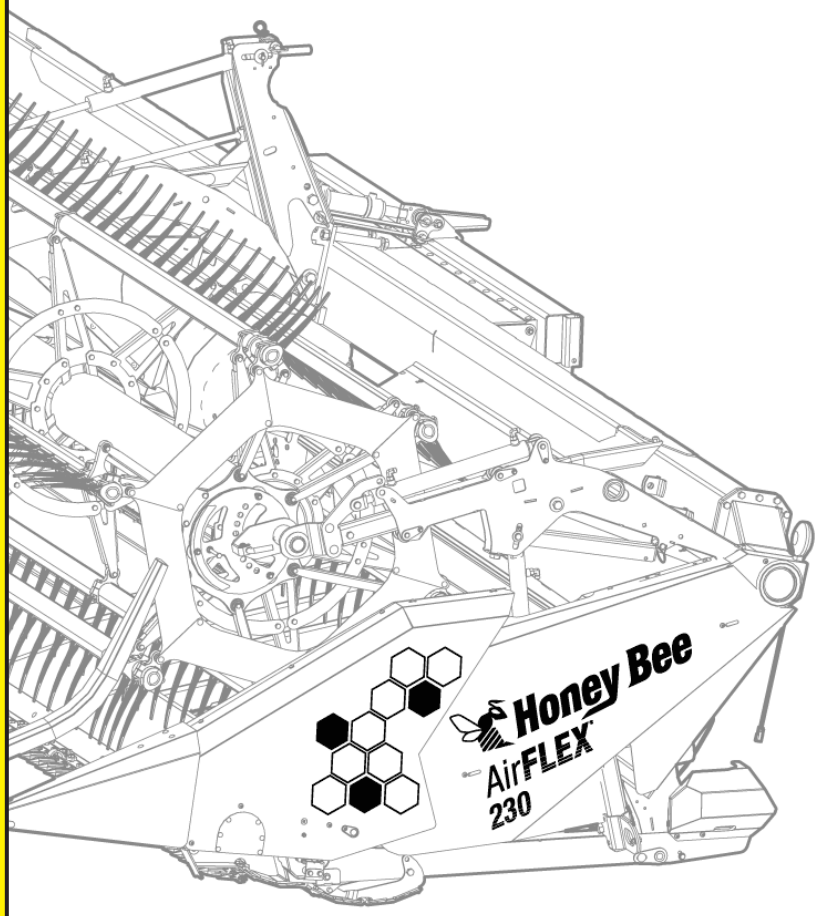
2017

AirFLEX

FLEX Header Operator Manual



Honey Bee®

Revision 1.6 P/N: 94980

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AirFLEX Pre Delivery Inspection

TO THE DEALER: *This form must be completed and returned to Honey Bee Manufacturing Ltd. along with the Warranty Registration Form. (please print)*

Model: _____ Serial #: _____

Check Completed By: _____ Signature: _____

Dealer Name: _____ Date: _____

As soon as you receive this machine, inspect it thoroughly to be certain that it is in good order and complete. Finish a pre-delivery inspection, paying special attention to the steps listed below, prior to delivery to the customer. Indicate with a tick mark in the left-hand column when correct/complete.

Refer to the page numbers listed below in the operator manual for detailed instructions.

Upon Receipt of Header:

___Set front reel bats to operational position (reinstalled from transport position). - *page 31*

___Remove reel tie-downs installed from factory.

___Install crop dividers & extensions and secure in place.- *page 31*

___Check draper tension as per decal on back panel. Adjust if necessary. - *page 105*

___Walk around the header, checking belts, bolts and shields to ensure everything is tight and in good working order.

___Install Automatix harness on the combine, note if the electrical system is positively or negatively switched, hook up the battery leads accordingly. - *page 35*

___Install Automatix control panel in combine cab & connect to electrical harness. - *page 35*

___Unlock the transport cart and draw bar, lift header with the combine then remove the cart and draw bar. - *page 32*

___Attach multicoupler and electrical connection(s) - *page 34*

___Attach the drive shafts to the left and right hand sides of the combine feeder house. - page 34

___Check the clearance between the feed auger drum, stripper plate and feeder house. - *page 43*

___Check feed auger finger timing, ensure adjustment arm is in middle hole with fingers in fully forward position. - *page 43*

___Set combine type via automatix control panel - *page 39*

___Set the faceplate angle using adjustment bolts on the combine's feeder house (if possible) and a 4-4.5" measure from ground to lowest point at the rear of the shoe/paddle. - *page 40*

___Set header to rigid mode, ensure all tabs on flex sensing rod are in proper position. - *page 49* and *page 120*

___Set reel finger pitch to a starting point of 5. - *page 50*

___Ensure reel fingers clear cutter bar by minimum of 1 1/2". Adjust reel height if necessary. - *page 50*

___Set Auto Header Height parameters in combine control panel (Combine and Sensitivity Settings) - *page 41*

___Calibrate header height control on Automatix control panel - *page 39*

___Calibrate combine (In FLEX and RIGID mode) - *See quick start laminate*

___Run header and fine tune drive belt to minimize vibration and get it running smoothly.

___Walk around the header while it is running to ensure everything is running smoothly

___If possible test in the field or lot and fine tune sensitivity settings if needed

___Red draw bar holder and tie-down bracket removed from header. - *page 32*

___Ensure Optional equipment as per sales order is installed and functioning.

Before Transporting:

___Tilt cylinder retracted. - *page 49*

___Drive shafts in storage position. - *page 90*

___Header in rigid mode (air system pressurized to 100 psi). - *page 49*

___Hydraulic & electrical connectors/lines in storage positions.

___Reel lowered, retracted, tied down and prevented from rotating.

___Transport cart & front draw bar axle properly installed. - *page 87*

___Automatix display and electrical harness, dividers, extensions & accessories securely stored.

___Warning lights, decals, reflectors & signs all legible and in place. - *page 20*

___Front reel fingers dropped into transport position. - *page 88*

___Center sensors in storage position. - *page 93*

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IMPORTANT!

This manual covers the AirFLEX header ONLY.

Review the sections of this manual regarding adjustments, settings, leveling, and table height before attempting to operate this header.

Without proper adjustment, damage to the header may occur.

IMPORTANT!

Please wash this equipment after transporting!

Honey Bee Manufacturing will not be responsible for any paint deterioration resulting from salt or harsh chemical corrosion if this equipment is not properly washed after transport. Use a mild soap solution, then rinse thoroughly.

If this equipment is stored near salted roadways through the winter months, it should be cleaned each spring.

Original Instructions

Patents: 7,470,180 - 2,572,274 - 8,833,048 - All other patents pending.

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1 - Purchase Information

Dealers Name: _____

Address: _____

Phone: ( ) _____

Purchase Date: _____

Model: _____

Serial Number: _____

Delivery Date: _____

Modification Record	
Date	Modification

Honey Bee Manufacturing Limited is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

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Table of Contents

2 - Introduction

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

This manual should be considered a permanent part of your header and should remain with the machine when you sell it.

Measurements in this manual are given in the worldwide standard of metric as well as U.S.A. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners require a specific metric or inch wrench.

All names given in this document for equipment components are those in use at the time of design.

Please write down your equipment serial numbers in the Specification section to help in tracing the header should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place away from the header.

2.1 - Directions

Right and left hand sides are determined by facing in the direction the implement will travel when going forward.

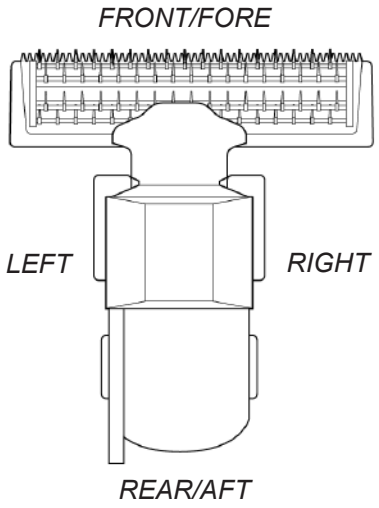

Fig. 1 - Reference directions

2.2 - Warranty

The warranty is provided as part of Honey Bee's support program for customers who operate and maintain their equipment as described in this manual.

Honey Bee Manufacturing Ltd. (Honey Bee) warrants your new AirFLEX Header to be free of defects in material and workmanship, under normal use and service. Obligations under this warranty shall extend for a period of 1 year (12 months) following the date of first use to the original purchaser and shall be limited to, at the option of Honey Bee, replacement or repair of any parts found, upon inspection by Honey Bee, to be defective.

Warranty Claims

The purchaser claiming under this warranty shall report a warranty claim to his Authorized Dealer. The dealer shall complete the claim, on the prescribed form online, for inspection by an authorized company representative. Warranty claims must be submitted online within 60 days of warranty expiration on the Honey Bee Manufacturing Ltd Claim Form (CFI).

Limitations of Liability

This warranty is expressly in lieu of all other warranties expressed or implied and all other obligations or liabilities on our part of any kind or character, including liabilities for alleged representations or negligence. We neither assume nor authorize any person to assume, on our behalf, any liability in connection with the subsequent sale of the AirFLEX Header.

This warranty shall not apply to any AirFLEX Header which has been altered outside the factory in a way that Honey Bee judges to affect its operation or reliability, or which has been subject to misuse, neglect, or accident.

Operator's Manual

The purchaser acknowledges having received training in the safe operation of the Header and that Honey Bee does not assume any liability resulting from the operation of the Header in any manner other than described in this manual.

2.3 - Specifications

2.3.1 - Dimensions & Specifications

Model	225	230	236	240	245	250
Size	25ft (7.62m)	30ft (9.14 m)	36ft. (10.97 m)	40ft. (12.19 m)	45ft. (13.72 m)	50ft (15.24 m)
Header Weight - Operating Configuration	5955 lbs 2701 kg	6444 lbs 2923 kg	6860 lbs 3112 kg	7628 lbs 3460 kg	8016 lbs 3636 kg	8404 lbs 3812 kg
Header Weight - Transport Configuration	6740 lbs 3057 kg	7229 lbs 3279 kg	7645 lbs 3468 kg	8413 lbs 3816 kg	8801 lbs 3992 kg	9189 lbs 4168 kg
Optional Transport Package	785 lbs 356 kg					
Optional Cross Auger	Hydraulically drive cross auger.					
Cutting System	Mechanically driven knife drive with SCH sections. 9” (22.9 cm) of FLEX.					
Drapers	Mechanically driven with simple to use tensioning system.					
Draper Shield	A new patented system that directs the flow of crop to the center deck without the need for moving parts					
Reel	Hydraulically driven, with multiple crop settings and finger spacing options. Automatic reel speed control					
Transport	Heavy duty road transport with electric brakes					
Record your equipment serial numbers below for reference in the event of service or theft.						
Header Serial Number:						
Reel Serial Number						
These specifications are subject to change without notice or obligation.						

2.4 - Header Identification Number

The AirFLEX Header serial number plate is located directly on top of the hydraulic bulkhead as shown below. The letters and numbers stamped on the plate identify the header. Please have this serial number on hand when ordering replacement parts. If ever stolen, the serial number is needed for law enforcement to trace.

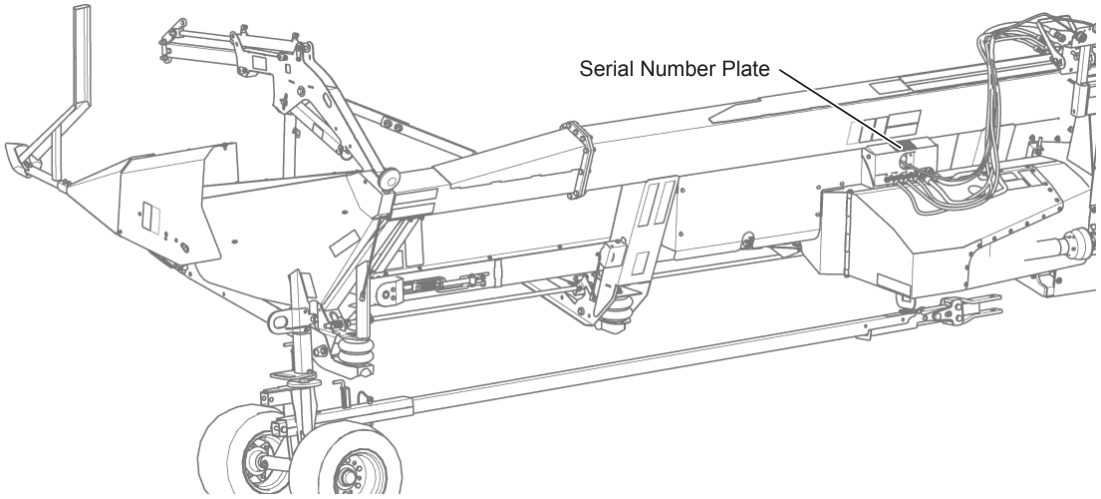

Fig. 2 - Serial number plate location

3 - Safety

3.1 - Recognize Safety Information

This is a safety-alert symbol. When you see this symbol, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.

3.2 - Understand Signal Words

The following are safety terms used around the equipment and throughout this manual. Please read and understand their descriptions.

DANGER!

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

WARNING!

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

CAUTION!

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT!

Warns of potential damage to the header if proper procedures are not followed.

NOTE:

Notifies you of important information to which you should pay attention.

3.3 - Read and Understand Instructions and Warnings

Please read and understand all warnings and safety information contained within this manual and on the safety signs located on your equipment.

You may find additional safety information on after-market optional equipment that may not be included in this manual.

Only allow trained individuals to operate the AirFLEX Header. Failure to comply can result in injury and/or equipment damage.

Unauthorized equipment modifications can cause injury or equipment failure that is not covered under warranty.

3.4 - Protective Clothing

WARNING!

When working around running equipment, secure all loose items such as long hair, jewelry, or loose clothing are secured so they do not contact moving parts. Failure to do so will result in injury or death.

Wear hearing protection to protect against hearing damage.

Operating equipment safely requires your full attention, do not wear headphones while operating the header.

3.5 - In Case of Emergency

Keep a first aid kit and fire extinguisher with your header at all times. Keep phone numbers for emergency services near your telephone.

3.6 - High Pressure Spray

IMPORTANT!

Avoid spraying yourself, electronics or hydraulic connections with a pressure sprayer.

3.7 - Store the Header Safely

⚠ WARNING!

Ensure your header and all attachments are secured when not in use. Keep bystanders away from equipment and storage area. Failure to comply can result in injury or death.

3.8 - Safety Around Moving Parts

⚠ DANGER!

Never attempt to service your equipment while in operation. Always shut off the combine and wait for all moving parts to come to a complete stop before approaching the header.

Keep guards and shields in place at all times. Ensure that they are serviceable and installed correctly.

Cutterbar, auger, reel, drive shafts, and drapers cannot be completely shielded due to their function. Stay clear of these moving elements during operation.

3.9 - High-Pressure Hydraulics

⚠ DANGER!

High pressure hydraulic leaks can penetrate the skin causing serious injury. Always relieve pressure before disconnecting hydraulic lines and tighten all connections before applying pressure.

Hydraulic leaks can be extremely small and difficult to see. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

3.10 - Transporting the Header

STOP IMPORTANT!

When transporting the header, frequently check for traffic from the rear, especially in turns. Always use headlights, flashing warning lights, and turn signals (when turning) day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order, replace if necessary.

Whenever possible avoid transporting the header on public roadways with header attached to the combine.

If combine must be transported with header attached, ensure all warning lights are operating, and reflective material is clean and visible.

Completely retract and lower the reel before transporting.

Use of a spotter or pilot vehicle is recommended on busy, narrow or hilly roads and when crossing bridges.

Drive at a speed safe for conditions.

Do not exceed 25 mph (40 kph) when transporting the header on the optional transport package.

3.11 - Using Correct Torque Values

STOP IMPORTANT!

It is extremely important that you use the correct torque values when servicing your AirFLEX header. Failure to follow the torque recommendations on page 132 can result in equipment damage.

3.12 - Practice Safe Maintenance

⚠ WARNING!

Before attempting to service your equipment, ensure that you fully understand any procedure that you are about to attempt.

Ensure all equipment is secured against sudden drops.

Keep the work area clean and dry.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove buildup of grease, oil, or debris.

If welding on the header, first disconnect battery ground cable (-). before making adjustments to electrical systems or welding on the header.

The header must be lowered to the ground before servicing. If the work requires that the header or reel be lifted, provide secure support. If left in a raised position, hydraulically supported devices can settle or drop suddenly.

Do not support the header on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a header that is supported only by a jack.

Do not attempt to clean drive belts or drapers with flammable cleaning solvents.

3.13 - Fire Safety

⚠ WARNING!

Inspect the header for material buildup on a daily basis. Build up of chaff and crop debris near moving parts is a fire hazard. Check and clean these areas frequently. Before inspection or service, shut off engine, engage the parking break, remove the key and wait for all moving parts to come to a stop.

Keep a fire extinguisher with your equipment at all times and ensure the operator is educated in its operation.

3.14 - Safety Feature & Decal Locations

Please take a moment to walk around your equipment and familiarize yourself with the safety decals and features on your equipment. Refer to the figure below and the decal list on the following pages for assistance.

Please ensure that you fully understand all safety warnings and instruction before operating this equipment.

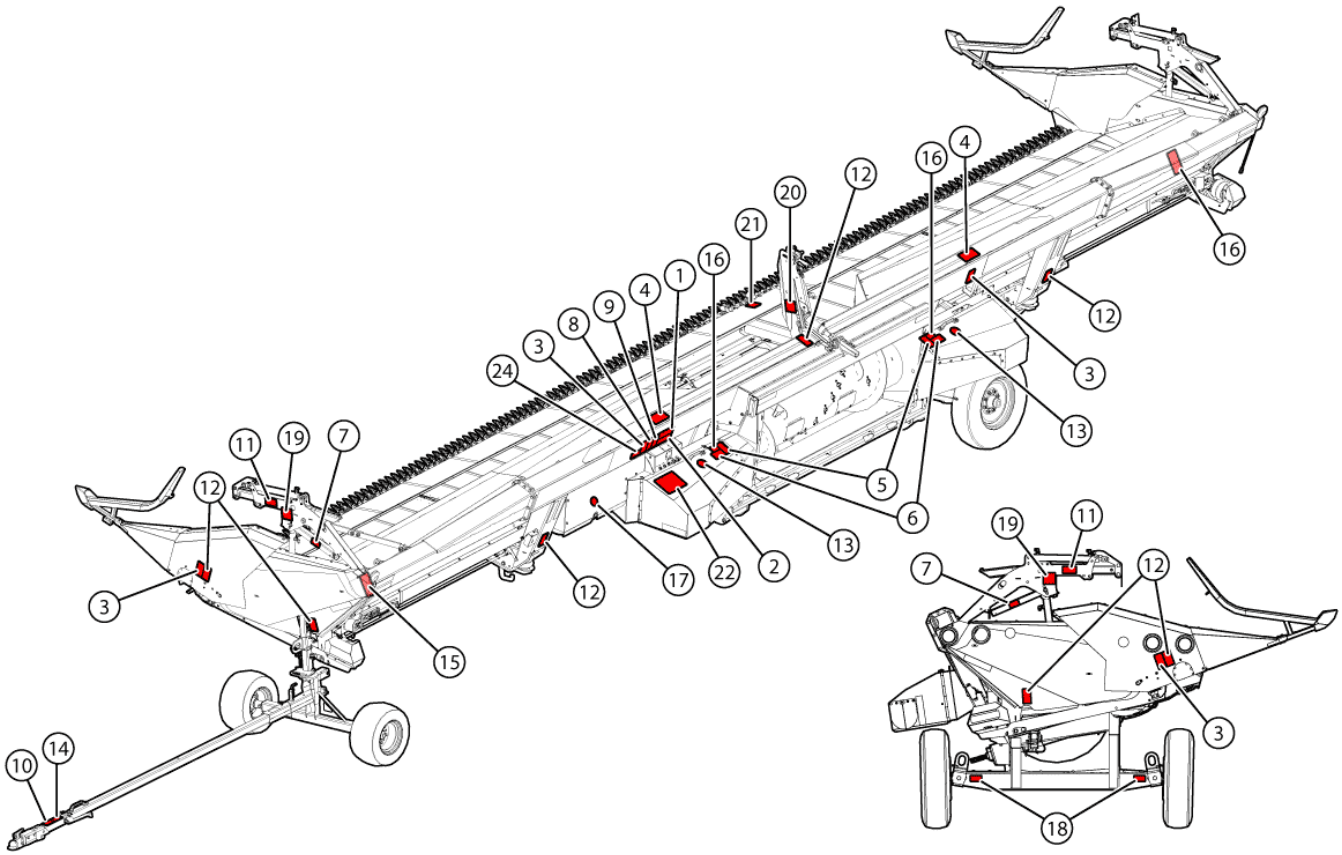

Fig. 3 - Decal & Safety Feature Locations

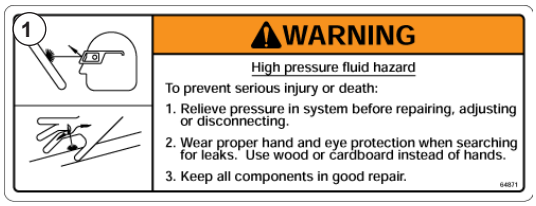

Fig. 4 - High Pressure Fluid Hazard

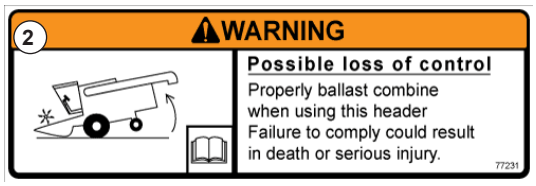

Fig. 5 - Properly Ballast Combine

Fig. 6 - Keep your Distance

Fig. 7 - Not a Step - Falling Hazard

Fig. 8 - Keep Clear of Rotating Drive Shaft

Fig. 9 - Keep Clear of Drive Belts

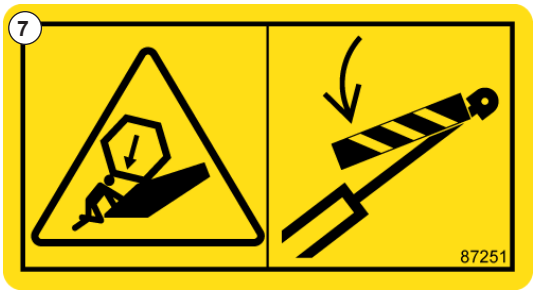

Fig. 10 - Engage Reel Stop Before Servicing

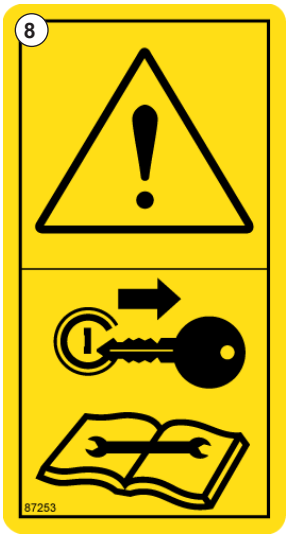

Fig. 11 - Turn off Engine when Servicing

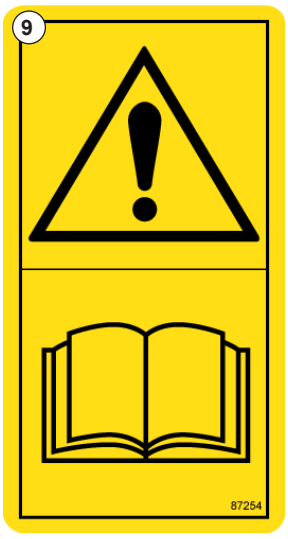

Fig. 12 - Read the Manual

Fig. 13 - Maximum Speed

Fig. 14 - Turn off Engine when Servicing Reel

Fig. 15 - Pinch Points

Fig. 16 - Do Not Step Here

Fig. 17 - Do not transport with deflated air bags.

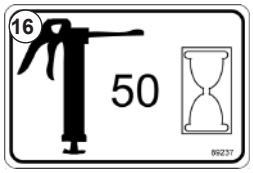

Fig. 19 - Lubricate Every 50 Hours

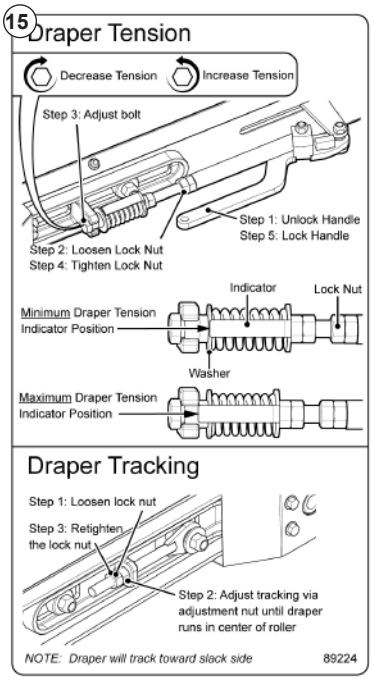

Fig. 18 - Draper Tension & Tracking

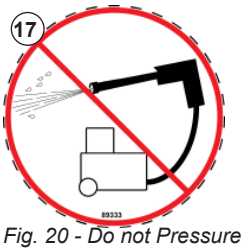

Fig. 20 - Do not Pressure Wash

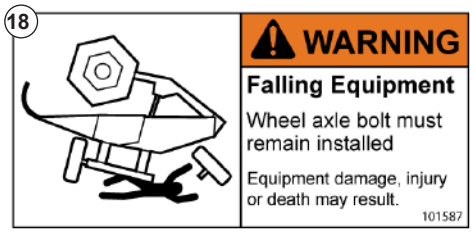

Fig. 21 - Do not remove axle bolt

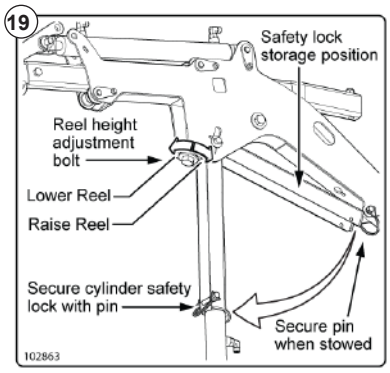

Fig. 22 - Reel Arm Instructions

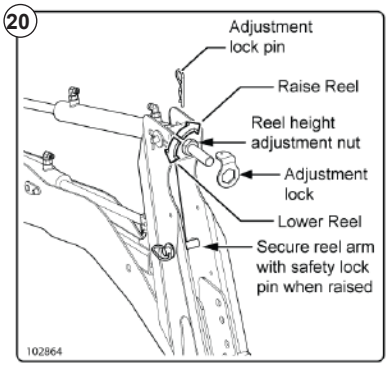

Fig. 23 - Center Reel Arm Instructions

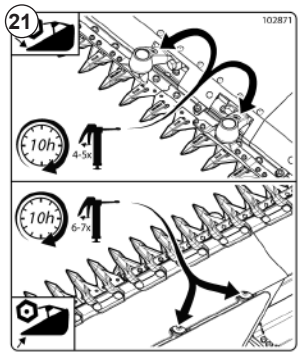

Fig. 24 - Knife Lubrication

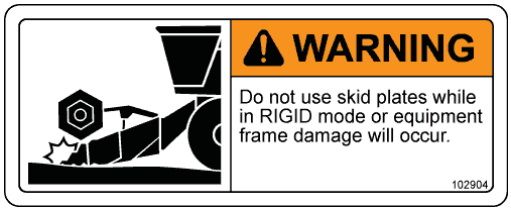

Fig. 26 - Skid shoe warning (Not shown in main illustration)

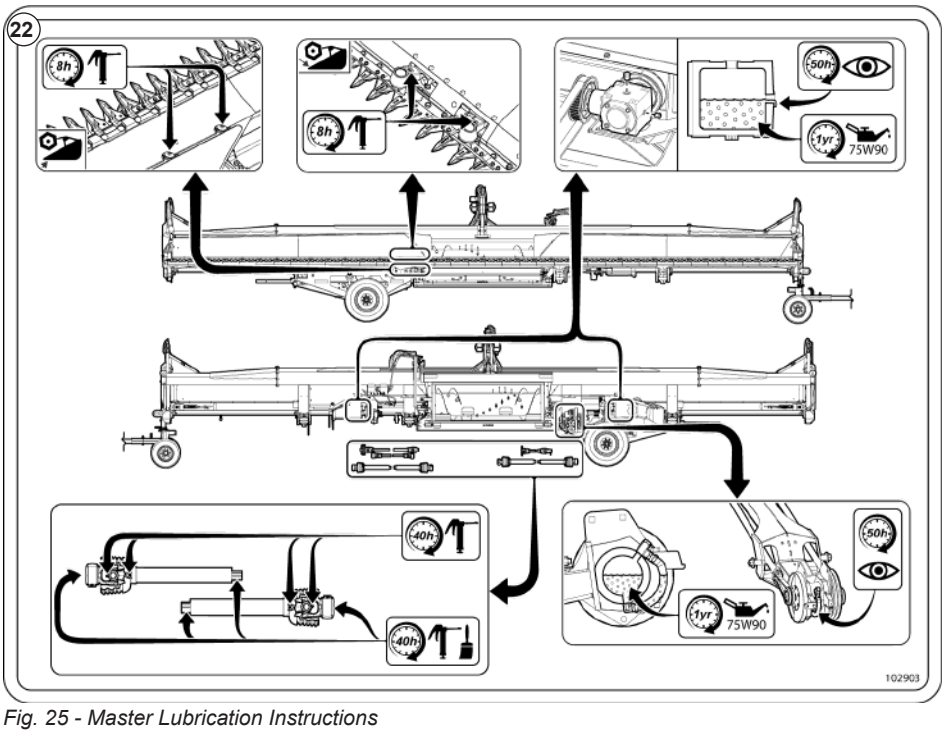

Fig. 25 - Master Lubrication Instructions

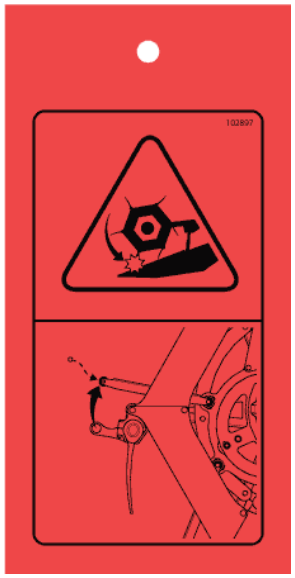

Fig. 27 - Reel tine warning (Not shown in main illustration)

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4 - Equipment Overview

Please take a moment to familiarize yourself with the AirFLEX header, its components and modes of operation.

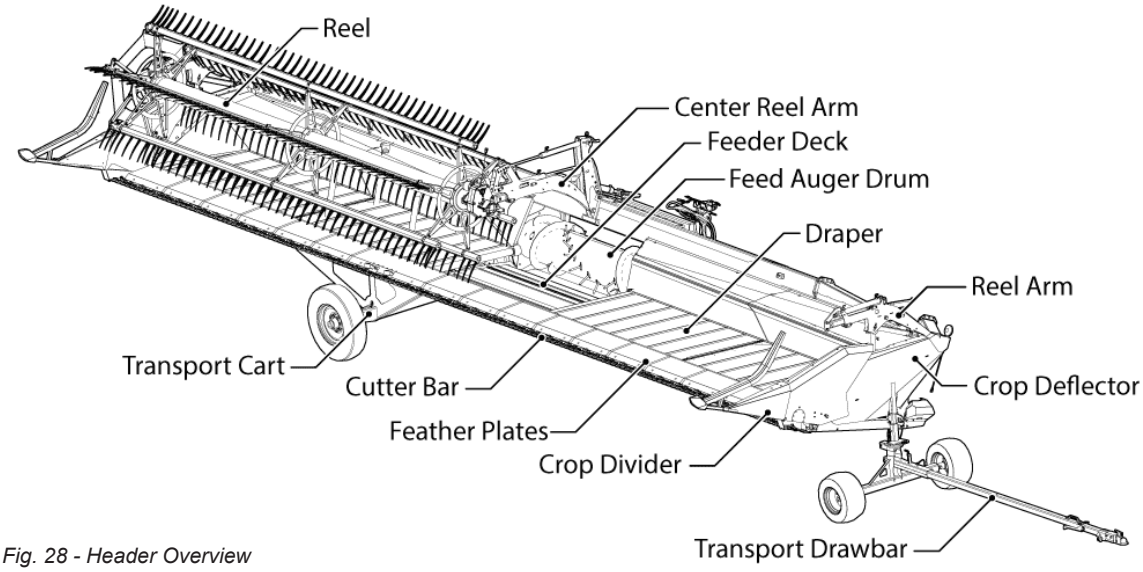

Fig. 28 - Header Overview

4.1 - Flexible Cutter Bar

The AirFLEX cutter bar has up to 9” (23 cm) of flex, allowing it to hug uneven ground in order to maximize crop harvest.

The sensor system keeps the cutter bar in position with very little contact with the ground resulting in reduced UHMW wear.

The system performs very well in wet ground conditions and does not ‘push mud’.

The AirFLEX cutter bar can also be “locked up”; i.e. made to function as a rigid table. (See section 10.5 on page 64 for details)

4.2 - Optional Transport Package

Featuring removable transport cart with minimal impact on balance, weight and function. The full transport can be safely removed and installed by a single person.

The transport is designed to be towed by a vehicle or combine when not on the header.

4.3 - Automatic Header Height Control (HHC)

The AirFLEX’s Header Height system relays the table’s proximity to the ground to the combine. This allows the combine to adjust feeder house height and tilt (if equipped), to maintain cutter bar clearance from ground in RIGID mode, or maintain float in FLEX mode.

NOTE:

Your combine must be equipped with lateral tilt for the AirFLEX to function properly with automatic header height.

4.4 - Interchangeable Combine Adapters & Drive Pulleys

The AirFLEX is designed to be easily adaptable to fit all major brands of combine. Faceplates, multi couplers, PTO shafts, drive pulleys and adjustable auger strippers are available for JD, CNH, LEXION, and AGCO combines.

4.5 - Drive System

Most components on the header are mechanically driven, excluding the reel and its related functions (Fore/Aft, Reel Up/Down) and hydraulic header tilt.

There is no hydraulic pump or tank on the header. Hydraulic devices on table are powered using combine hydraulics.

The mechanical drive system is designed to synchronize knives in opposing motion to minimize vibration transferred to frame and combine.

4.6 - FLEX Mode

When in FLEX mode, the cutter bar on the header will become Flexible and will automatically follow the contours of the land. Sensing the location of each paddle and reacting to the highest one on each side of the header, the cutter bar can FLEX up and down with a range of approximately 9” (23 cm).

This mode of operation is ideal for low lying crops.

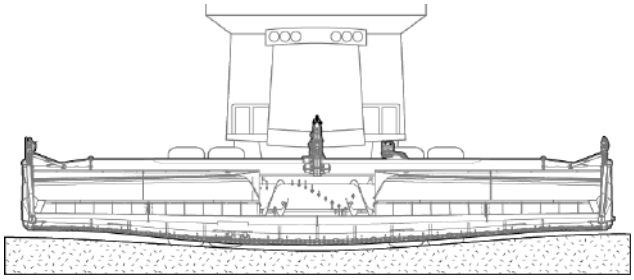

Fig. 29 - FLEX Mode

4.7 - RIGID Mode

When in RIGID mode, the cutter bar becomes locked with no vertical Flexibility possible. The system will sense the ground height via the crop divider sensors and lower limit sensors located under the header. The AirFLEX works like a regular header in this mode.

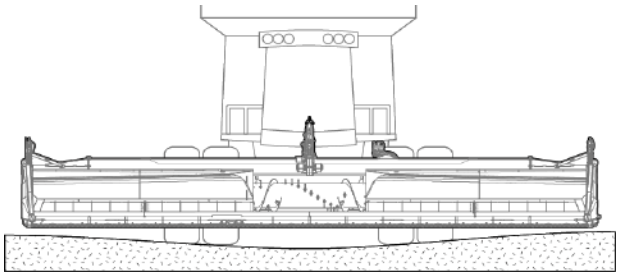

Fig. 30 - RIGID Mode

4.8 - Automatix Calibration and Operation

Pre-read the Automatix calibration procedure and ensure you understand the process before operating your equipment. See section 10 for details.

5 - Before First Use and Pre-Season Inspection

5.1 - Combine Specific Header Modifications

IMPORTANT!

Some combine configurations will require special modifications to the AirFLEX header prior to mounting. It is extremely important to read this section and follow all applicable steps prior to installing/operating the header.

5.1.1 - 2016 or Newer JD Combines

If installing the AirFLEX on a 2016 or newer John Deer Combine, a check valve must be installed on the AirFLEX to ensure proper operation. Follow the instructions in section 15.6 on page 131 prior to mounting the AirFLEX header.

5.1.2 - Combines with 'Bang-Bang' or 'Switching' style directional control valves.

If installing the AirFLEX on a combine equipped with 'Bang-Bang' style directional control valves, the BeeBox should be installed to prevent header height 'hunting'. Follow instructions in section 15.5 on page 130 prior to mounting the AirFLEX header.

5.1.3 - Gleaner/Massey Ferguson/ Challenger Combines

If installing the AirFLEX on an Gleaner, Massey Ferguson, or Challenger combine, ensure that the proper bezel configuration is installed on the faceplate prior to mounting the AirFLEX header to the combine. See section 15.1 on page 125 for details.

5.2 - Header Inspection

Dirt & Material Build-up

Inspect the header for dirt, material buildup and obstructions then clean/clear as necessary (inside drapers, under side shields, around drive belts, feeder house etc.).

Cutting System

Ensure the knife drive is in its operational position. (See section 7.2)

Inspect the cutting system for signs of damage, wear or material buildup.

Check for broken knife sections, guards & hold-downs.

Ensure knife timing is correct. (See Fig. 188 and Fig. 189 on page 110)

Drive Belts

Ensure drive belts are undamaged, properly aligned & tensioned. See section "13.4 - Drive Belt Tension" on page 96 for details.

Drapers

Check the three draper belts for damage or uneven wear. Replace when required.

Ensure the draper belts are properly tensioned and that they are tracking properly. See section 13.6 on page 105 for details.

Crop Dividers

Ensure the crop dividers are properly installed & free from material buildup. (See Fig. 34 on page 31)

Safety Shields

Inspect the header and ensure all protective shields are in place. Replace all damaged or missing shields. Inspect the shields for missing/ loose fittings.

