remove.
- 3 - Coupler insert (F) splits in half to be removed.



## Aligning Motor to Baler Drive Shaft

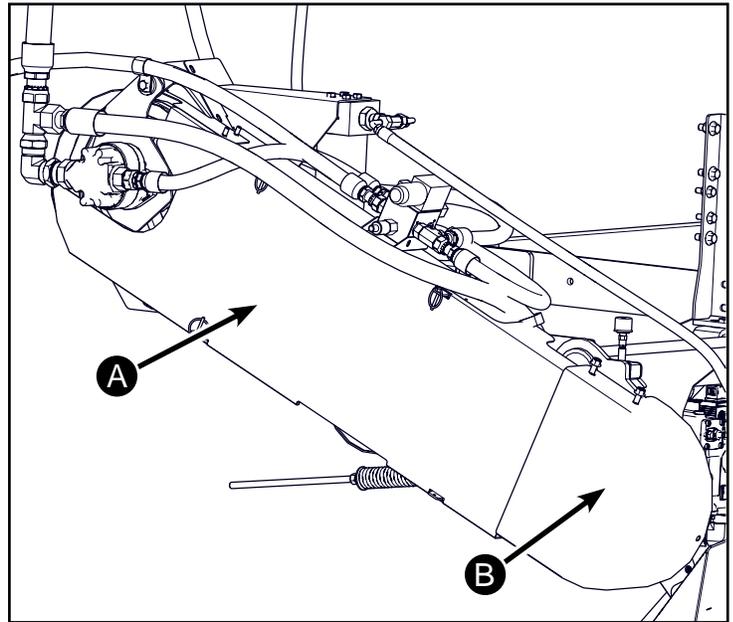
The Hydro Motor Shaft must be aligned to the baler drive shaft. To align adjust the mounting bolts (B) on the hydro motor. See diagram for proper alignment.

Alignment should be performed during installation. If alignment is incorrect use shims between spacer blocks

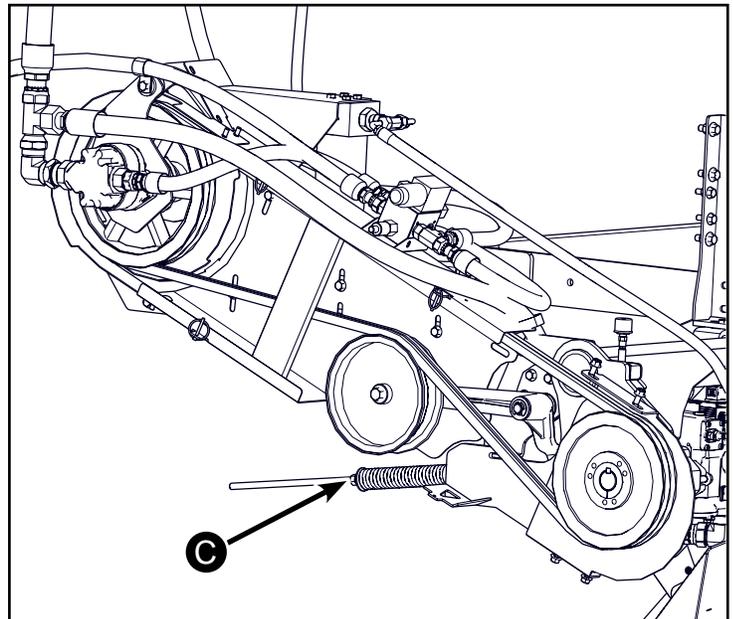


## Drive Belt Removal & Installation (SN14001-15999)

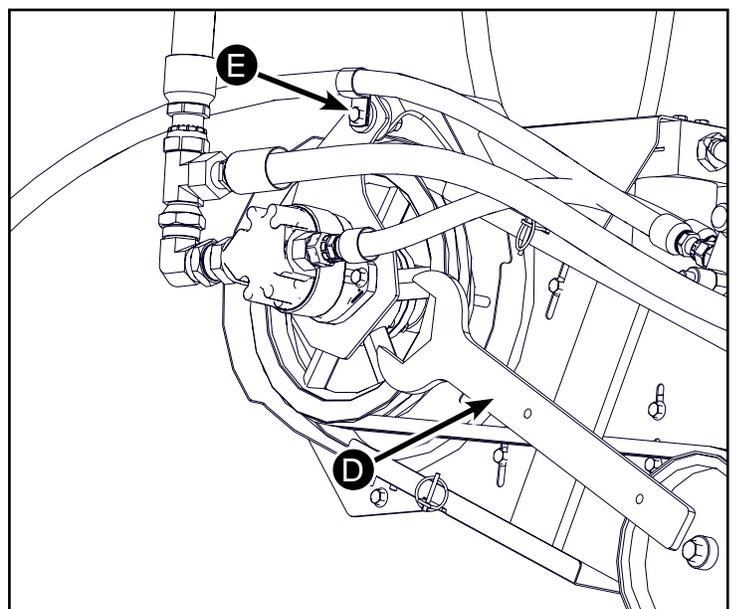
To remove the drive belt(s) remove the 2 shields (A) & (B).



Back off the tensioning spring (C) on the belt.



To remove the gear pump use the provided 2" wrench (D) that fits over the hex shaft that couples the pump to the hub. Unthread the pump mount coupler. When the pump is free remove the M12 x 45 bolt (E) that secures the rotation stop.



Remove old belt(s).

Install the new belt(s).

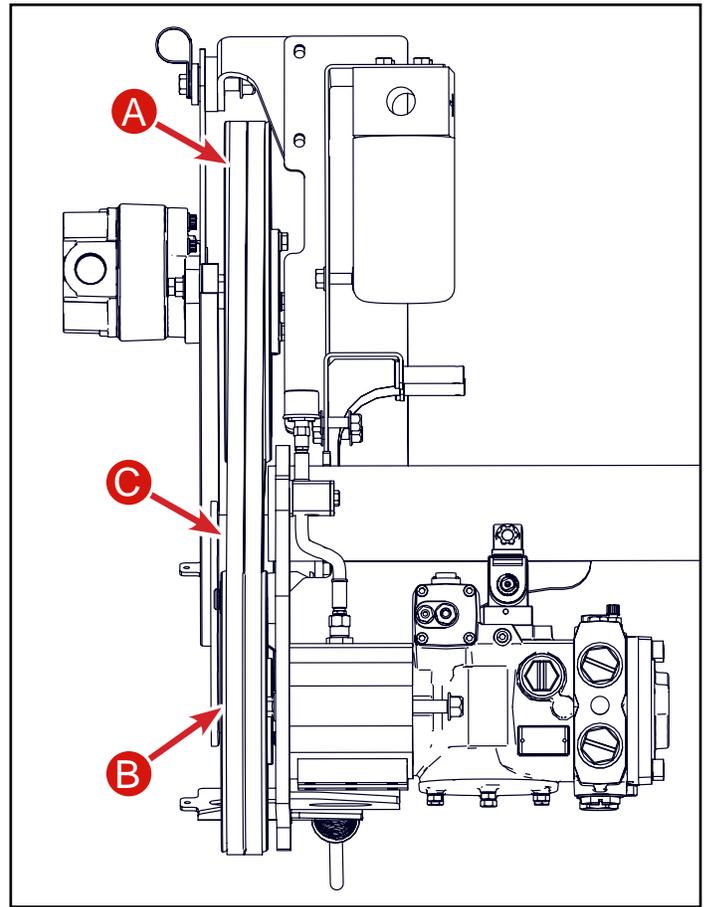
Reinstall the pump. Torque coupler to 130 lb-ft.

Tension the belt to 6 3/4" (see *Hydro Drive Belt Tension* section on page 64).

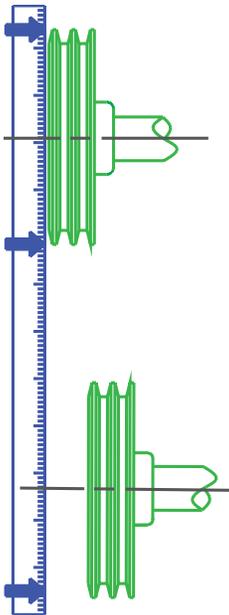
Reinstall the safety shields.

## Drive Belt Alignment

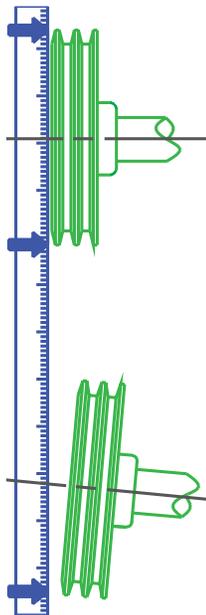
It is very important that the drive sheave (A) line up with the sheave on the hydro pump (B) and the idler pulley (C). Please follow this guide to properly align the sheaves and pulley.



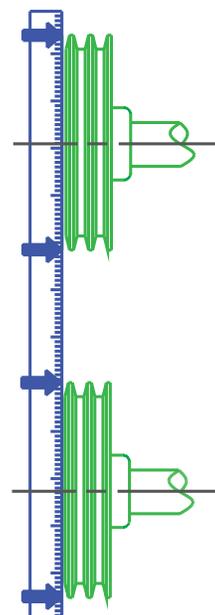
Parallel Misalignment



Angular Misalignment

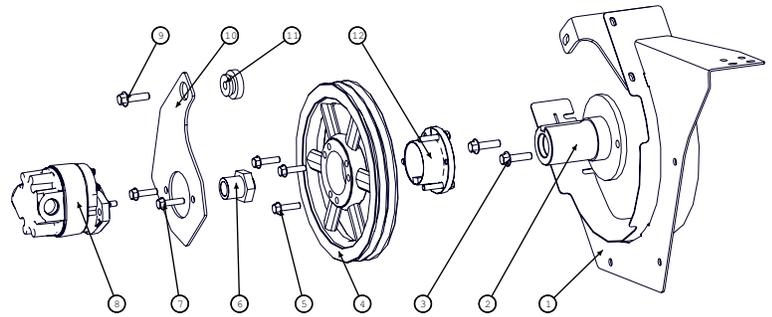


Correct Alignment

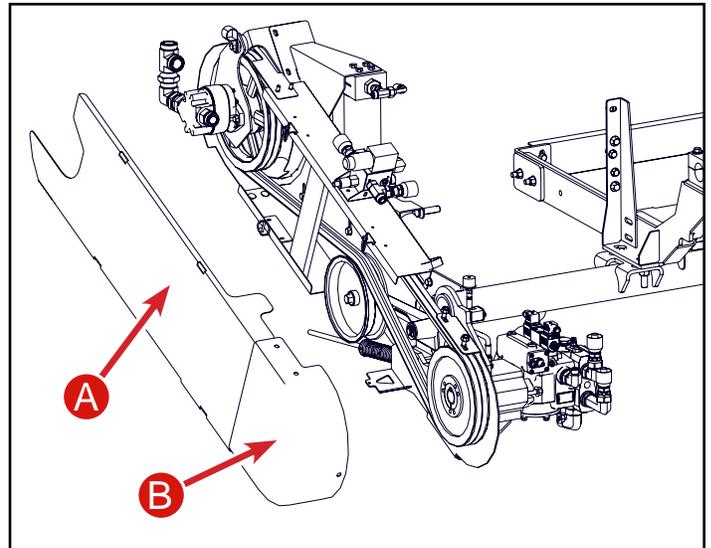


## Drive Sheave

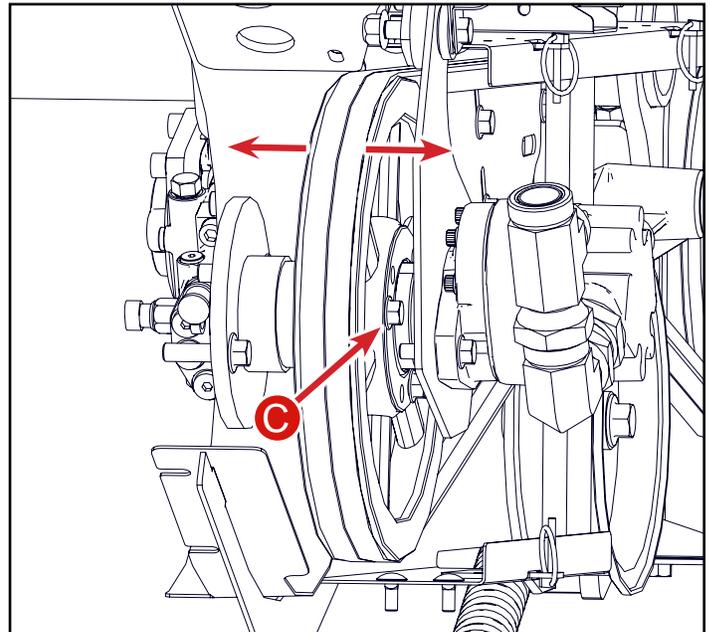
ID	Part No	Qty	Description
1	1317171	1	UPPER MOUNT, PUMP DRIVE
2	1317231	1	HUB, PUMP DRIVE
3	122.012.045	2	BOLT,HX,FL,CL10.9 M12X45
4	155217	1	2-5V 12.50 QD Sheave; McGuire Bearing #BLS-2-5V1250SF
5	122.010.040	3	BOLT,HX,FL,CL10.9 M10X40
6	1318042	1	PUMP MNT, INSERT
7	122.010.040	2	BOLT,HX,FL,CL10.9 M10X40
8	HC-152501	1	PUMP, SPB, FEED SYSTEM, JD #AXE21343
9	122.012.045	1	BOLT,HX,FL,CL10.9 M12X45
10	1317161	1	MOUNT, FEED PUMP
11	155215	1	BUSHING, PUMP, ANTI ROTATION (JD# T41770)
12	155218	1	TAPER LOCK HUB



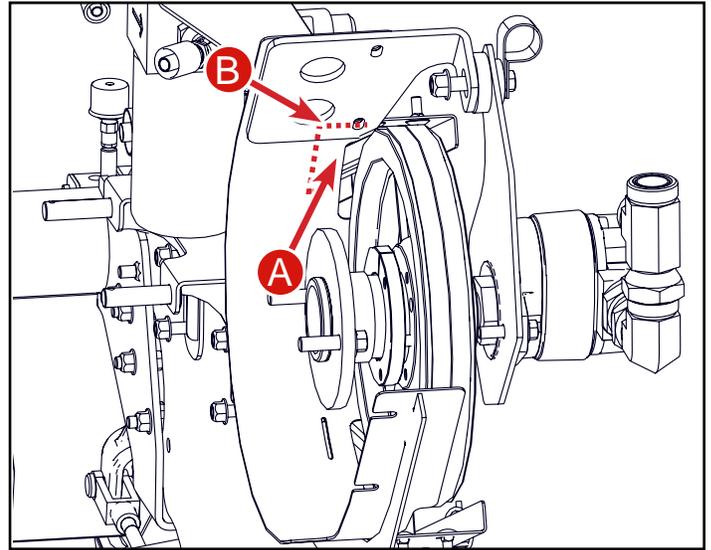
If the top drive sheave needs to be adjusted in or out remove the shields (A) and (B) to access the sheave.



To adjust the sheave loosen the 3 bolts (C) that secure the sheave to the taper lock hub. Taper lock hub must be to the inside.

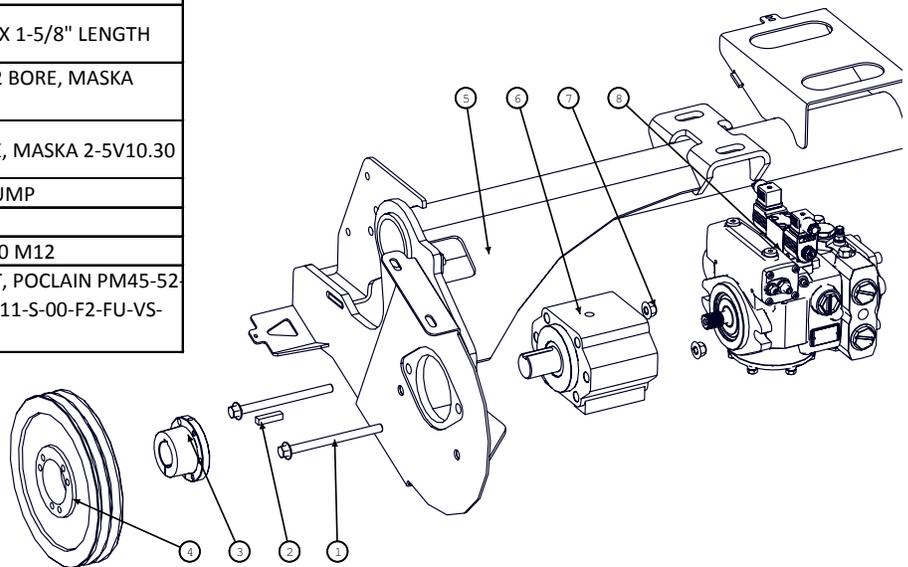


Note: If the top sheave is moved inward it is possible for the belt to come in contact with framework of the upper mount (A). If this is the case notch the framework to allow the belts to operate without interference (B).

