OPERATOR'S MANUAL

MODEL: MX1012 Commercial Bagger

DO NOT OPERATE THIS EQUIPMENT UNTIL THIS
MANUAL HAS BEEN READ AND UNDERSTOOD.

Part Number: 42.0701919B
March 2015

MILLER-ST.NAZIANZ,INC.
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INTRODUCTION

This Operator's Manual is provided to acquaint the operator with the safety and operation of the Miller Ag-Bag MX1012 Commercial Bagger. Complete Assembly, Operation, Lubrication and Maintenance procedures are provided. Following the recommended procedures will help you achieve many years of dependable service.

This manual is considered part of your machine and should remain with the machine at all times.

Make sure the operator reads and understands the manual before placing the bagger into operation.

Failure to follow the recommended procedures may result in personal injury or equipment damage, and could void the warranty.

MACHINE SERIAL NUMBER

The machine serial number is located on the support frame below the engine on the tunnel side. For your convenience refer to this number and your product model number when requiring service or parts information. Record the machine serial number, model number, date of purchase and dealership name in the space provided below.

Date Purchased _____

Model No. _____ Serial No. _____

Dealership _____

Right and Left sides are determined from a position standing at the bag tunnel side looking toward the feed table.

The Warranty Registration must be completed by the dealer online to validate your warranty protection. You must read and understand the places where you attest to having received instructions as to care, adjustments, safe operation and applicable warranty policy.

WARNING

SOME PHOTOGRAPHS USED HEREIN MAY SHOW DOORS, GUARDS AND SHIELDS OPENED OR REMOVED. BE SURE THAT ALL DOORS, GUARDS AND SHIELDS ARE FASTENED IN THEIR PROPER POSITION BEFORE MACHINE IS OPERATED!

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Important Reference Numbers

Fill in the important serial numbers and model numbers in the spaces below. These will be helpful when service or maintenance is required. Also listed below are the part numbers and quantities of the filters and belts for this unit.

Model and Serial Numbers

Bagger Model Number: __MX1012 Commercial_

Bagger Serial Number: _____

Engine Model Number: __ Cummins QSC 8.3 __

Engine Serial Number: _____

Filters

Description	Part Number	Qty.
Primary Air Filter Element	21.40570	1
Secondary Air Filter Element	21.40571	1
Fuel Filter/Water Separator	21.41069	1
Secondary Fuel Filter	21.41070	1
Engine Oil Filter	21.41068	1
Main Hydraulic Oil Return Filter	21.42586	2
Case Drain Filter	21.21112	1
Hydraulic Oil Reservoir Breather	21.20848	1
Hydrostat Filter	42.0701833	1

Belts

Description	Part Number	Qty.
Serpentine	21.41071	1

Bagger Check Lists

Delivery and Pre-Delivery Check Lists (customer and dealer copies) follow this page.

Customer copies can remain with this manual.

Dealer copies can be removed along perforation and remain with dealer.

Delivery Check List - Customer Copy

The following list is an important reminder of valuable information, which must be passed on to the customer at the time the unit is delivered. Check off each item as you explain it to the customer.

- ☐ Give the customer this operator's manual. Instruct them to be sure to read and completely understand its contents before attempting to operate the unit.
- ☐ Review the warranty.
- ☐ Explain and review the safety section of this manual with the customer.
- ☐ Explain that regular lubrication and proper adjustments are required for continued proper operation and long life. Review the maintenance section of this manual with the customer.
- ☐ Have the dealer complete the warranty registration online.

Dealer's Signature:_____ Date:_____

- ☐ I acknowledge that the above points were reviewed with me at the time of delivery.

Customer's Signature:_____ Date:_____

Pre-Delivery Check List - Customer Copy

After the Miller Ag-Bag has been completely set up, check that it is in correct working order before delivery to the customer. The following is a list of points to inspect. Check off each item to verify the proper adjustments have been made and the item(s) is (are) operating satisfactorily. Any adjustment must be made according to specifications defined in this manual.

- ☐ Verify that all of the options are installed.
- ☐ Verify that all accessories function correctly.
- ☐ Check tire inflation.
- ☐ Check and tighten wheel nuts to correct torque.
- ☐ Make sure all bolts and other fasteners are tightened or properly adjusted.
- ☐ Make sure hoses are secured and not in contact with any moving parts.
- ☐ Check that the feed table raises and lowers properly.
- ☐ Check all fluid levels.
- ☐ Lubricate all grease fittings.
- ☐ Check that all safety signs are in place.
- ☐ Check that all safety systems, including guards and shields are in place and functional.

Dealer's Name:_____

Signature of Pre-Delivery Inspector:_____

Date Of Inspection:_____

Delivery Check List - Dealer Copy

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- ☐ Have the dealer complete the warranty registration online.

Dealer's Signature:_____ Date:_____

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Customer's Signature:_____ Date:_____

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Dealer's Name:_____

Signature of Pre-Delivery Inspector:_____

Date Of Inspection:_____

Safety Precautions

This symbol is used to call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions. Take time to be careful!

DANGER

"DANGER" indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

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

CAUTION

"CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also alert against unsafe practices.

BEFORE you attempt to operate this machine, read and study the following safety information. In addition, MAKE SURE that every individual who operates or works with this equipment, whether family member or employee, is familiar with these safety precautions. Miller-St. Nazianz provides guards for exposed moving parts for the operator's protection; however, some areas cannot be guarded or shielded in order to assure proper operation. The OPERATOR'S MANUAL AND SAFETY SIGNS on the machine itself warn you of dangers and SHOULD BE READ AND OBSERVED CLOSELY.

Failure to follow these precautions could result in death or serious injury.

General Safety Precautions

Read and understand all of the safety precautions and warnings before performing any repair. This list contains the general safety precautions that must be followed to provide personal safety. Special safety precautions are included in the procedures when they apply.

Warning

To avoid the potential of fire, at least once during each day and at the end of the day, inspect and remove any trash and debris from the vehicle, especially around hot components such as the exhaust, engine, turbocharger, batteries and cooling system. More frequent cleaning and inspection will be required if operating conditions are severe.

- Know how to stop bagger operation **before** starting it.
- **Watch** for and **avoid** overhead wires or other obstacles. Contact with electrical wires **will** cause serious injury or death.
- **Be alert** for people and/or animals in front of or around machine, **before** you start operating the machine.
- **Do not** enter the feed table or hopper when machine is operating.
- **Keep** hands, feet and clothing away from feed table when operating.
- **Do not** allow people other than a qualified operator near the unit.
- **Keep** riders off the bagger. **Do not** allow passengers.
- **Do not** allow minors to be near the machine unless properly supervised.
- **Do not** allow children to operate this machine.
- Rotating parts can cause cuts, mutilation and strangulation.
- Wear safety goggles or glasses, safety shoes and all proper clothing when operating or servicing this machine.
- **Do not** wear loose fitting, torn or baggy clothing. Remove all jewelry when working.
- **Do not** attempt to operate machine without covers in place.
- Inspect machine for damage after use.
- **Do not** work on or walk under anything that is supported ONLY by lifting jacks or a hoist. Use blocks or proper stands to support the product before performing any service work.
- **Make sure** the work area surrounding the vehicle is dry, well lit, ventilated, free from clutter, loose tools, parts, ignition sources and hazardous substances. **Be aware** of hazardous conditions that can exist.
- **Stop** bagger operation and shut off engine between loads if bagger is to be left unattended.
- **Do not** leave running machine unattended.

- To **avoid** personal injury, use a hoist or get assistance when lifting components that weigh 50 lbs (23 kg) or more. **Make sure** all lifting devices such as chains, hooks or slings are in good condition and are of the correct capacity. **Make sure** hooks are positioned correctly. **Always** use a spreader bar when necessary. The lifting hooks **must not** be side loaded.
- **Do not** operate this machine or perform any repair when fatigued or after consuming alcohol or drugs that can impair your functioning.
- **Do not** drive this vehicle on public roads. Only transport on an equipment trailer or using the tow hitch.
- **Be sure** the area is clear of all personnel **before** starting the engine or operating this vehicle.
- **Do not** unclog, adjust, lubricate or service your bagger until you disengage the drive and shut off the engine. Failure to follow this procedure could result in serious bodily injury or death.
- **Avoid** high pressure fluids. Escaping fluid under pressure can penetrate skin causing serious injury or death.
- **Avoid** the edges of ditches or gullies and steep hillsides.
- **Only** operate bagger on level ground. **Reduce** speed on rough ground.
- **Be extra** careful when going through fence gates or nearing confined quarters.
- **Allow** for unit length when making turns.
- **Do not** allow children to play on or around a stored or idle unit.
- **Keep** wheel lug nuts tightened to the specified torque.
- **Assure** that all tires are inflated evenly and to specified pressure.
- **Check** for and **remove** all tools from the unit, feed table and hopper **before** starting operation.
- Chock the wheels when parking the vehicle or leaving the vehicle unattended to prevent rolling.
- **Replace** all safety signs that are missing or become illegible.
- **Keep** all safety signs clean and legible at all times.
- **Relieve** all pressure in the air, oil and cooling systems before any lines, fittings or related items are removed or disconnected. **Be alert** for possible pressure when disconnecting any device from a system that utilizes pressure. **Do not** check for pressure leaks with your hand. High pressure oil or fuel can cause personal injury.
- Naphtha and Methyl Ethyl Ketone (MEK) are flammable materials and must be used with caution. Follow the manufacturer's instructions to provide complete safety when using these materials. **KEEP OUT OF REACH OF CHILDREN.**

Maintenance Safety Precautions

- **Be sure** there is plenty of ventilation. **Do not** operate the engine in an enclosed area. Exhaust fumes are dangerous and can cause death.
- **Before** working on this machine, stop the vehicle, set the brakes, disengage all power drivers, shut off the engine and remove the ignition key.
- **Be sure** all moving parts have come to a complete stop **before** attempting to perform any maintenance.
- **Be sure** to use a safety support and blocks to support the machine. **Do not** use a jack to support the machine.
- **Be sure** to use the proper tools.
- **Be sure** to torque all hardware according to the torque chart contained in this manual.
- Use a piece of cardboard or paper to check for hydraulic oil leaks. **Do not** use your hand or any other body part. Hydraulic oil under pressure can penetrate the skin causing serious injury or death.
- **Be sure** to relieve all hydraulic pressure before disconnecting any hydraulic components.
- **Be sure** to replace all guards and shields after servicing is complete. **Do not** operate this machine with guards or shields open or missing.
- **Remove** all tools from vehicle before operating.
- **Do not** allow grease or oil on the steps or platform.
- Use same grade and type of fasteners if replacement is necessary.

Engine Safety Precautions

- Read engine operation & maintenance manual before operating or servicing the engine.
- Improper practices or carelessness can cause burns, cuts, mutilation, asphyxiation or other bodily injury or death.
- Disconnect the battery (negative [-] cable first, then the positive [+] cable) and discharge any capacitors **before** beginning any repair work. Put a **"Do Not Operate"** tag in the operator's compartment or on the controls.
- Use ONLY the proper engine barring techniques for manually rotating the engine.
- If an engine has been operating and the coolant is hot, **allow** the engine to cool before you **slowly** loosen the filler cap and relieve the pressure from the cooling system.
- **Relieve** all pressure in the air, oil and cooling systems before any lines, fittings or related items are removed or disconnected. **Be alert** for possible pressure when disconnecting any device from a system that utilizes pressure. **Do not** check for pressure leaks with your hand. High pressure oil or fuel can cause personal injury.
- To prevent suffocation and frostbite, wear protective clothing and **ONLY** disconnect liquid refrigerant (freon) lines in a well ventilated area. To protect the environment, liquid refrigerant systems must be properly emptied and filled using equipment that prevents the release of refrigerant gas (fluorocarbons) into the atmosphere. Federal law requires capture and recycling refrigerant. Check local regulations before servicing the air conditioning system.
- Cooling system corrosion inhibitor contains alkali. **Do not** get the substance in your eyes. **Avoid** prolonged or repeated contact with skin. **Do not** swallow internally. In case of contact, immediately wash skin with soap and water. In case of contact, immediately flood eyes with large amounts of water for a minimum of 15 minutes. **IMMEDIATELY CALL A PHYSICIAN. KEEP OUT OF REACH OF CHILDREN.**
- Some state and federal agencies in the United States Of America have determined that used engine oil can be carcinogenic and can cause reproductive toxicity. **Avoid** inhalation of vapors, ingestion and prolonged contact with used engine oil.

Electrical Safety Precautions

- This machine and its systems are designed to operate off of a 12 volt DC power supply **only.**
- **Never** operate this machine with a damaged electrical system. Disconnect from electrical supply if machine is not working properly.
- **Do not** attempt to operate this machine without the appropriate fuses, relays and breakers in place.
- **Do not** attempt to bypass a fuse. If a fuse is no longer serviceable, a shock or short hazard may exist.
- **Never** replace original fuses/breakers with higher amperage fuses/breakers.
- Inspect all components for damage after any electrical problem.

There are additional hazards associated with the service and maintenance of electrical components.

- All electrical components generate heat. To **avoid** serious burns, **never** touch internal components immediately after use.
- Disassembly or attempted repairs, if accomplished incorrectly can create electrical shock and/or short hazards. **Only** qualified personnel should perform repair service.
- **Never** attempt to replace electrical wires and cables with smaller gauge wire and cable.
- Some electrical components can store energy after the unit is shut down. **Be sure** to completely de-energize all electrical components, discharging all stored energy **before** beginning any service work.

Wheels and Tires Safety Precautions

- If a rim is leaking air, **Do not** weld on the rim! **Do not** put a tube in the tire! **Do not** use tire sealant in the tire! These types of repairs can allow the defect to propagate to the point that the rim could fail resulting in personal injury or severe damage to the bagger. **Replace** any leaking or damaged wheels with **New** wheels.
- **Do not** rework, weld, heat or braze rims. If you have a wheel on your bagger with a rim leaking air, contact your dealer immediately.
- **Do not** drive or load tires beyond their rated speed and load capacities. Check with the tire manufacturer for load and speed ratings for your particular tire.

Safety Sign and Decal Locations

Outside Feed Table Wing

42.0900821 (Ref #6)
Moving Conveyor Danger

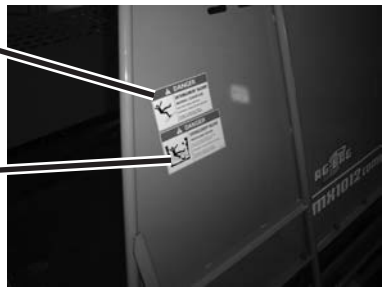
42.0900820 (Ref #7)
Revolving Rotor Danger

Inside Feed Table Wing

Inside Feed Table Wing

42.0900821 (Ref #6)
Moving Conveyor Danger

42.0900820 (Ref #7)
Revolving Rotor Danger



Outside Feed Table Wing

Operator Platform Feed Table Side

21.09026 (Ref #5)
Danger No Riders

Engine Platform Tunnel Side

21.09024 (Ref #1)
High Pressure Warning

Next To Remote Controls Operator Platform End Tunnel Side

21.09025 (Ref #4)
Danger Pinch Point

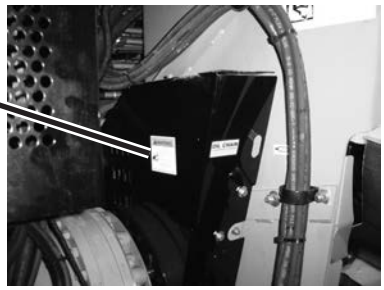
16.20181 (Ref #3)
Warning Rotating Parts Inside

Feed Table Pivot Engine End

Safety Sign and Decal Locations - continued

Engine Cover Tunnel Side

16.20181 (Ref #3)
Warning Rotating Parts Inside



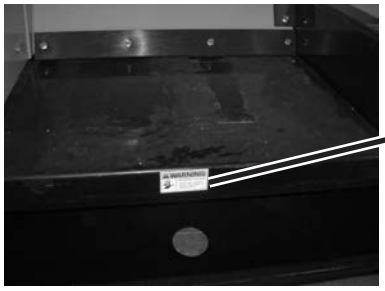
Lower Beater Guard

Hopper Side Plate Operator Platform Side

40.00472 (Ref #2)
Warning Pinch Point

42.0900820 (Ref #7)
Revolving Rotor Danger

Hopper Side Plate Engine Side



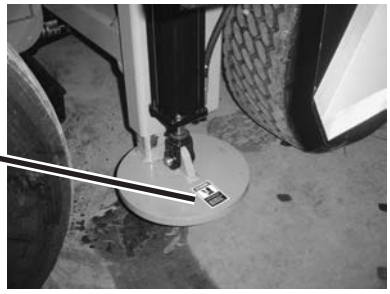
Cleanout Floor Inside Tunnel

40.00472 (Ref #2)
Warning Pinch Point

Cleanout Floor Inside Tunnel

Lift Pad Operator Platform End

21.09025 (Ref #4)
Danger Pinch Point

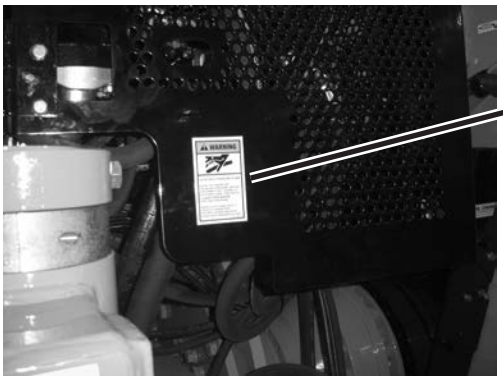


Lift Pad Engine End

Safety Sign and Decal Locations - continued

21.09026 (Ref #5)
Danger No Riders

Engine Platform Tunnel
Side



21.09024 (Ref #1)
High Pressure Warning

Engine Cover Tunnel
Side

16.20179 (Ref #8)
Warning Shield Is Off
Or Open

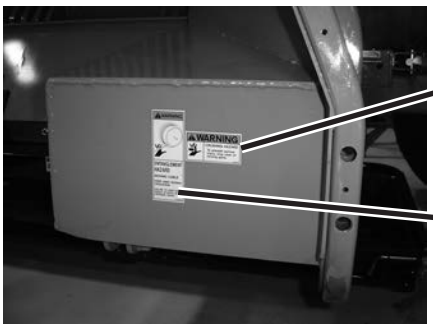
On Engine Feed Table
Side

Safety Sign and Decal Locations - continued

40.00472 (Ref #2)
Warning Pinch Point

On sides Of Tunnel Extension (Lower)

On sides Of Tunnel Extension (Upper)



40.00472 (Ref #2)
Warning Pinch Point

42.0900822 (Ref #9)
Warning Moving Cable Entanglement

On Edge Of Tunnel (Engine End)

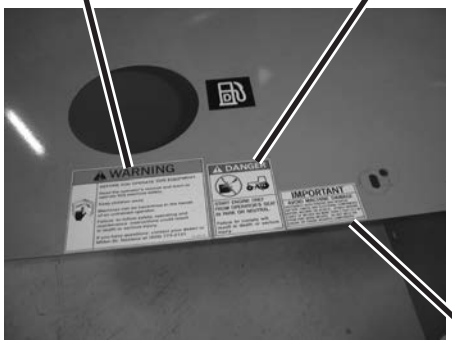
On Edge Of Tunnel (Engine Platform End)

40.00472 (Ref #2)
Warning Pinch Point

On Side Of Hitch Tube

16.20178 (Ref #10)
Warning Before Operating

21.25450 (Ref #11)
Start From Seat Danger



On Fuel Tank Cover

21.21131 (Ref #12)
Before Welding

Safety Signs

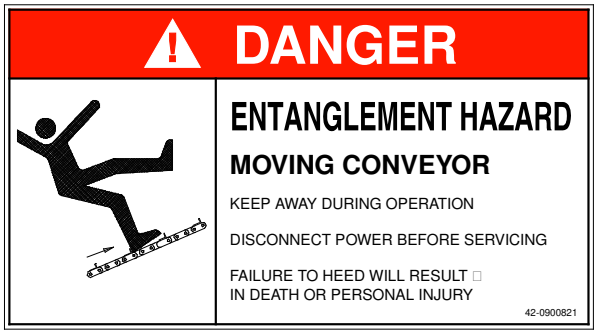
21.09024 (Ref #1)
High Pressure Warning

40.00472 (Ref #2)
Warning Pinch Point

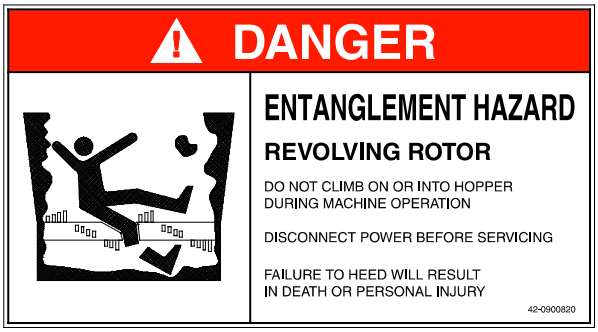
16.20181 (Ref #3)
Warning Rotating Parts Inside

21.09025 (Ref #4)
Danger Pinch Point

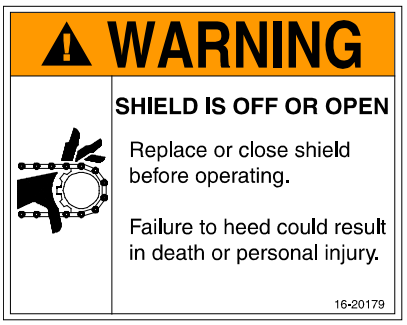
21.09026 (Ref #5)
Danger No Riders



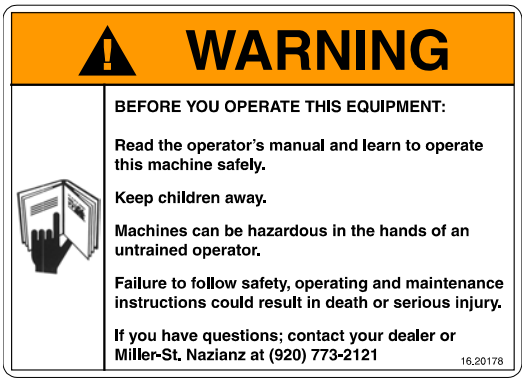
42.0900821 (Ref #6)
Moving Conveyor Danger



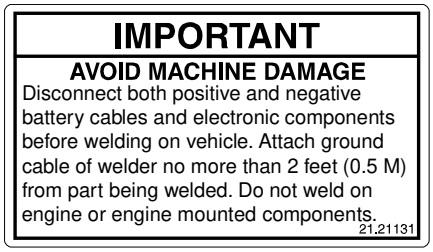
42.0900820 (Ref #7)
Revolving Rotor Danger



16.20179 (Ref #8)
Warning Shield Is Off Or Open

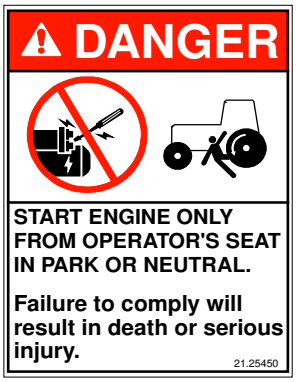


16.20178 (Ref #10)
Warning Before Operating

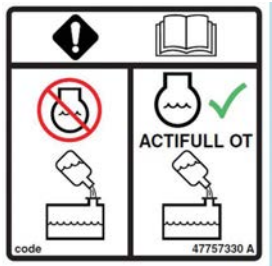


21.21131 (Ref #12)
Before Welding

42.0900822 (Ref #9)
Warning Moving Cable Entanglement

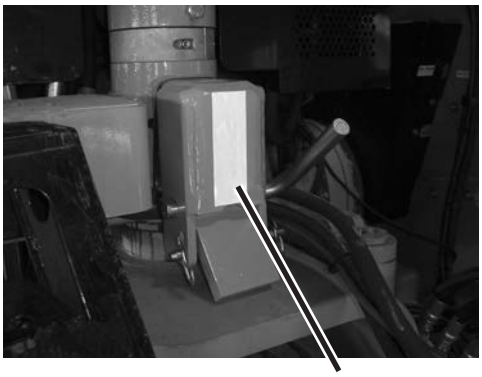


21.25450 (Ref #11)
Start From Seat Danger

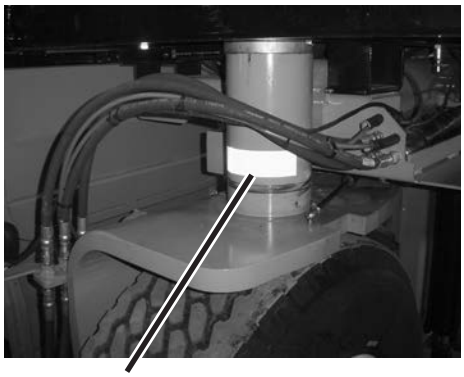


#21.62254
Decal Filled With OAT Coolant
(On Surge Tank & Engine Shroud)

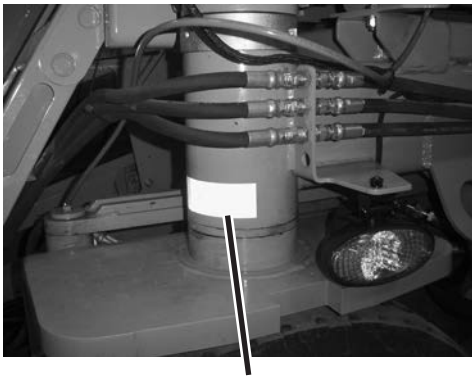
Yellow Reflective Decals



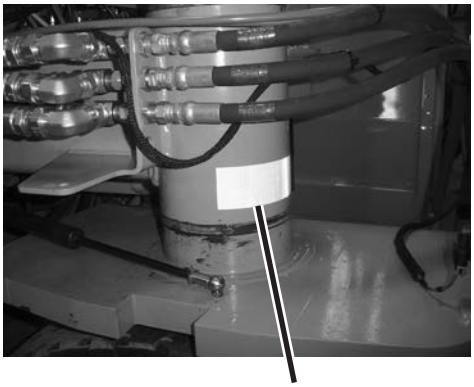
Yellow Reflective Decal Wheel Pivot Engine End (Feed Table Side)



Yellow Reflective Decal Wheel Pivot Engine End (Tunnel Side)

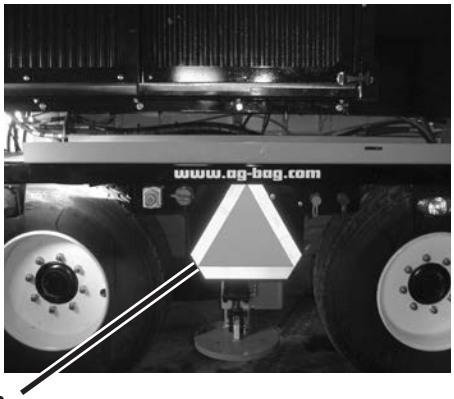


Yellow Reflective Decal Wheel Pivot Operator Platform End (Feed Table Side)

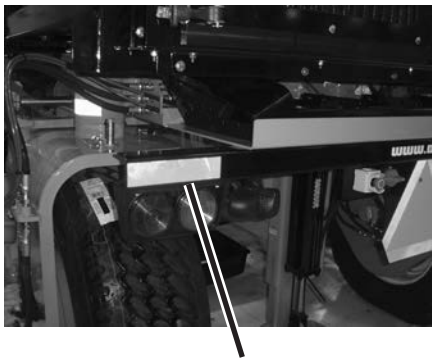


Yellow Reflective Decal Operator Platform (Tunnel Side)

SMV Emblem & Red Reflective Decal



SMV Emblem



Red Reflective Decal (One On Each Rear Corner)

Specifications

ENGINE ..... Cummins QSC 8.3 liter , 305 HP - Power bulge to 333 HP

ENGINE OIL
Oil Type (see Cummins operation & maintenance manual) ..... SAE 10W-40
Oil Capacity ..... 16 Qts (15.1 L) to Low Mark On Dipstick or 20 Qts (18.9 L) to High Mark On Dipstick

FUEL CAPACITY ..... 130 Gal. (492 L)

ENGINE COOLING SYSTEM CAPACITY ..... 8 Gal. (30 L)
Coolant Type ..... Extended Life

HYDRAULIC OIL RESERVOIR CAPACITY (Approximate to full mark) ..... 35 Gal. (132.5 L)
Hydraulic Oil Type ..... ISO 68

Gearbox ..... DURST
Gearbox Capacity (Approximate) ..... 3.5 Qts (3.3 L)
Oil Type ..... Synthetic Mobil SHC 630 Gear Lube

FEED TABLE PLANETARY 50LG
Planetary Oil Capacity ..... 1.25 Pints (0.59 L)
Planetary Oil Type ..... Synthetic 80W-140 Gear Lube

WIDTH - TRANSPORT ..... 8 ft. - 1 in.

WIDTH - BAGGING ..... 23 ft. - 1/2 in.

LENGTH - TRANSPORT ..... 23 ft. - 1/2 in.

MAXIMUM HEIGHT ..... 12 ft. - 1 in.

WEIGHT (Approximate with 12 foot tunnel) ..... 34,780 lbs (15,776 kg)

ROTOR LENGTH ..... 9 ft. - 6 in.

NUMBER OF ROTOR TEETH 110

MAXIMUM BAG LENGTH ..... 500 ft.

BAG DIAMETER ..... 10 ft. or 12 ft.

Features and Controls

Operators Platform Controls

All the controls in the operators platform are conveniently located on the front dash panel or the right side console.

Front Dash Panel

Refer to the following overview of the front dash for all control locations.

Left Side Dash

A. Cab End Brake Pressure Control & Gauge.

B. Emergency Stop Switch Button.

(#1) Signal Light Switch: Red On/Off.

(#2) Signal Light Switch: Yellow On/Off.

(#3) Signal Light Switch: Green On/Off.

(#4) Horn (Unit not equipped with horn)

(#5) Rotor On (Latch) Button.

(#6) Rotor Stop Button.

(#7) Rotor Reverse (Latch) Button.

(#8) Wheel Alignment Button.

C. Ignition Switch.

Right Side Dash

(#9) Feed Table & Canopy Light Switch: On/Off.

(#10) Bag Boom, Bag & End Light Switch: On/Off.

(#11) Engine End Anchor Switch: In.

(#12) Cab End Anchor Switch: In.

(#13) Engine RPM Increase Switch.

(#14) Engine RPM Decrease Switch.

(#15) Engine End Anchor Switch: Out.

(#16) Cab End Anchor Switch: Out.

D. Auto Sequence Switch: Start/Stop.

E. Parking Brake control.

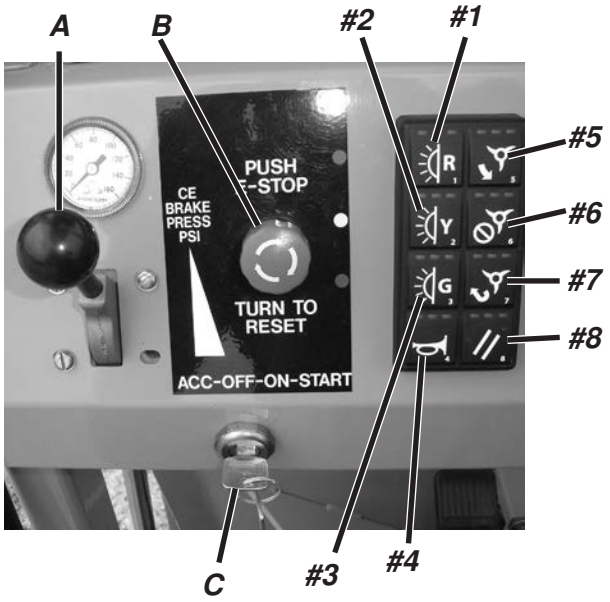
F. Engine End Brake Pressure Control & Gauge.

G. System Air Pressure Gauge.

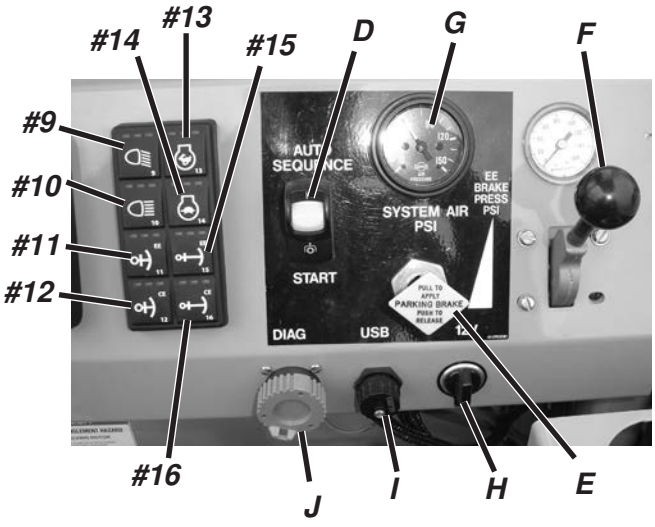
H. Power Port: Accessory 12 Volt Plug In.

I. USB Programming Port.

J. Diagnostic Plug.



Front Left Side Dash Controls

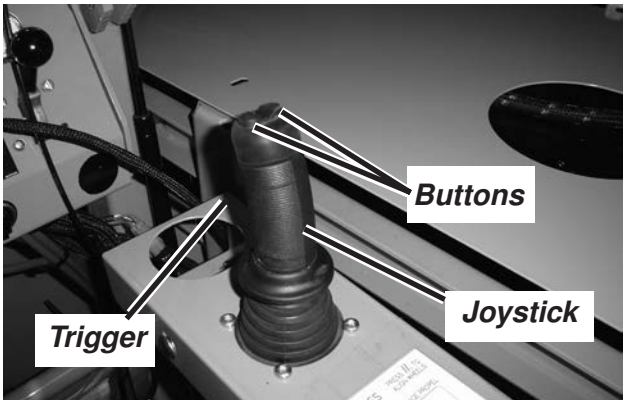


Front Right Side Dash Controls

Right Side Console

Refer to the following overview of the side console for all control locations.

Travel/Direction/Upper Beater& Feed Table Control Joystick. The joystick has a trigger on the front that has to be pressed to propel and two buttons on the top which have multiple functions. Refer to the joystick operation for all joystick functions.



Joystick

Remote Controls (Switch Banks Next To Bag Boom)

Remote Controls

Refer to the following overview of the remote controls for all control locations.

(#17) Rotor On Button Momentary.

(#18) Rotor Reverse Button Momentary.

(#19) Cab End Lift Jack (Retract) Button.

(#20) Cab End Lift Jack (Extend) Button.

(#21) Tunnel Clean Out Floor (Retract) Button.

(#22) Tunnel Clean Out Floor (Extend) Button.

(#23) Cab End Anchor Switch: In.

(#24) Cab End Anchor Switch: Out.

(#25) Bag Pan Up Switch.

(#26) Bag Pan Down Switch.

(#27) Engine End Anchor Switch: In.

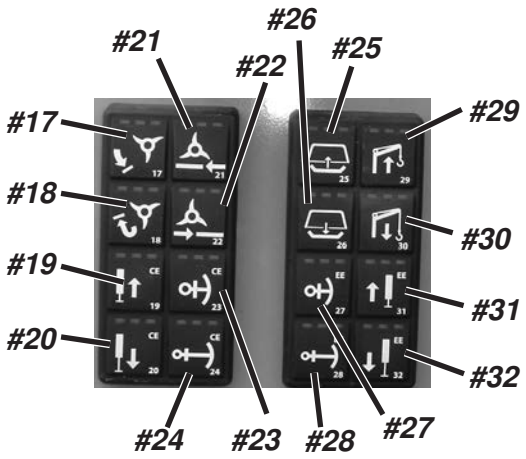
(#28) Engine End Anchor Switch: Out.

(#29) Bag Boom Hoist (Retract) Switch.

(#30) Bag Boom Hoist (Extend) Switch.

(#31) Engine End Lift Jack (Retract) Button.

(#32) Engine End Lift Jack (Extend) Button.



Remote Controls (Next To Bag Boom)

Remote Emergency Stop Buttons

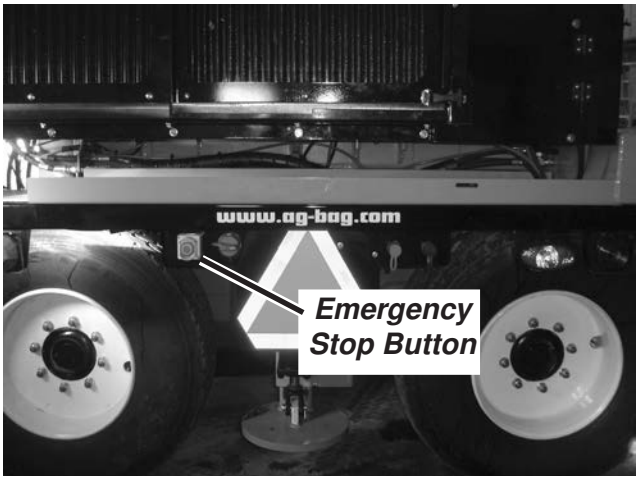
There are two additional emergency stop buttons on the bagger. One is located at the engine end of the bagger and the other on the tunnel side of the bagger.

Engine End Of Frame

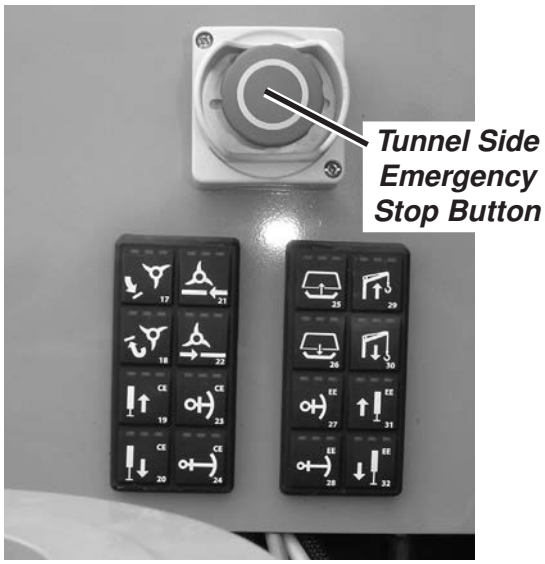
The emergency stop switch is located on the panel directly below the cooling package.

Tunnel Side Of Frame

The tunnel side emergency stop button is located on the panel at the tunnel side of the fuel tank next to the bag boom pivot tube.



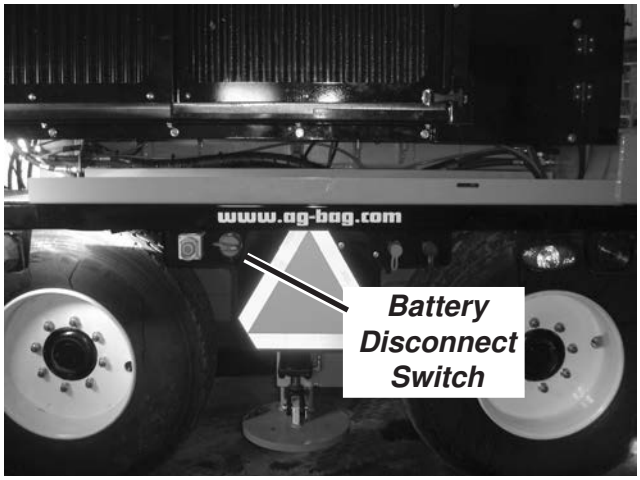
Emergency Stop Button (Engine End)



Emergency Stop Button (Tunnel Side)

Battery Disconnect Switch

The battery disconnect switch is located on the panel at the rear of the engine frame below the cooling package.



Battery Disconnect Switch

Display - Home Screen Overview

The main screen has four function keys:

F1) Swaps between two pages on the display. They are “Home” and “Power management” pages.

F2) Allows the operator to enter the Auxiliary Hydraulic Circuit Screen.

F3) Selects the machine travel directions, Transport & Bag.

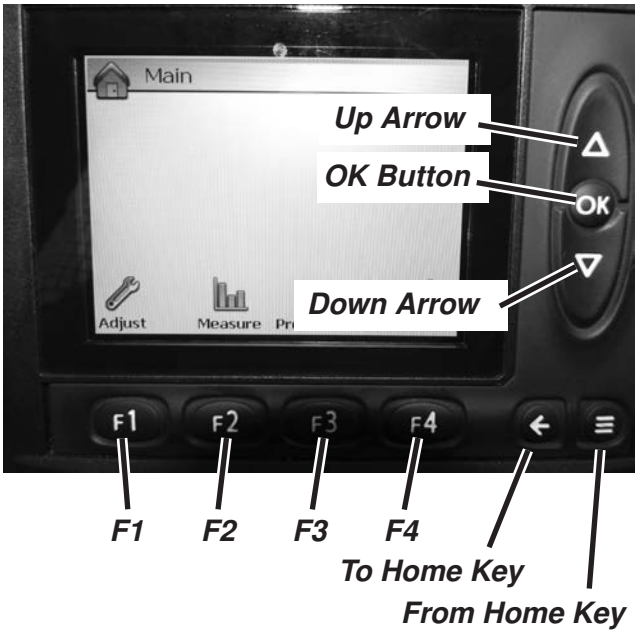
F4) Swaps between joystick modes in each of the two travel directions.

Refer to the ”Home Screen Operation” section of this manual for a more detailed explanation of the home screen operation.

Black “Hi-Light” box on the Auxiliary Hydraulic Circuit screen moves down through 4 icons and repeats as the “OK” button is cycled.

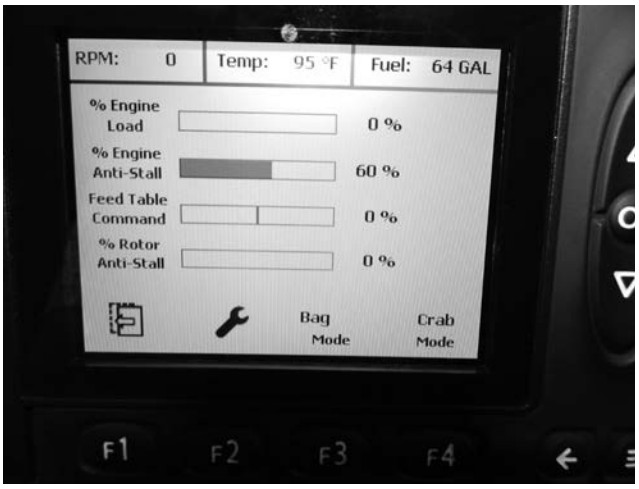
Up & Down arrows on right side of display run the the “Hi-Lighted” function similar to the feed table lift on the home screen.