Header Height Control Sensors

Ensure header height sensors* are installed and undamaged. Replace if necessary. Clean away material buildup.

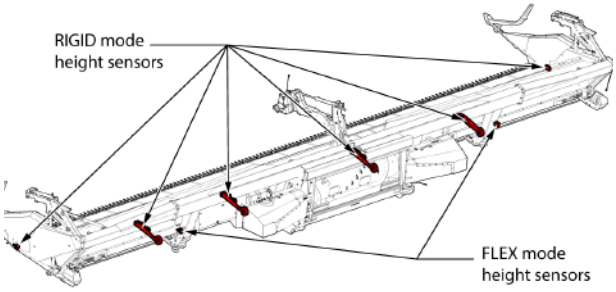

Fig. 31 - AirFLEX HHC Sensor Locations

**Two to Four center roller sensors may be present depending on the configuration of your equipment.*

Support Straps

There are a number of heavy-duty permanent fabric support straps located around the header, these straps allow added support while also allowing header to flex where needed. At the beginning of every season, inspect these straps for signs of wear or damage.

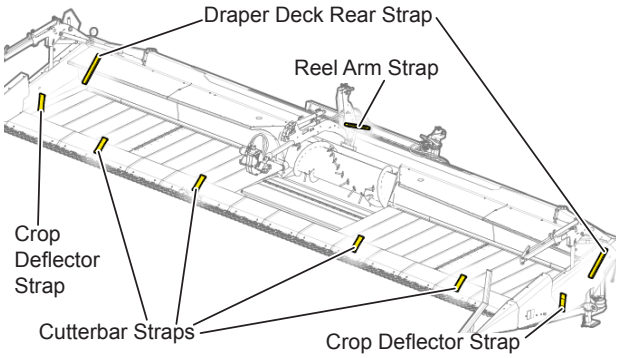

Fig. 32 - AirFLEX Support Strap Locations

Combine Feeder house

Inspect the combine feeder house for material buildup and clean as necessary.

Header Feed Auger

For initial setup ensure the feed auger drum is in its fully forward position & that it will not come into contact with any other parts of the equipment during operation. This can be adjusted later to suit the combine. See section 13.11 for details.

Hydraulic Tilt Cylinder Position

Inspect the hydraulic tilt cylinder to ensure it is in the correct position for your combine. See section 13.12 on page 118 for details.

Reel

Ensure the reel bats are in their operational position.

Multicoupler

Thoroughly inspect the connection faces on the header and the combine sides of the hydraulic multicoupler. Ensure the o-rings are in place and clean all debris from the fittings.

Inspect the hydraulic hoses and replace/repair as needed.

Verify the header is equipped with the appropriate multicoupler, drive shafts, drive pulleys and adapter plate for use with your combine model.

Lubrication

Check fluid levels on all gearboxes.

Apply grease where needed as outlined in section 13.18 on page 121 section of this manual.

Optional Transport Cart

Check the transport cart axle to ensure the wheel axle bolts are installed. If these bolts are removed, the wheels may fall off during transport.

Take Note

...of items that require attention after the header is connected to the combine as outlined in the combine operator's manual.

6 - Before First Use and Pre-Season Checklist

Combine Specific Header Modifications

- ☐ **2016 or new JD Combines:** Install line lock kit as described in section 15.6 on page 131
- ☐ **Combines with 'Bang-Bang' style directional control valves:** Install the BeeBox as described in section 15.5 on page 130
- ☐ **Gleaner/Massey Ferguson/Challenger Combines:** Ensure correct bezel is installed as per section 15.1 on page 125 for details.
- ☐ Inspect the combine feeder house for material buildup and clean as necessary.
- ☐ Calibrate combine as per combine operator's manual

Header Checklist

- ☐ Inspect the header for dirt, buildup and obstructions then clean as necessary (inside drapers, under side shields, feeder house etc.).
- ☐ Inspect the cutting system for signs of damage, wear or material buildup.
- ☐ Ensure knife timing is correct. (See Fig. 188 and Fig. 189 on page 110)
- ☐ Ensure drive belts are undamaged, properly aligned & tensioned. See section 13.4 on page 96 for details.
- ☐ Check the three draper belts for damage or uneven wear. Replace when required.
- ☐ Ensure the draper belts are properly tensioned and that they are tracking properly. See section 13.6 on page 105.
- ☐ Ensure the crop dividers are properly installed & free from material buildup. (See Fig. 34 on page 31)
- ☐ Ensure all protective shields are in place. Replace all damaged or missing shields. Inspect the shields for missing/loose fittings.
- ☐ Ensure header height sensors are installed and undamaged. Replace if necessary. Clean away material buildup.
- ☐ There are a number of heavy-duty permanent fabric support straps located around the header, these straps allow added support while also allowing header to flex where needed. At the beginning of every season, inspect these straps for signs of wear or damage.
- ☐ Ensure the feed auger drum is in its fully forward position & that it will not come into contact with any parts of the header or combine during operation. See section 13.11 on page 116 for details.
- ☐ Inspect the hydraulic tilt cylinder to ensure it is in the correct position for your combine. See section 13.12 on page 118 for details.
- ☐ Ensure the reel bats are in their operational position.
- ☐ Thoroughly inspect the hydraulic multicoupler. Clean all debris from the fittings.
- ☐ Inspect the hydraulic hoses and replace/repair as needed.
- ☐ Verify the header is equipped with the appropriate multicoupler and adapter plate for use with your combine model.
- ☐ Check fluid levels on all gearboxes & apply grease where needed as outlined in section 13.18 on page 121 section of this manual.
- ☐ Ensure transport cart axle bolts are installed. If these bolts are removed, the wheels may fall off during transport.
- ☐ Take note of items which require attention after the header is connected to the combine as outlined in the combine operator's manual.

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7 - Mounting the Header to the Combine

7.1 - Combine Preparation

Follow all relevant instructions outlined in your combine operators manual prior to hooking up the header.

Check all locking mechanisms and/or lock pins on the Combine's Feeder House to ensure they are working properly and will not interfere with the initial mounting of the AirFLEX.

If the combine has a hydraulic tilt faceplate, tilt the face plate to an angle that allows easy hookup to the header. If the feeder house is tilted forward, the front of the header may dig into the ground when the table is lifted.

7.2 - AirFLEX Preparation

1. Park the AirFLEX on flat, hard, level ground.
2. Raise the front reel bats into operational position & secure each end to timing arms using a 5/16" x 1-1/2" UNC bolt and 5/16" UNC C-Lock nut.

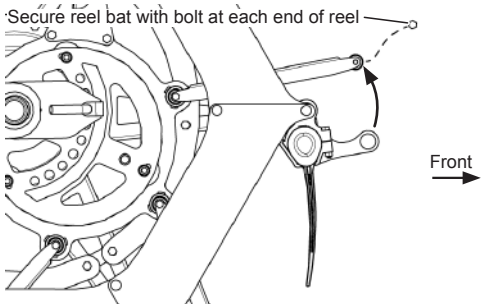


Fig. 33 - Raise reel fingers to operation position

3. Install the crop dividers, and crop divider extensions (or divider pipes) to the ends of the table by sliding the two notched tabs on the bottom rear of each divider onto the two slots at the bottom of the frame face.

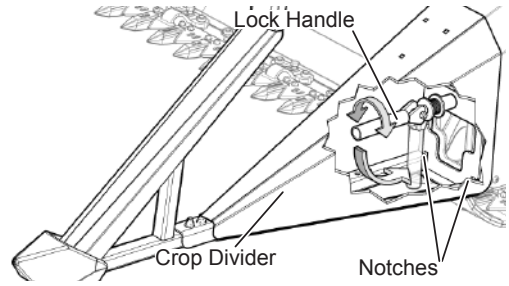


Fig. 34 - Install Crop Divider

4. Lock each divider in place by rotating the handle 90 degrees and pulling it down.

NOTE:

If the lock handle becomes loose, you can add an additional washer to improve handle performance as shown in section 13.10.1 on page 115.

NOTE:

If a more permanent solution is desired, the dividers can be bolted to the header using the nuts, washers and bolts provided in the Airflex shipping box.

7.3 - Mounting The AirFLEX

NOTE:

If the optional transport package is installed, unlock the transport cart and disconnect the cart's lift straps prior to lifting the header (see section 7.4).

1. Position combine directly behind the Header with the Feeder House aligned as closely as possible, on center, with the Feeder House Adapter on the Header.
2. Lower the combine feeder house and slowly drive the Combine forward until the top of the Feeder House is able to cradle the top Cross Member of the Subframe on the Header.

IMPORTANT!

Ensure the combine feeder chain has a minimum of 1/2" clearance from the feed auger drum.

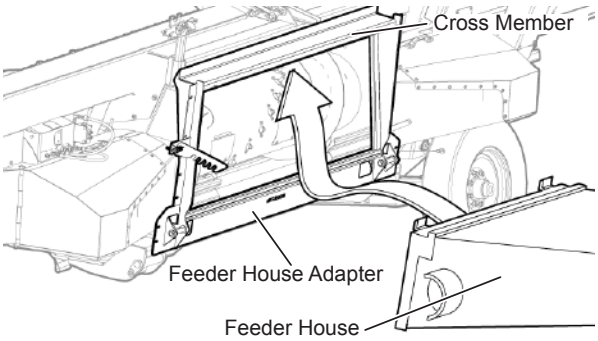


Fig. 35 - Insert Feeder House into Adapter Plate

3. Slowly raise the Feeder House until the it makes contact with the inside top of the Feeder House Adapter.
4. Check clearance and alignment of the Feeder House to the Feeder House Adapter, the Adapter Frame & the Feed Auger Drum. If required, adjust the Feed Auger Drum to a more forward position in the Adapter (See section 13.11 on page 116 for details).

NOTE:

If the transport cart is not present, proceed to section 7.5 on page 33.

7.4 - If the Optional Transport Package is Purchased

IMPORTANT!

Ensure the header rests on the ground to take the tension off the lock pins.

1. Remove the red hold-down on the draw bar mounting bracket and the red draw bar holder that extends below one of the struts on the left side of the header. Place in a secure storage location.

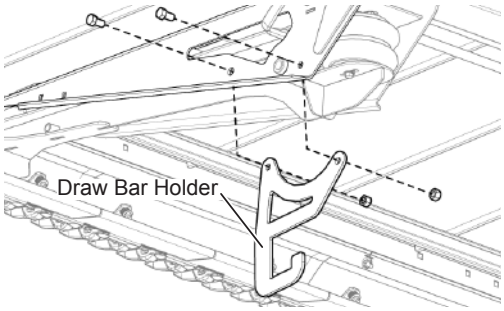


Fig. 36 - Remove Draw Bar Holder

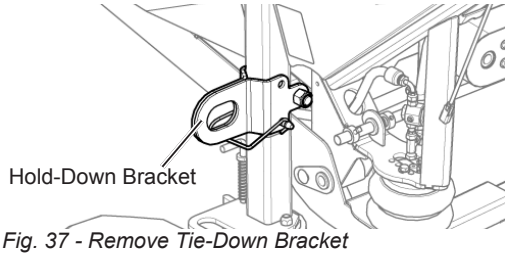


Fig. 37 - Remove Tie-Down Bracket

2. Disconnect the header electrical cable from the draw bar axle.
3. Remove the pin securing the draw bar axle to the header frame. It will drop away when the header is lifted in a later step.

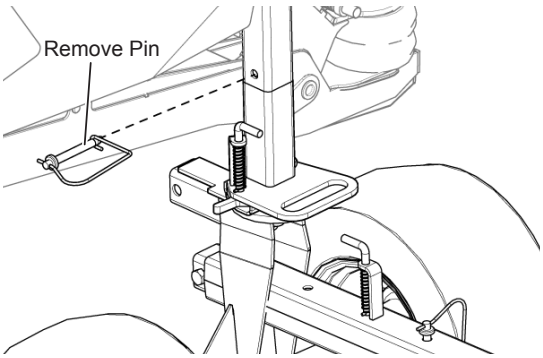


Fig. 38 - Remove Draw Bar Axle Pin

4. Release the two lock pins by first lifting up on the pin lock (A), then lift the handle back towards the rear of the header (B) then pull the lock pin out from between its lock ribs (C).

   Disconnect the transport's electrical cable from the header.

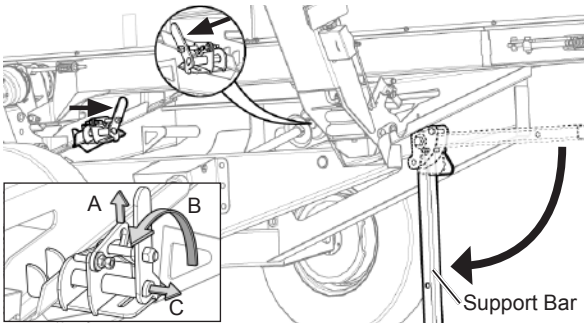


Fig. 39 - Unlock Transport & Lower Support Bar

5. Slightly raise the header with the combine, lower the transport support bar and lock in place with its pin.
6. Use the hand crank on the transport cart to lower it to the ground via its straps. Disconnect the straps from the header.

7.4.1 - Optional Draw Bar & Transport Storage

The draw bar and transport can be hooked together and towed to a storage location.

1. Lock support bar in horizontal position.
2. Insert the support bar into the draw bar axle and lock in place with pin.

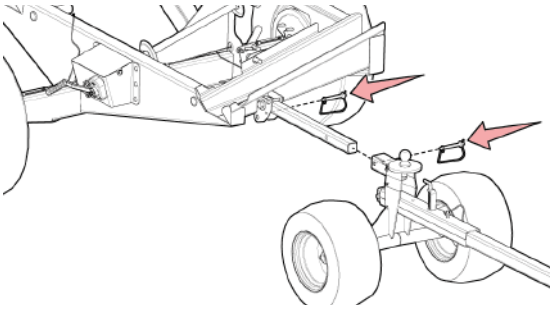


Fig. 40 - Transport Storage Position

⚠ WARNING!

Do not exceed 25 mph (40 kph) when towing the transport cart.

7.5 - Mounting the AirFLEX (continued)

1. Check feeder house alignment and clearances, start the engine and raise the Feeder House (and header) to its fully raised position.

STOP IMPORTANT!

If Feeder House and the Feeder House Adapter ARE NOT properly aligned, repeat this section of the manual.

⚠ WARNING!

To prevent injury, raise feeder house completely and lower the feeder house safety stop onto hydraulic cylinder rod. Shut OFF engine, set parking brake, and remove the key before exiting the cab.

2. With the Header in the fully raised position insert all lock pins and/or header adapter locking bolts as described in your Combine owner's manual.

⚠ WARNING!

Ensure all locks are properly installed before proceeding.

7.6 - Hydraulic & Electrical connections

Connect the Hydraulic Multicoupler, Automatix Electrical Harness and the Combine Electrical Harness to the header as shown below.

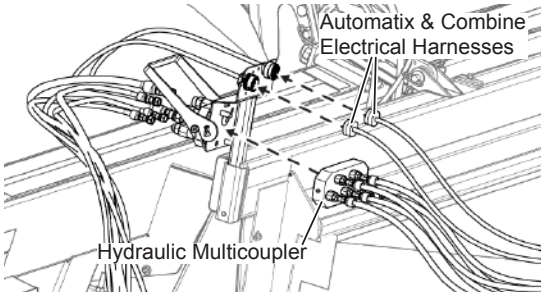


Fig. 41 - Connect Multicoupler & Electrical Harnesses

NOTE:

The multicoupler and harness design will vary between different combine makes.

7.7 - Drive Shaft Hookup

1. Connect the telescoping drive shaft on the left side of the feeder house adapter and attach to feeder house drive shaft. Verify the quick attach collar is fully locked on drive shaft.

IMPORTANT!

A pry bar may be required to help align the drive shaft with the combine's output shaft. Do not damage the grease zerk!

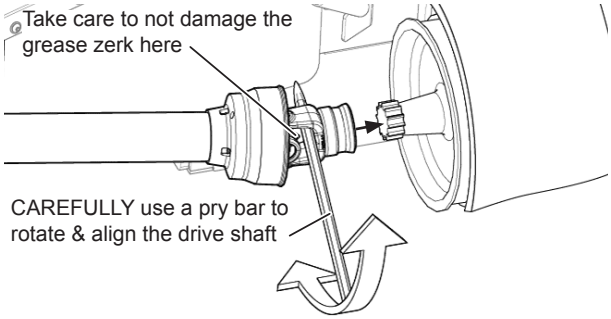


Fig. 42 - Connect Drive Shafts (both sides of feeder house)

NOTE:

To connect the PTO drive line, push the button on the collar and push the PTO onto the shaft. It will click as the collar snaps into place.

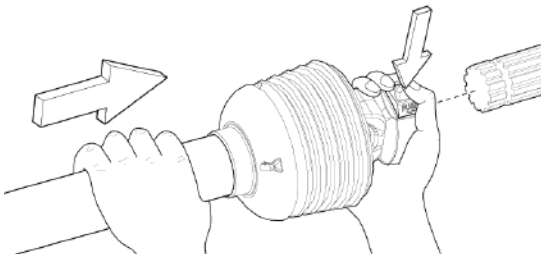


Fig. 43 - Connect PTO

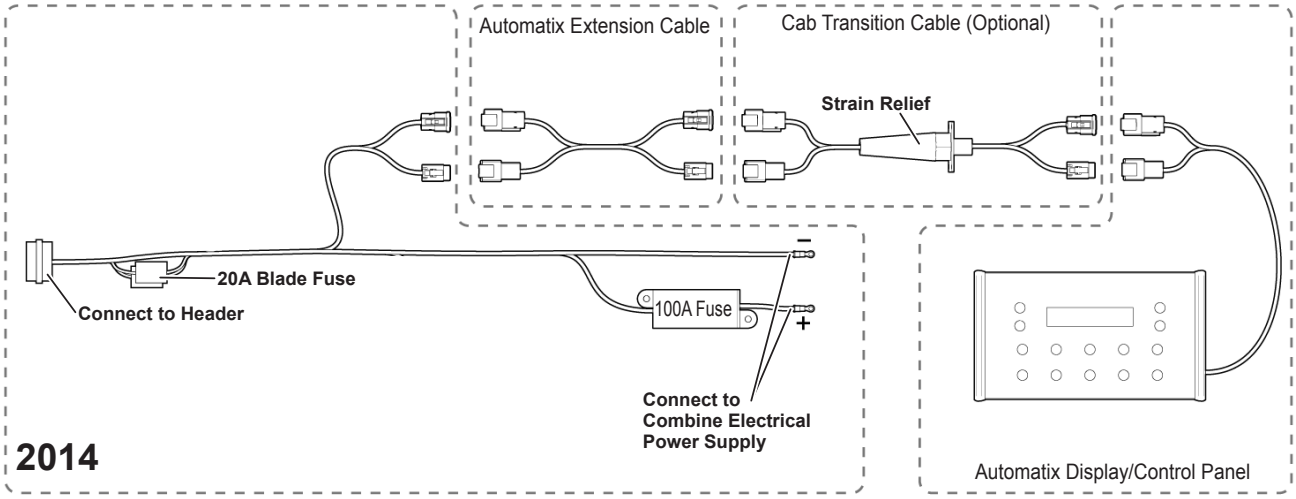
2. Repeat these steps for the drive shaft on the right side of the feeder house.

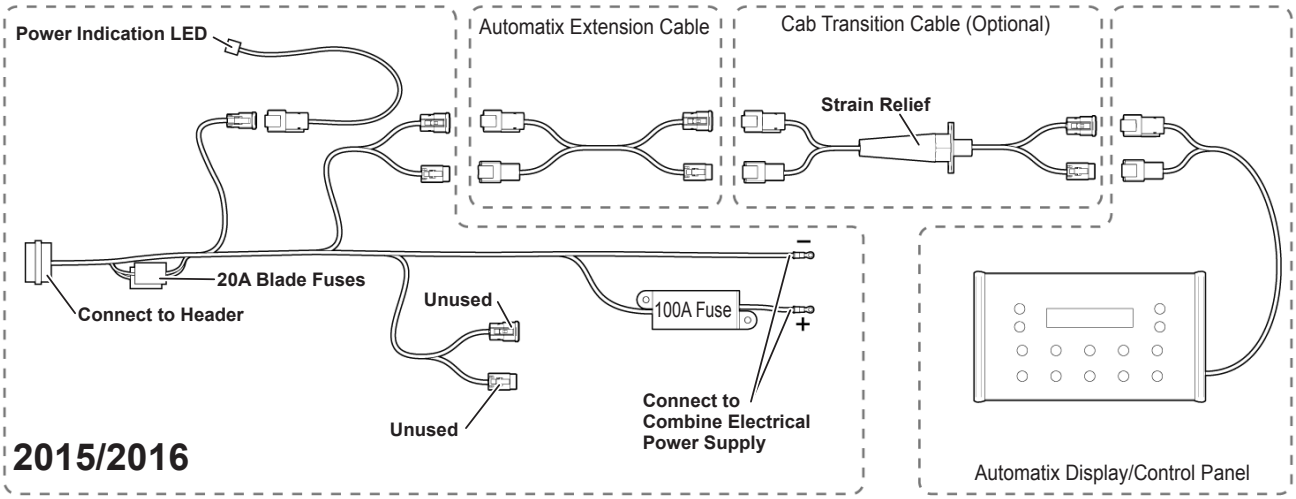
WARNING!

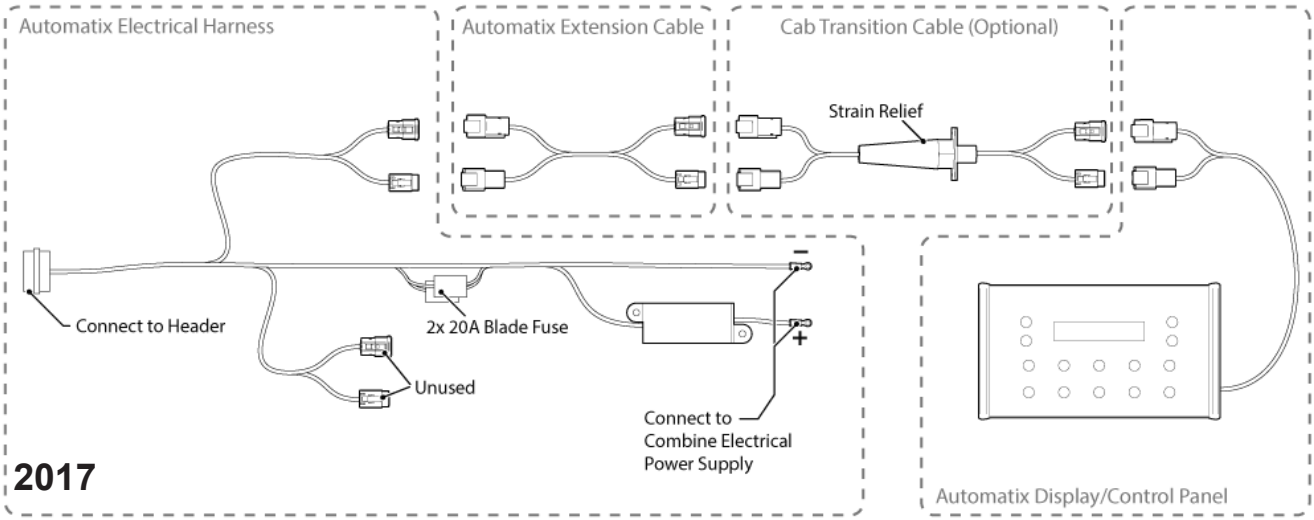
Ensure drive shields are in place.

7.8 - Automatix Installation

The Automatix control panel is used to control the various header functions. It must be connected to the combine's electrical system and mounted in the cab.







1. Connect the Main Automatix Harness to the header.

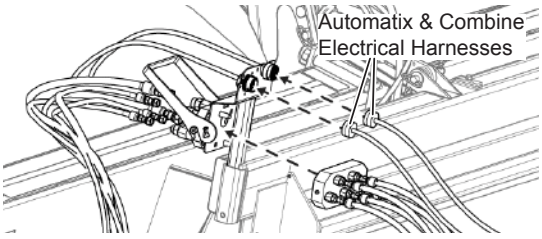


Fig. 44 - Connect Multicoupler & Electrical Harnesses

2. If using a combine equipped with `Bang-Bang` style directional hydraulic valves, install the BeeBox as described on page 130.
3. Connect one end of the Automatix Extension Cable to the Main Automatix Harness.
4. Route the Automatix Extension Cable as close to the combine cab as possible, keep in mind where you want the cable to enter the cab while routing.
5. Route the optional Combine Cab Transition Cable into the cab of the combine. Use the strain relief to protect the cable as it enters the cab.
6. Using either the provided suction cups or the RAM industries ball, mount the Automatix control panel inside the cab in an easily viewable and accessible location.

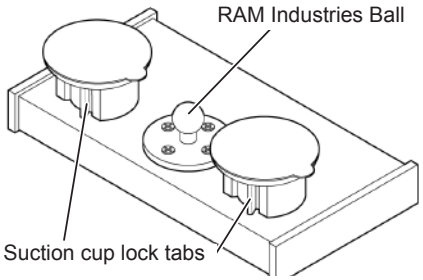


Fig. 45 - Automatix Display Mounting

NOTE:

If using the suction cups, ensure everything is clean and dust free prior to installation. The suction cups can only be installed on a flat window.

IMPORTANT!

The RAM Industries ball must not be removed from the Automatix control panel. Removing the ball will result in damage to the system.

7. Connect the Automatix Combine Cab Transition Cable to the Control Panel.

IMPORTANT!

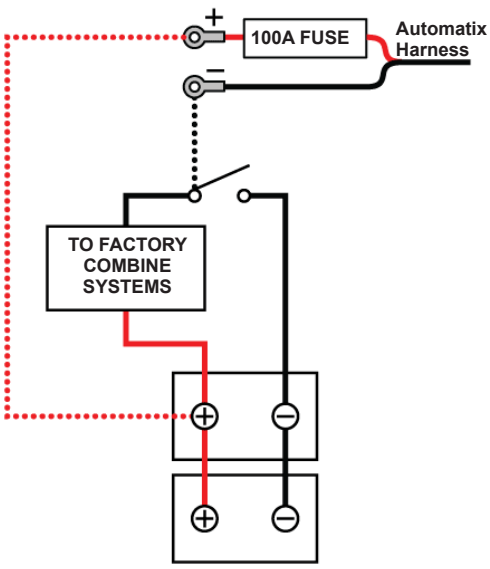
When routing cables around the combine, always ensure that there are no high temperature or moving parts that might damage or interfere with the cable. To prevent equipment damage, always secure cables with zip ties or cable hold-downs.

8. Route the two power connectors on the automatix electrical harness to the combine's electrical power supply. Connect the power lines to the battery using the following rules:
   - Both of the Automatix power cables must not be connected directly to the battery. Always ensure that the circuit can be interrupted with a switch in order to prevent the battery from discharging during storage.
   - Connect the un-switched automatix power wire to the same battery to which the master switch is connected. This ensures the Automatix system will not be subjected to more than 12 volts. Some combines have battery relays that combine voltage to 24 volts. Anything over 12 volts can damage the system. If in doubt, use a multimeter to check the voltage.
   - Most modern combines use a positive switched system but some older combines use a negative switched system. Please inspect the combine to verify which system it uses as the connection points will differ.

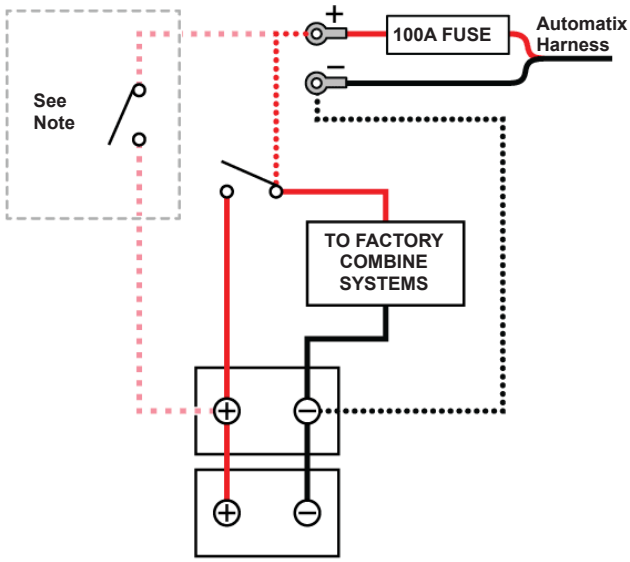
NOTE:

The battery master switch can be difficult to access on Gleaner combines. It may be required to install a second power switch for the automatix power connection. Use a positive switched connection.

12V Negative Switched Battery System



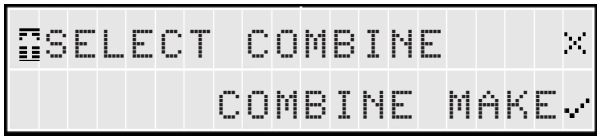
12V Positive Switched Battery System



7.9 - Mounting Checklist

- □ Combine feeder house securely connected to adapter plate on header with all locks in place.
- □ Electrical connection between header and combine in place.
- □ Hydraulic connection between header and combine in place.
- □ Drive lines (PTO) connected to left and right sides of combine feeder house.
- □ Reel fingers in operational position.
- □ Optional Draw bar front axle and Transport cart removed and stored.
- □ Red draw bar storage bracket and hold-down removed (if applicable).
- □ All safety shields and decals in place and undamaged.
- □ Automatix display installed in combine cab.
- □ Automatix power harness properly connected to combine's electrical supply.
- □ Hydraulics and air lines inspected for damage or leaks.

7.10 - Combine Make Selection



Select your make of combine via the last menu item in the automatix main menu.

To change the combine brand, select the check mark so the brand starts flashing.

Press the up and down arrows until your combine brand appears.

When satisfied, select the check mark again to lock in your selection.

If the combine make name has an asterisks (*) next to it, this indicates the settings for the header have been modified in the automatix service menu. The can be reset to defaults and the * can be cleared by reselecting your combine on this screen.

7.11 - Automatix Header Height Calibration

Airflex header height calibration must be performed upon the first use of your header and after major equipment modifications or repairs.

Follow the calibration instructions in section 10.8.7 on page 70 before proceeding.

IMPORTANT!

The automatic header height system will not function if calibration is not completed sucessfully.

7.12 - Combine Calibration

Combine calibration must be performed with the AirFLEX in FLEX mode, with the header tilted forward using the hydraulic tilt cylinder.

NOTE:

Do not use header float (accumulator) functions with the AirFLEX. The only known exception is Gleaner combines, where some accumulator float can be used after all calibrations are complete (~25% on).

IMPORTANT!

Manually adjusting tilt and height settings may deactivate automatic functions. Auto header height may need to be reactivated on some combines that don't allow manual adjustments while header height is engaged.

7.12.1 - Combine feeder house speed

IMPORTANT!

Machines equipped with a variable-belt drive feeder house are designed for use with a corn head or row-crop head. Using variable-belt drive at excessive speeds when the combine is equipped with a cutting platform can cause vibration and excessive wear to cutterbar parts.

If your combine's feeder house is configured to run at multiple speeds, ensure it is set to run at the 'Grain' speed.

7.12.2 - Combine Feeder House Angle

The Combine Feeder House must be tilted at a specific angle for optimal header operation. To set proper operation angle.

1. Set the header to FLEX mode.
2. Fully retract the hydraulic tilt cylinder.
3. Lower the table until the cutter bar is fully pushed up.

IMPORTANT!

Do not lower the header too far. This will result in the entire table tilting backward and may damage the header.

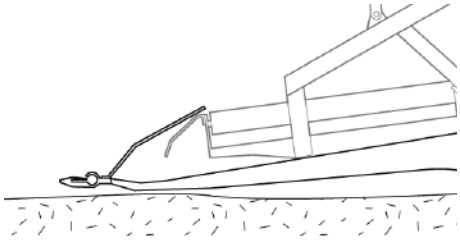


Fig. 46 - Cutterbar pushed up

4. Slowly raise the header until 2" (2 bars) show on the FLEX Header Height Live View on the Automatix display.

Fig. 47 - FLEX Live View - 2 bars (2" of travel)

WARNING!

Shut OFF engine, set parking brake, and remove the key before exiting the cab.

5. Check the end paddles at each end of the header to determine if they are low profile or high profile versions. The optimal feeder house angle measurments will vary depending on the paddle configuration.

For High Profile Paddles:

Measure the height of the 'heel' of the cutter bar paddle from the ground. It should be approximately 4" (10 cm).

- If the paddle 'heel' is more than 4" (10 cm) above the ground, the tilt is too steep and the cutter bar guards will dig into the ground.
- If the paddle 'heel' is less than 4" (10 cm) above the ground, the angle is too shallow and the rear of the paddle will drag.

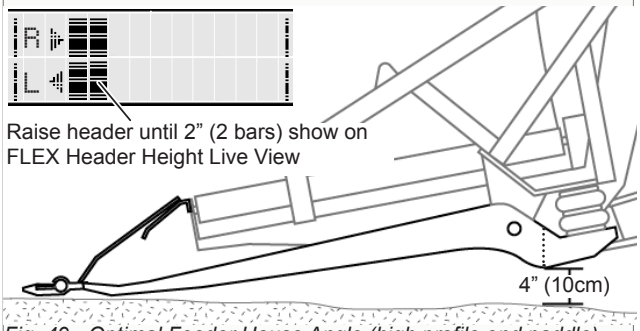


Fig. 49 - Optimal Feeder House Angle (high profile end paddle)

For Low Profile Paddles:

Measure down to the ground from the midpoint between the rear of the paddle and the pivot point. There should be an 8" (20 cm) space when at the optimal feeder house angle.

- If the paddle 'heel' is more than 8" (20 cm) above the ground, the tilt is too steep and the cutter bar guards will dig into the ground.
- If the paddle 'heel' is less than 8" (20 cm) above the ground, the angle is shallow and the rear of the paddle will drag on the ground.

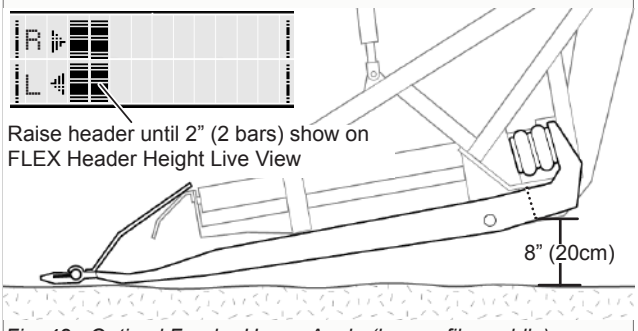


Fig. 48 - Optimal Feeder House Angle (low profile paddle)

6. Adjust the feeder house angle as necessary and re-test the angle as outlined in the previous steps. Tilt can be adjusted to suit ground conditions and habits of the operator.

7.12.3 - Float

Float interferes with proper automatic header height functionality and should be disabled on the combine (accumulators turned off).

Refer to your combine manual to see if your combine has the float option.

IMPORTANT!

Combine float systems will actively interfere with the AirFLEX header height control system. Disable the combine's float system prior to operating the AirFLEX header or damage to your equipment may result.

One exception is Pressure Float (may be called by a different name, depending on combine brand). Pressure float momentarily turns on float when there is upward pressure on the bottom of the cutter bar. The value should be set low (about 30 psi). This can protect the cutter bar from being bent if the header height is not reacting quickly enough to terrain changes.

7.12.4 - Hydraulic Header Raise and Drop Rates

Raise Rate: Set your combine's raise rate so it takes 6 seconds to lift the header from the lowest position to the highest position.

Drop Rate: Set your combine's drop rate so it takes 7 seconds to lower the header from the highest position to the lowest position.

7.12.5 - Combine header height calibration

While the header is in FLEX mode, calibrate your combine's header height via the combine's controls. Please refer to your combine's operator manual for information on where these settings can be changed.

7.12.6 - Combine Header Height/Tilt Sensitivity

1. When first calibrating the header, slowly increase your header height sensitivity (via the combine controls) until the header starts hunting up and down.
2. Decrease the sensitivity by 10-20% until the header stops hunting.
3. When set properly, the header should not hunt when it is standing still.
4. Repeat these steps for header tilt sensitivity.

7.12.7 - Other Combine Settings

Ensure all other combine settings (as outlined in your combine operator's manual) are properly configured before harvesting.

7.13 - Reel Calibration

7.13.1 - Reel Finger Timing Adjustment

Set the reel finger timing (angle) to a position suitable for your crop conditions. Always check finger clearance after adjusting timing.

See section 9.3.1 on page 50 for details.

7.13.2 - Reel Height Adjustment (bottom limit based on finger timing)

Once finger timing has been determined, adjust the reel height via the reel height adjustment bolts. With the header in rigid mode, ensure the reel maintains a distance of 1 1/2” (3.8 cm) from the cutter bar & feather plates.

Adjust the reel arms at the ends of the table first, then adjust the center reel arm. Multiple adjustments may be required.

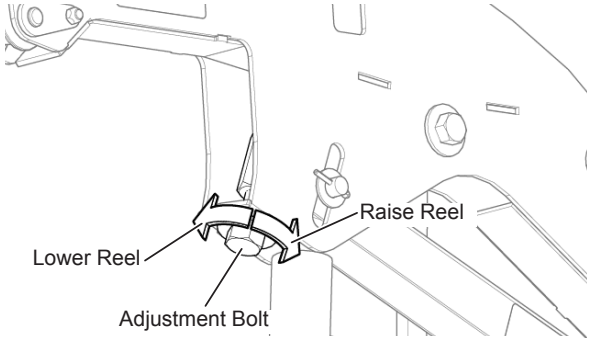


Fig. 50 - Reel Height Adjustment Bolt

To adjust the center reel arm height, release the indicated pin and adjustment lock, turn the adjustment bolt to adjust the height, then re secure the lock and pin.