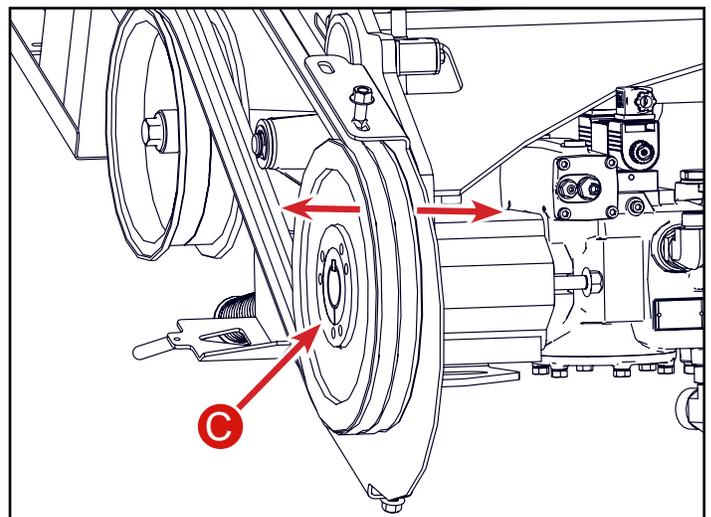


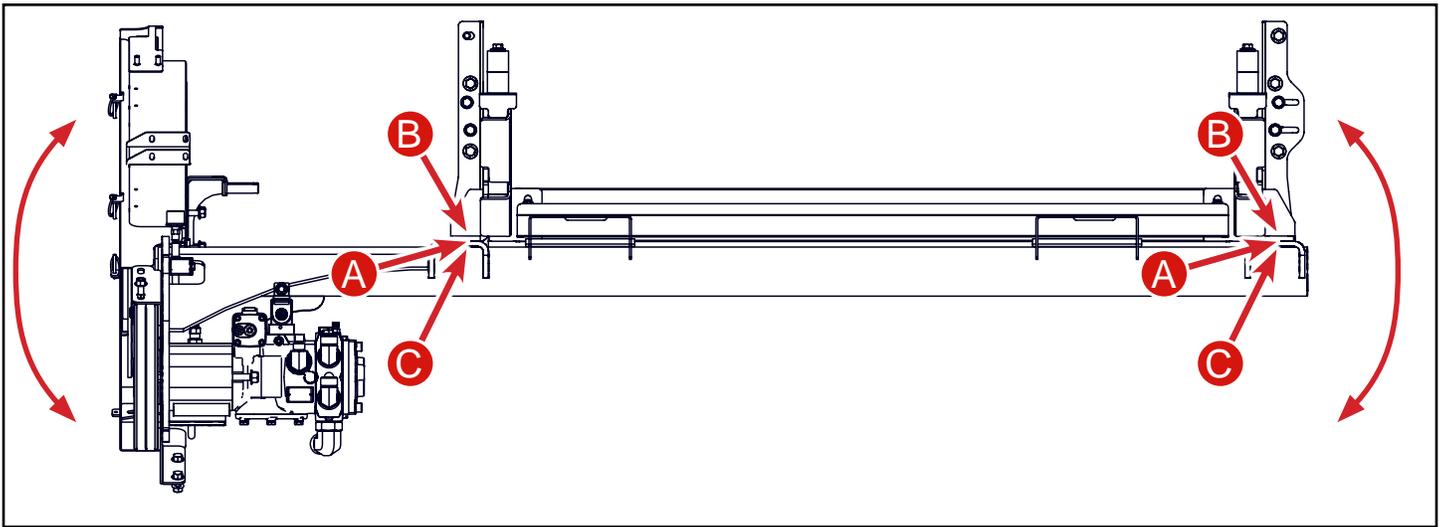
### Hydro Pump Sheave Adjustment

ID	Part No	Qty	Description
1	122.012.160	2	BOLT,HX,FL,CL10.9 M12
2	10064.06.00026	1	KEYSTOCK,SQ 3/8" X 1-5/8" LENGTH
3	MC-151991	1	BUSHING, QD 1-1/2 BORE, MASKA SKX1-1/2
4	MC-151971	1	SHEAVE, 2 GROOVE, MASKA 2-5V10.30
5	1317081	1	MOUNT, HYDRO PUMP
6	1317351	1	OHLA, PORTED
7	128.012	2	NUT,HX,FL,STV,CL10 M12
8	155190	1	PUMP, HYDROSTAT, POCLAIN PM45-52 S4-B12-08-35-L-26-11-S-00-F2-FU-VS-PA

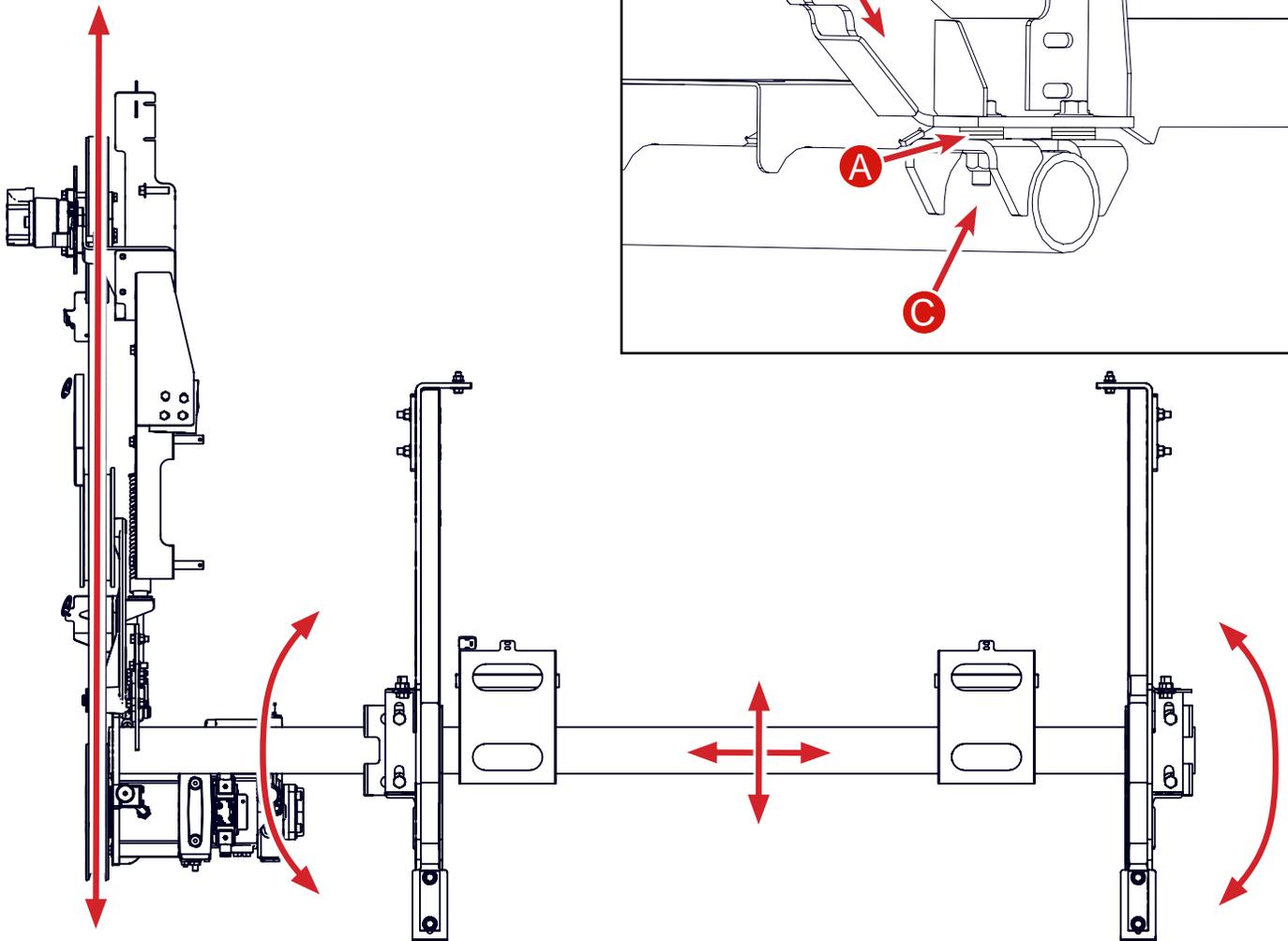
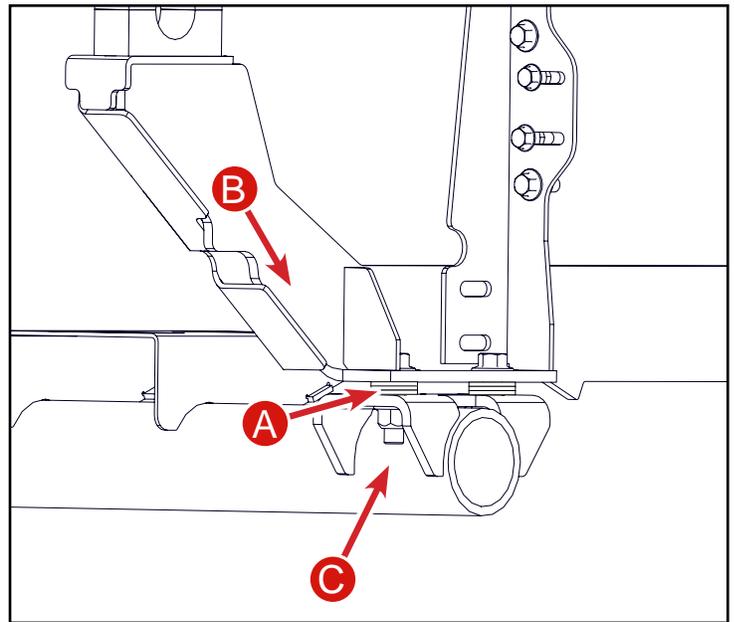


The taper lock hub and sheave (C) can move inward or outward on the overhung load adapter shaft. Note: Do not move the sheave so far outward that it is not securely fastened to the shaft. The taperlock hub is to be on the inward side of the sheave.



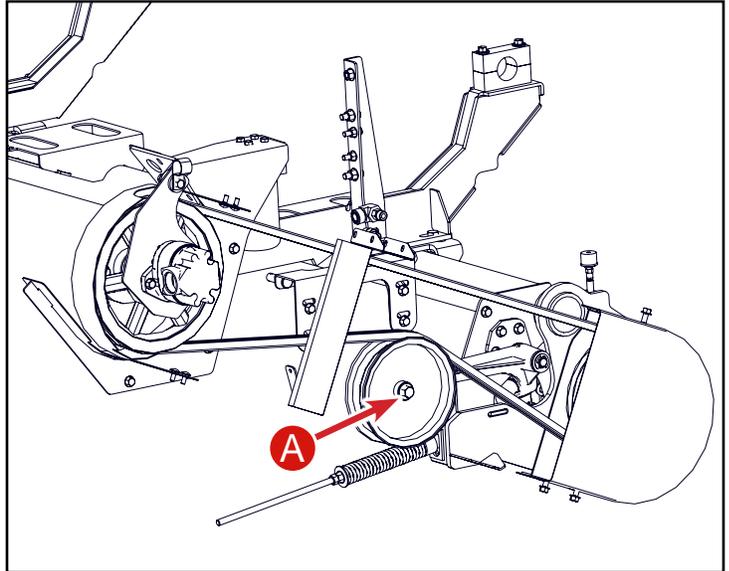


The spout can be rotated by installing shims (A) between the mounting arms (B) and the pump hanger (C) on either side to help align the drive sheave with the sheave on the hydro pump.

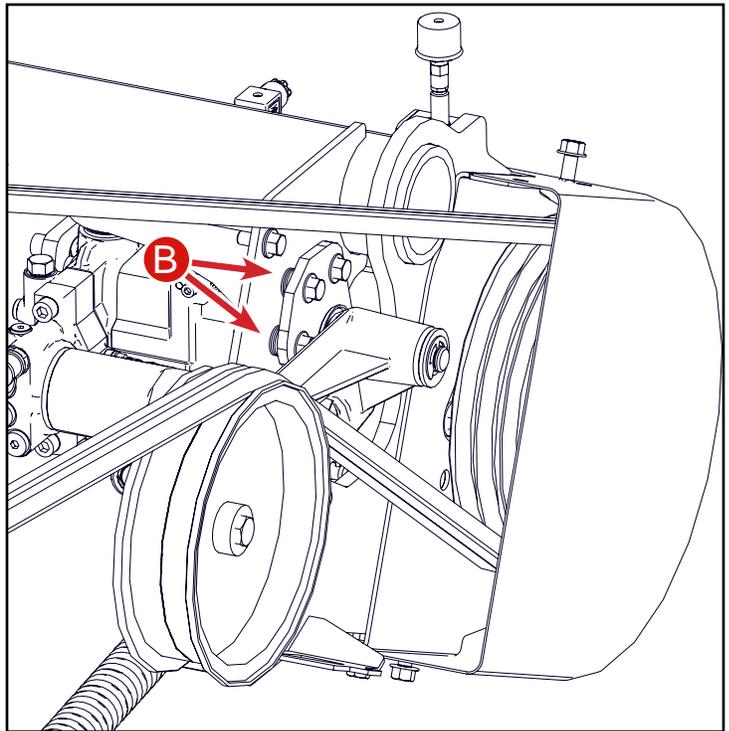


The holes on the hanger arms are slotted front to back and the holes on the hydro pump mount are slotted side to side. This allows for adjustment front to back, side to side and allows the whole mount to be pivoted to help with alignment

Once the top drive sheave is lined up with the bottom driven sheave on the hydro pump make sure the idler pulley (A) is aligned.

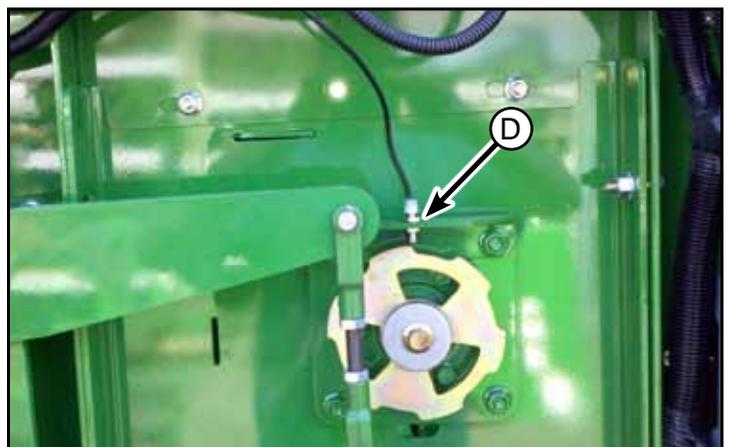
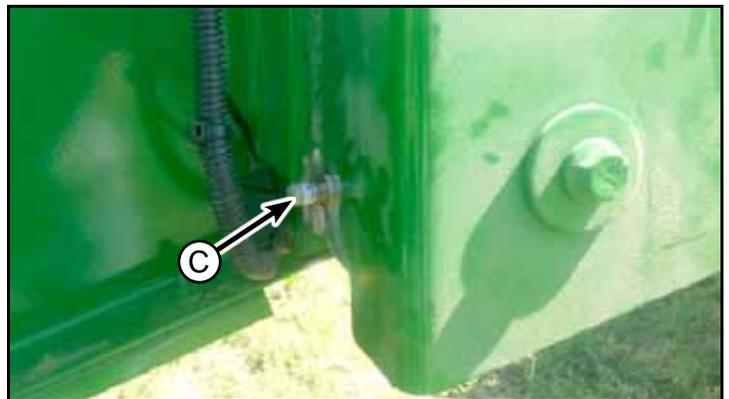
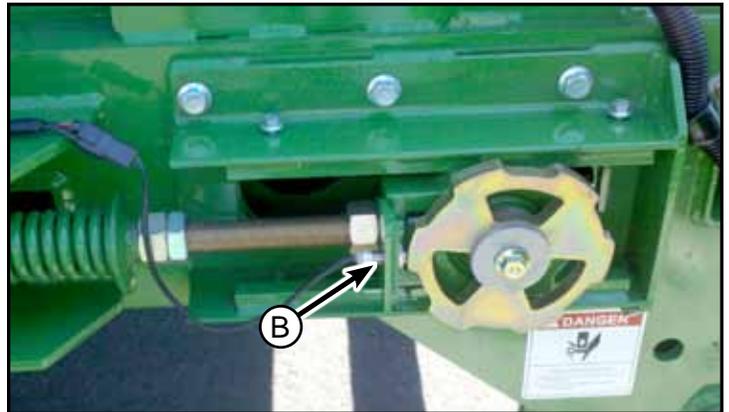
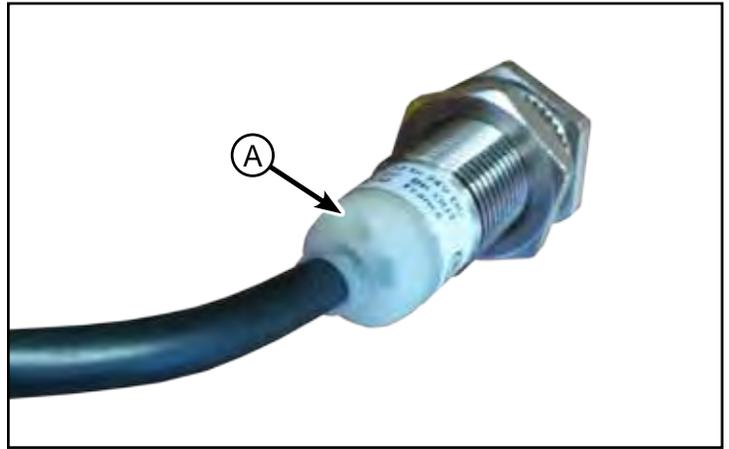


To space the idler pulley arm outward install washers (B) between the idler pulley arm and the mount.



## Speed Sensor Adjustment

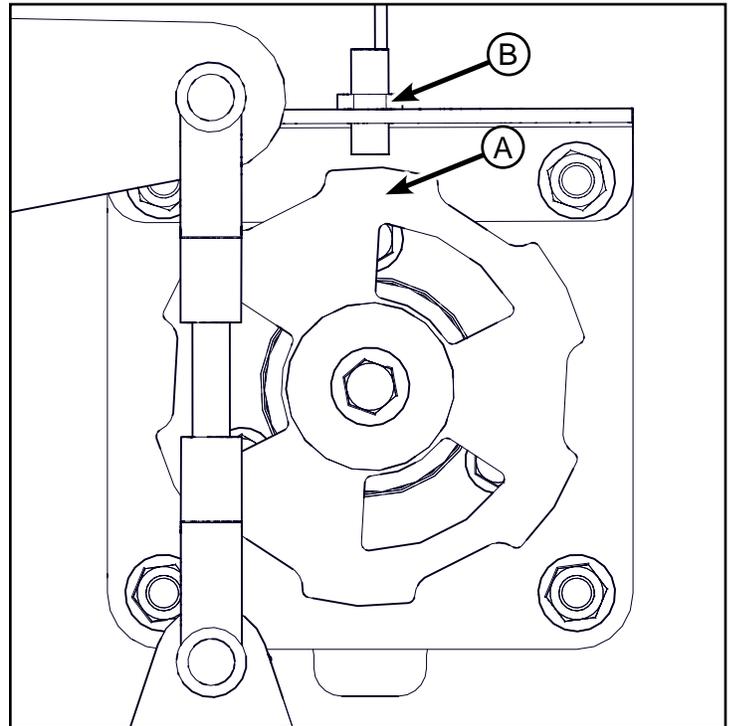
A small yellow LED (A) is present on the back side of each sensor. These LED's will illuminate when the sensor face detects a metallic object within ¼ inch (6 mm) of the sensor face. There are three speed sensors on the SPRB System, Conveyor Speed Sensor (B), Feed System Speed Sensor (C), Baler Belt Speed Sensor (D).



To properly adjust the sensors perform the following:

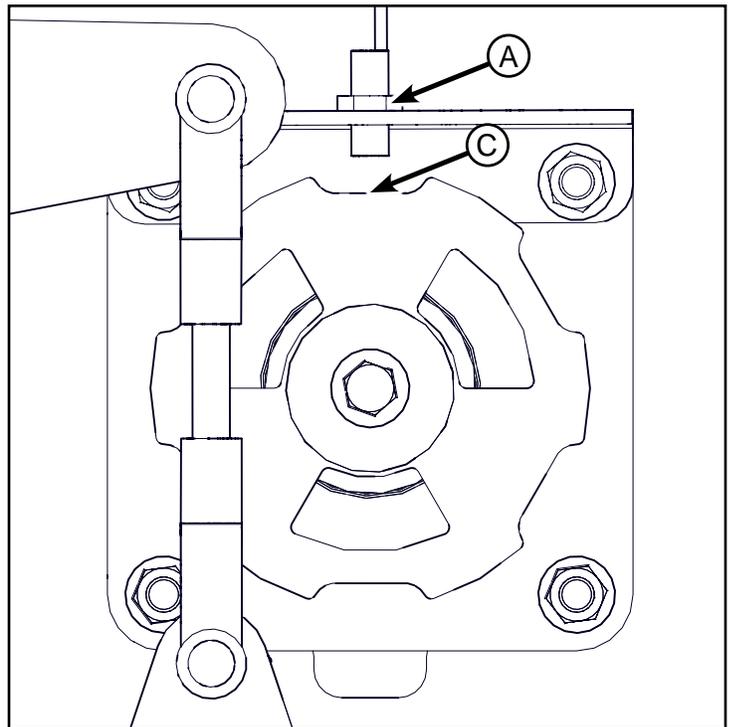
- Connect the SPRB to the combine and turn on the combine key to provide power to the SPRB controller. Do NOT start the combine's engine.
- If needed, manually rotate the shaft so one of the tone wheel (A) high points is in line with the sensor face (*Figure 1*).
- Loosen the sensor mounting nut (B) and adjust the sensor until the LED turns on. Rotate the sensor  $\frac{1}{2}$  turn further towards the tone wheel and tighten the adjustment nut.
- Manually rotate the shaft until one of the tone wheel low points (C) is in front of the sensor face (*Figure 2*).
- Verify that the LED is no longer illuminated. If the LED remains illuminated back the sensor away from the tone wheel until the LED goes out. Re-tighten the sensor adjustment nut.
- Manually rotate the shaft until one of the tone wheel high points is in front of the sensor face and verify that the LED illuminates once again (*Figure 1*).