The information on the left side of the Auxiliary Hydraulic Circuit screen is a repeat of the right side of the Homescreen, meaning it moves from side to side depending on screen choice.

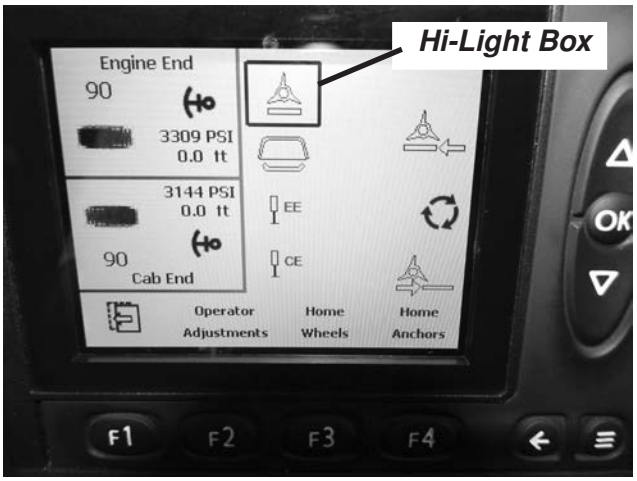


IQAN Main Display Screen F Keys

Home Screen Display (Screen @ Key On)



Bar Graph Screen From F1 Key On Home Screen (Power Management F1 from Home)



Auxiliary Hydraulic Circuit Screen (F2 Key from Home Screen)

Joystick Function Overview

The joystick is a multi-input control. the joystick has “five” ways the operator can control the bagger. They are:

1) X-axis: movement which is moving the grip in a line defined as toward the fuel tank (right) and away from the fuel tank (left).

2) Y-axis: movement which is moving the grip in a line toward the windshield (forward) and away from the windshield (backward).

3) The trigger: a switch on the front (fingers) side of the grip (opposite the operators view) and is depressed by the normal gripping of the handle by the operator.

4 & 5) The thumb rocker switch: a pair of buttons at the top of the grip that can be pressed one at a time, usually with the operators thumb.

NOTE: The axis’ movements are proportional, the farther the operator moves the grip from center, the machine or feature moves proportionally faster. The trigger and rocker switch are strictly on/off.

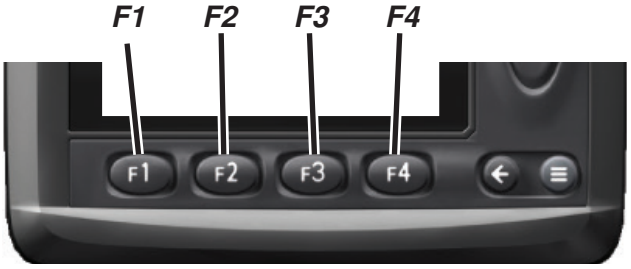
The joystick works in conjunction with the F3 & F4 keys on the home screen of the display to control: Steering, Propel, Feed Table Drive and the Upper Beater.

Steering is always available, but varies in operation depending on mode selected.

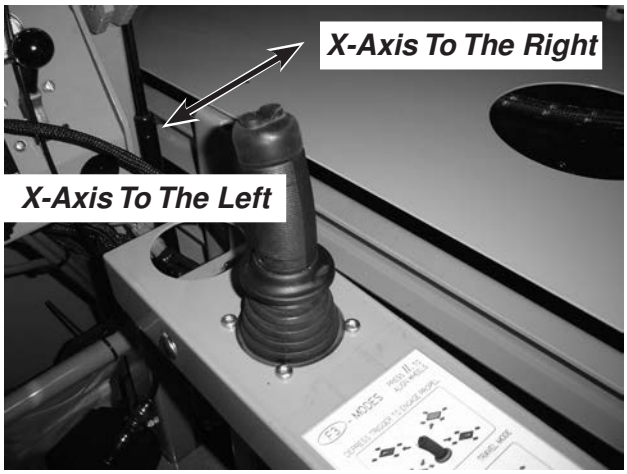
Propel is not available in the BagBagging mode.

Feed table drive and upper beater control are only available in the Bag/Bagging mode.

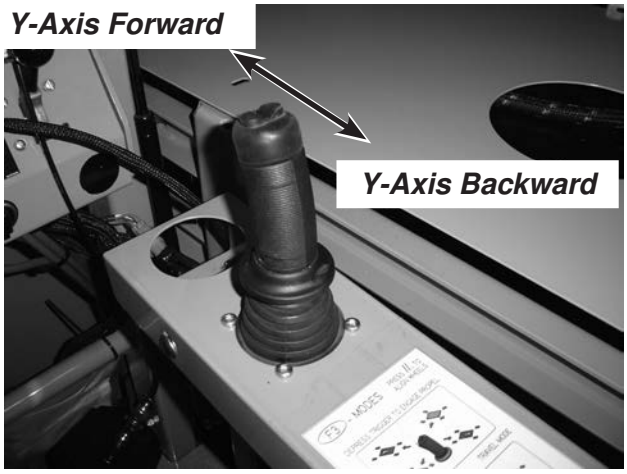
Refer to the ”Joystick Operation” section of this manual for a more detailed explanation of the joystick operation.



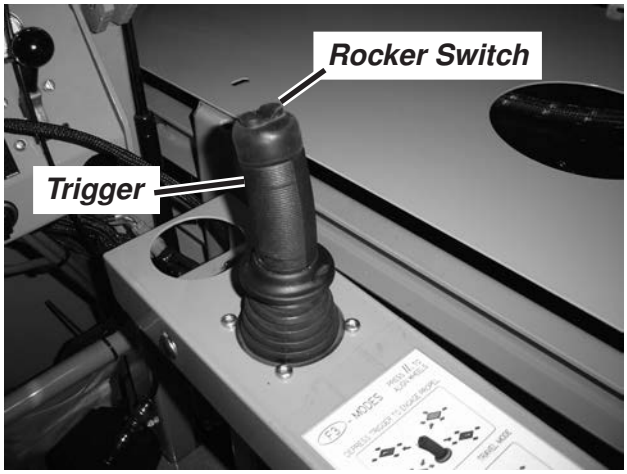
Display Screen F Keys



Joystick X-Axis



Joystick Y-Axis



Joystick Trigger & Rocker Switch

Signal Light Switch Red (#1)

The signal light switch for the red signal light is a on/off push button switch which turns the red signal light on and off and is located in the bank of switches on the left side of the front dash panel.

Push the switch to turn the red signal light on.

Push the switch again to turn the red signal light off.

Use this switch in conjunction with the yellow and green signal light switches to alert anyone around the bagger as to the operational status. Go over the colors used for each message intended before any operation is started. Once operation is started do not stray from the intended message for each light.

Signal Light Switch Yellow (#2)

The signal light switch for the yellow signal light is a on/off push button switch which turns the yellow signal light on and off and is located in the bank of switches on the left side of the front dash panel.

Push the switch to turn the yellow signal light on.

Push the switch again to turn the yellow signal light off.

Use this switch in conjunction with the red and green signal light switches to alert anyone around the bagger as to the operational status. Go over the colors used for each message intended before any operation is started. Once operation is started do not stray from the intended message for each light.

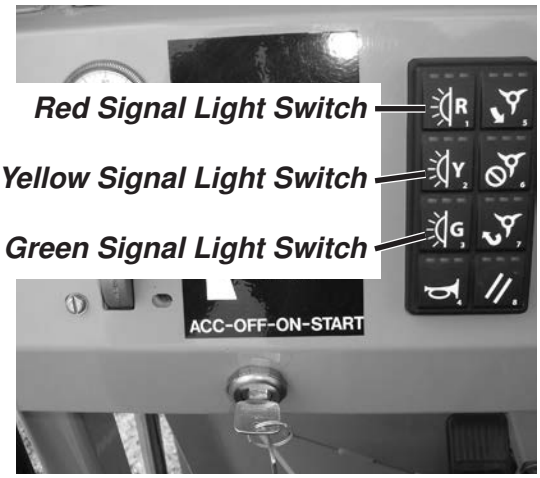
Signal Light Switch Green (#3)

The signal light switch for the green signal light is a on/off push button switch which turns the green signal light on and off and is located in the bank of switches on the left side of the front dash panel.

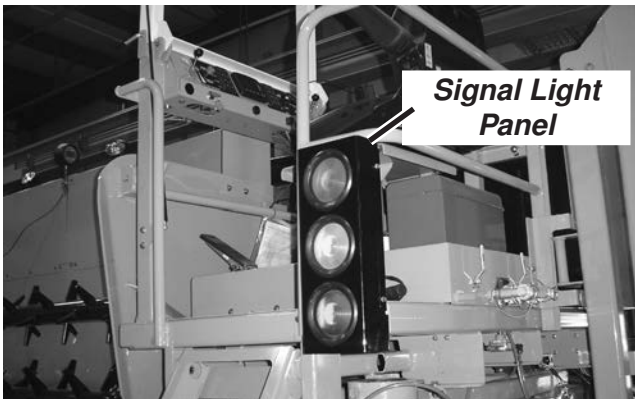
Push the switch to turn the green signal light on.

Push the switch again to turn the green signal light off.

Use this switch in conjunction with the red and yellow signal light switches to alert anyone around the bagger as to the operational status. Go over the colors used for each message intended before any operation is started. Once operation is started do not stray from the intended message for each light.



Signal Light Switches



Signal Lights

Anchor In Switch (Cab End) (#12 & 23)

The cab end anchor in switch is momentary switch which powers the anchor in. It is located in the switch bank on the right side of the front dash. When the switch is released, it will return to the off position.

Push and hold the switch to power the anchor in toward the tunnel. Anchors will not respond if minimum cable length is reached. See anchor setting section.

Always watch the anchor position scale (on the display) when powering the anchor in.

Note: There is a remote mounted button that can also be used to power the cab end anchor in. This button is located in a switch bank on the tunnel side of the bagger next to the bag boom.

Anchor Out Switch (Cab End) (#16 & 24)

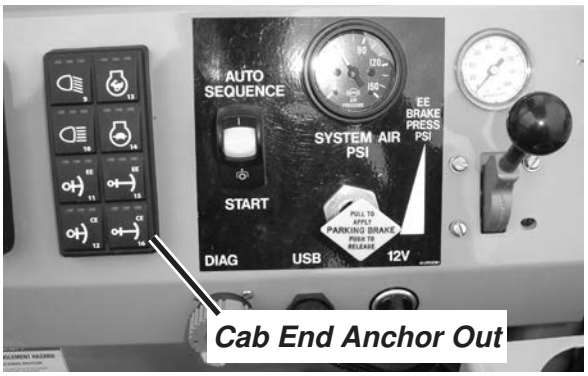
The cab end anchor out switch is momentary switch which powers the anchor out. It is located in the switch bank on the right side of the front dash. When the switch is released, it will return to the off position.

Push and hold the switch to power the anchor out away from the tunnel. Anchors will not respond if maximum cable length is reached. See anchor setting section.

Always watch the anchor position scale (on the display) when powering the anchor out.

Note: There is a remote mounted button that can also be used to power the cab end anchor out. This button is located in a switch bank on the tunnel side of the bagger next to the bag boom.

Cab End Anchor In Switch (Front Dash) (#12)



Cab End Anchor Out Switch (Front Dash) (#16)

Cab End Anchor In Switch (Remote Mounted) (#23)

Cab End Anchor Out Switch (Remote Mounted) (#24)

Anchor In Switch (Engine End) (#11 & 27)

The engine end anchor in switch is momentary switch which powers the anchor in. It is located in the switch bank on the right side of the front dash. When the switch is released, it will return to the off position.

Push and hold the switch to power the anchor in toward the tunnel. Anchors will not respond if minimum cable length is reached. See anchor setting section.

Always watch the anchor position scale (on the display) when powering the anchor in.

Note: There is a remote mounted button that can also be used to power the engine end anchor in. This button is located in a switch bank on the tunnel side of the bagger next to the bag boom.

Anchor Out Switch (Engine End) (#15 & 28)

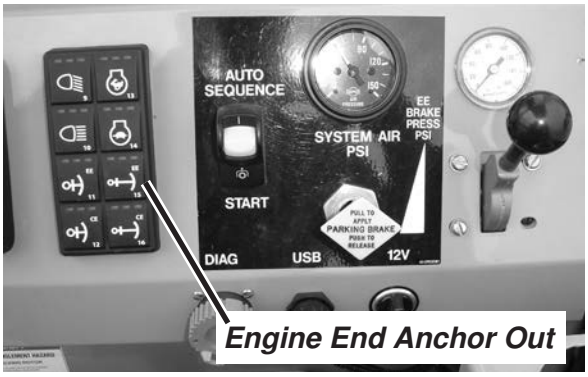
The engine end anchor out switch is momentary switch which powers the anchor out. It is located in the switch bank on the right side of the front dash. When the switch is released, it will return to the off position.

Push and hold the switch to power the anchor out away from the tunnel. Anchors will not respond if maximum cable length is reached. See anchor setting section.

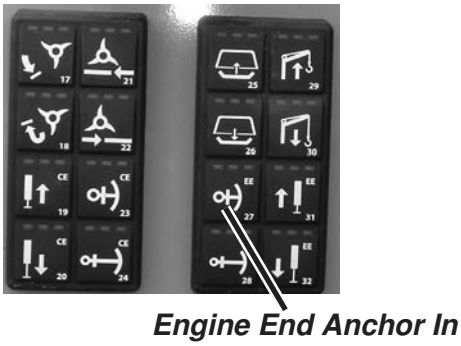
Always watch the anchor position scale (on the display) when powering the anchor out.

Note: There is a remote mounted button that can also be used to power the engine end anchor out. This button is located in a switch bank on the tunnel side of the bagger next to the bag boom.

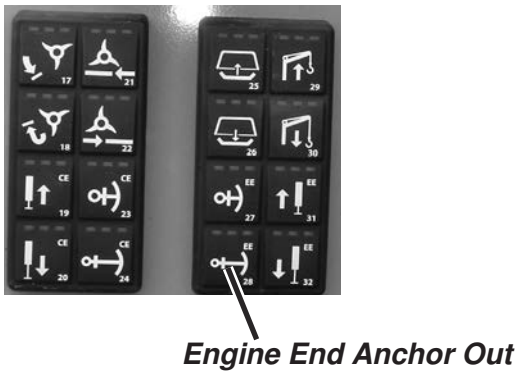
Engine End Anchor In Switch (Front Dash) (#11)



Engine End Anchor Out Switch (Front Dash) (#15)



Engine End Anchor In Switch (Remote Mounted) (#27)



Engine End Anchor Out Switch (Remote Mounted)

Anchor Settings and Float

A settable minimum cable length is provided to prevent the operator from over tightening the cables on the drum after the anchor is retracted all the way. The operator can override the feature if desired. Anchor winch will stop when min/max are reached, and a dialog box will appear, if “continue” is selected and the original button is pushed, the winch will then continue past the min/max setting.

A settable Maximum cable length is provided to prevent the operator from playing out the anchors too far and potentially losing them in the feed. The operator can override the feature if desired. Anchor winch will stop when min/max are reached, and a dialog box will appear, if “continue” is selected and the original button is pushed, the winch will then continue past the min/max setting.

Along with simple extension and retraction of the anchor winches, the Anchor Keys on the dash also allow the operator to engage the anchor Float mode. This feature tries to play out the anchors to a desired length without over-spooling the cable (turning the drum into a rat’s nest of jumbled cable). After the first load or two is in the bag, press and hold both IN and OUT buttons for either the cab end or the engine end until the button lights start to flash in sequence, left to right. Feed passing by the anchors will pull the anchors out to a settable predetermined length. Press either key to stop the float mode on that end. The float length, Min length and Max. length are settable though the Operator Adjustments Key.

Both anchors enter the float mode by pressing and holding the anchor in and anchor out keys for either the engine end or the cab end until the three lights on each switch start to turn on in order (across both switches)

Cab End Anchor In Switch (Front Dash) (#12)

Cab End Anchor Out Switch (Front Dash) (#16)

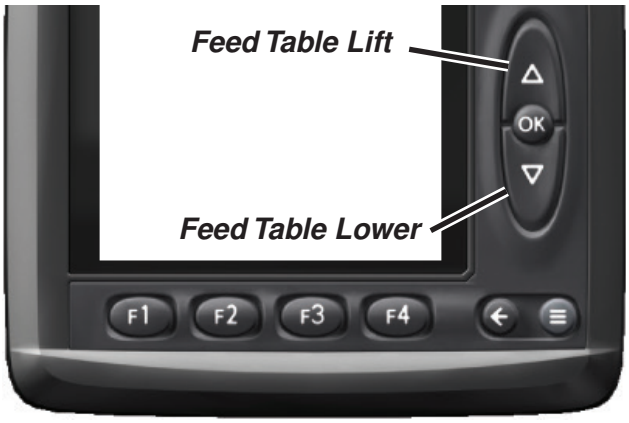
Engine End Anchor In Switch (Front Dash) (#11)

Engine End Anchor Out Switch (Front Dash) (#15)

Feed Table Lift/Lower

Be sure to release the feed table transport lock located on the cab side of feed table before lowering the feed table. The feed table lock pin can remain in the unlocked position while bagging, but resetting will allow an automatic latch upon fold.

The feed table lift/lower is controlled by the display on the front dash. Note: Feed table can only be controlled from the home page on the display. From the home page, press the down arrow to lower the feed table. This switch is momentary and the feed table will stop lowering if the arrow is released. Once the feed table is lowered it must be retracted toward the bagger for proper operation continue to hold the down arrow until this is accomplished.



Feed Table Lift/Lower Arrows On Display

Push and hold the up arrow on the display to lift the feed table up. Once the feed table is completely raised it must be retracted to allow the feed table lock to engage continue to hold the up arrow until this is accomplished.

IMPORTANT: To prevent contact between the feed table sides and the hopper, feed table sides must be folded completely down and against the belt and latched before raising the feed table.

Be sure the feed table sides are in the folded (down) position before attempting to raise the feed table. Always check the table lock immediately after raising the table to the folded position.

Feed Table Transport Lock

Power Port For 12 Volt Accessories

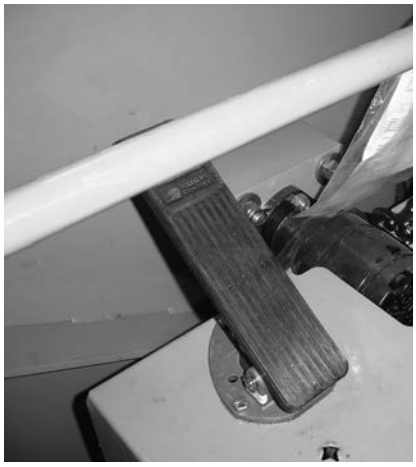
The power port is located on the right side of the front dash panel. The power port is used for electrical accessories such as cell phone chargers. This port has continuous power whether the ignition is on or off. Pull the protective cover off to gain access to the port.

This port should not be used for loads over 10 amps.

Power Port

Brake Pedal

The brake pedal is located on the operators platform floor in front of the operators seat. The brake pedal is used to apply the wheel brakes when moving the vehicle and also to assist in bagging when starting a new bag. Apply the brakes as needed to start a new bag until the anchors have been set and the brake pressure has been properly adjusted.



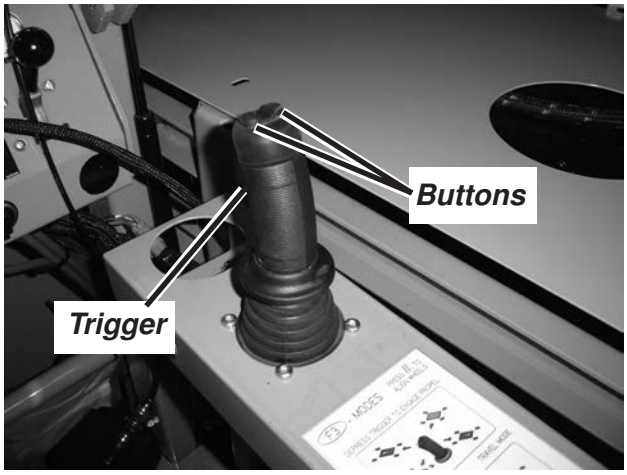
Brake Pedal

Direction, Steering, Upper Beater & Feed Table Drive (direction) Control Joystick

The joystick is located to the right of the operators seat.

The joystick has three additional controls on it for use with other modes and upper beater control. A trigger is located on the front side of the joystick handle and two push buttons are located on the top of the joystick handle.

Refer to the ”Joystick Operation” section of this manual for a more detailed explanation of the joystick operation.



Direction, Steering & Upper Beater Control Joystick

When driving in trailer mode, the right side button controls the engine end steering. The left button controls the cab end steering. When in bagging mode, the right side button controls the upper beater in a clockwise rotation. When pressed again it will stop the upper beater. The left side button in the bagging mode will rotate the upper beater in a counter-clockwise rotation. Pressing the left button again will stop the upper beater. This beater rotation feature is used when the crop bridges over the upper beater and will not feed properly into the rotor.

Driving in Transport Mode:

1. Be sure to raise the lift jacks, bag pan & fedd table before traveling.
2. Release the parking brake.
3. Move the joystick in the direction you want to travel. Move the joystick forward or backward to drive and side to side to steer. The trigger at the front of the joystick must be engaged (pressed).
   a. In transport mode, the joystick controls steering on the engine end only. The electronic control system will steer the cab end wheels to follow the engine end.
   b. Steering angles are limited to approximately 20 degrees in one direction and 30 degrees in the other direction. (20 degrees is a mechanical stop, 30 degrees is an electronic stop).

Driving in Trailer Mode:

1. Be sure to raise the lift jacks, bag pan & feed table.
2. Release the parking brake.
3. Move the joystick in the direction you want to travel. Drive is forward or backward.
4. Wheels at the cab end and engine end are steered independently using the buttons on the joystick. Cab end wheels are steered by moving the joystick side to side with the left hand button of the joystick engaged (pressed). Engine end wheels are steered by moving the joystick side to side with the right hand button of the joystick engaged (pressed).

NOTE: Trailer Mode is recommended when loading or unloading machine from a trailer.

Driving in Crab Mode:

1. Be sure to raise the lift jacks, bag pan & feed table before transporting.
2. Release the parking brake.
3. Move the joystick in the direction you want to travel. Move the joystick side to side to drive. Moving the joystick to the right will move the bagger to the right (tunnel side). Moving the joystick to the left will move the bagger to the left (feed table side).
4. In crab mode, the joystick controls steering on the engine end only. The electronic control system will steer the cab end wheels. Wheels will “Crab” steer (wheels stay parallel). Move the joystick front to back to steer.

NOTE: Direction is defined by wheel position, machine motion and the movement of the joystick required to generate the motion.

There are two machine directions. Transport and bag. from the home screen, the operator changes the software of the machine to that direction by cycling the F3 key. Press and hold the align button #8 to complete the process. Within each direction are two modes. All four modes are distinctively different. F4 toggles the software between the two modes in the current chosen direction.

Switching Driving/Bagging Modes

The modes can be switched depending on type of driving you are doing. This has to be done before operating joystick.

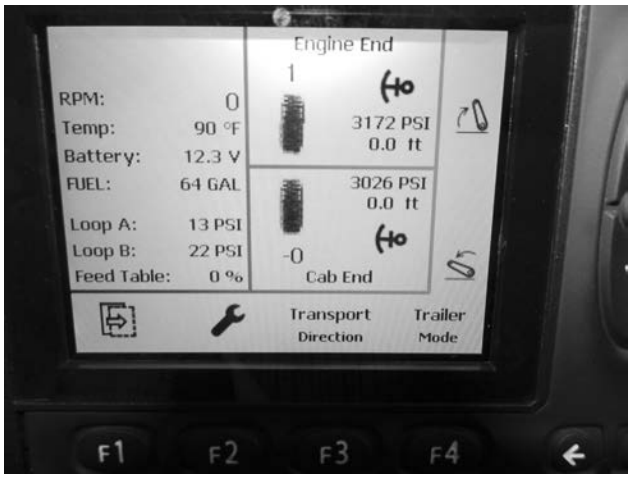
The modes are:

Transport Mode
Trailer Mode
Crab Mode
Bag Mode

NOTE: Pressing the F3 key will toggle you between 2 mode catagories. Press the F3 key once will get you to the Transport/Trailer Mode. From this point you will have to press the F4 key to select either transport or trailer mode. Pressing the F3 key again will get you to the Crab/Bag mode. From this point you will have to press the F4 key to select either Crab or Bagging mode.

Switch From Travel to Trailer Mode:

Switch to the trailer mode, press the F3 key on the display to get to the “Transport/Trailer” mode. Press the F4 key to display the trailer mode. Trailer mode will display.



Display for Trailer Mode

Switch From Trailer to Transport Mode:

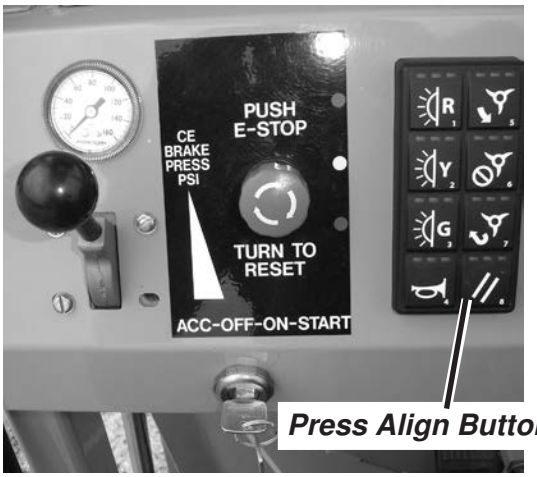
Trailer to transport.

Just cycle the F4 key. cab end wheels will “catch up” with engine end wheels when you begin to steer.

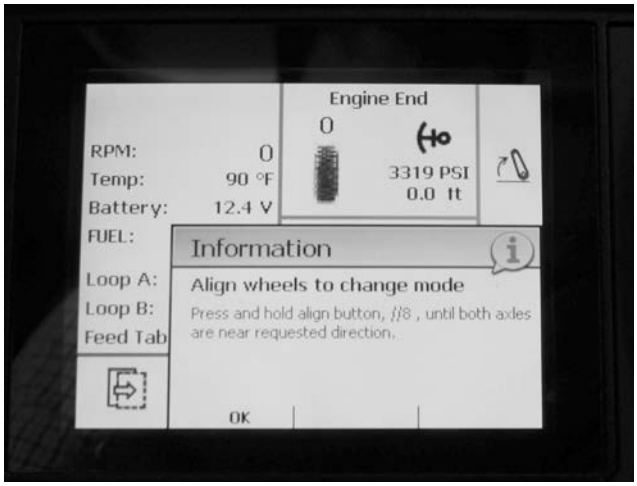
Switch From Trailer or Transport Mode to Crab Mode:

1. Press F3 long enough to get the dialog box to appear.
2. Press and hold the alignment button (#8) until wheels are in the new direction.
3. Press F4 to switch from bagging to crab. Machine will default to bagging mode when switching to bag direction.

Display for Crab Mode



Align Button (#8)



Display for Alignment Mode

Feed Table Belt Control (Joystick)

Feed table speed is displayed as a percentage, numerically on the home page and as the 3rd bar graph on the alternate home page.

The feed table belt is controlled by the joystick on the right side console. The joystick must be in the “Bagging” mode for this to function.

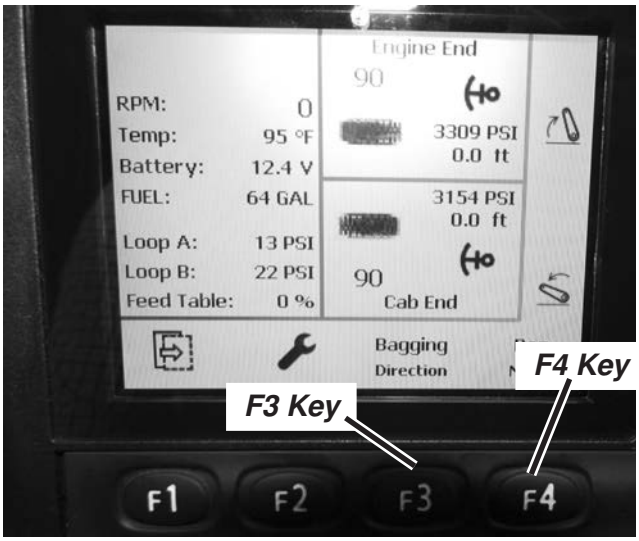
Press the F3 key on the display to get to the crab/bag mode direction. Then press the F4 key to select the “Bagging” mode.

Move the joystick to the right to have the feed table belt start to move toward the rotor. This direction is displayed as a positive percentage. Once the desired feed table speed is achieved, release the joystick and the feed table belt speed will be maintained. The speed of the feed table can be adjusted by moving the joystick along the X-axis once the feed table is in motion.

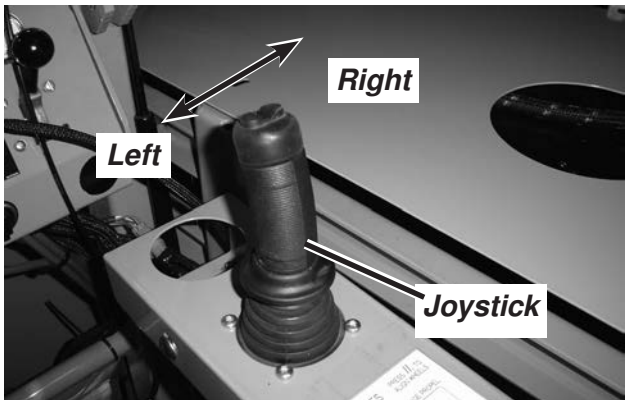
Move the joystick to the left to have the feed table belt start to move away from the rotor. When moving the joystick to the left, the feed table will slow down, stop and then start reversing. When reversing, once the desired feed table belt speed is achieved, release the joystick and the feed table belt speed will be maintained. This direction is displayed as a negative percentage. The speed of the feed table can be adjusted by moving the joystick along the X-axis once the feed table is in motion.

Always stop the feed table belt between loads and while leaving the bagger unattended.

Refer to the ”Feed Table Drive Operation” section of this manual for a more detailed explanation of the feed table operation.



F3 & F4 Keys On Display



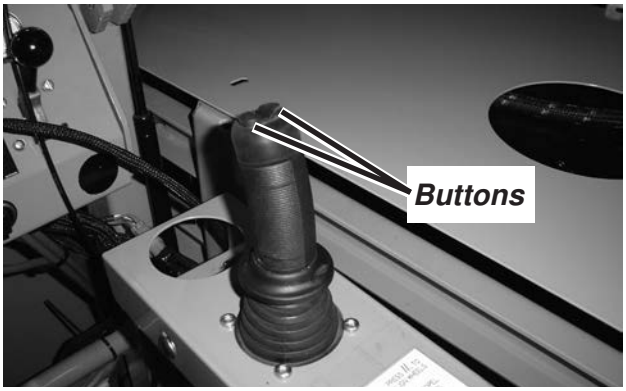
Feed Table Belt Control Joystick

Upper Beater Control (Joystick)

The joystick is located to the right of the operators seat.

When in bag/bagging mode, the right side button controls the upper beater in a clockwise rotation as seen from the seat. Either button will stop the upper beater. The left side button in the bagging mode will rotate the upper beater in a counter-clockwise rotation. Pressing either button will stop the upper beater. This beater rotation feature is used as an aid to stop crop from bridging over the upper beater when the crop bridges over the upper beater and will not feed properly into the rotor.

Refer to the ”Upper Beater Operation” section of this manual for a more detailed explanation of the upper beater operation and the auto-reverse feature.



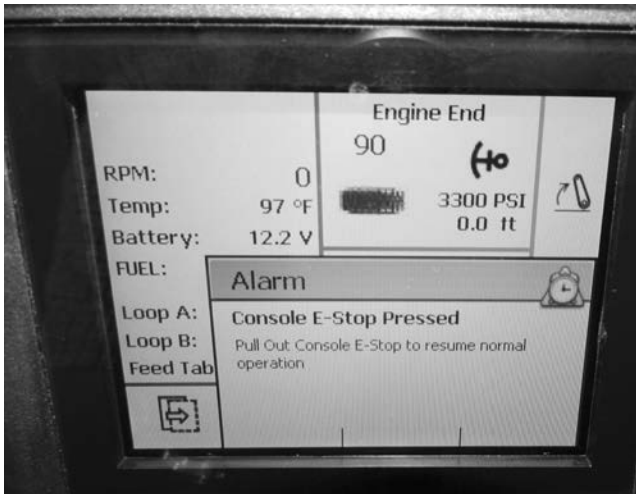
Joystick - Upper Beater Control

Emergency Stop Button (Operators Platform)

The emergency stop button is located on the left side of the front dash panel in the operators platform. Use this button to immediately stop the feed table and rotor. Pushing this button will also idle the engine down to a low idle. To reset the feed table and rotor, rotate the button and then restart the bagging sequence from the operators platform.

In the emergency stop mode, a dialog box on the display screen will indicate the mode and which switch is commanding the state, that is which switch has been pushed (activated).

Emergency Stop Button



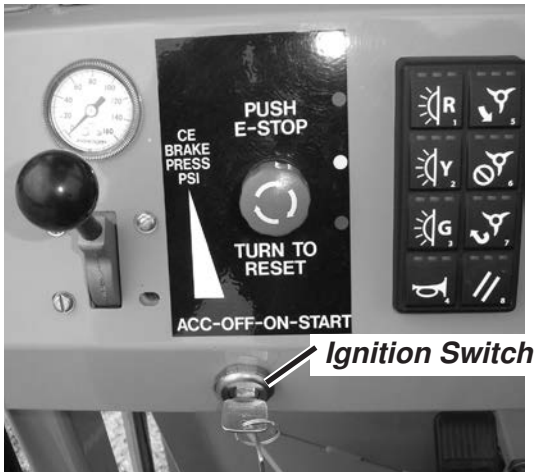
Emergency Stop Button Display

Ignition Switch

The ignition switch is located on the left side of the front dash. Turn the key from the OFF position, past the ON position to the START position to crank the engine. If the engine senses that the temperature is too cold, a wait to start will come on the display. Once the temperature inside the air intake rises to the predetermined temperature, the wait to start will disappear. Turn the key to start to crank the engine. Once the engine starts, release the key and it will return to the ON position.

Remove the key from the ignition switch whenever leaving the vehicle unattended.

Turn the ignition switch to the ACCESSORY position to operate any switched accessories such as radios, etc. without having the engine running.



Ignition Switch

Display Wait To Start

Parking Brake

The parking brake control is a pull to apply, push to release control. It is located on the right side of the front dash just below the system pressure gauge.

Pull the yellow control out to apply the parking brake. The parking brake is set with the absence of air pressure.

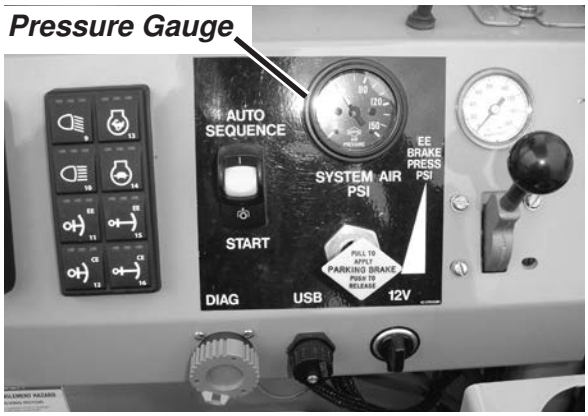
Push the yellow control knob in to release the parking brake. The parking brake requires air pressure to release.

Always apply the parking brake before leaving the operators platform or leaving the vehicle unattended.

Park Brake Control

System Air Pressure Gauge

The system air pressure gauge is located on the right side of the front dash in the operators platform and monitors the pressure in the bagger air system.



System Air Pressure Gauge

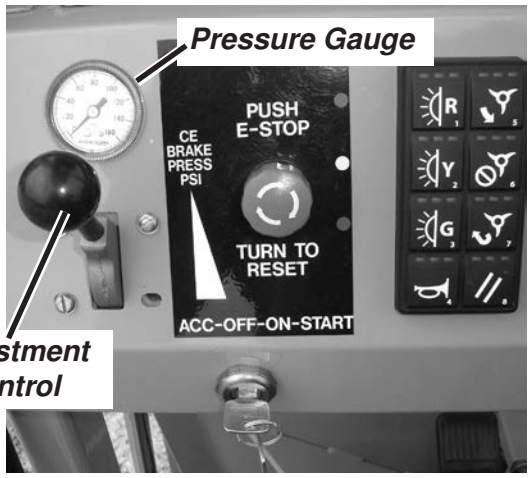
Brake Pressure Adjustment Controls (Cab & Engine End)

The brake pressure adjustment controls are located on the right and left sides of the front dash in the operators platform

The controls are used in combination with the anchors to modify the silage density profile inside the finished bag. Push the control up to decrease pressure or pull the control down to increase pressure.

Engine End Brake Pressure Adjustment Control

The brake pressure for the cab end and the engine end brakes are shown on the individual pressure gauges directly above the control.



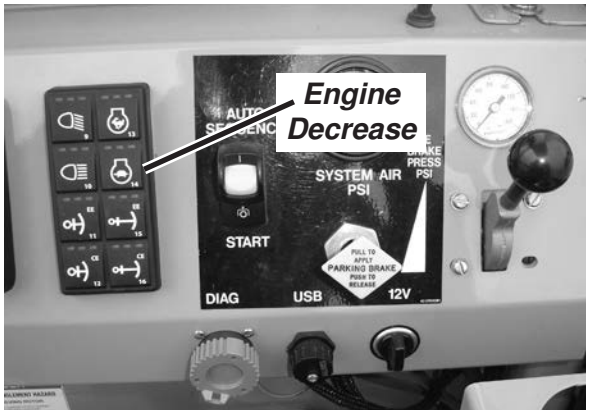
Cab End Brake Pressure Adjustment Control

Engine RPM Increase & Decrease Buttons (Operators Platform) (#13 & 14)

The engine rpm can be increased manually with the engine rpm increase button. This button is located in the switch bank on the right side of the front dash. To increase engine rpm's press and hold the button. The engine will increase rpms in all the way to high idle. When the button is released the engine will maintain the setting.

The engine rpm can be decreased manually with the engine rpm decrease button. This button is located in the switch bank on the right side of the front dash. To decrease engine rpm's press and hold the button. The engine will decrease rpms all the way down to low idle. When the button is released the engine will maintain the setting.

Engine RPM Increase Button (#13)



Engine RPM Decrease Button (#14)

Auto Sequence Start/Stop Switch (Operators Platform)

This switch when activated will start the following functions in the order listed:

1- Bring the engine off idle.

2- Turn the rotor on along with lower beater.

3- Rev the engine up to speed.

4- Turn the upper beater on (If auto mode is set to active will also start the reversing feature).

5- Start the feed table (if anti rotor stall mode is set to active will also start this feature which will momentarilly stop the feed table if required).

The auto sequence switch is located on the right side of the front dash. To start the auto sequence, press the yellow center button and push the switch up.

To stop the auto sequence, pull the switch down and the feed table, upper beater and rotor will shut down in a certain order as well as idle the engine down.

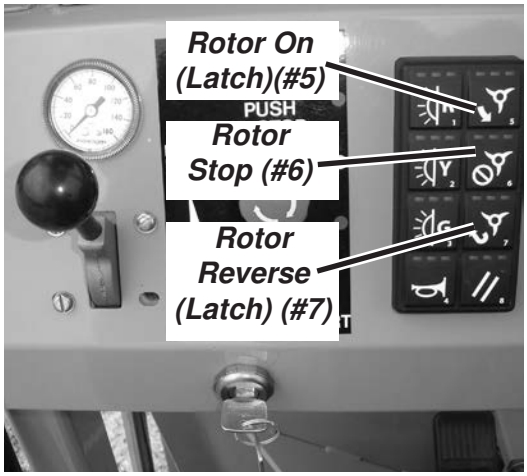
Auto Sequence Start/Stop Switch

Rotor Control Buttons ON-OFF-REVERSE (Operators Platform)

The rotor can be turned on by pressing the rotor latch on button in the bank of switches on the left side of the front dash. Press the button (#5) to turn the rotor on and latch in the on position.

Press the rotor stop button (#6) located in the switch bank on the left side of the dash.

Press the rotor reverse latch button to reverse the rotor. The rotor stop button must be pressed to stop the rotor before reversing. The rotor reversing button (#7) is located in the switch bank on the left side of the front dash. When pressed the rotor will latch in the reversing position.



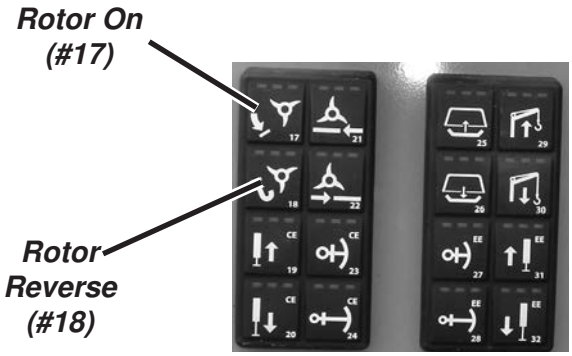
Rotor Control Buttons

Rotor Control Buttons Momentary ON-REVERSE (Next To Bag Boom)

With both of the remote rotor control buttons (#17 or 18), an audible alarm sounds immediately upon pressing the button, but you have to hold the button for 3 seconds before the rotor will turn.

The rotor can be turned on by pressing the momentary rotor on button (#17) located in the switch bank located next to the bag boom. This is a momentary switch and must be held to operate the rotor. When released the rotor will stop.