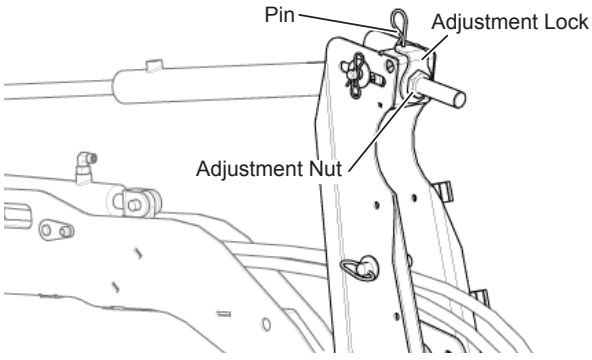


Fig. 51 - Center Reel Arm Height Adjustment

IMPORTANT!

Maintain a minimum of 1 1/2” (3.8 cm) of clearance between the reel fingers and cutter bar/feather. This clearance must be set while the header is in Rigid mode.

If harvesting low or downed crops, you may reduce this clearance to 1” (3.8 cm) but will risk cutting the reel fingers in the cutter bar, this damage is not covered under warranty.

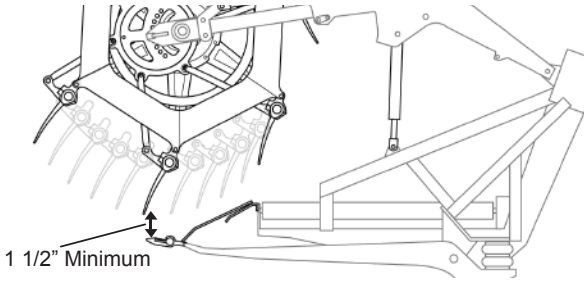


Fig. 52 - Reel Finger Clearance

7.13.3 - Reel Centering

Measure the distance between the left end of the reel and the left end of the header, then measure the distance between the right end of the reel and the right end of the header. The measurement should be equal on both ends, this ensures the reel is correctly centered on the header.

If adjustment is required, loosen the two indicated bolts on the reel arm brace, adjust the reel arm position then retighten the bolts.

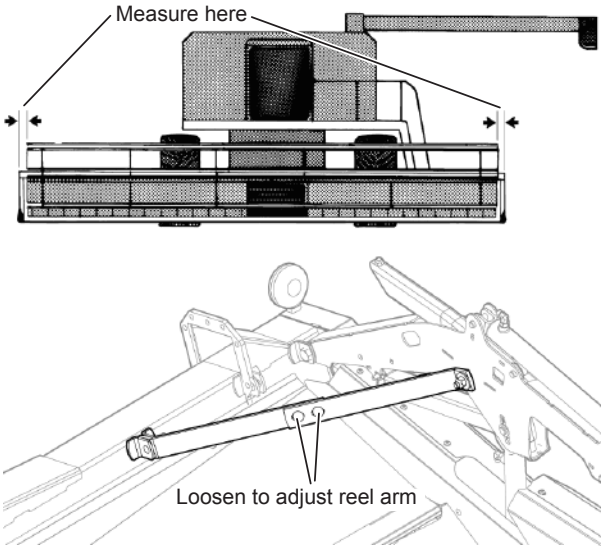


Fig. 53 - Reel centering

7.14 - Feed Auger Finger Timing

Adjusting finger timing is critical in achieving proper material flow from the center draper to the combine feeder house. The feed auger finger timing handle has 3 positions:

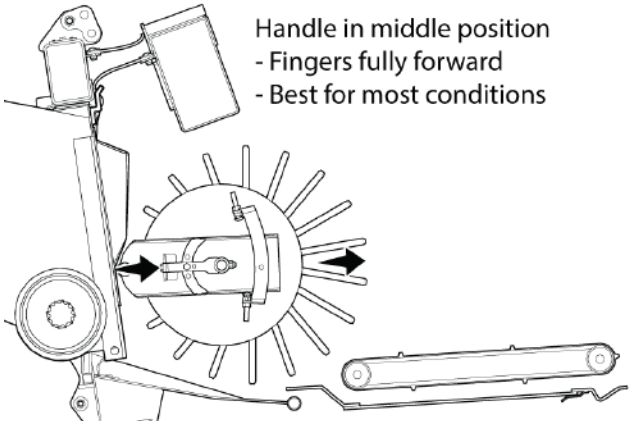


Fig. 54 - Feed auger drum fingers in middle position

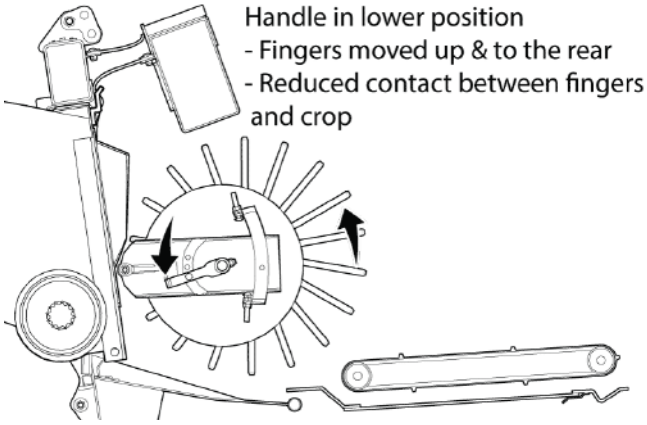


Fig. 55 - Feed auger drum fingers raised

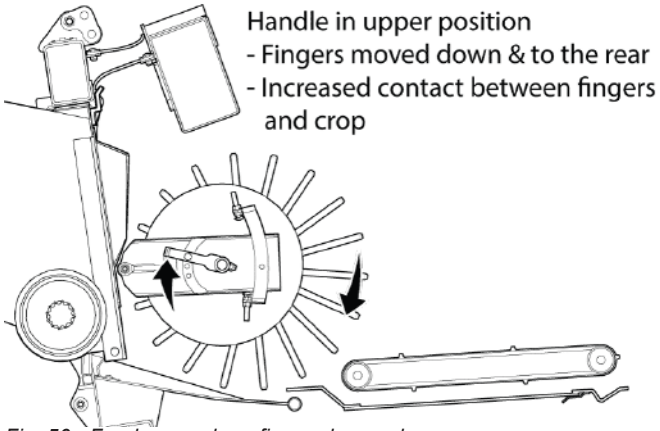


Fig. 56 - Feed auger drum fingers lowered

⚠ CAUTION!

Failure to secure the finger timing handle lock bolt will result in damaged equipment.

⚠ CAUTION!

Thoroughly check the clearance all the way around the feed auger drum.

STOP IMPORTANT!

The two stop bolts must be adjusted to prevent the feed auger fingers from contacting anything unintentionally. This distance to the top stop bolt (A) must be less than the distance between the top fingers and the upper tube (B).

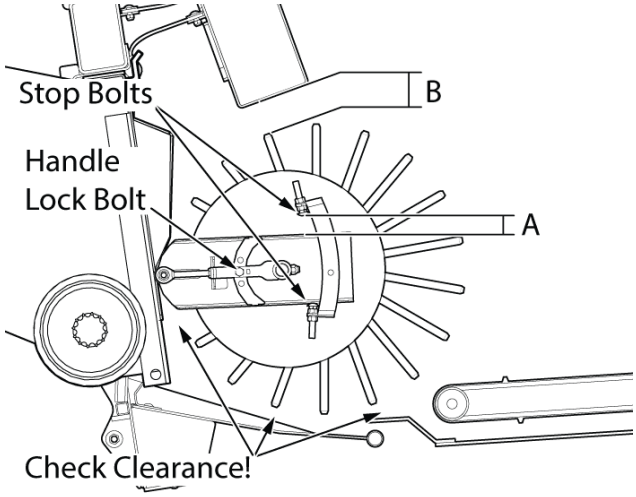


Fig. 57 - Feed Auger Drum Clearances

7.15 - Knife Hold-Down Clearance

NOTE:

In tough conditions, reduce clearance to optimize cutting performance. Only tighten as needed as knife life is affected. Minimum hold-down to section clearance is 0.3 mm (0.012 in.).

Knife Hold-Down to cutting section clearance should be: 0.5 mm (0.020 in.). Generally, this is not critical. However too tight can reduce knife lifespan.

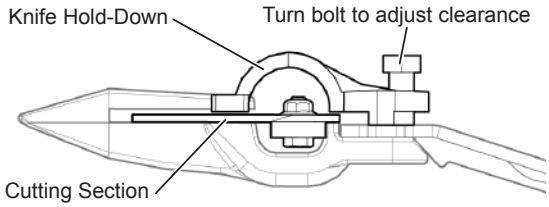


Fig. 58 - Adjust hold-down clearance to cutting section

7.16 - Optional Components

7.16.1 - Skid Shoes

The optional skid shoes provide additional protection to the underside of the header while cutting above the ground while in FLEX mode.

There are two possible positions for the skid shoes, this can be adjusted via the indicated bolt.

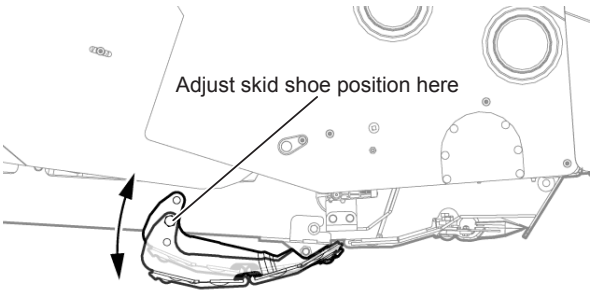


Fig. 59 - Skid shoes - 2 possible positions

WARNING!

Do not allow the skid shoes to contact the ground when harvesting in RIGID mode.

Allowing the skid shoes to contact the ground while in RIGID mode drastically increases the risk of the cutter bar or dividers digging into the ground causing equipment damage.

7.16.2 - Cross Auger

The optional cross auger should be adjusted so the flighting engages the crop to help move it towards the feeder deck opening.

The adjustment jacks are used to change how far the cross auger is extended. The lock bolts can be loosened to allow the angle of the cross auger to be adjusted. Always tighten the lock bolts after adjustment.

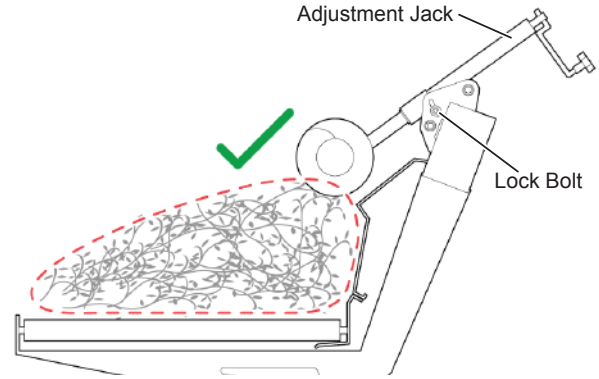


Fig. 60 - Adjust hold-down clearance to cutting section

The cross auger may contact the back panel if moved too close. Allow a minimum of 3/4" of space between the cross auger and back panel.

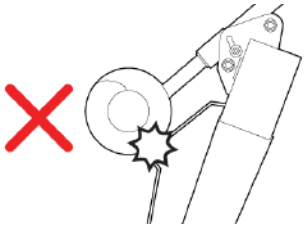


Fig. 61 - Cross auger impacting back panel

Too much space between the cross auger and the back panel will allow crops to wrap around the cross auger. This can be caused by over-extending the cross auger, or by over-adjusting the cross auger angle.

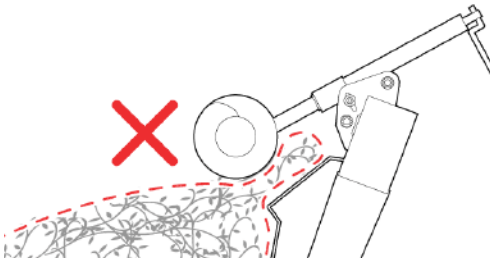


Fig. 62 - Crop wrapping around cross auger

The speed of the cross auger can be adjusted via the flow control located on side of the hydraulic manifold as shown below. There is a mechanical limiter to the flow control limiting the range from 1-4, with 1 being the slowest and 4 being the fastest.

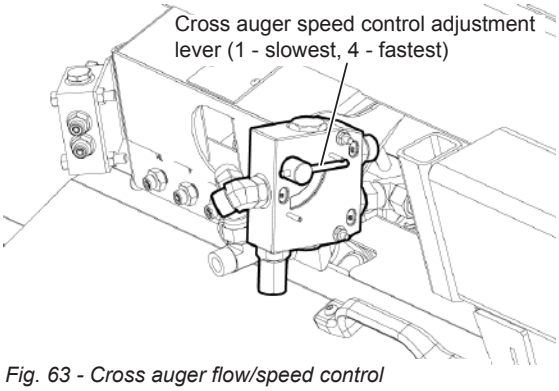


Fig. 63 - Cross auger flow/speed control

⚠ WARNING!

Do not bypass the mechanical speed limiter. Setting a speed higher than 4 can result in equipment damage or injury.

7.17 - Check for Problems

Run platform for a few minutes.

⚠ WARNING!

Shut OFF engine, set parking brake, and remove the key before exiting the cab.

Check for overheating bearings and gearbox leaks.

Inspect in and around the drapers for foreign objects that may have been dislodged while running the header.

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8 - Daily Inspection

8.1 - Safety & Protective Shields

Check all safety shields and ensure they are securely in place. Tighten all loose hardware.

8.2 - Dividers

Crop dividers must be properly installed. The crop divider extensions (or divider pipes) must be installed on the dividers. There are three positions for the standard divider (See section 13.10 on page 115 for details).

⚠ WARNING!

Crop dividers are heavy! To avoid strain or back injury, use lifting aids and proper lifting technique when moving the dividers.

8.3 - Air Hoses

Inspect air hoses, air fittings, and air bags for damage or leaks (see section 13.17 on page 120 for details).

- The air tank is located to the left of the feeder house area.
- There is an air bag located at the rear of each strut.

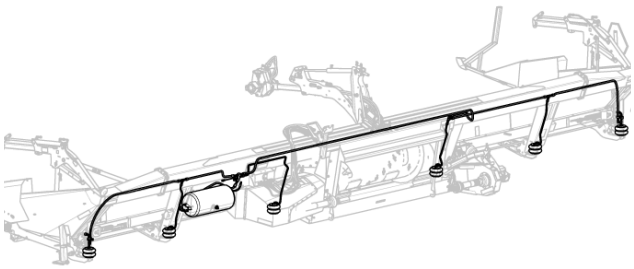

Fig. 64 - AirFLEX Air System

8.4 - Knife Guards & Sections

Inspect the cutter bar. Replace broken guards and cutting sections. See section 13.8 on page 110 for details.

8.5 - FLEX Header Height Control Sensors

Inspect and adjust the FLEX header height sensor bar as outlined in section 13.16 on page 120.

8.6 - Feed Auger

Ensure the finger timing on the feed auger drum is set to best handle the crop you are harvesting.

In most situations, you want both the drum and fingers in their fully forward position (without contacting anything). Ensure there is enough clearance around the feed auger. See section 13.11 on page 116 for details.

8.7 - Drapers

Ensure that all drapers are tensioned and aligned. Make sure the tension handle for each draper is in the correct position.

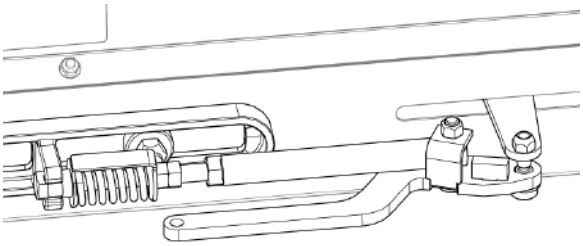

Fig. 65 - Draper Tension Handle Correct Position

8.8 - Belts

Ensure drive belts are properly aligned and tensioned. See section 13.4 on page 96 for details. Clear the belts of all debris & material buildup.

8.9 - Lubrication

The knife heads must be greased at four locations every 10 hours of operation, it is recommend that you apply grease every day prior to operating the equipment. See section 13.18 on page 121 for lubrication details & other lubrication points.

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9 - Operation

IMPORTANT!

When cutting close to the ground, it is important to avoid over-lowering the combine feeder house as this may drive the cutterbar and center draper pan into the ground, causing damage.

IMPORTANT!

The AirFLEX is designed to work with Automatic Header Height Control engaged. Do not disengage Automatic Header Height Control when operating the header or damage to your equipment will result.

IMPORTANT!

When operating the AirFLEX, **it is EXTREMELY important to grease the knife head bearings every 8 hours** (or every day of operation). Failure to do so will drastically shorten the lifespan of the knife head bearings. See 13.18 on page 121 for details.

9.1 - Cutting mode selection

The AirFLEX Header has two modes of operation; Flex Mode and Rigid Mode. It is important to select the correct cutting mode for your crops and terrain.

Flex Mode: The cutter bar will 'flex' to follow uneven terrain, ideal when cutting on the ground.

Rigid Mode: The cutter bar becomes 'rigid' and the header will behave like a standard rigid header.

These modes of operation can be selected via the 'RIGID' & 'FLEX' buttons on the Automatix control panel.

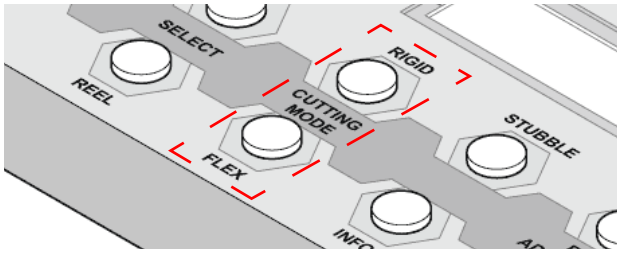


Fig. 66 - Cutting Mode Selection

NOTE:

The cutting mode cannot be changed while the header is operating. You must first stop the knife before switching between modes.

Transitioning from Rigid to Flex entails dumping air from the tank, taking about 60 seconds. Transitioning from Flex to Rigid requires the onboard compressor to run until the system is pressurized to the Rigid pre-set and requires up to 15 minutes.

9.2 - Hydraulic Header Tilt

The AirFLEX header can be tilted forward or back using the hydraulic tilt cylinder.

Header tilt is controlled by first pushing the 'TILT' button on the Automatix control panel, then using the combine's reel height controls to tilt the header.

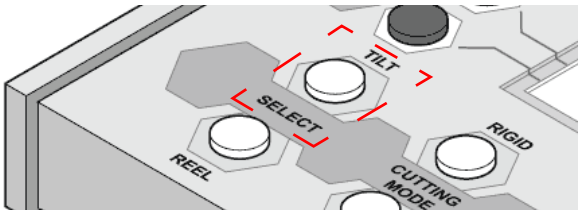


Fig. 67 - Header Tilt - Select function of reel height controls

The controls default back to reel height control after 5-30 seconds (adjustable via system menu). Push the 'REEL' button on the Automatix control panel to skip this wait time.

Once tilted, the selected tilt mode (out or back) must be input into the Automatix control panel via the 'Rigid Adjustment' buttons to indicate the table tilt orientation.

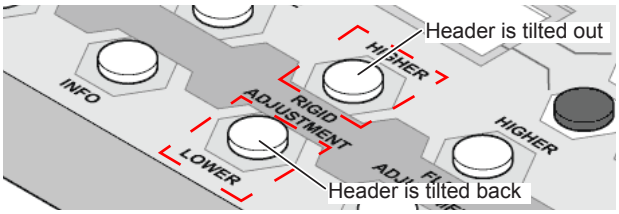


Fig. 68 - Input tilt mode via rigid adjustment buttons

The tilt indicator is located next to the hydraulic tilt cylinder.

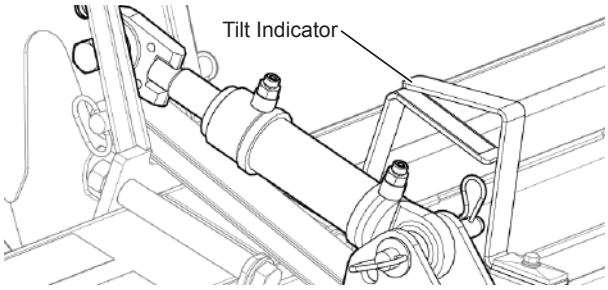


Fig. 69 - Hydraulic Tilt Cylinder & Indicator

9.3 - Reel Settings & Controls

The reel on the AirFLEX is designed to assist in separating cut crops from uncut crops then sweep them across the feather plates between the knife and the drapers in order to obtain a steady flow.

Reel configuration is extremely important for optimal header performance. The order of importance of these settings are:

- Finger Pitch
- Fore-Aft position.
- Reel Height
- Reel Speed.

NOTE:

See section 13.7 on page 108 for reel adjustment information

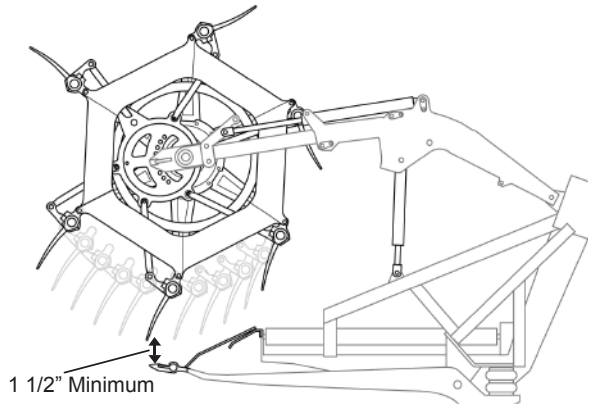


Fig. 70 - Reel Finger Clearance

9.3.1 - Finger Pickup Settings (Pitch)

Start by adjusting the finger pitch so fingers are perpendicular to the cutter bar.

For crops that are down or lodged, adjust fingers to be more aggressive, lifting the crop and dropping it onto the draper decks.

If the crop starts to wrap around reel, this indicates the need to adjust the fingers to a less aggressive setting and/or finger spacing (2 1/2", 5" or mixed spacing).

Adjust the fingers to suit your individual needs and make note of the best settings for each of the crop conditions you encounter.

WARNING!

To avoid serious injury, raise reel, engage reel lift safety stops, shut OFF engine, set parking brake, and remove key before exiting the cab.

IMPORTANT!

Maintain a minimum of 1 1/2" (3.8 cm) of clearance between the tips of the reel fingers and the cutter bar/feather plates. If harvesting low or downed crops, the clearance can be reduced to 1" but will run the risk of damaging the reel fingers which is not covered under warranty.

Reel to knife clearance must be readjusted whenever finger pitch is changed.

1. Firmly grasp the handle then pull and rotate lock pin to one side so it is disengaged from reel.

WARNING!

Failure to secure the handle when pulling the pin will result in the reel bats dropping suddenly.

2. Lift the handle up for less aggressive finger pitch.

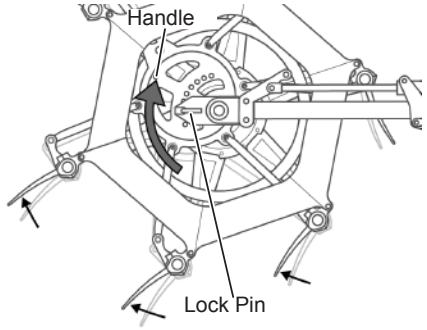


Fig. 71 - Less Aggressive Finger Pitch

3. Lower the handle for more aggressive finger pitch.

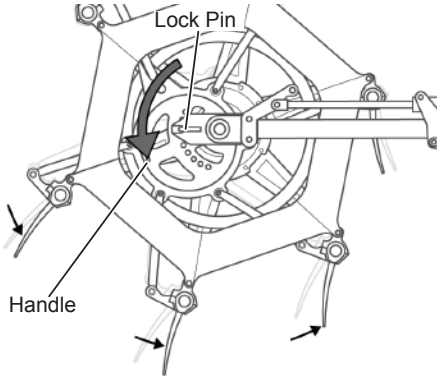


Fig. 72 - More Aggressive Finger Pitch

NOTE:

The finger pitch adjustment holes are numbered from 1 to 9, with 1 being the least aggressive setting and 9 being the most aggressive.

4. Once desired setup is obtained, re-engage the lock pin.
5. Repeat this process for the other end of the reel to ensure each side has identical finger pitch.
6. Readjust reel height and reel fore/aft in order to maintain a minimum safe knife clearance (1 1/2” (3.8 cm)).

IMPORTANT!

Reel finger to cutter bar clearance must be determined while the header is in rigid mode so the knife is in its highest position.

Setting the clearance while the header is in flex mode will result in reel finger damage.

9.3.2 - Hydraulic Reel Height and Fore/Aft Control

For general usage, the center of the reel should be positioned slightly behind the cutter bar.

For lodged or down crops, adjust reel so the center of the reel is ahead of cutter bar.

The reel height and fore/aft controls are located on the combine’s controls. Please see your combine’s operator manual for details.

For details on setting the minimum reel height, see section 13.7.2 on page 108.

IMPORTANT!

It is important that a reel clearance of 1 1/2” from the cutter bar has been set with the header in rigid mode prior to attempting to operate the hydraulic reel height and fore/aft controls, or the reel fingers may become damaged.

9.3.3 - Reel Speed

The reel speed is controlled and viewed via the combine’s control panel and display. Please see your combine’s user manual for details.

Set reel speed slightly faster than ground speed.

When traveling over 2 mph (3.2 kph), the reel should move ~10% faster than ground speed.

When traveling under 2 mph (3.2 kph), the reel should move ~20% faster than ground speed.

9.4 - Knife, Feed Auger Drum and Draper Speed.

On the AirFLEX header, the knife, feed auger drum and draper speeds are directly linked to the combine feeder house pto speed .

9.5 - Crop Dividers

Adjust divider extensions for best header height performance based on current cutting height or use divider pipes when extendable dividers interfere with crop.

There are three types of crop divider extensions.

9.5.1 - Crop Divider Pipe Extension:

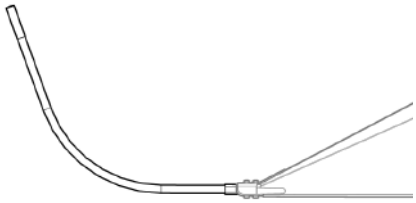


Fig. 73 - Crop Divider Pipe Extension

Limited to use with matted or tangled crops in Flex cutting mode only. The pipes must skim on top of the crops, they should never touch the ground.

IMPORTANT!

Do not use the crop divider extension pipes in rigid cutting mode.

9.5.2 - Crop Divider Snub Extension:

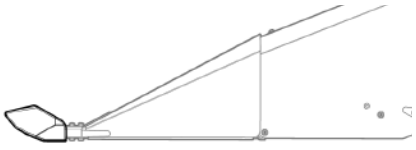


Fig. 74 - Crop Divider Snub Extension

The crop divider snub extension is used primarily in Flex cutting mode when harvesting soybeans or when it is desirable to reduce divider contact with the crop.

See section 13.10 on page 115 for details on installing & adjusting the dividers.

9.5.3 - Crop Divider Extension:

The crop divider extension has three possible positions.

When cutting at 10” or lower, the divider can be fully retracted.

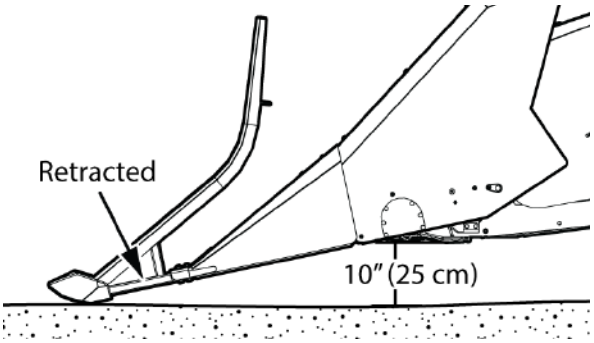


Fig. 75 - Crop Divider Extension Retracted

When cutting at 18” above the ground, the divider must be fully extended in order for header height control to function.

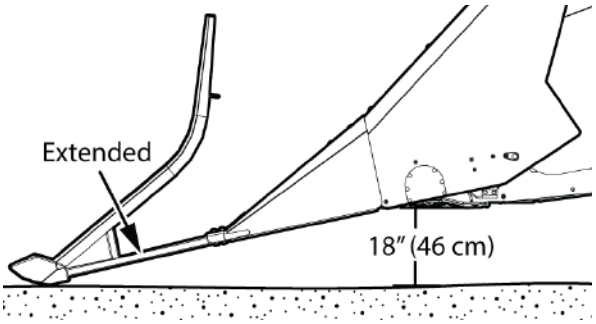


Fig. 76 - Crop Divider Extension Extended

Adjust the divider float so it feels just heavy enough to skim along the ground without being lifted up by crops or stubble. See section 13.10.5 for details.

9.5.4 - Locking Dividers

The crop dividers can be locked in place if required (if using vertical shear for example) using the following components on each crop divider:

- 1 of 1/2’ x 2” UNC Grade 5 Bolt
- 2 of 1/2” SAE Washer
- 1 of 1/2” UNC Grade A Nut

These components are provided with the optional vertical shear kit. If vertical shear is not purchased for your equipment, the nut, washers and bolt must be purchased separately.

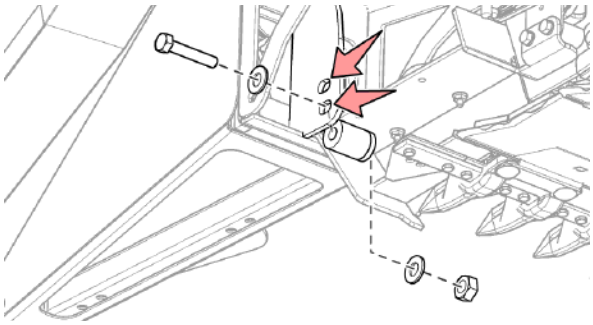


Fig. 77 - Lock dividers using bolt

NOTE:

The divider lock may not be available on older headers, if this feature is unavailable on your header, engage RIGID mode via the automatix control panel.

9.6 - Operating in Flex Mode

In Flex cutting mode, the cutter bar flexes to follow the contour of the ground. This cutting mode is best suited for low or tangled crops.

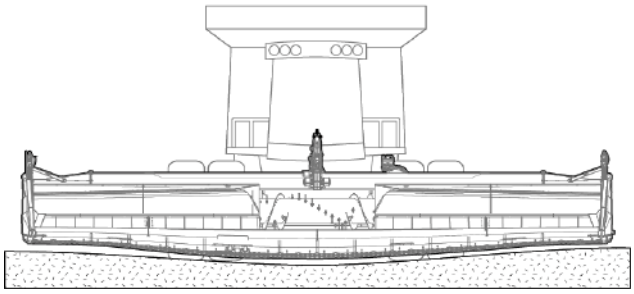


Fig. 78 - FLEX Mode

1. Before activating FLEX mode, tilt the header back by retracting the hydraulic tilt cylinder.

IMPORTANT!

FLEX mode will not work properly if the header is tilted forward.

2. First ensure the knife is not running.
3. Ensure the center limit sensors are in their raised and locked position.

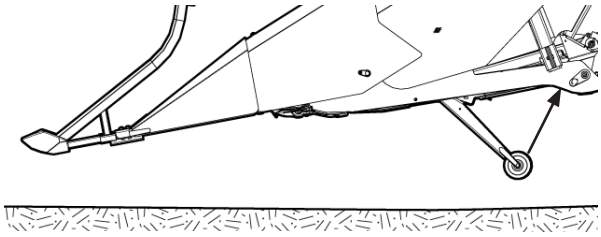


Fig. 79 - Raise & lock center sensor(s)

4. Press the Flex button on the Automatix control panel.

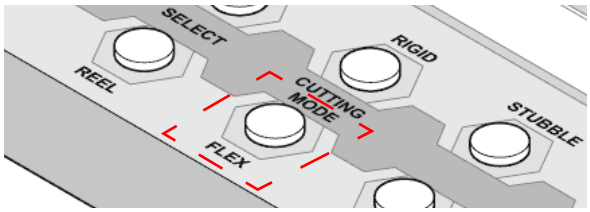


Fig. 80 - Select FLEX mode

9.6.1 - Flex Air Pressure

In Flex mode, the system air pressure can range between 25 PSI and 80 PSI.

To maximize Flex platform performance, operate at pressures within the following recommended ranges:

- **Lower than 32 psi** for terraces.
- **32-35 PSI** for firm/fast ground conditions.
- **36-39 PSI** for normal ground conditions.
- **40-50 PSI** for soft/sticky/wet/slow ground conditions.
- **Higher than 50 PSI** in severe rocky conditions.

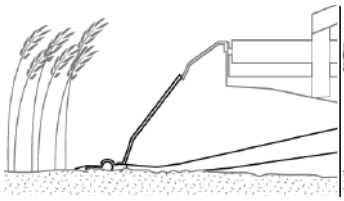


Fig. 81 - FLEX Air Pressure Too Low, Guards Digging Ground

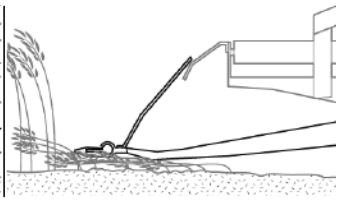


Fig. 82 - FLEX Air Pressure Too High, Riding On Top of Crop

You can adjust the 'weight' of the cutter bar via the 'HIGHER' and 'LOWER' buttons on the Automatix control panel.

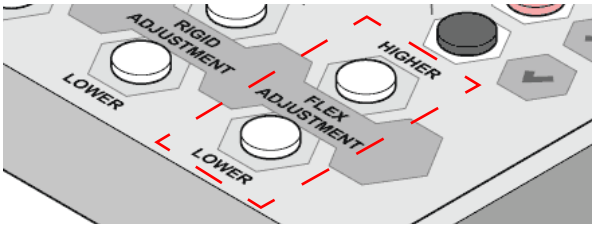


Fig. 83 - Flex air pressure adjustment

- The 'HIGHER' button adds air, making the cutter bar lighter.
- The 'LOWER' button removes air and makes the cutter bar heavier.

Adjust as necessary to prevent the cutter bar from hanging up (normally seen on the ends).

See section 10.9 on page 75 for details on setting the default Flex PSI.

The Cut Set Point should be ~1-2 inches above ground (1-2 bars on the automatix display).

NOTE:

The Automatix system does not display the decimal point, 400 on the display actually represents 40.0 PSI.

IMPORTANT!

Pressures listed are recommended. Depending on field conditions, an operator may be required to operate above or below recommended pressure.

9.6.2 - Divider settings

See section 9.5 on page 52 for recommendations on when/how to use the various crop dividers.

See section 13.10 on page 115 for details on adjusting the dividers.

9.6.3 - Reel settings

When using the Flex cutting mode, you generally want the reel fingers to be pitched more aggressively in order to help pick up crops. See section 13.7 on page 108 for details.

Reel speed should be set approximately 20% faster than the ground speed.

Always ensure the reel fingers have enough clearance (1 1/2” (3.8 cm)) from the cutter bar & feather plates.

9.6.4 - Ground speed

The AirFLEX Header can often be run at faster ground speeds than other similar sized headers.

Adjust your speed according to the terrain, crop yield and combine capacity.

Adjust air pressure to work at operating speed and ground moisture. Wetter conditions require more pressure for a lighter cutter bar.

The speed at which the combine can raise the table in response to changes in terrain may limit ground speed.

9.7 - FLEX Operating Screens

9.7.1 - FLEX Mode Live View

The live view is displayed on the automatix screen during normal operation in FLEX mode. The number of bars shown on the display indicate how much further the cutter bar can be pushed up. Each bar represents 1" (2.5 cm), half a bar represents 1/2" (1.27 cm). A total of 9" (22.86 cm) of motion is possible for the cutter bar when in FLEX mode.

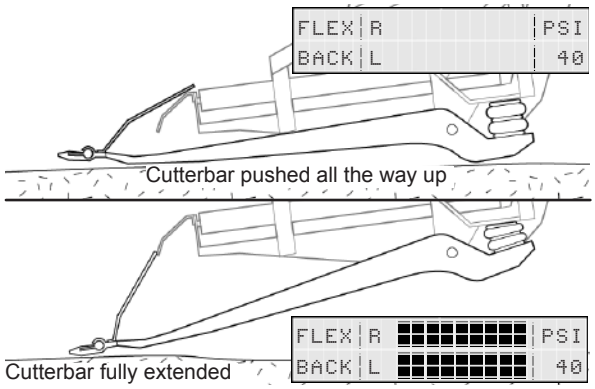
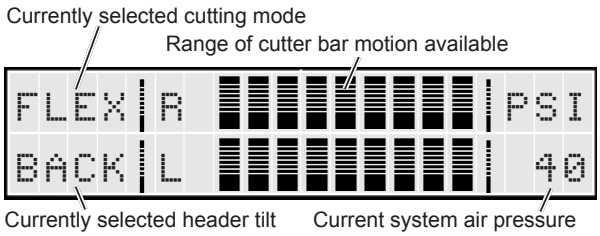


Fig. 84 - FLEX Live View - full range of travel



When in FLEX mode, adjust the table to a set point of 1 ½" - 2". This will result in having 1 ½" – 2" of upwards motion remaining before the auto header height system lifts the table.

This set point allows 7" – 7 ½" of down motion available for the cutter bar to drop into depressions, without having to lower the table.

This setting is extremely important for optimal AirFLEX performance. If the set point is too high, then the cutter bar will not follow the terrain properly.

9.7.2 - FLEX Mode Live View - Warning

When the cutter bar is running while fully pushed up with no remaining travel, there will be no bars remaining on the display..

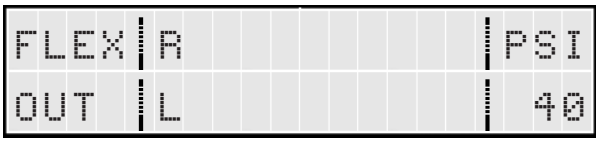


Fig. 85 - FLEX Live View- Warning - Cutter bar highest limit

This usually indicates that the auto header height is not turned on or the set point is too low.

The set point must be high enough to leave some sensor range of up travel to trigger the lift command. If your set point is placed where the FLEX cutter bar is fully compressed, then the auto header height system will NEVER lift.

9.7.3 - Air Pressure Setting for Cutter Bar Ground Pressure

When in FLEX mode, access this screen by pressing one of the 'FLEX ADJUSTMENT' buttons.