*Figure 1.*



Feed System Sensor Shown

*Figure 2.*



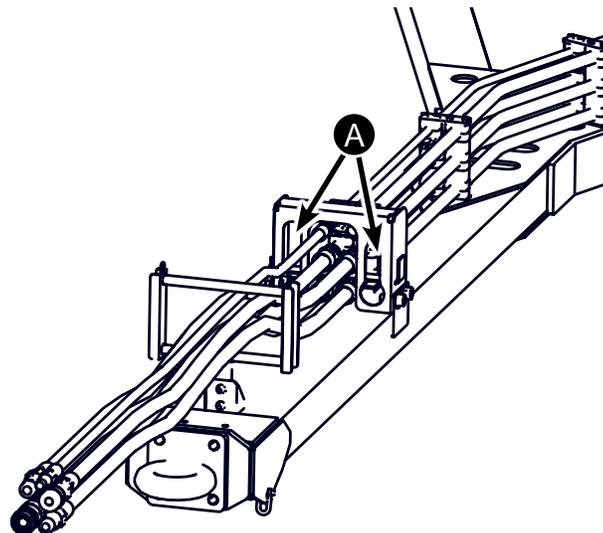
# Connecting and disconnecting SPRB System from the combine

## Connecting

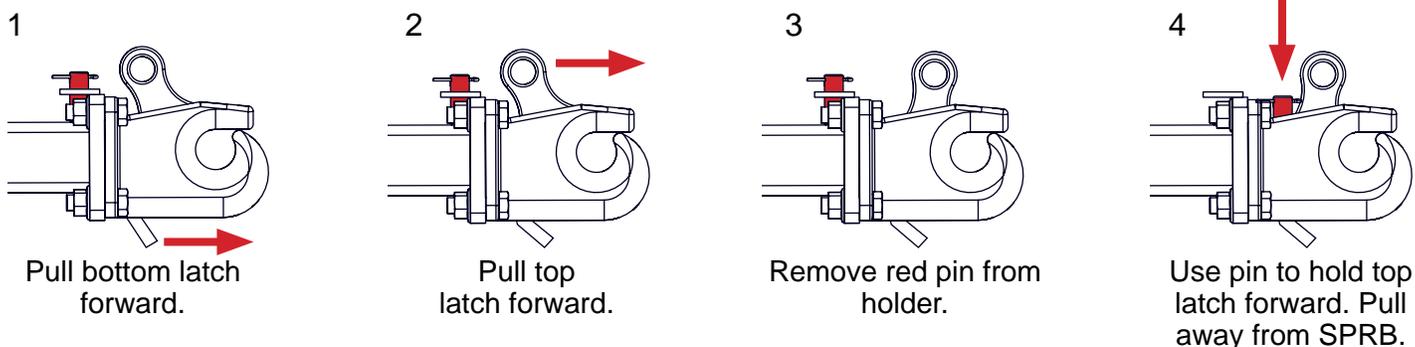
1. Pintle Hitch is in the open position when hooking up and the release pin is removed.
2. Shut off Combine.
3. Clean Hydraulic Fittings using non-chlorinated parts cleaner (Baler operates in a closed loop system and any foreign material may not be filtered out prior to passing through the pump).
4. Connect Hydraulics and Electrical (hook up large lines first for ease).
5. Hook up safety chains.
6. Fold up Jack.
7. Remove any blocks from tires.

## Disconnecting

1. Park baler on level ground and block tires.
2. Fold out Jack.
3. Shut off Combine.
4. Disconnect hydraulic and electrical lines. Verify that the hydraulic couplers snap closed. If not spray them with non-chlorinated parts cleaner and tap them with a hammer.
5. Disconnect safety chains.
6. Manually pull release on pintle hitch (cannot have tension on hitch). See instructions below for releasing pintle hitch.
7. Store hydraulic hoses in hose holder (A).
8. Start combine and pull away from SPRB System.



## Releasing Pintle Hitch



## Break-in Period

1. After running the SPRB System for 10 hours:
  - Check the tension on all drive chains
  - Check the tension on the conveyor belt.
2. Refer to baler operator's manual for baler brake in period.
3. Check hydraulic oil level on combine. Inspect all plumbing for oil leaks.
4. Remove debris from build up areas. See Cleaning Out Machine Section.

## Hydraulic Settings

Refer to the Hydraulic Safety section for precautions regarding the hydraulic system. The SPRB System uses both an auxiliary hydrostatic pump and a gear pump to provide flow for hydraulic functions. The hydrostatic pump provides flow for the baler while the gear pump provides flow for the conveyor feed system. Consult your combine and baler's operator's manual or contact your John Deere dealer for diagnostic and maintenance support regarding the hydraulic system.



### **IMPORTANT**

All adjustments on the hydraulic system are preset at the factory for optimal performance. Do not make any adjustments to these settings without first contacting your authorized Hillco Dealer.

## Hydraulic Hoses

Inspect the hydraulic system for leaks, damaged hoses, improper routing, and loose fittings. Hydraulic hoses that are not routed correctly could become worn from working against abrasive edges or moving parts. If abrasions or holes do occur, the hydraulic hoses can only be replaced, not repaired. Do not attempt repairs with tape or cements. High pressure will burst such repairs and cause system failure and possible injury.

Hydraulic Hose Connections – When tightening loose hoses on the cylinders, pump, etc., always use one wrench to keep the hose from twisting and another wrench to tighten the union. Excessive twisting will shorten hose life and allow the fitting to loosen during operation. Do not over-tighten fittings or adapters.

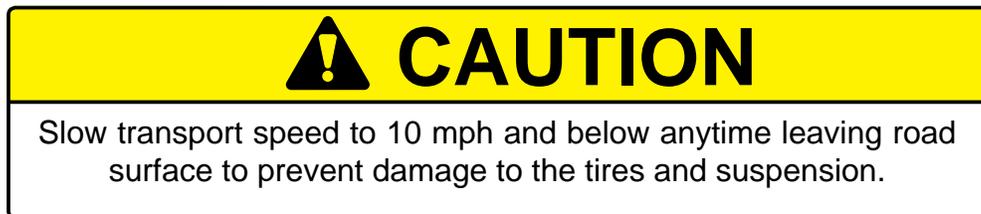
Refer to the John Deere® Combine's Operators Manual for information regarding hydraulic oil, check intervals, and reservoir fluid levels.

## Storage

Little needs to be done to the single pass baler for off season storage. Make sure the Accumulator and bale chamber are clean. Be aware of the spout on the combine as you park the combine in your storage space.

## Transporting the SPRB System

Extra care must be taken when transporting the baler down the road behind the combine. Allow extra distance for stopping. Be prepared to need more turning room as you go around turns. Always have your flashing hazard lights on when transporting on the road.



## Towing the SPRB with a Tractor

In the event an SPRB equipped combine is unavailable, the SPRB system can be transported with a properly ballasted tractor

Tow only with a properly ballasted tractor or SPRB equipped Combine and properly attached safety tow chains.

- To insure proper stability, adjust ballast, wheel spacing and tire inflation according to the tractor operators' manual.

Do not exceed the implements maximum transport speed of 32 km/h (20 mph)

- Exceeding this speed may result in loss of control during transport or braking, or serious injury or death.

Do not transport with a motor vehicle

Reduce speed and use additional caution when on an incline, towing under adverse surface conditions, and turning.

**!Caution: To avoid injury to others, transport baler with the bale chamber empty.**

1. Prior to disconnecting the SPRB from the combine:
  - a. Empty the bale chamber.
  - b. Close the gate.
2. Prior to transporting SPRB with a tractor:
  - a. Connect SPRB pintle ring to tractor drawbar.
  - b. Secure safety chain.
  - c. Stow and secure hydraulic and electrical lines.
  - d. Connect SPRB tail light plug to tractor outlet.
  - e. Pin caster wheels.

SPRB Implement Weights:

Implement weight:	5556 kg (12,250 lb.)
Drawbar Vertical Capacity:	140 kg (310 lb.)

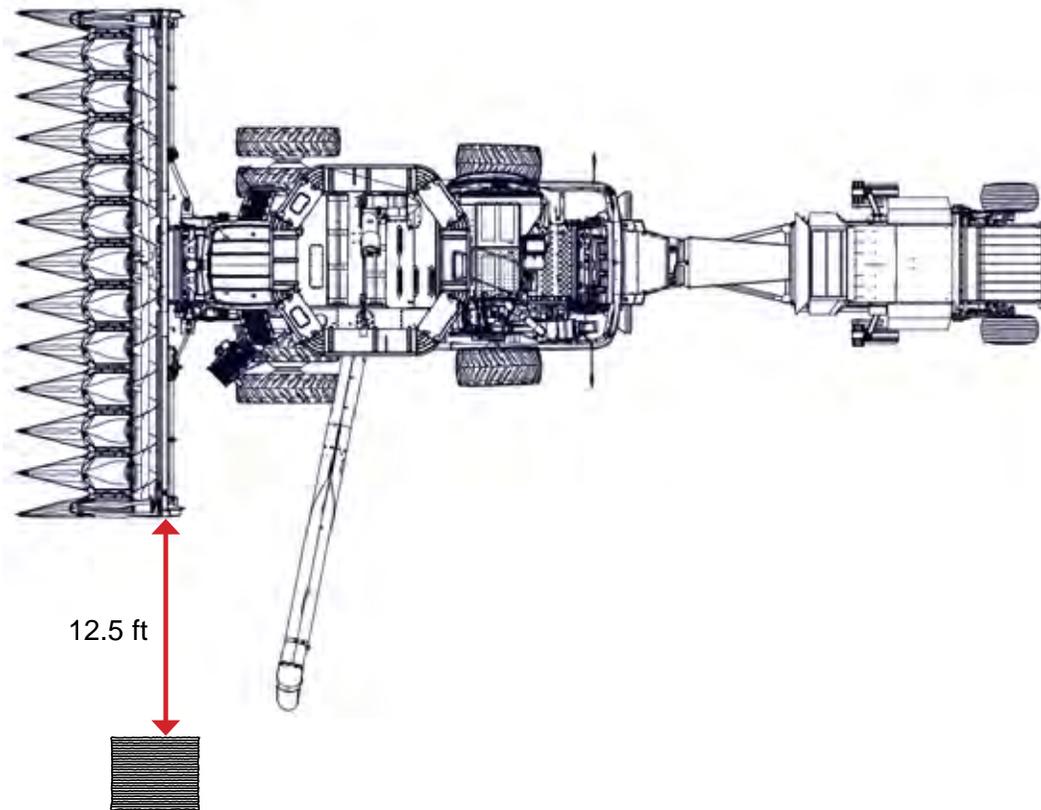


**IMPORTANT**

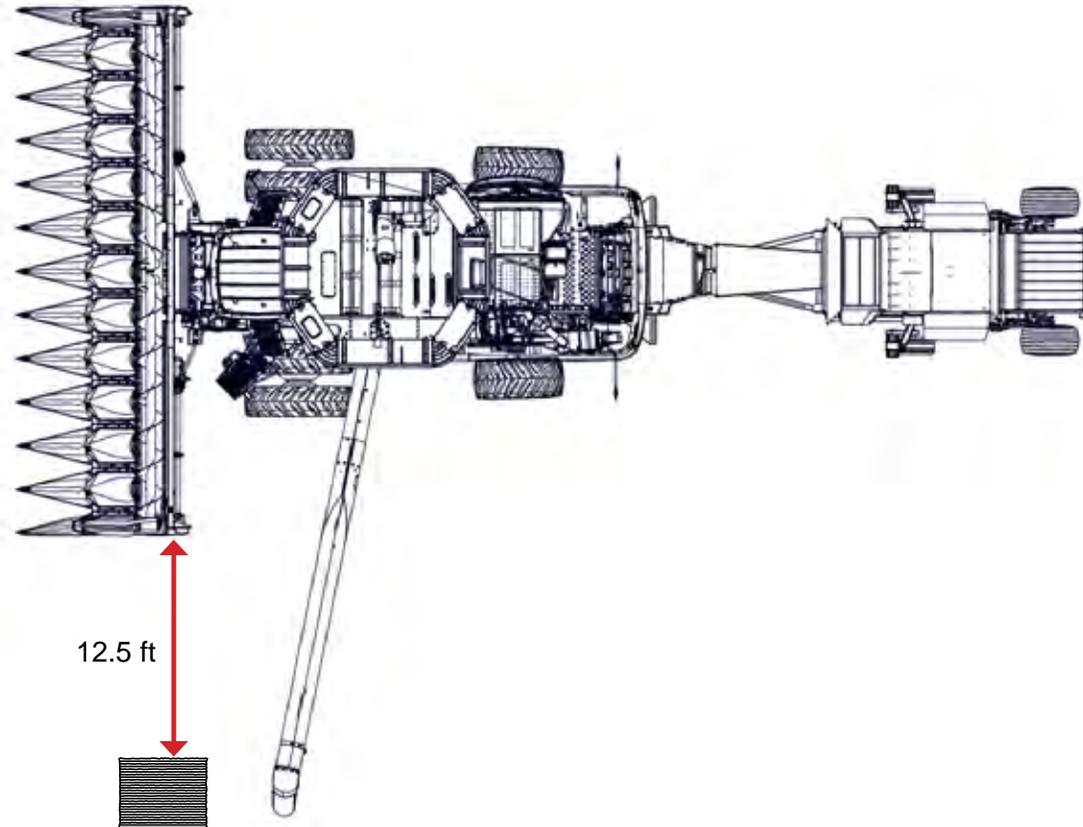
Never transport the SPRB System with material in the Accumulator or a bale in the baler.