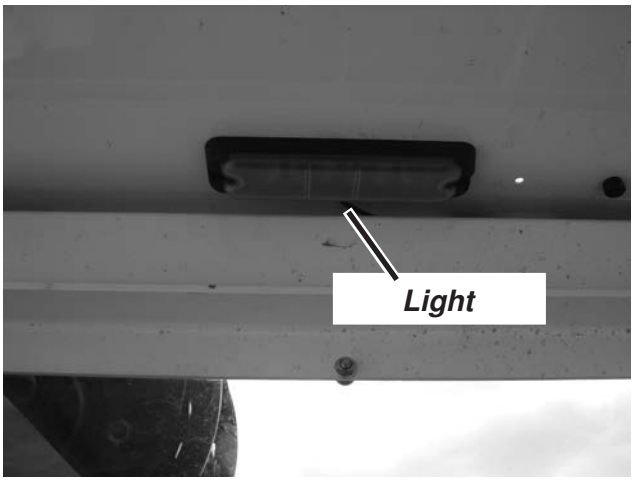
Press and hold the rotor reverse button (#18) to reverse the rotor. The rotor reversing button is a momentary button located in the switch bank next to the bag boom. When released the rotor will stop.



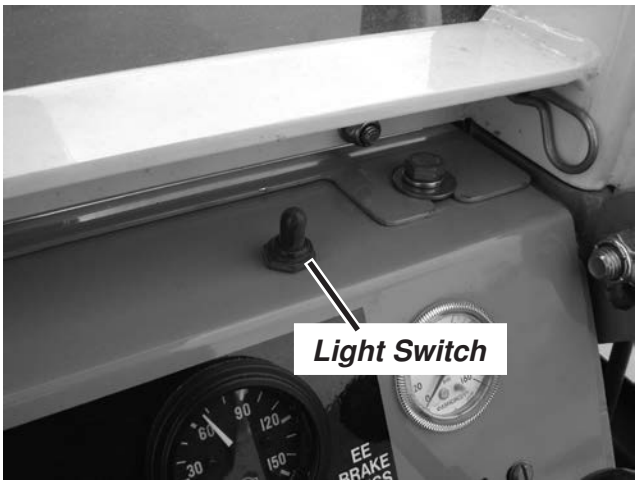
Rotor Control Buttons (Next To Bag Boom)

Operators Platform Work Light

The operators platform work light is located up in the corner of the roof and the windshield frame. The switch is located on the top of the right side front dash.



Operators Platform Work Light



Operators Platform Work Light Switch

Manual Storage

Keep the operators manual and any other manuals supplied with your vehicle in the storage bag that has been provided. These manuals should be kept with the vehicle at all times.

Lighting Operation (#9 & 10)

Bagger Light Switches

The lights on the bagger are controlled by two push button switches on the dash in the operators platform. These switches are:

Feed Table & Canopy Lights Switch - (#9)

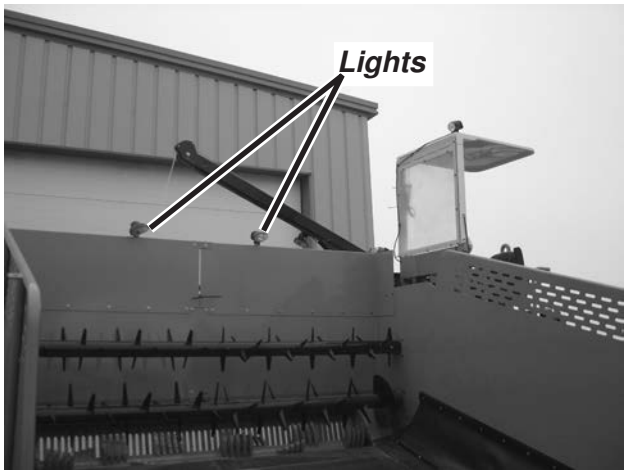
- Push the switch once to turn the two feed table lights and the canopy light on. All three lights shine into the feed table. Press the switch again to turn all three feed table & canopy lights off.

Bag Boom, Bag & End Lights Switch - (#10)

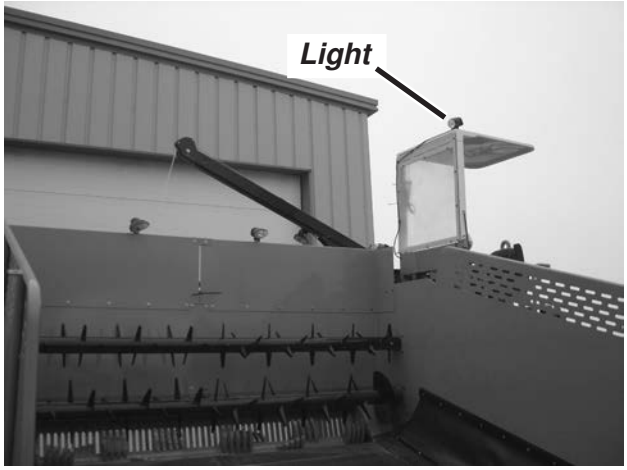
- Push the switch once to turn the bag boom and two bag lights on. Press the switch again to turn the two end lights on along with the other three lights. Press the switch again to turn all the lights off.

Light Locations On Vehicle

Feed Table Lights & Canopy Light

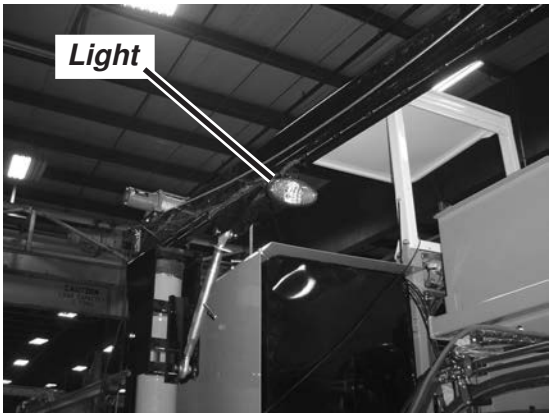


Feed Table Lights

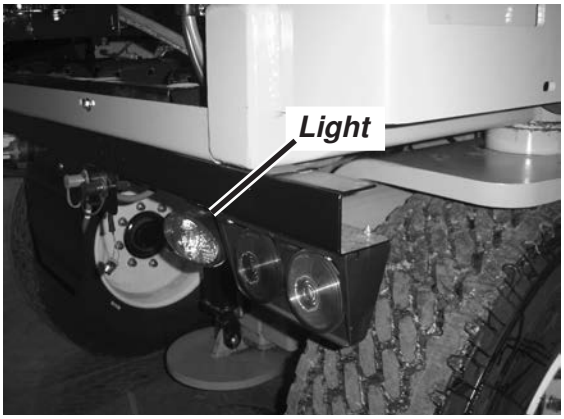


Canopy Light

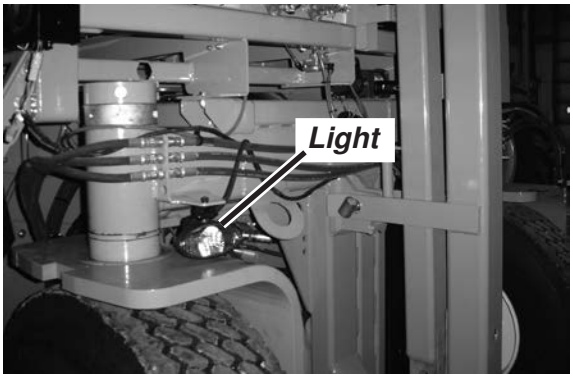
Bag Boom, Bag & End Lights



Bag Boom Light



End Light (Engine End Feed Table Side)



End Light (Operator Platform End Feed Table Side)

Engine Data Link Connector

This connector is provided to allow a Cummins Service Technician to connect to the engine computer. It allows the technician to diagnose engine related problems from the operators platform.

The operators platform connector is located on the front dash, directly in front of the operators seat.

Engine Data Link Connector At Operators Platform

System Monitor Programming Port

The System Monitor programming port is located on the dash in the operators platform. This programming port should only be used by a qualified service technician.

System Monitor Programming Port

Seat Adjustments

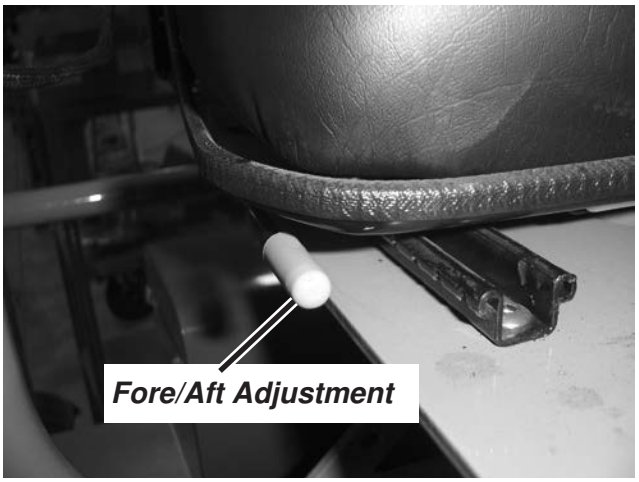
The following is a list of adjustments for the seat:

Firmness Adjustment: Use this control to change the fimness of the seat from soft to firm.

Fore/Aft Adjustment: Pull this control to the side to allow the seat to be moved fore or aft to a comfortable position. Be sure to allow the seat to lock in position.

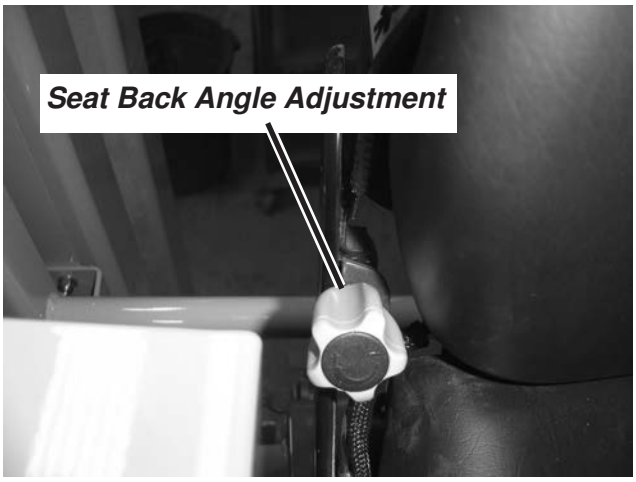
Seat Back Angle Adjustment: Use this control to change the angle of the seat backrest.

Left Side Armrest: The left side armrest can be raised or lowered as needed. Lift the armrest up for entry to the operators seat and lower down for operation.



Fore/Aft Adjustment

Firmness Adjustment



Seat Back Angle Adjustment

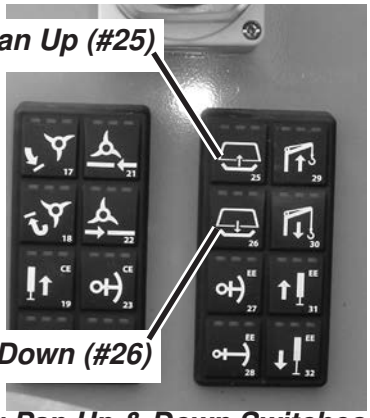
Left Side Armrest

Bag Pan Up & Down Switches (#25 & 26)

The bag pan can be lowered down to the ground for installing the bag onto the tunnel. The momentary switch is located in the switch bank on the tunnel side of the machine next to the bag boom.

Press and hold the bag pan down switch (#26) to lower the bag pan. When the switch is released the bag pan will stop in position.

After the bag has been installed on the tunnel, raise the bag pan up by pressing and holding the momentary switch (#25). The switch is located in the switch bank on the tunnel side of the machine next to the bag boom. When the switch is released the bag pan will stop in position.



Bag Pan Up & Down Switches

Bag Boom Winch Cable Up & Down Switches (#29 & 30)

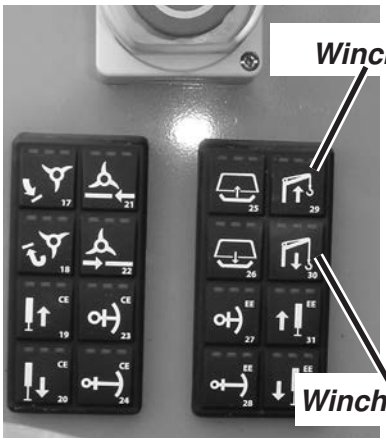
The bag boom winch cable can be lowered (extended) down to the ground. The momentary switch is located in the switch bank on the tunnel side of the machine next to the bag boom.

To lower (extend) the winch cable down, press and hold the bag boom winch cable down switch (#30) to lower the winch cable. When the switch is released the bag boom winch cable will stop in position.

Use this control to lower the winch cable down to pick up the bag with the bag craddle and raise up into position. Use also to lift and lower the tunnel extension into position.

IMPORTANT: The bag boom is designed to be used for positioning the tunnel extension and to install bags onto the tunnel. The bag boom winch can also be used to remove or install the tunnel assemblies.

To raise (retract) the winch cable up, press and hold the momentary switch (#29). The switch is located in the switch bank on the tunnel side of the machine next to the bag boom. When the switch is released the bag boom winch cable will stop in position.



Bag Boom Winch Cable Up & Down Switches

Wireless Bag Boom Winch Cable Controller (Early Production)

The bag boom winch cable can be operated with the wireless controller from areas around the bagger. The wireless control is located in a holder clip next to the switch bank on the tunnel side of the machine next to the bag boom.

Remove the wireless controller from the storage clip by pusing on the lock tab at the bottom of the holder and pulling the controller straight up.

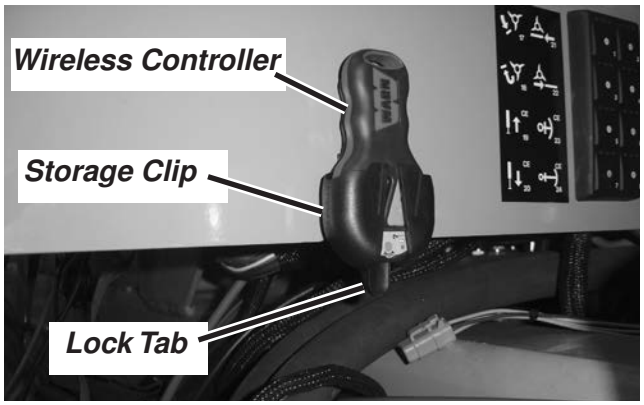
If the wireless controller is active there will be a green LED light on at the top of the controller. If the LED light is not on, press and hold both arrows on the controller at the same time until the light comes on to activate the controller.

IMPORTANT: The bag boom is designed to be used for positioning the tunnel extension and to install bags onto the tunnel. The bag boom winch can also be used to remove or install the tunnel assemblies.

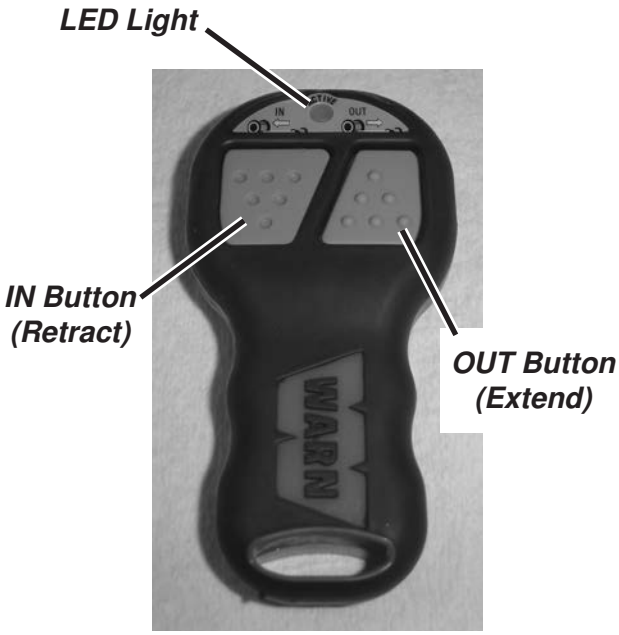
To raise (retract) the winch cable up, press and hold the “IN” (left) arrow on the wireless controller. When the arrow is released the bag boom winch cable will stop in position.

To lower (extend) the winch cable down, press and hold the “OUT” (right) arrow on the wireless controller. When the arrow is released the bag boom winch cable will stop in position.

When not using the wireless controller place the controller back into the holder clip. Push into the clip until it locks in place.



Wireless Controller In Storage Clip



Wireless Controller

Wireless Bag Boom Winch Cable Controller (Current Production)

The bag boom winch cable can be operated with the wireless controller from areas around the bagger. The wireless control is located in the tool box behind the operqators seat

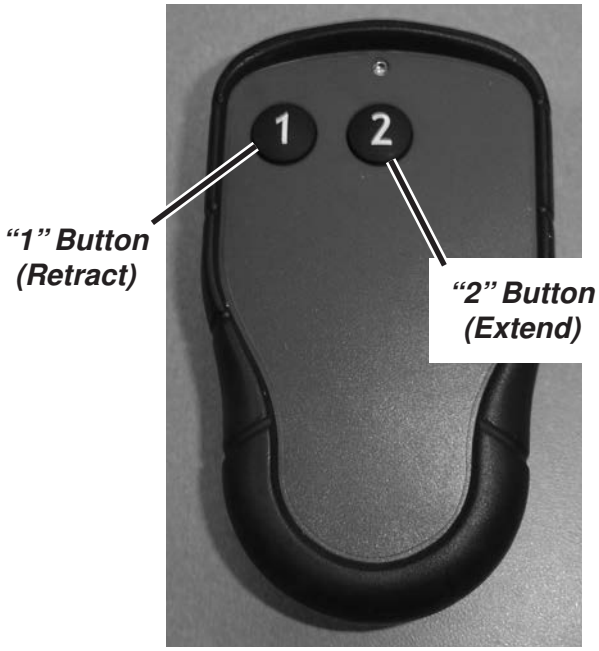
Remove the wireless controller from the tool box

IMPORTANT: The bag boom is designed to be used for positioning the tunnel extension and to install bags onto the tunnel. The bag boom winch can also be used to remove or install the tunnel assemblies without the extension.

To raise (retract) the winch cable up, press and hold the “1” button on the wireless controller. When the button is released the bag boom winch cable will stop in position.

To lower (extend) the winch cable down, press and hold the “2” button on the wireless controller. When the button is released the bag boom winch cable will stop in position.

When not using the wireless controller place the controller back into the tool box.



Wireless Controller

Engine End Lift Jack Switch (Extend) (#32)

The engine end lift jack switch is a momentary switch which must be held in position. This switch is located in the switch bank next to the bag boom. When the switch is released, it will stop the lift jack in position.

DANGER

Keep away from lift jack pad when lowering jack. Serious injury or death will result from any body part being crushed under pad.

Push and hold the switch in to lower the engine end lift jack to the ground, lifting the engine end wheels up.

IMPORTANT: Never lift the engine end of the machine any higher than needed to rotate the wheels into position.

Engine End Lift Jack Extend (#32)

Engine End Lift Jack Switch (Extend)

Engine End Lift Jack Switch (Retract) (#31)

The engine end lift jack switch is a momentary switch which must be held in position. This switch is located in the switch bank next to the bag boom. When the switch is released, it will stop the lift jack in position.

Push and hold the switch in to raise the engine end lift jack lowering the wheels to the ground.

IMPORTANT: Always lift the engine end lift cylinder all the way up before starting any bagging operation.

Engine End Lift Jack Retract (#31)

Engine End Lift Jack Switch (Retract)

Cab End Lift Jack Switch (Extend) (#20)

The cab end lift jack switch is a momentary switch which must be held in position. This switch is located in the switch bank next to the bag boom. When the switch is released, it will stop the lift jack in position.

DANGER

Keep away from lift jack pad when lowering jack. Serious injury or death will result from any body part being crushed under pad.

Push and hold the switch in to lower the cab end lift jack to the ground, lifting the cab end wheels up.

IMPORTANT: Never lift the cab end of the machine any higher than needed to rotate the wheels into position or to hook the bagger to a tow vehicle.

Cab End Lift Jack Extend (#20)

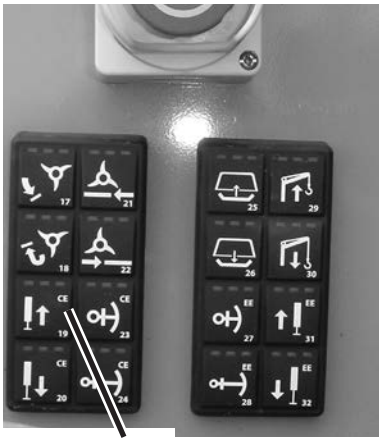
Cab End Lift Jack Switch (Extend)

Cab End Lift Jack Switch (Retract) (#19)

The cab end lift jack switch is a momentary switch which must be held in position. This switch is located in the switch bank next to the bag boom. When the switch is released, it will stop the lift jack in position.

Push and hold the switch in to raise the cab end lift jack lowering the wheels to the ground.

IMPORTANT: Always lift the cab end lift cylinder all the way up before starting any bagging operation.



Cab End Lift Jack Retract (#19)

Cab End Lift Jack Switch (Retract)

Tunnel Clean Out Floor Retract Switch (cleaning tunnel) (#21)

The tunnel clean out floor retract switch is a momentary switch which must be held in position. This button is located in a switch bank on the tunnel side of the bagger next to the bag boom. When the switch is released, the floor will stop in position.

IMPORTANT: Always turn the rotor off before activating the tunnel cleanout floor. Do not turn the rotor on unless the tunnel clean out is completely extended.

Push and hold the switch in to retract the tunnel clean out floor (bring it toward the rotor).

Note: At the end of the bag, use the tunnel floor retract and then extend switches to push (compact) the feed from the tunnel into the bag. Be sure to retract the anchors and release the brakes before cleaning out the tunnel. This will push the feed into the bag while pushing the bagger away from the bag.

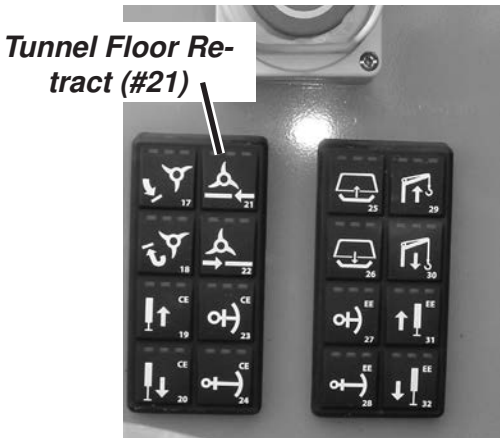
Tunnel Clean Out Floor Extend Switch (bagging position) (#22)

The tunnel clean out floor extend switch is a momentary switch which must be held in position. This button is located in a switch bank on the tunnel side of the bagger next to the bag boom. When the switch is released, the floor will stop in position. Always extend the floor completely before beginning any bagging operation.

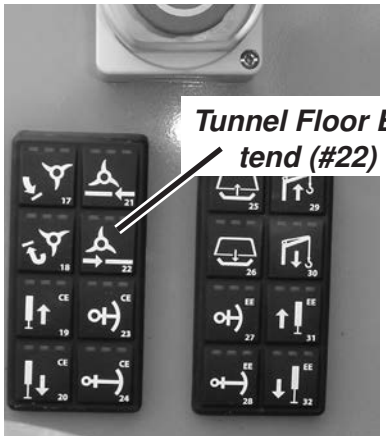
IMPORTANT: Always turn the rotor off before activating the tunnel cleanout floor. Do not turn the rotor on unless the tunnel clean out is completely extended.

Push and hold the switch to extend (push floor away from rotor).

Note: At the end of the bag, use the tunnel floor retract and then extend switches to push (compact) the feed from the tunnel into the bag. Be sure to retract the anchors and release the brakes before cleaning out the tunnel. This will push the feed into the bag while pushing the bagger away from the bag.



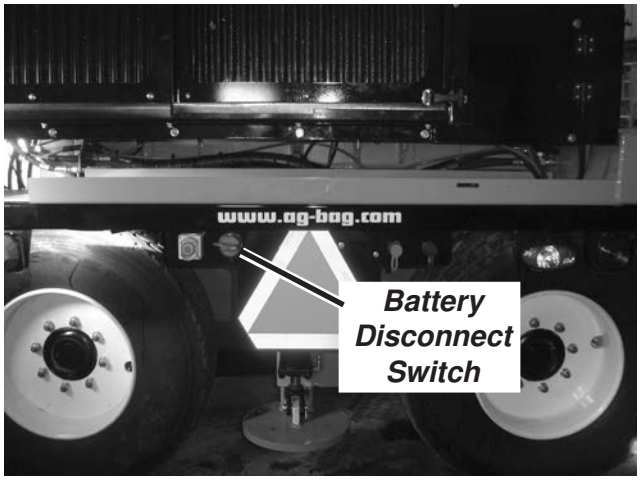
Tunnel Clean Out Floor Retract Switch



Tunnel Clean Out Floor Extend Switch

Battery Disconnect Switch

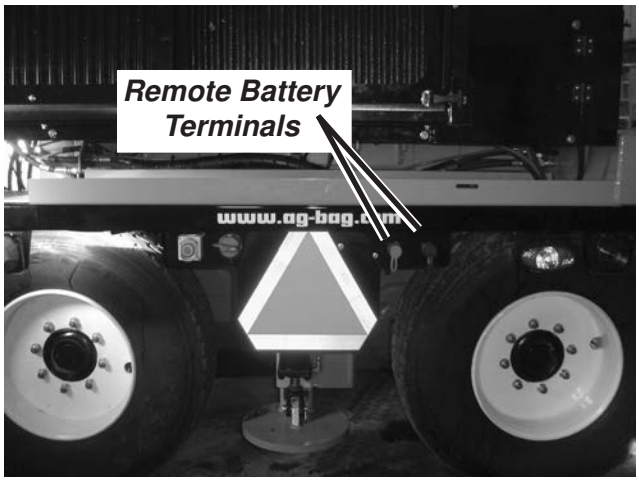
The battery disconnect switch is located on the panel at the rear of the engine frame below the cooling package. Be sure the switch is in the “ON” position before attempting to operate the bagger. The switch can remain in the “ON” position unless there is a power drain on the batteries, then turn the switch to the “OFF” position when the bagger is not being used, this will disconnect the batteries from the bagger electrical system.



Battery Disconnect Switch

Remote Battery Terminals

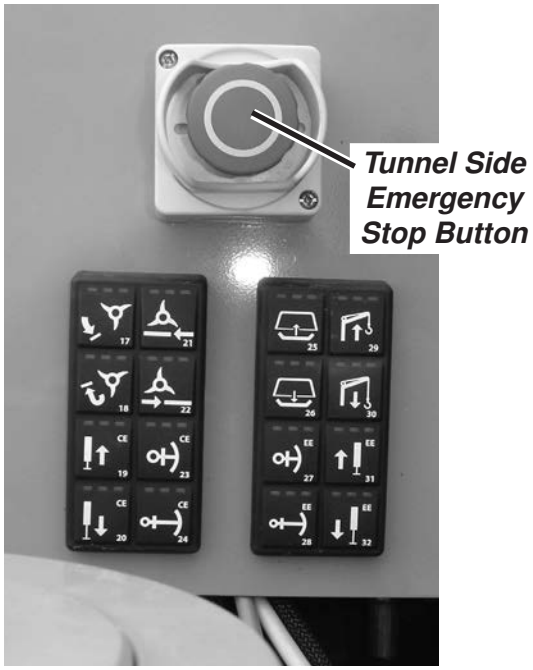
The remote battery terminals are located on the panel at the rear of the engine frame below the cooling package. Be sure to replace the rubber caps when not using the remote terminals.



Remote Battery Terminals

Tunnel Side Emergency Stop Button

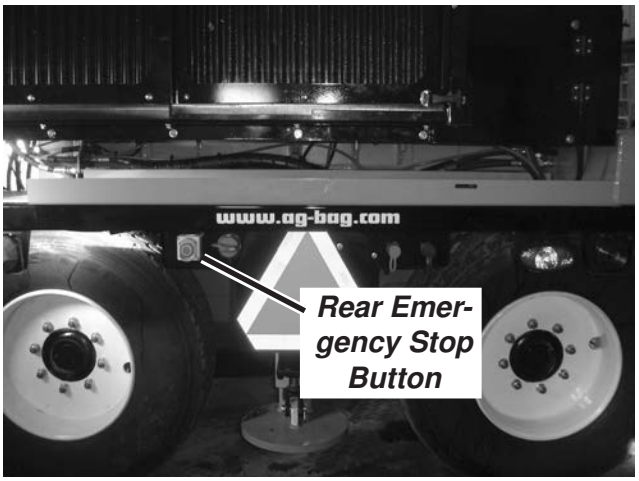
The tunnel side emergency stop button is located on the panel at the tunnel side of the fuel tank next to the bag boom pivot tube. Use this button to immediately stop the feed table and rotor. Pushing this button will also idle the engine down to a low idle. To reset the feed table and rotor, pull the button out and then restart the bagging sequence from the operators platform.



Tunnel Side Emergency Stop Button

Rear Emergency Stop Button

The rear emergency stop button is located on the panel at the rear of the engine frame below the cooling package. Use this button to immediately stop the feed table and rotor. Pushing this button will also idle the engine down to a low idle. To reset the feed table and rotor, pull the button out and then restart the bagging sequence from the operators platform.



Rear Emergency Stop Button

Operation

Home Screen

Home screen key F3 toggles the machine between two machine directions, transport long ways direction (transport/....) and bag (bag/....) the direction the machine must travel in order to bag.

- To switch directions, from the home screen, press and hold the F3 key until a dialog box appears over the screen. The dialog box will indicate that to finish the change in state, the operator must first check for safe conditions to exist for changing direction (no one near the wheels) and to then press and hold the align button until both axles have turned to the new position. This will take several moments, and the progress can be followed be watching the wheel symbols turn on the screen. Process is repeated to toggle back to the other direction.

Joystick Operation

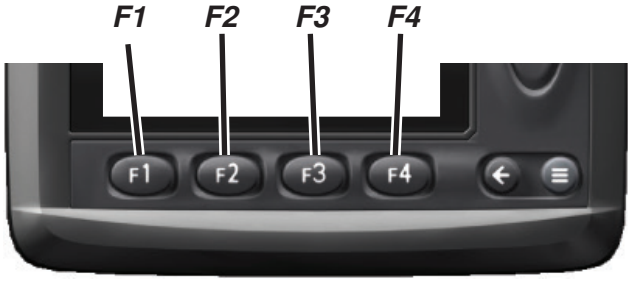
If F3 is in Transport Direction, the machine is steered using the X-axis (left to right). The machine is propelled using the Y-axis (front to back), in conjunction with holding the trigger. If F3 is in Bagging Direction the machine is steered using the other movement of the joystick, the Y-axis (front to back). The machine can only crab steer in the bagging direction. This is a four wheel mode where the two axles steer together to move the machine diagonally. That is, the machine can't be directed in a new direction without steering with the brakes.

The Home screen Button F4 toggles between two modes. The two modes it toggles between depend on the direction selected with F3. In the Travel direction, F4 has two modes to toggle the steering between:

- One of F4 toggles' is the Transport (Transport/Transport), a Four Wheel Steer mode where the two axles steer in a coordinated fashion for tight turns. Watch the symbols on the screen as you move the joystick along the X-axis (left to right). The thumb toggle has no function in this mode.
- The other toggle is Trailer(Transport/Trailer) a Two Wheel Steering mode where each axle is steered independently. No steering happens in this mode unless the thumb toggle pressed one way or the other. If the left button is pressed, X-axis (left to right) inputs will affect the cab end (CE) axle only. When the right button is pressed, X-axis (left to right) inputs will affect the engine end (EE) axle only.

In this direction, F4 also has two modes to toggle the steering between, but they are different than Travel:

- One of F4 toggles' is Crab (Bag/Crab), a mode whereby the machine is propelled, in conjunction with the trigger, using the X-axis (left to right).
- The other toggle is Bagging (Bag/Bagging) a mode where the bagger cannot be propelled. All hydrostatic flow is directed to the rotor. The X-axis (left to right) controls the conveyor drive, and the thumb rocker runs the upper beater.



Display Screen F Keys

Press Align Button (#8)

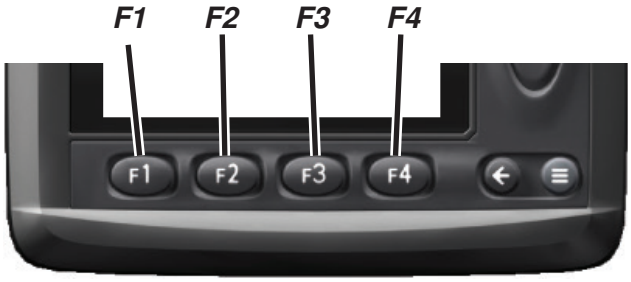
Align Button

Upper Beater Operation

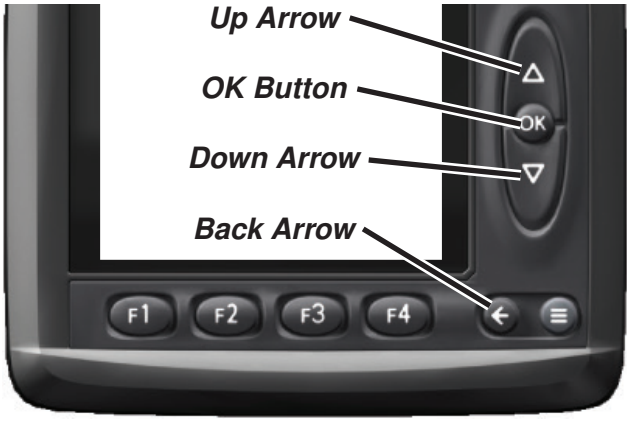
The upper beater will run in conjunction with the Auto Sequence Start switch, or can run independently in the bag/bagging mode with the thumb rocker on the joystick. See section on the Auto Sequence Start switch for more info on beater auto start. Regardless of how it's turned on, the upper beater can be set to run continuously, or to repeatedly reverse direction after settable periods of time.

To run the beater independent of the Auto Sequence Start switch (operator commands override the Auto Sequence Start switch), first check the Home screen to see if the machine is in Bag/Bagging mode. If not, use the F3/F4 and align keys to enter the Bag/Bagging mode. Then, to start the beater, press the thumb rocker switch on the joystick in either direction. The beater will continue to run after the switch is released. Pressing to the left starts the upper beater in the forward direction (counterclockwise as viewed from the seat). This is considered the forward direction because it's the same direction as the rotor. Pressing the rocker to the right starts the beater in the reverse or clockwise direction. Once running, pressing the rocker in either direction will stop the beater. If a quick reversal of beater direction is desired, a double tap in the opposite direction will swap the direction of an already active beater.

The Auto Beater Reverse feature periodically changes the direction of the upper beater without operator input. It only functions while the beater is turned ON. By the thumb rocker or Auto Sequence Start switch. Adjustments to the Beater Auto Reverse feature are done though the menu pages. There are three settings. One is for turning the auto reverse feature ON or OFF. The other two are for setting the time intervals between reversals. One is for the forward direction, and another for reverse. From the home screen, press the wrench (F2) key, then press Operator Adjustments key (F2 again), then use the UP/DN arrows to the right of the screen to scroll to each of the three parameters, use the OK button to both enter that parameter and change it, then use the back arrow key to the right of F4) to complete the change and return to the list. The times for each direction are settable from 30 seconds to 2 minutes using the UP/DN arrows. The forward direction is defined as the same direction as the rotor (counterclockwise) and the reverse is clockwise (as viewed from the seat). Continue pressing the back arrow key to return to the wrench page, press F1 to return to the home page.



Display Screen F Keys



Display Screen Keys

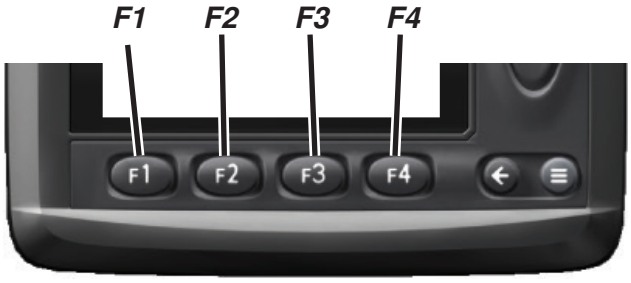
Press Align Button (#8)

Align Button

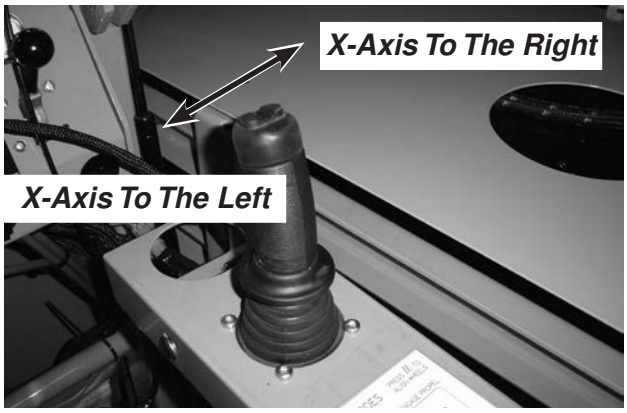
Feed Table Drive Operation

The feed table will run in conjunction with the Auto Sequence Start switch, or can run independently in the bagging/bag mode with the X-axis (left to right) of the joystick. See section on the Auto Sequence Start switch for more info on feed table auto start. Regardless of how it's turned on, the joystick can be used to speed up or slow down the feed table. If active, the rotor anti-stall feature will over-ride the operator's commands.

To run the feed table independent of the Auto Sequence Start switch (operator commands over-ride the Auto Sequence Start switch), first check the Home screen to see if the machine is in Bag/Bagging mode. If not, use the F3/F4 and align keys to enter the Bag/Bagging mode. Then, to start the feed table, move the grip of the joystick along the X-axis (left to right) in either direction. The feed table will continue to run after the grip is released. Pressing to the right (towards the fuel tank) starts the feed table in the forward direction (feed on the table will move towards the rotor). Pressing to the left starts the feed table in the reverse direction (feed on the table will move away the rotor). Once running, pressing the X-axis (left to right) in either direction will adjust the speed of the table accordingly. The home screen displays the speed of the table as a percentage of full speed.



Display Screen F Keys

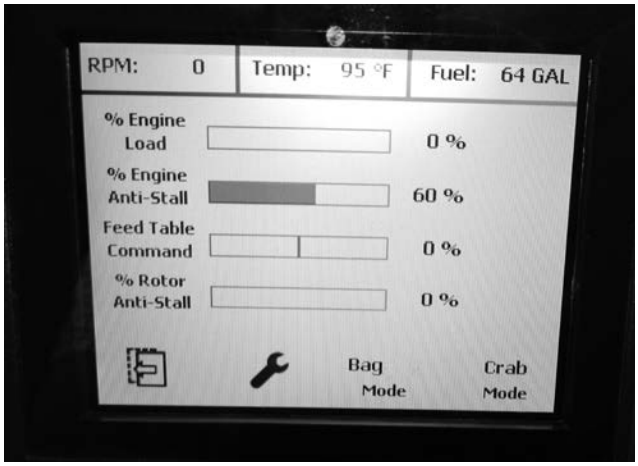


Joystick X-Axis

Rotor Anti-Stall Operation

The rotor anti-stall feature slows the feed table in response to pressure in the rotor drive. If excessive hydrostatic pressure is observed, the feed table speed is slowed in proportion to the severity of the pressure. The operator can tailor the Rotor Anti-stall feature by adjusting the Target pressure the anti-stall feature is trying to stay under.

Adjustment of the Rotor Anti-stall feature is done though the menu pages. There is only one setting, the maximum hydraulic pressure the anti-stall will allow without slowing down the feed table. The operator can effectively turn OFF the feature by setting the target pressure higher than system pressure. From the home screen, press the wrench (F2) key, then press Operator Adjustments key (F2 again), then use the UP/DN arrows to the right of the screen to scroll to Feed Table Target Pressure, use the OK and up/down arrow buttons to both enter the parameter and change it, then use the back arrow key, to the right of F4) to complete the change and return to the list. Continue pressing the back arrow key to return to the wrench page, press F1 to return to the home page.



Display Screen Keys

Engine Anti-Stall Operation

The engine anti-stall feature slows the rotor in response to a decrease in engine rpm from the throttle setting (engine drop). If excessive drop is present, the engine may stall. When this occurs, the Engine Anti-Stall feature will slow the rotor speed in proportion to the severity of the drop. There are no operator settable parameters for this feature.

Re-Fueling

Caution:

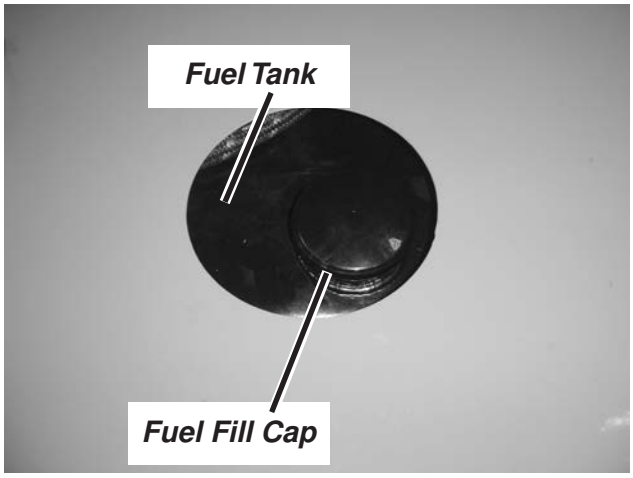
Follow these simple rules when handling fuel

- **Handle fuel carefully.**
- **Do not refuel the vehicle while smoking.**
- **Turn off engine before filling fuel tank.**
- **Do not over fill fuel tank. Bodily injury may result from fuel splash back.**
- **Leakage can result from expansion of fuel. If tank is filled too full, then left in direct sunlight or if temperature rises after refueling, the tank will overflow.**

The fuel tank is located next to the operator platform on the tunnel side.

The fuel tank capacity is 130 gallons.

Replace fuel cap before operating. Wipe up any spilled fuel.