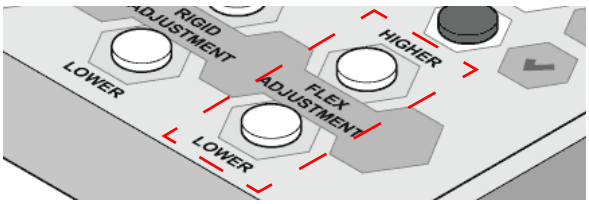


Fig. 86 - Cutter Bar FLEX Float Adjustment

In FLEX mode, the normal range is from 25 PSI up to 80 PSI. A higher pressure results in a RIGID cutter bar, which will reduce the FLEX performance. The 'HIGHER' button adds air, making the cutter bar lighter on the ground. The 'LOWER' button removes air from the system, making the cutter bar heavier. Lighter is better in most cases. Adjust as necessary to prevent the cutter bar from dragging or hanging up (dragging is normally seen on the ends).

With no skid shoes installed, a maximum pressure of 40 psi will all the cutter bar the full 9" of travel.

If skid shoes are installed, a maximum of 50 psi is will allow the full 9" of cutter bar travel.

9.8 - Operating in Rigid Mode

In Rigid mode, the cutter bar is inflexible and will not follow ground contours. The header will be automatically raised or lowered based on the input from the crop divider and center limit sensors.

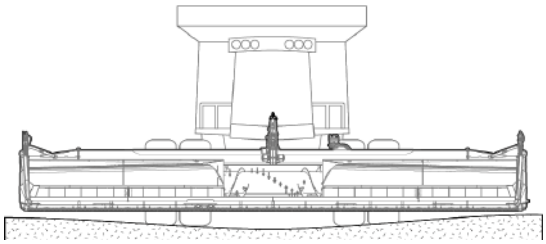


Fig. 87 - RIGID Mode

IMPORTANT!

Automatic header height must be enabled and the header should be tilted forward by extending the hydraulic tilt cylinder when in Rigid mode.

9.8.1 - To select Rigid mode:

WARNING!

To prevent injury, fully raise the header, shut OFF the engine, set parking brake, and remove the key before exiting the cab. Set the combine feeder house safety locks.

1. Release and lower all of the center limit sensor(s) located under the header on the sides of the struts. The sensors are secured with a cable. See section 15.3 for sensor locations.

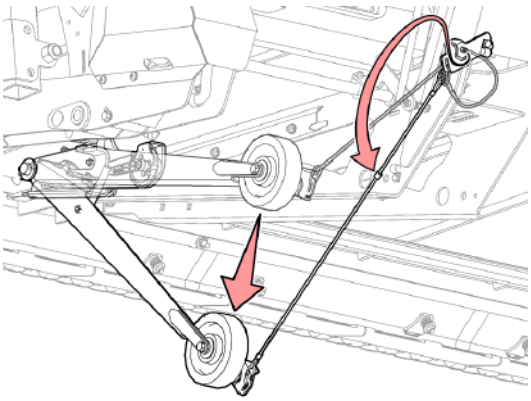


Fig. 88 - Lower all header height roller sensor arms

2. Push the RIGID button on the automatix display.

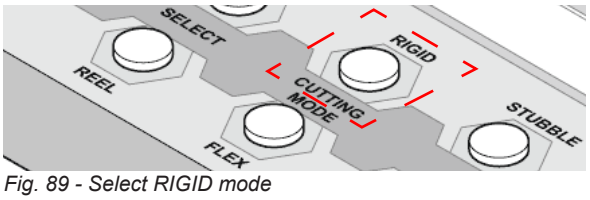


Fig. 89 - Select RIGID mode

NOTE:

When operating in Rigid mode, the system air pressure is 100 PSI. It can take up to 15 minutes to transition from Flex to Rigid mode.

9.8.2 - Rigid Mode Tilt Selection

IMPORTANT!

When operating your header in rigid mode, it is important to tell the automatix system if the header is tilted forward or backward. This will ensure that the automatic header height control system works properly

Use the 'Rigid Adjustment' buttons to indicate the table tilt orientation.

- Press 'Higher' to indicate that the header is tilted out.
- Press 'Lower' to indicate the header is tilted back.

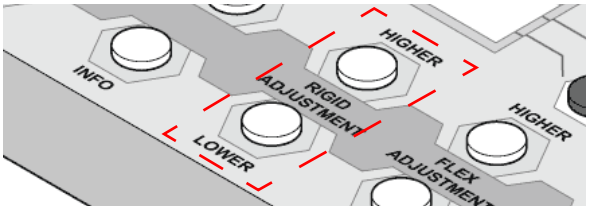


Fig. 90 - Center Limit Adjustment

9.8.3 - Divider settings

See section 9.5 on page 52 for recommendations on when/how to use the various crop dividers.

See section 13.10 on page 115 for details on adjusting the dividers..

9.8.4 - Reel settings

When using Rigid mode, the reel fingers should be pitched less aggressively in order to assist with gently pulling crops towards the cutter bar.

See section 13.7 on page 108 for details.

Reel speed should be set approximately 10% faster than the ground speed.

Always ensure the reel fingers have enough clearance (1 1/2” (3.8 cm)) from the cutter bar & feather plates.

9.8.5 - Ground speed

Adjust ground speed according to the terrain, crop yield and combine capacity. The speed at which the combine can raise the table in response to terrain may limit ground speed.

9.9 - RIGID Operating Screens

9.9.1 - RIGID Mode Live View

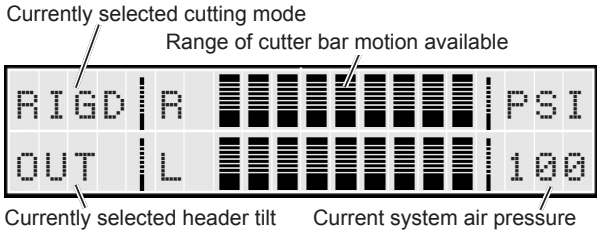


Fig. 91 - RIGID Header Height Live View

The Rigid mode live view is displayed on the automatix screen during rigid operation. The middle display area shows a live view of the cutter bar height above ground and is determined by all valid & calibrated center and divider sensors. This is useful for determining and setting the cut height set point.

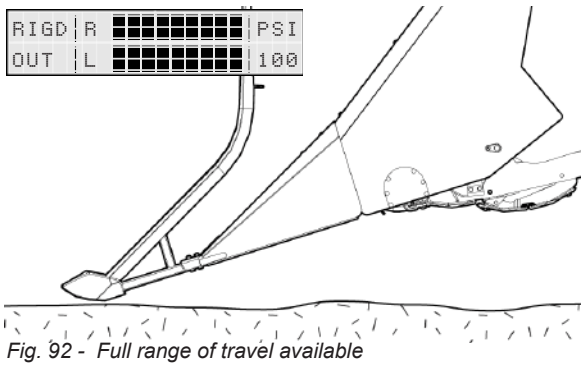


Fig. 92 - Full range of travel available

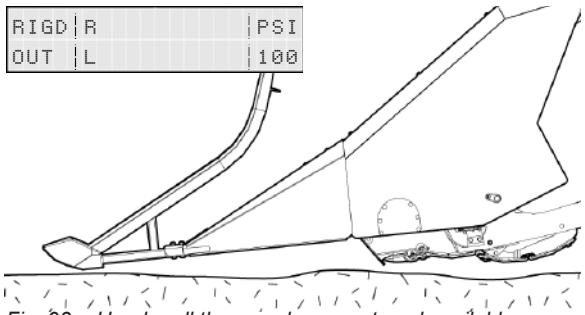


Fig. 93 - Header all the way down, no travel available

9.9.2 - Rigid Vertical Shear Mode Live View

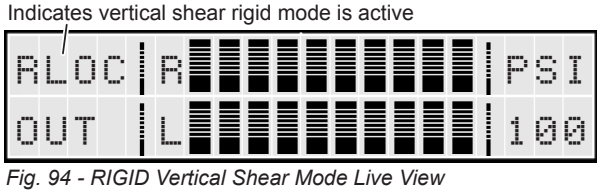


Fig. 94 - RIGID Vertical Shear Mode Live View

9.9.3 - Rigid Mode Live View - Warning

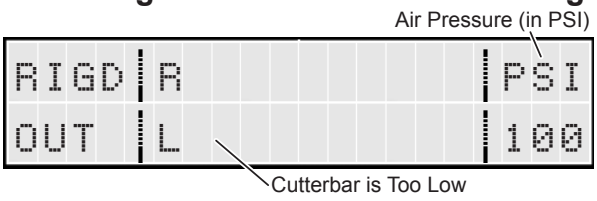


Fig. 95 - RIGID - Header Height - Warning Screen

If the dividers get pushed all the way up (resulting in the cutter bar running on the ground), then no bars will be visible on the screen. This is a high wear situation and should be avoided but will not stop the header from functioning.

9.9.4 - Rigid Mode - Table Tilt Selection

IMPORTANT!

When operating your header in rigid mode, it is extremely important to tell the automatix system if you are running the header tilted forward or tilted backward. This will ensure that the automatic header height control system will work properly

Use the 'Rigid Adjustment' buttons to indicate the table tilt orientation.

- Press 'Higher' to indicate that the header is tilted forward (out)
- Press 'Lower' to indicate the header is tilted backward (in)

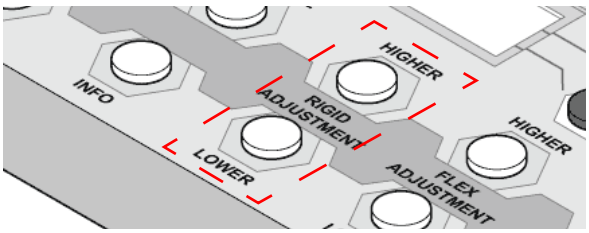


Fig. 96 - Header Tilt Selection - Rigid Mode

9.10 - Reverse Operation

When the combine feeder house is reversed, the drapers, knife and feed auger drum run backwards to assist with unplugging. Please keep in mind that the reel will only reverse if the combine supports reverse oil flow direction via the multicoupler.

WARNING!

Do not reverse the mechanical system until all parts have come to a complete stop. Failure to do so WILL result in damage to the header.

9.11 - Feed Auger Drum Settings

Set the feeder house finger adjustment plate to the middle position (fingers extended fully forward).

See section 13.11 on page 116 for details on adjusting the feed auger.

9.12 - Combine Header Height Settings

When setting the Header Height sensitivity, increase the value until the header starts hunting then back off 10-20% for both lift and lateral tilt.

- Raise Rate: 6 seconds (bottom to top)
- Drop Rate: 7 seconds (top to bottom)

Ensure the Header Height system is calibrated on the header first, then on the Combine.

9.13 - Feed Auger Stop Warning Lamp

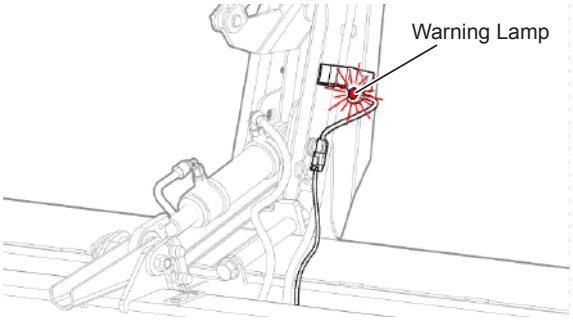


Fig. 97 - Feed Auger Stall Warning Lamp

If the feed auger becomes stopped or jammed, the red stop warning lamp will illuminate. The lamp is located on the right side of the center reel tower so it is in the operator's view at all times.

IMPORTANT!

If the stall warning lamp ever illuminates, immediately stop the combine and address the problem in order to prevent equipment damage.

WARNING!

Shut OFF engine, set parking brake, and remove the key before exiting the cab.

9.14 - System Indicator Lamp

The blue system lamp will stay illuminated to indicate the AirFLEX is connected and operating normally with no detected problems

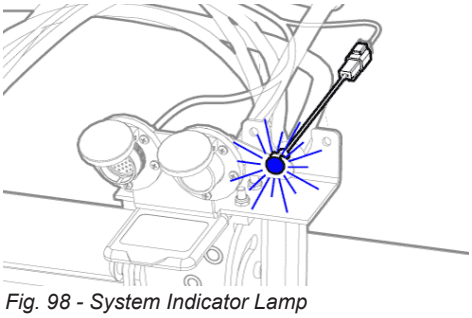


Fig. 98 - System Indicator Lamp

NOTE:

This lamp may not be installed on all models.

9.15 - General Crop Specific Productivity

Harvesting Standing Cereal Crop

Harvest in **RIGID** cutting mode. Lower platform until cutterbar cuts below lowest grain heads or pods. For maximum combine efficiency, take in only as much crop material as necessary. Position the reel above the cutterbar & feather plates. Raise/lower the reel until the bats pull the crop toward the cutter bar and the fingers comb the cut crop across the feather plates.

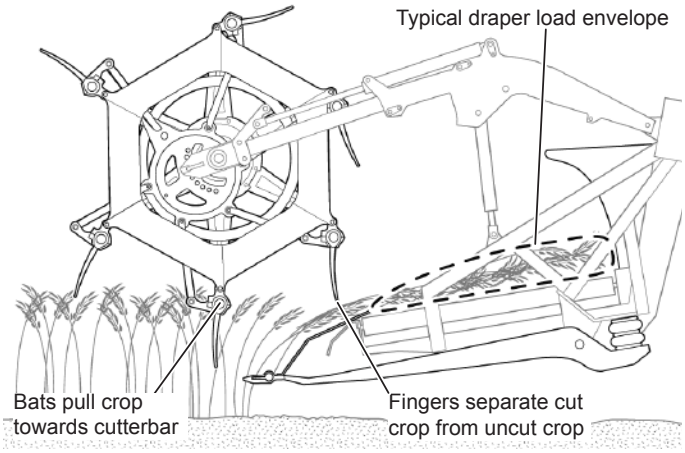


Fig. 99 - Optimal Cereal Harvesting

Harvesting Pulse Crops

Harvest in **FLEX** mode. Set the reel fingers to a more aggressive pitch. Position the reel in front of the cutter bar. Raise/lower the reel until the fingers lift the crop toward the cutterbar. The draper should be half-way filled (see illustration)

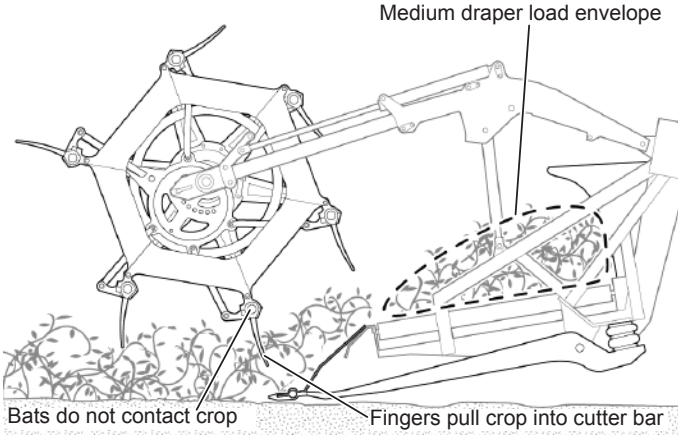


Fig. 100 - Optimal Pulse Crop Harvesting

Harvesting Bushy Crops

Harvest in **RIGID** cutting mode. Lower the platform until cutterbar cuts below the material to be collected. For maximum efficiency, completely fill the drapers so the crop reaches just to the top of the draper shields (see the illustration below). Raise and retract the reel so it is slightly behind the cutter bar so it assists in separating the cut from the uncut crop. The reel bats should not contact the crop.

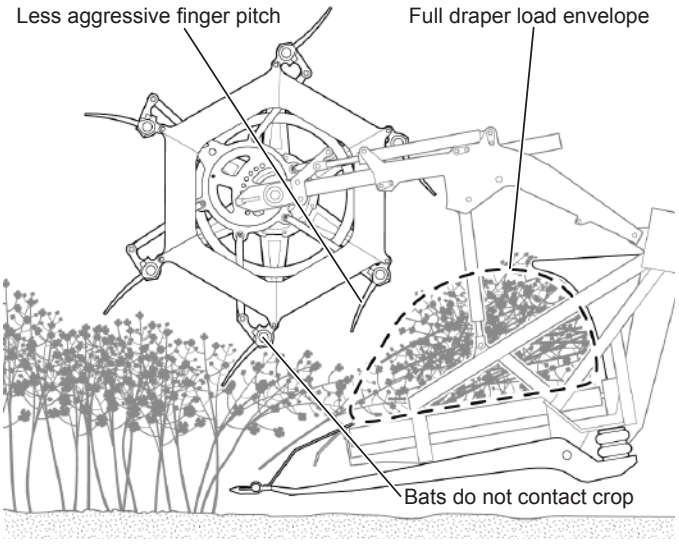


Fig. 101 - Optimal Bushy Crop Harvesting

Harvesting in Tough Feeding Crop Conditions

Move reel rearward to ensure cut, heavy crop is separated from uncut crops and transferred across the feather plates to the drapers.

Harvesting in Short, Thin Crops

Position reel low, above knife (approximately half way extended) and front area of draper, to assist crop onto drapers. The reel fingers should be directly above the cutter bar.

In thin crops, increase ground speed in order to increase crop volume to facilitate feeding.

Harvesting Soybeans

When harvesting soybeans, set AirFLEX pressure for crop conditions:

- **Dry conditions:** lower pressure/heavier cutter bar
- **Wet conditions:** higher pressure/lighter cutter bar

Harvesting Sorghum

Set cutting height to cut off heads and no more stalk than necessary. Adjust reel low and rearward as much as possible to help move cut heads onto belts. Tilt the header back so the heads roll back.

Lodged/Downed Crops

Fully extend the reel toward the front of the header.

At full reel extension, the reel will pick up crop from below the cutter bar. Only use this reel position for downed crops as high finger wear will result.

The reel height should be set so the fingers have a minimum of 1 1/2” (3.8 cm) clearance from the cutter bar.

When picking up downed crops, the reel finger pitch should be adjusted to be more aggressive.

IMPORTANT!

It is very important that you check the reel finger clearance before operating the header in order to avoid cutting off the ends of the reel fingers.

Extreme Lodged/Downed Crops

Fully extend the tilt cylinder to angle the guards down.

Lower the air pressure [increasing cutter bar weight] to prevent cutter bar riding on top of down crop.

If the cutter bar is still riding on top of crops:

Raise your FLEX cut height to 6 inches. This tilts the guards down to ensure they enter under the crop. In this case the header height will have more headroom to work with and protect the cutter bar from damage.

IMPORTANT!

Increased wear will result on guards, knife sections, and knife head bearings. When running in this mode, grease the knife heads every 5 hours (not 10 hours). This method should only be used in extremely down crop on rolled land.

The feather plates will be quite steep in this mode, so set your reel to clean the top of the feather to assist crop onto the drapers. Set ground speed to ensure sufficient crop flow across the cutter bar to aid in feeding.

Bushy/Ripe Crops

The feed auger fingers should be extended fully forward or slightly upward to increase the ability of the drum to grab and pull in bulky crops.

Fully retract the reel towards the rear of the header.

When harvesting busy/ripe crops, the reel fingers should be adjusted to be less aggressive.

Easily Shelled Crops

The reel should be positioned so it has minimum contact with the crop in front of the cutter bar. Positioning the reel too far forward can result in shelled out crops dropping under the cutter bar.

Generally, the reel should be lined up to the middle of the feather plates to allow for knife clearing and good feeding with minimum losses.

Raise the reel so only the reel fingers engage the crop and not the reel bats.

Normal Crops

Position the reel to provide best crop flow with minimal interference. For grain crops, this is typically about 7” out (fingers in line with top of feather plate). For leaning or pulse crops, this is further forward at about 11” out (fingers in line with back of guards).

10 - Automatix System

The two bottom rows of buttons are used for sending commands to the Automatix system and provide access to harvesting settings used in the field. The upper four buttons are used for navigating the automatix menu system. The Red button will always exit out of your current screen.

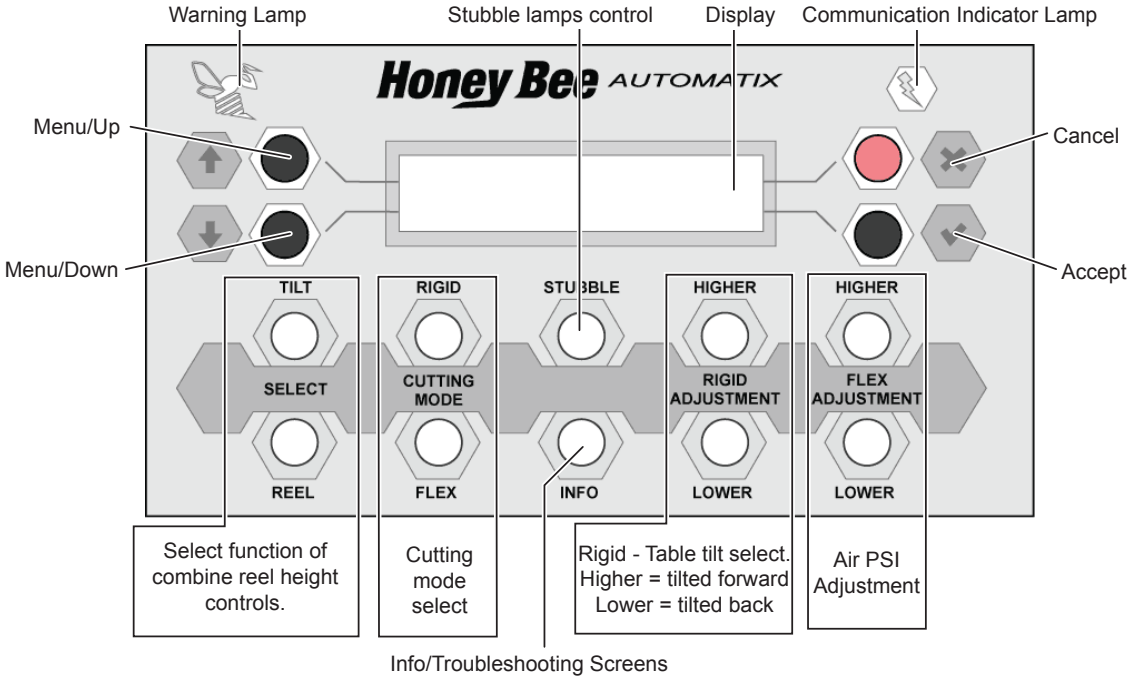
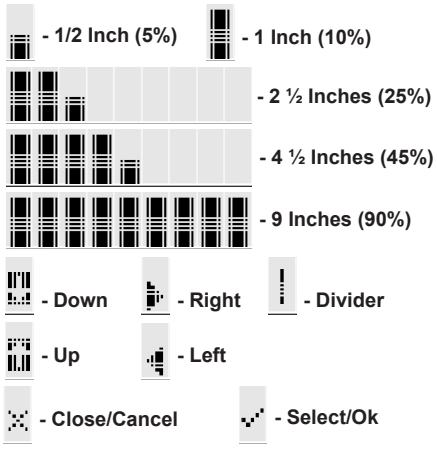


Fig. 102 - Automatix Control Panel

10.1 - Screen Icons

The Automatix system uses icons to provide easy to understand information at a glance.



10.2 - Communications Lamp

Solid Yellow Light:
Automatix is receiving communications from header

Solid Red Light:
Automatix is not receiving communications from header

Flashing Red Light:
Serious error has occurred which requires attention.

10.3 - Warning Lamp

Yellow Warning Lamp:
System is operating normally.

Flashing Red Warning Lamp:
Unacknowledged error.

Solid Red Warning Lamp:
Acknowledged but unresolved error.

10.4 - Navigating the Automatix System

Use the four buttons located around the Automatix display to navigate the menus. The illustration below shows the relationship between the buttons and the icons shown on the screen.

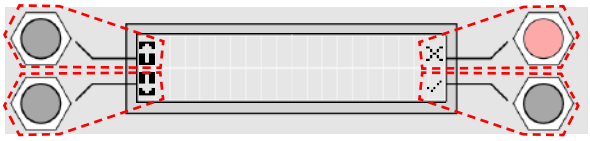


Fig. 103 - Menu Buttons & Display Screen

10.5 - Cutting Mode Selection

The Honey Bee AirFLEX has 2 modes of operation: FLEX and RIGID. These modes are selected by pressing the FLEX or RIGID buttons on the Automatix Control Panel.

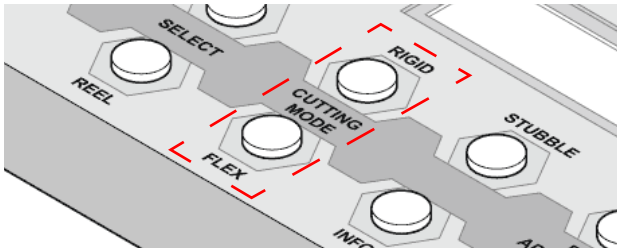


Fig. 104 - Cutting Mode Selection

The transition from RIGID to FLEX entails dumping air from the system, down to the FLEX pre-set pressure (Initially set at factory to 40 psi). This is a quick operation, taking about 60 seconds.

The transition from FLEX to RIGID entails running the onboard compressor (automatically done) until the air system pressurizes to the RIGID pre-set (about 100 PSI). The compressor takes longer to fill the system, and requires up to 15 minutes. The MODE cannot be changed while the header is in operation. This change can only be made when the knife RPM is zero (the display is in the standby state showing CUT HRS).

NOTE:

Rigid mode will disable auto header height until system pressure is at least 80 psi to prevent damage to header.

10.6 - Stubble Lights

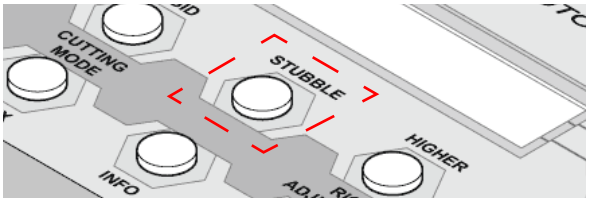


Fig. 105 - Cutter Bar FLEX Float Adjustment

This button controls the stubble lights. The stubble lights are mounted on the rear of the header to illuminate the ground so the operator can see the stubble.

This button does not impact anything on the control panel.

The stubble button backlight indicates the stubble lights current mode of operation:

On - Stubble lights are on

Off - Stubble lights are off

Slow fade on/off - Stubble lights are on automatic and will automatically turn on when it is dark.

These three modes of operation can be cycled by pushing the stubble button.

10.6.1 - Standby Screen

The Standby Screen is shown when the unit is powered up but the knife is not running. This screen shows useful information such as:

Hour - The total running time of the header. This value only increments while the reel is rotating.

Current Mode - Displays the cutting mode (RIGID or FLEX)

Selected Tilt - This section shows the currently selected tilt mode (as selected via the rigid adjustment buttons).

Current Air Pressure - The current air pressure measured in PSI.

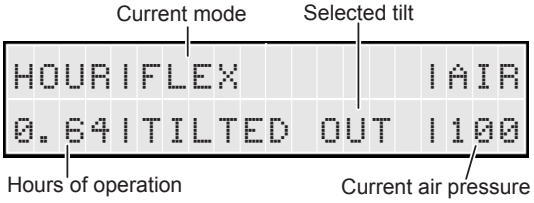
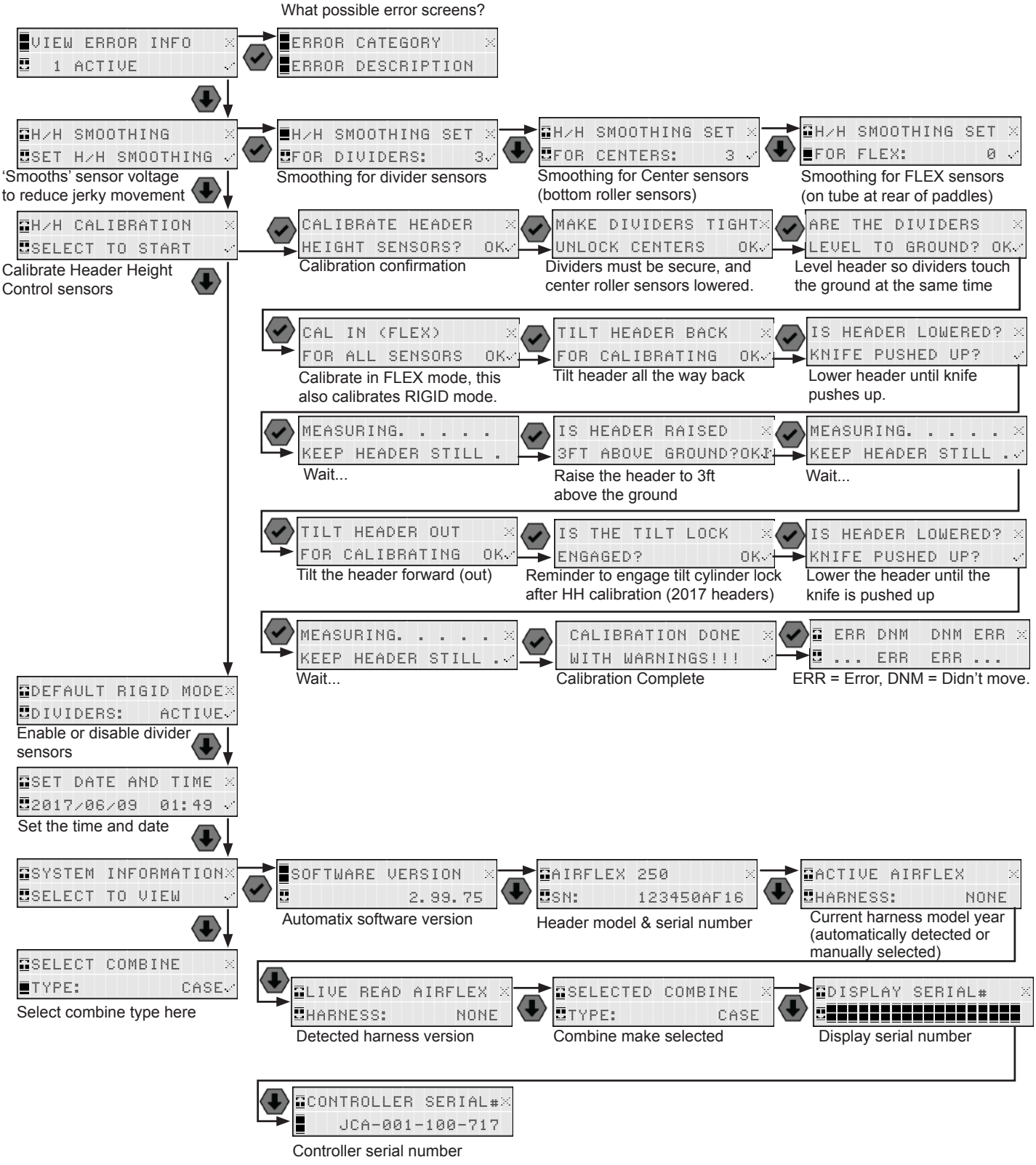


Fig. 106 - Standby Screen

10.7 - Automatix Main Menu



10.8 - Errors

10.8.1 - Super Critical Errors

SUPER CRITICAL ERROR

The Super Critical Error is an error that results from a serious issue that must be rectified before operating the equipment.

SUPER CRITICAL ERROR
SOFTWARE NOT SAME

Software version mismatch between Automatix display and controller. Update software before operating header.

SUPER CRITICAL ERROR
CANBUS COMMS FAILURE

Communication failure between Automatix display and controller. Check cables & connections.

SUPER CRITICAL ERROR
UNKNOWN SYSTEM FAULT

Unidentified error. Ensure Automatix is receiving adequate power from the combine.

10.8.2 - Critical Errors

CRITICAL ERROR

The Critical Error is an error that should be fixed before proceeding, but may be deferred at a risk to the equipment.

CRITICAL ERROR
SELECT COMBINE

Combine make must be selected via main menu before operating header.

CRITICAL ERROR
CALIBRATE HEADER

Header Height Control calibration must be performed via the main menu before operating header.

CRITICAL ERROR
NO SENSOR POWER

Expected sensor voltage not received by Automatix. Sensor wire is damaged or sensor is shorted to ground. Check connections & sensors.

10.8.3 - Operating Errors

```
OPERATING ERROR
```

The Non Critical Error is an error that will block the correct operation of the equipment but does not pose a serious risk to the equipment.

```
OPERATING ERROR
COMPSSR ELEC FAULT
```

Output is turned on, but is not drawing any current or is drawing too much current.

```
OPERATING ERROR
DMPVALV ELEC FAULT
```

output is turned on, but is not drawing any current or is drawing too much current.

```
OPERATING ERROR
HH SNSR ELC FAULT
```

Sensor was detected and calibrated, but automatix is no longer receiving signal from that sensor

```
OPERATING ERROR
TILTVLV ELEC FAULT
```

Output is turned on, but is not drawing any current or is drawing too much current.

```
OPERATING ERROR
FEED AUGR STOPPED
```

Feed auger drum has stopped turning or the sensor is damaged. Ensure drum is functioning then check sensor, cables and connections.

```
OPERATING ERROR
XX DRAPER STOPPED
```

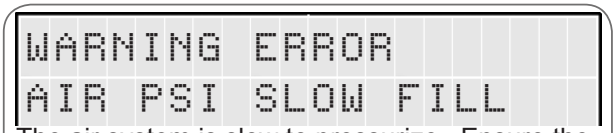
A draper has stopped turning or its sensor is damaged. Ensure drapers are tensioned and working, check sensors, cables and connections.

```
OPERATING ERROR
KNIFE IS STOPPED
```

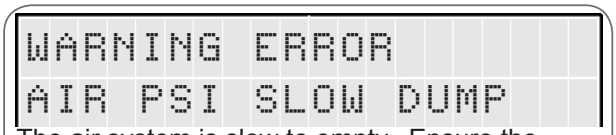
The knife has stopped or the sensor is damaged/ disconnected. Ensure the knife is working then check sensors, cables and connections.

10.8.4 - Warning Errors

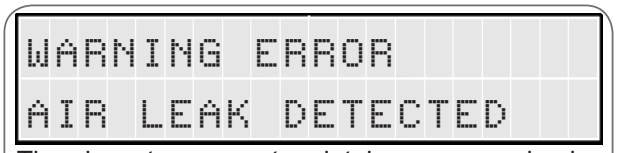
The Warning Error is an error that will reduce the performance of the equipment, but does not put it in any significant risk.



The air system is slow to pressurize. Ensure the compressor is functioning and check for leaks.

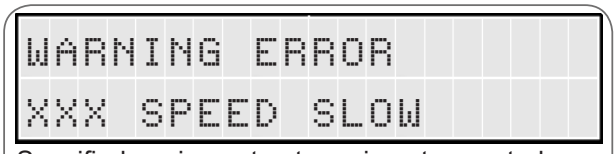


The air system is slow to empty. Ensure the dump valve is functioning.

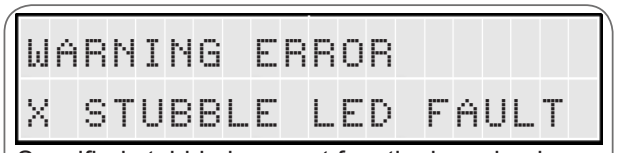


The air system cannot maintain pressure, check all air hoses and fittings for leaks.

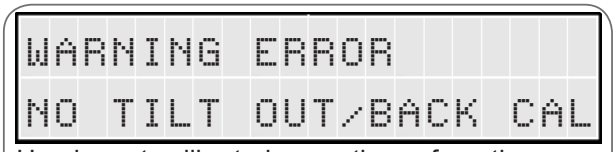
Header height sensor(s) not moving enough to provide full voltage range. Check HH sensors.



Specified equipment not running at expected speed. Inspect listed equipment for issues. Only shows if enabled via system menu (disabled by default)



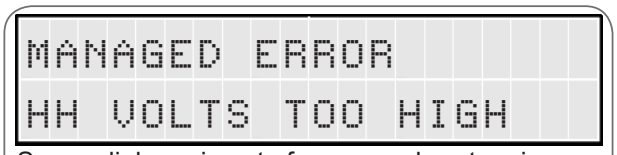
Specified stubble lamp not functioning, check electrical cables and connections.



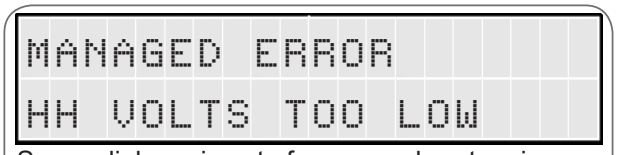
Header not calibrated correctly, perform the Header Height calibration procedure.

10.8.5 - Managed Errors

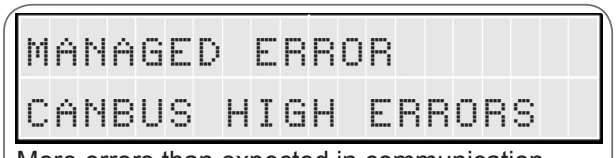
The Managed Error is an error that has minimal impact on the performance of the equipment, and can be managed without operator intervention.



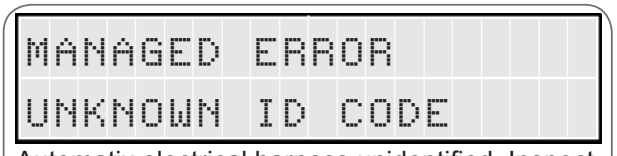
Sensor linkage is out of range and system is limiting maximum voltage automatically.



Sensor linkage is out of range and system is limiting minimum voltage automatically

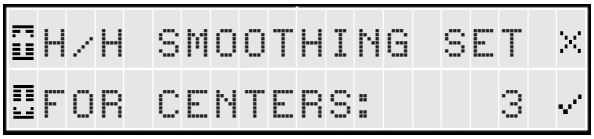


More errors than expected in communication between Automatix display and control box. Check connections and cables.



Automatix electrical harness unidentified. Inspect harness for damage. Manually select harness model via system menu.

10.8.6 - Header Height Smoothing



The smoothing function averages the header height sensor voltage from the header to the combine. The value entered represents 1/10th of a second of averaging. The default value of 3 will result in a 3/10ths of a second delay from when a sensor moves to when the combine reacts.

This setting can be useful in rough or bouncy conditions and provides the ability to reduce hunting up and down (primarily in RIGID mode) while using a higher sensitivity setting on the combine header height system. The recommended default settings are:

- For Dividers: 3
- For Centers: 3
- For FLEX: 0 (3 for LEXION)

IMPORTANT!