# Header/Auger/Bale Spacing

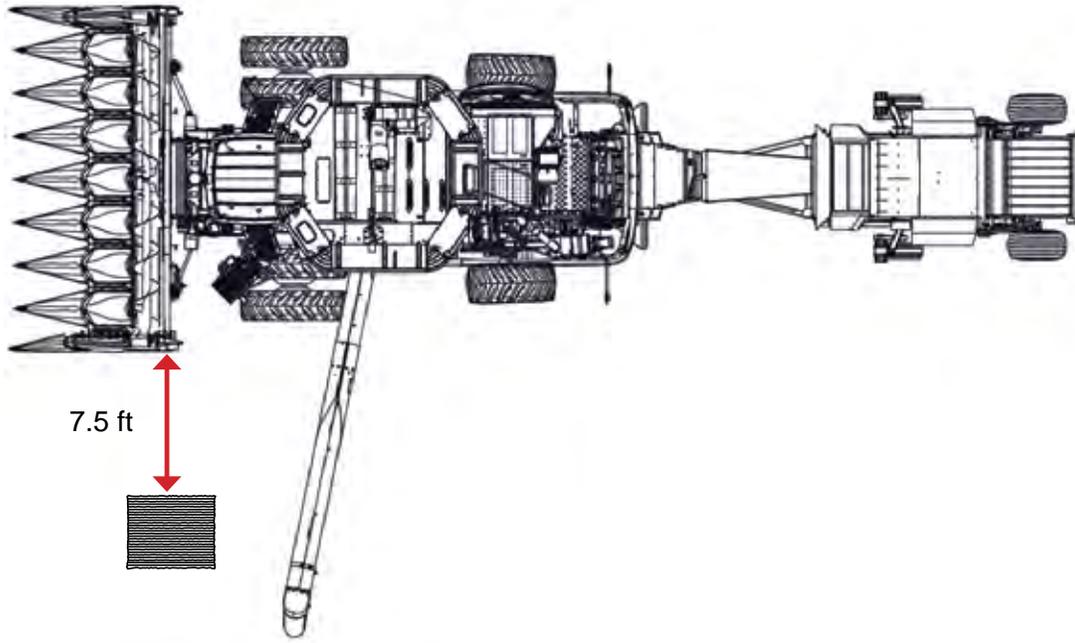
612C Head, 22.5 ft Unloading Auger



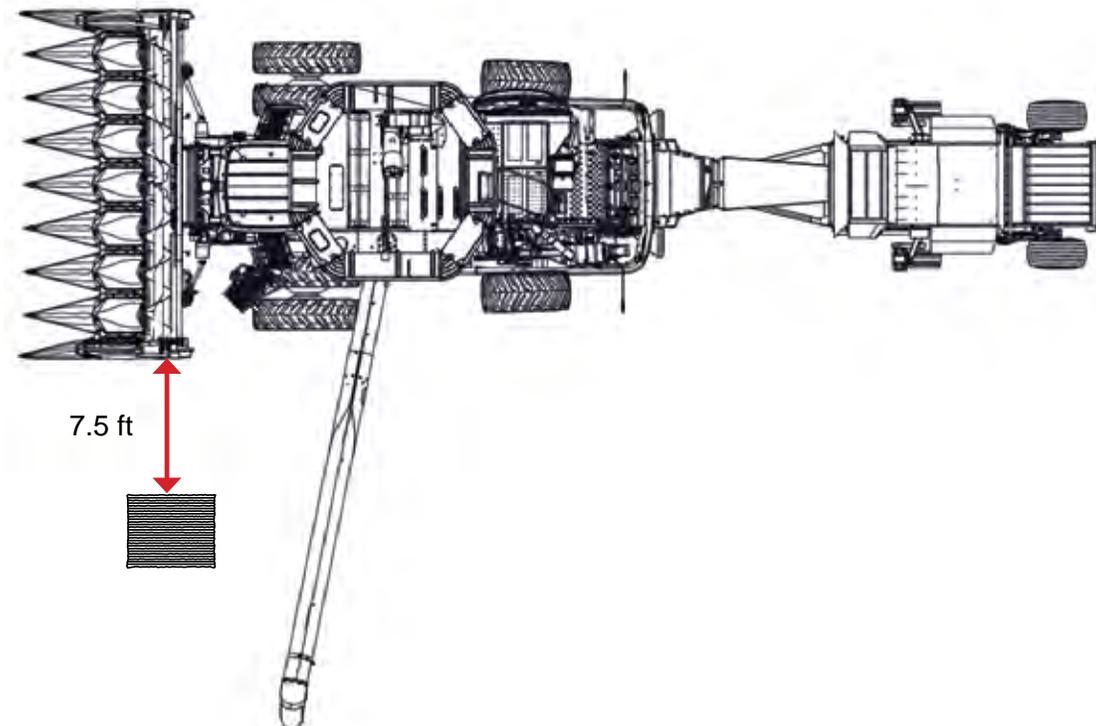
612C Head, 26 ft Unloading Auger



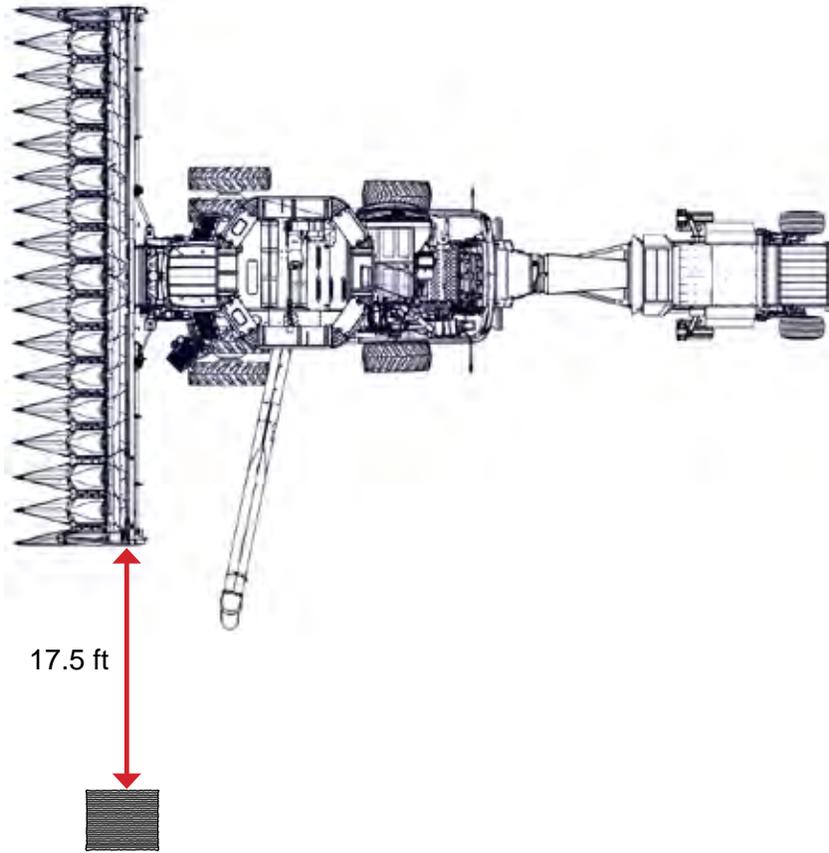
608C Head, 22.5 ft Unloading Auger



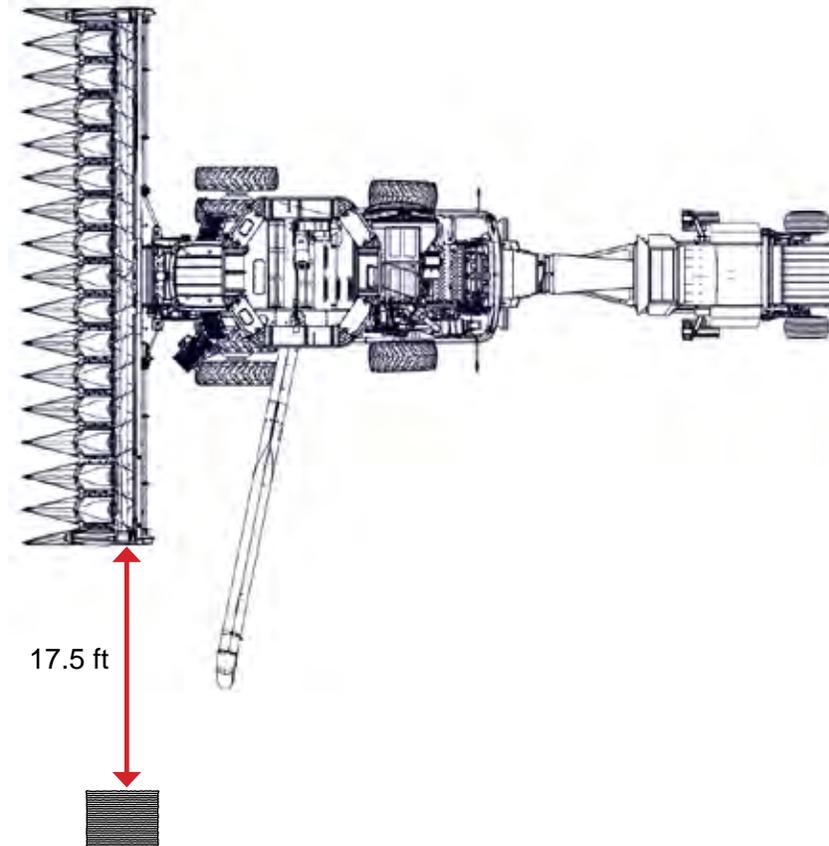
608C Head, 26 ft Unloading Auger



616C Head, 22.5 ft Unloading Auger

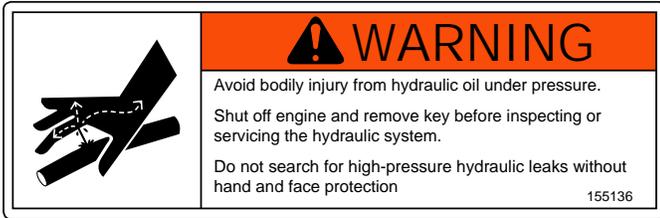


616C Head, 26 ft Unloading Auger



# Decal Placement

(A)



155136

(B)



155138

(C)



155139

(D)



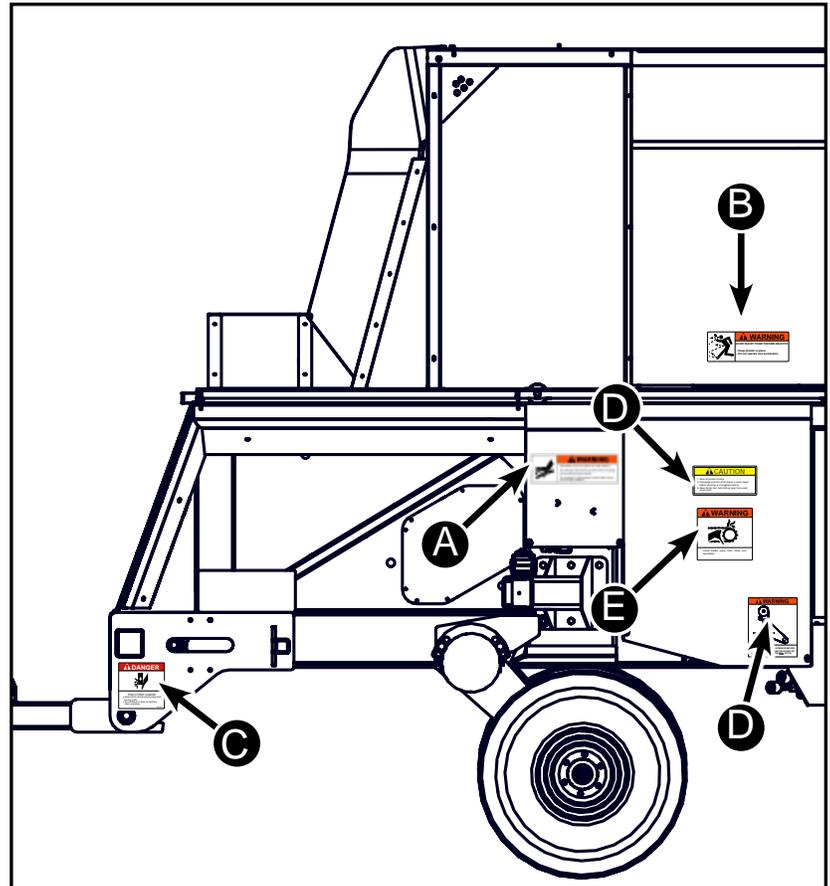
155137

(E)

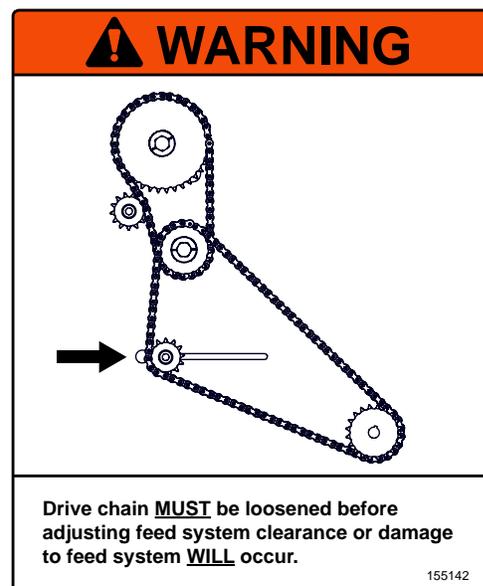


155141

D-130704CMA01E



(F)



155142

(A)

**WARNING**



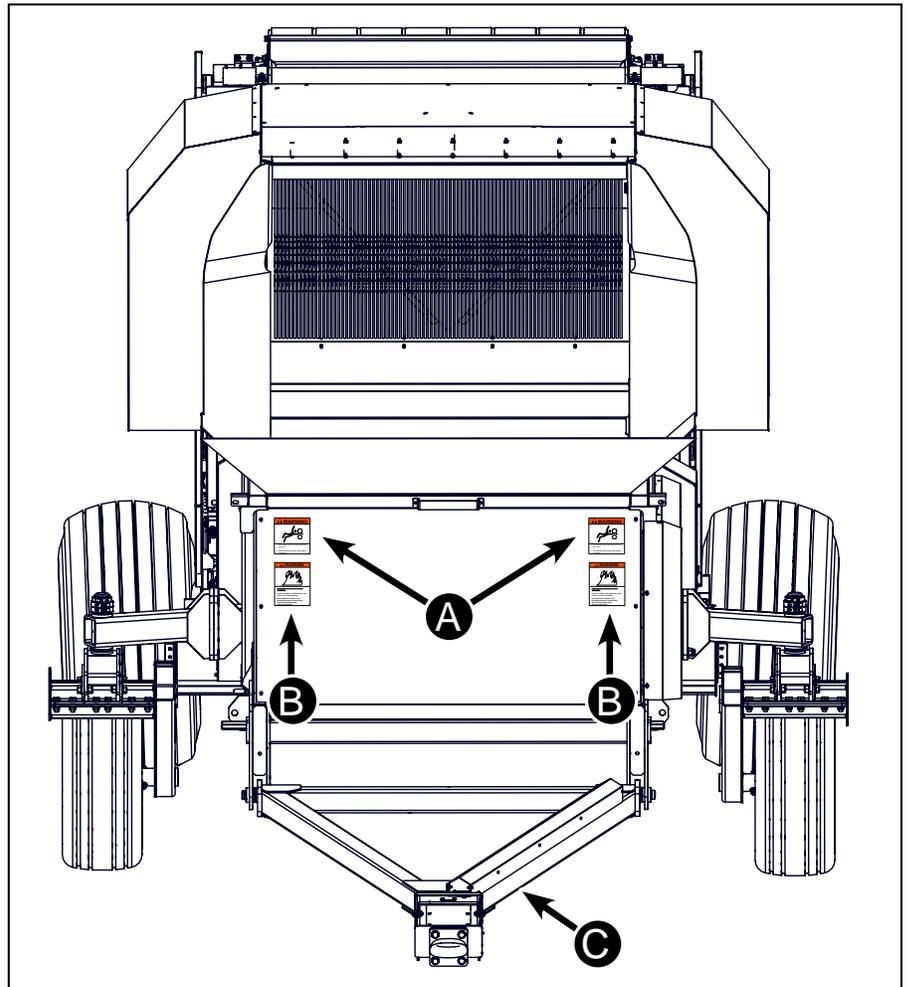
**AVOID SERIOUS PERSONAL INJURY FROM FIRE.**

DO NOT ATTEMPT TO EXTINGUISH A FIRE THAT IS TOO FAR ADVANCED.

SEE OPERATOR'S MANUAL FOR INFORMATION ABOUT PREVENTING AND EXTINGUISHING FIRES BEFORE OPERATING.

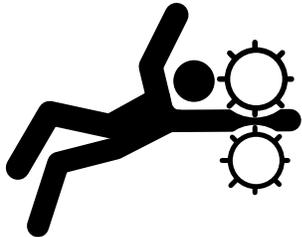
155144

155144



(B)

**WARNING**



- Avoid bodily injury from feed rolls and conveyor.
- Do not enter accumulator when engine is running.

155143

155143

(C)



**WARNING**

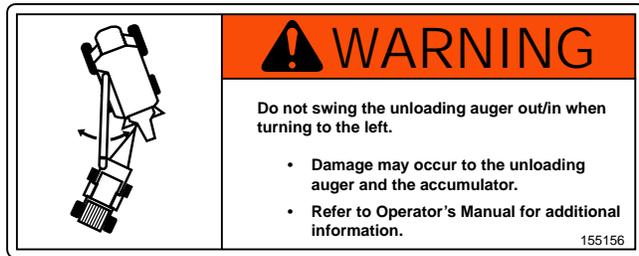
Avoid serious injury or death resulting from loss of control while transporting with this hitch:

- Do not transport with any material in cart.
- Do not transport at speeds exceeding 32 kph (20 mph)
- Do not exceed 13,000 lb. maximum pull.
- Do not transport with motor vehicle.
- Attach safety chain (minimum 13,000 lb. rating) between combine and cart.

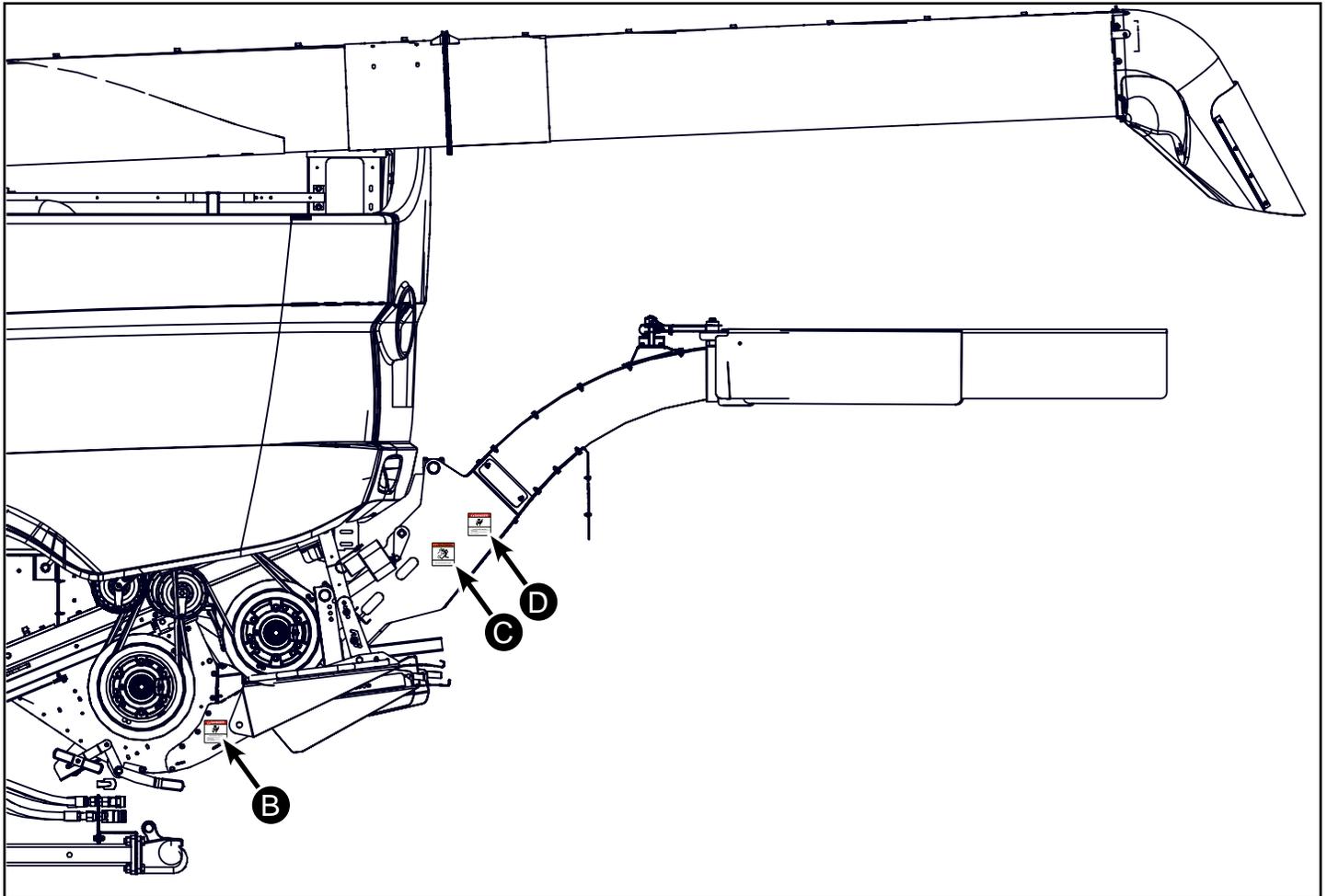
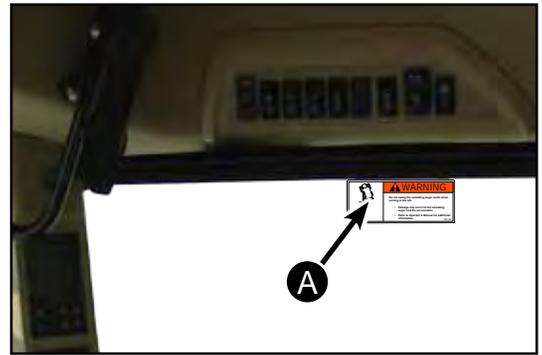
155140

155140

(A)



155156



(B)



155139

D-130704CMA01E

(C)



155145

Hillco Technologies, Inc.