Fuel Tank and Fill Cap

Drain Water From Fuel Filter/Water Separator

Drain Water From Water Separator Daily

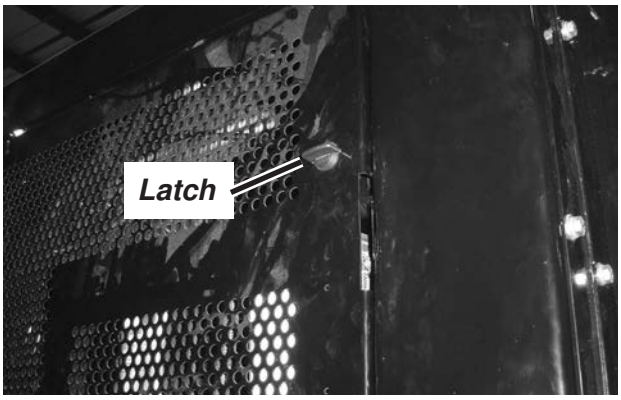
Locate the primary fuel filter water separator inside the engine compartment on the tunnel side. Unlatch and remove the engine compartment cover to access the filters.

Shut off the engine, open the valve on the bottom of the water separator and drain into a container until fuel clear of water is present.

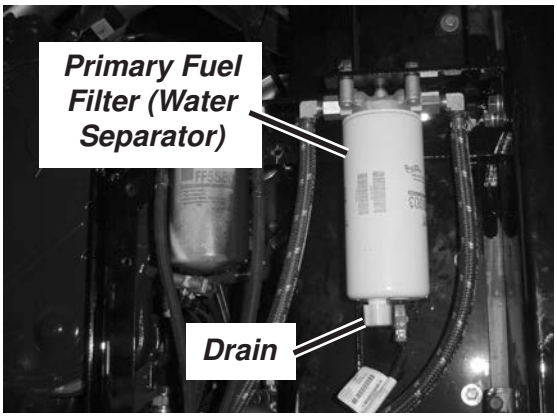
Shut the valve. Do not over tighten. Dispose of fuel properly.

Change the filter as outlined in the Cummins Engine Operation and Maintenance Manual or when the engine starts to lack power.

Be sure to replace the engine compartment cover and latch in place before operating the bagger.



Engine Compartment Cover Latches



Primary Fuel Filter (Water Separator)

Changing Tunnels

The tunnel on this bagger can be changed to accommodate either a 10 foot bag or a 12 foot bag.

Remove 12 foot or 10 foot Tunnel

The 12 foot tunnel weighs approximately 2050 lbs (930 kg).

DANGER

Connect the bag boom hook directly to the lifting loop at the top of the tunnel. Serious injury or death will result from the tunnel falling and creating a crushing hazard.

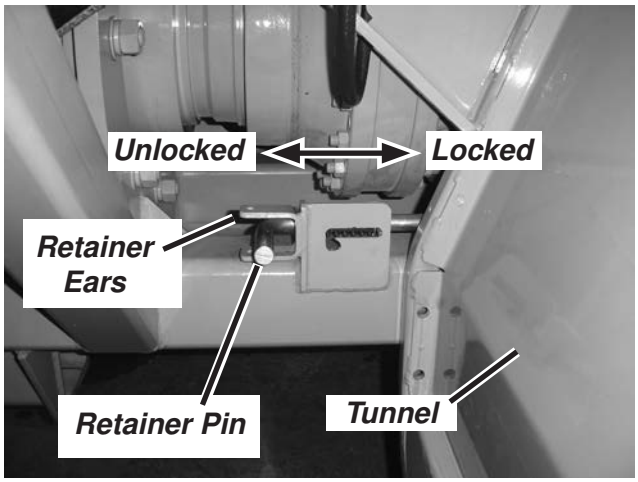
To change the tunnel proceed as follows.

IMPORTANT: The bag cradle and tunnel exension must be removed and set aside before removing the tunnel.

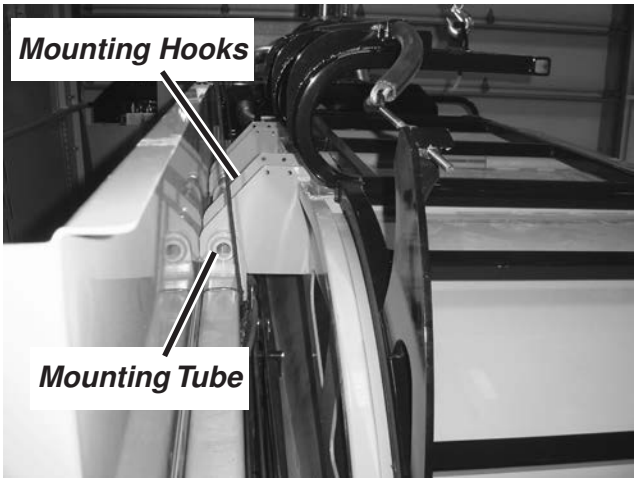
1. Start the engine and lower the bag pan all the way down.
2. Retract the cleanout floor all the way into the tunnel.
3. Extend both anchors and lay them on the ground.
4. Shut off the engine and remove the key.
5. Remove the retainer lock pin from the retainer ears. Unlock both lower tunnel retainer pins (away from the tunnel). There is one pin on each side of the tunnel (engine side & operators platform side). Be sure the retainer lock pins are in place to hold the retainer pins in the locked position before operating the bagger.
6. Use the bag boom to lift the tunnel from the mounting hook tubes on the top of the tunnel.
7. Swing the bag boom out and lower the tunnel to the ground.
8. Remove the 10 foot tunnel in the same manner.

Install 12 foot or 10 foot Tunnel

1. Use the bag boom to lift the tunnel up in place. Securely attach the bag boom cable hook to the loop at the top of the tunnel.
2. Lift up the tunnel and swing toward the frame of the bagger.
3. Line up the upper mounting hooks on the tunnel with the mount tubes on the frame.
4. Lower the tunnel down into place and lock the tunnel in place with the two lower retainer pins. Be sure the pins are locked in place (toward the tunnel).



Lower Tunnel Retainer Pin In Locked Position



Tunnel Mounting Hooks & Mounting Tubes

Bagger Operation

General

Read and understand the “Features and Controls” section of this manual so you are familiar and know how to operate all the controls on this bagger.

Read the section about safety as well as the precautions presented in this section.

Inspect the bagger to be sure all fluid and mechanical connections are secure and tight.

Perform the daily maintenance items for the engine as specified in the “Maintenance” section. Check that all periodical maintenance has been complied with.

Be sure the battery disconnect switch is in the “ON” position.

WARNING

Be sure all persons are clear of this equipment before starting.

Be sure the area around the bagger is clear before turning the key to crank the engine to alert anyone in the area that the engine is about to be started.

DANGER

Do not ride on walkways, platforms or ladder. Serious injury or death will result.

1. If the engine has been idle for a long period of time, it may be necessary to bleed the fuel lines and use the hand primer pump (on the fuel filter) to charge the lines with fuel. See your Engine Operation and Maintenance Manual. If the engine will not start, see Trouble Shooting Engine.

2. If you run out of fuel, it will be necessary to bleed the fuel lines and charge the lines with fuel. See your Engine Operation and Maintenance Manual.

3. Both the engine and the hydraulic system require a warm-up period before operation.

   - When a diesel engine is operated cold at high throttle, it will miss and run rough. This is normal and will subside as the engine warms.

   - When hydraulic oil is operated cold, it will create a whining noise. This is normal due to oil cavitating. The noise will subside as the hydraulic pumps circulate the hydraulic oil and it warms up. Reduce speed and allow oil to warm up.

   - Normal warm up for engine and oil is within 2 minutes at 1200 rpm. In severe cold it may be necessary to continue warm up for an additional 4 minutes. But, after 6 minutes of warm-up either the engine or oil is not ready, check for other causes.

Important: Things to know about a turbocharged engine.

- If you ever stall the engine while working, restart the engine **immediately** to provide lubrication to the hot turbocharger and avoid damaging it.

- Before shutting off the engine, allow it to idle for several minutes under 1000 rpm to cool the turbocharger turbine.

Engine Cold Starting

Two batteries provide 1800 cold cranking amps.

To Start

1. Turn the key to RUN
2. Check for error codes on the System Monitor display. Press the F2 key on the display to clear.
3. Check for any bystanders around the bagger.
4. Sound the horn if so equipped by pressing the horn button (#4) located on the left side front dash
5. Turn the key to start the engine.
6. The engine is equipped with intake air heaters to aid in cold weather starting. Turn the ignition key to the on position and a “wait to start” message appears on the display. The message will stay on for a length of time while the intake air heaters pre heat the air in the intake manifold. The length of time will be dependant on how cold it happens to be. When the “wait to start” message turns off, turn the ignition key to the start position and crank the engine until it starts. If the engine does not start, repeat the pre heat process. Do not crank the starter for more than 15 seconds. Allow the starter to cool between tries.

Do Not use ether as a starting aid!
Ether can cause an explosion if it comes in contact with the intake air heaters.

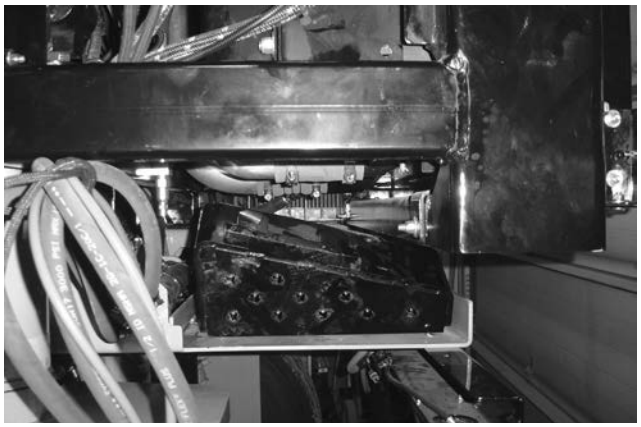
Display Wait To Start

Setup Bagger For Bagging Operation

Engine Ladder & Platform In bagging Location For 12 Foot Tunnel

When using the 12 foot tunnel the engine platform and ladder on the tunnel side must be pivoted up and locked in the bagging/transport location.

1. Be sure the ladder at the engine platform is removed and locked in place under the cooling package.
2. Be sure the platform next to the engine on the feed table side is pivoted up, the railing is slid in toward the engine and pinned in the transport (in) position.



Engine Platform Ladder Locked In Place

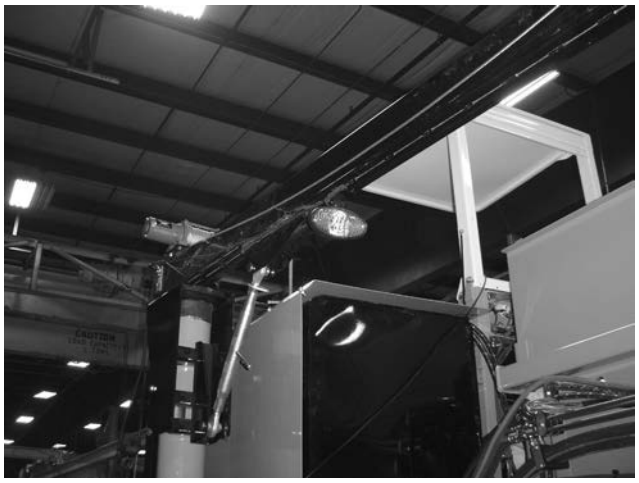
Engine Platform In Transport/Bagging Location

Operators Canopy

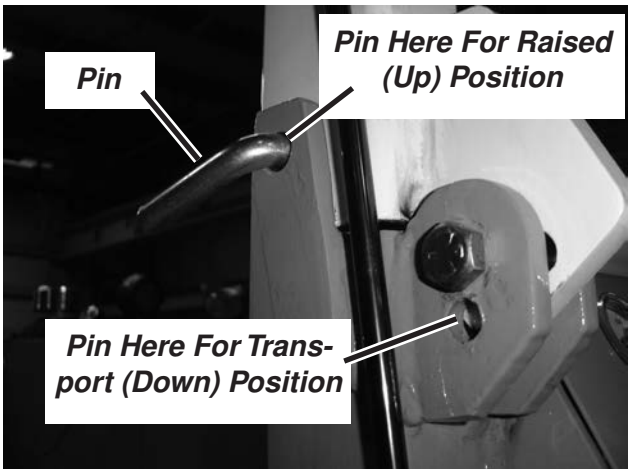
Once the bagger is at the site where the bagging operation is to take place, the operators canopy must be raised up to the operating position.

1. Remove both pins from the canopy pivot points at the front dash.
2. Raise the canopy up and insert the pins into the forward holes.
3. Secure the pins in place with the clips.

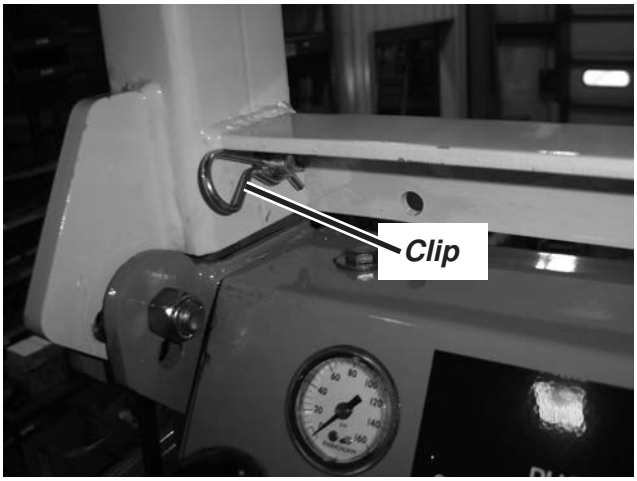
IMPORTANT: Always lower the canopy down and pin in the transport position before transporting the bagger. Be sure to lower the operator seat all the way down before placing the canopy in the transport position.



Canopy In Upright Position



Canopy Pivot Pin In Upright Position

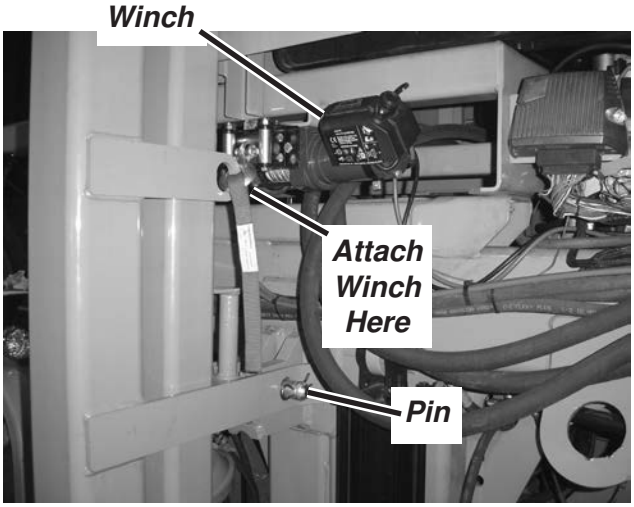


Canopy Pivot Pin Clip

Canopy In Transport Position

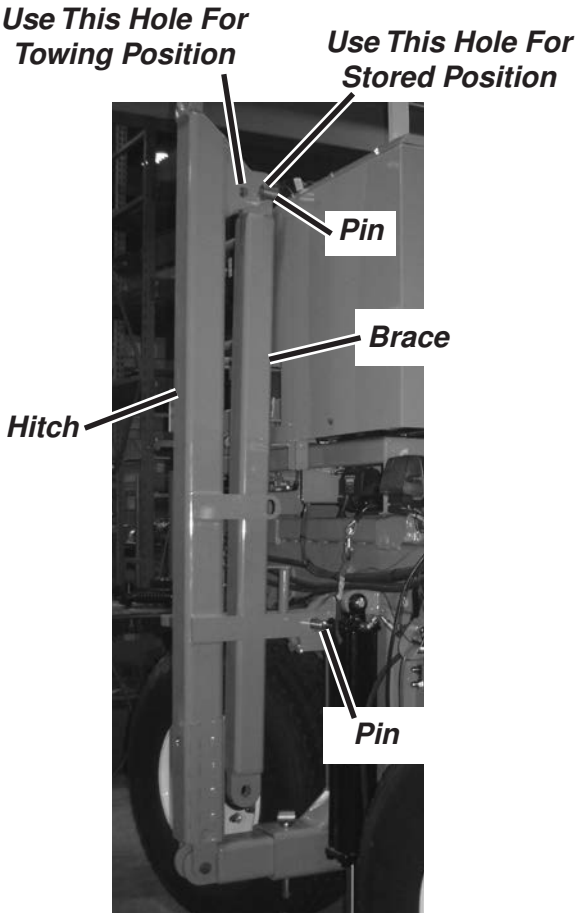
Pintle Hitch

The pintle hitch on this bagger is used for towing the bagger on the road from job site to job site. The hitch must be raised with the winch located under the operator platform and pinned in the stored position before any bagging operation is started.



Winch Under Operator Platform

The pintle hitch brace should be removed from the bagger frame and stored along with the hitch in the upright position. Be sure to relocate the pintle end of the brace to the upper hole in the hitch before raising up to the stored position.



Hitch & Brace In Stored Position

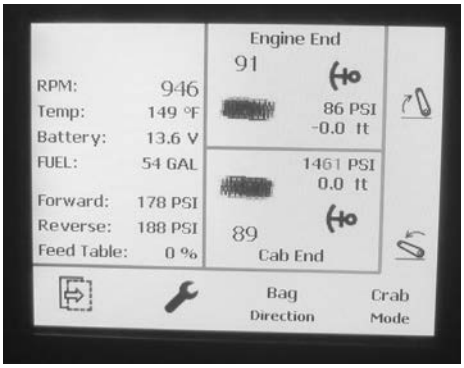
Position Bagger At Bagging Site

Drive the bagger to the spot where the bag is to begin. Position the bagger with the tunnel toward the bag starting point. Position the bagger perpendicular to the path of the bag.

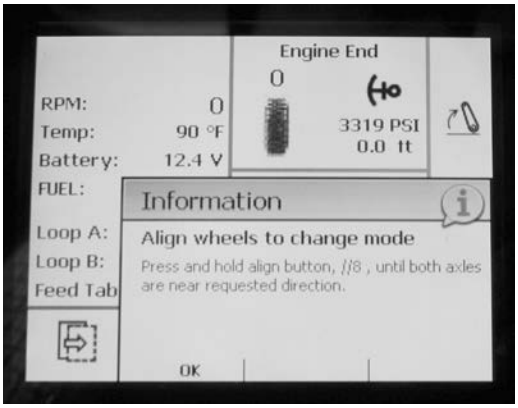
Switch From Trailer or Travel Mode to Crab Mode:

Switch to the crab/ bagging modes, press the F3 key on the display to get to the “Crab or Bagging” modes. Press the F4 key to display the crab mode. Crab mode will display.

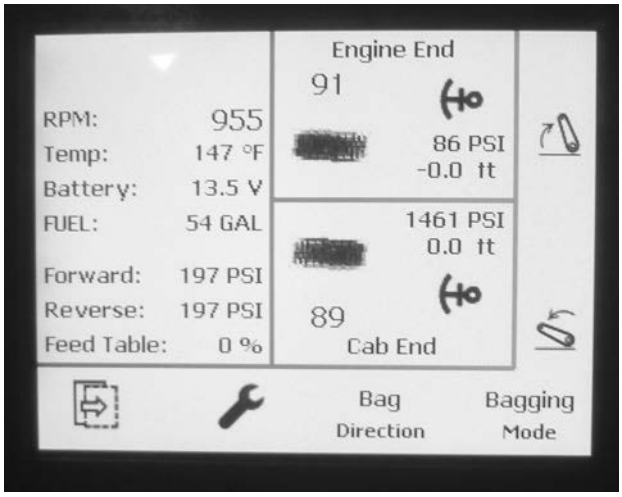
1. Press and hold the “Align” button on the left side switch bank, the wheels will automaticaly move to the selected position. Watch the wheels move on the display.
2. Steer the wheels to 90 degrees ± 2 degrees.
3. When the wheels are being aligned, a pop up screen will be indicated on the display stating that alignment is in process. Move the bagger into the desired location to begin bagging by using the joystick to move the bagger.
4. Mode on the display will switch to crab mode.
5. Press the F4 key to get to the “Bagging” mode.



Display for Crab Mode



Display for Alignment Mode



Display for Bag Mode

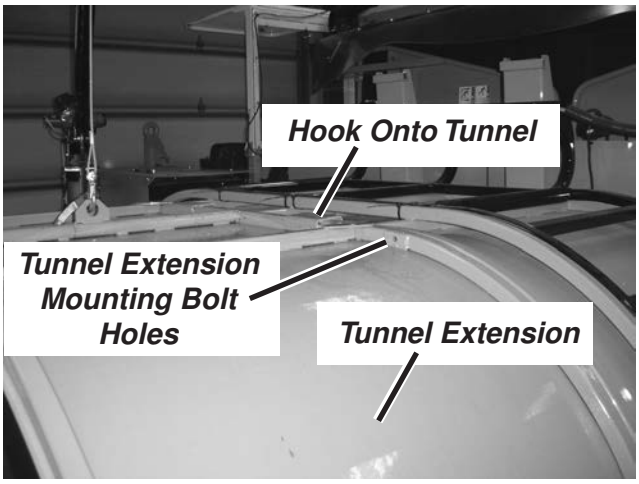
Press Align Button (#8)

Align Button

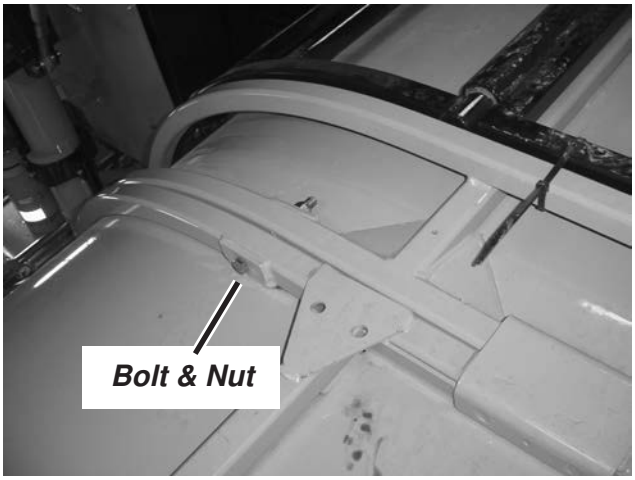
Install Tunnel Extension On To Tunnel

The tunnel extension is stored on the top of the tunnel. Two people are required for this procedure.

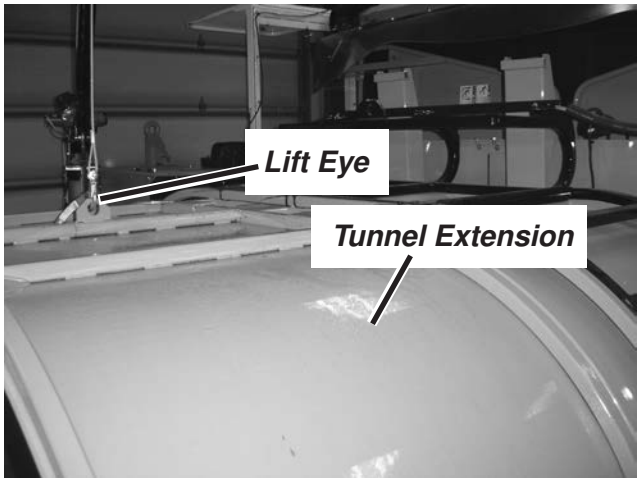
1. Attach the bag boom hook to the lift eye located at the center of the tunnel extension.
2. Using the bag boom, swing the tunnel extension out and lower to a position in front of the tunnel. Hook the tunnel extension on the lip of the tunnel and line up the six mounting holes. Two on the top edge and two on each side.
3. Secure in place with the bolts and nuts supplied with the bagger. Insert all bolts from the tunnel extension side. Tighten all six bolts securely.
4. Unhook the bag boom from the lift eye on the tunnel extension.
5. Fold the eye down against the tunnel extension to prevent damage to the bag.



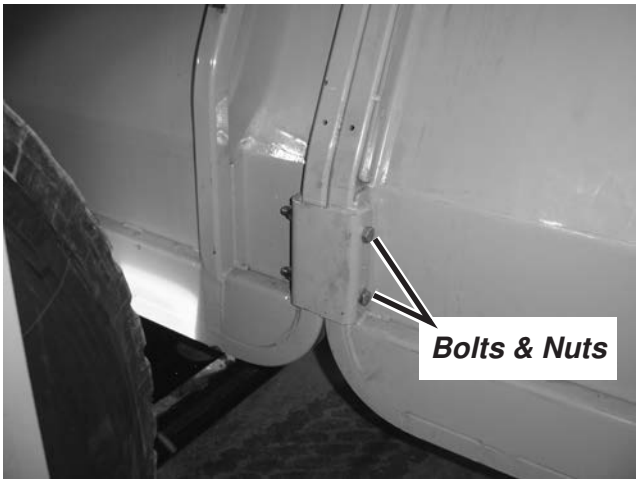
Tunnel Extension Hooked To Tunnel Edge



Top Tunnel Extension Bolts & Nuts (one side shown)



Boom Winch Attached To Tunnel Extension Lift Eye



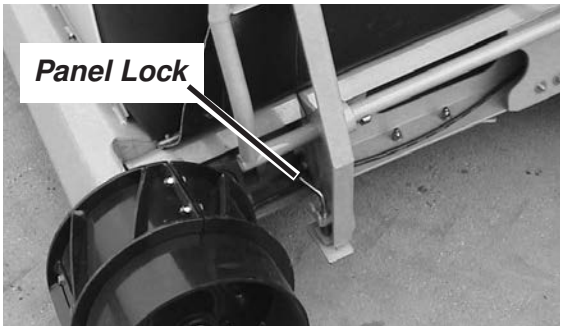
Side Tunnel Extension Bolts & Nuts (one side shown)

Lower and Setup Feed Table

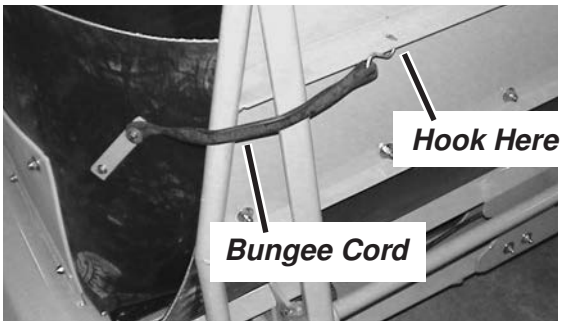
The feed table must be lowered to the ground before the side panels can be setup.

Check to be sure the area in front of the feed table is clear before lowering.

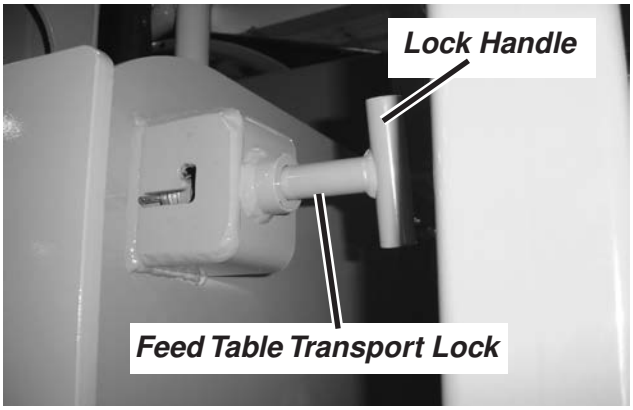
1. Unlock the feed table transport lock.
2. Using the feed table raise/lower arrows on the display panel, lower the feed table to the ground. Release the switch when the feed table reaches the ground.
3. Lift the side panels up until the spring loaded locks enter into the lock plate hole. The locks can be pulled up and rotated to remain in the unlocked (up) position which is helpful when lowering the side panels down to the feed table.
4. Stretch the bungee cords from the front panel around the front of each side panel and hook in place to hold the front rubber flap up.



Side Panel Lock



Front Rubber Flap Bungee Cord



Feed Table Transport Lock

Feed Table Setup

Feed Table Down

Bag Identification

Remember to use only Ag-Bag® bags. They are designed to fit and function properly.

Locate the bag size indicated on the box. Make sure you are using the correct size for your bagger.

Locate the arrow on the side of the box. It should be pointing toward the bagger.

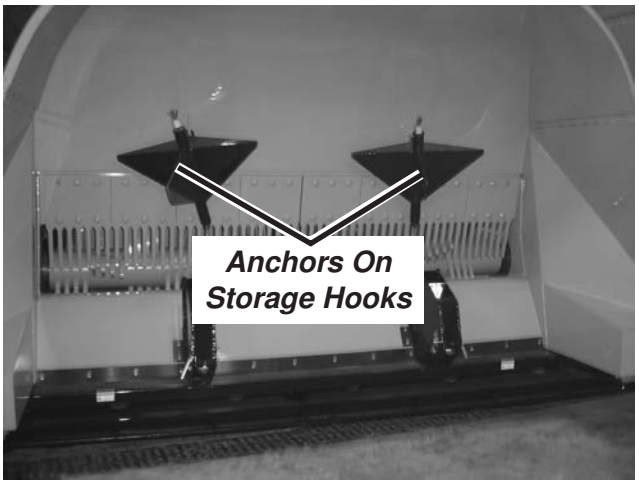
IMPORTANT: Be sure to select the best surface for bag placement. Refer to bagging surface in the "Bagging Instructions" section of this manual.

Bag Identification

Remove Anchors From Storage Hooks

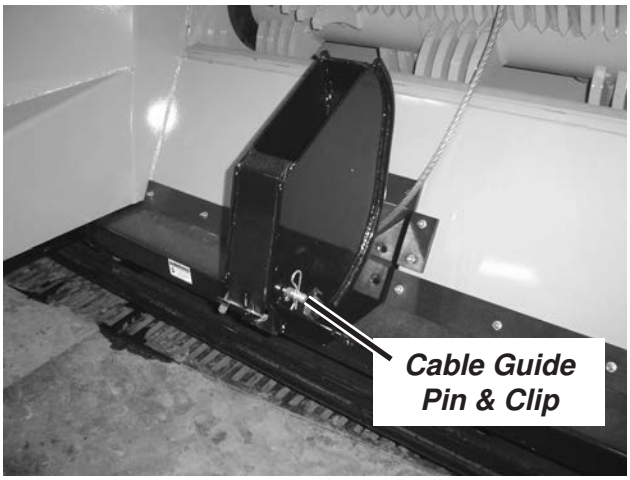
Before placing the bag onto the tunnel, the two anchors have to be removed from the storage hooks.

1. Remove the anchors from the hooks and position in front of the tunnel.
2. Repeat for the other anchor.



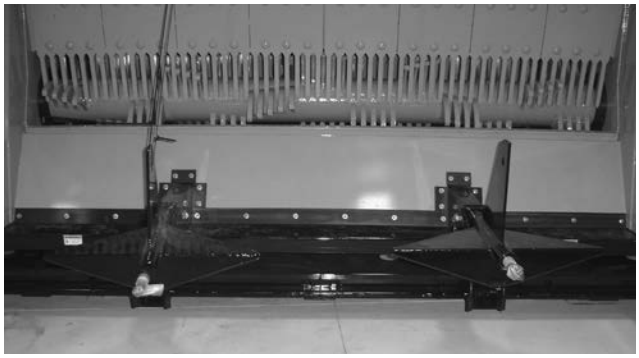
Anchor Storage Hooks

3. Remove the pins and clips from the anchor cable guides. Rotate each guide down to the operating position.



Anchor Cable Guide Pins & Clips

4. Return to the operators station, start the engine and use the anchor In switches to retract both anchors. Retract both of them all the way in to the guides.

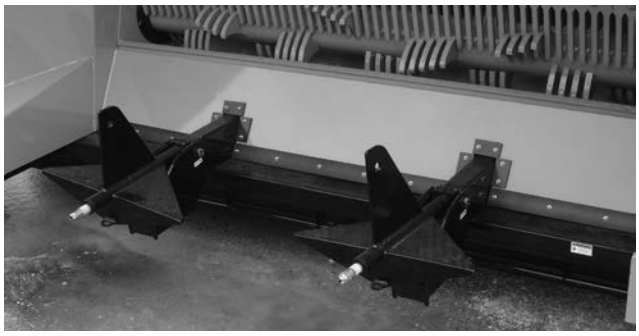


Anchors In Bagging Position

Tunnel Cleanout Floor

Before placing the bag onto the tunnel, use the tunnel cleanout floor switches to retract and extend the cleanout floor. Be sure cleanout floor is extended before bagging.

Tunnel Cleanout Floor Extended



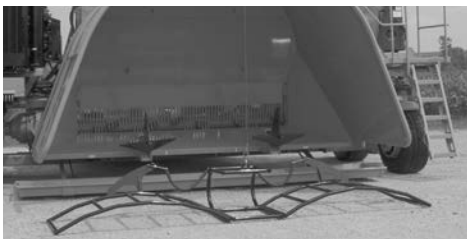
Tunnel Cleanout Floor Retracted

Install The Bag On To The Tunnel

Use the bag boom to lower the bag cradle to the ground.

1. Hook the bag boom cable hook to the loop at the center of the cradle.

2. Lift the cradle off the top of the tunnel, swing out and lower to the ground in front of the tunnel. Be sure the cradle is centered in the tunnel and close to the tunnel.



Bag Cradle Placement

3. Line up the box with the back of the tunnel and cradle, making sure the arrow on the end of the box is pointing toward the tunnel. Cut the plastic bands from the box and remove the outer lid. DO NOT remove the ties around the bag until the bag is on the tunnel. Remove the inner shell and the box will flatten.

Arrow On Bag Box

CAUTION

Caution should be used when moving bags. Bags are heavy.

4. Unfold the bag and lift the top half of the bag and place it on the bag cradle. Using the winch on the bag boom, raise the bag up. Once the bag is raised, rotate the bag so the stretch measure marks are between 1 and 3 o'clock.

NOTE: Do Not roll the bag while placing on the tunnel. Keep the folds flat. Bag damage could occur if bag is not flat.

5. Lower the bag pan to allow placement of the bag around the tunnel and in the bag pan. Open the front door on the bag pan to allow placement of the bag on the tunnel and in the bag pan. Close and latch the bag pan door after the bag has been placed in the bag pan.

6. Raise the cradle with the bag boom winch up until the cradle is above the tunnel. Swing the boom and cradle toward the tunnel. Carefully work the bag around the tunnel, making sure the bag maintains its flat look and is flat between the tunnel and the bag pan.

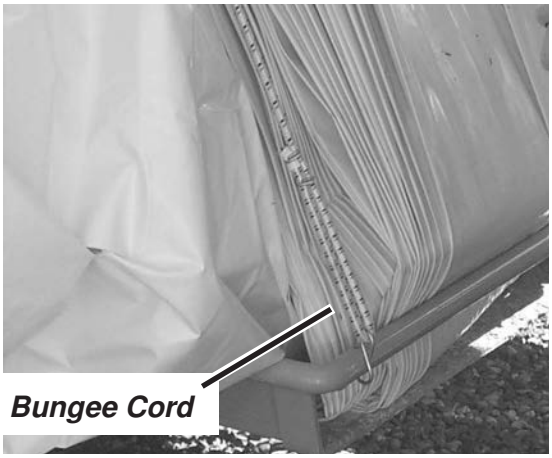
7. Lower the cradle until it is resting on top of the tunnel. Make sure the cradle is on the tunnel and not on the tunnel extension. The cradle should rest between the two pipes on the top of the tunnel. Once the cradle is in place on the tunnel remove all the ties that hold the bag folds together.

8. Use the bag pan control to bring the bag pan up toward the tunnel.

9. Place the long tunnel bungee cord over the bag on the tunnel and hook on to the bag pan on each side of the tunnel.

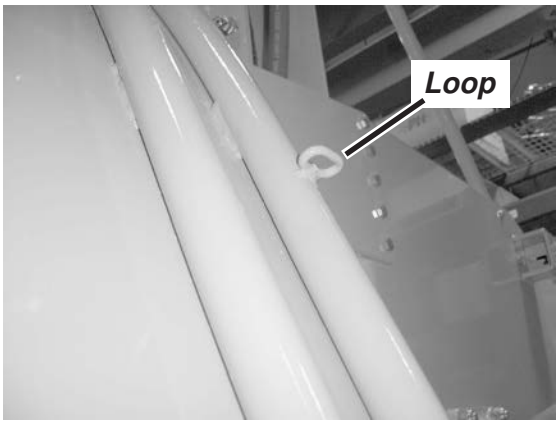
IMPORTANT: To avoid damage to the bag during operation and setup, be sure the lifting eye on the top of the tunnel extension is laying flat against the tunnel extension.

Bag On Tunnel



Bag In Bag Pan With Bungee Cord

10. Attach the four ropes of the tunnel bungee cord to the four loops evenly spaced on the tunnel. Be sure the ropes are straight and over the top of the bag. These four ropes hold the long tunnel bungee cord from following along with the bag as it is fed off the tunnel.



Bungee Cord Rope Loops On Tunnel (one loop shown)

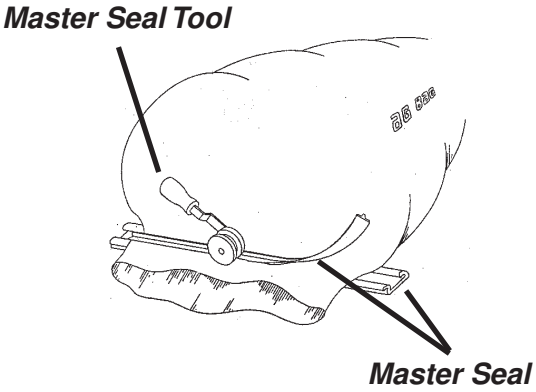
Seal Beginning End Of Bag

1. Pull enough bag to apply the seal. Pull from the inside folds, not the outside folds (white on the outside, black on the inside). Make sure you pull the bag under the bag bungee cord.

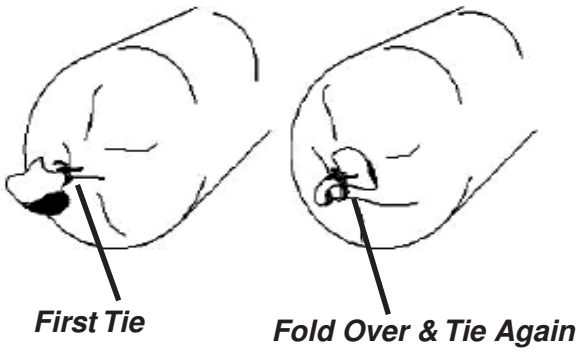
2. Seal the end of the bag using one of the two following methods:

   a. Using the Master Seal®. Follow the instructions that are included with the Master Seal. Master seal and tool (Zip Tool Part Number 42.1500273) are available from your Miller Ag-Bag dealer.

      42.1500272 - 250 Ft. Roll



   b. Use a double knot tie. Find the end of the bag, gather the bag to the center. Twist the bag tight and tie the bag tight. Leave enough bag to fold over and tie a second time giving the bag an air tight seal.



3. Slide the excess bag back onto the tunnel and bag pan. Position the knot approximately knee high.

Knot At Beginning Of Bag
(Photo is for knot placement only - stretch bars must be between 1 & 3 o'clock not as shown)

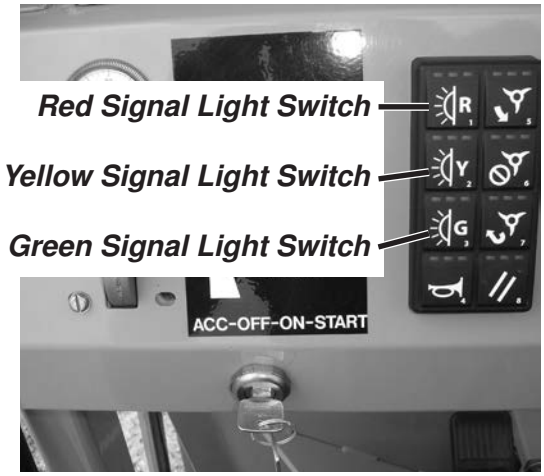
Bagging Procedure

Before Starting The Bagger

It is important that you set up a communication system between the operator of the bagger and all other persons involved with the bagging process. By using the RED, YELLOW and GREEN communication lights located at the operator platform end of the bagger.

The communication lights are controlled by the three switches (#1, 2 & 3) on the control console in front of the operator.

Communication Lights Operator Platform End



Signal Light Switches

Bagger Start-Up Procedure

1. Using the warning procedure established, warn all people to move away from the bagger. After giving enough time for everyone to move away, visually make sure the area is clear.

2. Start the engine by turning the ignition switch to the start position. Check all warning and diagnostic messages on the System Monitor display. Refer to the “Features and Controls” section “In Operators Platform” for a detailed explanation.

3. Start the rotor. Use the rotor on button in the switch bank on the left side of the front dash or use the auto sequence start switch on the right side of the front dash. If using the rotor on button, the top beater will have to be started separately as well as the feed table belt. The engine rpm will also have to be manually increased with the engine rpm increase button in the switch bank on the right side of the dash. Refer to the “Features and Controls” section “Operators Platform” for a detailed explanation.

4. Start the feed table by moving the joystick on the right side console in the desired direction either away from the rotor or toward the rotor. Refer to the feed table drive operation section for a detailed explanation.

5. Start the upper beater in a clockwise or counter-clockwise direction by activating the upper beater switch on the top of the joystick in the appropriate direction. Refer to the upper beater drive operation section for a detailed explanation.

IMPORTANT: If the operator leaves the operators seat during bagging operations the following will happen:

A message will appear on the System Monitor display and a timer will start a count down. To clear the timer, sit in the operator seat and move the feed table control joystick to the stop position.

If not cleared:

The feed table will stop after 4 seconds.

The engine will start to decelerate after 8 seconds from the time the operator leaves the seat.

The rotor and lower beater will stop after 10 seconds from the time the operator leaves the seat.

If this happens the operator will have to restart the rotor and feed table once the operator is seated in the operators seat.