If a value higher than 5 is required to reduce header height hunting up and down, then combine sensitivity settings may need to be adjusted.

10.8.7 - Header Height Sensor Calibration

NOTE:

If the calibration is performed while the header is in FLEX cutting mode, both the FLEX and RIGID sensors are calibrated.

If the calibration is performed while the header is in RIGID cutting mode, only the RIGID sensors are calibrated. If the header is in RIGID Vertical Shear mode, only the center sensors are calibrated.

This calibration is required when:

- The header is used for the first time
- If divider extensions are adjusted/changed
- If you change combines.
- If the header height sensor are serviced.

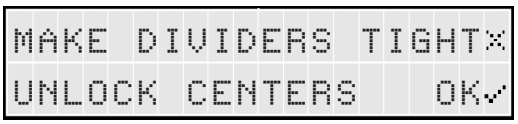
When the header height calibration is performed, combine header height calibration must also be done (See your combine operators manual for details).

IMPORTANT!

The calibration process must be completed without skipping any steps.

1. Select H/H Calibration via the main menu on the Automatix control panel.

2. MAKE DIVIDERS TIGHT, UNLOCK CENTERS. The crop dividers must be tightly secured and the divider extensions in their operational position prior to calibration. Loose dividers will cause inaccurate readings. The center roller sensors must be lowered to their operational position.



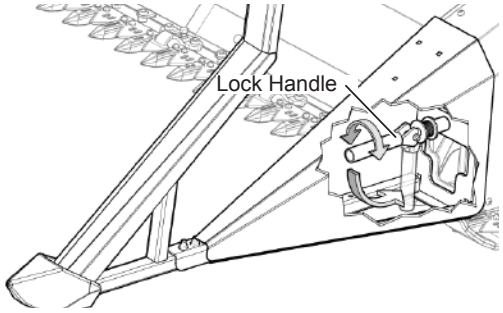


Fig. 107 - Ensure crop dividers are tight

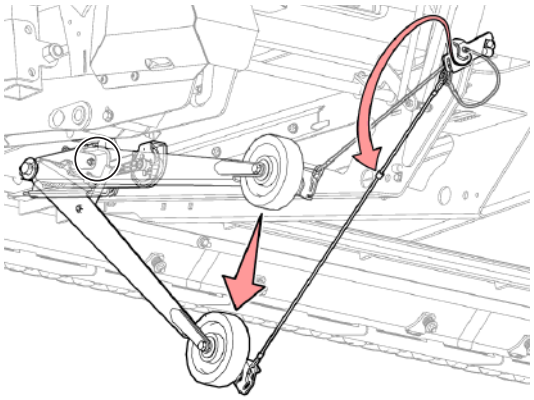
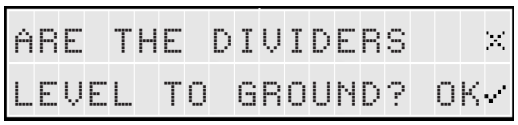


Fig. 108 - Lower all header height roller sensor arms

3. ARE THE DIVIDERS LEVEL TO THE GROUND. Use lateral tilt to adjust the header until the divider tips are touching the ground evenly. This ensures that the dividers are moving up/down at the same rate and simulates level ground.



4. CAL IN (MODE). This screen is simply a confirmation of which header height sensors will be calibrated.
   - If in RIGID mode prior to calibration, only the RIGID sensors will get calibrated.
   - If in FLEX mode prior to calibration, both the RIGID and FLEX sensors get calibrated (Recommended).

```
CAL IN (FLEX)      X
FOR ALL SENSORS  OK✓
```

5. TILT HEADER BACK FOR CALIBRATING. Retract the hydraulic tilt cylinder via the combine controls to fully tilt the header back.

```
TILT HEADER BACK   X
FOR CALIBRATING  OK✓
```

6. IS HEADER LOWERED? KNIFE PUSHED UP?. Lower the header until the FLEX cutter bar is pushed all the way up. If the table tilts back, you have pushed too far. Once you have achieved the lowered position, wait a few seconds before selecting the check mark.

```
IS HEADER LOWERED? X
KNIFE PUSHED UP? OK✓
```

   Once OK is selected the following screen will display for a few seconds. Do not move the header during this time.

```
MEASURING. . . . .
KEEP HEADER STILL. .
```

7. IS HEADER RAISED 3FT ABOVE GROUND?. Raise the header until the crop divider tips are about 3 feet off the ground. This ensures that the center sensors are also off the ground. Once you have achieved the raised position, wait a few seconds for the header to stop bouncing, before selecting the check mark.

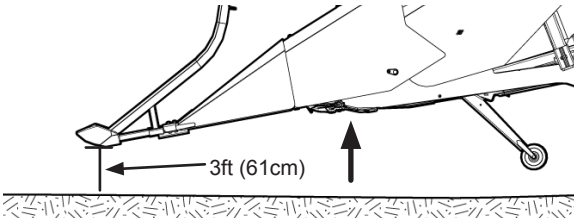


Fig. 109 - Raise Header

```
IS HEADER RAISED   X
3FT ABOVE GROUND?OK✓
```

   Once OK is selected the following screen will display for a few seconds. Do not move the header during this time.

```
MEASURING. . . . .
KEEP HEADER STILL. .
```

8. TILT HEADER OUT FOR CALIBRATING. Fully tilt the header out by extending the hydraulic tilt cylinder via the combine controls.

```
TILT HEADER OUT    X
FOR CALIBRATING  OK✓
```

9. IS THE TILT LOCK ENGAGED. This is a REMINDER to engage the hydraulic tilt cylinder lock AFTER the header height calibration is complete. Do not exit the combine until after the header height calibration is complete and the combine is shut down.

```
IS THE TILT LOCK   X
ENGAGED?         OK✓
```

10. IS HEADER LOWERED? KNIFE PUSHED UP?. Lower the header until the FLEX cutter bar is pushed all the way up. If the table tilts back, you have pushed too far. Once you have achieved the lowered position, wait a few seconds before selecting the check mark.

Once OK is selected the following screen will display for a few seconds. Do not move the header during this time.

11. If successful, your Automatix display will read “H/H CALIBRATION COMPLETED NORMALLY”. Select the X to exit.

12. Once the header height calibration process is complete, follow the safety warning below then engage the hydraulic tilt cylinder lock. Then proceed to your combine calibration as described in your combine operator’s manual.

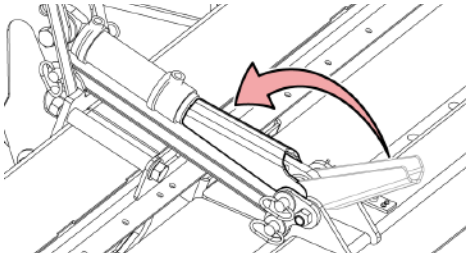


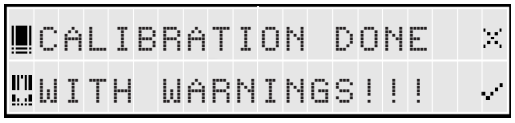
Fig. 110 - Tilt Cylinder Calibration Lock

⚠ WARNING!

To prevent injury, fully raise the header, shut OFF the engine, set parking brake, and remove the key before exiting the cab. Set the combine feeder house safety locks.

10.8.8 - Header Height Calibration Warnings

This screen will show if at least one of the header height sensors calibration failed. This can be caused by something limiting the physical range of motion of a sensor or by a faulty sensor. If any of the voltages are not changing enough (they must change by a minimum of 1.5 volts), then the sensors and linkages will require inspection.



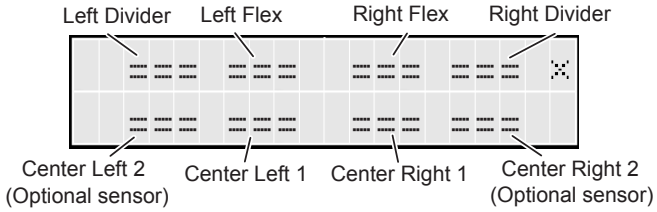
The calibration results screen indicates which sensors were calibrated and if any problems are encountered.

DNM - The sensor did not move enough.

MIS - The sensor appears to be missing (no voltage received from sensor)

CAL - The sensor is sucessfully calibrated.

... - Optional sensor not found



See section 15.3 on page 128 for sensor locations.

10.8.9 - Default RIGID Mode (Vertical Shear)

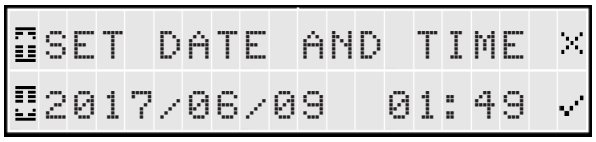
When operating the header with a vertical shear option, the end divider header height sensors must be locked in order to avoid Automatix errors. The two options on this screen are:

Locked - Vertical Shear mode enabled, end divider sensors become disabled.

Active - For normal RIGID cutting mode without vertical shear installed, header height sensors work as usual.

10.8.10 - Time and Date

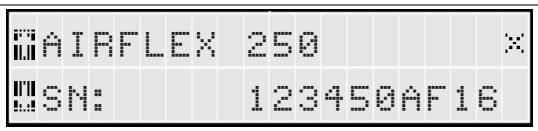
Time and date are set at the factory for Honey Bee's time zone. If operating in another time zone, adjust this to reflect your local time.



10.8.11 - System Information

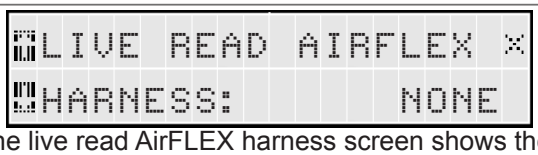
These screens are accessed via the main menu and are used to show the version and serial numbers for various AirFLEX components and software. These can be useful when ordering or troubleshooting components.

The Software screen shows the Automatix software version.



The equipment serial number screen shows the current AirFLEX model number and serial number.

The active AirFLEX harness screen shows the currently selected electrical harness version.



The live read AirFLEX harness screen shows the detected electrical harness.

The Selected Combine screen simply shows which combine make has been selected for use with your header.

The Display Serial number screen will show the serial number for the in-cab Automatix display box.

The Controller Serial number screen will show the serial number for the Automatix control box installed on the header.

10.8.12 - Combine Selection

The Select Combine screen allows you to select the make of combine to be used with the AirFLEX.

To change the combine brand, select the check mark so the brand starts flashing.

Press the up and down arrows until your combine brand appears.

When satisfied, select the check mark again to lock in your selection.

NOTE:

If an asterisks (*) is visible next to the combine name, it indicates the combine settings have been modified via the System Menu. The settings can be reset to defaults by re-selecting the combine make.

10.9 - Automatix System Menu

The Automatix system menu is used for making modifications to various advanced system settings. Most equipment operators will never need to access these settings

To access this menu hold the 'up' and 'down' buttons next to the Automatix display until the menu appears. Hold the red cancel button to exit the menu.

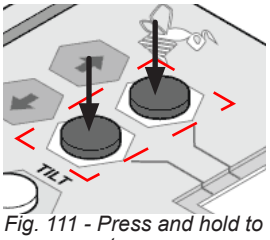


Fig. 111 - Press and hold to access system menu

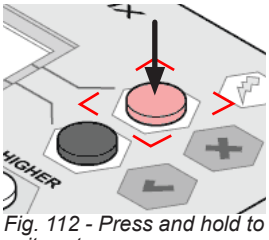
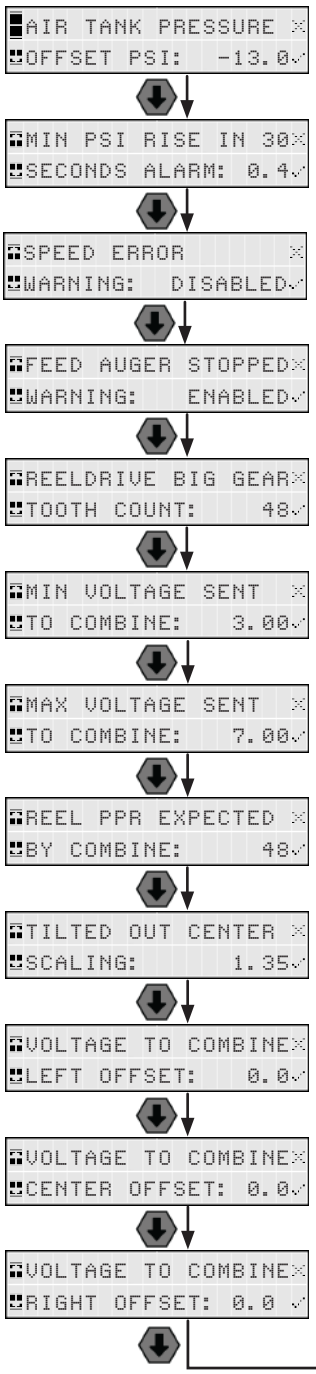


Fig. 112 - Press and hold to exit system menu



If the actual air tank PSI does not match the display, use this to offset the display values to match.
(i.e. Tank is 20 psi, display shows 30 psi, enter -10 as the value to make the display match the tank)

When pressurizing the air system while transitioning from FLEX to RIGID mode, this setting will show an error on the display if the air fill rate is below the value set here. In this example, the error will show if the pressure rises slower than 0.4 psi in 30 seconds.

If speed sensors are installed on your equipment, they may be enabled/disbled here. Otherwise this menu item will not be visible.

This setting should only be disabled if there is no feed auger sensor present.
IN ALL OTHER SITUATIONS FEED AUGER WARNINGS MUST NOT BE DISABLED.

Different header configurations may use different reel drive output gear sizes (48 or 58 teeth). Please ensure the correct value is entered for your header.

The maximum and minimum sensor voltage expected by the combine. These two values are set automatically when the combine make is selected via the main menu. These should only be modified if using an unlisted combine make.

This value is determined by your combine selection in the main menu, this should not require adjustment unless an unlisted combine is used..

This value corrects for the system geometry change when tilting the the header, this value should only be modified by a qualified service technician.

If the combine is not receiving expected voltages from the header height and reel sensors, they can be adjusted here. Left and Right offset apply to the divider sensors. Center offset applies to the virtual reel height sensor. These values should only be adjusted by a qualified service technician.

If necessary, the type of automatix harness can be manually selected. Do not adjust this value unless instructed to do so.

AUTOMATIC = Automatix shuts down 15 minutes after combine is shut off.
MANUAL = Automatix stays on as long as it receives power.

Sets the time before the tilt controls to revert to reel control on the combine control handle after tilt is selected on the automatix control panel.

10.10 - Information Screens

The Automatix information screens are useful for monitoring equipment and crop conditions while harvesting. Some of this information can also be useful for troubleshooting purposes. To access the information screens, press the info button. Every time the button is pressed, the system will cycle to the next information screen.

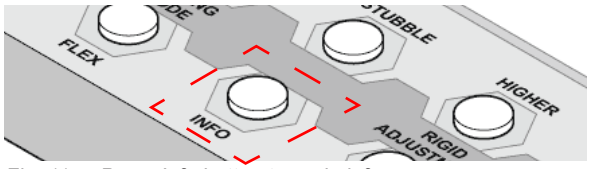
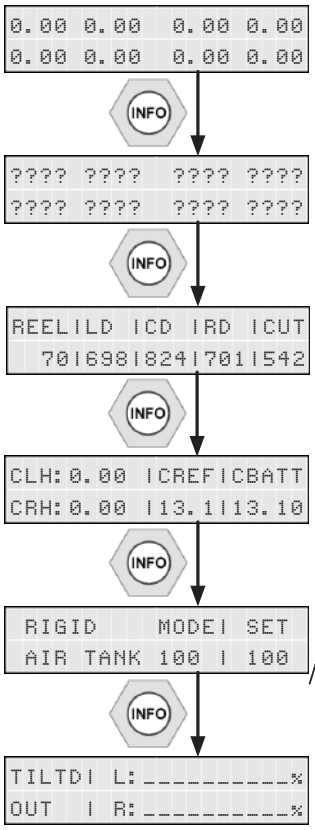


Fig. 114 - Press Info button to cycle info screens



Raw voltage from header height sensors.
Top row: Left Divider, Left Flex, Right Flex, Right Divider
Bottom row: Outer left center sensor, inner left center sensor, inner right center sensor, outer right center sensor

Calibrated range of motion available to header height sensors.
0 = cutter bar/divider fully pushed up with no motion left available.
100 = Cutter bar/dividers have full range of motion available.
Top row: Left Divider, Left Flex, Right Flex, Right Divider
Bottom row: Outer left center sensor, inner left center sensor, inner right center sensor, outer right center sensor

Speed sensor output in RPM (if installed, only available on some models of equipment)
REEL = Reel Speed, **LD** = Left Draper, **CD** = Center Draper, **RD** = Right Draper, **CUT** = Knife Speed

CLH & CRH: The corrected left and right hand voltage sent to the combine from the automatix system.
CREF: Combine Reference Voltage, sent from combine to sensors. Used by the Automatix system to determine if the combine sensor power is 5v or 10v.
CBATT: Combine Battery voltage (as measured at Automatix system).

This screen shows the current mode (FLEX or RIGID), the current air tank pressure (bottom left) and the preset pressure for the selected mode (bottom right). The preset air pressure buttons can be adjusted via the FLEX Adjustment Higher/Lower buttons.

When properly calibrated, this screen will show the range of travel available on the current mode sensors.
0 bars = sensors are pushed all the way up with no travel left.
In FLEX mode, 9 bars on this screen represent 9” of available cutter bar travel.
In RIGID mode, 10 bars on this screen represent 100% of the sensors range of available travel.

10.10.1 - Raw Auto Header Height Voltages

This screen shows the raw voltages from the automatic header height sensors on the AirFLEX header. These values may be of assistance when troubleshooting the header height system.

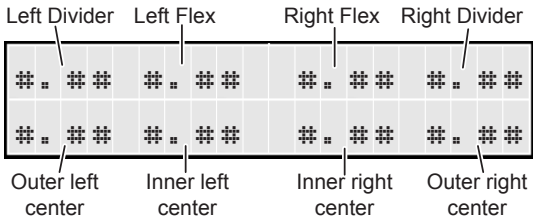


Fig. 113 - Raw voltage

The sensor locations on the header can be found in section 15.3 on page 128.

NOTE:

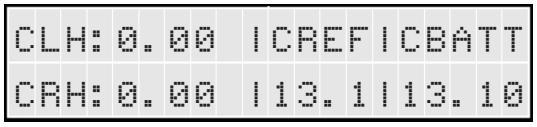
If a asterisks shows instead of a decimal point, it indicates the sensor is not properly calibrated.

10.10.2 - Combine Voltages

The combine voltage screen shows the software-corrected left and right hand sensor voltages that are sent the combine (CLH and CRH).

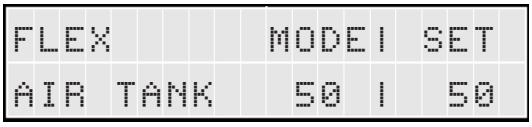
The combine reference voltage (CREF) is the voltage sent from the combine to the sensor system, this voltage is only used by the Automatix system to help identify the combine.

The actual combine battery voltage as read at the Automatix controller is also displayed (CBATT).



10.10.3 - Cutting Mode Air Pressure

Preset



This screen shows the current cutting mode (top left), current air tank pressure (bottom middle) and the preset air pressure (bottom right).

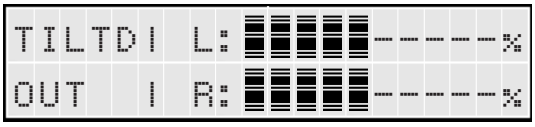
The preset air pressure can be adjusted via the Flex Adjustment buttons.

This screen is useful for comparing the actual air tank PSI and the target PSI for the selected cutting mode when transitioning between cutting modes to ensure the system is pressurizing properly.

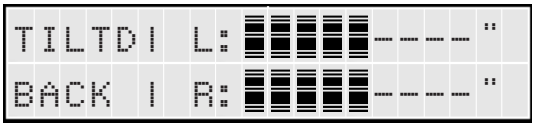
10.10.4 - Header Height Values

This screen shows how much movement downward is left before the header height sensors reach their limit.

In RIGID mode, this is shown as a percentage, with 0% indicating the header has reached its lowest limit. Each bar on the display represents 10% (50% is shown in the example below).



In FLEX mode, this is shown in inches, with each bar on the display representing one inch (5” is shown in the example below).



10.11 - FLEX Operating Screens

10.11.1 - FLEX Mode Live View

The live view is displayed on the automatix screen during normal operation in FLEX mode. The number of bars shown on the display indicate how much further the cutter bar can be pushed up. Each bar represents 1" (2.5 cm), half a bar represents 1/2" (1.27 cm). A total of 9" (22.86 cm) of motion is possible for the cutter bar when in FLEX mode.

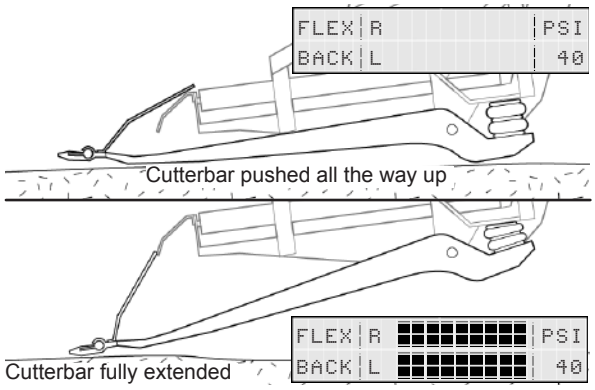
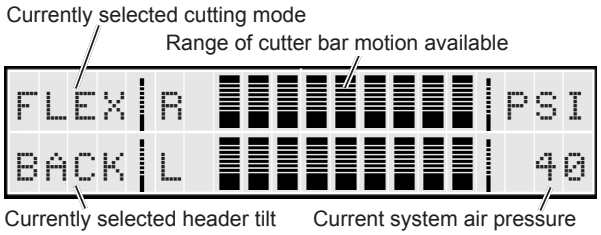


Fig. 115 - FLEX Live View - full range of travel



When in FLEX mode, adjust the table to a set point of 1 ½" - 2". This will result in having 1 ½" – 2" of upwards motion remaining before the auto header height system lifts the table.

This set point allows 7" – 7 ½" of down motion available for the cutter bar to drop into depressions, without having to lower the table.

This setting is extremely important for optimal AirFLEX performance. If the set point is too high, then the cutter bar will not follow the terrain properly.

10.11.2 - FLEX Mode Live View - Warning

When the cutter bar is running while fully pushed up with no remaining travel, there will be no bars remaining on the display..

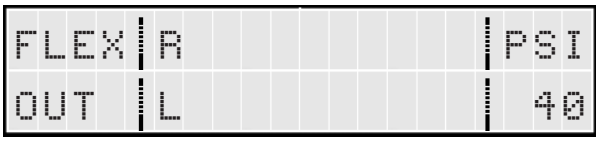


Fig. 116 - FLEX Live View- Warning - Cutter bar highest limit

This usually indicates that the auto header height is not turned on or the set point is too low.

The set point must be high enough to leave some sensor range of up travel to trigger the lift command. If your set point is placed where the FLEX cutter bar is fully compressed, then the auto header height system will NEVER lift.

10.11.3 - Air Pressure Setting for Cutter Bar Ground Pressure

When in FLEX mode, access this screen by pressing one of the 'FLEX ADJUSTMENT' buttons.

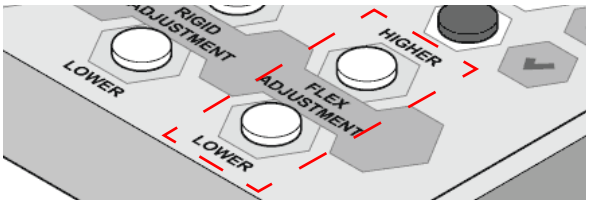


Fig. 117 - Cutter Bar FLEX Float Adjustment

In FLEX mode, the normal range is from 25 PSI up to 80 PSI. A higher pressure results in a RIGID cutter bar, which will reduce the FLEX performance. The 'HIGHER' button adds air, making the cutter bar lighter on the ground. The 'LOWER' button removes air from the system, making the cutter bar heavier. Lighter is better in most cases. Adjust as necessary to prevent the cutter bar from dragging or hanging up (dragging is normally seen on the ends).

With no skid shoes installed, a maximum pressure of 40 psi will all the cutter bar the full 9" of travel.

If skid shoes are installed, a maximum of 50 psi is will allow the full 9" of cutter bar travel.

10.12 - RIGID Operating Screens

10.12.1 - RIGID Mode Live View

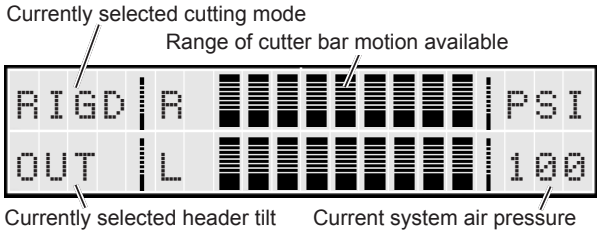


Fig. 118 - RIGID Header Height Live View

The Rigid mode live view is displayed on the automatix screen during rigid operation. The middle display area shows a live view of the cutter bar height above ground and is determined by all valid & calibrated center and divider sensors. This is useful for determining and setting the cut height set point.

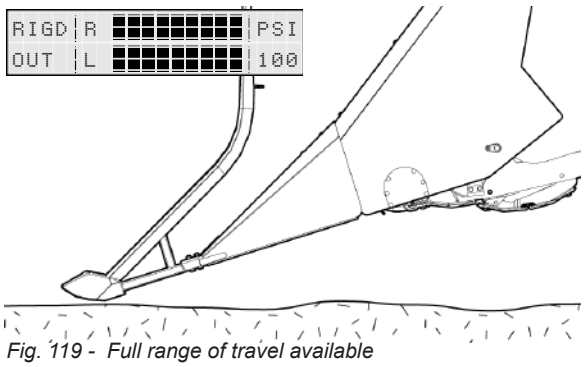


Fig. 119 - Full range of travel available

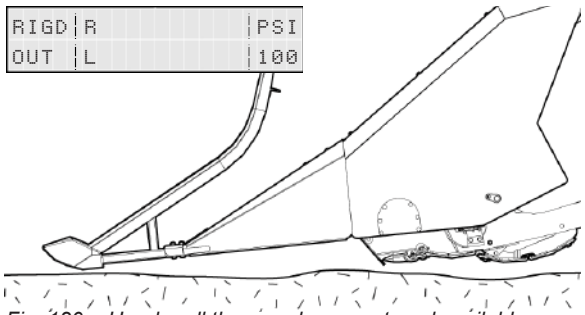


Fig. 120 - Header all the way down, no travel available

10.12.2 - Rigid Vertical Shear Mode Live View

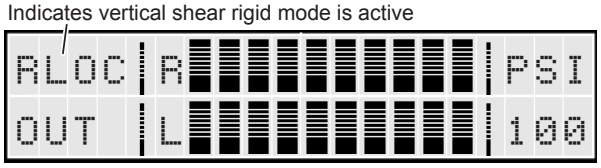


Fig. 121 - RIGID Vertical Shear Mode Live View

10.12.3 - Rigid Mode Live View - Warning

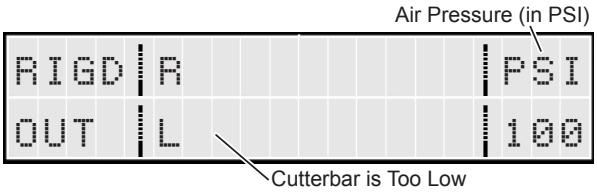


Fig. 122 - RIGID - Header Height - Warning Screen

If the dividers get pushed all the way up (resulting in the cutter bar running on the ground), then no bars will be visible on the screen. This is a high wear situation and should be avoided but will not stop the header from functioning.

10.12.4 - Rigid Mode - Table Tilt Selection

IMPORTANT!

When operating your header in rigid mode, it is extremely important to tell the automatix system if you are running the header tilted forward or tilted backward. This will ensure that the automatic header height control system will work properly

Use the 'Rigid Adjustment' buttons to indicate the table tilt orientation.

- Press 'Higher' to indicate that the header is tilted forward (out)
- Press 'Lower' to indicate the header is tilted backward (in)

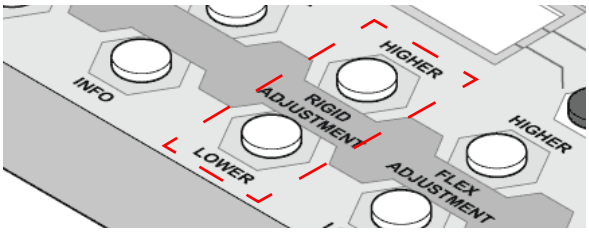


Fig. 123 - Header Tilt Selection - Rigid Mode

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11 - Troubleshooting

11.1 - Reel

Symptom	Possible Cause	Solution
Reel Wrapping in Tangled and Weedy Conditions	Incorrect reel location.	Adjust reel forward and down.
	Reel speed too fast.	Slow reel until crop flows smoothly onto belts.
	Reel fingers not able to eject material properly.	Adjust reel timing to next more aggressive setting (lower number)
Reel Carrying Around Crops or Excessive Shattering of Grain Heads	Reel speed too fast.	Slow reel speed. Reel should turn slightly faster than ground speed.
	Reel height too low.	Raise reel height to reduce amount of straw gathered by reel.
	Pickup fingers pitched too much.	Reduce finger pitch by adjusting reel timing to next less aggressive setting (higher number)
	Pickup fingers too tightly spaced	Replace 2.5” spaced reel fingers with 5” spaced reel fingers (remove every 2nd finger).
Uneven Reel Height and Fore/Aft	Reel cylinders out of phase.	Rephase cylinders (see section 13.7.6 on page 109).
	Reel stops not set to same height	Adjust reel stops.
Cutterbar Plugging or Slug Feeding	Reel speed too slow.	Increase reel speed.
	Reel too far forward	Retract reel
	Reel fingers too far from cutter bar	Lower Reel

11.2 - Drapers

Symptom	Possible Cause	Solution
Draper Jams or Stops Moving	Material is lodged in the draper mechanism	Stop the combine, wait for all parts to come to a stop and reverse the mechanical systems (see section 9.10 on page 60)
	Material is jammed in the draper cleanout or rock trap.	Clean out the rock trap and the draper cleanout. (See section 13.13 on page 119)
Drapers are slipping	Draper tension too loose.	Adjust draper tension (13.6.1 on page 105)

11.3 - Cutting Platform

Symptom	Possible Cause	Solution
Shattering of Grain Ahead of Cutterbar	Reel speed not matched to ground speed, causing crop to be overly disturbed before it is cut.	Adjust reel speed to match with ground speed so reel moves crop evenly. Reel should turn slightly faster than ground speed.
	Reel is positioned too low.	Raise reel.
	Reel speed too fast	Slow down ground speed so reel does not hit crop, causing it to shatter.
	Ground speed too slow for conditions of crop.	Increase ground speed so crop ‘pressure’ is increased, forcing more product onto the drapers.
	Reel too far forward	Position the reel above the cutter bar.
Cut Crop Building Up and Falling from Front of Cutterbar or Loss of Grain Heads at Cutterbar	Reel not adjusted low enough for good delivery of cut crop to belts.	Set reel low enough to sweep material from cutterbar.
	Ground speed too slow for crop conditions.	Increase ground speed so crop ‘pressure’ is increased, forcing more product onto the drapers.
	Reel too far forward.	Move reel closer to cutterbar.
	Cutterbar angle to steep, preventing crop from being pushed onto draper.	Use tilt adjuster at center of platform to adjust angle of cutterbar.
	FLEX Cut Set Point set too high (more than 2”).	Decrease the Cut Set Point
Ragged and Uneven Cutting of Crop	Knife dull.	Replace knife.
	Cutterbar plugged with material.	Adjust reel to sweep material off cutterbar.
	Knife sections damaged.	Replace damaged sections.
	Integral knife hold-downs adjusted loose.	Adjust hold-downs to recommended clearance.
Excessive Vibration of Cutting Parts	Feeder house lower shaft not at recommended speed.	Check basic speed of combine (see combine Operator’s Manual).
	Variable speed feeder house is too fast.	Slow variable speed feeder house (see combine Operator’s Manual).
	Knives not timed properly.	Adjust knife timing (see SERVICE section).
	Loose bolts on knife drive paddle	Tighten all fittings on the knife drive paddle.

11.4 - Cutting Platform (continued)

Symptom	Possible Cause	Solution
Excessive Knife Drive Loads or Inconsistent Cut Heights	Dull knife sections.	Replace knife sections.
	Dull knife guard edges.	Replace knife guards.
	Excess binding between top of knife sections and top of guard slots.	Inspect for bent guards, bent cutterbar, or improper position of guards.
	Incorrect setting of knife hold downs.	See SERVICE section for adjustments.
Excessive Knife Drive Loads or Inconsistent Cut Heights	Dull knife sections.	Replace knife sections.
Crop is not feeding properly	Crop is not clearing the feather plates	Lower the reels, increase the speed of the power unit/reel, set reel finger timing to be more aggressive. Set reel fore/aft to clear feather plates.

11.5 - Active Header Height Control

Symptom	Possible Cause	Solution
Active Header Control Will Not Operate	Manual raise or lower does not work.	See your combine dealer.
	Active header control not enabled.	Enable active header control mode that is desired as per combine procedures.
	Feeder house to header connector not connected or loose.	Connect properly.
	Header sensor not properly connected or damaged.	Connect or repair sensor.
	Header not correctly calibrated	Calibrate header height control on header first, then combine.
Active Header Control Lowers But Will Not Raise	Defective active header control card.	See your combine dealer.
Active Header Control Raises But Will Not Lower	Defective active header control card.	See your combine dealer.
System Cycles or Hunts	Accumulator on combine has incorrect setting.	The AirFLEX header height works best with the float accumulator turned OFF.
	Combine Header Height (or tilt) sensitivity too high	Decrease Combine Header Height sensitivity (or combine tilt sensitivity if the header hunts side to side), then if the problem continues increase combine smoothing. Re-calibrate the combine HHC.
System Fails Intermittently After Manually Raising Header Over Obstacle	System was deactivated.	Reactivate combine header height system.
Header Raises or Lowers Too Slow or Too Fast	Incorrect raise/drop rate adjustment.	Adjust raise/drop rate (see combine Operator's Manual).

11.5.1 - Miscellaneous

Symptom	Possible Cause	Solution
Uneven or Bunched Feeding of Crop	Cut crop not being separated from uncut crop at cutter bar.	Adjust reel settings as described in 9.3 on page 50)
	Feeder house conveyor chain too loose.	Adjust tension (see combine Operator's Manual).
	Feed auger lower stops set too high.	Adjust lower stops downward.
	Feed auger belt drive too loose.	Adjust belt tension
	Draper tension is too loose	Increase draper tension
	Crop is bunching on feather plate	Adjust the reel
Header pushing dirt when tilted forward	Header angled too far forward	Tilt the header back
		Add air pressure to paddles
		Lower the reel make finger timing more aggressive
	Combine feed house angle not correct.	Set the correct combine feeder house angle (see 7.12.2 on page 40)
Hydraulic Leak Detected At Multi-Coupler	Leaking O-ring.	See your dealer.
System is not keeping air pressure while AirFLEX is running	Air is leaking or compressor is not running properly	Check air lines, air bags and air fittings for leaks.
Crop Dividers are riding up on top of the crop	Improper adjustment of the crop divider	Adjust the crop divider float settings to be 'heavier' as outlined in "13.10 - Dividers" on page 115
FLEX mode PSI setting is not 'remembered' when restarting the combine	You probably only set the operating PSI (shutting down the equipment reverts this value to the default)	Set the default FLEX PSI via the main automatix menu (see section 10.7 on page 65.

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12 - Header Transport & Storage

12.1 - Read before Transporting

There may be regulations restricting transport of heavy equipment on in your area. Be aware of local regulations before transporting.

When transporting your header via trailer or transport cart, your local regulations may require a maximum equipment width of 8 ft. (2.44 m). To achieve this width, lower the front-most reel fingers into their transport position as outlined in this section of the manual.

⚠ WARNING!

Do not exceed 25 mph (40 kph) when towing the header via transport cart. Excessive speeds can result in injury or equipment damage and may not be permitted by regulations in your area.

Do not transport header without wheel axle bolts installed!

12.2 - Measurements for Flatbed Transport

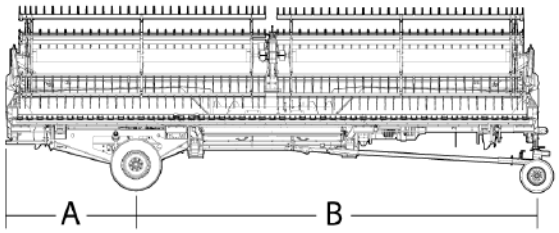

Fig. 125 - Transport Measurements

Header Size	Distance A		Distance B	
	Feet	Meters	Feet	Meters
25ft	6.4	1.96	19.6	5.99
30ft	8.9	2.71	22.4	6.83
36ft	11.8	3.59	25.6	7.81
40ft	13.8	4.20	27.3	8.32
45ft	16.4	5.00	29.9	9.12
50ft	18.9	5.76	32.4	9.88

12.3 - Transporting on Combine

⚠ WARNING!

Avoid transporting the header on the front of a combine on public roadways whenever possible. The extreme width of the header, combined with low visibility can pose danger to the equipment operator and the public.

- Reflective material must be clean and visible
- A spotter or pilot vehicle should be used when there is the possibility of encountering traffic.
- Drive at a speed that is safe for conditions.
- Completely raise platform and engage the feeder house safety stop.
- The reel must be completely retracted and at an appropriate height for maximum visibility.
- When transporting on public roads, flashing warning lights and tail lights on both sides provide warning to other vehicles. Warning lights are required when driving a combine on public roads.
- Operators should be aware of the assembled width of the Combine, and must check local regulations before transporting on public roadways.

NOTE:

Some combines disable auto header height functions when set to road mode and do not remember the settings when put back into field mode. Ensure auto header height and auto lateral tilt settings are enabled prior to operating the header again.