(D)



155139

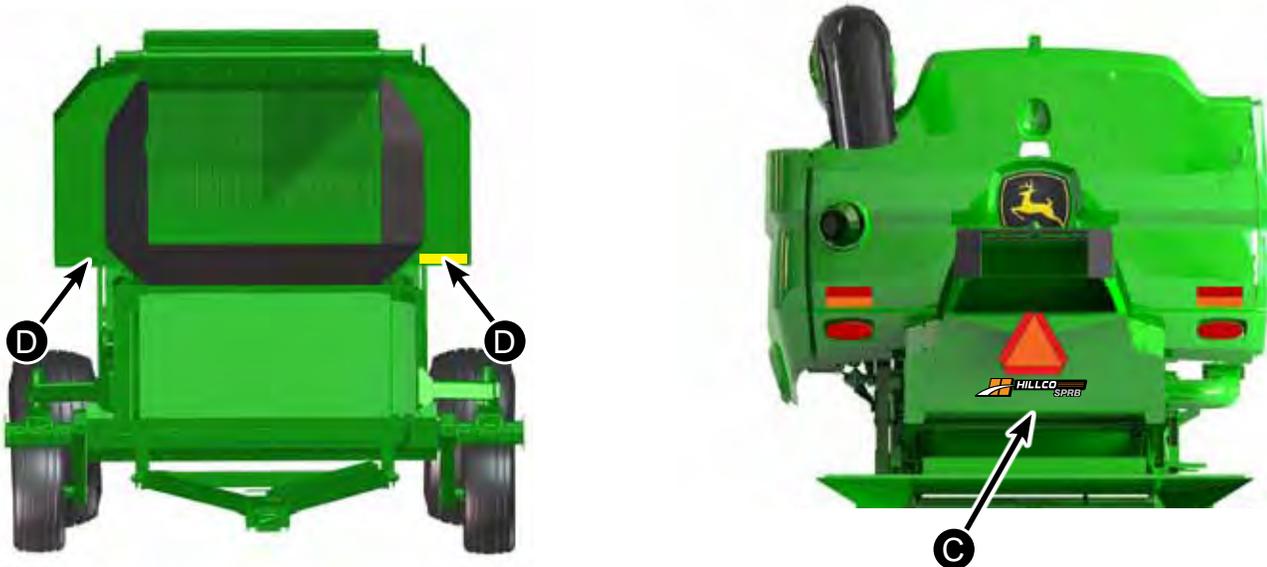


(A)  **SINGLE PASS ROUND BALE SYSTEM**

155188

(B)  **HILLCO SPRB**

155187

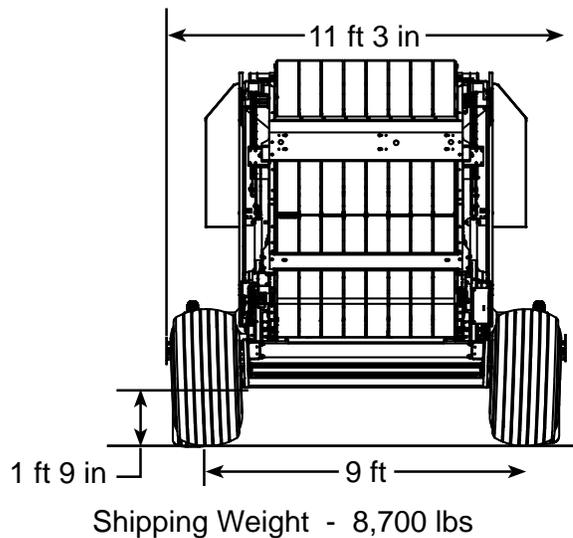
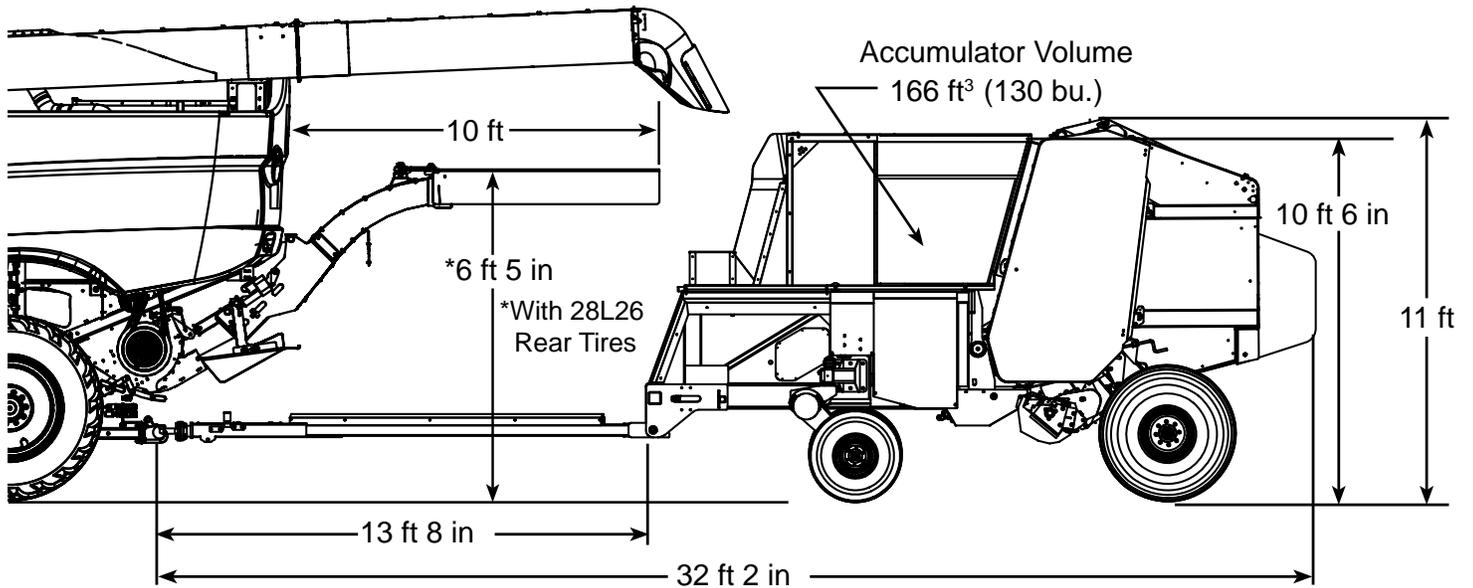


(C)  **HILLCO SPRB**

155189

(D) - Yellow Reflective Tape (2" x 12")

## System Specifications



### Maximum Bale Weight

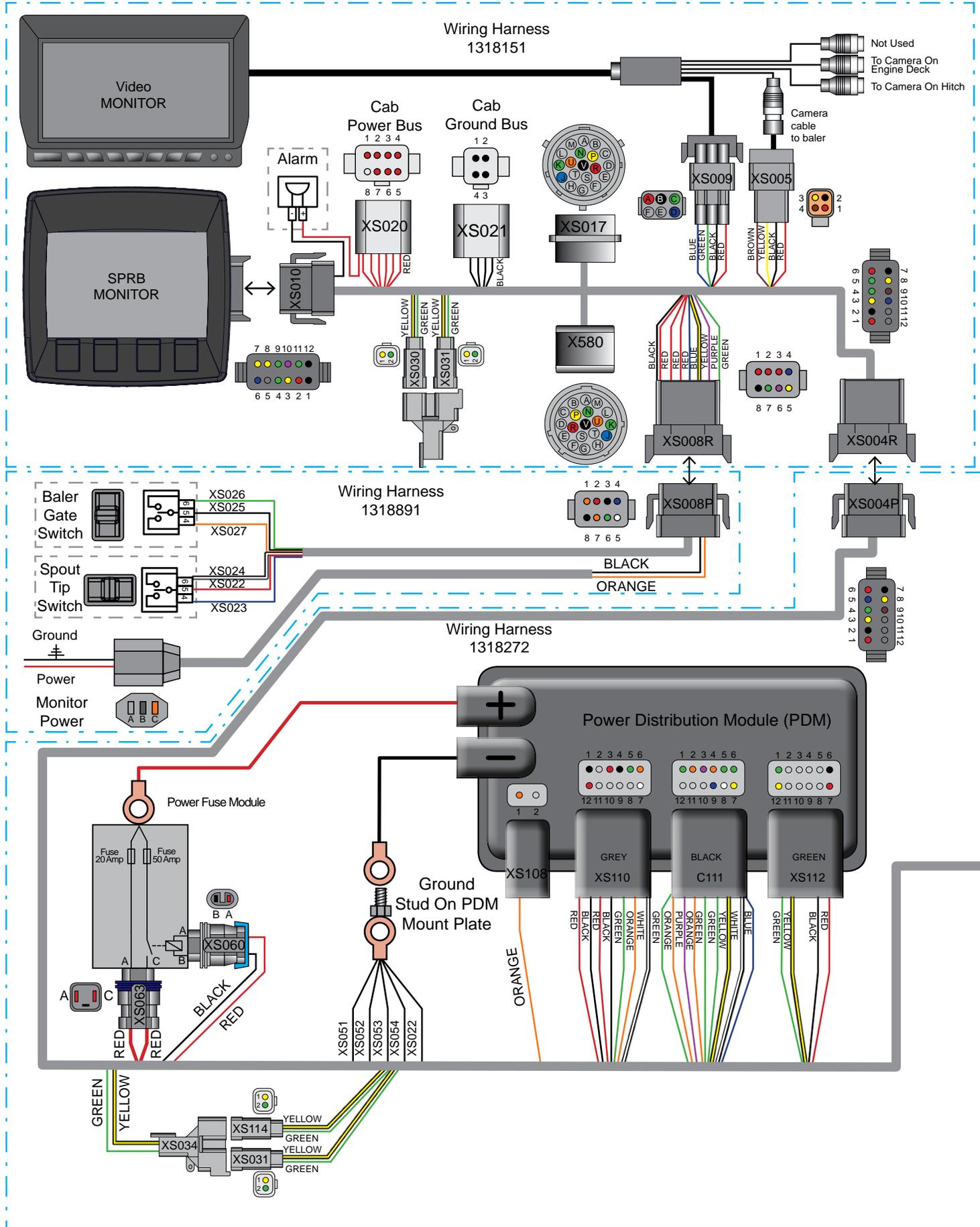
Never exceed a bale weight of 2,200 lbs.



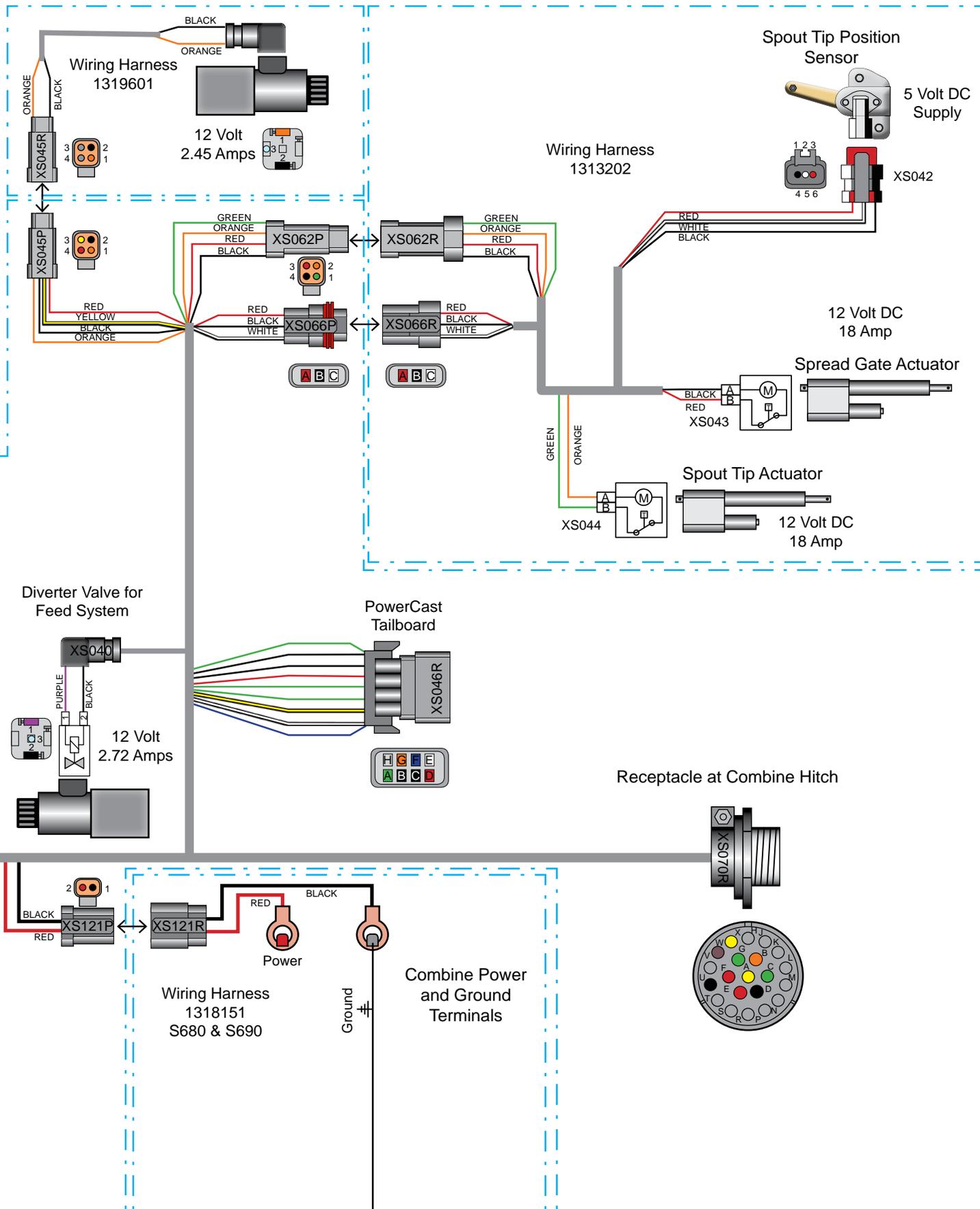
## WARNING

If bale weight exceeds 2,200 lbs damage may occur to the baler or SPRB System.

\*For Complete Circuit Schematics See the SPRB Technical Manual

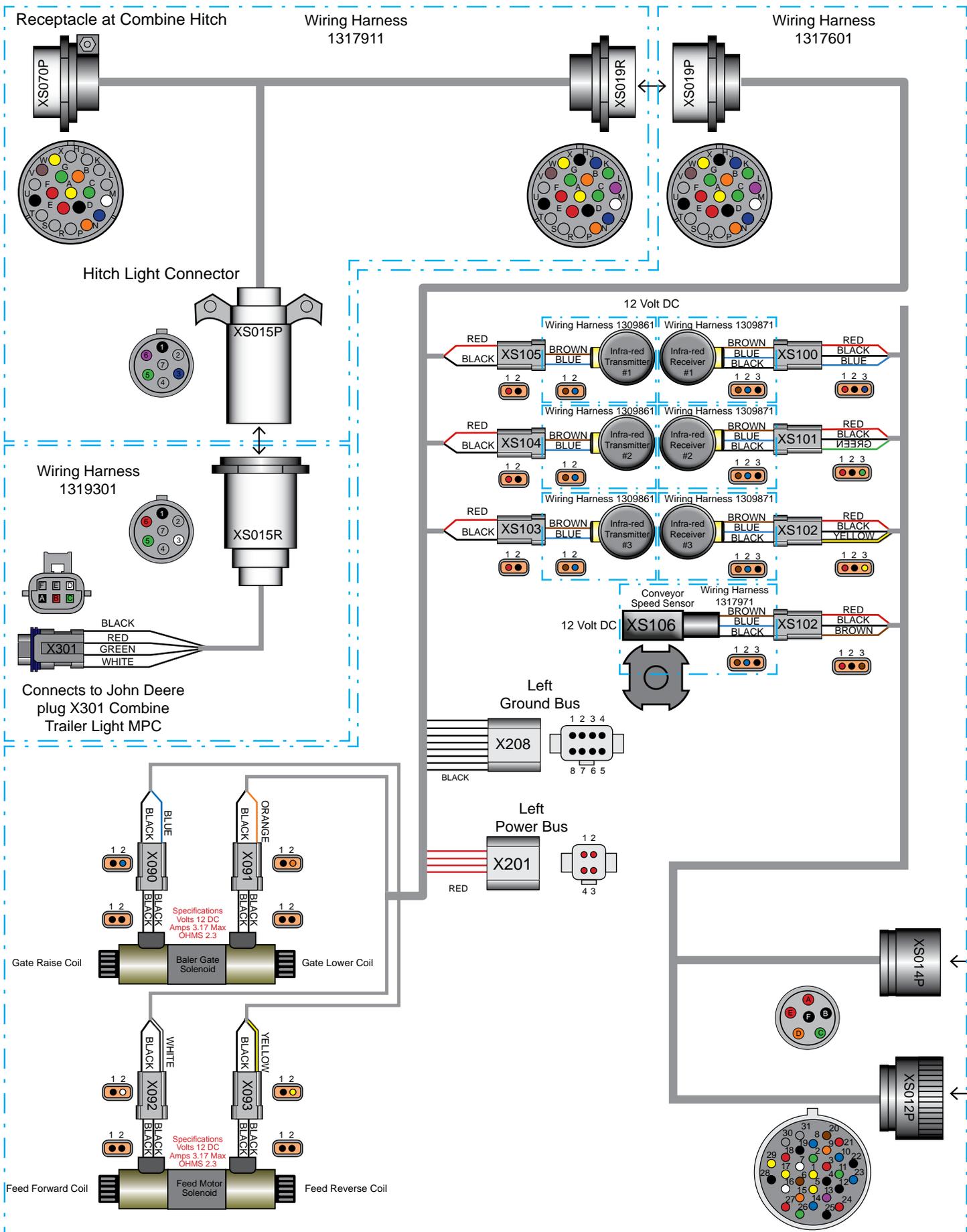


# Combine

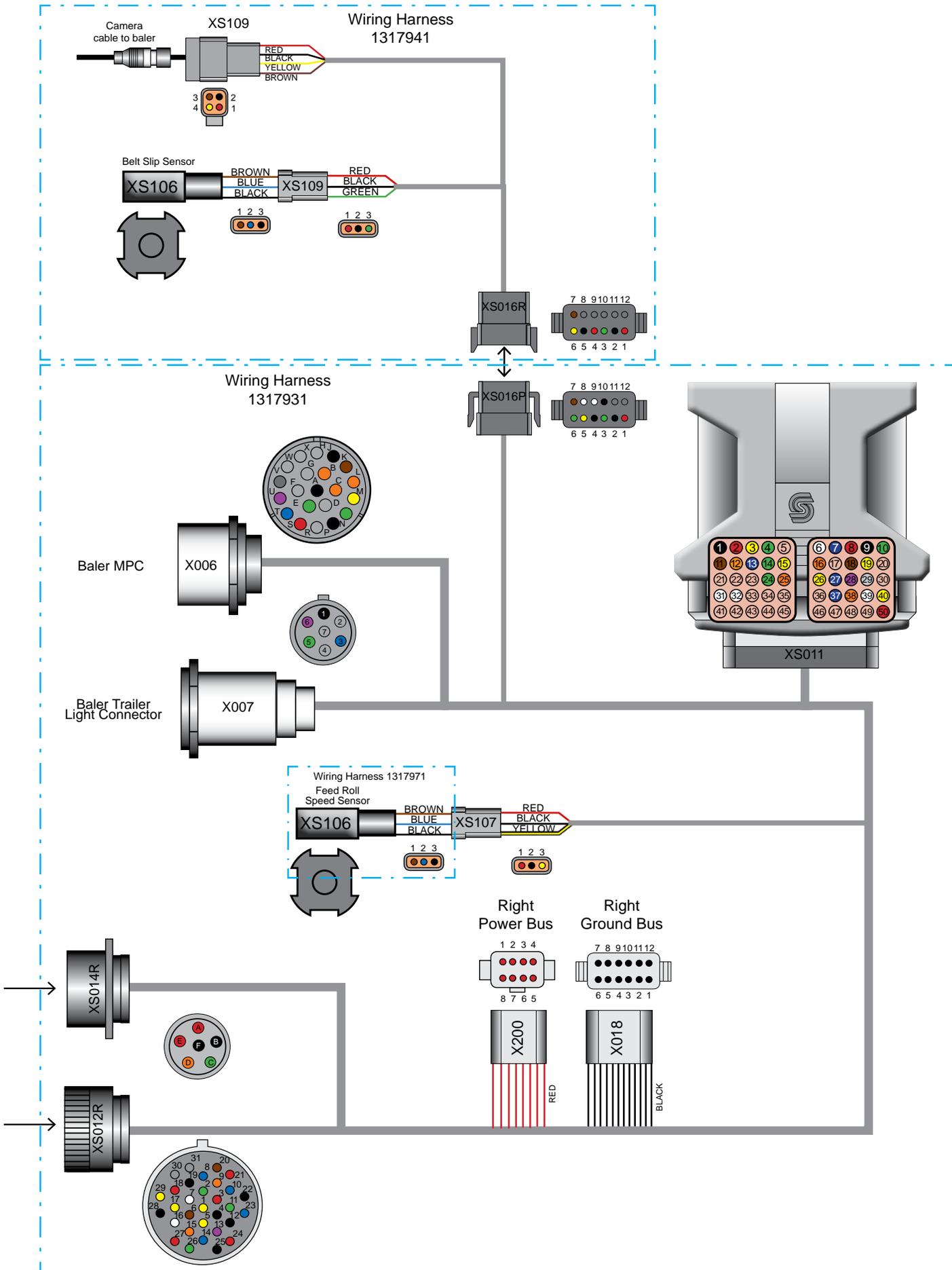


# Baler

\*For Complete Circuit Schematics See the SPRB Technical Manual



# Baler



X006 - Combine Can Tee			To	
Pin	Wire Color	Description	Connector	Pin
A	Black	Pickup Speed Sensor	XS011	2
B	Orange	Actuator Retract	XS014R	4
C	Orange	Pickup Speed Sensor	XS011	23
D	-	-	-	-
E	Green	Actuator Extend	XS014R	3
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
I	-	-	-	-
J	Black	Ground	XS018	7
K	Brown	Left Gate Switch	XS011	11
L	Orange	Right Gate Switch	XS011	12
M	Yellow	Oversize Bale Switch	XS011	26
N	Green	Net Switch	XS011	10
P	Black	Sensor Ground	XS011	9
R	-	-	-	-
S	Red	Sensor Power	XS011	8
T	Blue	Bale Size Sensor	XS011	27
U	Purple	Left Bale Shape	XS011	28
V	Gray	Right Bale Shape	XS011	29