System Monitor Display - Seat Switch Open

Filling The Bag

When filling the bag, watch the System Monitor display for all important settings and pressures as the bag is being filled.

For all controls that follow, refer to the “Features and Controls” section “Operators Platform” for a detailed explanation.

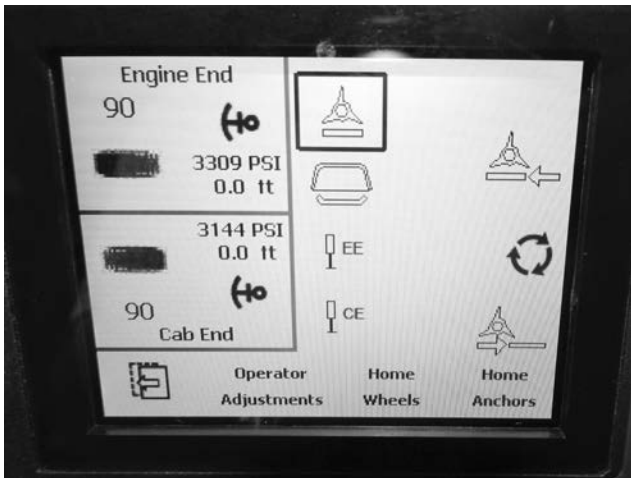
1. Set the brake pressure at the engine and cab side brakes to 20 psi using the brake pressure controls on the right and left sides of the front dash Watch the individual brake pressure gauges directly above each control.
2. Use the brake pedal to control the movement of the bagger when starting a new bag. Apply pressure to the brakes as needed.
3. Check the anchor in switches for the cab and engine end anchors. Be sure they are in all the way before starting to move product into the bag.
4. Start moving product into the bag.
5. Reduce the wheel brake pressure to 10 psi. At this time you can discontinue using the brake pedal to control the bagger movement.
6. Monitor the stretch bars on the bag, do not allow the bag to stretch beyond the bag manufacturers recommendations.
7. Increase/decrease the brake pressure at the wheels or increase/decrease the amount of cable fed out as needed to create a smooth bag. More cable fed out will increase the drag/pressure on the anchors.

Anchor Settings and Float

A settable minimum cable length is provided to prevent the operator from over tightening the cables on the drum after the anchor is retracted all the way. The operator can override the feature if desired.

A settable Maximum cable length is provided to prevent the operator from playing out the anchors too far and potentially losing them in the feed. The operator can override the feature if desired.

Along with simple extension and retraction of the anchor winches, the Anchor Keys on the dash also allow the operator to engage the anchor Float mode. This feature tries to lay out the anchors to a desired length without overspooling the cable (turning the drum into a rat’s nest of jumbled cable). After the first load or two is in the bag, press and hold both IN and OUT buttons until the button lights start to flash in sequence, left to right. Feed passing by the anchors will pull the anchors out to a settable predetermined length. Press either key to stop the float mode. The float length, Min length and Max. length are settable though the Operator Adjustments Key.



Anchor Position/Pressure Screen

Removing The Bag

IMPORTANT: Monitor the length of the bag and the number of folds remaining on the tunnel. Start the following procedure when there is 6 to 7 folds remaining on the tunnel.

1. Prior to the last load pull the cab and engine end anchors in using the anchor in switches on the right side front dash. Increase the brake pressure on the engine and cab end brakes by pulling the individual controls toward you. Watch the individual gauges for brake pressure at the cab and engine end brakes. When the final load is in the bag there should be approximately 5 folds left on the tunnel.

2. Release the brake pressure on the cab and engine end brakes by pushing the individual controls up. Watch the individual gauges for brake pressure at the cab and engine end brakes.

IMPORTANT: Always turn the rotor off before retracting the tunnel cleanout floor. Do not turn the rotor on unless the tunnel clean out floor is completely extended.

3. Use the cab end and engine end anchor in switches to fully retract the anchors.

4. Press and hold the clean out floor retract switch to retract the floor away from the bag. Press and hold the clean out floor extend switch to push the floor into the bag. This will push as much product as possible into the bag while pushing the bagger away from the bag. Do this several times.

5. Once no more product can be pushed into the bag, pull the bagger forward until the bag has been pulled from the tunnel.

6. After the bagger has been pulled away from the bag, extend the clean out floor for the next bag.

7. After the bagger has been moved away, pull the plastic flat and prepare to seal the end of the bag. Grab each side of the bag on the end. Walk the bag over itself pulling the product together. Bring the bag end back forward.

8. Seal the end of the bag using either Master Seal strips or the double tie method. Refer to “Bagging Instructions” for additional information.

NOTE: No matter which method is used when sealing the end of the bag, loose plastic should be weighted down. Do not use material that will be abrasive to the bag material.

Install the vent into the bag. See Venting the Bag.

Venting The Bag

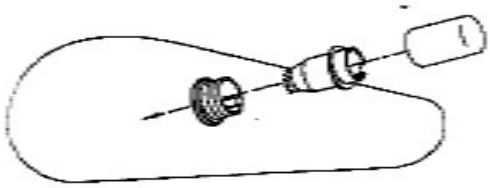
Immediately after the bag is sealed a vent must be installed to remove the gases produced by the product. A reusable vent valve and vent tool are available from your Miller Ag-Bag dealer.

Reusable Vent Valve Part Number 42.1500893
Vent Installation Tool Part Number 42.1500568

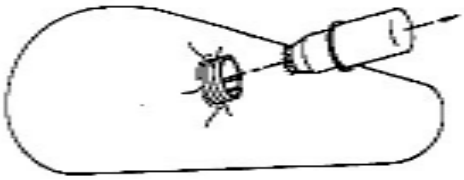
Insert the vent valve as follows:

1. Remove the cover from the vent cutter tool. Turn the cutting portion of the tool around (cutter away from cover), line up the notches and insert the cutter into the cover.

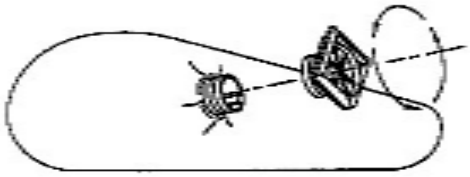
2. Take the threaded side of the valve, line up the notches and slide it over the cutter end of the tool. Slide the threaded portion all the way onto the cutter.



3. After you have located the spot where you want the vent to be installed, about 10 feet from the end and about 3/4 of the way up the height of the bag, press the cutter portion of the tool into the plastic to create a hole. Push the tool with the threaded portion of the vent through the hole and pull the cutting tool out leaving the threaded end of the vent sticking out through the bag.



4. Assemble the valve lid onto the threaded portion. Turn the lid to the left and tighten securely.



Slide the lid of the vent open enough to allow the gases to escape. Within 1-2 days, close the lid and leave the vent in the bag until that end of the bag is fed out.

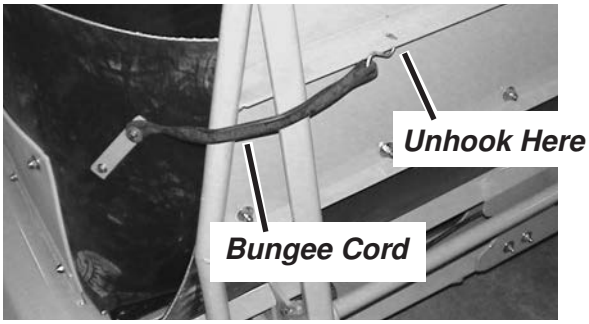
NOTE: If excessive gassing occurs, leave the vent open an additional day. If the bag puffs up again after closing the valve, open the valve again until gasses recede, then close the valve.

Prepare The Bagger For Transport

Feed Table

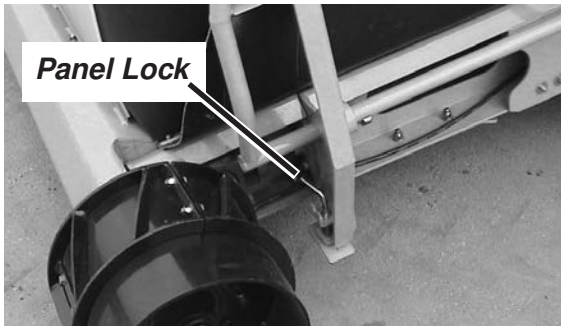
Before raising the feed table up, the feed table sides have to be folded down onto the feed table belt.

1. Unhook the bungee cords from each side panel holding the front rubber flap in place. Pull the rubber flap outside the side panels.



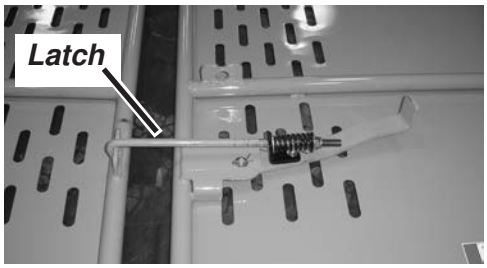
Front Rubber Flap Bungee Cord

2. Unlock the side panels one at a time and lower the side panels down on the feed table belt. Be sure the front rubber flap remains out from under the side panels.



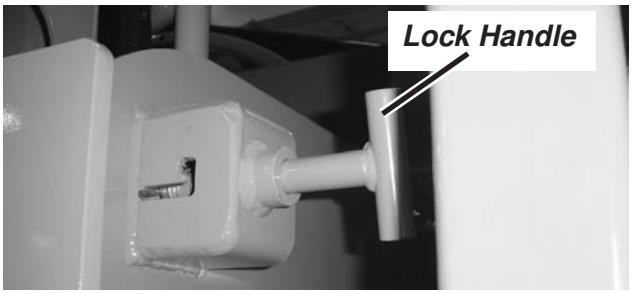
Side Panel Lock

3. Latch the panels together to hold them in place while raising the feed table.



Side Panels Latched Together

4. Once the side panels are both down and latched, raise the feed table up to the transport position and lock in place with the transport lock. Be sure the transport lock is fully engaging the feed table.



Feed Table Transport Lock

Bag Cradle

The bag cradle is stored on top of the tunnel before the tunnel extension is secured in place.

1. Use the bag boom to lift the bag cradle up and set on top of the tunnel. Be sure the cradle is centered from side to side on the tunnel and between the pipes on the tunnel.

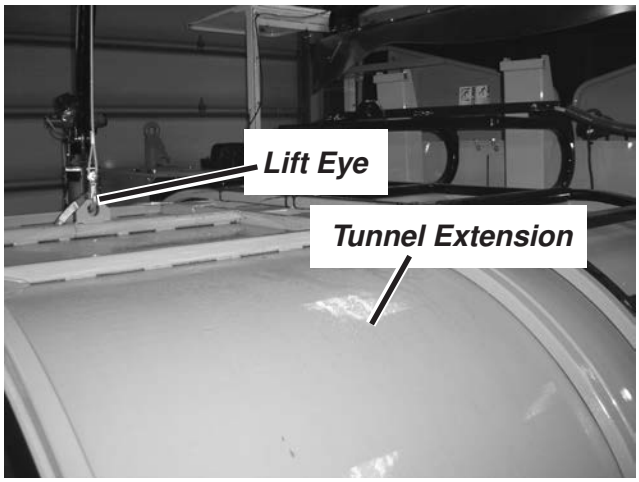
2. Unhook the bag boom from the cradle when in position.

Bag Cradle In Transport Position

Tunnel Extension

The tunnel extension is stored on top of the tunnel during transport. Be sure the bag cradle is in place before placing the tunnel extension on top of the tunnel.

1. Use the bag boom to lift the tunnel extension. Connect the hook from the bag boom cable to the lifting eye on the top of the tunnel. Remove the slack in the cable.



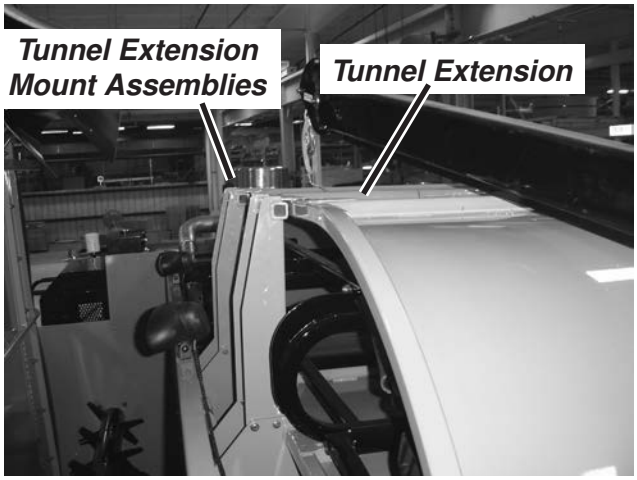
Boom Winch Attached To Tunnel Extension Lift Eye

2. Remove the six bolts and nuts holding the tunnel extension to the tunnel. Save the hardware.

3. Using the bag boom, lift the tunnel extension up and place on top of the tunnel.

4. Line up the tunnel extension with the tunnel and hook the tunnel extension transport hooks over the edge of the tunnel extension mount assemblies.

5. Lower the boom arm down to the top of the tunnel extension and remove the slack in the cable. The boom must remain in this position for transport.



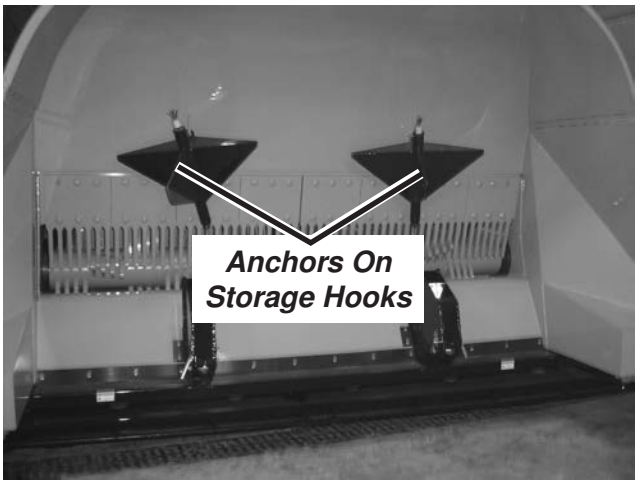
Tunnel Extension Transport Hooks

Tunnel Extension In Transport Position

Anchors In Storage Position

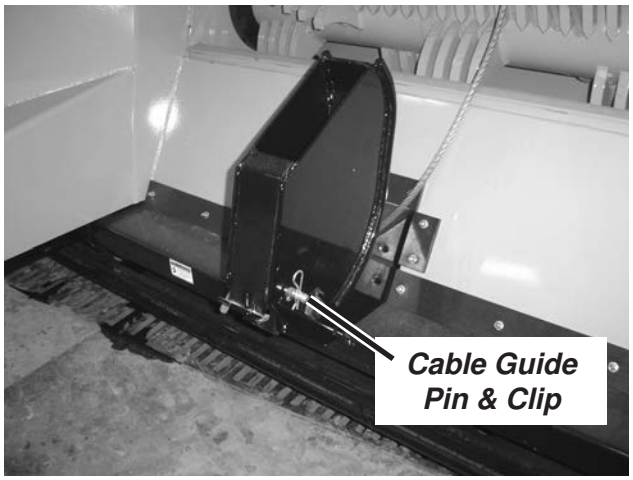
The anchors must be hung on the storage hooks for transport.

1. Hang the anchors on the storage hooks located at the back of the tunnel.
2. Use the anchor in switches to remove the slack in the anchor cables. Do not pull the cables tight. If the cables are pulled tight, kinking of the cables will occur.



Anchor Storage Hooks

3. Swing the anchor cable guides up and use the pins and clips to secure them in the transport position.



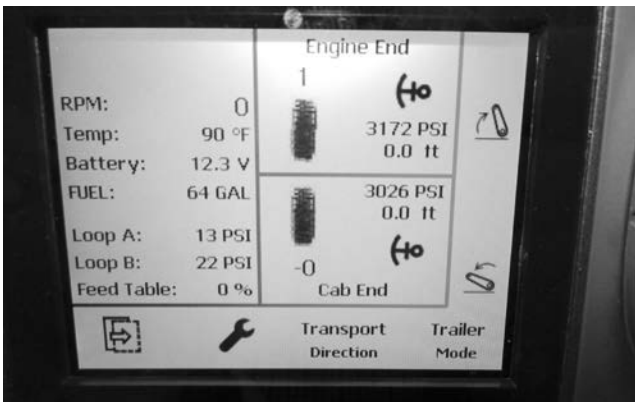
Anchor Cable Guide Pins & Clips

Place Wheels Into Travel Position

Switch to the transport/trailer modes, press the F3 key on the display to get to the “transport or trailer” modes. Press the F4 key to display the transport mode. Transport mode will display.

1. Press and hold the “Align” button on the left side switch bank, the wheels will automaticaly move to the selected position. Watch the wheels move on the display.
2. Steer the wheels straight front to back ± 2 degrees.
3. When the wheels are being aligned, a pop up screen will be indicated on the display stating that alignment is in process.
4. Mode on the display will switch to travel mode.
5. Cab end wheels will automatically adjust to match the engine end wheels.

Press Align Button (#8)
Align Button

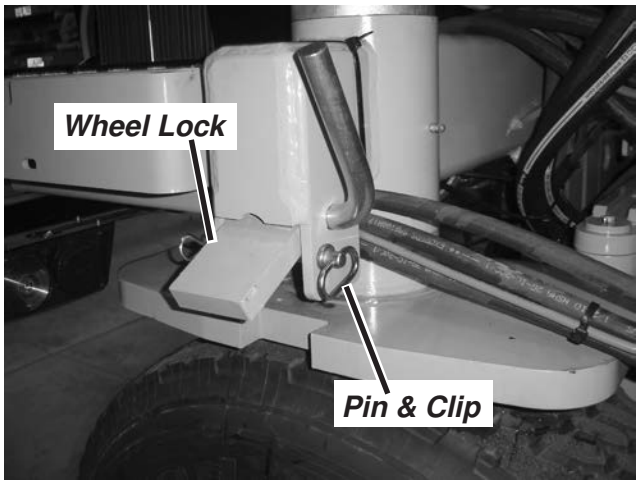


Display for Trailer Mode

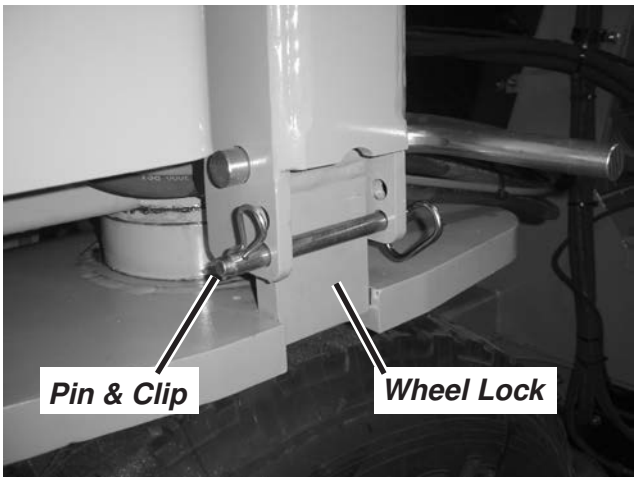
Transport Lock

The transport lock is only required when towing the bagger with a tow vehicle.

1. If transporting with a tow vehicle, the engine end wheels have to be locked in the straight front to back position.
2. The lock is located next to the engine end wheel on the feed table side.
3. Remove the retaining pin and clip. Allow the lock to swing down into the notch on the wheel column.
4. Reinstall the retaining pin and clip in the lower hole to secure the lock in the transport position.
5. When not using the transport lock, remove the pin and clip, raise the lock up away from the wheel column and re-insert the pin in the upper hole under the lock to hold it up. Clip in place.



Wheel Lock In Unlocked Position

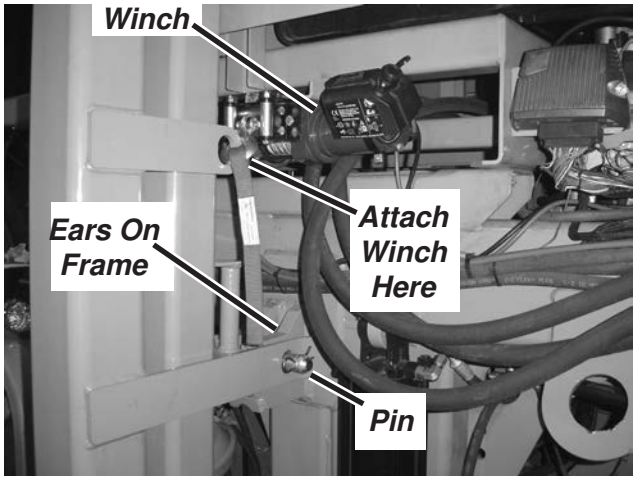


Wheel Lock In Locked Position

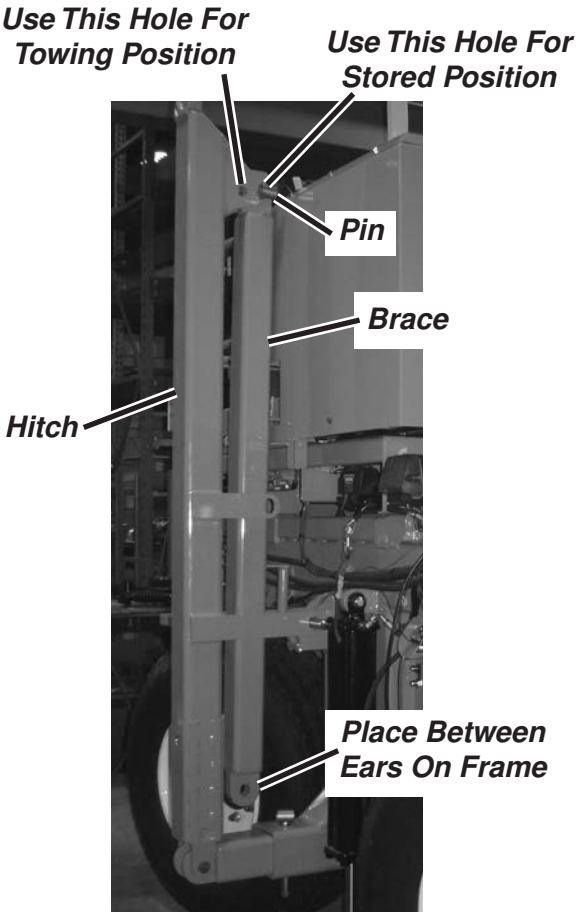
Pintle Hitch

For transporting with a tow vehicle the tow hitch and hitch brace have to be secured to the operator platform end of the bagger. This hitch is only required when transporting the bagger with a tow vehicle.

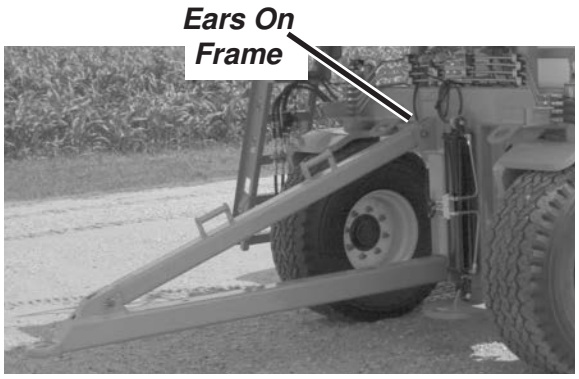
1. Hook the winch cable to the ear on the hitch tube.
2. Remove the retainer pin and clip holding the center of the hitch tube to the bagger frame.
3. Use the winch to raise or lower the hitch tube down. To bring the cable hook to the ear on the hitch tube, you can free spool the winch by releasing the lock on the side of the spool. Be sure to relock the spool before using the power on the winch.
4. Remove the brace from the upper hole at the pintle end of the hitch and reassemble into the lower hole. Reuse the existing pin and clip. Be sure to reassemble back into the upper hole before attempting to raise the hitch up to the stored position.
5. Lift the end of the hitch brace up and secure it between the ears on the bagger frame. Use the existing pin and clip to secure the brace in place.



Winch Under Operator Platform



Hitch & Brace In Stored Position



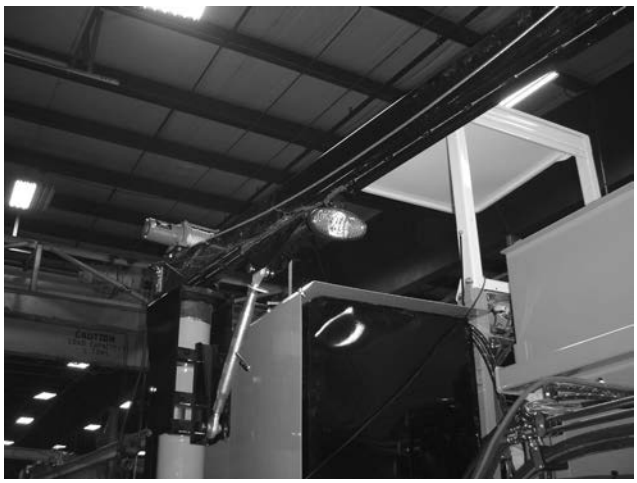
Hitch And Brace In Towing Position

Operators Canopy

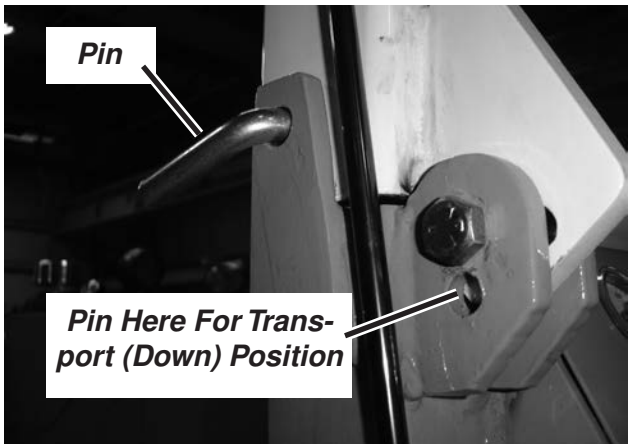
Once the bagger is ready for transport, the canopy must be lowered down to the transport position and pinned in place.

1. Remove both pins from the canopy pivot points at the front dash.
2. Lower the canopy down and insert the pins into the transport holes. The roof of the canopy will be positioned behind the seat when in the transport position.
3. Secure the pins in place with the clips.

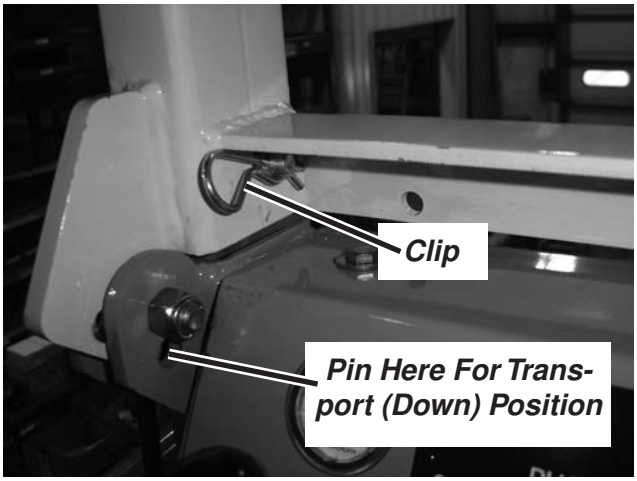
IMPORTANT: Always lower the canopy down and pin in the transport position before transporting the bagger. Be sure to lower the operator seat all the way down before placing the canopy in the transport position.



Canopy In Upright Position



Canopy Pivot Pin In Upright Position



Canopy Pivot Pin Clip

Canopy In Transport Position

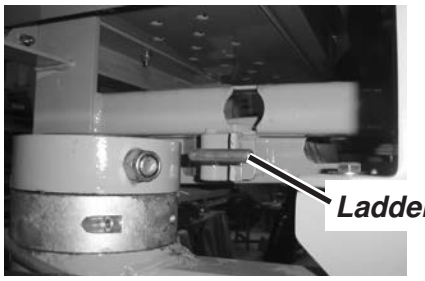
Transporting

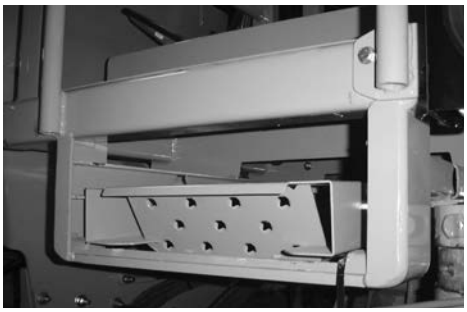
IMPORTANT: You must obey all applicable highway safety laws and rules when transporting this vehicle on public roads.

Transporting Bagger On A Equipment Trailer

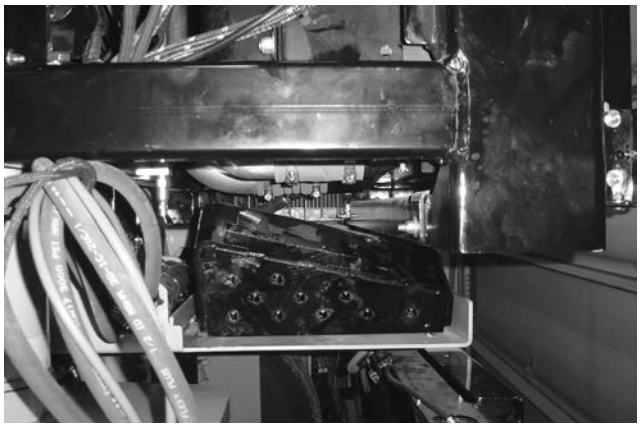
IMPORTANT: This vehicle is NOT designed to be driven on a public road, It MUST be transported on an equipment trailer or towed with the towing hitch.

1. Drive the bagger onto the equipment trailer with the bagger drive in the Trailer Mode.
2. Place the drive in neutral.
3. Set the parking brake.
4. Securely tie the vehicle down. Use a minimum of a four corner tie down method. Be sure to secure tie downs to sturdy solid points on the frame or tie down points, never to vulnerable areas such as cylinder rods or sheet metal areas.
5. Close the exhaust by taping the exhaust pipe shut with duct tape to keep the turbocharger from spinning without lubrication.
6. Raise the ladder up into the storage position and secure in place. Never transport the bagger with the ladder in the down position.
7. Be sure the ladder at the engine platform on the tunnel side is removed from the platform, slid in place under the cooling package and locked in place.
8. Be sure the platform next to the engine on the feed table side is pivoted up, the railing is slid in toward the engine and pinned in the transport (in) position.





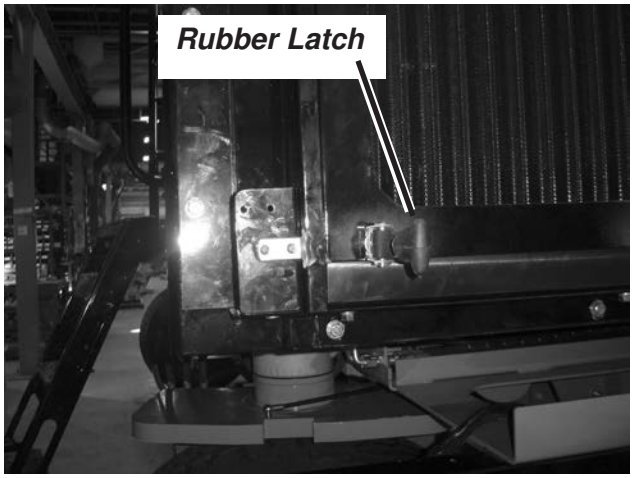
Ladder In Transport Position



Engine Platform Ladder Locked In Place

Engine Platform In Transport/Bagging Location

9. The outer sliding doors of the radiator should be closed and secured in place with the rubber latches before transporting.



Outer Sliding Door Rubber Latch

10. The operators canopy must be lowered down to the transport position and pinned in place. Never transport the bagger with the canopy in the raised (up) position.

Canopy In Transport Position

Transporting With A Tow Vehicle

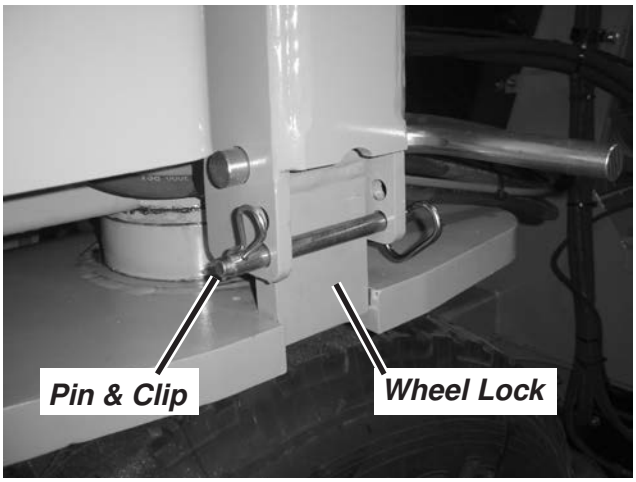
IMPORTANT: This vehicle is NOT designed to be driven on a public road, It MUST be transported on an equipment trailer or towed with the towing hitch.

CAUTION

Maximum towing speed is 25 MPH.

Bagger Hooked To Tow Vehicle (Bagger Style may Vary - Shown for Hitching Purposes Only)

1. Be sure the tow vehicle is rated to tow the bagger.
2. The wheel lock must be engaged on the engine end wheels.



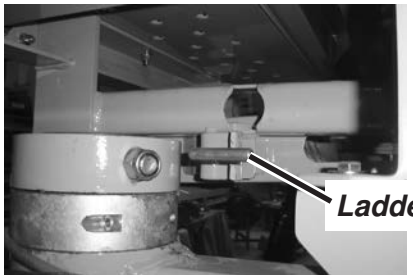
Wheel Lock In Locked Position

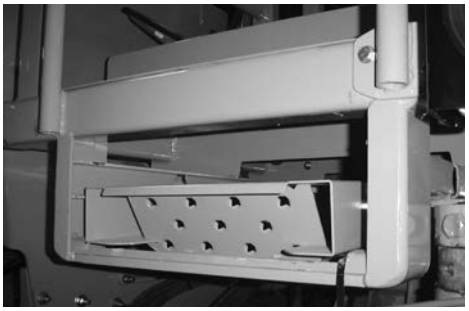
3. Raise the ladder for the operators platform and slide under the platform. Slide the ladder all the way in and lock into place. Be sure the ladder lock is engaged completely.

4. Be sure the ladder at the engine platform on the tunnel side is removed from the platform, slid in place under the cooling package and locked in place.

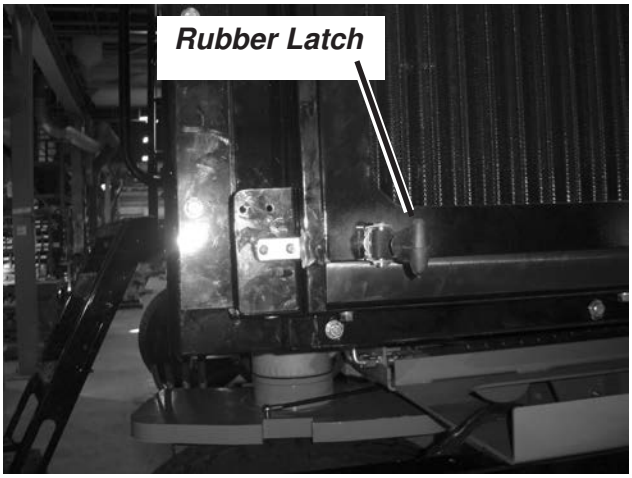
5. Be sure the platform next to the engine on the feed table side is pivoted up, the railing is slid in toward the engine and pinned in the transport (in) position.

6. The outer sliding doors of the radiator should be closed and secured in place with the rubber latches before transporting.

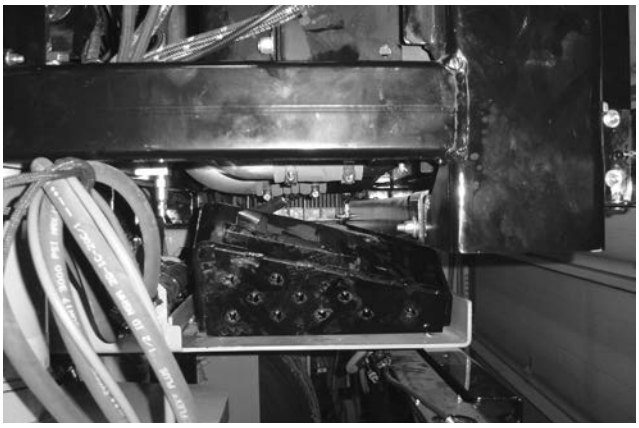




Ladder In Transport Position



Outer Sliding Door Rubber Latch



Engine Platform Ladder Locked In Place

Engine Platform In Transport/Bagging Location

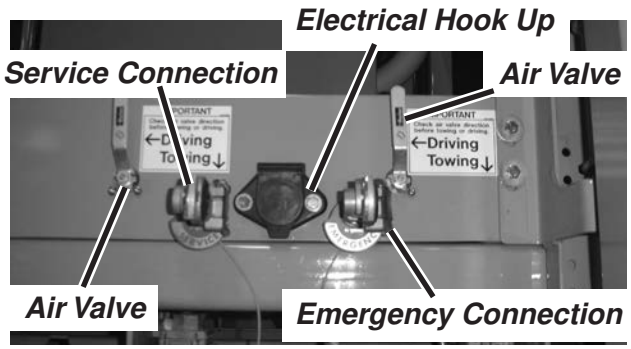
7. Lower the cab end lift jack to raise the cab end of the bagger high enough to hook the pintle hitch of the bagger on to the pintle hitch of the towing vehicle. Lower the bagger down onto the tow vehicle hitch and raise the lift jack all the way up. Never transport the bagger with the lift jack down.

8. Shut the bagger engine off.

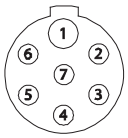
9. Close the exhaust by taping the exhaust pipe shut with duct tape to keep the turbo-charger from spinning without lubrication.

10. Connect the air lines from the tow vehicle to the air connections on the bagger. Connect the brake air line to the “Service” connection on the bagger. Connect the constant air supply line to the “Emergency” connection on the bagger. Be sure both air valves are set for towing.

11. Connect the 7 pin electrical cord between the tow vehicle and the connection on the bagger. The plug terminal on the bagger is wired per the ANSI/ASAE S279.13 Specifications.



Air And Electrical Hook Ups



Light plug terminal identification

1	Ground	
3	Bright Amber	LH Turn & Flash
4	Bright Red	Stop Lamps
5	Bright Amber	RH Turn & Flash
6	Dim Red	Tail Lamps

Light receptacle wired per ANSI/ASAE S279.13

12. The operators canopy must be lowered down to the transport position and pinned in place. Never transport the bagger with the canopy in the raised (up) position.

Canopy In Transport Position

Bagging Instructions

Read and follow these procedures for proper bagging of product as well as feed out rates and bag placement.

Bag Information

NOTE: The tons per bag are approximate and will vary based on moisture and length of crop and crop types.

Capacity of Tons Per Running Foot of Bag

10 Ft.....1.5 Ton per foot (approx.)

Suggested Feed Out Rates Per Day

Winter Feed Out Rate - October to April

Feet per day (2 feet)

Tons per day (3 tons)

Summer Feed Out Rate - May to September

Feet per day (2.5 feet)

Tons per day (4 tons)

12 Ft.....2 - 2.25 Ton per foot (approx.)

Suggested Feed Out Rates Per Day

Winter Feed Out Rate - October to April

Feet per day (2.5 feet)

Tons per day (5 - 5.6 tons)

Summer Feed Out Rate - May to September

Feet per day (3 feet)

Tons per day (6 - 6.75 tons)

The Crop

a. Maturity (pre-bloom)

b. Moisture Level (60 to 65 percent target)

c. Crop Length (3/4" target)

Haylage and Corn Silage:

Apply enough anchor pressure to fill the bag to within 2 inches of the top of the tunnel. Keep the bag stretch indicators within the bag manufacturer's specifications.

Grains:

Grains tend not to fill the bag to the top of the tunnel, regardless of anchor pressure. Regulate anchor pressure by measuring your stretch bars approximately 30 feet back from the bagger. Keep the stretch indicators within the bag manufacturer's specifications.

Product Moisture

Refer to the "3M's of Silage" supplement available from your Miller Ag-Bag dealer for more detailed information on product moisture levels. Moisture levels play an important part of product quality.

Dry Product

Dry product makes a lumpy bag. Long dry chop is hard on the bagger. Remember when trying to make good haylage, dry feeds have more resistance. They will pack higher in the bag and less anchor pressure is required.

Wet Product

Moisture levels above 70% may create excessive liquid in the bag. This excessive liquid is OK unless the bag is outside the recommended shape. Slowly release anchor pressure until the bag is within the recommended shape. Let the product wilt longer in the field if liquid does not dissipate. Wet product does not rise very high in the bag. The result will be a wide bag.

Bag Location - pick an area using the following recommendations

a. Remove rocks and sticks from the site

b. Good drainage of site is important

c. Concrete, asphalt, gravel or packed limestone works well under bags

d. Pick a site away from rodents

e. Protect your site from livestock with fencing.

Bag Installation

Enclosed in each box of bags is an instruction sheet with pictures to help you properly install the bag on your bagger. Please take time to understand the best method of bag installation. The bag should be placed on the machine with the bag logo in an area between 1 and 3 o'clock.

Watch the stretch indicators on the bag. The bag is overfilled when the stretch indicator exceeds the manufacturer's recommendations.

Correcting Bag Stretch

Ground To Ground Method Of Checking

Tie weights (hex nuts) approximately 1/4 lb to one end of a string and one weight (hex nut) approximately 1/8 lb to the opposite end of the string. The distance between the nuts need to be 26 feet 6 inches for a 12 foot bag or 21 feet 6 inches for a 10 foot bag.

Straddle the string over the bag approximately 15 feet away from the bagger.

While bagging, when the single nut touches the ground, increase the anchor pressure and/or brake pressure. If the nut comes off the ground more than 3 inches, reduce the anchor pressure and/or brake pressure.

NOTE: Use this procedure only as a visual aid. Remember, measuring the stretch bars on the bag and maintaining appropriate stretch dimension is important. Keep the bag stretch indicators within the manufacturer's specifications.