12.4 - Prepare the AirFLEX for Transport on Cart or Trailer

1. Remove the crop dividers by pulling the handle up into the horizontal position and rotating it 90 degrees to release the divider.

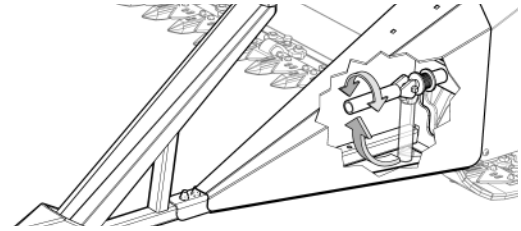

Fig. 126 - Remove Crop Dividers

⚠ WARNING!

Use lifting aids and proper lifting technique to avoid muscle strain or back injury.

2. Store the dividers on top of the center feed deck, take care not to damage the draper.

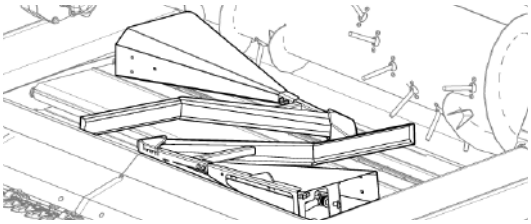

Fig. 127 - Store Crop Dividers on Center Draper

3. Completely lower and retract the reel arms.
4. Secure the reel in place to prevent it from rotating during transport.
5. At each end of the reel, remove the indicated bolt to allow you to drop down the header's front-most reel finger as shown below.

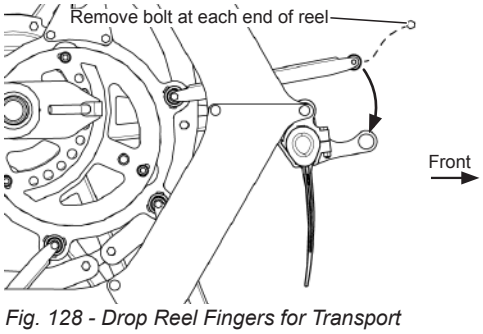

Fig. 128 - Drop Reel Fingers for Transport

6. Raise the center limit sensors to their storage positions. Secure with pin and cable.

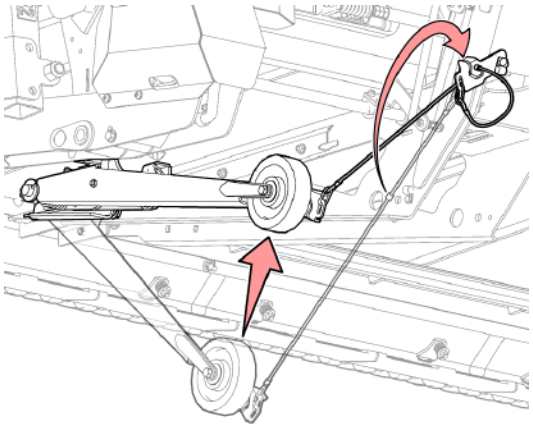

Fig. 129 - Raise & secure header height roller sensors

7. Ensure the cutter bar is locked up in rigid mode to prevent it from bouncing during transport.

12.5 - Transport Using Optional Transport Cart

There are two components to the optional transport package: The draw bar axle and the transport cart.

1. Ensure the header is in RIGID mode with the air system fully pressurized to 100 psi.
2. Completely lower and retract the reel.
3. Tilt the header backward by fully retracting the tilt cylinder.
4. Raise the header.

⚠ WARNING!

Engage the Parking Brake, shut down the engine and wait for all moving parts to stop before exiting the cab. Lock the Feeder House Lift Cylinders in raised position as described in your Combine Owner's Manual.

5. Roll the transport into position under the header.
6. Attach the 4 straps to the struts on the underside of the header.
7. Restart the combine and lower the header until it is one foot above the transport.

⚠ WARNING!

Engage the Parking Brake, shut down the engine and wait for all moving parts to stop before exiting the cab.

8. Use the hand crank to raise the transport up into position.

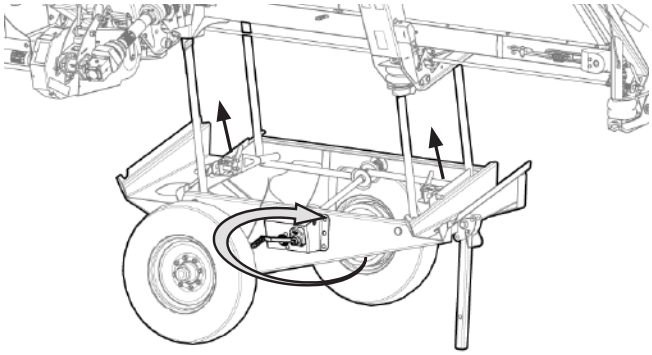

Fig. 130 - Install Header Transport Cart

9. Swing the transport support bar into its transport position, lock in place with its pin.

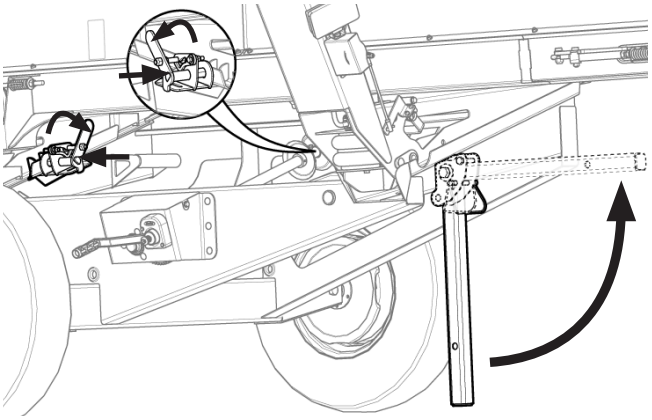

Fig. 131 - Lock Transport Cart to Header

10. Connect the transport's electrical line to the header.
11. Roll the drawbar under the drawbar mount, pull the pin to lower the draw bar mount onto the draw bar axle.

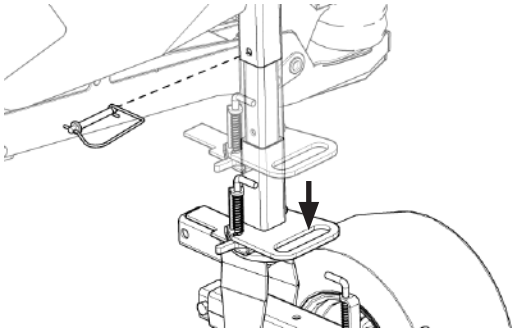

Fig. 132 - Lower draw bar bracket onto draw bar axle

12. Remove all locks, pins/bolts which hold Auger Adapter to the Feeder House of Combine.
13. Restart the combine and completely lower header to the ground.
14. Lock the transport cart in place via the two lock pins.

⚠ WARNING!

Engage the Parking Brake, shut down the engine and wait for all moving parts to stop before exiting the cab.

15. Re-insert the pin to secure the draw bar axle in place.

16. Disconnect platform drive shafts from feeder house and place in storage positions.

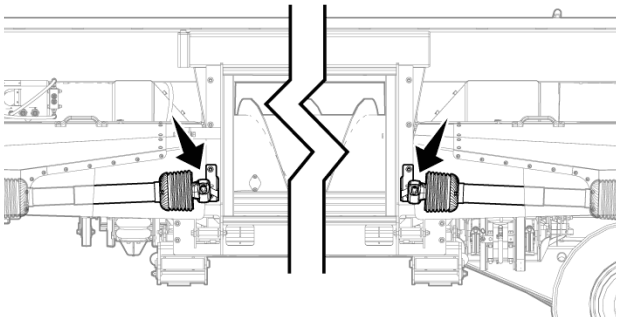

Fig. 133 - Drive shaft storage positions

17. Disconnect hydraulic coupler and place in storage position.
18. Disconnect electrical cable & place in storage position.

NOTE:

If transporting the header with installed transport cart on a flatbed trailer, skip the remaining steps and proceed to section 12.6.1 on page 91.

19. Restart the combine, lower the feeder house slightly and carefully back away.

12.5.1 - Trailer Brake Settings

Before towing the AirFLEX on the optional transport cart, ensure you set the electric brake controller sensitivity in the truck's cab.

12.5.2 - Off-Road Transportation

When transporting the AirFLEX header in rough or off-road conditions, take extreme care to drive slowly with no sharp turns. Failure to do so can result in a roll over.

12.5.3 - On-Road Transportation

Do not exceed the speed of 25 mph (40 kph) while transporting the header on public roads. Always follow local regulations.

12.5.4 - After Transporting

Inspect and clean the right hand drive area after transporting your equipment. Rocks and debris can be flung into the drive assembly during transport.

12.6 - Transporting on Flatbed Trailer

IMPORTANT!

A combine does not have the reach to lift the AirFLEX onto a flatbed trailer without a side-loading ramp. Without a ramp, specialized lifting equipment is required for lifting the header.

12.6.1 - With Optional Transport Package

Prior to following the steps in this section, ensure that you have followed the steps in section 12.5 on page 89.

IMPORTANT!

When transporting your equipment via flatbed trailer, use the provided hold-down brackets with your header to avoid equipment damage.

1. Ensure the draw bar axle hold-down bracket is in place.

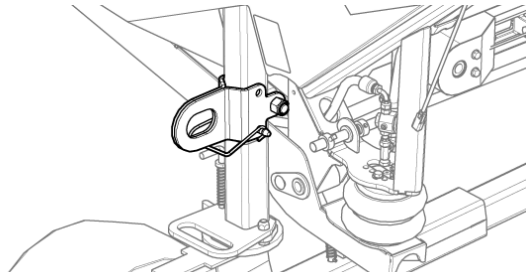

Fig. 134 - Check for draw bar axle hold-down

2. Ensure the draw bar holder is in place, install if necessary. This bracket will interfere with normal header operation and must be removed after transport is complete.

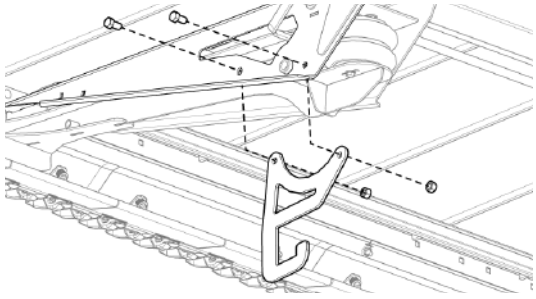

Fig. 135 - Draw bar holder

3. Swing the draw bar around and hook it onto the draw bar holder.

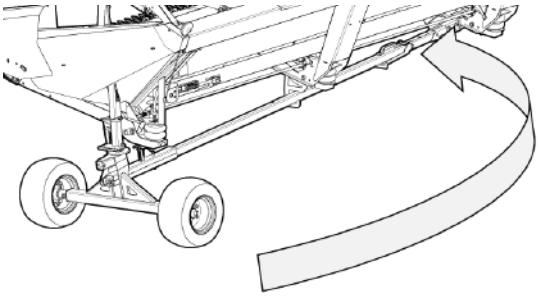

Fig. 136 - Swing Draw Bar into Storage Position

4. Inspect the axle on the header transport and ensure the indicated bracket is installed next to each wheel. This bracket should remain installed at all times.

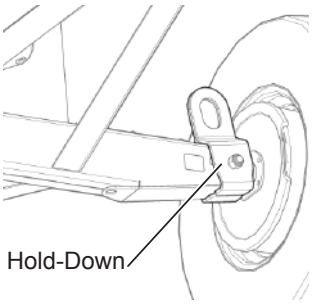

Fig. 139 - Axle Hold-Down

5. Lift the header onto the flatbed trailer and secure in place using the hold-down brackets previously mentioned. If additional strapping is required, ensure that only structural components are used to secure the header to the trailer. Strapping the header down via lightweight components such as the reel will result in equipment damage.

WARNING!

Use appropriate lifting equipment. Ensure the header is firmly secured. Keep bystanders away. Failure to follow instructions can result in equipment damage or death.

12.6.2 - Without Optional Transport Package

1. Ensure the header is in RIGID mode with the air system fully pressurized to 100 psi.
2. Completely lower and retract the reel.
3. Tilt the header backward by fully retracting the tilt cylinder.

⚠ WARNING!

Engage the Parking Brake, shut down the engine and wait for all moving parts to stop before exiting the cab. Lock the Feeder House Lift Cylinders in raised position as described in your Combine Owner's Manual.

4. Disconnect platform drive shafts from feeder house and place in storage positions.

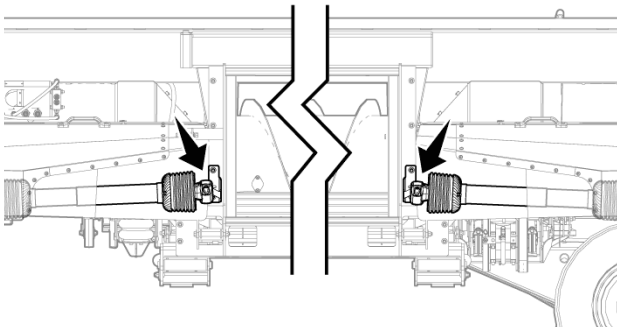

Fig. 137 - Drive shaft storage positions

5. Disconnect hydraulic coupler and place in storage position.
6. Disconnect electrical cable & place in storage position.
7. Place two wood blocks on the flatbed trailer where the header subframe will be sitting.
8. Use appropriate lifting equipment to raise the header and gently place it on the wood blocks on the flatbed trailer. A combine can only be used to lift the header if using a stable side-loading ramp.

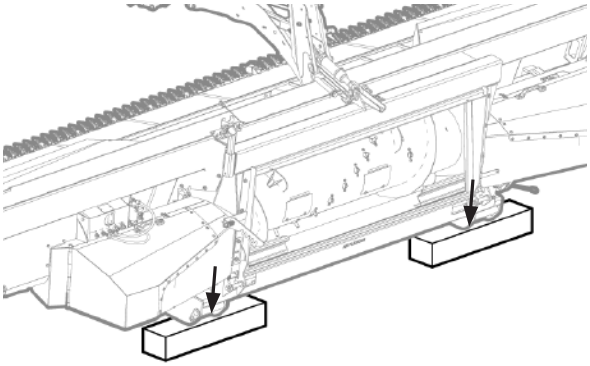

Fig. 138 - Lower Header onto Blocks

⚠ WARNING!

Use safe lifting procedures or serious injury may result.

9. Strap down the header using structural components only.

STOP IMPORTANT!

When strapping the header to the flatbed trailer, ensure that only structural components are used to support the straps. Strapping the header down via lightweight components such as the reel will result in equipment damage.

STOP IMPORTANT!

Ensure that all required standards and regulations are followed in regards to transporting heavy equipment on public roadways.

12.7 - Quick Dismount

The header can be lowered directly onto the ground for short or long term storage.

IMPORTANT!

If storing the header for long periods of time, ensure it is protected from the elements.

1. Ensure the ground is firm and level.
2. Place two wood blocks on the ground below the bottom strut of the subframe.
3. Raise the center limit sensors to their storage positions.

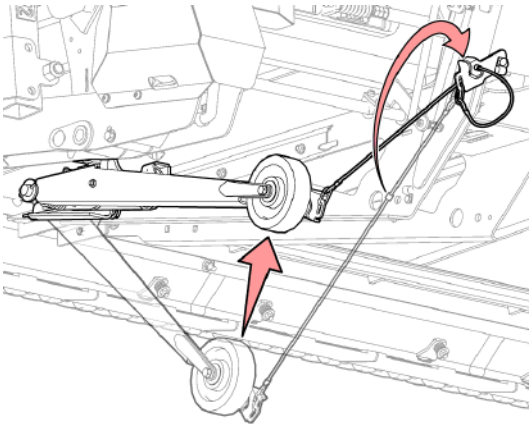

Fig. 140 - Raise & secure header height roller sensors

4. Start the combine, fully retract the hydraulic tilt cylinder, lower and retract the reel.
5. Remove pins and locks holding feeder house to header.
6. Gently lower the header down onto the blocks.

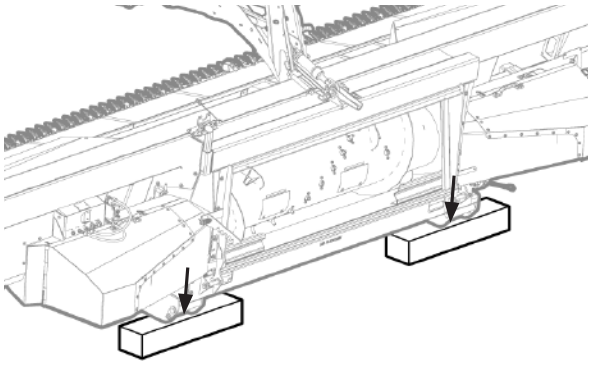

Fig. 141 - Lower Header onto Blocks

WARNING!

Engage the Parking Brake, shut down the engine and wait for all moving parts to stop before exiting the cab.

7. Disconnect platform drive shafts from feeder house and place in storage positions.

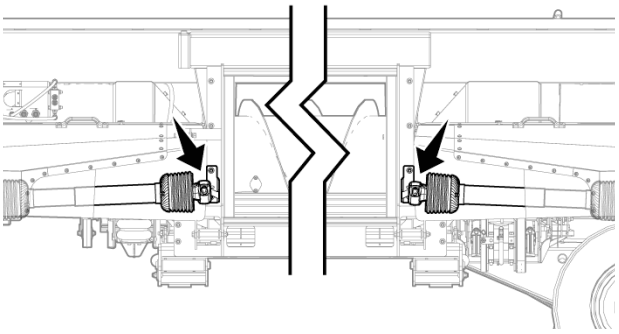

Fig. 142 - Drive shaft storage positions

8. Disconnect hydraulic coupler and place in storage position.
9. Disconnect electrical cable & place in storage position.
10. Restart the combine, lower feeder house slightly and back away.

12.8 - End of Season Storage

- ☐ Lower platform onto safety stops or blocks.
- ☐ Open side shields (see section 13.14 on page 119) and clean all chaff and debris.
- ☐ Loosen tension on side draper belts (See section 13.6.1 on page 105).
- ☐ Lift up on side drapers and power wash inside belts. Make sure to wash away all chaff and debris.

IMPORTANT!

Do not use high-pressure washer spray directly on electronics, bearings, decals, or any other sensitive areas. High-pressure water can remove seals, lubricants, decals, and damage electrical systems.

- ☐ Remove center draper belt and clean frame (see section 13.6.5 on page 107). Reinstall belt loosely.
- ☐ Check fluid levels on all gearboxes.
- ☐ Apply grease where needed as outlined in section 13.18 on page 121 of this manual.
- ☐ Completely lower and retract the reel.
- ☐ Raise the center sensor into it's storage position.
- ☐ Paint all parts where paint is worn or chipped.
- ☐ Close side shields.
- ☐ If possible, shelter header in a dry place.

13 - Regular Service & Adjustment

⚠ WARNING!

The AirFLEX header contains many high speed mechanical components. If these components become damaged, it is extremely important that they be repaired as soon as possible. Running equipment with misaligned or damaged parts can cause additional damage to surrounding components, as well as increase the risk of fire.

13.1 - Fasteners

During operation, vibration can loosen fasteners on various components of your header. Parts with thinner metal such as safety shields tend to vibrate more than other parts, so particular care must be taken to ensure they are firmly secured.

Always ensure that all fasteners are torqued to the proper specifications (see page 132) Apply thread lock compound when necessary.

13.2 - Permanent Bushings

Inspect sealed bearings and permanent bushings every 200 hours of operation and replace as necessary.

See section 15.2 on page 127 for bushing locations.

STOP IMPORTANT!

Do not lubricate the permanent bushings. These bushings are self-lubricating. Added grease will drastically shorten their lifespan.

13.3 - Reel/Feed Auger Speed Sensor Adjustment

The speed sensors on the header are adjusted to their optimal position in the factory but may require adjustment if they are replaced or serviced.

In order for the speed sensors to work properly, they must be 0.90-0.95mm (0.035-0.037 in.) away from the surface they are measuring.

For each sensor, 1 full rotation of the adjuster nut equals approximately 1 mm of travel, so to get the best distance, screw in the sensor until it is just touching its measuring surface then back it off 90-95% of a turn.

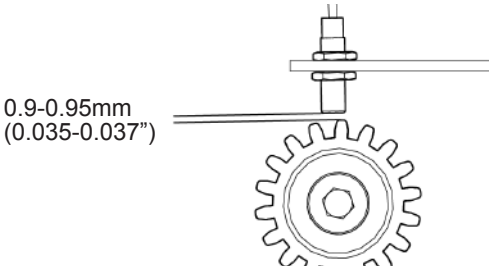

Fig. 143 - Speed Sensor Spacing

See section 13.3 on page 95 for speed sensor locations.

13.4 - Drive Belt Tension

All drive belts should have proper tension and alignment. If any belts appear to be damaged, they must be replaced and the cause of damage must be determined and rectified.

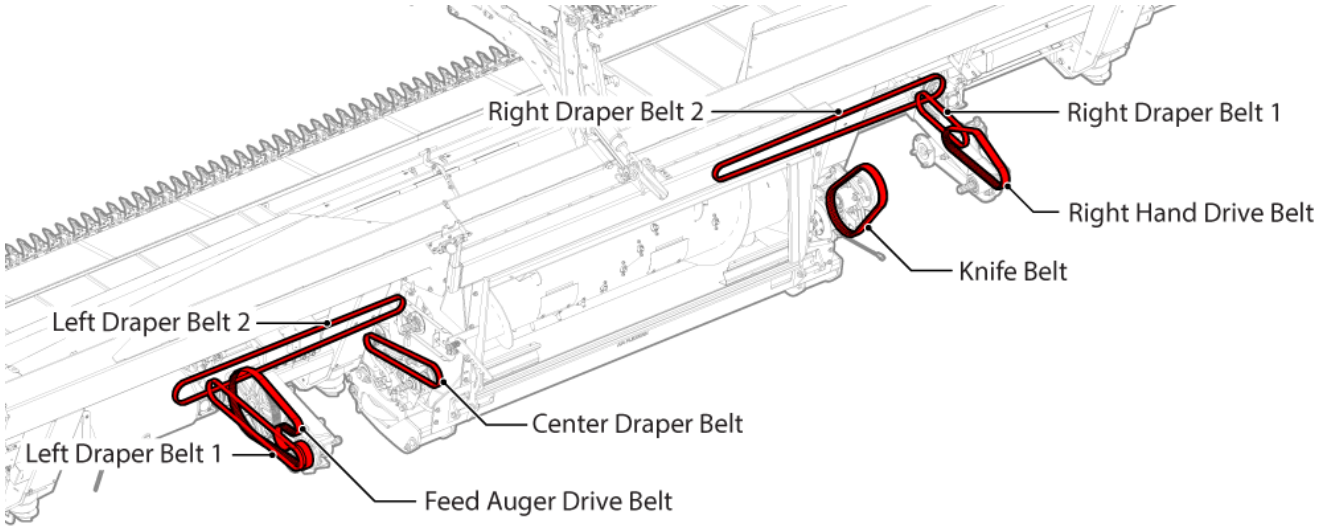

Fig. 144 - Drive Belt Locations

⚠ WARNING!

Before adjusting belt tension, shut off the combine, engage the parking break and wait for all moving parts to come to a stop before approaching the header.

STOP IMPORTANT!

Under-tensioned belts can slip, generating heat which will shorten the belt lifespan and damage cog pulleys!

Over-tensioning belts will result in belt stretching and reduced bearing lifespan.

If belt tension is adjusted, it is important to re-check the tension after a day of usage to ensure all adjustments are secure.

When adjusting belt tension, check the belt for fraying or cracks. Replace if necessary.

STOP IMPORTANT!

Check the belt tension after the first 100 hours of operation.

The tension for most belts is adjusted by its tension indicator. The various indicators will vary slightly in construction but the basic function will remain the same. Simply loosen the lock mechanism, turn the adjustment bolt (or nut in some situations) until the indicator is aligned with the washer, then re-tighten the lock mechanism.

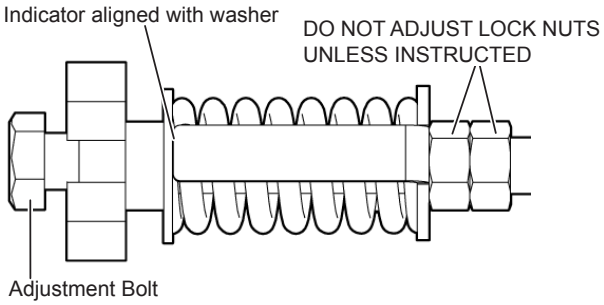

Fig. 145 - Tension Indicator Position

STOP IMPORTANT!

Do not adjust the lock nuts unless otherwise instructed!

13.4.1 - Tension Verification Using Tension2Go App

A number of the belts in the AirFLEX drive system require the use of the Tension2Go application for verifying belt tension.

App Name: Tension2Go

Developer Name: ContiTech Antriebssysteme GmbH

Link for Android devices: https://play.google.com/store/apps/details?id=com.contitech.ptg.Tension2Go

Link for Apple devices: https://itunes.apple.com/app/tension2go/id585560650

NOTE:

The Tension2Go app requires a quiet location in order to accurately record belt frequency.

Please note this is a 3rd party application which is not published by Honey Bee. The software may be removed or changed without notice, this is beyond Honey Bee's control.

1. Open the app.
2. Hold the phone's microphone opening approximately 1" from the belt
3. Press the start button then pluck the belt like a guitar string.
4. If successful, the app will display the frequency of the belt vibration.

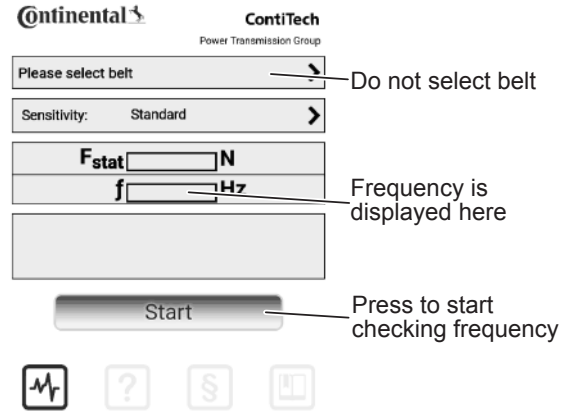

Fig. 146 - Tension2Go App Details

13.4.2 - Feed Auger Drive Belt Tension

The feed auger drive belt is located just to the left of the subframe.

1. Loosen the lock nut.
2. Adjust the tension, then re-tighten the lock nut.

Correct tension is achieved when the bottom section of belt vibrates at 195Hz when plucked. Use the Tension2Go app to verify the frequency.

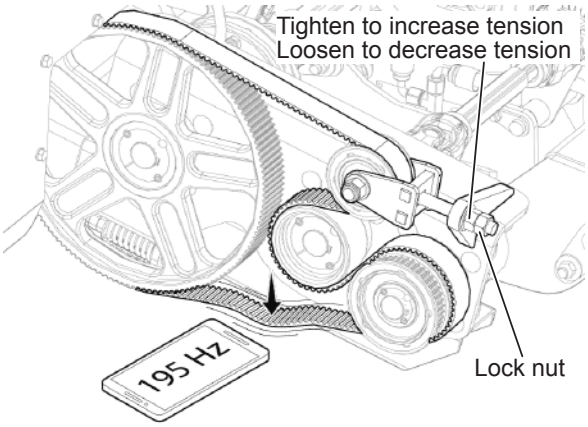

Fig. 147 - Feed Auger Drive Belt Tension Adjustment

13.4.3 - Left Draper Drive Belt 1 Tension

1. Loosen the two lock bolts and lock nut.
2. Adjust the belt tension with the adjustment bolt.
3. Retighten the lock nut and lock bolts when desired tension is achieved.

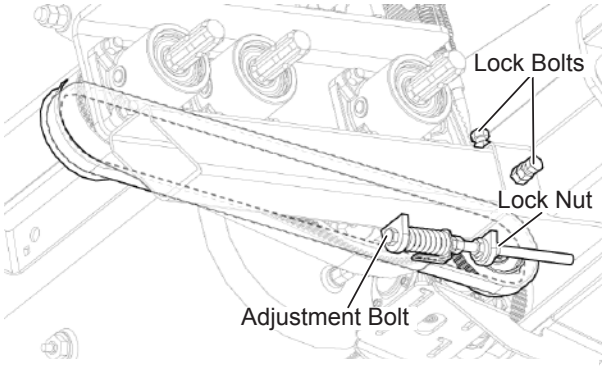

Fig. 148 - Left Draper Drive Belt 1 Tension Adjustment

13.4.4 - Left Draper Drive Belt 2 Tension

4. Loosen the four lock bolts on the bottom of the gearbox then loosen the lock nut.
5. Adjust the belt tension via the adjustment nut.
6. Retighten the lock nut and lock bolts when desired belt tension is reached.

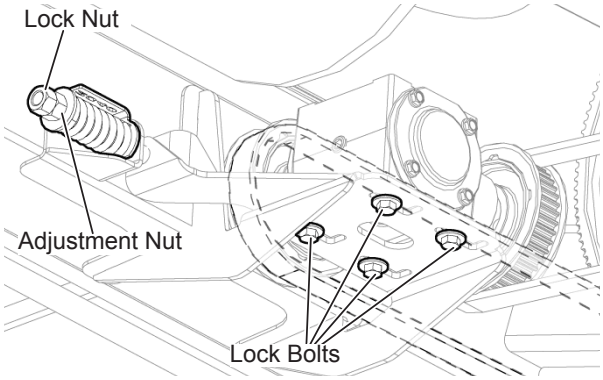

Fig. 149 - Left Draper Drive Belt 2 Tension Adjustment

13.4.5 - Center Draper Drive Belt Tension

The center draper drive belt is located on the left side of the feed auger drum enclosure, under the shield.

1. Simply adjust the belt tension via the adjustment bolt. Do not adjust any of the lock nuts!

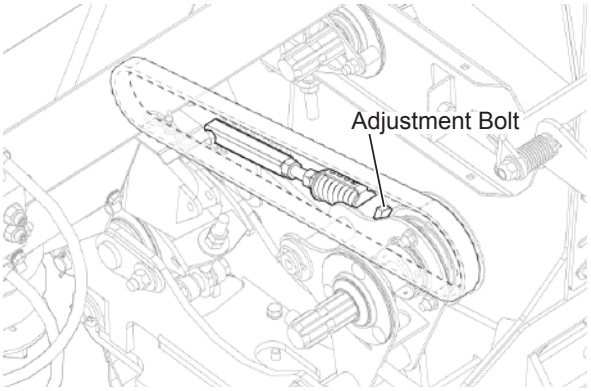

Fig. 150 - Center draper tension adjustment

13.4.6 - Right Hand Drive Belt Tension

1. Loosen the lock nut
2. Adjust the belt tension via the adjustment nut.
3. Retighten the lock nut when desired tension is reached.

Correct tension is achieved when the bottom section of belt vibrates at 220Hz when plucked. Use the Tension2Go app to verify the frequency.

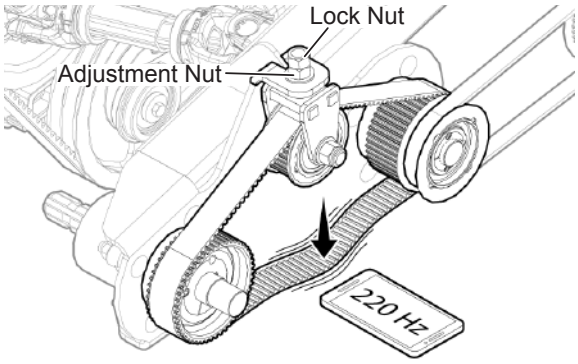

Fig. 151 - Right hand drive belt tension

13.4.7 - Right Hand Draper Belt 1 Tension

1. Loosen the two lock bolts and lock nut
2. Adjust the belt tension via the adjustment bolt
3. Retighten the lock bolts and lock nut when desired tension is reached.

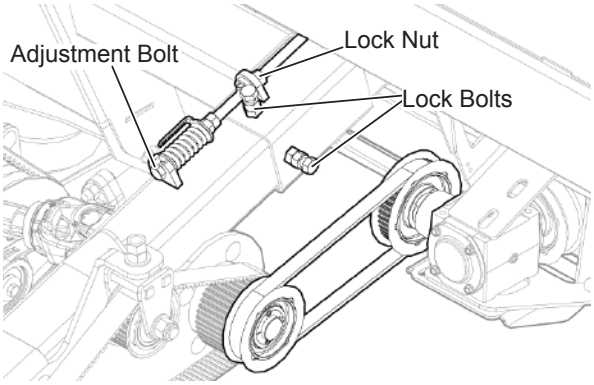

Fig. 152 - Right draper belt 1 tension adjustment

13.4.8 - Right Hand Draper Belt 2 Tension

1. Loosen the four lock bolts on the underside of the gearbox.
2. Loosen the lock nut and adjust the belt tension via the adjustment nut.
3. When desired tension is reached, re-tighten the lock bolts.

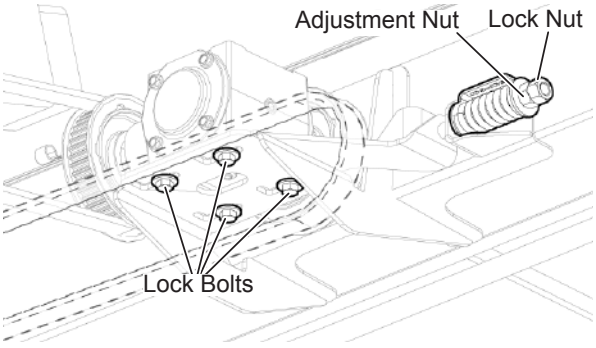

Fig. 153 - Right draper belt 2 tension adjustment

13.4.9 - Knife Drive Belt Tension

1. Slightly loosen the lock nut and lock bolt but do not remove.

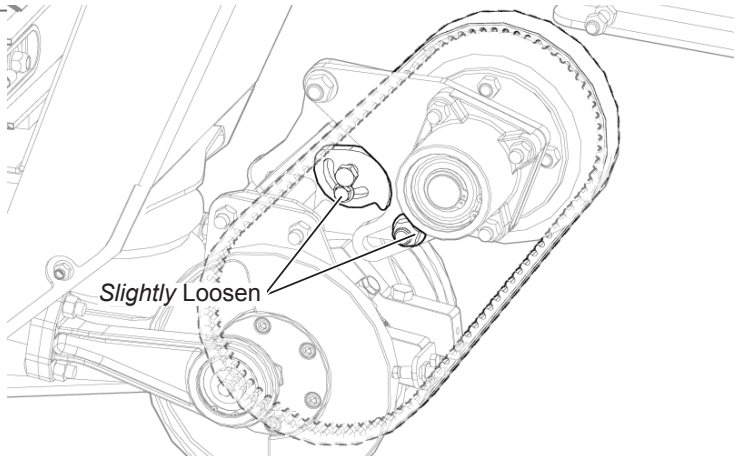

Fig. 154 - Knife Belt Tension - loosen lock nut and bolt

2. Place a torque wrench on the adjustment bolt and lift with 180 ft/lb (244 Nm) of force. As soon as the indicated torque is reached, tighten the lock bolt to lock the tension. Re-tighten the lock nut.

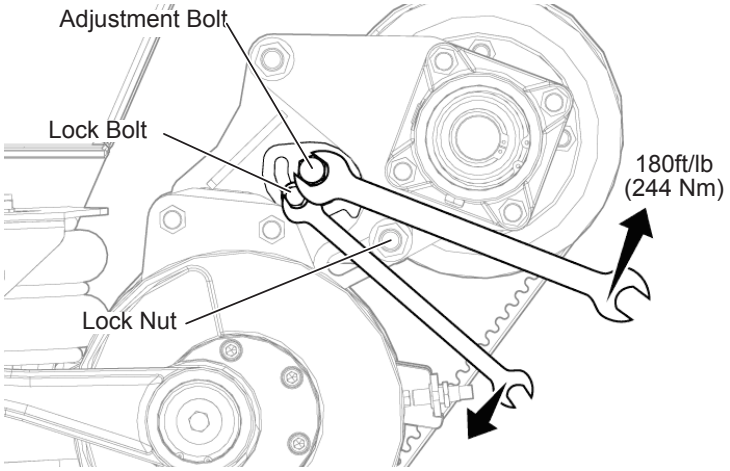

Fig. 155 - Torque bolt to tension belt

3. Correct tension is achieved when the belt vibrates at 95Hz when plucked like a guitar string. Use the Tension2Go app to verify the frequency.

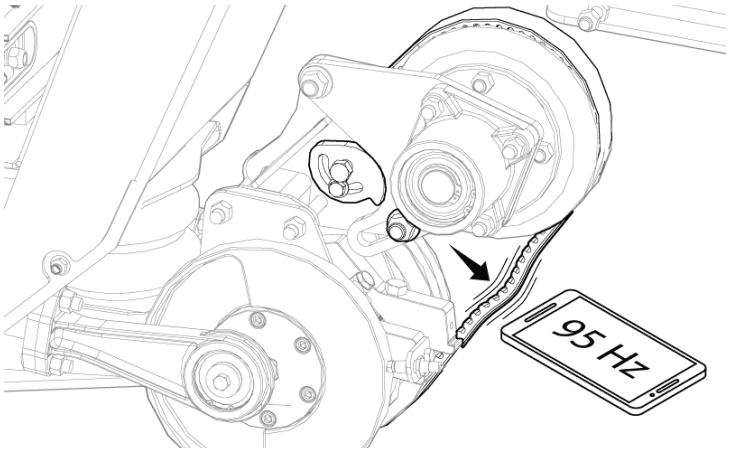

Fig. 156 - 'Pluck' belt & check tension

13.5 - Drive Belt Replacement

IMPORTANT!

When replacing or adjusting the drive belts, NEVER bend the belts beyond the diameter of the smallest pulley they will be installed on. Bending the belts too far will result in drastically reduced belt lifespan and possible equipment damage.

When replacing drive belts, check the pulleys for excessive tooth wear.

13.5.1 - Knife Drive Belt Replacement

Take note of which nuts, washers and bolts are used with which components when removing them to make the reassembly process easier.