X007 - Baler Trailer Light Connector			To	
Pin	Wire Color	Description	Connector	Pin
1	Black		XS012R	12
2				
3	Blue	Left Amber Light	XS012R	10
4				
5	Green	Right Amber Light	XS012R	11
6	Purple	Brake Light	XS012R	13
7				

X301 - Combine Trailer Light MPC			To	
Pin	Wire Color	Description	Connector	Pin
A	Black	Gate Switch Power	XS015S	1
B	Red	Spout Switch Power	XS015S	6
C	Green	Gate Up Signal	XS015S	5
D	White	Gate Down Signal	XS015S	3
E	-	-	-	-
F	-	-	-	-

X580 - Combine Can Bus			To	
Pin	Wire Color	Description	Connector	Pin
A	-	-	-	-
B	-	-	-	-
C	-	-	-	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
I	-	-	-	-
J	Blue	GS Video -	XS017	J
K	Yellow	GS Video -	XS017	K
L	-	-	-	-
M	-	-	-	-
N	Green	Can1 Low	XS017	N
P	Yellow	Can1 High	XS017	P
R	Red	GS Power	XS017	R
S	-	-	-	-
T	-	-	-	-
U	Orange	GS Wakeup	XS017	U
V	Black	GS Ground	XS017	V

XS004P - Cab Multi Pin Connector			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Relay Power	XS060	A
2	Black	Relay Ground	XS060	B
3	Yellow	Can0 High	XS034	1
4	Green	Can0 Low	XS034	2
5	Green	Backup Camera Signal	XS111	5
6	Red	Camera Power	XS070R	F
7	Black	Camera Ground	XS070R	U
8	Yellow	Camera Signal	XS070R	X
9	Brown	Camera Shield	XS070R	W
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-

XS004R - Cab Multi Pin Connector			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Relay Power	XS020	6
2	Black	Relay Ground	XS021	3
3	Yellow	Can0 High	XS030	1
4	Green	Can0 Low	XS030	1
5	Green	Backup Camera Signal	XS009	C
6	Red	Camera Power	XS005	1
7	Black	Camera Ground	XS005	2
8	Yellow	Camera Signal	XS005	3
9	Brown	Camera Shield	XS005	4
10	Blue	Eject Camera Signal	XS009	D
11	-	-	-	-
12	-	-	-	-

XS005 - Baler Camera			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Cab Power Bus Supply	SX004R	6
2	Black	Spout Switch Power	SX004R	7
3	Yellow	Gate Switch Power	SX004R	8
4	Brown	Spout Left	SX004R	9

XS008R - Switch Box/Power			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Cab Power Bus Supply	XS020	1
2	Red	Spout Switch Power	XS020	4
3	Red	Gate Switch Power	XS020	5
4	Blue	Spout Left	XS010	6
5	Yellow	Spout Right	XS010	7
6	Purple	Gate Up	XS010	10
7	Green	Gate Down	XS010	11
8	Black	Cab Ground	XS021	2

XS008P - Switch Box/Power			To	
Pin	Wire Color	Description	Connector	Pin
1	Orange	Cab Power	RE67013	C
2	Red	Spout Switch Power	XS022	1
3	Black	Gate Switch Power	XS025	1
4	Blue	Spout Left Signal	XS023	1
5	White	Spout Right Signal	XS024	1
6	Green	Gate Up Signal	XS026	1
7	Orange	Gate Down Signal	XS027	1
8	Black	Cab Ground	RE67013	B

XS009 - Camera			To	
Pin	Wire Color	Description	Connector	Pin
A	Red	Camera Power	XS020	3
B	Black	Camera Ground	XS021	3
C	Green	Backup Camera Signal	XS004R	5
D	Blue	Eject Camera Signal	XS004R	10
E	-	-	-	-
F	-	-	-	-

XS010 -Display			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Display Ground	XS021	2
2	Red	Display Power	XS020	2
3	Yellow	Display Can0 High	XS030	1
4	Green	Display Can0 Low	XS030	2
5	-	-	-	-
6	Blue	Spout Left	XS008R	4
7	Yellow	Spout Right	XS008R	5
8	Yellow	Can1 High - Tee	XS017	P
9	Green	Can 1 Low - Tee	XS017	N
10	Purple	Gate Up	XS008R	6
11	Green	Gate Down	XS008R	7
12	-	-	-	-

XS011 -Controller MPC			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Controller Ground	XS018	11
2	Red	Power	XS014R	1
3	Yellow	Can High	XS012R	1
4	Green	Can Low	XS012R	2
5	-	-	-	-
6	White	Tractor Service #1	XS012R	7
7	Rblue	Tractor Service #2	XS012R	8
8	Red	Sensor Power	X006	S
9	Black	Sensor Ground	X006	P
10	Green	Net Switch	X006	N
11	Brown	Left Gate Switch	X006	K
12	Orange	Right Gate Switch	X006	L
13	Blue	Infra Red Receiver Signal #1	XS012R	23
14	Green	Infra Red Receiver Signal #2	XS012R	26
15	Yellow	Infra Red Receiver Signal #3	XS012R	29
16	Orange	Tractor Service #3	XS012R	9
17	-	-	-	-
18	Brown	Conveyor Speed Signal	XS012R	20
19	Yellow	Feed Sensor Signal	XS107	3
20	-	-	-	-
21	-	-	-	-
22	-	-	-	-
23	-	-	-	-
24	Green	Belt Sensor Signal	X016P	3
25	Orange	Pickup Speed Sensor	X006	C
26	Yellow	Oversize Bale Switch	X006	M
27	Blue	Bale Size Sensor	X006	T
28	Purple	Left Bale Shape	X006	U
29	Gray	Right Bale Shape	X006	V
30	-	-	-	-
31	White	Led Backup Light	X016P	8
32	White	Led Backup Light	X016P	9
33	-	-	-	-
34	-	-	-	-
35	-	-	-	-
36	-	-	-	-
37	Blue	Gate Up Coil Power	XS012R	14
38	Orange	Gate Down Coil Power	XS012R	15
39	White	Feed Forward Coil Power	XS012R	16
40	Yellow	Feed Reverse Coil Power	XS012R	17
41	-	-	-	-
42	-	-	-	-
43	-	-	-	-
44	-	-	-	-
45	-	-	-	-
46	-	-	-	-
47	-	-	-	-
48	-	-	-	-
49	-	-	-	-
50	Red	Power Link	XS200	1

XS012P -Right Bulkhead			To	
Pin	Wire Color	Description	Connector	Pin
1	Yellow	Can High	XS019P	A
2	Green	Can Low	XS019P	C
3	Red	Camera Power	XS019P	F
4	Black	Camera Ground	XS019P	U
5	Yellow	Camera Signal	XS019P	X
6	Brown	Camera Shield	XS019P	W
7	White	Tractor Service #1	XS019P	M
8	Blue	Tractor Service #2	XS019P	N
9	Orange	Tractor Service #3	XS019P	P
10	Blue	Left Amber Right	XS019P	J
11	Green	Right Amber Light	XS019P	K
12	Black	Tail Light Ground	XS019P	H
13	Purple	Brake Power	XS019P	L
14	Blue	Gate Up Coil Power	XS012P	14
15	Orange	Gate Down Coil Power	XS012P	15
16	White	Feed Forward Coil Ground	XS012P	16
17	Yellow	Feed Reverse Coil Ground	XS012P	17
18	Red	Conveyor Speed Power	XS012P	18
19	Black	Conveyor Speed Ground	XS012P	19
20	Brown	Conveyor Speed Signal	XS012P	20
21	Red	Infra Red RX #1 Power	XS012P	21
22	Black	Infra Red RX #1 Ground	XS012P	22
23	Blue	Infra Red RX #1 Signal	XS012P	23
24	Red	Infra Red RX #2 Power	XS012P	24
25	Black	Infra Red RX #2 Ground	XS012P	25
26	Green	Infra Red RX #2 Signal	XS012P	26
27	Red	Infra Red RX #3 Power	XS012P	27
28	Black	Infra Red RX #3 Ground	XS012P	28
29	Yellow	Infra Red RX #3 Signal	XS012P	29
30	-	-	-	-
31	-	-	-	-

XS012R -Right Bulkhead			To	
Pin	Wire Color	Description	Connector	Pin
1	Yellow	Can High	XS011	3
2	Green	Can Low	XS011	4
3	Red	Camera Power	X016P	4
4	Black	Camera Ground	X016P	5
5	Yellow	Camera Signal	X016P	6
6	Brown	Camera Shield	X016P	7
7	White	Tractor Service #1	XS011	6
8	Blue	Tractor Service #2	XS011	7
9	Orange	Tractor Service #3	XS011	19
10	Blue	Left Amber Right	X007	3
11	Green	Right Amber Light	X007	5
12	Black	Tail Light Ground	X007	1
13	Purple	Brake Power	X007	6
14	Blue	Gate Up Coil Power	XS011	37
15	Orange	Gate Down Coil Power	XS011	38
16	White	Feed Forward Coil Ground	XS011	39
17	Yellow	Feed Reverse Coil Ground	XS011	40
18	Red	Conveyor Speed Power	XS200	3
19	Black	Conveyor Speed Ground	XS018	4
20	Brown	Conveyor Speed Signal	XS011	18
21	Red	Infra Red RX #1 Power	XS200	4
22	Black	Infra Red RX #1 Ground	XS018	6
23	Blue	Infra Red RX #1 Signal	XS011	13
24	Red	Infra Red RX #2 Power	XS200	5
25	Black	Infra Red RX #2 Ground	XS018	9
26	Green	Infra Red RX #2 Signal	XS011	14
27	Red	Infra Red RX #3 Power	XS200	6
28	Black	Infra Red RX #3 Ground	XS018	10
29	Yellow	Infra Red RX #3 Signal	XS011	15
30	-	-	-	-
31	-	-	-	-

XS013 - Baler Camera			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Camera Power	XS016R	4
2	Black	Camera Ground	XS016R	5
3	Brown	Camera Shield	XS016R	7
4	Yellow	Camera Signal	XS016R	6

XS014P - Right Bulkhead Power			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Power	XS019P	E
2	Black	Ground	XS019P	D
3	Green	Actuator Extend	XS019P	G
4	Orange	Actuator Retract	XS019P	B
5	Red	Left Power	XS014P	5
6	Black	Left Ground	XS014P	6

XS014R - Right Bulkhead Power			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Power	XS011	2
2	Black	Ground	XS018	1
3	Green	Actuator Extend	X006	E
4	Orange	Actuator Retract	X006	B
5	Red	Left Power	XS014R	5
6	Black	Left Ground	XS014R	6

XS015P - Hitch Light Connector			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Tail Light Ground	X301	A
2	-	-	-	-
3	White	Left Amber Light	X301	D
4	-	-	-	-
5	Green	Right Amber Light	X301	C
6	Red	Brake Light	X301	B
7	-	-	-	-

XS015P - Hitch Light Connector			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Tail Light Ground	XS019R	H
2	-	-	-	-
3	Blue	Left Amber Light	XS019R	J
4	-	-	-	-
5	Green	Right Amber Light	XS019R	K
6	Purple	Brake Light	XS019R	L
7	-	-	-	-

XS016R - Baler Extension			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Belt Slip Sensor Power	XS109	1
2	Black	Belt Slip Sensor Ground	XS109	2
3	Green	Belt Slip Sensor Signal	XS109	3
4	Red	Camera Power	XS013	1
5	Black	Camera Ground	XS013	2
6	Yellow	Camera Signal	XS013	4
7	Brown	Camera Shield	XS013	3
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-

XS016P - Baler Extension			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Belt Slip Sensor Power	XS200	8
2	Black	Belt Slip Sensor Ground	XS018	8
3	Green	Belt Slip Sensor Signal	XS011	24
4	Red	Camera Power	XS012R	3
5	Black	Camera Ground	XS012R	4
6	Yellow	Camera Signal	XS012R	5
7	Brown	Camera Shield	XS012R	6
8	White	LED Backup Light	XS011	31
9	White	LED Backup Light	XS011	32
10	Black	Backup Light Ground	XS018	12
11	-	-	-	-
12	-	-	-	-

XS017 - Combine Can Tee			To	
Pin	Wire Color	Description	Connector	Pin
A	-	-	-	-
B	-	-	-	-
C	-	-	-	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
I	-	-	-	-
J	Blue	GS Video -	XS580	J
K	Yellow	GS Video -	XS580	K
L	-	-	-	-
M	-	-	-	-
N	Green	Can1 Low	XS580	N
P	Yellow	Can1 High	XS580	P
R	Red	GS Power	XS580	R
S	-	-	-	-
T	-	-	-	-
U	Orange	GS Wakeup	XS580	U
V	Black	GS Ground	XS580	V

XS018 - Right Ground Bus			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Ground	XS014R	2
2	Black	Pickup Speed Sensor	X006	A
3	Black	Left Ground	XS014R	6
4	Black	Conveyor Speed Ground	XS012R	19
5	Black	Feed Sensor Ground	XS107	2
6	Black	Infra Red #1 Ground	XS012R	22
7	Black	Ground	X006	J
8	Black	Belt Slip Sensor Ground	X016P	2
9	Black	Infra Red #2 Ground	XS012R	25
10	Black	Infra Red #3 Ground	XS012R	28
11	Black	Controller Ground	XS011	1
12	Black	Backup Light Ground	X016P	10

XS019R - Drawbar Multi-Pin Connector			To	
Pin	Wire Color	Description	Connector	Pin
A	Yellow	Can High	XS070P	A
B	Orange	Actuator Retract	XS070P	B
C	Green	Can Low	XS070P	C
D	Black	Ground	XS070P	D
E	Red	Power	XS070P	E
F	Red	Camera Power	XS070P	F
G	Green	Actuator Extend	XS070P	G
H	Black	Tail Light Ground	XS015P	1
J	Blue	Left Amber Light	XS015P	3
K	Green	Right Amber Light	XS015P	5
L	Purple	Brake Light	XS015P	6
M	White	Tractor Service #1	XS070P	M
N	Blue	Tractor Service #1	XS070P	N
P	Orange	Tractor Service #1	XS070P	P
R	-	-	-	-
S	-	-	-	-
T	-	-	-	-
U	Black	Camera Ground	XS070P	U
V	-	-	-	-
W	Brown	Camera Shield	XS070P	W
X	Yellow	Camera Signal	XS070P	X

XS019P - Drawbar Multi-Pin Connector			To	
Pin	Wire Color	Description	Connector	Pin
A	Yellow	Can High	XS012P	1
B	Orange	Actuator Retract	XS014P	3
C	Green	Can Low	XS012P	2
D	Black	Ground	XS014P	2
E	Red	Power	XS014P	1
F	Red	Camera Power	XS012P	3
G	Green	Actuator Extend	XS014P	3
H	Black	Tail Light Ground	XS012P	12
J	Blue	Left Amber Light	XS012P	10
K	Green	Right Amber Light	XS012P	11
L	Purple	Brake Light	XS012P	13
M	White	Tractor Service #1	XS012P	7
N	Blue	Tractor Service #1	XS012P	8
P	Orange	Tractor Service #1	XS012P	9
R	-	-	-	-
S	-	-	-	-
T	-	-	-	-
U	Black	Camera Ground	XS012P	4
V	-	-	-	-
W	Brown	Camera Shield	XS012P	6
X	Yellow	Camera Signal	XS012P	5

XS020 - Cab Power Bus			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Cab Power Bus Supply	XS008R	1
2	Red	Display Power	XS010	2
3	Red	Camera Power	XS009	A
4	Red	Spout Switch Power	XS008R	2
5	Red	Gate Switch Power	XS008R	3
6	Red	Relay Power	XS004R	1
7	-	-	-	-
8	-	-	-	-

XS021 - Cab Ground Bus			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Cab Ground	XS008R	8
2	Black	Display Ground	XS010	1
3	Black	Camera Ground	XS009	B
4	Black	Relay Ground	SX004R	2

XS022 - Spout Switch Power			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Spout Switch Power	XS008P	2

XS023 - Spout Left Signal			To	
Pin	Wire Color	Description	Connector	Pin
1	Blue	Spout Left Signal	XS008P	4

XS024 - Spout Right Signal			To	
Pin	Wire Color	Description	Connector	Pin
1	White	Spout Right Signal	XS008P	5

XS025 - Gate Switch Power			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Gate Switch Power	XS008P	3

XS026 - Gate Up Signal			To	
Pin	Wire Color	Description	Connector	Pin
1	Green	Gate Up Signal	XS008P	6

XS027 - Gate Down Signal			To	
Pin	Wire Color	Description	Connector	Pin
1	Orange	Gate Down Signal	XS008P	7

XS030 - Can Tee 1			To	
Pin	Wire Color	Description	Connector	Pin
1	Yellow	Display Can0 High	XS010	3
2	Green	Display Can0 Low	XS010	4

XS031 - Can Tee 2			To	
Pin	Wire Color	Description	Connector	Pin
1	Yellow	Can0 High	XS004R	3
2	Green	Can0 Low	XS004R	4

XS034 - Can Tee			To	
Pin	Wire Color	Description	Connector	Pin
1	Yellow	Can0 High	XS004P	3
2	Green	Can0 Low	XS004P	4

XS035 - Can Tee			To	
Pin	Wire Color	Description	Connector	Pin
1	Yellow	Can0 High	XS070R	A
2	Green	Can0 Low	XS070R	C

XS040 - Dump Valve			To	
Pin	Wire Color	Description	Connector	Pin
1	Purple	Dumpe Valve Power	XS111	3
2	Black	Dumpe Valve Ground	XS053	1

XS042 - Spout Tip Sensor			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Spout Tip Potentiometer	XS066R	B
2	White	Spout Tip Potentiometer	XS066R	C
3	Red	Spout Tip Potentiometer	XS066R	A
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-

XS043 - Spread Actuator			To	
Pin	Wire Color	Description	Connector	Pin
A	Black	Spread Retract	XS062	1
B	Red	Spread Extend	XS062	2

XS044 - Spout Tip Actuator			To	
Pin	Wire Color	Description	Connector	Pin
A	Orange	Spout Tip Left	XS062R	4
B	Green	Spout Tip Right	XS062R	3

XS045P - Hydro MPC			To	
Pin	Wire Color	Description	Connector	Pin
1	Orange	Hydro Power	XS111	4
2	Black	Hydro Ground	XS052	1
3	Yellow	Hydro Pressure Sensor	XS111	7
4	Red	Hydro Pressure Sensor	J3	

XS046R - PowrCast MPC			To	
Pin	Wire Color	Description	Connector	Pin
A	Green	PowerCast Power	XS111	6
B	Black	PowerCast Ground	XS022	1
C	Black	PowerCast Speed	XS112	6
D	Red	PowerCast Speed	XS112	7
E	White	PowerCast Speed	XS111	8
F	Blue	PowerCast Speed	XS111	9
G	Orange	PowerCast Power	XS108	1
H	-	-	-	-

XS050 - PowerCast Ground			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	PowerCast Ground	XS046R	B

XS051 - PDM Ground Stud			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Battery Ground	SX121P	1

XS052 - Hydro Pump Coil Ground			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Hydro Ground	XS045P	2

XS053 -Dump Valve Ground			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Dump Valve Ground	XS040	2

XS054 -Baler Ground			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Baler Ground	XS070R	D