You can control the stretch in the bag by either letting out the anchors or pulling them in.

Anchor Out: The further out the anchors extend, the more pressure will be exerted, meaning the bag will have higher compaction. Watch the anchor gauge so you will know how much cable is out. This will cause the stretch bars on the bag to lengthen. You can let more cable out by using the anchor out switches on the front dash. Do not use the anchor cable in/out switch to let the anchor cable out while bagging, this can create slack in the anchor cables.

Anchor In: By pulling the anchors back toward the tunnel you will lessen the amount of pressure and cause the stretch bars to become smaller. Use the anchor cable in switches on the front dash to pull the anchors in. Watch the anchor pressure on the System Monitor display and keep it in the correct range.

Sealing and Venting

As soon as the bag is filled, seal the finished end of the bag as outlined with the Master Seal instructions or using the double knot method. The sooner oxygen is sealed out, the sooner the fermentation process can begin. It is very important to vent the bag after sealing. Refer to "Venting The Bag" section of this manual. Order Master seal and reusable vents from your local Miller Ag-Bag dealer. Refer to the list that follows for specific part numbers:

Part Number 42.1500272 - 250 Ft. Roll of Master Seal

Part Number 42.1500893 - Reusable bag vent

Part Number 42.1500568 - Vent installation tool

Protecting the Bag From Wind Damage

Wind damage can be caused by the wind whipping the loose end of the bag. To prevent damage, the loose bag end needs to be secured by placing tires or other soft material on the end of the bag. Wind damage can cause small cracks and eventually wear a hole that allows air to penetrate, causing feed damage. A tightly secured bag will add to the life of the bag.

Bag Management and Inspection

Periodic inspection of the bag is essential to maintain the oxygen free environment inside the bag. It is recommended that repairs be made with Ag-Bag mending tape as soon as they are discovered. Repair tape can be ordered from your local Miller Ag-Bag dealer using the following part numbers:

Part Number 42.1500523
2" x 36 yard roll, 18 rolls per case
Part Number 42.1500525
3" x 36 yard roll, 24 rolls per case
Part Number 42.1501331
4" x 36 yard roll, 18 rolls per case

Bagging Surface

IMPORTANT: Do not bag on a hillside. Tip-over or bag roll could result.

Bag up hill rather than down hill. Avoid bagging on a hillside. The bagger can drift and the bag may roll.

Surface conditions may affect bagging quality and ability. Soft ground conditions will act as a brake and may cause the bagger to sink. A hard clean and level surface is best to bag on. By cleaning the area, rodent problems can be reduced or eliminated.

Bad Weather Bags

NOTE: Remember to place bags in a location that feed out can be done when you need the feed.

Consider the surface conditions during the seasons when product will be removed from the bags. If you expect a lot of mud, you may want to put some bags on a solid surface. Have enough accessible bags to last until good weather conditions can be expected.

Storage

It is important that the bagger be thoroughly cleaned before storing. Thoroughly wash the entire bagger to remove any residue left from the bagging season.

Thoroughly clean all forage residue from the tunnel, feed table and rotor area. Crop juices are very corrosive if left to stand in the hopper, tunnel and feed table area.

Grease all fittings to purge any forage residue juice from the bearings.

Refer to the Engine Operation and Maintenance Manual for storage procedures for the engine.

Use touch up paint on any areas that the paint has been worn off to prevent rusting and corrosion during storage.

Store the bagger inside and out of the weather.

Trouble Shooting

WARNING:

Turn off engine and remove ignition key before attempting to inspect, clean, lubricate, adjust or perform other service on this machine.

Hydraulic System

WARNING:

Avoid high pressure fluids.

Avoid the hazard by relieving all pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Never use your hand or any other body part to search for leaks. Protect hands and body from high pressure fluids.

Hydraulic System Cleanliness

IMPORTANT: The greatest contributor to hydraulic component failure is contamination of the oil with dirt and other debris. Keep all hydraulic access areas completely clean, such as around the hydraulic reservoir filter and filler cap. Immediately repair any fittings, hoses or other components where leakage is observed. Wipe up any leakage.

Engine

Refer to the Cummins Engine Operation and Maintenance Manual for problems not covered in this manual.

Engine Trouble Shooting

Engine Fault Codes

The Cummins QSC engine has onboard diagnostic capabilities built into it to troubleshoot the engine fault codes.

FAULT DETECTION: Engine fault codes can be detected while the engine is running. If a fault occurs, the engine computer takes a snapshot of engine operating parameters and logs the fault code into memory.

The System Monitor will display active fault codes as they occur. The display can also be used to view inactive fault codes.

The System Monitor will display fault codes. Refer to the display representation of an actual code on the following page. Use these codes as they are displayed to determine corrective action. These codes are found in the Engine Fault Code tables that follow.

Engine Fault Codes

Refer to the System monitor screen represented below as an example of how the engine codes will be displayed.

The SPN/FMI code displayed below is represented in the Engine Fault Code Tables that follow.

Display Showing Engine Fault (Actual Display may vary In Appearance)

Engine Fault Codes - QSC Engines

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
94	0	2216	Amber	Fuel pump delivery pressure - data valid but above normal operating range - moderately severe level.	None or possible engine noise associated with higher injection pressures especially at idle or light load. Engine power is reduced.	Check for air in fuel supply line. Check fuel return line restriction. Call Cummins service.
94	1	2215	Amber	Fuel pump delivery pressure - data valid but below normal operating range - moderately severe level.	Possible smoke, loss of power or hard starting. Engine can possibly not start.	Check for fuel inlet restriction. Check for air in fuel supply line. Check for plugged fuel filter. Check fuel return line restriction. Call Cummins service.
94	2	268	Amber	Injector metering rail 1 pressure - data erratic, intermittent or incorrect.	The ECM will estimate fuel pressure and power is reduced.	Call Cummins service.
94	3	546	Amber	Fuel delivery sensor circuit - voltage above normal or shorted to high source.	Power and or speed derate.	Call Cummins service.
94	4	547	Amber	Fuel delivery sensor circuit - voltage below normal or shorted to low source.	Power and or speed derate.	Call Cummins service.
97	3	428	Amber	Water-In-Fuel indicator - voltage above normal or shorted to high source.	None on performance. No water-in-fuel warning available.	Change water-in fuel filter. Check wiring. Call Cummins service.
97	4	429	Amber	Water-In-Fuel indicator - voltage below normal or shorted to low source.	None on performance. No water-in-fuel warning available.	Change water-in fuel filter. Check wiring. Call Cummins service.
97	15	418	Amber	Water-In-Fuel indicator - data valid but above normal operational range - least severe level.	Possible white smoke, loss of power or hard starting.	Drain water-in fuel filter. Call Cummins service.
97	16	1852	Amber	Water-in-fuel indicator - date valid but above normal operational range - moderately severe level.	Possible smoke, loss of power or hard starting. Engine can possibly not start.	Check for water in fuel. Drain or replace filter. If fault does not clear call Cummins service.
100	1	415	Red	Engine oil rifle pressure - data valid but below normal operational range - most severe level.	Progressive power derate.	Check oil level. Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
100	2	435	Amber	Oil pressure switch sensor circuit - data erratic, intermittent or incorrect.	None on performance. No engine protection for oil pressure.	Call Cummins service.
100	3	135	Amber	Oil pressure switch sensor circuit - voltage above normal or shorted to high source.	None on performance. No engine protection for oil pressure.	Call Cummins service.
100	4	141	Amber	Oil pressure switch sensor circuit - voltage below normal or shorted to low source.	None on performance. No engine protection for oil pressure.	Call Cummins service.
100	18	143	Amber	Engine oil rifle pressure - data valid but below normal operational range - moderately severe level.	None on performance.	Call Cummins service.
102	2	433	Anber	Intake manifold pressure sensor circuit - data incorrect.	Engine power derate.	Call Cummins service.
102	2	2973	Amber	Intake manifold pressure sensor circuit - data erratic, intermittent or incorrect.	Engine power derate.	Call Cummins service.
102	3	122	Amber	Intake manifold pressure sensor circuit - voltage above normal or shorted to high source.	Engine power derate.	Call Cummins service.
102	4	123	Amber	Intake manifold pressure sensor circuit - voltage below normal or shorted to low source.	Engine power derate.	Call Cummins service.
102	16	124	Amber	Intake manifold 1 pressure circuit - data valid but above normal operational range - moderately severe level.	Engine power derate.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
103	0	595	Amber	Turbocharger number 1 speed high - warning level.	Engine power derate. The ECM uses an estimated turbocharger speed.	Call Cummins service.
103	10	2345	Amber	Turbocharger speed - invalid rate of change detected.	Possible low power. Estimated turbocharger speed will be used.	Call Cummins service.
103	18	687	Amber	Turbocharger number 1 speed low - warning level.	Engine power derate. The ECM uses an estimated turbocharger speed.	Call Cummins service.
105	0	155	Red	Intake manifold 1 temperature - data valid but above normal operating range - most severe level.	Progressive power derate.	Make sure airflow through charge air cooler is not obstructed. Call Cummins service.
105	2	436	Amber	Intake manifold 1 temperature - data erratic, intermittent or incorrect.	The ECM will estimate engine intake manifold temperature.	Call Cummins service.
105	3	153	Amber	Intake manifold air temperature sensor circuit - voltage above normal or shorted to high source.	Possible white smoke. No engine protection for intake manifold air temperature.	Check for multiple fault codes. Call Cummins service.
105	4	154	Amber	Intake manifold air temperature sensor circuit - voltage below normal or shorted to low source.	Possible white smoke. No engine protection for intake manifold air temperature.	Check for multiple fault codes. Call Cummins service.
105	10	1848	Amber	Intake manifold 1 temperature - abnormal rate of change.	The ECM will estimate engine intake manifold temperature.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
105	15	2964	None	Intake manifold temperature high - data valid but above normal operating range - least severe level.	Progressive power derate.	Make sure airflow through charge air cooler is not obstructed. Call Cummins service.
105	16	488	Amber	Intake manifold 1 temperature - data valid but above normal operating range - most severe level.	Progressive power derate.	Make sure airflow through charge air cooler is not obstructed. Call Cummins service.
108	2	295	Amber	Barometric pressure - data erratic, intermittent or incorrect.	Engine power derate.	Call Cummins service.
108	3	221	Amber	Barometric pressure sensor circuit - voltage above normal or shorted to high source.	Engine power derate.	Call Cummins service.
108	4	222	Amber	Barometric pressure sensor circuit - voltage below normal or shorted to low source.	Engine power derate.	Call Cummins service.
110	0	151	Red	Engine coolant temperature - data valid but above normal operating range - most severe level.	Progressive power derate.	Check coolant level. Make sure airflow through the radiator is not obstructed. Call Cummins service.
110	2	334	Amber	Engine coolant temperature - data erratic, intermittent or incorrect.	The ECM will estimate engine coolant temperature.	Call Cummins service.
110	3	144	Amber	Engine coolant temperature 1 sensor circuit - voltage above normal or shorted to high source.	Possible white smoke. No engine protection for engine coolant temperature.	Check for multiple fault codes. Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
110	4	145	Amber	Engine coolant temperature 1 sensor circuit - voltage below normal or shorted to low source.	Possible white smoke. No engine protection for engine coolant temperature.	Check for multiple fault codes. Call Cummins service.
110	15	2963	None	Engine coolant temperature high - data valid but above normal operating range - least severe level.	Progressive power derate.	Check coolant level. Make sure airflow through the radiator is not obstructed. Call Cummins service.
110	16	146	Amber	Engine coolant temperature - data valid but above normal operating range - moderately severe level.	Progressive power derate.	Check coolant level. Make sure airflow through the radiator is not obstructed. Call Cummins service.
157	0	449	Amber	Injector metering rail 1 pressure - data valid but above normal operating range - most severe level.	None or possible engine noise associated with higher injection pressures especially at idle or light load. Engine power is reduced.	Check for restrictions in fuel return line to tank. Check for air in fuel supply line. Call Cummins service.
157	1	2249	Amber	Injector metering rail 1 pressure - data valid but above normal operating range - most severe level.	Possible smoke, loss of power or hard starting.	Call Cummins service.
157	2	554	Amber	Injector metering rail 1 pressure - data erratic, intermittent or incorrect.	The ECM will estimate fuel pressure and power is reduced.	Call Cummins service.
157	3	451	Amber	Injector metering rail 1 pressure control circuit - voltage above normal or shorted to high source - high signal voltage detected at the rail fuel pressure sensor circuit.	Power and or speed derate.	Call Cummins service.
157	4	452	Amber	Injector metering rail 1 pressure control circuit - voltage below normal or shorted to low source - low signal voltage detected at the rail fuel pressure sensor circuit.	Power and or speed derate.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
157	16	553	Amber	Injector metering rail 1 pressure - data valid but above normal operating range - moderately severe level.	None or possible engine noise associated with higher injection pressures especially at idle or light load. Engine power is reduced.	Call Cummins service
157	18	559	Amber	Fuel pump delivery pressure low - data valid but below normal operating range - moderately severe level.	Possible white smoke, loss of power or hard starting. Engine can possibly not start.	Check for fuel inlet restriction. Check for air in fuel supply line. Check for plugged fuel filter. Check fuel return line restriction. Call Cummins service.
166	2	951	None	Cylinder power imbalance between cylinders detected by the ECM.	Possible low power, rough idle or misfire.	Call Cummins service.
167	1	598	Red	Electrical charging system voltage low - data valid but below normal operating range - most severe level.	Red warning lamp is illuminated until the low battery voltage condition is corrected.	Check for undercharged batteries due to faulty alternator or regulator. Call Cummins service.
167	16	596	Amber	Electrical charging system voltage high - data valid but above normal operating range - moderately severe level.	Amber warning lamp is illuminated until the high battery voltage condition is corrected.	Check for faulty alternator or regulator overcharging system. Call Cummins service.
167	18	597	Amber	Electrical charging system voltage low - data valid but below normal operating range - moderately severe level.	Amber warning lamp is illuminated until the low battery voltage condition is corrected.	Check for undercharged batteries due to faulty alternator or regulator. Check for high-current devices on vehicle such as radio amplifiers, additional exterior lighting or other added on accessories. Call Cummins service.
168	16	442	Amber	Battery 1 voltage - data valid but above normal operational range - moderately severe level.	Possible electrical damage to all electrical components.	Check for faulty alternator or regulator overcharging system (over 36 V). Batteries connected in series instead of parallel. Incorrect jump starting procedure. Call Cummins service.
168	18	441	Amber	Battery 1 voltage - data valid but below normal operational range - moderately severe level.	Engine may stop running or may not start.	Check for weak batteries. Check for low voltage below 6 volts during cranking. Call Cummins service.
190	0	234	Red	Engine crankshaft speed/ position - data valid but above normal operating range - most severe level.	Fuel injection disabled until engine speed falls below the overspeed limit.	Overspeed from hydrostatic braking or down hill operation. Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
190	2	689	Amber	Engine crankshaft speed/ position - data erratic, intermittent or incorrect.	Engine can run rough. Possible poor starting. Engine runs using backup speed sensor. Engine power is reduced.	Call Cummins service.
190	2	2321	None	Engine speed/position sensor (crankshaft) - data erratic, intermittent or incorrect.	Engine may misfire. Engine power is reduced.	Call Cummins service.
251	2	319	Amber	Real - time clock power interrupt - data erratic, intermittent or incorrect.	None on performance. Data in the ECM will not have accurate time and date information.	Call Cummins service.
611	4	238	Amber	Sensor supply 3 circuit - voltage below normal or shorted to low source.	Possible hard starting and rough running.	Call Cummins service.
611	15	2347	Amber	Turbocharger compressor outlet temperature - data above normal.	Fueling to the engine is limited.	Check for air leaks between air cleaner and turbocharger. Call Cummins service.
611	16	2292	Amber	Fuel inlet meter device - data valid but above normal operating range - moderately severe level.	Possible smoke, loss of power or hard starting. Engine power is derated.	Check for fuel inlet restriction. Check for air in fuel supply line. Check for plugged fuel filter. Call cummins service.
611	18	2293	Amber	Fuel inlet meter device flow demand lower than expected - data valid but below normal operating range - moderately severe level.	None or possible engine noise associated with higher injection pressures especially at idle or light load. Engine power is reduced.	Check for air in fuel supply line. Check fuel return line restriction. Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
611	31	757	Amber	Engine control module data lost - condition exists.	Possible no noticeable performance effects. Engine dying or hard starting.	Call Cummins service.
612	2	115	Red	Engine speed/position sensor circuit lost signal - data erratic, intermittent or incorrect.	Fueling to the injectors is disabled and the engine can not be started.	Call Cummins service.
623	4	244	Amber	Red stop lamp driver circuit - voltage below normal or shorted to low source.	Possible no noticeable performance effects. Engine dying or hard starting.	Call Cummins service.
627	2	1117	None	Power supply lost with ignition on - data erratic, intermittent or incorrect. supply voltage to the ECM fell below 6.2 VDC momentarily or the ECM was not allowed to power down correctly (retain battery voltage for 30 seconds after key off).	Possible no noticeable performance effects or engine dying or hard starting. Fault information, trip information and maintenance data may be inaccurate.	Check for loose or open power supply circuit connections or high resistance in ECM battery supply circuits. Cycle through normal engine start and shutdown to clear fault. If fault does not clear call Cummins service.
627	12	351	Amber	Injector power supply - bad intelligent device or component.	Possible smoke, low power, engine misfire and/or engine will not start.	Call Cummins service.
629	12	111	Red	Engine control module - critical internal failure.	Engine may not start.	Call Cummins service.
630	2	341	Amber	Engine control module data lost - data erratic, intermittent or incorrect.	Possible no noticeable performance effects. Engine dying or hard starting.	Check power and ground connections to 4 pin connector on ECM. Call Cummins service.
630	31	2217	Amber	Engine control module calibration program memory (RAM) corruption - condition exists.	Possible no noticeable performance effects. Engine dying or hard starting.	Check power and ground connections to 4 pin connector on ECM. Call Cummins service.
633	31	2311	Amber	Fueling actuator number 1 circuit error condition exists.	Possible low power.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
639	2	426	None	SAE J1939 data link cannot transmit - communication between the ECM and another device on the J1939 data link has been lost.	None on performance. J1939 devices possibly do not operate.	Check J1939 data link connections. Call Cummins service.
651	5	322	Amber	Injector solenoid driver cylinder 1 circuit - current below normal or open circuit.	Engine can misfire or possibly run rough.	Call Cummins service.
651	7	1139	Amber	Injector solenoid driver cylinder 1 - mechanical system not responding properly or out of adjustment.	Engine will shut down.	Call Cummins service.
652	5	331	Amber	Injector solenoid driver cylinder 2 circuit - current below normal or open circuit.	Engine can misfire or possibly run rough.	Call Cummins service.
652	7	1141	Amber	Injector solenoid driver cylinder 2 - mechanical system not responding properly or out of adjustment.	Engine will shut down.	Call Cummins service.
653	5	324	Amber	Injector solenoid driver cylinder 3 circuit - current below normal or open circuit.	Engine can misfire or possibly run rough.	Call Cummins service.
653	7	1142	Amber	Injector solenoid driver cylinder 3 - mechanical system not responding properly or out of adjustment.	Engine will shut down.	Call Cummins service.
654	5	332	Amber	Injector solenoid driver cylinder 4 circuit - current below normal or open circuit.	Engine can misfire or possibly run rough.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
654	7	1143	Amber	Injector solenoid driver cylinder 4 - mechanical system not responding properly or out of adjustment.	Engine will shut down.	Call Cummins service.
655	5	323	Amber	Injector solenoid driver cylinder 5 circuit - current below normal or open circuit.	Engine can misfire or possibly run rough.	Call Cummins service.
655	7	1144	Amber	Injector solenoid driver cylinder 5 - mechanical system not responding properly or out of adjustment.	Engine will shut down.	Call Cummins service.
656	5	325	Amber	Injector solenoid driver cylinder 6 circuit - current below normal or open circuit.	Engine can misfire or possibly run rough.	Call Cummins service.
656	7	1145	Amber	Injector solenoid driver cylinder 6 - mechanical system not responding properly or out of adjustment.	Engine will shut down.	Call Cummins service.
723	2	778	Amber	Engine speed sensor (camshaft) error - data erratic, intermittent or incorrect.	Possible poor starting. Engine power derate.	Call Cummins service.
723	2	2322	None	Backup engine speed/ position sensor number 2 - data erratic, intermittent or incorrect.	Possible low power.	Call Cummins service.
723	7	731	Amber	Engine speed sensor/ position camshaft and crankshaft misalignment - mechanical system not responding properly.	Engine power derate. Excessive smoke, hard starting and rough idle possible.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
729	3	2555	Amber	Intake air heater #1 circuit - voltage above normal or shorted to high source.	The intake air heaters may be on or off all the time.	Check intake air heater wiring circuit and relays. Call Cummins service.
729	4	2556	Amber	Intake air heater #1 circuit - voltage below normal or shorted to low source.	The intake air heaters may be on or off all the time.	Check intake air heater wiring circuit and relays. Call Cummins service.
1043	4	284	Amber	Engine speed/position sensor (crankshaft) supply voltage circuit - voltage below normal or shorted to low source.	Possible hard starting and rough running.	Call Cummins service.
1075	3	2265	Amber	Electric lift pump for engine fuel supply circuit - voltage above normal or shorted to high source. High voltage or open detected at the fuel lift pump signal circuit.	Engine may be difficult to start.	Call Cummins service.
1075	4	2266	Amber	Electric lift pump for engine fuel supply circuit - voltage below normal or shorted to low source. Low signal voltage detected at the fuel lift pump signal circuit.	Engine may be difficult to start.	Call Cummins service.
1080	3	227	Amber	Sensor supply voltage number 2 circuit - voltage above normal or shorted to high source.	Engine power derate.	Call Cummins service.
1080	4	187	Amber	Sensor supply voltage number 2 circuit - voltage below normal or shorted to low source.	Engine power derate.	Call Cummins service.
1172	3	691	Amber	Turbocharger number 1 compressor inlet temperature sensor circuit - voltage above normal or shorted to high source.	Engine power derate.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
1172	4	692	Amber	Turbocharger number 1 compressor inlet temperature sensor circuit - volyage below normal or shorted to low source.	Engine power derate.	Call Cummins service.
1188	7	545	Amber	Turbocharger 1 wastegate control - mechanical system not responding properly or out of adjustment.	Engine power derate.	Check for tampered wastegate. Call Cummins service.
1209	3	2373	Amber	Exhaust gas pressure sensor circuit - shorted high.	Engine power derate.	Call Cummins service.
1209	4	2374	Amber	Exhaust gas pressure sensor circuit - shorted low.	Engine power derate.	Call Cummins service.
1322	31	1718	Amber	Engine misfire for multiple cylinders - condition exists.	Possible low power, rough idle or misfire.	Call Cummins service.
1323	31	1654	Amber	Engine misfire cylinder 1 - condition exists.	Possible low power, rough idle or misfire.	Call Cummins service.
1324	31	1655	Amber	Engine misfire cylinder 2 - condition exists.	Possible low power, rough idle or misfire.	Call Cummins service.
1325	31	1656	Amber	Engine misfire cylinder 3 - condition exists.	Possible low power, rough idle or misfire.	Call Cummins service.

Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
1326	31	1657	Amber	Engine misfire cylinder 4 - condition exists.	Possible low power, rough idle or misfire.	Call Cummins service.
1327	31	1658	Amber	Engine misfire cylinder 5 - condition exists.	Possible low power, rough idle or misfire.	Call Cummins service.
1328	31	1659	Amber	Engine misfire cylinder 6 - condition exists.	Possible low power, rough idle or misfire.	Call Cummins service.
1347	3	272	Amber	High fuel pressure solenoid valve circuit - voltage above normal or shorted to high source.	Engine will run poorly but will be severely derated. Rail pressure will be higher than commanded.	Call Cummins service.
1347	4	271	Amber	High fuel pressure solenoid valve circuit - voltage below normal or shorted to low source.	Engine will run poorly at idle. Engine will have low power. Fuel pressure will be higher than commanded.	Call Cummins service.
1347	7	281	Amber	Fuel pump pressurizing assembly 1 circuit - mechanical system not responding properly or out of adjustment. A pumping imbalance between the front and rear pumping plungers has been detected.	Engine will not run or possible low power.	Call Cummins service.
1348	3	275	Amber	Fuel pump pressurizing assembly 2 circuit - voltage above normal or shorted to high source.	Engine will not run or possible low power.	Call Cummins service.

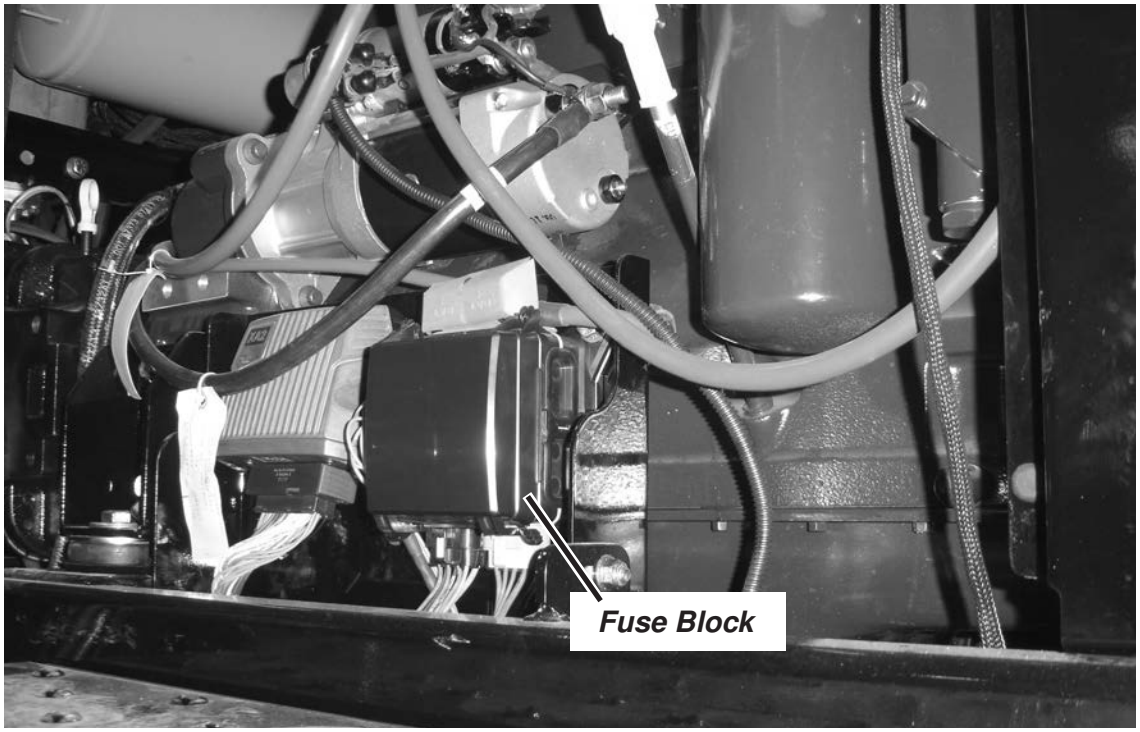
Engine Display SPN #	Engine Display FMI #	Cummins Fault Code #	Lamp Color	Reason For Fault	Effect (Only When Fault Code Is Active)	Course Of Action
1378	31	649	Amber	Change lubricating oil and filter - condition exists.	None on performance. Maintenance reminder only.	Change oil and oil filter.
2789	15	2346	Amber	Exhaust gas temperature - data above normal.	Engine power derate.	Check charge air cooler system for leaks. Call Cummins service.
3509	3	386	Amber	Sensor supply voltage number 1 circuit - voltage above normal or shorted to high source.	Engine power derate.	Check power and ground connections to 4 pin connector on ECM. Call Cummins service.
3509	4	352	Amber	Sensor supply voltage number 1 circuit - voltage below normal or shorted to low source.	Engine power derate.	Check power and ground connections to 4 pin connector on ECM. Call Cummins service.
3510	3	227	Amber	Sensor supply voltage number 2 circuit - voltage above normal or shorted to high source.	Engine power derate.	Call Cummins service.
3510	4	187	Amber	Sensor supply voltage number 2 circuit - voltage below normal or shorted to low source.	Engine power derate.	Call Cummins service.
3511	3	239	Amber	Sensor supply 3 circuit - voltage above normal or shorted to high source.	Possible hard starting and rough running.	Call Cummins service.
3511	4	238	Amber	Sensor supply 3 circuit - voltage below normal or shorted to low source.	Possible hard starting and rough running.	Call Cummins service.

Trouble Shooting

Problem	Possible Cause	Possible Solution
Wheels will not steer.	Transport pin locked.	Remove pin from locked position.
	Steering sensors out of adjustment.	See Miller Ag-Bag Dealer.
Feed table will not pull feed to rotor.	Feed too wet and heavy.	Remove some feed from belt to reduce weight.
	Drive chain binding.	Check for binding and re-align sprockets.
	Too much build up on belt rollers.	Clean belt roller of build up.
	Feed table belt too loose.	Tighten both feed table belt adjusters to get belt moving, then adjust tracking.
Anchors will not retact	Anchor float switch on.	Turn anchor float off.
	Anchors out too far. Too much pressure.	Pull machine ahead and retract anchors.
Steering angles on system display do not match actual steering angles on bagger	Steering sensors need to be reset.	Refer to adjustment section to reset steering sensors.
Wheels will not steer	Sensor adjustment.	See Miller Ag-Bag Dealer.
Front dash switches not working.	Fuse blown.	Replace fuse.
Exterior lights do not work.	Fuse blown.	Replace fuse.
	Blown or faulty lamp.	Replace lamp.
Bagger electrical system not working.	Battery disconnect switch turned to off.	Turn switch to on.

Fuse Block Location

The fuse block is located above the engine frame between the engine and the tunnel/feed table. Remove the cover to access the fuses. Be sure to reassemble the cover before operating.



Fuse Block

MINI-FUSES
F1 - TRAVEL LIGHT (20A)
F2 - BAG / BOOM LIGHT (20A)
F3 - ROTOR / PROPEL (15A)
F4 - FEED TABLE LIGHT (20A)
F5 - CONVENIENCE OUTLET SWITCHED POWER (30A)
F6 - 12 VOLT SWITCHED POWER (15A)
F7 - TRAVEL INVERSE (10A)
F8 - BEATER REVERSE (10A)
F9 - ECU POWER (10A)
F10 - IGNITION POWER (10A)
F11 - SPARE (10A)
F12 - SPARE (10A)
F13 - SPARE (10A)
F14 - SPARE (10A)
F15 - MD3 POWER (10A)
F16 - CONVENIENCE OUTLET BATTERY POWER (30A)

RELAYS
R1 - TRAVEL LIGHT
R2 - FEED TABLE LIGHT
R3 - TRAVEL INVERSE
R4 - BAG / BOOM LIGHT
R5 - BEATER REVERSE
R6 - 12 VOLT SWITCHED POWER
R7 - ROTOR / PROPEL
R8 - CONVENIENCE OUTLET SWITCHED POWER

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Fuse Location Decal (On Fuse Block Cover)

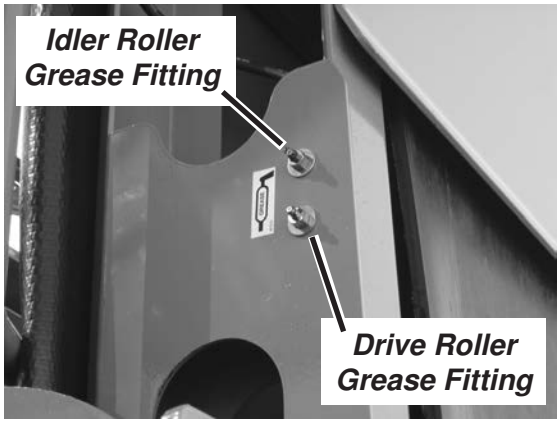
Lubrication

Use a good grade of Lithium Based grease on all fittings.

Feed Table Drive and Idler Rollers

Grease twice per bag

Locate the grease fittings on each side of the feed table. Clean off the fittings before attaching the grease gun. Grease each roller, wipe up excess grease. Grease these bearings twice each bag, two pumps at the beginning of the bag and two pumps halfway through the bag. Do not over grease. It is better to give the bearings smaller amounts of grease more often, than large amounts of grease.

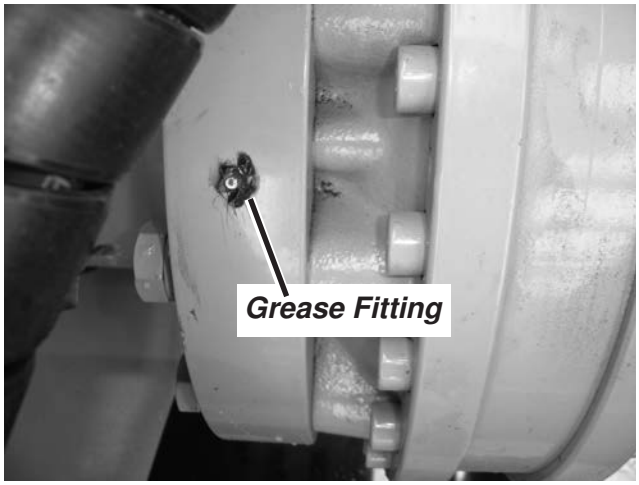


Idler & Drive Roller Bearing Grease Fittings (Feed Table In Raised Position)

Cab End Rotor Motor

Grease daily

There is a grease fitting in the flange of the housing of the cab end rotor motor. Clean off the fitting before attaching the grease gun. Give the rotor motor 2-3 pumps of grease daily. Wipe up excess grease.

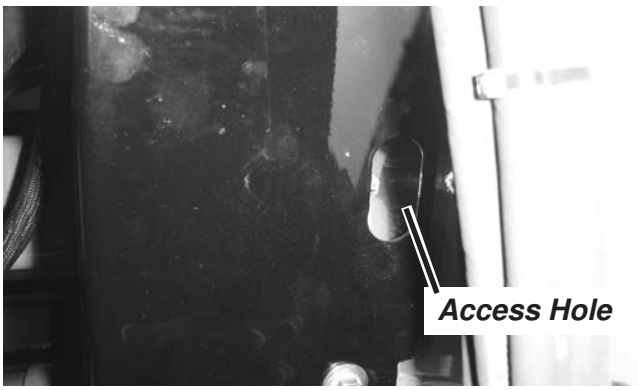


Cab End Rotor Motor Grease Fitting

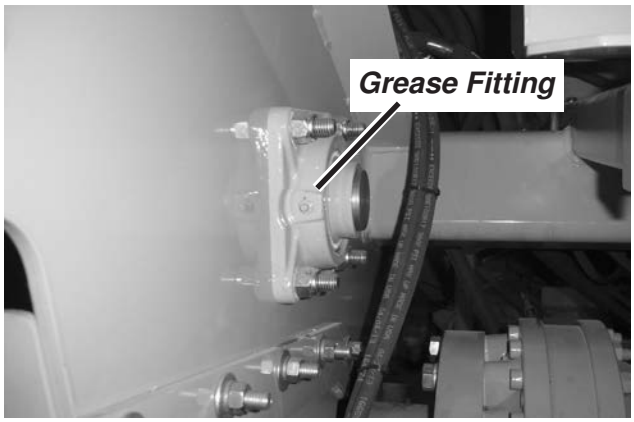
Lower Beater Bar Bearings
Grease twice per bag

On the engine side of the hopper, locate the shield covering the lower beater bar drive. Clean off the grease fitting through the access hole in the shield. Attach the grease gun. Wipe up excess grease. Grease this bearing twice each bag, two pumps at the beginning of the bag and two pumps halfway through the bag. Do not over grease. It is better to give the bearings smaller amounts of grease more often, than large amounts of grease.

Locate the lower beater bar bearing on the cab side of the hopper. Wipe off the fitting before attaching the grease gun. Wipe up excess grease. Grease this bearing twice each bag, two pumps at the beginning of the bag and two pumps halfway through the bag. Do not over grease. It is better to give the bearings smaller amounts of grease more often, than large amounts of grease.



Lower Beater Drive End Bearing Grease Fitting

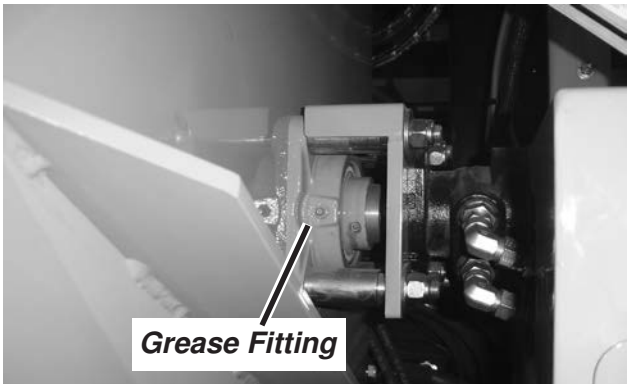


Lower Beater Bearing Grease Fitting

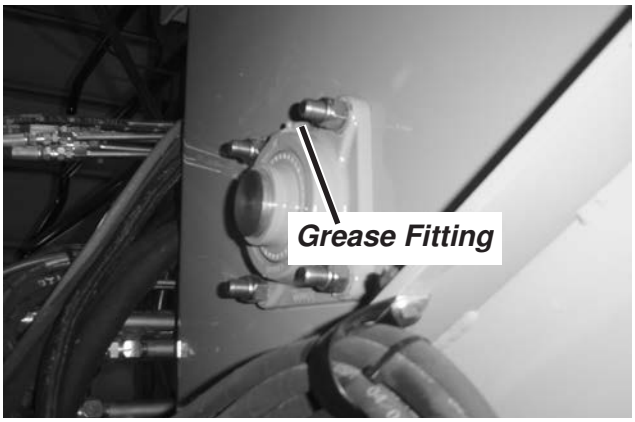
Upper Beater Bar Bearings
Grease twice per bag

On the cab side of the hopper, locate the drive for the upper beater bar. Clean off the grease fitting on the bearing. Attach the grease gun. Wipe up excess grease. Grease this bearing twice each bag, two pumps at the beginning of the bag and two pumps halfway through the bag. Do not over grease. It is better to give the bearings smaller amounts of grease more often, than large amounts of grease.

Locate the upper beater bar bearing on the engine side of the hopper. Wipe off the fitting before attaching the grease gun. Wipe up excess grease. Grease this bearing twice each bag, two pumps at the beginning of the bag and two pumps halfway through the bag. Do not over grease. It is better to give the bearings smaller amounts of grease more often, than large amounts of grease.



Upper Beater Drive End Bearing Grease Fitting



Upper Beater Bearing Grease Fitting

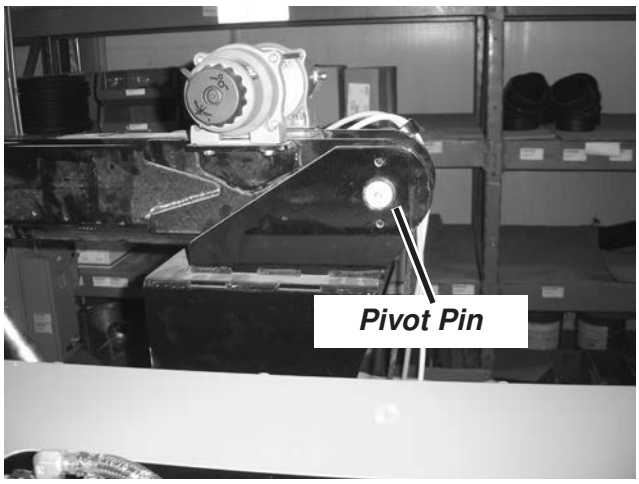
Anchor Cable Guide Rollers
Grease daily

There is a grease fitting in the head of the bolt that each of the cable guides pivot on. This fitting is for greasing the roller inside the guide. Clean off the fitting before attaching the grease gun. Wipe up excess grease.

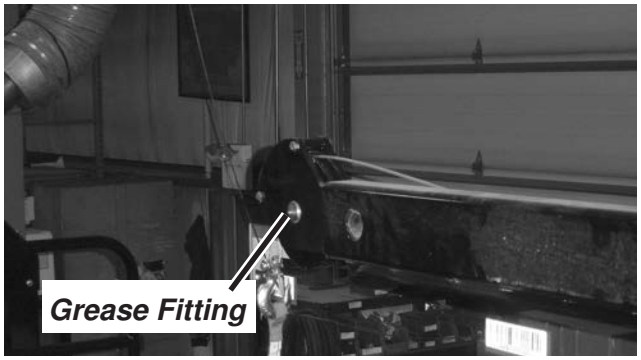
Pivot Bolt For Cable Guide and Roller

Bag Boom
Grease weekly

Locate the two grease fittings on the bag boom. One fitting is on the pivot pin where the arm pivots on the vertical tube. The other fitting is on the cable roller at the end of the boom arm. Clean off the fittings before attaching the grease gun. Wipe up any excess grease.



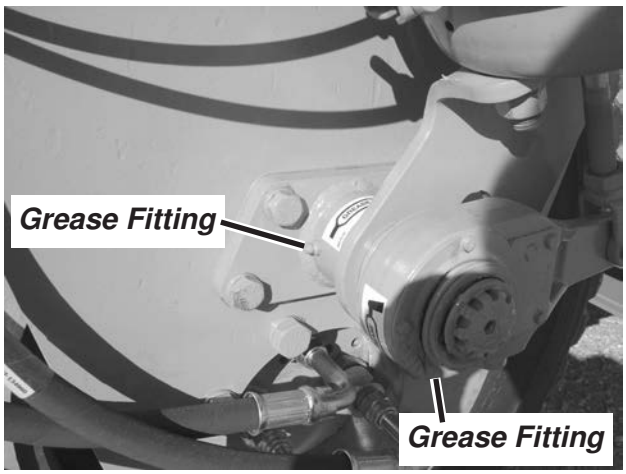
Bag Boom Pivot Pin Grease Fitting



Bag Boom Cable Roller Grease Fitting

Brake Pivot Arms
Grease weekly

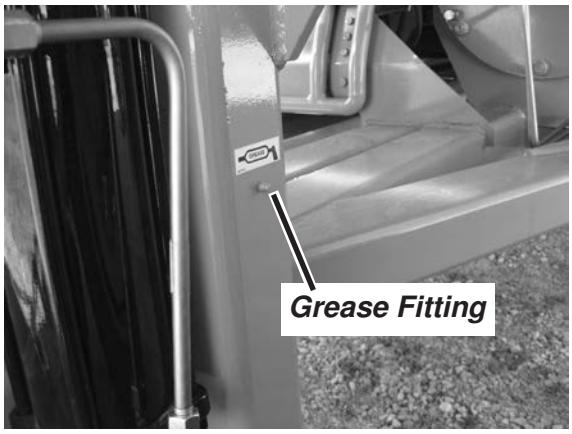
There are two grease fittings on each brake assembly. There are two arms on each brake, each one has a grease fitting. Wipe off the fittings before attaching the grease gun. Wipe up any excess grease. Grease the arms on all four brake assemblies.