1. Disconnect the pto driveshaft and right-hand pitman arm from the knife drive belt assembly.

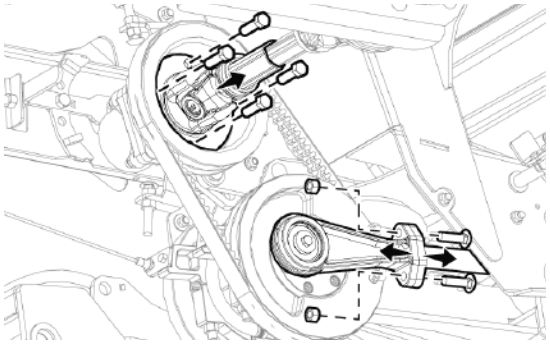

Fig. 157 - Disconnect pitman arm & PTO

2. Loosen the tension from the belt as shown below.

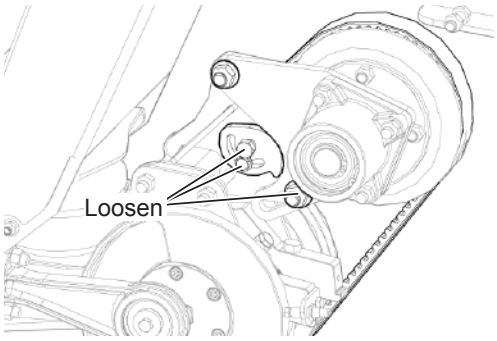

Fig. 158 - Loosen locking mechanisms

3. Remove the old belt and install the new belt.
4. Reinstall the pitman arm and drive shaft by performing the removal process in reverse. See 15.7 on page 132 for torque recommendations.
5. Ensure the new knife belt is properly tensioned by following the directions section 13.4.9 on page 100. All fittings must be properly re-tightened after this procedure is complete.

13.5.2 - Feed Auger Belt Replacement

1. Open the side shield as described in section 13.14 on page 119.
2. Remove the left hand draper belt 1 as described in section 13.5.3 on page 102.
3. Loosen the feed auger belt tension by loosening the indicated bolt.
4. Loosen (but do not remove) the nut holding the tension pulley in place. This will release the pulley bracket allowing you to remove the draper belt.

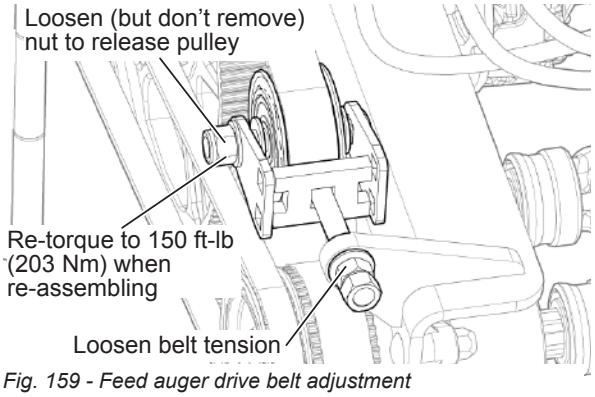

Fig. 159 - Feed auger drive belt adjustment

IMPORTANT!

If you completely disassemble the pulley, take note of the washers used on each side of the pulley to separate it from the bracket. The system will not function without these washers.

5. Take note of the belt orientation and how it is fed through the pulleys. Remove the old belt and install the new belt. See Fig. 147 on page 97 for belt orientation.
6. Reinstall the first draper belt.
7. Reinstall the pulley and ensure the tension is properly adjusted for both belts as described in section 13.4 on page 96.

13.5.3 - Left Draper Drive Belt 1 Replacement

The left hand draper uses two drive belts, the first belt runs parallel to the feed auger drive belt on the left of the sub frame.

1. Loosen the two lock bolts shown below.

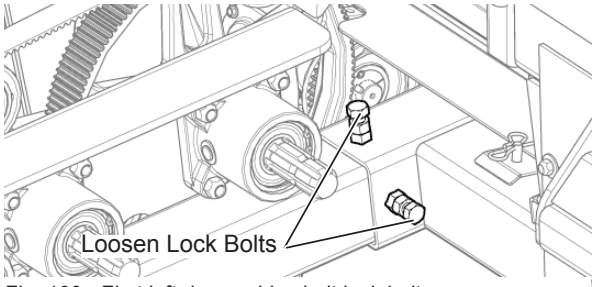

Fig. 160 - First left draper drive belt lock bolts

2. Loosen tension via the tension bolt to decrease belt tension to allow you to slide the old belt off the pulleys.

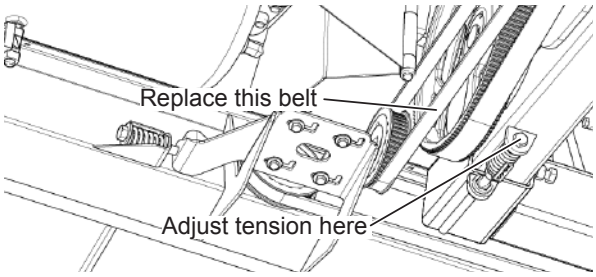

Fig. 161 - Remove the first left draper belt

3. Install the new belt on the pulleys and then re-tighten the belt tension. Ensure the belt tension is properly set as described in section 13.4.3 on page 98.
4. Retighten the two lock bolts.

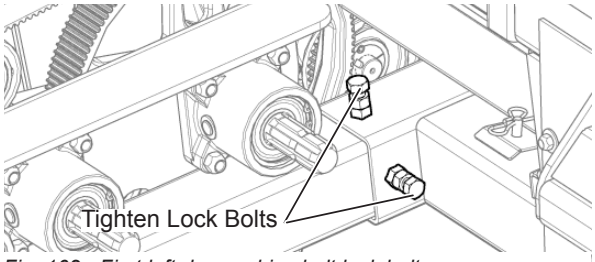

Fig. 162 - First left draper drive belt lock bolts

IMPORTANT!

It is critical that the belt is correctly tensioned and that the two lock bolts shown in Fig. 160 are securely tightened prior to operating the header.

13.5.4 - Left Draper Drive Belt 2 Replacement

The second left hand draper belt is located behind the feed auger belt assembly between the draper deck and the feed auger frame.

1. Before replacing this belt, fully extend the tilt cylinder (tilt the table forward) to allow more room for accessing belt hardware.

WARNING!

Lock the Feeder House in raised position as described in your Combine Owner's Manual. Engage the Parking Brake, shut down the engine and wait for all moving parts to stop before exiting the cab.

2. Loosen the draper belt tension

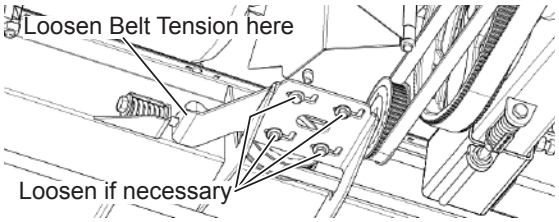

Fig. 163 - Left draper drive belt loosen tension

3. Remove the cover from the other end of the draper belt and remove the belt from the pulleys.

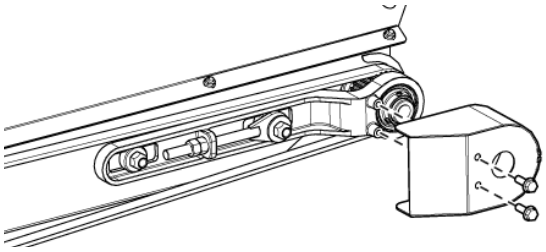

Fig. 164 - Remove left draper drive belt cover

4. Install the new belt and reinstall the cover.

IMPORTANT!

Ensure the cover shown above is installed before operating the header.

5. Ensure the belt tension is properly set as described in section 13.4.4 on page 98.

13.5.5 - Right Hand Drive Belt Replacement

1. Before replacing this belt, tilt the table forward to allow more room for accessing belt hardware.

⚠ WARNING!

Engage the Parking Brake, shut down the engine and wait for all moving parts to stop before exiting the cab.

2. In order to replace the right-hand drive belt, you must first remove the right hand draper belt 1 as described in section 13.5.5.
3. Loosen the indicated lock nut, loosen the drive belt tension via the adjustment nut. Loosen but do not remove the pulley nut to release the belt.

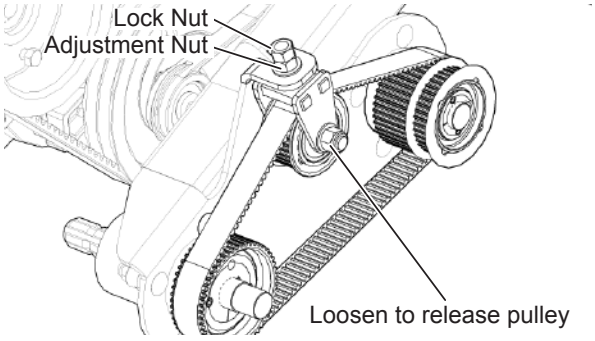

Fig. 165 - Right draper belt 1 tension adjustment

4. Replace and resecure the drive belt then reinstall the right hand draper belt 1. Re-tension as outlined in section 13.4 on page 96.

13.5.6 - Center Draper Drive Belt Replacement

1. Release the belt tension via the adjustment bolt.
2. Slide the belt off the front pulley.
3. Remove the pin to release the rear pulley assembly in order to remove the belt.
4. Slide the new belt onto the two pulleys.
5. Reinstall the pin to secure the rear pulley assembly.
6. Re-tension the new belt via the adjustment bolt.

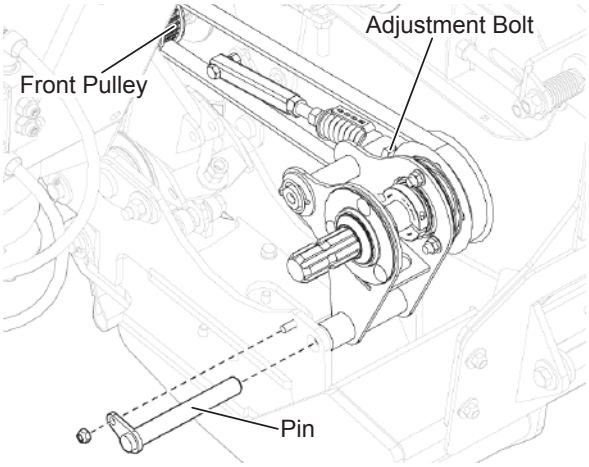

Fig. 166 - Center draper tension adjustment

13.5.7 - Right Hand Draper Belt 1 Replacement

1. Loosen the two lock bolts and lock nut then loosen the belt tension via the adjustment bolt.

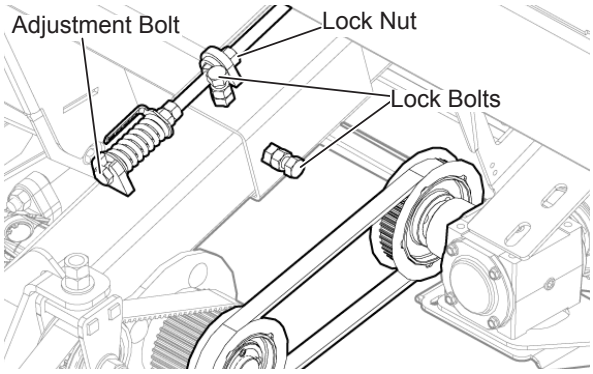

Fig. 167 - Remove RH draper belt 1 to access drive belt

IMPORTANT!

It is critical that the belt is correctly tensioned and that the two lock bolts shown in Fig. 167 are securely tightened prior to operating the header.

2. It may be necessary to loosen the tension on the right hand draper belt 2 by loosening the lock nut, adjustment nut and lock bolts in order to allow the gearbox to shift far enough to release the right hand draper belt 1.

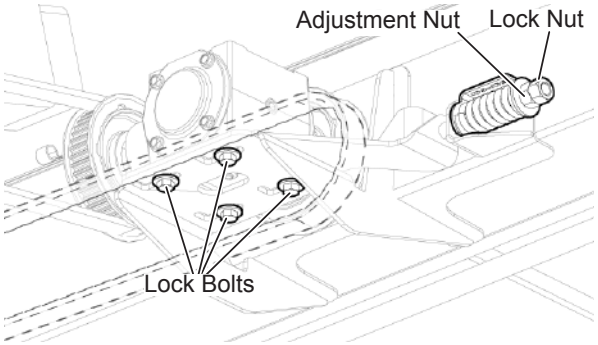

Fig. 168 - Right draper belt 2 tension adjustment

3. Install the new right hand draper belt 1 then re-tension both right hand draper belts as described in section 13.4 on page 96.

13.5.8 - Right Hand Draper Belt 2 Replacement

1. Loosen the tension by loosening the lock nut, adjustment nut and 4 lock bolts in order to allow the gearbox to shift along the 4 L shaped slots on the bottom.

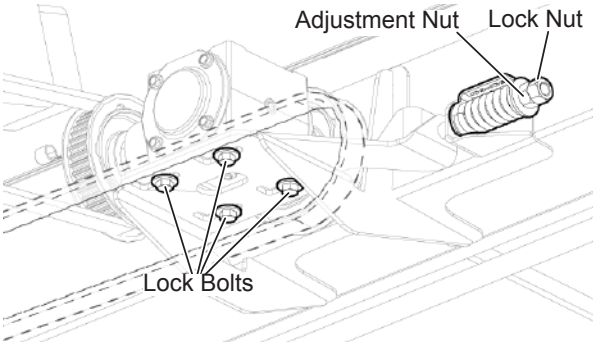

Fig. 169 - Right draper belt 2 tension adjustment

2. Slide the gearbox along the L slots to allow room for removing the belt.
3. Remove the old belt and install the new belt.
4. Move the gearbox back to its original position on the L slots then retighten the 4 lock bolts, lock nut and adjustment nut.
5. Readjust the belt tension as shown in section 13.4 on page 96.

13.6 - Drapers

13.6.1 - Side Draper Belt Tension

NOTE:

In wet or heavy crop conditions, additional belt tension is required to prevent belt slippage. Increase belt tension only when necessary as belt life, tracking, and drive components are affected.

Proper tension must be maintained on the draper to prevent slipping on the drive rollers. The draper tension is adjusted via the idler roller.

1. Engage the power unit drive with the engine at low idle.
2. Observe from the cab how drapers are tensioned.

WARNING!

Lower the header, raise the reel and engage cylinder locks. Shut down the engine before exiting the cab.

3. Take note of the tension indicator position against the spring.
4. Unlock the handle to release tension.
5. Turn the adjuster bolt until the indicator is aligned with the washer.
6. Lock the handle and tighten the lock nut.

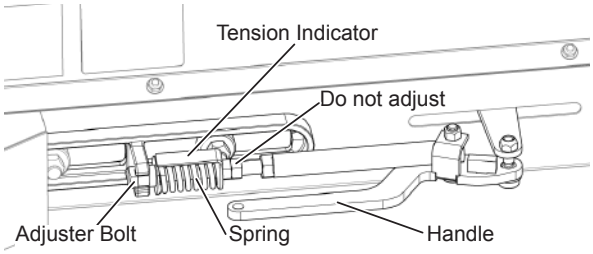

Fig. 170 - Draper Tension Adjustment

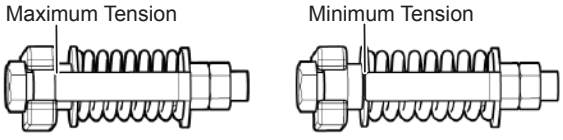

Fig. 171 - Tension Indicator Position

7. Restart the Combine and repeat the running test. Re-adjust as necessary.

13.6.2 - Side Draper Belt Tracking

If your draper drive roller is not properly aligned, the draper may start rubbing the side of its channel causing improper crop flow and equipment damage.

1. Inspect the draper for proper tracking. When not properly tracking, the draper will pile up against the edge of the draper channel.

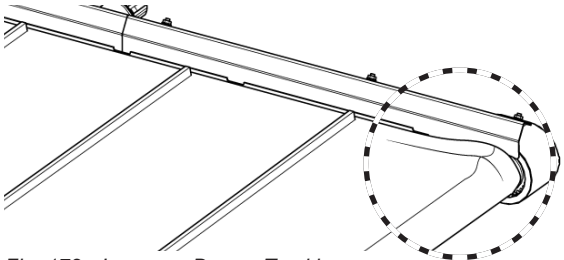

Fig. 172 - Improper Draper Tracking

2. The drive roller must be at exactly 90 degrees to the draper frame.
3. If adjustment is required, first release the draper belt tension handle, then loosen the lock nut and reposition the drive roller via the adjustment nut. Re-engage the draper tension handle.

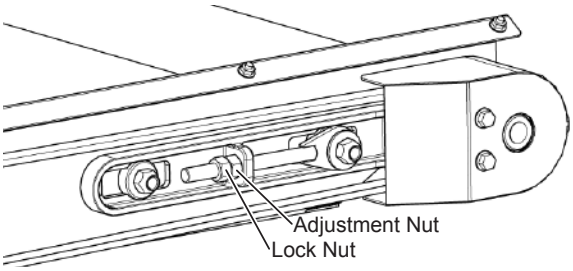

Fig. 173 - Center Draper Tension Adjustment

4. Once satisfied with drive roller alignment, re-tension the draper drive belt as described in section 13.5.

13.6.3 - Center Draper Belt Tension

WARNING!

When working under platform always lower hydraulic cylinder safety stop onto cylinder rod to prevent platform from lowering.

NOTE:

For difficult crops, additional belt tension may be required. Increase belt tension only if necessary as belt life, tracking, and drive are affected.

To tension the center draper:

1. Locate the two tensioners on each side of the center draper on the underside of the header.
2. Loosen the 1/2” UNC Jam Nut, hold the lock nut with a wrench to prevent it from moving and turn the adjuster bolt until the tension indicator is in line with the end of the spring. Retighten the jam nut.
3. Repeat the process for the adjuster bolt on the other side of the center draper.

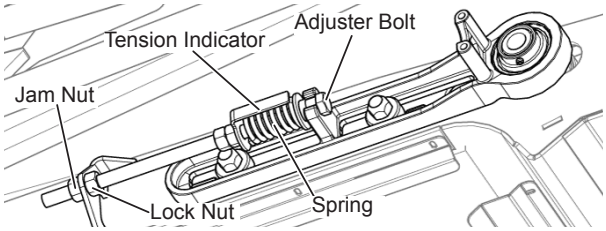

Fig. 174 - Center Draper Tension Adjustment

13.6.4 - Draper Installation

1. Make sure that the quick release lever is in the open position prior to installing the draper on the deck.
2. Place draper bundle on the top of deck runners, and unroll with the slats facing up. Be sure to align the v-guide with the notched side of the roller toward the rear end of the header.
3. Wrap draper around one of the rollers and feed draper into the bottom runner of the deck. The bottom runners will support the draper, and prevent it from hanging down.
4. Pull draper through bottom runner, and wrap around the other roller. Pull the ends of the draper together. Install a connector bar to close the joint.

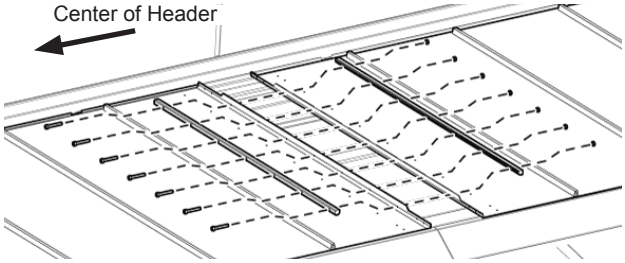

Fig. 175 - Installing Draper Connector Bar

5. The bolts for the connector bar should be installed with the bolt heads facing the center of the header. This helps prevent the crop being caught on the screws. Complete the installation by adjusting tension and tracking as described on the following pages.
6. Once the draper is installed on the draper deck, close the quick release lever (shown on following page) to apply tension to the draper.

13.6.5 - Remove & Install Center Draper Belt

1. When installing the center draper belt, you should first remove the bottom cleanout panel to allow access under the draper.

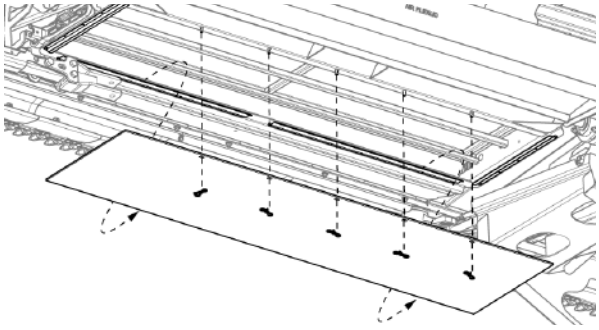

Fig. 176 - Remove Center Draper Cleanout Panel

2. Unpack and unroll the new draper on top of the center feed deck.

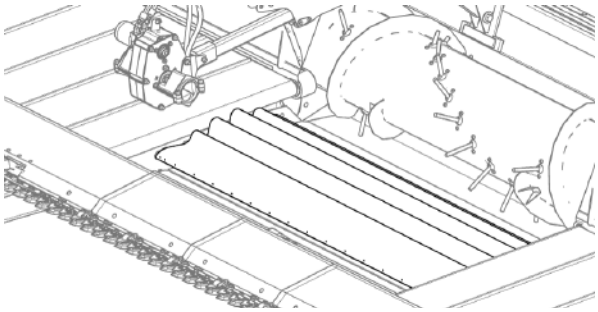

Fig. 177 - Unroll new draper onto center deck

3. Feed the draper around the rollers, under the center deck and back out the top.
4. Connect the ends of the draper together using the connector bars. Insert the bolts from the feed auger side of the center draper deck.

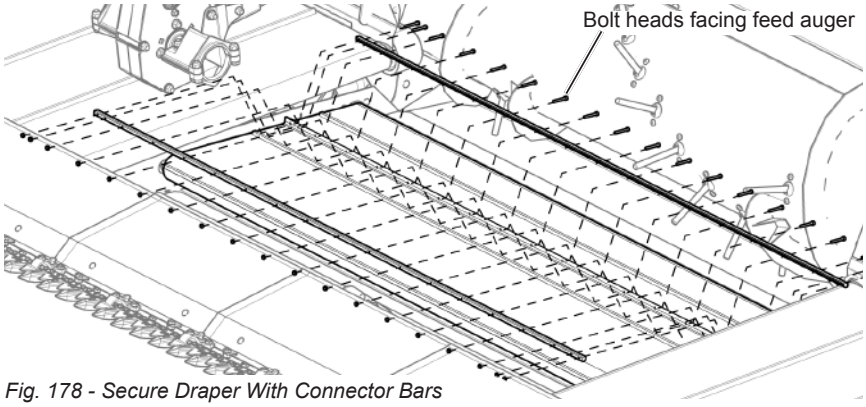

Fig. 178 - Secure Draper With Connector Bars

13.7 - Reel

13.7.1 - Set Reel Safety Stops

End reel arms: Raise reel completely and engage safety stops on reel lift cylinders at each end of the header. The stop must be snapped over cylinder with the lock pin.

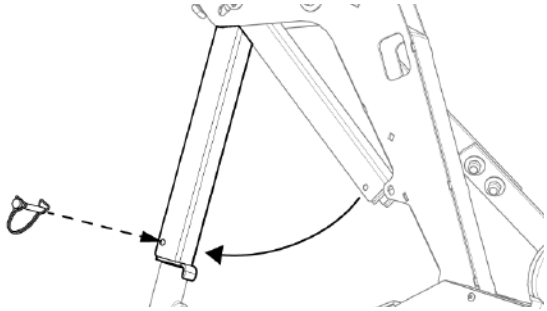

Fig. 179 - Reel Arm Safety Stop

Center reel arm: Pin reel arm in front of arm on center reel arm tower to hold it up mechanically.

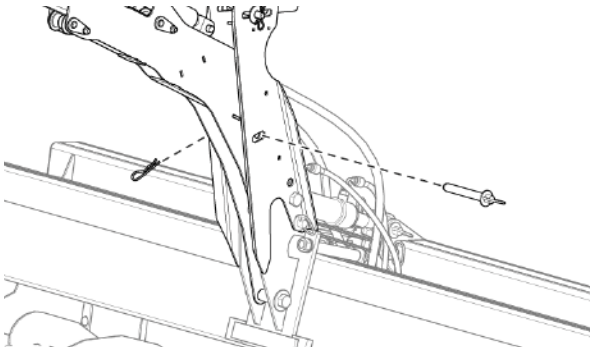

Fig. 180 - Center Reel Arm Lock Pin

13.7.2 - Minimum Reel Height and Leveling Reel

Proper setting of minimum reel height will protect against unexpected reel movements that can place reel fingers in contact with cutterbar.

1. Set the header to Rigid mode and wait for the knife to become fully rigid (up to 15 minutes).
2. Fully lower table. Fully lower reel.
3. Adjust finger pitch so the tips of the reel fingers are as close to the cutter bar as possible. See section 9.3.1 on page 50 for details on adjusting finger pitch.
4. Position reel fingers as close to cutterbar & feather plates as possible, using fore/aft cylinders.
5. Using a wrench to rotate the 3/4” UNC adjustment bolts on the left and right reel arms, raise or lower reel. Adjust each shaft so the clearance between the reel fingers and cutterbar is a minimum of 1 1/2” (3.8 cm) along full length of reel.

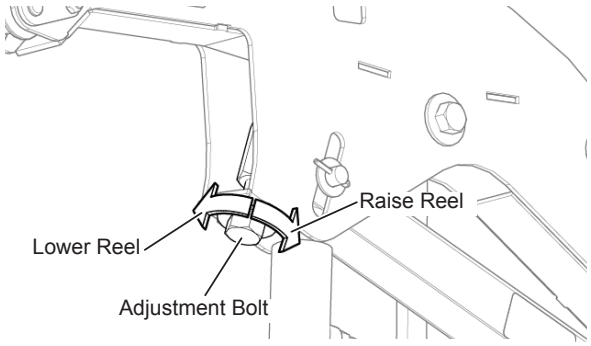

Fig. 181 - Reel Height Adjustment Bolt

6. Adjust the center reel arm height (if applicable) by removing the pin, releasing the lock and turning the 1” UNC adjustment nut as shown below.

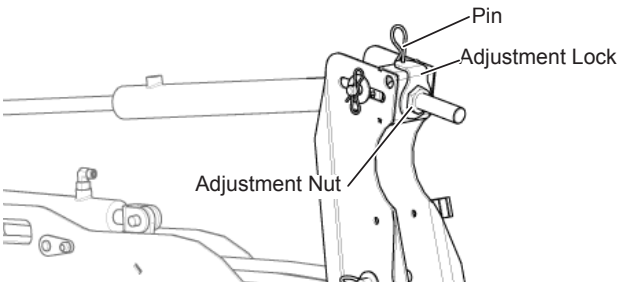

Fig. 182 - Center Reel Arm Height Adjustment

IMPORTANT!

Note that reel timing adjustments will change the reel finger-cutterbar clearance. The operator needs to be aware of finger clearance at all times.

13.7.3 - Reel Finger Replacement

⚠ WARNING!

To avoid serious injury, completely raise reel, engage reel lift safety stops, shut OFF engine, set parking brake, and remove key.

1. Using a pair of slip-joint pliers, grab, squeeze and pull to remove the spacer next to the reel finger to be replaced.

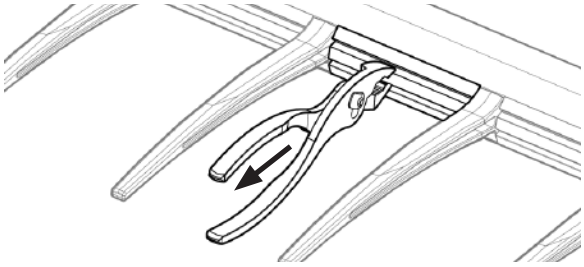

Fig. 183 - Remove reel finger spacer

2. Twist the reel finger counter-clockwise and pull to remove it from the channel.

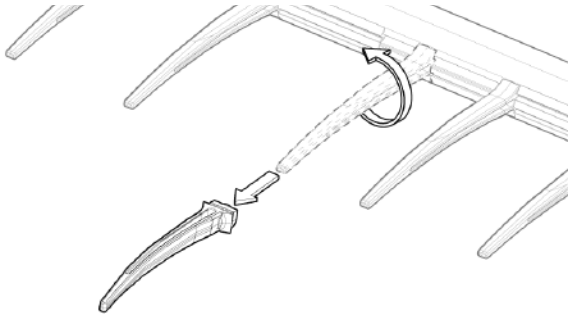

Fig. 184 - Twist clock-wise and pull to remove finger

3. Reverse the above procedure to install the new reel finger.

NOTE:

If multiple reel fingers are being replaced, only 1 spacer must be removed, the remaining spaces can be slid side to side while installing the fingers.

13.7.4 - Automatic Reel Speed

The reel speed sensor is calibrated for various combines. Additional calibrations can be added via software updates.

Generally, auto reel speed only works when auto header height is active.

NOTE:

Normally, this automatic control will not work if ground speed is less than 1 km/h (0.62 mph). When driving the header slowly through a down and lodged crop, temporarily shut off auto control and use manual speed controls.

It is recommended that the reel speed be set 10-20% faster than combine ground speed.

13.7.5 - Reel Speed Sensor Adjustment

The reel speed sensor (and all other speed sensors) need to be adjusted so that the face of the sensor is touching the rotating trigger, and then unscrew 1.5 turns (1 turn = 1mm). On the reel speed sensor, the rotating trigger is the teeth on the small reel drive gear. This is adjustable externally without any disassembly requirements. When adjusting the speed sensors, unplug the connecting wire so that the body of the sensor can spin in or out to its required position without twisting the wire. When done, tighten the jam nut and reconnect the wire. A ¾" wrench is required for the speed sensor jam nuts.

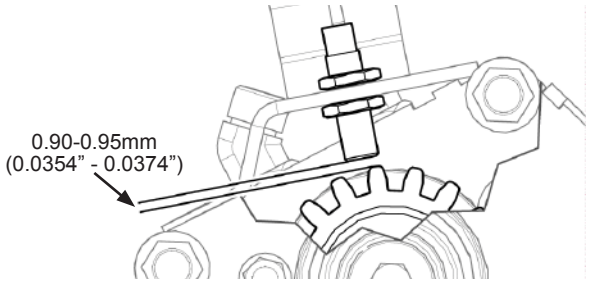

Fig. 185 - Reel Speed Sensor Adjustment

13.7.6 - Rephasing Reel Cylinders

If cylinders become unevenly extended then retract the cylinders and hold the cylinder retract switch for a few seconds to remove air from the system.

13.8 - Knife

13.8.1 - Knife Drive Component Torque Recommendations

When servicing the knife drive components, refer to the illustration below for recommended torque values.

NOTE: Apply red loctite to threaded bolts unless otherwise specified

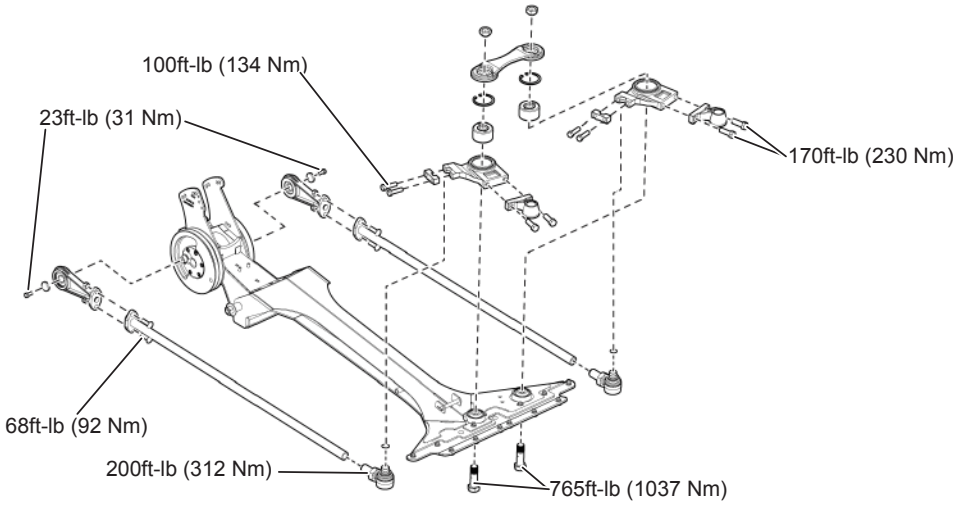

Fig. 186 - Knife Drive Torque Recommendations (see 15.7 on page 132 for details)

13.8.2 - Set Cutterbar Knife Timing

⚠ WARNING!

Ensure the combine feeder house is full raised and all safety locks are secured in place. Failure to do so can result in injury or death.

1. Disconnect the drive shaft PTO from the knife drive system to allow you to move the knives freely while aligning.
2. Remove the shield covering the flywheel.
3. Run a long bolt or rod through the alignment hole of the two flywheels to keep them aligned with each other.

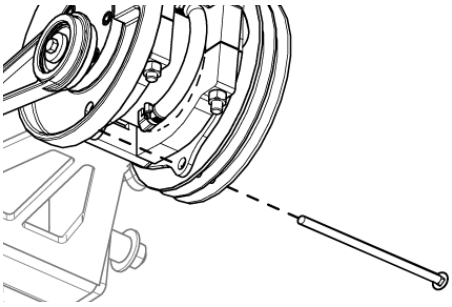

Fig. 187 - Align Drive Plates with a Bolt

4. Remove the feather plate from above the two knife heads on the cutter bar.
5. Check alignment of bell cranks and cutting sections to determine if timing adjustment is necessary.

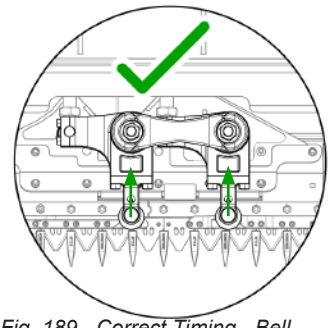

Fig. 189 - Correct Timing - Bell Cranks Aligned

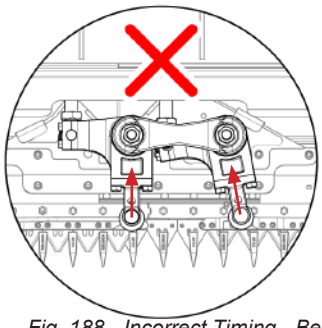

Fig. 188 - Incorrect Timing - Bell Cranks Not Aligned

6. Loosen the drive arm jam nuts

(Continued on following page)

7. Disconnect the two knife drive arms from each of the two knife drive flywheels as illustrated.

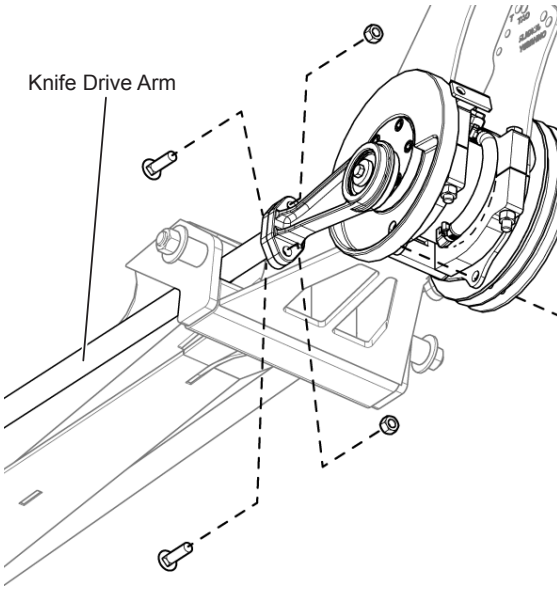

Fig. 190 - Disconnect both Knife Drive Arms

8. Adjust the knife drive arm length until the bell cranks and cutting sections are aligned. Screw/unscrew until tight.
9. Re-attach the knife drive arms to the flywheels when satisfied with alignment.
10. Re-torque everything.
11. Remove the bolt/rod that was inserted in the alignment hole on the flywheels.
12. Reinstall the safety shields & ensure the knife belt is properly tensioned.

IMPORTANT!

Remember to remove the rod or bolt that was temporarily installed in the flywheels to keep them aligned.

13.8.3 - Knife Section Service Kit

Service kits are available from your Honey Bee dealer to replace individual sections, or complete knife.

Kit contains all necessary hardware, sections and instructions.

13.8.4 - Cutterbar Maintenance

For optimal performance and durability of knife:

- Inspect for broken or improperly adjusted hold-downs.
- Inspect for dull or broken knife sections
- Inspect for dull, worn or broken guard cutting edges.
- Inspect for excessive binding between top of knife sections and top of guard slot. Binding can be caused by bent/misaligned guards or a bent cutterbar.
- Inspect knife head and knife drive alignment with first guard slot to ensure binding is not present in these areas.
- Ensure cutting system turns freely by rotating the drive by hand (drive shaft removed). If system does not turn freely, repeat inspection.

13.8.5 - Replacing the Knife

⚠ WARNING!

Knife sections are sharp!

Wear protective gloves when handling knives.

Raise platform completely and engage feeder house safety stop. Raise reel completely and engage reel lift cylinder safety stops. Shut OFF engine, set parking brake, remove key.

1. In order to replace either the left or right hand knife, you must first remove the feather plate from above the knife head bearings.