XS060 -Relay Signal			To	
Pin	Wire Color	Description	Connector	Pin
A	Red	Relay Power	XS004P	1
B	Black	Relay Ground	XS004P	2

XS062P - Spout Actuator MPC			To	
Pin	Wire Color	Description	Connector	Pin
1	Green	Spout Tip Left	XS110	5
2	Orange	Spout Tip Right	XS110	6
3	Red	Spread Extend	XS110	3
4	Black	Spread Retract	XS110	4

XS062R - Spout Actuator MPC			To	
Pin	Wire Color	Description	Connector	Pin
1	Green	Spout Tip Left	XS044	B
2	Orange	Spout Tip Right	XS044	A
3	Red	Spread Extend	XS043	B
4	Black	Spread Retract	XS043	A

XS063 -Relay			To	
Pin	Wire Color	Description	Connector	Pin
A	Red	Baler Power	XS070R	E
B	Red	Battery Power	XS121P	2

XS066P - Spout Sensor MPC			To	
Pin	Wire Color	Description	Connector	Pin
A	Red	Spout Tip Potentiometer	XS110	12
B	Black	Spout Tip Potentiometer	XS110	1
C	White	Spout Tip Potentiometer	XS110	7

XS066R - Spout Sensor MPC			To	
Pin	Wire Color	Description	Connector	Pin
A	Red	Spout Tip Potentiometer	XS042	3
B	Black	Spout Tip Potentiometer	XS042	1
C	White	Spout Tip Potentiometer	XS042	2

XS070R - Hitch Multi-Pin Connector			To	
Pin	Wire Color	Description	Connector	Pin
A	Yellow	Hitch Can High	XS035	1
B	Orange	Actuator Retract	XS111	2
C	Green	Hitch Can Low	XS035	1
D	Black	Baler Ground	XS054	1
E	Red	Baler Power	XS063	A
F	Red	Camera Power	XS004P	6
G	Green	Actuator Extend	XS111	1
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-
L	-	-	-	-
M	-	-	-	-
N	-	-	-	-
P	-	-	-	-
R	-	-	-	-
S	-	-	-	-
T	-	-	-	-
U	Black	Camera Ground	XS004P	7
V	-	-	-	-
W	Brown	Camera Shield	XS004P	9
X	Yellow	Camera Signal	XS004P	8

XS070R - Hitch Multi-Pin Connector			To	
Pin	Wire Color	Description	Connector	Pin
A	Yellow	Hitch Can High	XS019R	A
B	Orange	Actuator Retract	XS019R	B
C	Green	Hitch Can Low	XS019R	C
D	Black	Baler Ground	XS019R	D
E	Red	Baler Power	XS019R	E
F	Red	Camera Power	XS019R	F
G	Green	Actuator Extend	XS019R	G
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-
L	-	-	-	-
M	White	Tractor Service #1	XS019R	M
N	Blue	Tractor Service #2	XS019R	N
P	Orange	Tractor Service #3	XS019R	P
R	-	-	-	-
S	-	-	-	-
T	-	-	-	-
U	Black	Camera Ground	XS019R	U
V	-	-	-	-
W	Brown	Camera Shield	XS019R	W
X	Yellow	Camera Signal	XS019R	X

XS090 - Gate Raise Coil			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Gate Up Coil Ground	XS208	2
2	Blue	Gate Up Coil Power	XS012P	14

XS091 - Gate Lower Coil			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Gate Down Coil Ground	XS208	3
2	Orange	Gate Down Coil Power	XS012P	15

XS092 - Feed Forward Coil			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Feed Forward Coil Ground	XS208	4
2	White	Feed Forward Coil Power	XS012P	16

XS093 - Feed Reverse Coil			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Feed Reverse Coil Ground	XS208	5
2	Yellow	Feed Reverse Coil Power	XS012P	17

XS100 - IR Receiver #1			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	IR #1 Power	XS012P	21
2	Black	IR #1 Ground	XS012P	22
3	Blue	IR #1 Signal	XS012P	23

XS101 - IR Receiver #2			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	IR #2 Power	XS012P	24
2	Black	IR #2 Ground	XS012P	25
3	Green	IR #2 Signal	XS012P	26

XS102 - IR Receiver #3			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	IR #3 Power	XS012P	27
2	Black	IR #3 Ground	XS012P	28
3	Yellow	IR #3 Signal	XS012P	29

XS103 - IR Transmitter #3			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	IR Transmitter # 1 Power	XS201	2
2	Black	IR Transmitter # 1 Ground	XS208	6

XS104 - IR Transmitter #2			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	IR Transmitter # 2 Power	XS201	3
2	Black	IR Transmitter # 2 Ground	XS208	7

XS105 - IR Transmitter #1			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	IR Transmitter # 3 Power	XS201	4
2	Black	IR Transmitter # 3 Ground	XS208	8

XS106 - Conveyor Speed Sensor			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Conveye Speed Power	XS012P	18
2	Black	Conveyer Speed Ground	XS012P	19
3	Brown	Conveyor Speed Signal	XS012P	20

XS107 - Feed Roller Speed Sensor			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Feed Sensor Power	XS200	7
2	Black	Feed Sensor Ground	XS018	5
3	Yellow	Feed Sensor Signal	XS011	19

XS108 - PDM J6			To	
Pin	Wire Color	Description	Connector	Pin
1	Orange	Power Cast Power	XS046R	G
2	-	-	-	-

XS109 - Baler Belt Slip Sensor			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Belt Slip Sensor Power	XS016R	1
2	Black	Belt Slip Sensor Ground	XS016R	2
3	Green	Belt Slip Sensor Signal	XS016R	3

XS110 - PDM J3			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Spout Tip Potentiometer	XS066P	B
2				
3	Red	Spread Extend	XS062P	3
4	Black	Spread Retract	XS062P	4
5	Green	Spout Tip Left	XS062P	1
6	Orange	Spout Tip Right	XS062P	2
7	White	Spout Tip Potentiometer	XS066P	C
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	Red	Spout Tip Potentiometer	XS066P	A

XS111 - PDM J4			To	
Pin	Wire Color	Description	Connector	Pin
1	Green	Actuator Extend	XS070R	G
2	Orange	Actuator Retract	XS070R	B
3	Purple	Dump Valve Power	XS040	1
4	Orange	Hydro Power	XS045P	1
5	Green	Backup Camera Signal	XS004P	5
6	Green	Power Cast Power	XS046R	A
7	Yellow	Hydro Press Sensor	XS045P	3
8	White	Power Cast Speed	XS046R	E
9	Blue	Power Cast Speed	XS046R	F
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-

XS112 - PDM J5			To	
Pin	Wire Color	Description	Connector	Pin
1	Green	PDM Can Low	XS114	1
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	Black	Power Cast Speed	SX046R	C
7	Red	Power Cast Speed	SX046R	D
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	Yellow	PDM Can High	XS114	2

XS114 - Can Tee			To	
Pin	Wire Color	Description	Connector	Pin
1	Yellow	PDM Can High	XS112	12
2	Green	PDM Can Low	XS112	1

XS121P - Battery MPC			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Battery Ground	XS051	1
2	Red	Battery Power	XS063	B

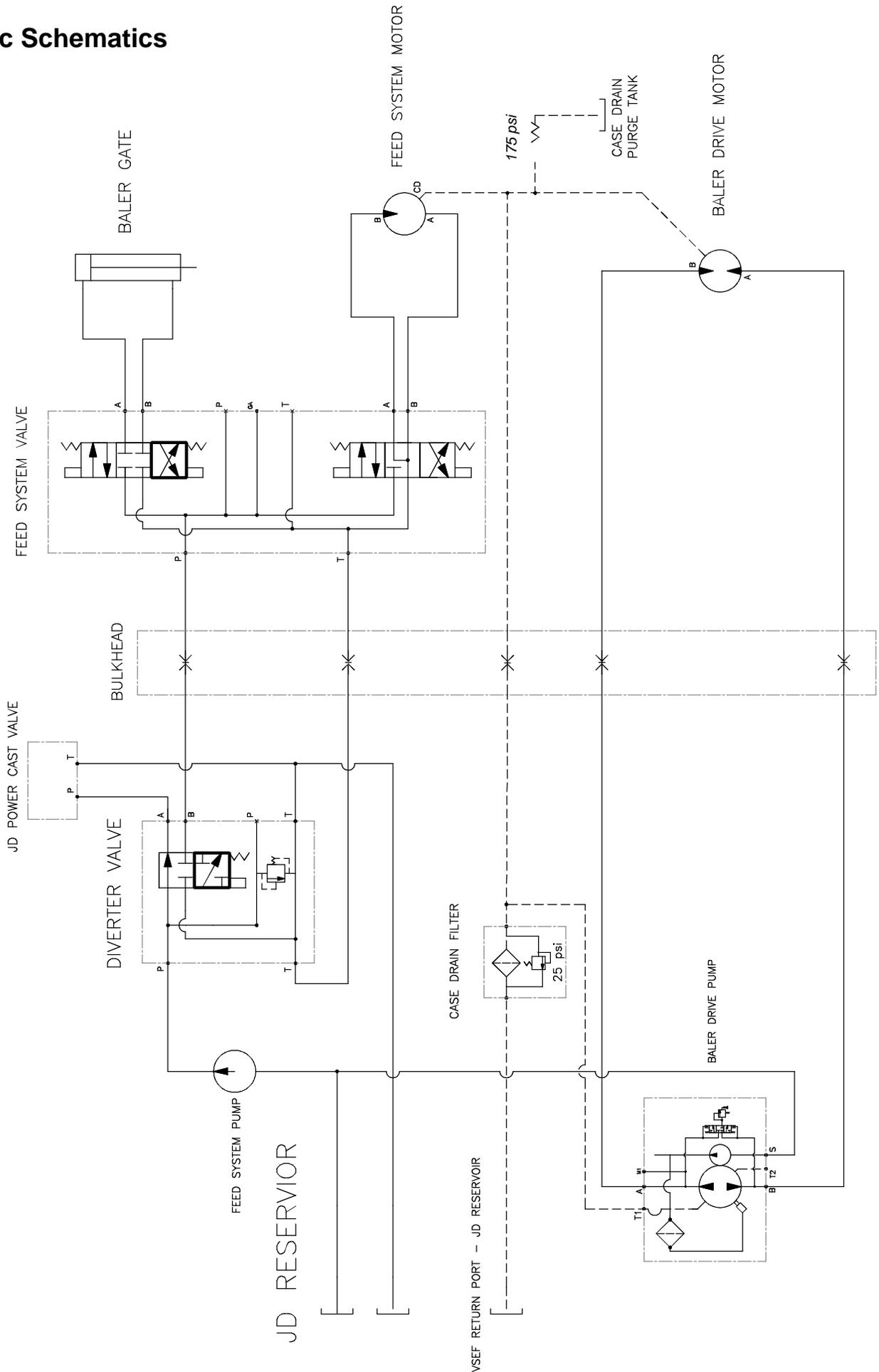
XS200 - Right Power Bus			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Power Link	XS011	50
2	Red	Left Power	XS014R	5
3	Red	Conveyor Speed Power	XS012R	12
4	Red	Infra Red #1 Power	XS012R	21
5	Red	Infra Red #2 Power	XS012R	24
6	Red	Infra Red #3 Power	XS012R	27
7	Red	Feed Sensor Powr	XS107	1
8	Red	Belt Slip Sensor Power	X016P	1

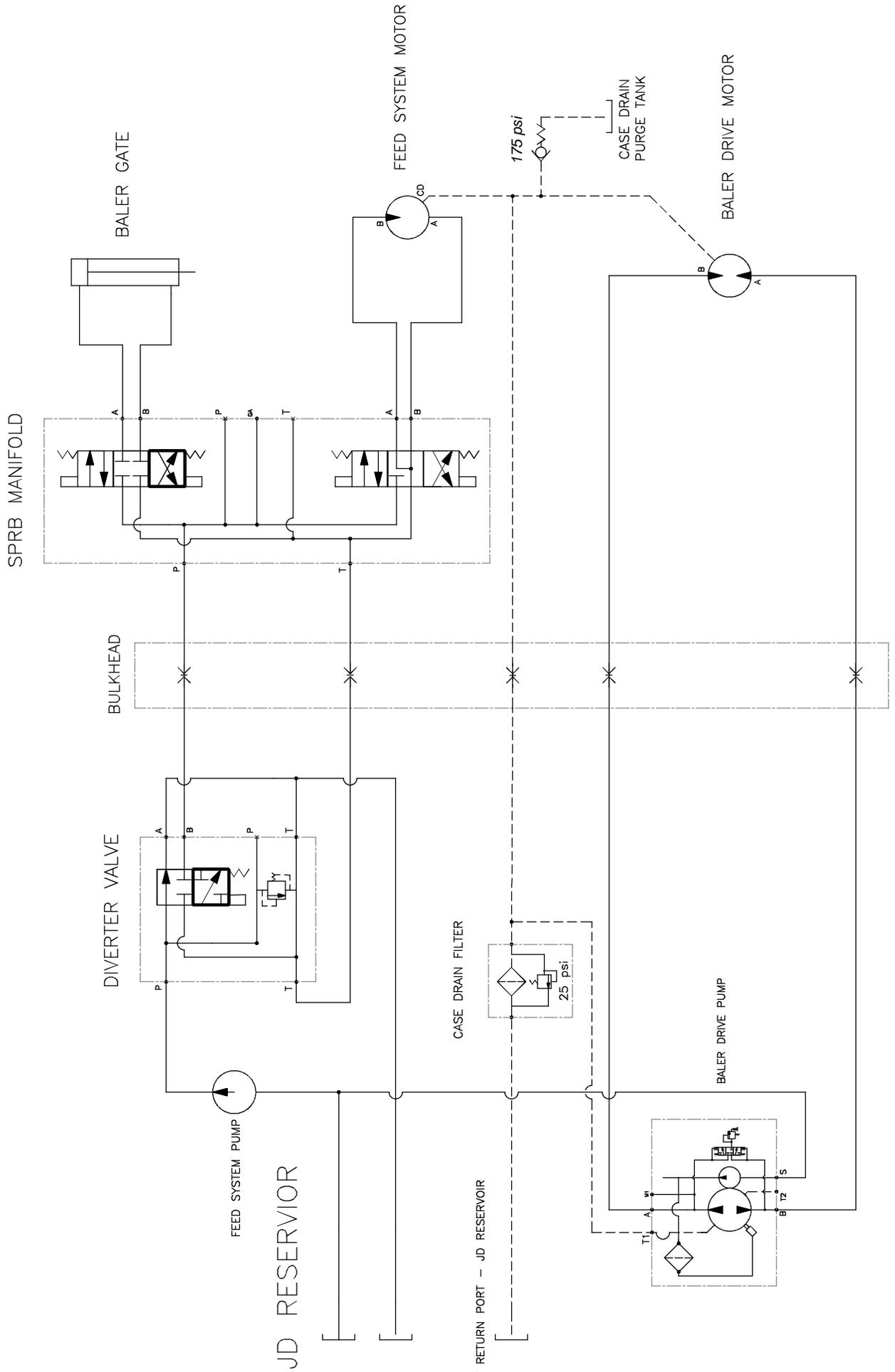
XS201 - Left Power Bus			To	
Pin	Wire Color	Description	Connector	Pin
1	Red	Left Power	XS014P	L
2	Red	Infra Red Transmitter #1	XS103	1
3	Red	Infra Red Transmitter #2	XS104	1
4	Red	Infra Red Transmitter #3	XS105	1

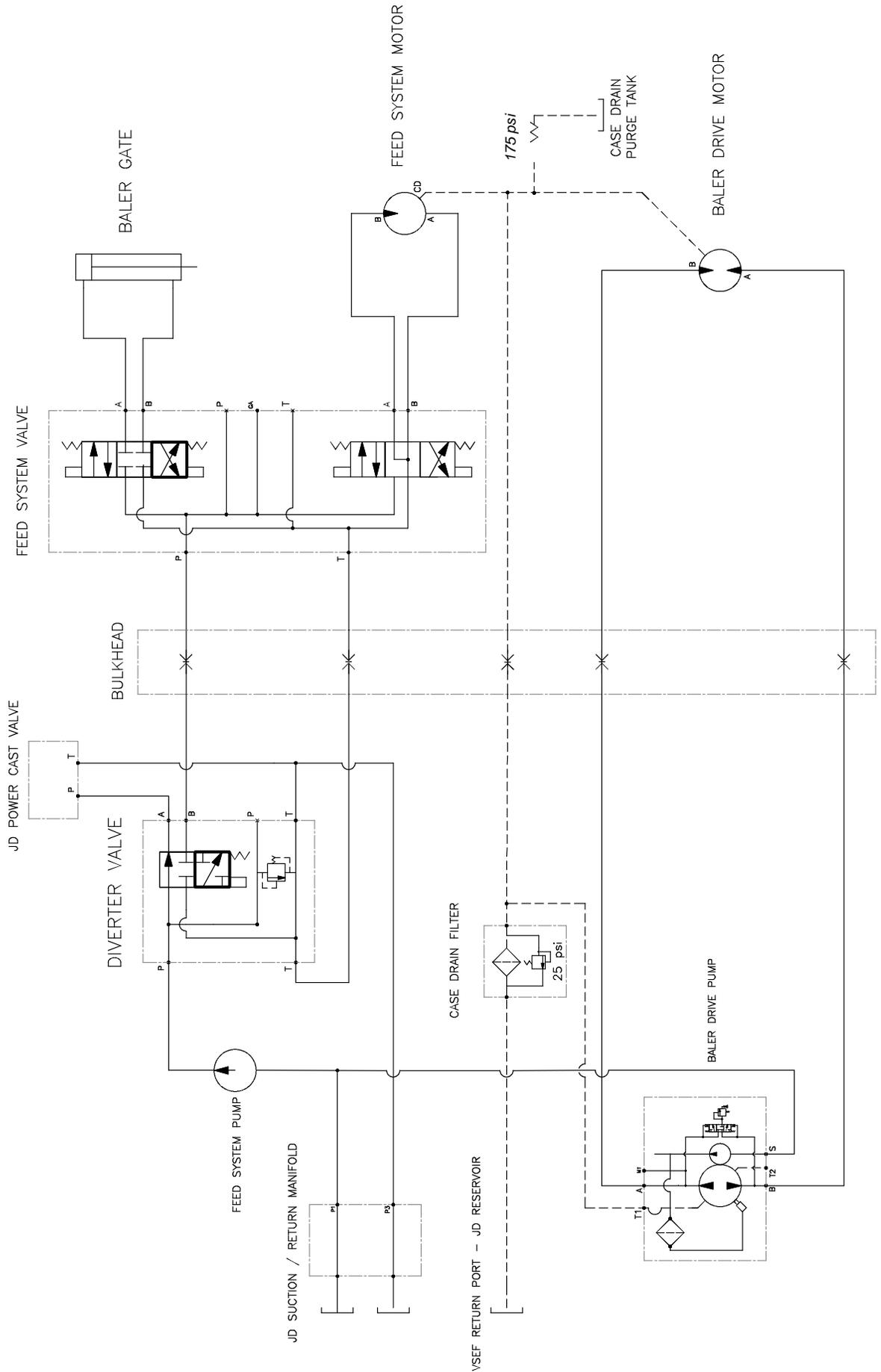
XS208 - Left Ground Bus			To	
Pin	Wire Color	Description	Connector	Pin
1	Black	Left Ground	XS014P	6
2	Black	Gate Up Coil Ground	XS090	1
3	Black	Gate Down Coil Ground	XS091	1
4	Black	Feed Forward Coil Ground	XS092	1
5	Black	Feed Reverse Coil Ground	XS093	1
6	Black	Infra Red Rx Ground #1	XS103	2
7	Black	Infra Red Rx Ground #2	XS104	2
8	Black	Infra Red Rx Ground #3	XS105	2