Brake Pivot Arm Grease Fittings

Hydraulic Lift Jack Slide Tubes
Grease weekly

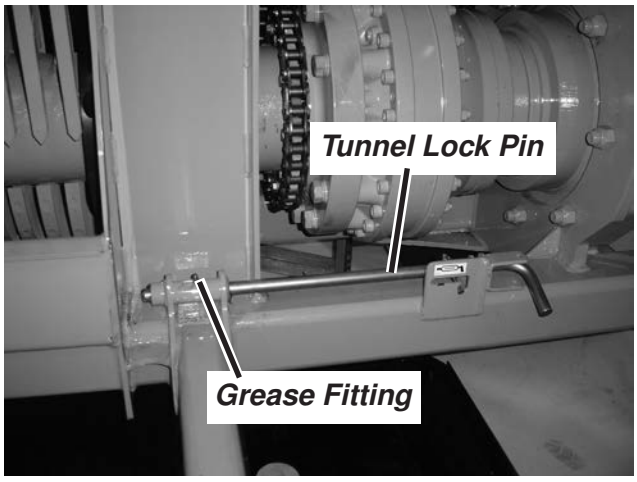
Locate the grease fitting on each lift jack slide tube (engine & cab end). Wipe off the fitting before attaching the grease gun. Apply ample grease to keep the slide tube well greased.



Lift Jack Slide Tube Grease Fitting

Tunnel Lock Pin Slide Tubes
Grease as required (whenever tunnel is removed)

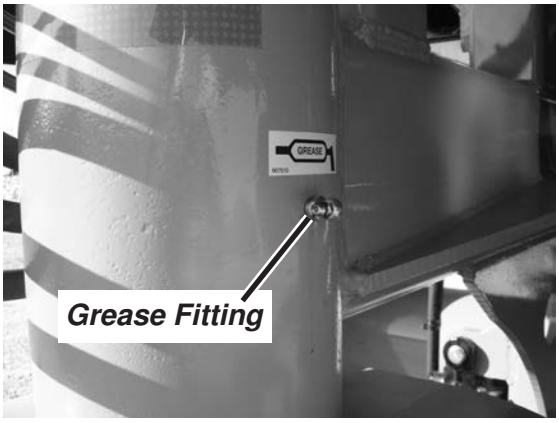
Locate the grease fittings on the tunnel lock pin slide tubes. One fitting is on each of the tunnel lock pin slide tubes. The lock pin slide tubes are behind each end of the tunnel mounted to the frame. Clean off the fittings before attaching the grease gun. Wipe up any excess grease.



Tunnel lock Pin Slide Tube Grease Fitting

Wheel Column Posts
Grease weekly

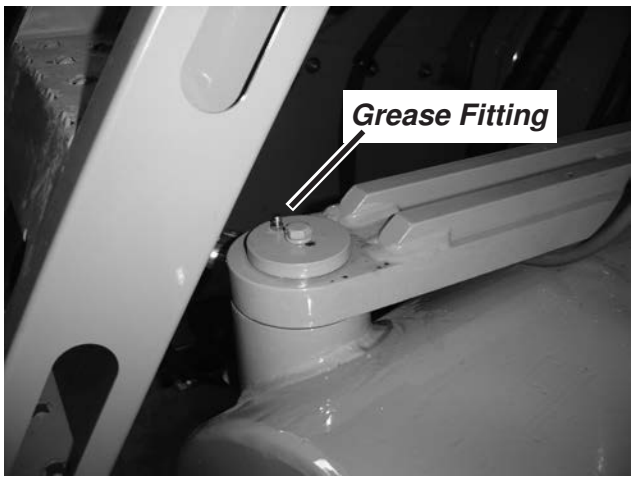
Locate the grease fittings on each of the wheel column posts. Clean off grease fittings before attaching the grease gun. Grease the fittings until grease comes out of the post tube. Wipe up any excess grease.



Wheel Column Post Grease Fittings

Steering Tie Rod
Grease weekly

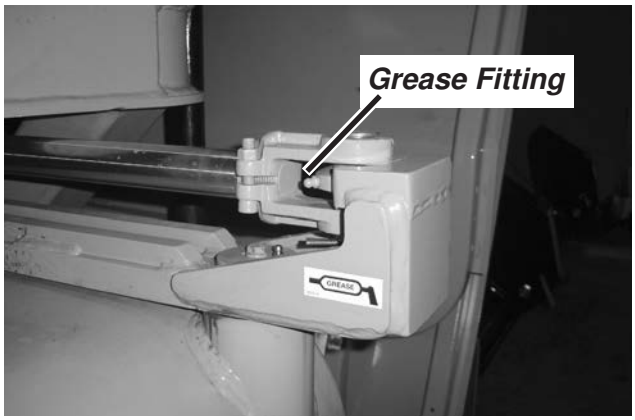
Locate the grease fittings (one on each end of tie rod). Clean off grease fittings before attaching the grease gun. Grease the fittings until grease comes out of each pivot. Wipe up any excess grease. Repeat for the other steering tie rod.



Steering Tie Rod Grease Fittings

Steering Cylinder Rod End
Grease weekly

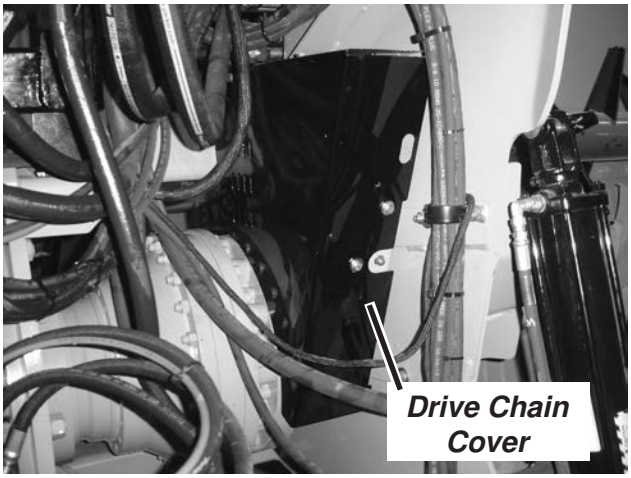
Locate the grease fittings (one on each steering cylinder rod end). Clean off grease fittings before attaching the grease gun. Grease the fittings until grease comes out of each pivot. Wipe up any excess grease. Repeat for the other steering cylinder rod end.



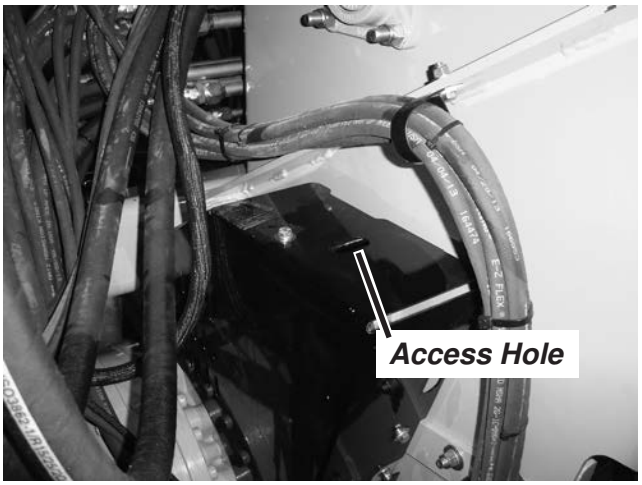
Steering Cylinder Rod End Grease Fittings

Beater Bar Drive Chain
Oil twice per bag

Oil the beater bar drive chain twice per bag. Once at the beginning of the bag and again half way through the bag. Oil the chain through the access hole in the cover at the engine side of the tunnel.



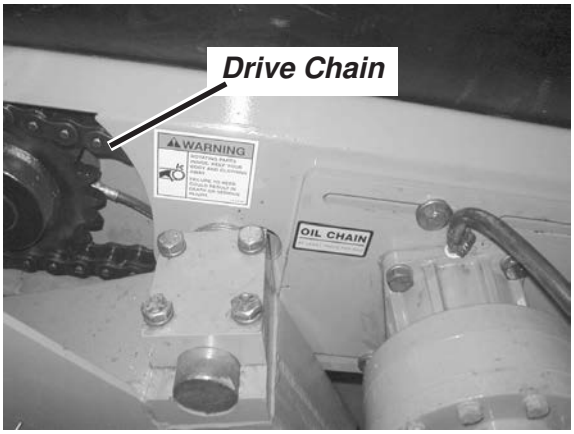
Lower Beater Bar Drive Chain Cover



Oil Lower Beater Bar Drive Chain

Feed Table Drive Chain
Oil twice per bag

Oil the feed table drive chain twice per bag. Once at the beginning of the bag and again half way through the bag. Oil the chain through the opening next to the feed table drive chain motor on the engine side of the feed table at the lower end.



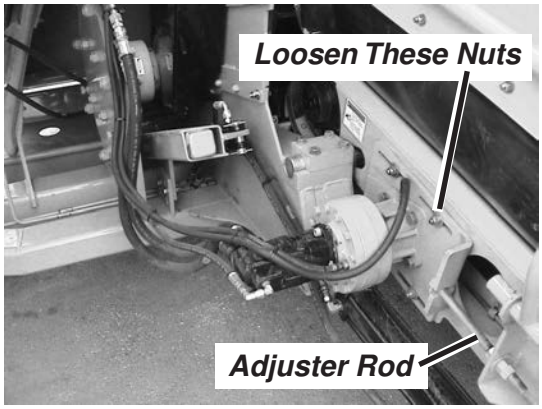
Oil Feed Table Drive Chain

Adjustments

Feed Table Drive Chain

The feed table drive chain will require periodic inspection and adjustment. Adjust as follows:

1. Lower the feed table down to the ground.
2. On the cab side of the feed table, locate the hydraulic drive motor for the feed table belt.
3. Loosen the four nuts holding the drive motor mounting plate to the side of the feed table.
4. Loosen the inner adjustment nut and the outer lock nut on the adjuster rod. Use the outer adjustment nut to tighten the drive chain.
5. After drive chain is tight (all slack removed), tighten the inner adjustment nut and then the outer locknut down against the outer adjustment nut to hold the adjuster in position.
6. Tighten the four nuts holding the drive motor mounting plate to the side of the feed table. Tighten securely.



Feed Table Drive Chain Adjustment

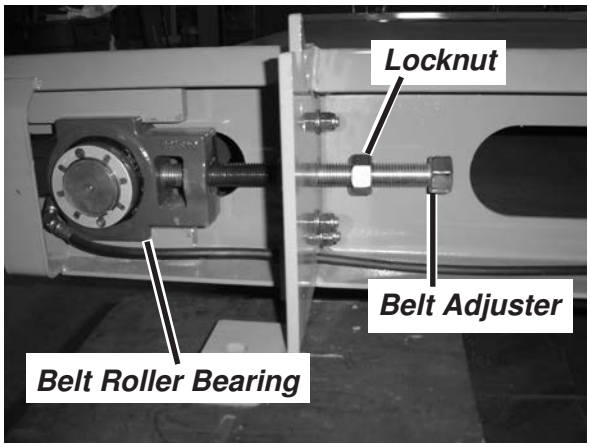
Feed Table Belt

If the feed table belt is too loose and begins to slip or does not track straight the belt needs to be adjusted.

IMPORTANT: Do not overtighten feed table belt, this may result in belt damage and premature wear of roller bearings.

Adjust as follows:

1. Lower the feed table down to the ground.
2. Tighten the adjustment bolt to push the belt away from the side you are tightening. Tighten the locknut when finished.
3. Adjust the opposite side the same amount.
4. Adjust the belt to run straight in the feed table. If it does not run straight, adjust either side as needed until belt runs straight. Tighten locknuts on each side when finished.



Feed Table Belt Adjustment

Lower Beater Bar Drive Chain

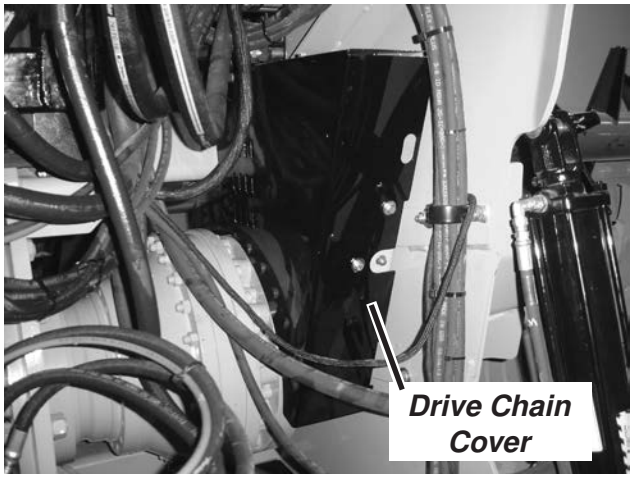
The chain for the lower beater bar is tensioned by a spring loaded tensioner. Periodically check to make sure the tensioner is pivoting freely and providing tension on the chain.

The tensioner is located under the cover at the engine side of the tunnel.

WARNING

Do not operate the bagger unless all guards and covers are secured in place or closed. Moving parts inside could cause serious injury or death.

Be sure to reassemble the cover to the frame before operating. Never operate bagger with shields or covers off or missing.



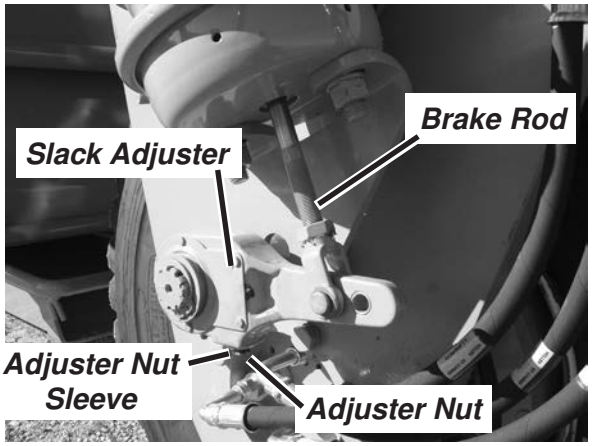
Lower Beater Drive Chain Cover

Brake Slack Adjusters

WARNING

To prevent machine from rolling, securely block both sides of the wheels before releasing the parking brake.

1. Release the parking brake.
2. Slide the adjuster nut sleeve up. Use a 9/16” wrench on the adjuster nut.
3. Tighten the adjusting nut until snug by turning the wrench counter-clockwise looking from the top.
4. When the nut is snug, loosen 1/4 turn clockwise.
5. Make sure the adjuster sleeve slides down over the nut.
6. The slack adjuster will now move so the brake rod moves up and down 1/4”
7. Adjust all four brakes as needed.



Brake Slack Adusters

Setting Rotor Speed

By virtue of the hydrostatic rotor drive, the operator can select rotor speed from the display. Not only can he pick a specific speed, he can choose how the bagger controls that speed, fixed ratio, or constant speed.

- **In fixed ratio mode:** the target rotor speed selected by the operator is the theoretical speed of the rotor at rated engine rpm. As the engine slows down under load, so will the rotor.
- **In the constant speed mode:** the pump will try to maintain to selected speed, to the extent the pump has the flow to do so.

The rotor speed setting feature adjustments are done though the menu pages. There are two settings. One is for setting the desired rotor speed at rated engine rpm. The other is for choosing the desired speed control method. From the home screen, press the wrench (F2) key, then press Operator Adjustments key (F2 again), then use the UP/DN arrows to the right of the screen to scroll to each of the parameters, use the OK button to both enter that parameter and change it, then use the back arrow key, (to the right of F4 key) to complete the change and return to the list. The speed is set using the UP/DN arrows up to 60 rpm, although the machine might not be able to produce that speed. Continue pressing the back arrow key to return to the wrench page, press F1 to return to the home page.

Display Screen F Keys

Display Screen Keys

IQAN Display Screen Keys

Resetting Steering Sensors

If the steering angles on the System Monitor display do not match the actual steering angles on the bagger, the steering sensors need to be reset.

Reset as follows:

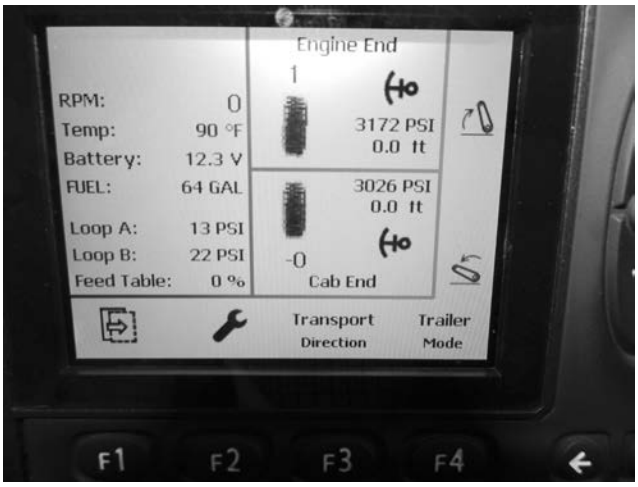
1. Press the F3 key to enter the transport/ trailer mode. Press the F4 key to enter the trailer mode.

2. Press and hold the “Align” button until the wheels are pointing engine end to cab end. You can watch the wheels move on the display.

3. Steer the wheels on the bagger so they are in line for bagging.

Align Button

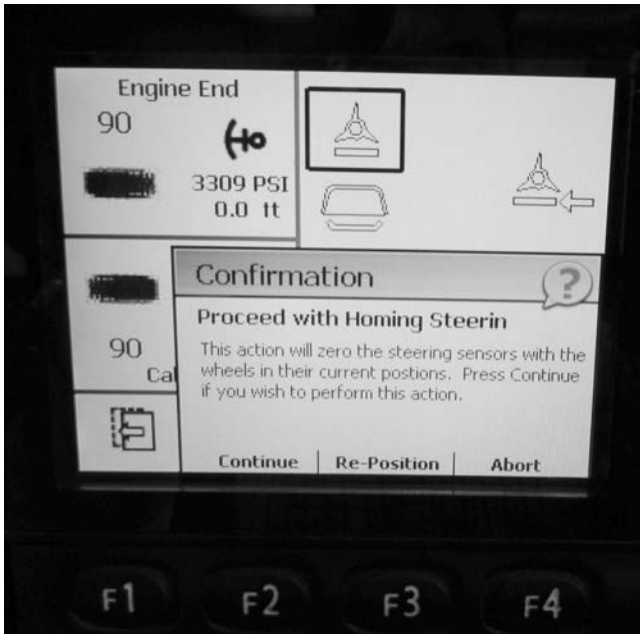
4. With the bagger in the “Trailer” mode press the “F2” key at the bottom of the display.



5. Press the “F1” key at the bottom of the display to “Home” the steering sensors.

6. Once the “F1” key is pressed the “Confirmation” window will display. Press the “Continue” (F2) key to zero (“Home”) the sensors.

7. Press the “F4” key at the bottom of the display to return to the main menu.



Maintenance

Maintenance Schedule

Review the following maintenance schedule regularly to determine when maintenance is required. Record the maintenance on the following pages whenever it is performed. Consult the other maintenance sections of this manual for proper maintenance procedures.

+ Perform at initial break in

X Required service interval

Service To Be Performed	Interval														
	10 Hours	Daily	As Required	Weekly	50 Hours	100 Hours	250 Hours	400 Hours	500 Hours	Annually	750 Hours	1000 Hours	2 Years	1500 Hours	2500 Hours
Check serpentine belt	+														
Tighten lug nuts	+			X											
Check engine oil level		X													
Check coolant level		X													
Check hydraulic oil level		X													
Clean hydraulic suction strainers		X													
Drain fuel filter/water separator		X													
Lubricate anchor cable guide rollers		X													
Check engine air filters		X													
Check oil level in gearbox	+	X													
Drain moisture from air storage tank		X													
Lubricate cab end rotor motor		X													
Remove trash/debris from chassis & engine area		X	X												
Lubricate feed table drive and idler roller bearings			X												
Lubricate upper and lower beater bar bearings			X												
Oil beater bar chain			X												
Oil feed table drive chain			X												
Replace engine air filters			X				X								
Clean hydraulic oil cooler			X												
Lubricate tunnel lock pin slide tubes			X												
Lubricate steering tie rod				X											
Lubricate bag boom				X											
Lubricate wheel column posts				X											
Lubricate brake pivot arms				X											
Lubricate engine & cab end lift slide tubes				X											
Inspect cooling package					X										
Check tire inflation						X									
Replace main hydraulic oil filter								X							
Replace case drain oil filter								X							
Replace fuel filter/water separator								X							
Check coolant PH condition (conventional coolant only)									X						
Change engine oil and filter									X						
Change gearbox oil (first 500 hours or 3 months)									X						
Change hydrostat filter									X						
Change feed table planetary oil									X	X					
Clean engine vent tube										X					
Repack feed table wheel bearings										X					

Maintenance Schedule continued

Review the following maintenance schedule regularly to determine when maintenance is required. Record the maintenance on the following pages whenever it is performed. Consult the other maintenance sections of this manual for proper maintenance procedures.

	Interval														
Service To Be Performed	**10 Hours**	**Daily**	**As Required**	**Weekly**	**50 Hours**	**100 Hours**	**250 Hours**	**400 Hours**	**500 Hours**	**Annually**	**750 Hours**	**1000 Hours**	**2 Years**	**1500 Hours**	**2500 Hours**
Check air intake system											X				
Check engine speeds											X				
Change gearbox oil (every 1000 hours or 6 months)												X			
Change hydraulic oil												X			
Flush cooling system and replace thermostats													X		
Check fuel injector nozzles														X	
Adjust engine valve clearance															X

Maintenance Record

Date	Service Performed

Date	Service Performed

Date	Service Performed

Engine Maintenance

Refer to the Cummins Engine Operation and Maintenance Manual for all engine maintenance procedures and maintenance schedules not covered in this manual.

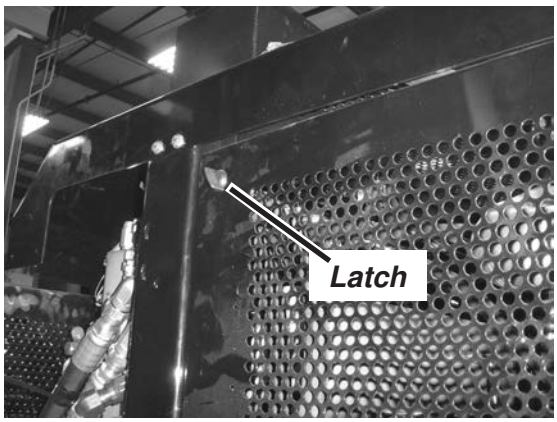
Engine Oil and Filter

Change the engine oil and filter as described in the Cummins Engine Operation and Maintenance Manual.

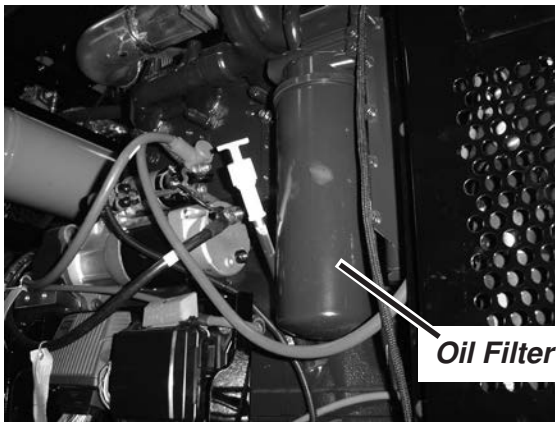
Drain the engine oil.

The engine oil filter is located on the tunnel side of the engine. Access the filter from the engine platform on the tunnel side of the engine compartment. Unlatch and remove the engine compartment cover to access the filter.

Be sure to replace the engine compartment cover and latch in place before operating the bagger.



Engine Compartment Cover Latches



Engine Oil Filter

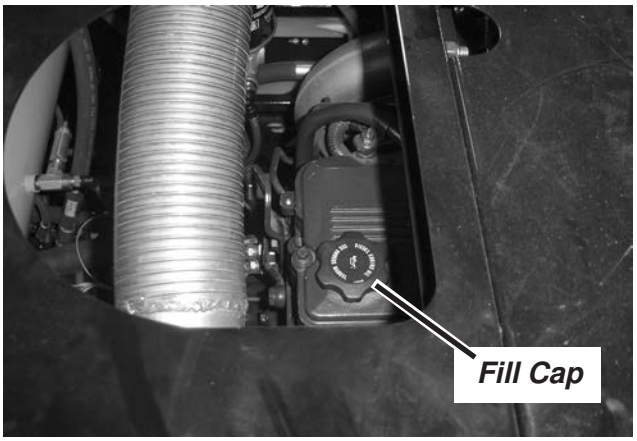
The crankcase fill cap is located on the top of the engine valve cover. Access the fill cap through the top of the engine compartment. The dipstick is mounted on the engine next to the oil filter. Unlatch and remove the engine compartment cover to access the dipstick. Fill to full mark on dipstick.

Engine oil capacity is:

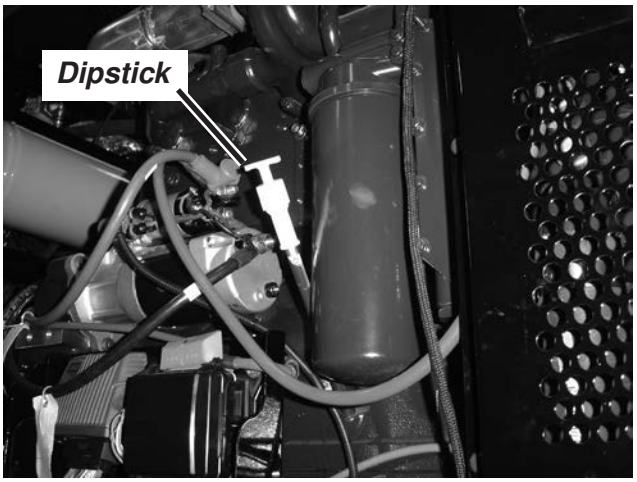
16 Qts (15.1L) to low mark on dipstick

20 Qts (18.9L) to high mark on dipstick

Be sure to replace the engine compartment cover and latch in place before operating the bagger.



Engine Oil Fill Cap



Engine Oil Dipstick

Primary Fuel Filter (Water Separator)

Drain Water From Water Separator Daily

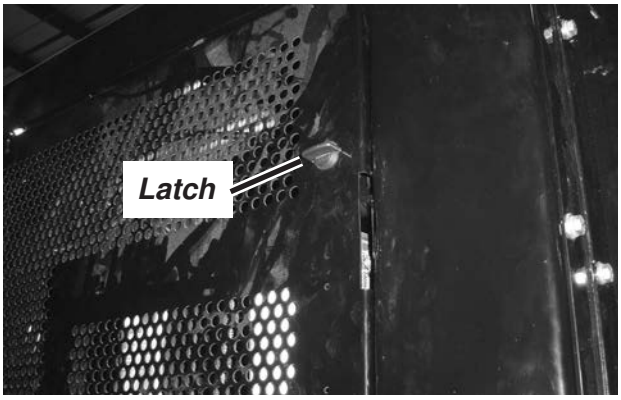
Locate the primary fuel filter water separator inside the engine compartment on the tunnel side. Unlatch and remove the engine compartment cover to access the filters.

Shut off the engine, open the valve on the bottom of the water separator and drain into a container until fuel clear of water is present.

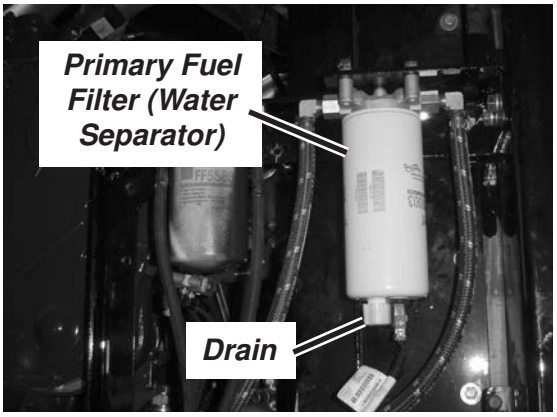
Shut the valve. Do not over tighten. Dispose of fuel properly.

Change the filter as outlined in the Cummins Engine Operation and Maintenance Manual or when the engine starts to lack power.

Be sure to replace the engine compartment cover and latch in place before operating the bagger.



Engine Compartment Cover Latches

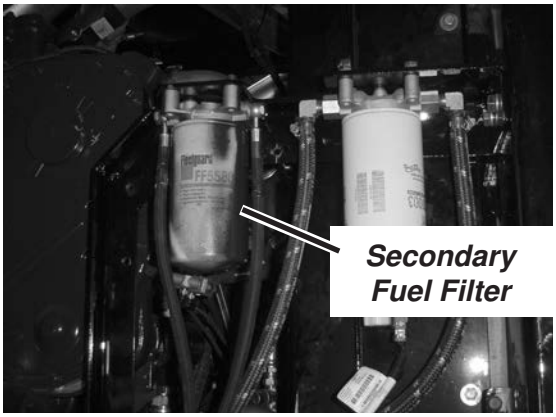


Primary Fuel Filter (Water Separator)

Secondary Fuel Filter

Change the secondary filter as required. The secondary fuel filter is located next to the water separator remote mounted inside the engine compartment on the tunnel side. Change the secondary fuel filter as outlined in the Cummins Operation and Maintenance Manual or when the engine starts to lack power.

Be sure to replace the engine compartment cover and latch in place before operating the bagger.



Secondary Fuel Filter

Chassis & Engine Compartment Inspection & Cleaning

Perform the following inspection and cleaning daily and as required by operating conditions

Inspect for and remove <u>all</u> trash and debris from around and on any hot components such as the exhaust, engine, turbocharger, batteries and cooling system at least once during each day and at the end of the day. Inspect and clean more often if operating conditions are severe. Keep these areas clean to avoid the possibility of fire and over-heating.

Radiator, Oil Cooler and Charge Air Cooler Heat Exchangers

WARNING

Do not service the engine or any components while the engine is running. Doing so could result in serious injury from contact with moving parts.

The engine radiator, charge air cooler and hydraulic oil cooler are in a side to side stacked arrangement.

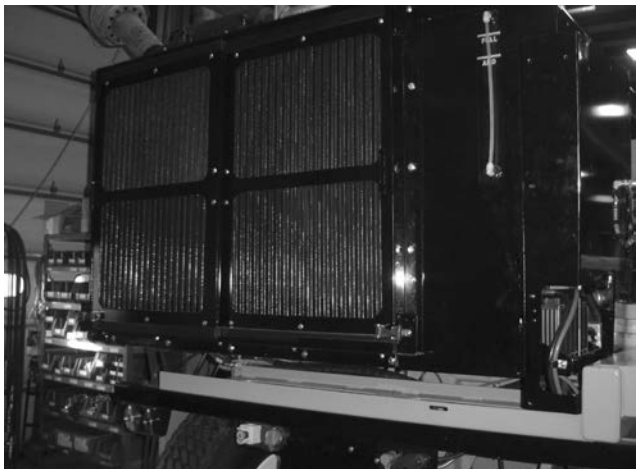
The cooling fan sucks air through the coolers from the outside and out past the engine.

Cooling Package Cleaning

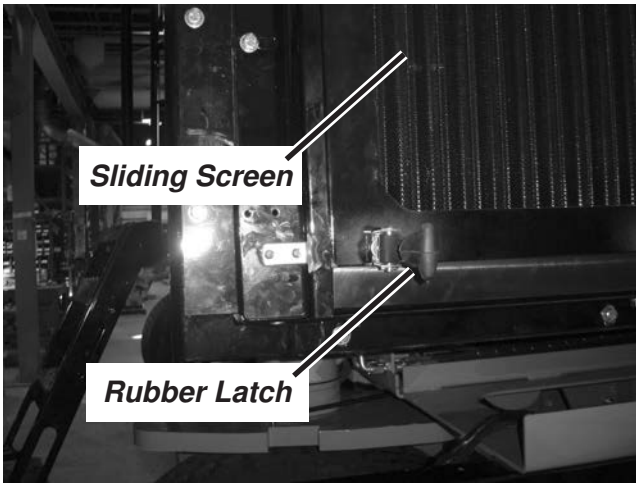
Cleaning should be directed from the inside of the cooling package toward the outside. Use a pressure washer or compressed air to clean the fins. The outside screens can be slid open for access to the cooling package fins. Locate the rubber latches on each sliding screen door. Un hook the rubber latch and slide the screen doors open. Be careful not to bend the fins.

Inspect the cooling package every 50 hours of operation for debris and any leakage of the fittings. Repair any leaks immediately. Straighten any dented or damaged cooling fins.

Be sure to close and latch the sliding screens before starting the engine.



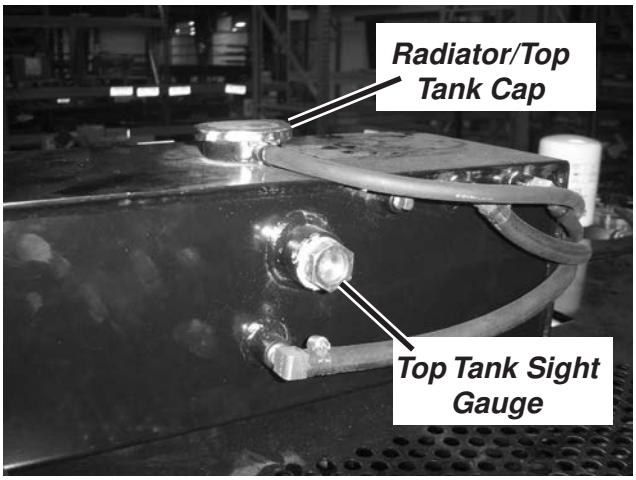
Cooling System



Sliding Screen Rubber latch

Engine Coolant

The radiator/top tank cap is located on the top of the engine compartment.



Radiator/Top Tank Cap

Level Check

WARNING

Open radiator/top tank cap slowly to relieve pressure before opening. Hot liquids under pressure can cause serious burns.

The level of coolant in the radiator/top tank should be visible in the sight gauge on the side of the tank. The coolant should be in the center of the sight gauge The capacity of the cooling system is approximately 8 gallons (30 liters).

Add Coolant

WARNING

Open radiator/top tank cap slowly to relieve pressure before opening. Hot liquids under pressure can cause serious burns.

If the coolant level is low, allow the engine and radiator to cool before attempting to open the radiator cap on the radiator/top tank. Add extended life coolant as needed to bring the level up to the center of the sight gauge. Replace radiator cap when finished.

Check Coolant PH Level (Conventional Coolant Only)

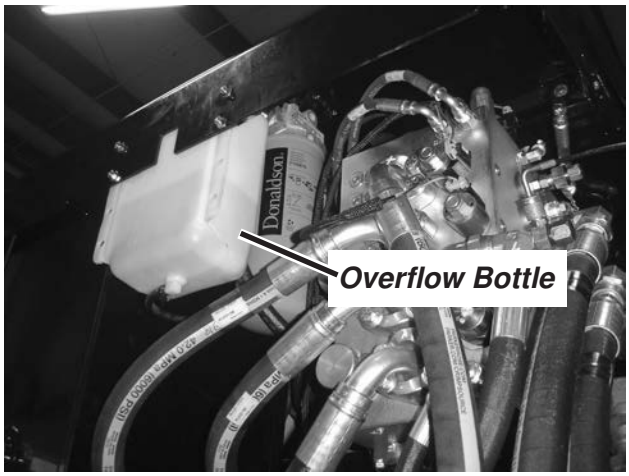
WARNING

Open radiator cap slowly to relieve pressure before opening. Hot liquids under pressure can cause serious burns.

Using a ph test strip kit test the ph level of the coolant at every oil change. The ph level should be maintained between 8.0 and 10.0. Test the coolant in the top tank.

Overflow Bottle

The overflow bottle is located inside the engine compartment on the feed table side. Do not use the overflow bottle to add coolant to the radiator.



Overflow Bottle

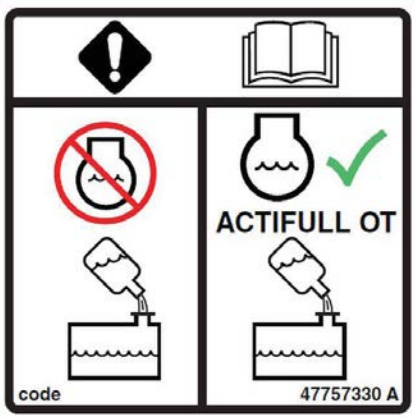
Organic Acid Technology (OAT) Coolant

Serial Number 4210004 & After are filled with an Organic Acid Technology (OAT) coolant solution such as **NEW HOLLAND AMBRA ACTIFULL™ OT EXTENDED LIFE COOLANT**. You should never mix the coolant types.

The decal shown is located near the fill point of the cooling system whenever the factory fill is **NEW HOLLAND AMBRA ACTIFULL™ OT EXTENDED LIFE COOLANT**.

NOTE: NEVER mix OAT coolant with conventional (extended life) coolant. Under no circumstances should you top off a cooling system with only water. You can use a refractometer to check the concentration level. You should not use Supplemental Coolant Additives (SCA) when using **NEW HOLLAND AMBRA ACTIFULL™ OT EXTENDED LIFE COOLANT**. Change the coolant solution at the recommended change interval.

When changing from conventional (extended life) coolant to OAT, you should follow the "Changing coolant types" procedure to attain the full benefit of the coolant.



Decal Filled With OAT Coolant

Changing Coolant Types

To change from conventional (extended life) coolant to OAT coolant:

1. Empty the engine cooling system by draining the coolant into a suitable container.
2. Fill the system with clean water.
3. Start the engine and run the engine for at least 30 min.

NOTE: Make sure that you activate the heating system (if equipped) to circulate fluid through the heater core.

4. Repeat steps 1 through 3 for a total of two washes.
5. Fill the system with OAT coolant. Refer to "Add Coolant" for the proper filling procedure.
6. Operate the engine until it is warm. Inspect the machine for leaks.
7. Attach the OAT decal to the machine when changing to OAT coolant. This will indicate the use of OAT coolant in the cooling system.

Definitions Of Coolant Types

Conventional (extended Life) coolant:

A coolant that relies on inorganic inhibitors such as silicates, nitrates and phosphates for corrosion and cavitation protection.

Organic Acid Technology (OAT) coolant:

A coolant that relies on inhibitors such as organic acid salts for corrosion and cavitation protection.

Engine Air Cleaner Filters

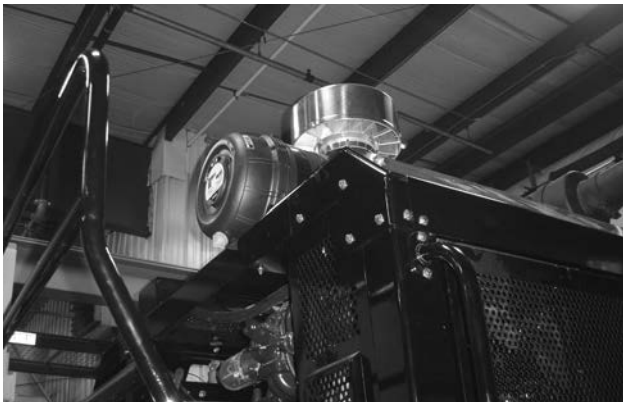
Perform the following procedures at 250 Hour or 3 Month Intervals

Inspect the filters twice weekly if operating in dusty conditions. Inspect daily if operating conditions are severe.

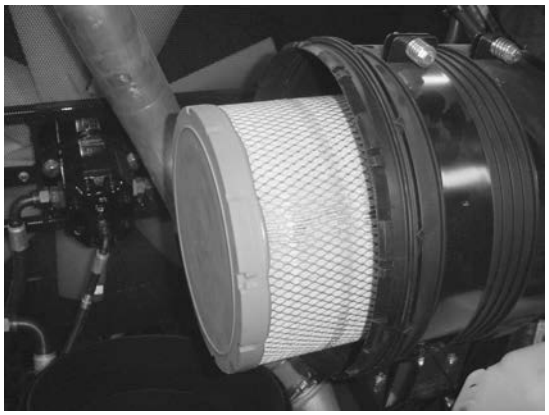
The air cleaner is mounted on the top side of the engine compartment.

Use the following procedure to replace the filters.

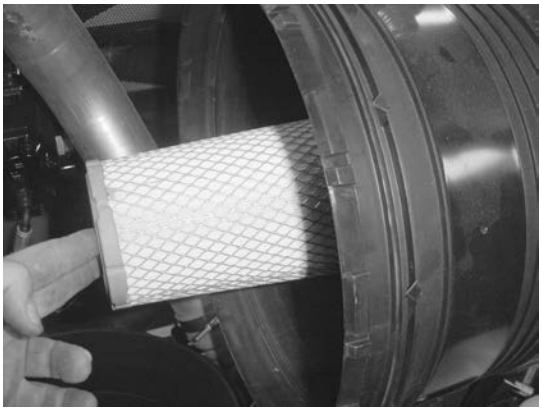
1. Release the locking tab on the cover, rotate the cover counterclockwise to remove the cover.
2. Pull the cover and primary filter assembly out of the cannister.
3. Do not remove the inner (secondary) filter unless it is to be replaced.
4. With the secondary filter in place, use a rag to wipe the inside of the filter cannister and cover clean.
5. If the secondary filter is being replaced, replace it after the cannister has been cleaned.
6. Check the primary filter for any damage and replace if any is discovered. Do not clean the primary filter, always replace the filter when the System Monitor indicates air filter is clogged.