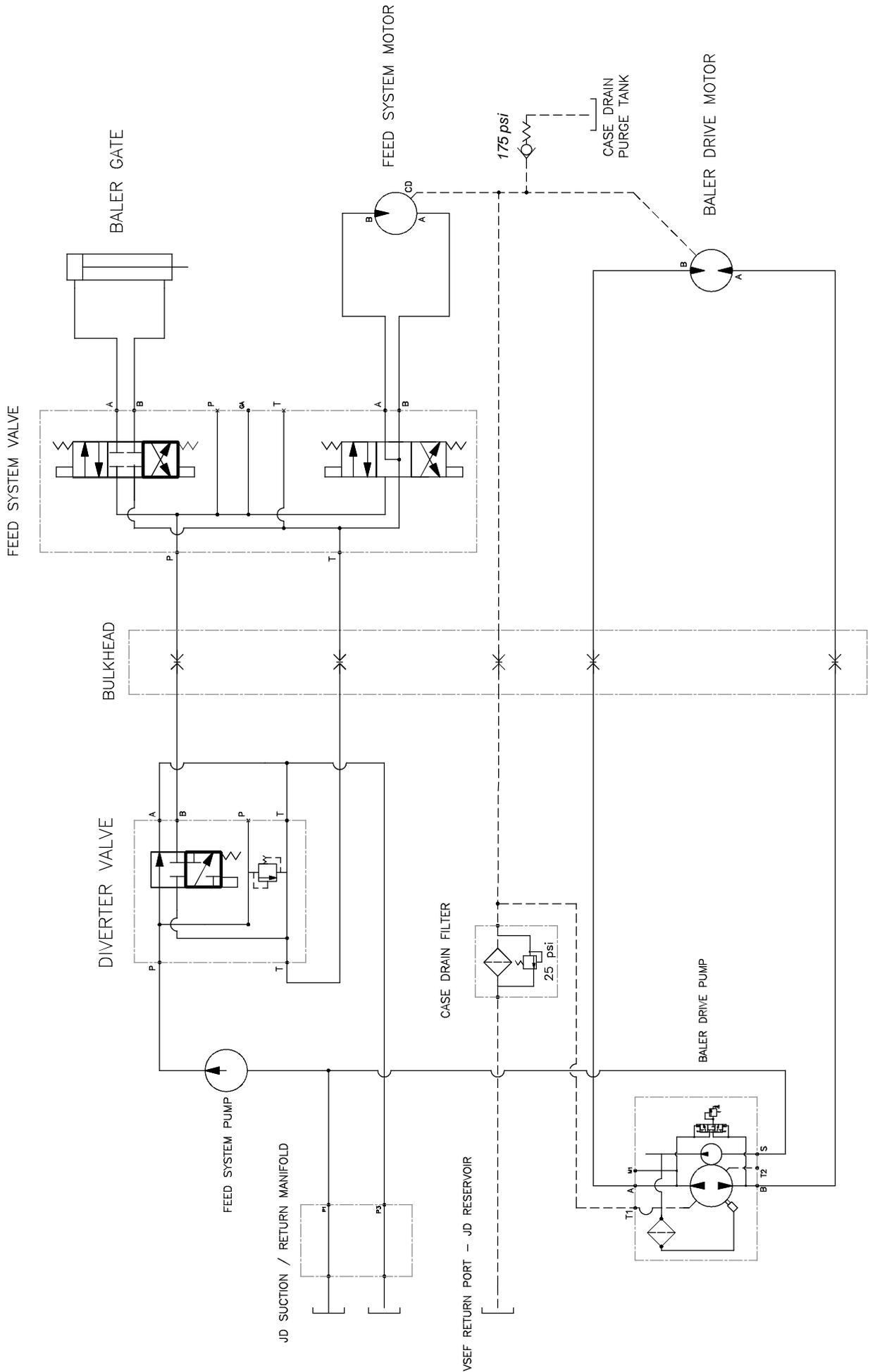
# Hydraulic Schematics

2014 SPB HYDRAULIC SCHEMATIC, FT4 S680 & S690 W/ POWER CAST TAILBOARD









# Trouble Shooting

## Baler Gate

Baler Gate Won't Open or Close	Combine Separator is not engaged	The combine separator must be engaged to provide oil to operate the baler gate
	Combine Engine is at low or mid idle	Combine engine must be at high idle to provide enough oil to operate the baler gate
	Operater is not seated	The operater must be seated in the combine operator's seat to open or close the baler gate
	Baler Gate Lock is set	Release the baler gate lock located above the left rear baler tire.
	SPRB Hoses are not connected properly at hitch	Verify the hose routing from the combine to the SPRB manifold. The hose from the SPRB Diverter valve should route to the "P" port on the SPRB manifold.
	Baler Gate Valve coils are backwards	Verify eletrical connections at the baler gate valve on the SPRB manifold.
	Hydraulic Releif setting too low	Check the SPRB manifold pressure and set the hydraulic releif properly. Relief should be set to 3200 psi.
	SPRB Diverter Valve Malfunction	Verify that the SPRB diverter valve coil is connected properly and is receiving 12 VDC . The valve can be manually engaged by pushing inward on the detent at the end of the valve spool.
	SPRB Gate Valve Malfunction	Manually actuate the valve by pressing a small screwdriver into the detent on the end of the valve spool. If the valve spool does not easily move remove the valve and check for contamination.
Baler Gate Won't Stay Up	Wrong valve connected to the baler gate manifold	Verify that the valve connected to the baler gate manifold is a cylinder spool valve and not a motor spool valve.
Baler Gate Opens/Closes slowly	Low flow orifice installed incorrectly	Check the position of the low flow orifice in the outer hose "Port B" of the SPRB manifold. The groove in the orifice should face towards the manifold. Verify that the hose from Port B connects to Port L on the baler gate manifold. The baler gate manifold is mounted on the baler above the baler drive motor.
	The SPRB Gate valve is not opening fully due to contamination in the valve spool See John Deere operators manual	Remove and dissassemble the valve to remove the contamination
Baler Gate Pinches Baler Belts	Auxillary take up arm missing	Verify that the auxillary take up arm is properly installed above the baler gate
	Gate is closed at low idle	The combine engine must be at high idle to provide enough oil flow to tension the baler belts and prevent the gate from pinching them.
	Low flow orifice installed incorrectly	Check the position of the low flow orifice in the outer hose "Port B" of the SPRB manifold. The groove in the orifice should face towards the manifold. Verify that the hose from Port B connects to Port L on the baler gate manifold. The baler gate manifold is mounted on the baler above the baler drive motor.
Baler gate won't latch	Baler Gate latches out of adjustment	See John Deere operators manual
Baler gate won't close completely	Debris accumulated between gate and baler frame	Open baler gate in service mode, lock gate and clean debris. Verify that the crop deflector kit is installed correctly.
	Gate timers in SPRB software not properly set	Verify gate timer settings in SPRB display. Gate raise time should be about 5000 ms ( 5 seconds) and gate lower time should be about 6000 ms (6 seconds).
Auxillary take up arm is bent or broken	See John Deere operators manual	

## Baler Drive

Baler won't turn	Hopper is empty	Verify that the baler should be turning. In automatic and semi-automatic modes the baler drive will shut down once the SPRB hopper is empty
	System is in Spread Mode	Put the system into Collect Mode
	Combine separator not engaged	Engage the combine separator - The combine separator must be engaged to drive the baler drive pump.
	Pump belts missing or damaged	Verify that the baler pump drive belts are intact and tensioned properly
	SPRB Hoses are not connected properly at hitch	Verify the hose routing from the combine to the baler drive motor. Consult the hydraulic schematics for proper routing
	Baler drive coupler damaged or missing	Inspect the baler drive coupler alignment. Replace drive insert if necessary
	Hydraulic oil level low	Check & fill combine hydraulic reservoir
	Baler chains missing or out of place	Check drive chains on left side of baler
	Baler drive pump not engaging	Verify that 12 Volts is sent to the baler pump coil, if not trace wires from the pump to the PDM under the unload auger and look for a damaged wire or poor ground.
	Baler drive pump may be damaged	Verify that the baler drive pump is outputting the proper pressures. See the pressure testing procedure in the SPRB Technical manual for more information.
Baler turns backwards	SPRB Hoses are not connected properly	Verify the hose routing from the combine to the baler drive motor. Consult the hydraulic schematics for proper routing
	Wrong coil energized on baler drive pump	Verify that the electrical connector is plugged into the rear most coil on the baler drive pump.
Baler always turns	Baler hoses crossed with feed system hoses	Verify the hose routing from the combine to the baler drive motor. Consult the hydraulic schematics for proper routing
Baler frequently stalls with partial bale	High moisture crops	High moisture crops can create bales that are too heavy for the baler drive. Reduce the bale size setting to wrap sooner.
	Miss-shapen bales	Slug feeding can cause miss-shapen bales to form that will stall the baler drive. Increase the chopper knife setting to improve feeding out of the SPRB hopper. For corn, try adjusting header deck plates or backshaft speed to increase the amount of MOG in the bale.
	Incorrect baler gear box configuration	Verify that the baler is equipped for a 1000 RPM PTO option

## Net Wrap

Too many wraps	Actuator timer not set properly	Reduce net actuator extend timer setting
	Wrap Time Calibration too high	Reduce wrap time calibration.
	Net wrap system not set up properly	See John Deere Operators' manual for net wrap setup procedures
	Actuator stuck	Fully extend actuator and clean rod
	Inadequate amperage to actuator	Check amperage to actuator in SPRB display. If lower than 15000 mA without actuator extending check wiring for damage
Not enough wraps	Actuator timer not set properly	Increase net actuator extend timer setting
	Wrap Time Calibration too low	Increase wrap time calibration.
	Net wrap system not set up properly	See John Deere Operators' manual for net wrap setup procedures
	Actuator stuck	Fully extend actuator and clean rod
	Inadequate amperage to actuator	Check amperage to actuator in SPRB display. If lower than 15000 mA without actuator extending check wiring for damage
Frequent net not cut alarms	Actuator timer not set properly	Increase net actuator retract timer setting
	New wrap switch miss-adjusted	Adjust net wrap switch further away from paddle
	Net wrap system not set up properly	See John Deere Operators' manual for net wrap setup procedures
Frequent net not applied alarms	Actuator timer not set properly	Increase net actuator extend timer setting
	Net wrap system not set up properly	See John Deere Operators' manual for net wrap setup procedures
	New wrap switch miss-adjusted	Adjust net wrap switch closer to paddle
All other troubles		See John Deere Operators' manual

## Feed System

Feed system turns backwards	Incorrect hose routing	Verify hydraulic hose routing. Consult the hydraulic schematics for proper routing
	Incorrect electrical routing	Verify electrical routing from controller to SPRB valve. Consult the electrical schematics for proper routing
Conveyor will not turn with feed rollers	Drive chain missing	Verify that drive chain is installed correctly
	Conveyor not tensioned properly	Retension conveyor - See adjustment section for proper conveyor tensioning procedure
	High Moisture crop	Crop material is too heavy for belt drive - Operate in half hopper mode
	Conveyor stalled	Unplug material between belt and baler frame
Feed rollers will not turn with conveyor	Drive chains	Verify that both drive chains are installed correctly
	Worn sprocket	Inspect sprocket for worn or broken teeth. Replace if necessary
	Broken or worn roller shaft	Inspect roller drive shaft for wear. If the shaft is broken or if the flats are worn round replace the shaft.
Feed system will not turn	Hopper is empty	Verify that the baler should be turning. In automatic and semi-automatic modes the baler drive will shut down once the SPRB hopper is empty
	Operator not seated	An operator must be seated in the operators' seat to allow the feed system to turn
	Combine Separator not engaged	The combine separator must be engaged to operate the SPRB feed system
	Combine Engine is at low or mid idle	Combine engine must be at high idle to provide enough oil to operate the feed system
	Hydraulic Relief setting too low	Check the SPRB manifold pressure and set the hydraulic relief properly.
	SPRB Hoses are not connected properly at hitch	Verify the hose routing from the combine to the SPRB manifold. The hose from the SPRB Diverter valve should route to the "P" port on the SPRB manifold.
	SPRB Diverter Valve Malfunction	Verify that the SPRB diverter valve coil is connected properly and is receiving 12 VDC . The valve can be manually engaged by pushing inward on the detent at the end of the valve spool.
	Baler Gate not latched	The baler gate must be closed and latched for the feed system to operate. If gate is fully closed check the baler gate sensors, check baler gate latch adjustment - see JD Operators Manual
	Incorrect electrical routing	Verify electrical routing from controller to SPRB valve. Consult the electrical schematics for proper routing
	Valve not opening	Check for 12 VDC at valve plug
	SPRB Gate Valve Malfunction	Manually actuate the valve by pressing a small screwdriver into the detent on the end of the valve spool. If the valve spool does not easily move remove the valve and check for contamination. Replace the valve if necessary.
	Incorrect hose routing	Verify hydraulic hose routing . Consult the hydraulic schematics for proper routing
Conveyor belt won't track straight	Conveyor not tensioned properly	Retension conveyor - See adjustment section of Operators' Manual for proper conveyor tensioning procedure
	Crop residue accumulated in roller V-guide	Loosen belt and clean v-guide.
	Conveyor splice is not straight	See your dealer to resplice belt
IR sensor malfunctioning	Sensor is blocked by material	Clean out hopper and verify sensor face is clear
	Sensors miss-aligned	Check that transmitter and receiver are aligned with oneanother
	Poor electrical connections	Check for 12 VDC at sensor connectors. Green LED should light up when system is powered on. Check wire to controller for damage
	Faulty sensor	Replace transmitter and receiver
Incorrect shaft speed alarms	Sensor is too far away from tone wheel	Adjust sensor - See adjustment section in Operators' manual
	Sensor is not powered	Check for 12 VDC at sensor connectors. LED should light up when system is powered on and metal is in front of sensor
Baler sensor faults	See John Deere Operators manual	

## Spout

Spread/Collect gate won't move	Operator not seated	The operator must be seated in the combine operator's seat to operate the spout actuators
	Seperator not engaged	The combine sepearator must be engaged to operate the spout actuators
	Crop residue buildup in Spread/Collect gate mechanism	Clear any accumulated crop residue
	Inadequate amperage to actuator	Check amperage to actuator in SPRB display. If lower than 15000 mA without acuator exteding check wiring for damage
	Acutuator stuck	Fully extent actuator and clean rod
Spout tip won't move	Operator not seated	The operator must be seated in the combine operator's seat to operate the spout actuators
	Seperator not engaged	The combine sepearator must be engaged to operate the spout actuators
	Crop residue buildup in Spread/Collect gate mechanism	Clear any accumulated crop residue
	Inadequate amperage to actuator	Check amperage to actuator in SPRB display. If lower than 15000 mA without acuator exteding check wiring for damage
	Acutuator stuck	Fully extent actuator and clean rod
Material is not making it to hopper	Spout tip too high or too low	Adjust spout tip. Tip should be slighly lower at the baler end than at the combine end
	Spout angle not properly set	Adjust spout drag links so the rear face of the spout frame is perpendicular to the ground. See installation manual for more information.
	Wet material	Material is too wet and heavy, increase chopper speed if possible

## Camera

Display not powered up	Combine key is off	Turn key on
	Camera harness not plugged into SPRB harness	Check connector XS009
	In line fuse blown	Replace inline fuse in camera harness. Fuse is located near XS009
No views in camera	Display is set to PAL	Reset display to NTSC in camera display menu
	Cameras are not connected	Check all camera connections
	Camera cables are damaged.	Inspect camera cable from combine cab to camera location for damage. Repair or replace cable as necessary
	Cameras are damaged	Replace faulty camera with a known good camera. If it works consult John Deere dealer for a replacement camera
Camera views are distored	Low voltage	Start engine, if camera views do not clean up inspect camera power connection to combine for loose connection.
	Cameras are dirty	Clean the camera lenses daily.
Reversing camera does not come up	Option is not activated in SPRB display	Activate option in SPRB display menu.
	Signal wire from PDM damaged	Check green wire in connector XS004 Pin 5 for damage. 12V should be present when combine hydro handle is in reverse position

## Electrical System

Combine CAN fault on baler screen	SPRB Display not plugged into combine can	Plug baler harness into X513. If a greenstart is required it can be plugged into a tee on the SPRB harness.
	Incorrect wiring	Confirm wire routing from X513 To XS010 - See wiring diagrams for more information
	Combine CAN Bus Fault	Consult John Deere dealer to diagnose and repair combine CAN Bus
Display not powered up	Key is not on	Turn combine key on
	SPRB not plugged into power strip	Verify that the power plug is connected to the combine power strip
	Breaker blown on cab power strip	Cycle key power to reset circuit breaker
	Power/Ground Busses not connected or faulty	Remove and reconnect power and ground busses behind SPRB display. Check pins and sockets for damage
	Connector on back of display not connected	Check connector XS010. Verify that sockets are properly seated in connector.
	Display damaged	Consult John Deere dealer to replace display
PDM functions not working	Fuse blown	Check 50A fuse in PRM under unload auger
	PRM Relay is not activating	Verify that 12VDC are present at XS060 when the combine key is on. If so replace the PRM.
	Not connected to battery	Check power and ground connections at the combine battery. Check connector XS121
	Connectors not seated in PDM	Check all plug connections. Verify that contacts are properly seated in connectors.
	PDM damaged	Consult John Deere dealer to replace PDM
Controller not powered	Key is not on	Turn combine key on
	Fuse blown	Check 20A fuse in PRM
	PRM Relay is not activating	Verify that 12VDC are present at XS060 when the combine key is on. If so replace the PRM.
	Not connected to battery	Check power and ground connections at the combine battery. Check connector XS121
	Faulty ground link from Right ground bus to PDM ground stud	Check connector XS054, verify wiring from right ground bus (XS018) to PDM ground stud is intact
	Hitch plug not connected properly	Check hitch plug connection. Verify wiring and that contacts are properly seated in plug. See electrical schematics for more information.
	SPRB harness damaged	Check harness for damage repair any bare or broken wires.
	Controller not plugged in	Check controller connector (XS011). Verify that contacts are properly seated in connectors.
	Power/Ground bus missing	Verify right power bus (XS200) and right ground bus (XS018) are properly connected. Verify that contacts are properly seated in connectors.
	Faulty controller	Consult John Deere dealer to diagnose and replace faulty controller
Baler sensors not working	Baler hitch connector not plugged into SPRB	Check electrical plug at right rear of SPRB frame (X006)
	Improper wiring at baler connector	Check for 5 volts between X006 Pin S and Pin P. Refer to wiring diagrams for more information
	Faulty ground from baler to right ground buss	Check continuity between X006 pins A and J to right side ground bus (XS018)
	Faulty baler harness	Consult John Deere dealer to diagnose and replace faulty harness
Baler lights not working	Light harness not connected to combine connector (MY14 and later)	Check connector X301
	Lights not connected at hitch (MY14 and later)	Check hitch connection XS015
	Service harness connection not hooked up (MY14 and later)	Check service harness connection on SPRB drawbar (XS019)
	Baler light plug not connected to SPRB	Check connection at X007
	Poor connection to baler controller (MY13)	Check wiring from X007 to XS011. See wiring schematics for more information
	Combine fuse blown (MY14 and later)	Check SPRB harness 1318272 for shorts. Consult John Deere Combine documentation for more information
	Light bulb burnt out	Check and replace bulb
	Faulty Lighting Module	See John Deere Baler Operators manual.

**Notes**