Air Cleaner



Primary Filter



Inner (Secondary) Filter

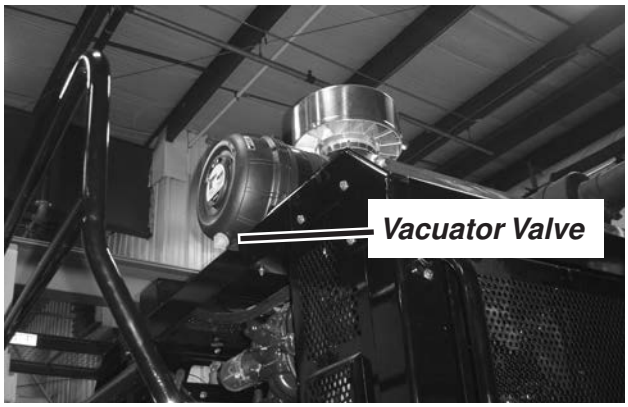
NOTE: Never operate the engine without an air cleaner. Intake air must be filtered to prevent dirt and debris from entering the engine and causing premature wear.

After servicing is complete, reinstall cover onto the cannister.

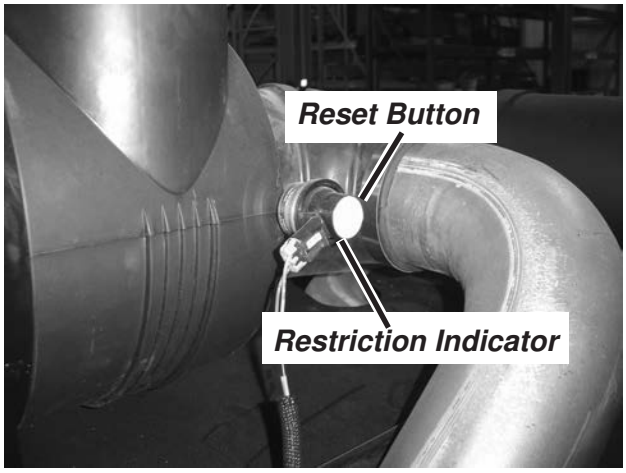
Rotate the cover clockwise and lock into position with the vacuator valve down.

Periodically check the vacuator valve on the air cleaner cannister to make sure it is closing and sealing when the engine is running. If the vacuator valve does not close and seal properly it must be replaced.

Reset the restriction indicator after the filters are replaced. Press the yellow button on the indicator to reset.



Air Cleaner Vacuator Valve



Air Cleaner Restriction Indicator

Air Storage Tank

Remove moisture daily.

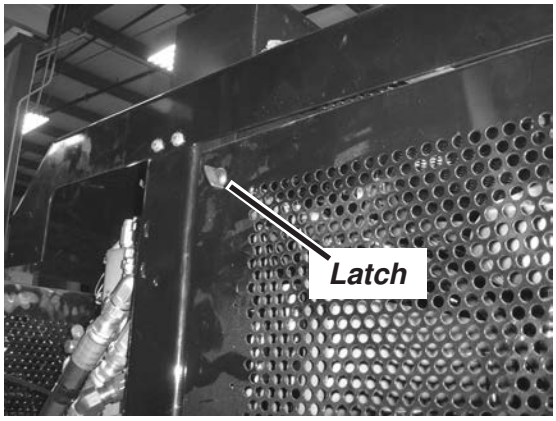
IMPORTANT: Be sure to remove all moisture from the air storage tank daily.

The air storage tank is located inside the engine compartment on the feed table side. Unlatch and remove the engine compartment cover to access the air storage tank.

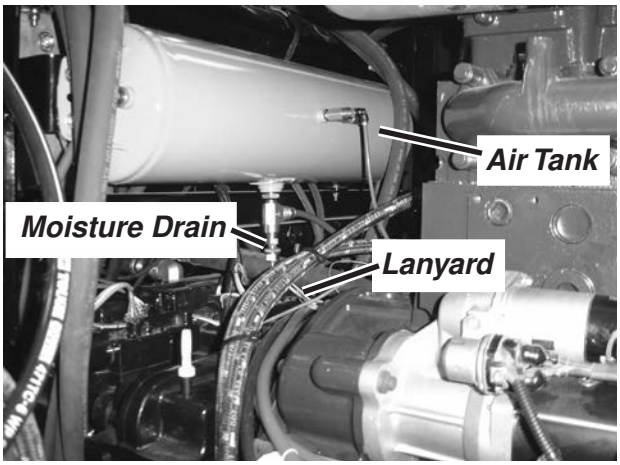
Locate the lanyard that is attached to the moisture drain on the bottom center of the tank.

Pull on the lanyard to open the valve. Hold the valve open until all moisture has been removed from the tank. Let go of the lanyard and the valve will close.

Be sure to replace the engine compartment cover and latch in place before operating the bagger.



Engine Compartment Cover Latches



Air Tank Drain Valve

Hydraulic Systems

IMPORTANT: There are two different systems on the bagger. Each system uses a different type of oil. Never mix oils in the systems. Refer to the proper system for recommendations.

They are:

Main Hydraulic System:
Type of Oil: ISO 68 Hydraulic Oil
Reservoir Capacity: 35 Gallons

Feed Table Planetary Drive:
Type of Oil: Synthetic 80W-140 Gear Lube
Feed Table Planetary Capacity: 1.25 Pints

WARNING

- **Avoid high pressure fluids.**
- **Avoid the hazard by relieving all hydraulic pressure from the system before disconnecting any lines or fittings. Tighten all connections before applying any pressure.**
- **Search for hydraulic oil leaks with a piece of cardboard. Protect your hands and body from high pressure fluids.**

Hydraulic System Cleanliness

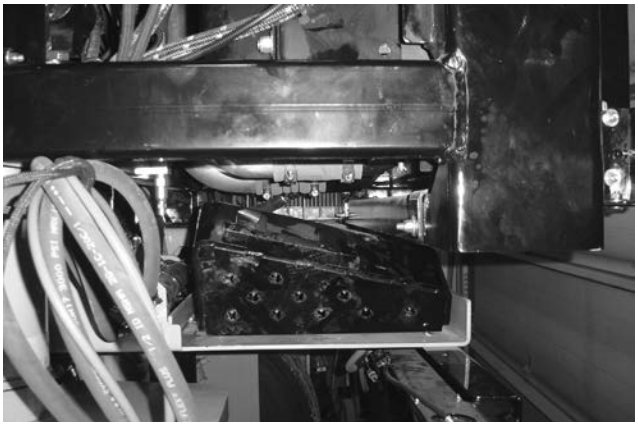
Important: The greatest contributor to hydraulic component failure is contamination of the oil with dirt and other debris. Keep all hydraulic access areas completely clean, such as around the hydraulic filter and filler cap. Immediately repair any fittings, hoses or other components where leakage is observed. Wipe up any leakage.

If the hydraulic system should be disconnected for service, protect the ends of hoses, tubing and ports of components from contamination with clean lint free towels or clean plastic bags, plugs or caps.

Before installing any replacement hose, flush the inside of the hose with clean diesel fuel or unused commercial petroleum cleaning solvent for ten seconds minimum. Do not use water, water soluble cleaners or compressed air.

Access To Hydraulic Fill & Filters

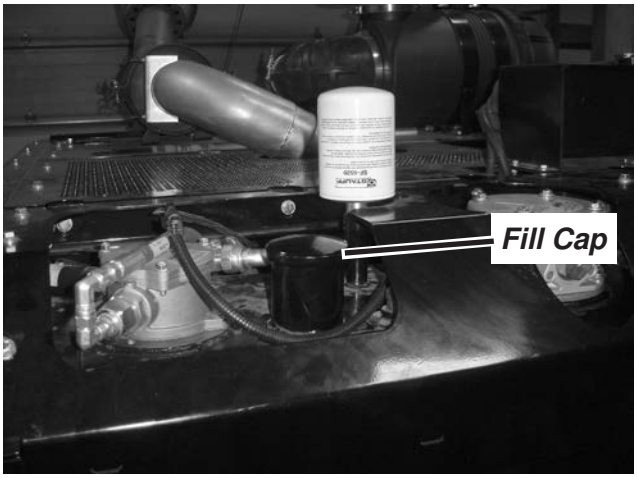
Important: The portable ladder from under the cooling package can be used to gain access to the platform on the tunnel side of the engine. Be sure to securely lock the ladder on to the mounting flange of the frame. When finished, store the ladder under the cooling package.



Portable Ladder Locked In Place Under Cooling Package

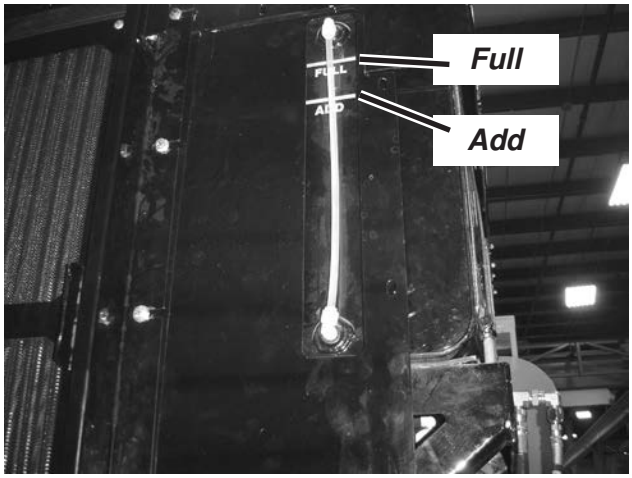
Main Hydraulic System Oil

The main hydraulic system reservoir is located next to the engine on the feed table side. The hydraulic oil fill cap is located on the top of the tank.



Main Hydraulic Oil Reservoir Fill

The hydraulic system reservoir holds approximately 35 gallons (132.5 liters). Do not over fill. Fill to the full mark on the hydraulic oil level gauge located on the rear of the reservoir.



Hydraulic Oil Reservoir Level Gauge

Main System Hydraulic Oil

It is important that a quality oil be used to insure proper longevity of hydraulic components. Following is the minimum specifications for hydraulic oil to be used on this bagger.

Typical Characteristics

ISO Classification HV-68

Viscosity, cSt @ 40° C 69.0

Viscosity, cSt @ 100° C 11.0

Viscosity, SUS @ 100° F 352

Viscosity, SUS @ 210° F 63.4

Viscosity, cPs @ -20° C (-4° F)..... 4940

Viscosity, cPs @ -30° C (-22° F)..... 28700

Viscosity Index, Typical 150

Viscosity Loss, Sonis Shear Method ..... <7%

Pour Point, °F, Typical ..... -38

Flash Point, °F, Typical 430

API Gravity 30.8

Some US mineral oil brands that meet these specifications are:

- Benz Flowmite 68 SS (shear stable)
- Amoco Rykon 68
- BP (Louisiana special) BATRANS HV68
- New Holland Multi G134
- Caltex RANDO HDZ68
- Castrol HYSPIN AWH68
- Cenex INDOL ISO 68
- Chevron RYKON Premium 68 or AW68MV
- Exxon UNIVIS N 68
- John Deere HY GARD (High Viscosity Only)
- Mobil DTE 16 M or DTE 10XL68
- Shell TELLUS T 68
- Texaco Rando HDZ 68

NOTE: In high temperature climates it may be desirable to change oil and fill with 100 weight hydraulic oil. The oil should be pre filtered to 3 micron with a filter cart to extend the life of the machine system filters.

Changing Main Hydraulic Reservoir Oil

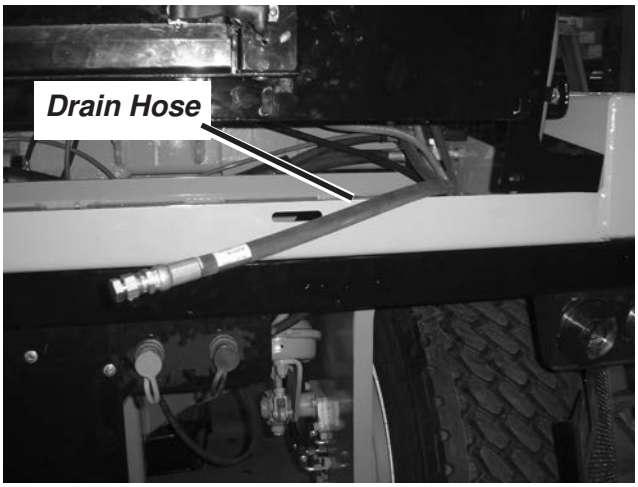
(Every 1000 Hours of Operation)

1. The most important element in maintaining hydraulic oil is to keep it clean, filtered and do not allow it to over heat. Clean filtered hydraulic oil is tan colored and if properly maintained is usable for a long time. Because it is possible to encounter contamination and possible high temperature applications, it is recommended that the oil be changed annually. Any time the oil is changed the hydraulic oil filters should also be changed. Refer to “Main Hydraulic Oil Filters” for correct procedure. There are three separate filters in the main hydraulic oil reservoir.

2. If the oil turns very dark brown, it is burned from overheating. If it is milky colored it has become contaminated. If either occurs, the oil must be changed regardless of the time interval.

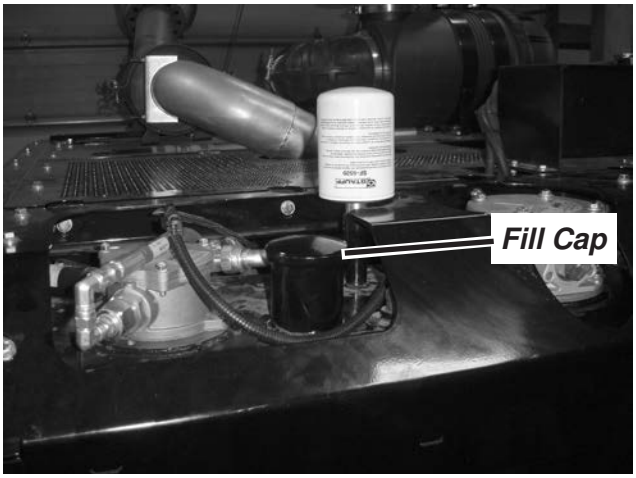
3. Drain the oil from the hydraulic oil reservoir into empty containers. The hydraulic system oil reservoir holds approximately 35 gallons (132.5 liters). Remove the drain plug from the reservoir drain hose. Use this hose to drain the reservoir. Dispose of used oil properly.

4. Replace the drain plug on the end of the hose.

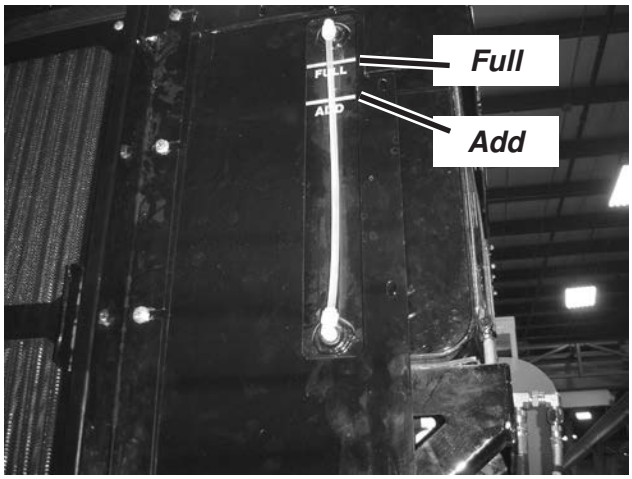


Hydraulic Oil Reservoir Drain Hose

5. Remove the fill cap from the hydraulic oil reservoir and refill with clean hydraulic oil. Fill reservoir until the oil reaches the “FULL” mark in the sight gauge. Do not over fill.



Main Hydraulic Oil Reservoir Fill



Hydraulic Oil Level Gauge

Main Hydraulic Oil Filters & Case Drain Filter
(Every 400 Hours of Operation, When Gauge Indicates or When Oil is Changed)

Replacing Main Hydraulic Filters (one on each end of hydraulic oil reservoir) or Case Drain Filter

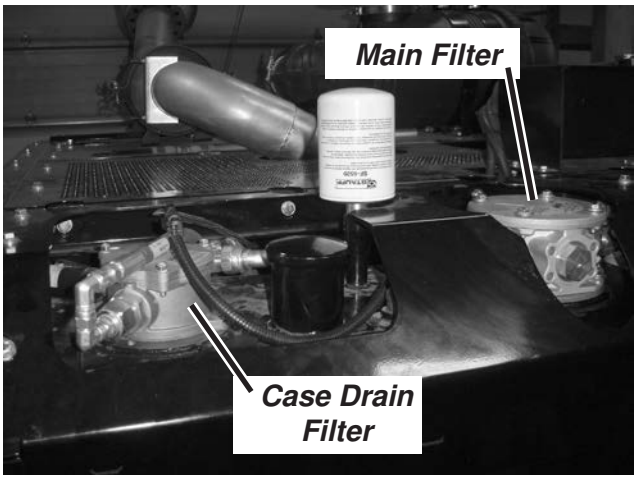
The main hydraulic oil system filters are located on the top side of the reservoir. Refer to the "Filters" chart on the "Important Reference Numbers" page for replacement filter part numbers.

These filters require replacement when the restriction indicator indicates that the flow through the filter is becoming restricted (gauge in yellow area). Always close any covers before operating the bagger.

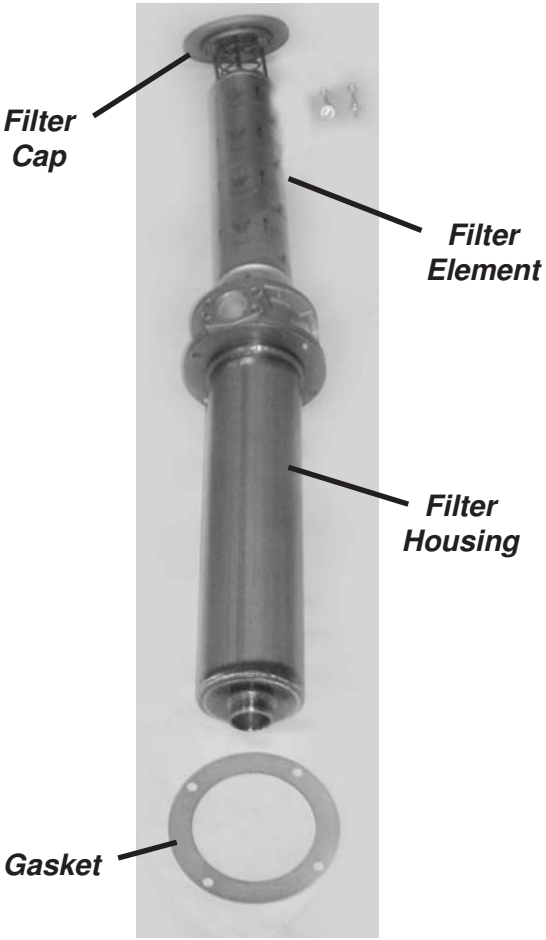
The case drain filter is located on the top side of the reservoir on the sight gauge end. This filter requires replacement when the restriction indicator indicates that the flow through the filter is becoming restricted (gauge in yellow area). Refer to the "Filters" chart on the "Important Reference Numbers" page for replacement filter part numbers.

To change Filters

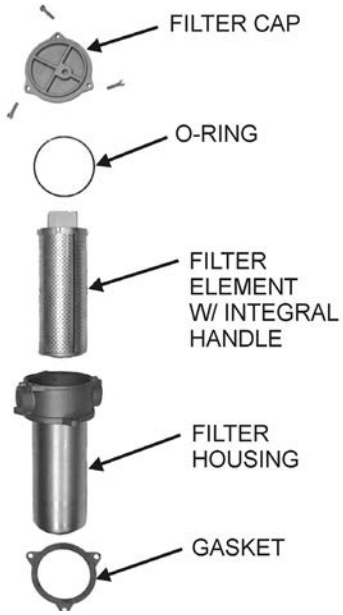
1. Remove the nuts from the studs around the filter cap and remove the filter assembly from the filter housing
2. Remove the filter element. Replace the element with a new element. Be sure to reinstall all gaskets. If gaskets or o-rings are deteriorated, replace with new parts.
3. Replace the filter assembly into the housing, being careful to line it up to properly seat the filter assembly in the housing.
4. Place the holding spring on the hub of the cap. Make sure to reinstall the o-ring seal. Reinstall the cap and tighten the nuts, being sure the spring and o-ring are properly seated so the suction filter seals to the face of the filter housing.



Main Hydraulic Filter & Case Drain Filter



Hydraulic Oil Return Filter



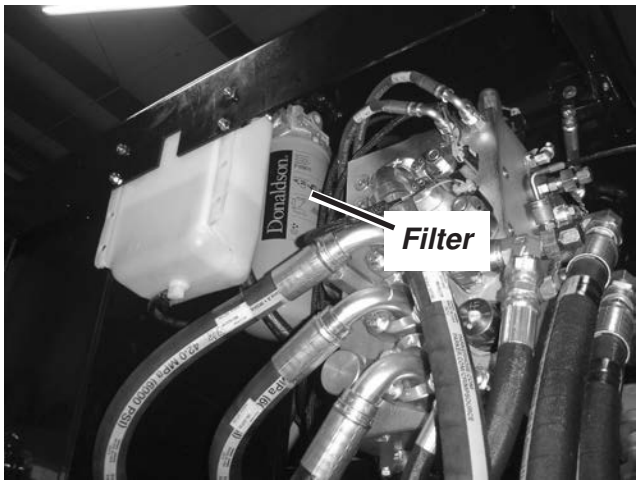
Case Drain Filter

Hydrostat Filter

(Change filter every 500 hours of operation)

Change hydrostat filter as follows:

1. Open the engine compartment cover on the feed table side of the engine compartment.
2. Clean the area around the filter and filter head. The filter is located on the feed table side just to the inside of the overflow bottle.
3. Remove the filter from the filter head.
4. Lightly oil the filter o-ring with clean oil. Fill the filter with clean ISO 68 hydraulic oil and install on to the filter head. Tighten 1/2 turn after initial contact. Do not over tighten.
5. Close and latch the engine compartment cover before operating the bagger.



Hydrostat Filter

Feed Table Planetary Oil

(Change oil every 500 hours of operation or annually)

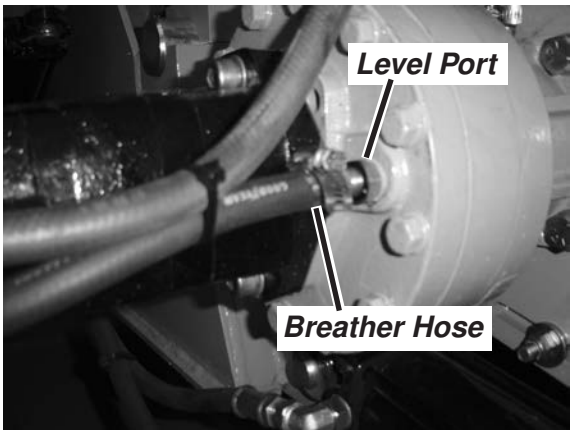
Level Check:

Check the oil level daily. To check the oil level in the feed table planetary, the feed table must be lowered down to the operating position.

Locate the breather hose on the planetary. The planetary is located at the lower end of the feed table on the cab side. Clean the area around the hose and remove the hose from the planetary. The oil level should be at the bottom of the breather hose hole.

If the oil is low, add synthetic 80W-140 gear lube oil through the level hole until the level is at the bottom of the hole.

Reassemble the breather hose to the planetary and tighten securely.

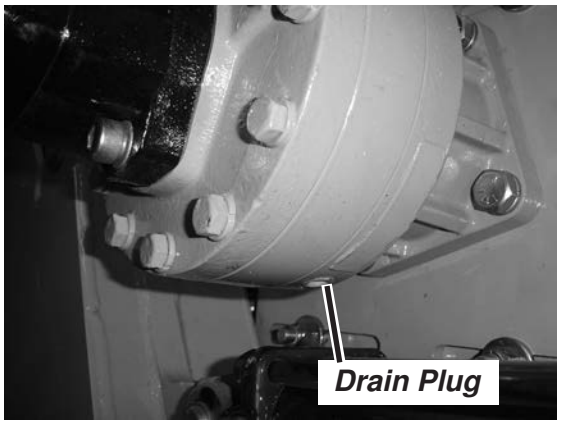


Feed Table Planetary Level Check

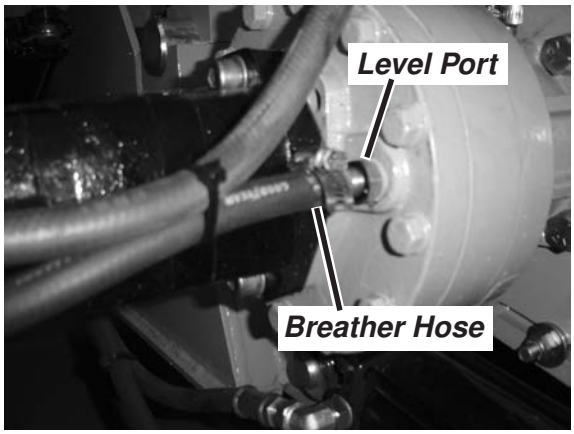
Change feed table planetary oil as follows:

The feed table must be lowered down to the operating position to drain the oil or to check level.

1. Locate the drain plug on the bottom of the planetary. Clean around the drain plug and remove.
2. Drain the oil into a suitable container. Replace the level plug after all the oil has drained. Dispose of the used oil properly.
3. Remove the breather hose from the level hole. Fill the planetary to the bottom of the breather hose hole with synthetic 80W-140 gear lube oil.
4. Reassemble the breather hose to the planetary and tighten securely.
5. Locate the feed table planetary breather in the engine compartment. Be sure the breather is clean. To easily locate the breather, follow the hose from the planetary up to the breather.



Feed Table Planetary Drain Plug



Feed Table Planetary Level Check

Gearbox Oil

(Change oil after the first 500 Hours or 3 months which ever occurs first, then every 1000 hours of operation or 6 months of service)

Level Check:

Check the oil level daily. To check the oil level in the gearbox, the engine must be shut off.

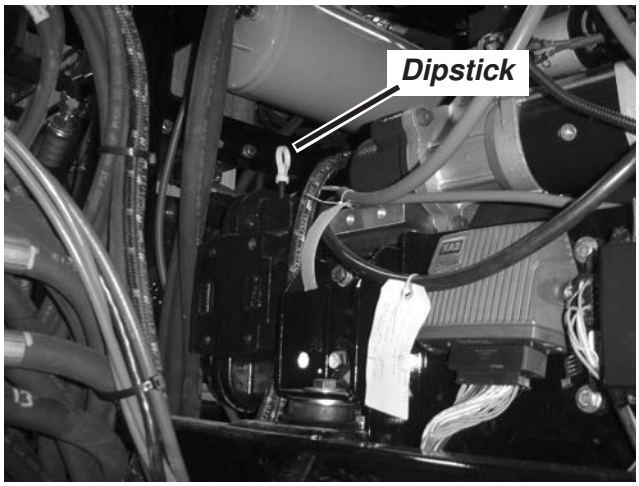
Locate the dipstick in the top of the gearbox toward the hooper side of the engine at the feed table side. Clean the area around the dipstick before removing. Oil should be up to the MAX mark on the dipstick. Do not overfill.

If the oil is low, add Synthetic Mobil SHC 630 gear lube oil through the dipstick hole until the level is at the MAX mark on the dipstick.

Change Oil:

Always drain the oil while the the unit is still warm.

Remove the drain plug at the bottom of the gearbox. Drain oil completely. Gearbox capacity is approximately 3.5 qts (3.3 liters). Clean and reinstall the magnetic drain plug. Fill the gearbox to the MAX mark on the dipstick.



Gearbox Dipstick

Check Hydraulic Hose and Fitting Condition

CAUTION:

Use of equipment with damaged hoses and/or fittings may result in personal injury or death.

1. Before operating machine, carefully make a visual inspection of all hoses and fittings, looking for leaks and/or other damage.
2. If a problem or defect is found, make all necessary repairs before operating machine.

WARNING:

Escaping fluid under pressure could penetrate the skin causing serious injury. Do not use your hand to search for hydraulic leaks. Use a piece of paper or cardboard.

Check Hydraulic Cylinders

CAUTION:

Use of equipment with damaged hydraulic cylinders may result in personal injury or death.

1. Before operating machine, carefully make a visual inspection of all hydraulic cylinders, looking for leaks and/or other damage.
2. If hydraulic cylinder damage is found, make all necessary repairs before operating machine.

Rotor Tooth Tine Caps
Replace as needed

WARNING

DO NOT lubricate, adjust and/ or service this machine unless the engine is shut off and ignition key is removed.

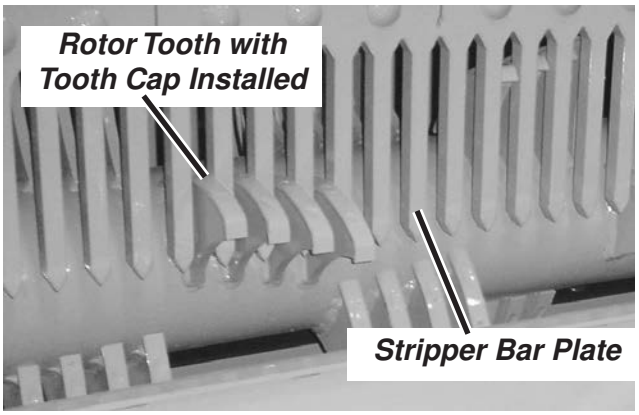
Periodically check the wear of the rotor tooth tine caps. Replace the caps if they show any of the following signs or wear:

- Cap is worn down and pointy.
- Sides of cap are worn to leave more than 1/8” gap between cap and stripper bar.
- Cap is bent or torn.
- Cap is missing.

Replace as follows:

1. Rotate the rotor until the damaged or worn rotor cap is accessible from the tunnel side of the stripper bar.
2. Remove the existing rotor cap from the rotor tooth. Clean up the rotor tooth.
3. Place the new rotor tooth cap on top of the rotor tooth. The cap should be centered in the space between the two stripper bars. Be sure the cap is straight with the tooth and stitch weld in place (three places per side).
4. After welding is complete, use a hammer to bend the tip of the rotor tooth cap over the rotor tooth.

NOTE: If the space on either side of the new rotor tooth cap exceeds 1/8” the stripper bar plate may need replacement. Contact your Ag-Bag dealer.



Rotor Tooth Tine Caps

Tire Air Pressure

It is recommended that the tire manufacturer’s tire pressure as indicated on the side wall of the tire be maintained. Check the tire pressure daily.

Wheel Lug Nut Torque

Check the wheel lug nut torque weekly. Torque the lug nuts to 270 ft.-lbs (366 Nm).

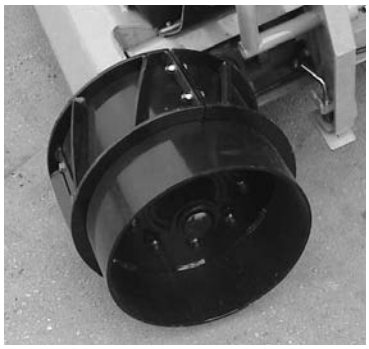
Retorque the wheel lug nuts each time a wheel is removed. Then retorque the lug nuts after one hour of use.

Feed Table Wheel Bearings
Repack Annually

Type of Grease: Use a good grade of lithium base wheel bearing grease.

1. Raise the feed table so the feed table wheels are off the ground.
2. Remove the hub from the spindle. Inspect the inner and outer cups in the hub. Be sure both cups are seated against the shoulders in the hub.
3. Pack the cones with grease. A pressure grease packer is recommended. To hand pack cones, force grease under cage between rollers from large end of rollers until grease shows at small end. Fill the hub with grease to I.D. of the cup race, then place the cone into the cup. Make sure the cone is straight!

IMPORTANT: Failure to correctly lubricate bearing and maintain proper lubrication may result in bearing damage which could cause wheel to lock and come off during operation.



Feed Table Wheel

4. Install grease seal. Support the seal so as not to bend the case during installation.
5. Use grease to lubricate the seal lip.
6. Place the hub on to the spindle. Rotate the hub while doing this so that the seal lip does not fold under as the lip goes on the seat of the spindle.
7. Fill hub cavity with grease.
8. Place the outer cone on the spindle and into the cup.
9. Assemble the washer and nut onto the spindle and tighten the nut to 15-20 ft/lbs, while rotating the hub. Then back off the nut until it aligns the next available slot with the cotter pin hole. Install the cotter pin and bend around the nut. There should be between .001” - .005” end play.

IMPORTANT: Failure to back off adjusting nut may cause bearing damage. Wheel could then lock and come off during operation.

10. Grease inside of dust cover and install dust cover.
11. Repeat for the other wheel.

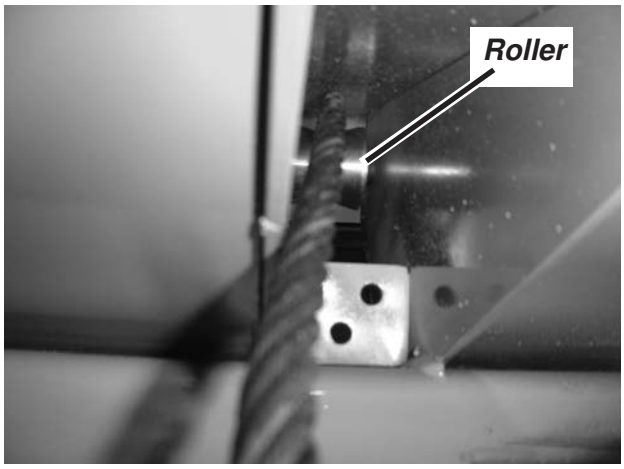
Anchor Cables

Anchor Cable Replacement

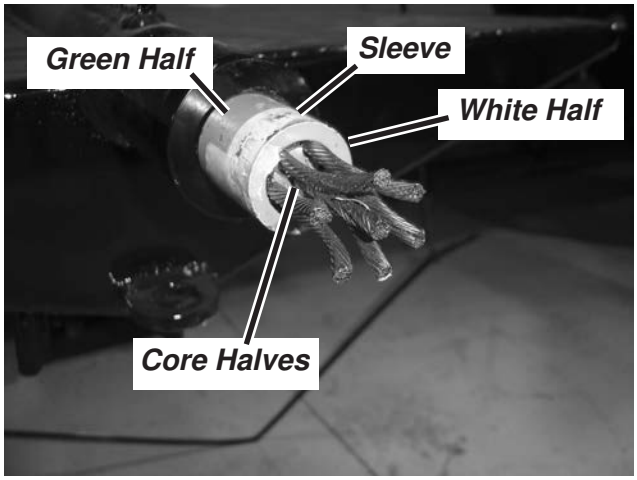
WARNING

Serious injury could occur. Always wear protective gloves when handling wire rope cables.

1. The cleanout floor must be retracted all the way.
2. Insert the cable from the tunnel side.
3. Insert the cable through the cable guide and over the roller.
4. Guide the cable through the cleanout floor and back to the cable winch.
5. Route the cable over the top of the winch cable drum. Insert the end of the cable under the retainer on the drum and secure in place with the set screw.
6. While keeping tension on the cable, wind the cable on to the winch drum. Do not fully wind all the cable on to the drum. Leave approximately four feet in front of the cleanout floor.
7. Slide the cable through the center of the anchor. Install the cable stop on to the cable (green side toward anchor).
8. Pull on the anchor to secure the cable stop in the nose of the anchor.
9. Retract the cable and anchor. The anchor should be tight in the socket.
10. Repeat this procedure to replace the other cable.
11. Zero out the cable extension sensors after the cables are replaced and anchors are tight in the sockets.



Anchor Cable Over Roller



Cable, Knob Core Halves & Sleeve

Torque Specifications

NOTE: Use these torque values when tightening hardware (excluding: locknuts and self tapping, thread forming and sheet metal screws) unless specified otherwise.

All torque values are in lb-ft except those marked with an (*) which are lb-in (for metric torque value Nm, multiply lb-ft value by 1.355 or for lb-in multiply by 0.113).

Unified National Thread	Grade 2		Grade 5		Grade 8	
	Dry	Lubed	Dry	Lubed	Dry	Lubed
8-32 8-36	19* 20*	14* 15*	30* 31*	22* 23*	41* 43*	31* 32*
10-24 10-32	27* 31*	21* 23*	43* 49*	32* 36*	60* 68*	45* 51*
1/4-20 1/4-28	66* 76*	50* 56*	9 10	75* 86*	12 14	9 10
5/16-18 5/16-24	11 12	9 9	17 19	13 14	25 25	18 20
3/8-16 3/8-24	20 23	15 17	30 35	23 25	45 50	35 35
7/16-14 7/16-20	32 36	24 27	50 55	35 40	70 80	55 60
1/2-13 1/2-20	50 55	35 40	75 90	55 65	110 120	80 90
9/16-12 9/16-18	70 80	55 60	110 120	80 90	150 170	110 130
5/8-11 5/8-18	100 110	75 85	150 180	110 130	220 240	170 180
3/4-10 3/4-16	175 200	130 150	260 300	200 220	380 420	280 320
7/8-9 7/8-14	170 180	125 140	430 470	320 360	600 660	460 500
1-8 1-14	250 270	190 210	640 710	480 530	900 1000	680 740
Metric Course Thread	**Grade 8.8**		**Grade 10.9**		**Grade 12.9**	
	Dry	**Lubed**	**Dry**	**Lubed**	**Dry**	**Lubed**
M6-1	8	6	11	8	13.5	10
M8-1.25	19	14	27	20	32.5	24
M10-1.5	37.5	28	53	39	64	47
M12-1.75	65	48	91.5	67.5	111.5	82
M14-2	103.5	76.5	145.5	108	176.5	131
M16-2	158.5	117.5	223.5	165.5	271	200

Tightening Hydraulic Fittings

WARNING

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pin holes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. DO NOT use your hand.

Tightening O-Ring Fittings*

1. Inspect O-ring and seat for dirt or obvious defects.
2. On angle fittings, back the locknut off until washer bottoms out at top of groove.
3. Hand tighten fitting until backup washer or washer face (if straight fitting) bottoms on face and O-ring is seated.
4. Position angle fittings by unscrewing no more than one turn.
5. Tighten straight fittings to torque shown.

* Torque values shown are based on lubricated connections as in reassembly.

Thread Size	Nut Size Across Flats	Torque Value*		Recommended Turns To Tighten (After Finger Tightening)	
(In.)	(In.)	(Nm)	(lb-ft)	(Flats)	(Turns)
3/8	1/2	8	6	2	1/3
7/16	9/16	12	9	2	1/3
1/2	5/8	16	12	2	1/3
9/16	11/16	24	18	2	1/3
3/4	7/8	46	34	2	1/3
7/8	1	62	46	1-1/2	1/4
1-1/16	1-1/4	102	75	1	1/6
1-3/16	1-3/8	122	90	1	1/6
1-5/16	1-1/2	142	105	3/4	1/8
1-5/8	1-7/8	190	140	3/4	1/8
1-7/8	2-1/8	217	160	1/2	1/12

Tightening Flare Type Fittings*

1. Check flare and flare seat for defects that might cause leakage.
2. Align hose end with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the hose, use two wrenches. Place one wrench on the hose end body and with the second wrench, tighten the swivel nut to the torque shown in this chart.

* Torque values shown are based on lubricated connections as in reassembly.

Tube Size OD	Nut Size Across Flats	Torque Value*		Recommended Turns To Tighten (After Finger Tightening)	
(In.)	(In.)	(Nm)	(lb-ft)	(Flats)	(Turns)
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8

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MACHINE WARRANTY
MX1012 Commercial Series Bagger

MILLER-ST. NAZIANZ, INC. warrants each new Ag-Bag® MX1012 commercial series bagger to be free from defects in material and workmanship under recommended use and service, as stated in the Operator's Manual, as follows:

Warranty

Miller will replace, F.O.B. St. Nazianz, Wisconsin, or repair, as Miller elects, any part of a new MX1012 commercial series bagger which is defective in material or workmanship: Without charge for either parts or labor during the first year following delivery to the original retail customer.

All warranties on the new MX1012 commercial series bagger shall apply only to the original retail purchaser from an authorized Ag-Bag dealer.

Repair Parts

Miller warrants that it will replace the failed part F.O.B. St. Nazianz, Wisconsin, or repair, as Miller elects, without charge, any genuine Ag-Bag spare part purchased after the expiration of the new MX1012 commercial series bagger warranty, or to any subsequent owners that is defective in material or workmanship, within ninety (90) days of the installation date. Repair parts warranty does not cover labor to remove or replace the failed part.

Misuse

The provisions of this warranty shall not apply to any MX1012 commercial series bagger which has been subject to misuse, negligence, alteration or accident, or which shall have been repaired with parts other than those obtainable through Ag-Bag.

Authorized Dealer

Repairs eligible for labor warranty must be made by Ag-Bag or an authorized Ag-Bag dealer. The purchaser is responsible for transportation of the equipment to the dealership for warranty service or for any service call expense.

Exclusive Effect of Warranty and Limitation of Liability

The remedies of the customer set forth herein are exclusive. Miller neither assumes nor authorizes any person to assume any other obligation or liability in connection with the sale of covered equipment. Correction of defects and malfunctions in the manner and for the applicable period of time provided above shall constitute fulfillment of all responsibilities of Miller to the customer and Miller shall not be liable for negligence, under contract, or in any other manner with respect to such equipment. IN NO EVENT SHALL THE OWNER BE ENTITLED TO RECOVER FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SUCH AS BUT NOT LIMITED TO: LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE OR COST OF RENTAL OF REPLACEMENT EQUIPMENT.

THIS WARRANTY IS IN LIEU OF ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PURPOSE OR OTHER WARRANTIES, EXPRESS OR IMPLIED.

Warranty Requirements

To be covered by warranty, each machine must be properly registered with Miller within 30 days of date of original retail delivery.