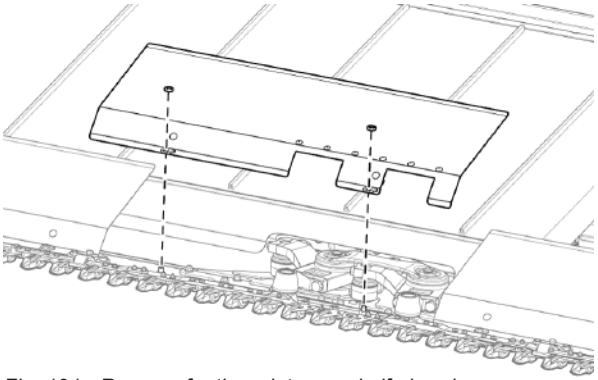

Fig. 191 - Remove feather plate over knife bearings

13.8.5.1 - Removing the Right Hand Knife

1. Remove 4 to 6 guards from around the right hand knife head.

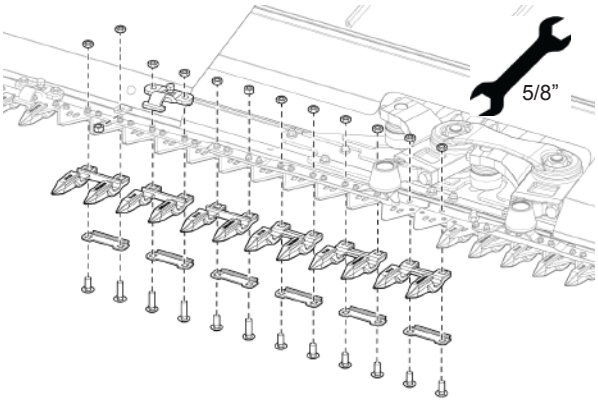

Fig. 192 - Remove guards around right hand knife head

2. Remove the bearing housing from the right hand knife head.

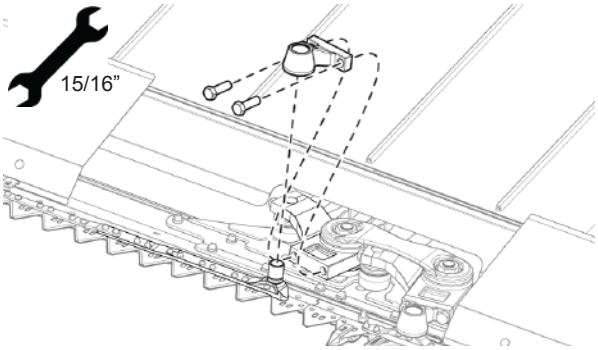

Fig. 193 - Remove bearing housing from right hand knife head

IMPORTANT!

There are a number of loose components within the knife head that you must take care to keep in place when reassembling. Take special precautions not to disturb the needle bearings within.

3. Wearing protective gloves, lift and pull knife head out from guards.

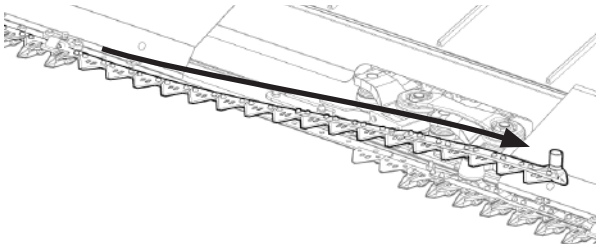

Fig. 194 - Lift and pull out the right-hand knife

NOTE:

It is easiest to lift the right-hand knife to remove it from the cutter bar but you may require a second person to help support the knife to prevent it from getting caught on the guards.

If performing this procedure alone, you may wish to lower the knife in order to pull it out of the cutter bar.

13.8.5.2 - Removing the Left-Hand Knife

1. Remove 4 to 6 guards from around the left hand knife head.

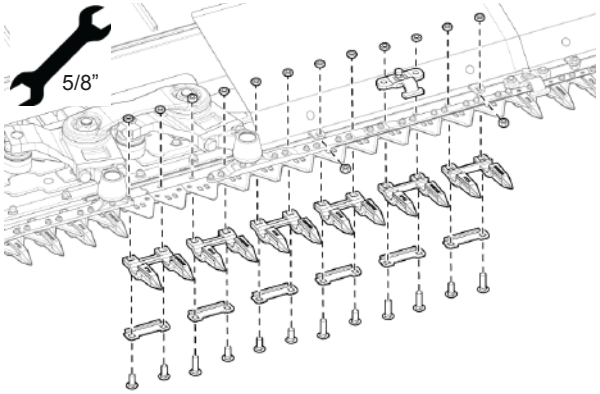

Fig. 195 - Remove guards around the left hand knife head

2. Remove the bearing housing from the left hand knife head.

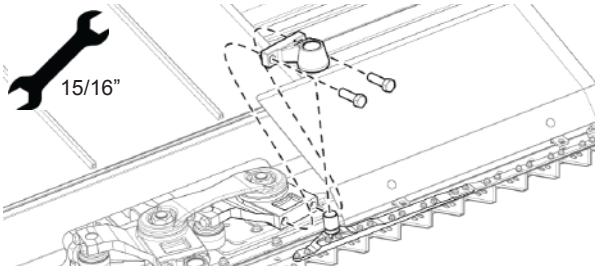

Fig. 196 - Remove left hand knife head bearing

IMPORTANT!

There are a number of loose components within the knife head that you must take care to keep in place when reassembling. Take special precautions not to disturb the needle bearings within.

3. Wearing protective gloves, lower and pull the knife head out from guards.

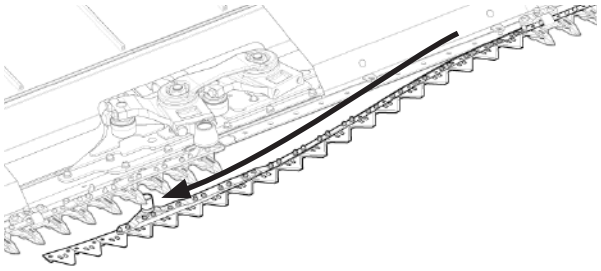

Fig. 197 - Lower and pull out the left hand knife

13.8.5.3 - Installing the new knife (left or right)

1. Slide the new knife into place.
2. Pack the bearing housing with grease, taking care not to dislodge the needle bearings.
3. Push the bearing housing back into place by hand only. Do not use a hammer or damage will result.
4. Check the bearing housing to ensure it is properly seated. When properly installed, the shiny bearing should not be visible below the housing.

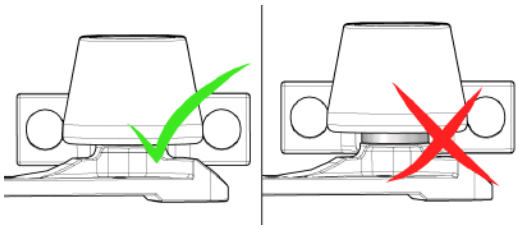

Fig. 198 - Ensure bearing is properly seated

5. Bolt the bearing housing in place and reinstall the grease zerk. Torque the two bolts to 170 ft-lb (230 Nm).
6. Use a grease gun to add grease to the bearing housing via the zerk until excess grease oozes out.
7. Reinstall the 4 to 6 guards
8. Reinstall feather plate section above the knife heads.

IMPORTANT!

Lubricate the knife head as described in section 13.18 on page 121.

13.8.6 - Remove and Install Knife Sections

WARNING!

Wear protective gloves when handling knives.

Raise platform completely and engage feeder house safety stop. Raise reel completely and engage safety stops on reel lift cylinders. Shut OFF engine, set parking brake, and remove key.

Position knife so hold-downs and guard tangs do not inhibit section removal.

1. Remove the nuts from the knife section.
2. Remove and discard knife section.
3. Replace any damaged cap screws, you may need to move the knife side to side to make the bolt holes accessible.
4. Install knife section and nuts.

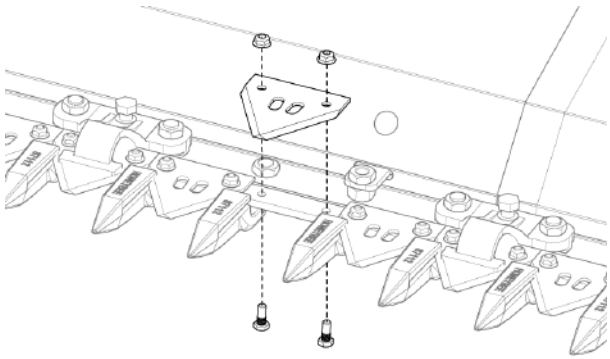

Fig. 199 - Replace Knife Section

13.9 - Repair Broken Knife Back

If the knife breaks during use, repairs can usually be made with a connector bar. Most often the knife back will break across a sickle section bolt hole. To use the connector bar properly, the damaged section needs to be cut out and/or a section of knife removed.

IMPORTANT!

If the knife breaks close to the knife head, remove that section of knife, reconnect the knife head, and then add the new section to the far end of the knife where there is less mechanical stress. The join in the two knives must be located midway under a sickle section, not in the gap between two sickle sections.

When you encounter this type of break, inspect the knife for dull/damaged guards, and sections, and gummy build-up which might cause binding. One or more of these problems may have been the cause of the failure.

13.9.1 - Connector Bar

The connector bar is installed on the top of the knife back. The connector bar has six bolt holes in the bar. The knife back is punched with holes to accommodate the sickle sections and the holes are slightly tapered from the bottom.

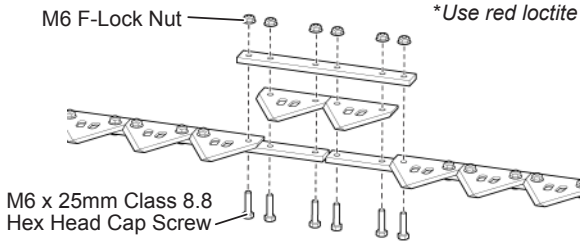

Fig. 200 - Connector Bar

Knife sections must be installed on the top side of the knife back (the side with the SCH Logo).

NOTE:

When ordering a connector bar, request part number 100779.

13.10 - Dividers

13.10.1 - Divider Handle

Over time, the crop divider removal handle may become difficult to use. If this occurs, install one extra washer behind the handle as shown below. This will compensate for any 'slack' in the handle.

Fig. 201 - Add washer to tighten loose handle

13.10.2 - Crop Divider Extension

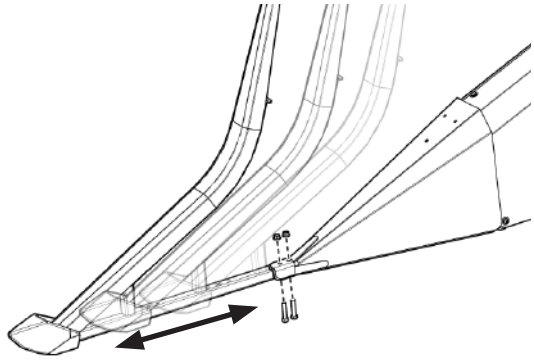

Fig. 202 - Crop Divider Extension - 3 Possible Positions

To adjust the crop divider extension position:
Remove the two bolts securing the extension, slide it in or out to the desired position then resecure with the two bolts.

13.10.3 - Crop Divider Pipe Extension

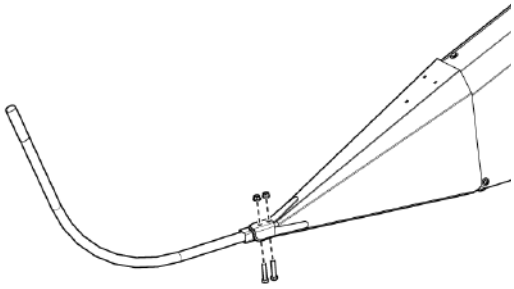

Fig. 203 - Crop Divider Pipe Extension

No adjustments are possible for the pipe extension.

13.10.4 - Crop Divider Snub Extension

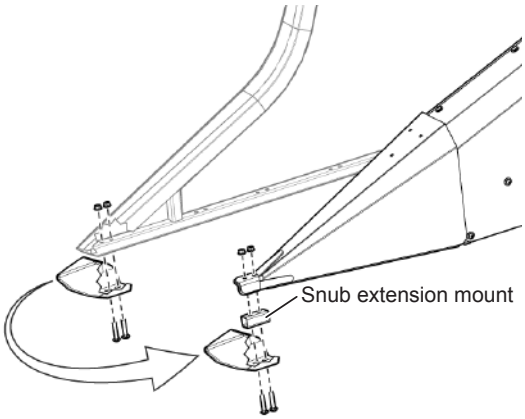

Fig. 204 - Crop Divider Snub Extension

To install the crop divider extension:

1. Remove the currently installed divider extensions.
2. Remove the nose cone from the divider extensions, set carriage bolt and nut aside for the next step.
3. Using the snub extension mount, secure the nose cone to the end of the crop divider using the carriage bolts from the previous step.

13.10.5 - Divider Spring Float Setting

The divider float should be set so it takes about 15 lbs (6.8 kg) of force to lift the divider.

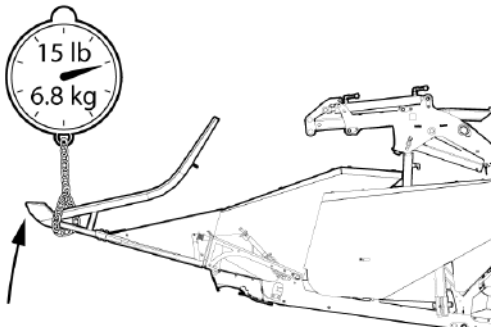

Fig. 205 - Divider Spring Float Adjustment

The recommend 'weight' of the divider will vary by crop conditions and will need to be adjusted for your application. See section 13.13 on page 119 for details on proper divider usage.

To adjust the float, simply remove the divider cover and:

- Tighten the bolt to increase float (make the divider lighter)
- Loosen the bolt to decrease float (make the divider heavier)

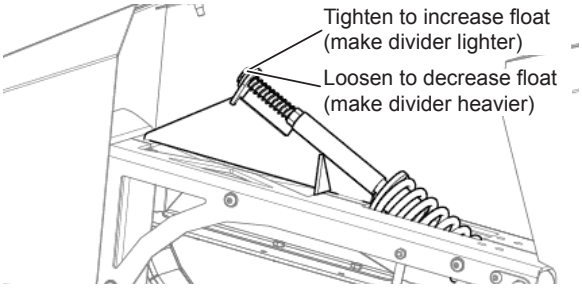

Fig. 206 - Divider Spring Float Adjustment

13.11 - Feed Auger

13.11.1 - Finger Timing Adjustment

In most circumstances, the feed drum finger timing should be set so the fingers are fully extended at their most forward position (timing handle in middle hole as shown below)

To adjust the finger timing:

1. Remove the lock bolt.
2. Adjust the Feed drum finger timing handle as necessary:
   - Move the feed drum finger timing handle down to move the fingers up and toward the rear of the header.
   - Move the feed drum finger timing handle up to move the fingers down and toward the rear of the header.
3. Re-install the lock bolt.

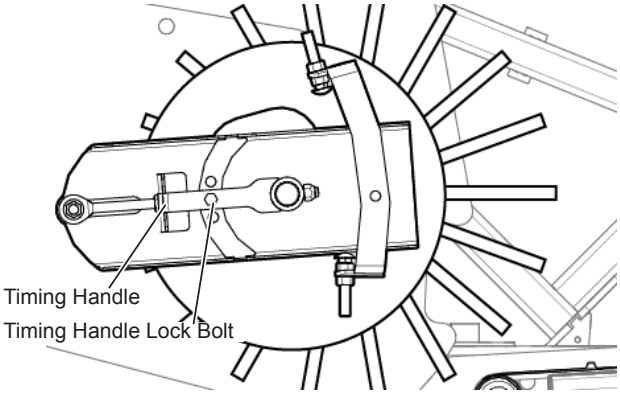

Fig. 207 - Feed Auger Drum Clearances

IMPORTANT!

After adjusting finger timing, ensure that the auger fingers will not contact anything unintentionally during operation. Failure to allow proper finger clearance will result in equipment damage.

13.11.2 - Feed Auger Drum Position

To move the feed auger drum forward or backwards, simply adjust the indicated bolt on the left and right ends of the feed auger.

IMPORTANT!

Ensure that the Feed Auger fingers will not contact anything unintentionally during operation. Failure to do so WILL result in equipment damage.

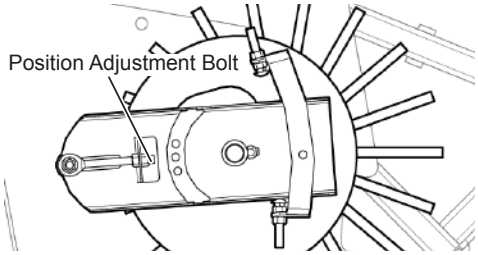

Fig. 208 - Feed Auger Drum Position

13.11.3 - Feed Auger Interior Access

To access the interior of the feed auger drum, rotate the drum until the access hatches are visible, remove the two 5/16” Torx screws holding each hatch in place, then pull the hatches away.

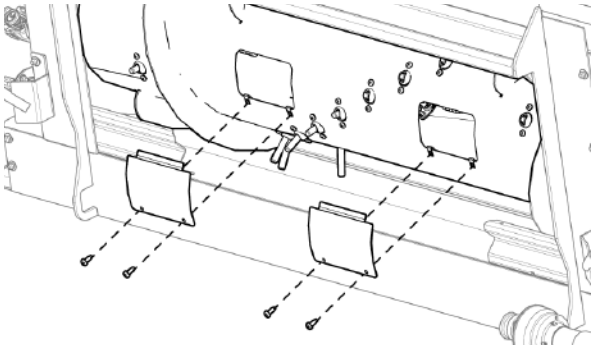

Fig. 209 - Feed Auger Drum Interior Access

13.11.4 - Remove and Install Feed Auger Fingers

Rotate the feed auger drum so the fingers are fully extended toward the front of the header. Open the access hatch and remove the indicated screw to release the finger to be replaced.

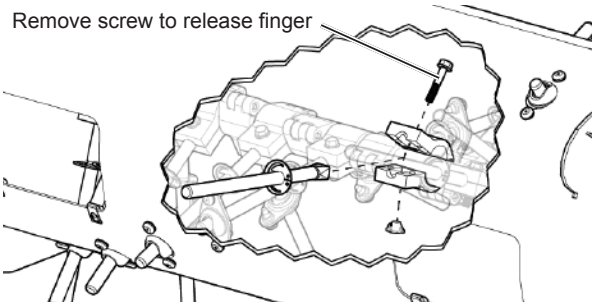

Fig. 210 - Replace Feed Auger Fingers

13.11.5 - Remove and Install Feed Auger Finger Guides

Only attempt to replace the feed auger finger guides for fingers that are fully retracted into the feed auger drum.

Remove the two 5/16” Torx screws securing the finger guide.

Remove the finger as described in section 13.11.4 on page 117.

Reinstall the finger along with the new guide.

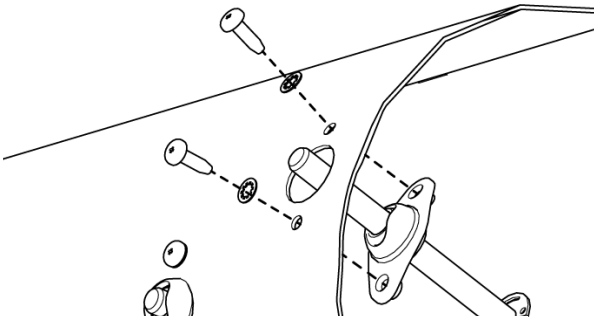

Fig. 211 - Replace Feed Auger Finger Guide

13.12 - Hydraulic Tilt Cylinder

There are two possible positions for the hydraulic tilt cylinder. The tilt cylinder should be set to the correct position for your combine from the factory, but if a different combine is ever used, you may need to adjust the position.

Position #1 Is used with combines that do not have an adjustable feeder house (the feeder house can't tilt forward and backward).

Position #2 is used with combines that do have an adjustable feeder house (the feeder house can tilt forward and backward).

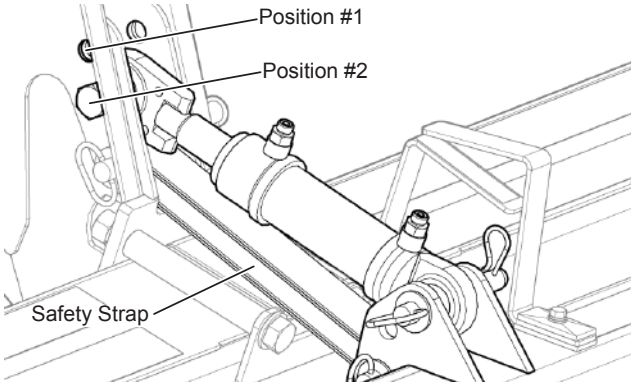

Fig. 212 - Short Hydraulic Tilt Cylinder (position #2 shown)

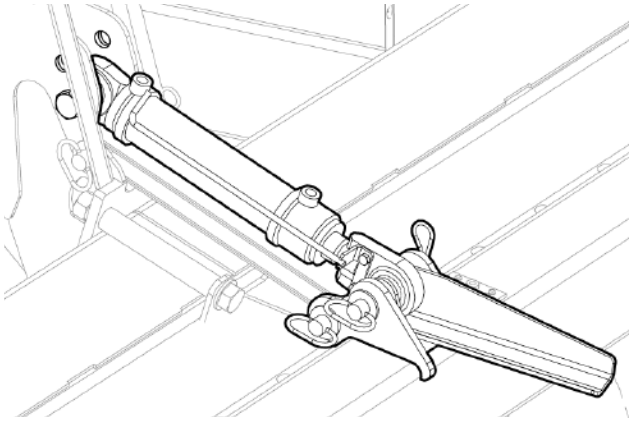

Fig. 213 - Long Hydraulic Tilt Cylinder (position #2 shown)

NOTE:

Depending on your equipment configuration, your header may be equipped with the short or long version of the hydraulic tilt cylinder.

WARNING!

Ensure the safety strap is properly installed, and undamaged prior to disconnecting the tilt cylinder.

13.12.1 - Reposition the Hydraulic Tilt Cylinder

1. With the header mounted on the combine, slowly lower the header down onto the ground until you see some slack on the tilt cylinder.

WARNING!

Shut OFF the combine engine, set parking brake, and remove key before exiting the cab.

2. Remove the bolt securing the tilt cylinder to the header frame (do not remove the pin securing the cylinder to the sub frame)
3. Reposition the cylinder to the appropriate hole and reinstall the bolt.

13.13 - Center Rock Trap and Draper Cleanout

The center deck features a rock trap behind the cutterbar. This is hinged at the front edge and held closed with a locked lever arm. To open the rock trap door, lift/push the T handle towards the center draper and the door will swing down/open. Clean out by pushing debris into the opening. When done, pull the T handle towards you and press down to lock it.

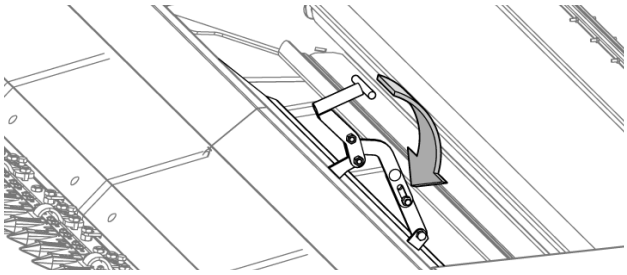

Fig. 214 - Open Rock Trap at Center Draper

IMPORTANT!

Always close the center rock trap door before operating the header.

The draper cleanout is located under the center deck draper. It is held in groves on the side and front of the panel. The rear edge is held in place by a series of pins. For quick cleanout, remove only the center 3 pins, pull down the rear edge of the plastic and reach in to clean out debris. For a full inspection, all pins are removed and the plastic sheet pulled out to the rear. Ensure pins are loaded from front to back to prevent inadvertent removal by stubble, etc.

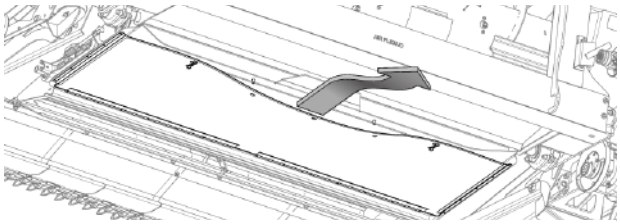

Fig. 215 - Open Center Cleanout to Remove Debris

13.14 - Open Side Shield

To gain access to the drive shafts and belts on the left side of the subframe, you must open the side shield. To open the side shield, simply remove the pin locking it in place, lift slightly and swing open.

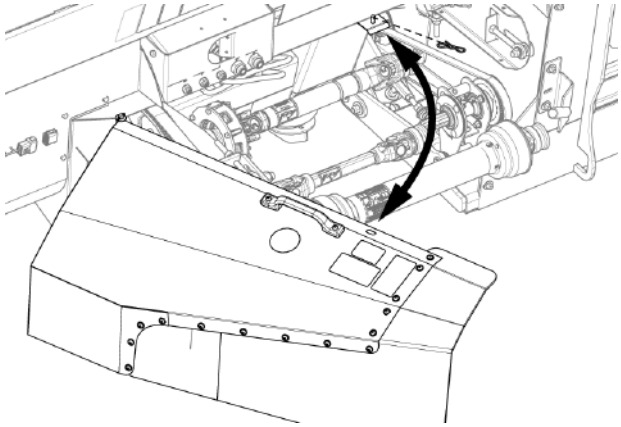

Fig. 216 - Open Side Shield

13.15 - PTO (Drive Shaft)

There are 3 points on each drive shaft that must be lubricated every 50 hours of operation.

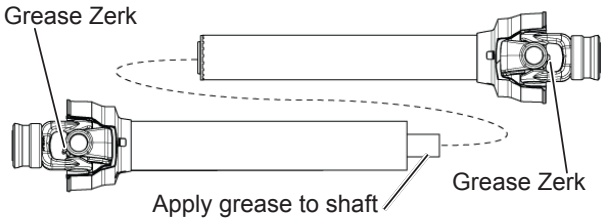

Fig. 217 - Drive Shaft Grease Points

IMPORTANT!

There is one extra grease zerk on the clutch of the feed drum drive shaft that must also be lubricated.

13.16 - FLEX Header Height Control Sensor Bar Alignment

After transport or long periods of operation, you may need to adjust the FLEX HHC sensor arms and sensor bar.

First ensure the header is in RIGID mode, mounted on the combine and raised from the ground.

From the factory, the sensor contacts should be contacting their respective rollers.

All sensor contacts must remain in contact with the roller. The design of the contacts may vary.

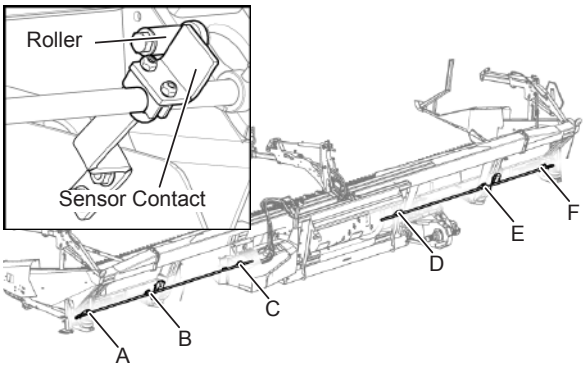

Fig. 218 - FLEX HHC sensor contact positions

Ensure that the Sensor Bar sensors are all oriented so the sensor arm and sensor wire are both pointing in the same direction as shown in the illustration below.

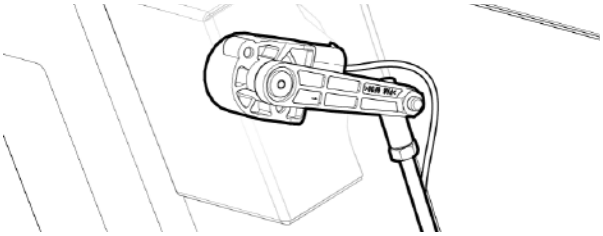

Fig. 219 - HHC Sensor Alignment

13.17 - Checking for Air Leaks

If the AirFLEX air system does not maintain pressure, there may be an air leak. To check for leaks, fill a spray bottle with soapy water and spray the following locations while watching for air bubbles. Replace all leaking fittings.

Check the fittings on the air tank and air manifold located just to the left of the feeder house.

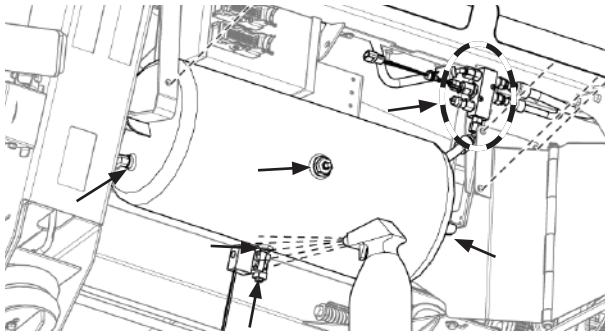

Fig. 220 - Check Air Tank for Leaks

Check the 'T' fittings located on the front of each strut (between the struts and the draper back panels)

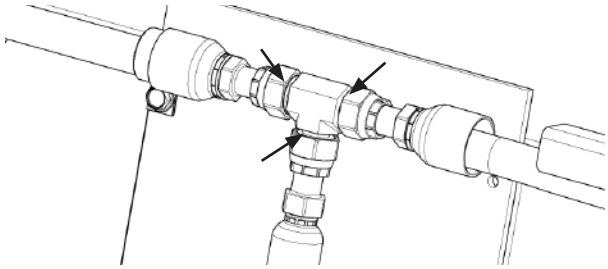

Fig. 221 - Check T Fittings On Front Side of Struts for Leaks

Check the airbag fittings located at the bottom rear of each strut.

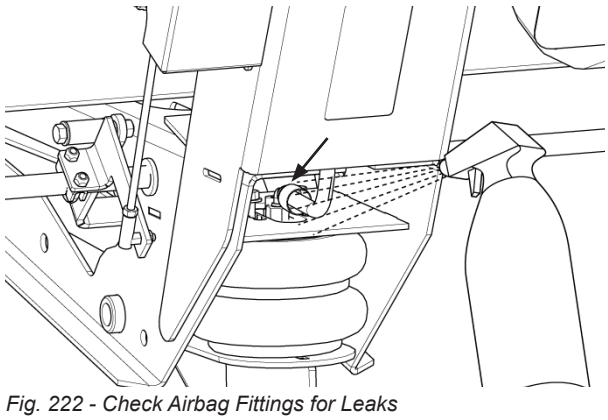

Fig. 222 - Check Airbag Fittings for Leaks

13.18 - Lubrication

13.18.1 - Grease

It is extremely important that you are aware of ALL lubrication points on the header (see following page).

Repack the transport wheel bearings, that should be repacked once a year if used on roads.

Use grease based on NLGI consistency numbers and expected air temperature range during service interval.

The following grease is recommended: NLGI Performance Classification GC-LB. GC-LB means bearing and chassis-load bearing. #2 EP GC-LB is the most common grade of automotive grease. EP = Extreme Pressure fortified, which is desirable.

IMPORTANT!

Some types of grease thicken and are not compatible with others.

If a grease fitting is missing, replace immediately. Clean fittings thoroughly before using grease gun.

13.18.2 - Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual. Consult your dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to both conventional and synthetic lubricants.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

13.18.3 - Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants. Dirty lubricant = grinding paste!

Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

13.18.4 - Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

Consult your dealer to obtain specific information and recommendations.

13.18.5 - Reel Lubrication

IMPORTANT!

Do NOT add grease to the zerks on each end of the main reel tube. There are plastic bushings inside this assembly and the grease will shorten their lifespan.

13.18.6 - Gearbox Lubrication

75W90 oil must be used when replacing the oil in the gearboxes.

13.18.7 - Lubrication Interval Chart

		Lubrication Interval
A	Grease knife head bearings @ zerk (top side) x2 **NOTE:** Pump grease into the zerks until the old grease is purged out of the bottom of the bearing. This may take 4-5 pumps. Add grease slowly to allow the old grease to purge.	8 hours
B	Grease knife bell crank bearings @ zerk (bottom side) x2 **NOTE:** Pump grease into the zerks until the old grease is purged out of the bearing. This may take 6-7 pumps. Add slowly to allow old grease to purge.	8 hours
C	PTO Drive shaft grease zerks (2 on each end of shaft)	40 hours
D	Lubricate Telescoping Drive Shafts (5 shafts)	40 hours
E	Check Main Knife Bearing housing oil level Replace oil in Knife Bearing (75W90)	50 hours 1 year
F	Check RH side draper gearbox oil level Replace oil in RH side draper gear box	50 hours 1 year
G	Check LH side draper gearbox oil level Replace oil in LH side draper gear box	50 hours 1 year

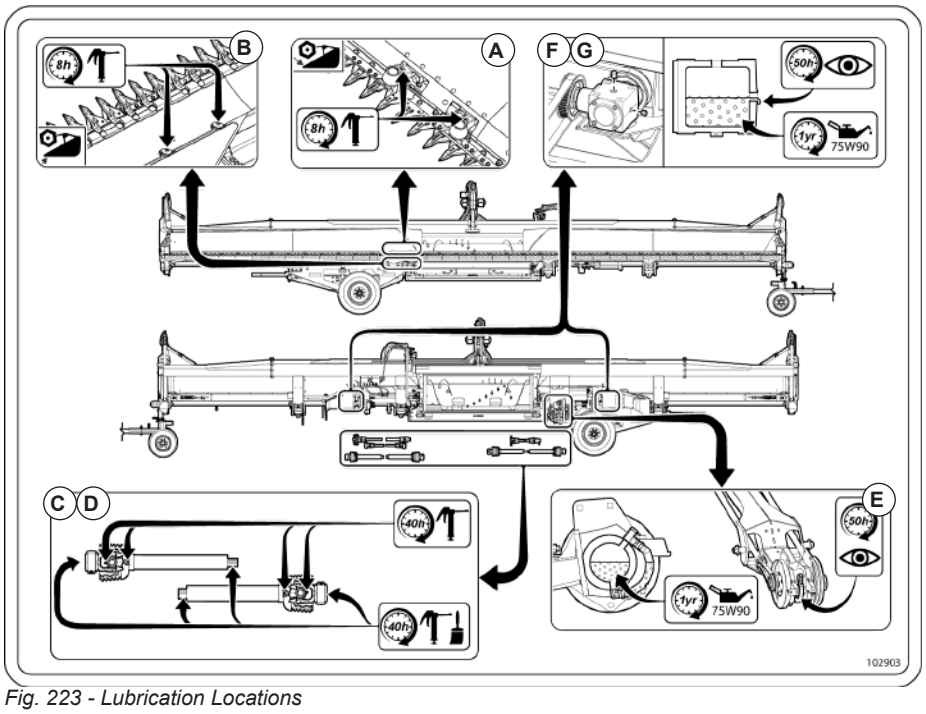

Fig. 223 - Lubrication Locations

All other rotating elements on this product use sealed bearings and permanent bushings (not shown). These must be replaced if worn. Typically, loose = worn. Consult your dealer for recommendations.

IMPORTANT!

To avoid equipment damage and system contamination, always clean grease fittings before and after lubrication. If a grease fitting is damaged or missing, replace it immediately. Always tighten plugs securely.

14 - Support

General Information & Sales	
E-Mail:	*sales@honeybee.ca*
Website:	*http://www.honeybee.ca*
Phone:	(306) 296-2297

Parts & Service	
Parts E-Mail:	*parts@honeybee.ca*
Service E-Mail:	*service@honeybee.ca*
Phone:	1 (855) 330-2019 (Toll free in north america)

Your Local Dealership	
E-Mail:	
Phone:	
Notes:	

Equipment manuals and service information can be found on our website:

http://www.honeybee.ca

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15 - Appendix

15.1 - AGCO Bezels

The AGCO style of auger adapter provides a series of bezel layouts. These adapters are needed to match your new header to the opening of the feeder house on your combine.

Combine	Model	Lateral Tilt	Non Lateral Tilt	Note
Gleaner	S67, S77, S68, S78, S88, R76, R75, R66, R65, R72, R62	Layout 2	Layout 1	62/72 if equipped with removable indexing blocks.
	C62	N/A	Layout 5	Use 3/16 tab as spacer at top of web.
	A65, A66	Layout 3	Layout 3	
	A75, A76, A85, A86	Layout 4	Layout 4	Use 3/16 tab as spacer at top of web
Massey Ferguson	9790, 9895, 9795, 9540, 9560, 9545, 9565	Layout 4	Layout 4	Use 3/16 tab as spacer at top of web.
	9690, 9520, 9685	Layout 3	Layout 3	
	8780 V	Layout 3	Layout 3	
	8780 XP/W	Layout 3	Layout 3	
	8570	N/A	Layout 6	Cut end off guides and drill new inner hole to place as shown.
	8680	N/A	Layout 5	Use 3/16 tab as spacer at top of web
Challenger	670, 680B, 540C, 560C, 540E, 560E	Layout 4	Layout 4	
	660	Layout 3	Layout 3	

15.1.1 - Configuring the AGCO Bezels

Refer to the following diagram to familiarize yourself with the key components:

- Guide Plate (includes a portion bent back at 90 degrees.)
- The First Bezel.
- The Second Bezel.
- Web (extends backward from the bezels at 90 degrees.)

In addition, there are long and short sections of flat-bar used to reinforce connections.

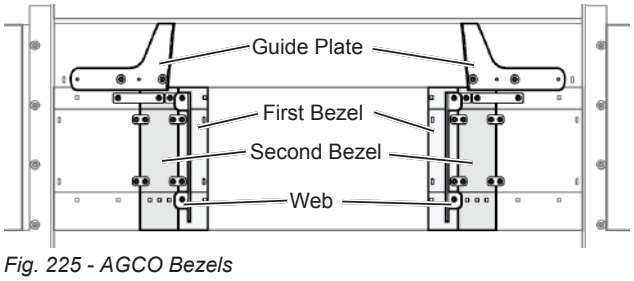


Fig. 225 - AGCO Bezels

Configuration	Components Used	Notes
Layout #1	1,2,3,4	The guide plates, (#1) are positioned using the innermost holes, as seen in the main diagram.
Layout #2	1,2,3,4	The guide plates, (#1) are moved outward exposing one hole on the inner side.
Layout #3	3,4	The guide plates, (#1) and the first bezel (#2) are removed. Reposition the web so that the vertical portion is midway on the remaining bezel.
Layout #4	4	The web is positioned in the innermost top and bottom holes, with one short support bar, used as a spacer, at the top of each web.
Layout #5	4	The web is positioned in the outermost top and bottom holes, with one short support bar, used as a spacer, at the top of each web.
Layout #6	1,2,3,4	The guide plate is positioned using the extreme outer holes, and the portion extending beyond the adapter's outer edge is trimmed off. All other components are as shown in the main diagram.

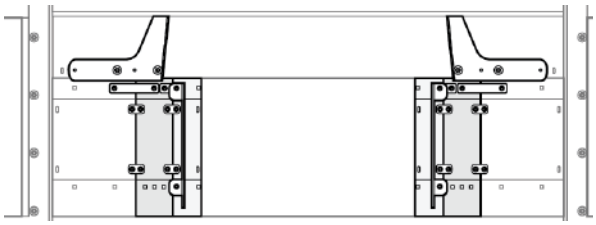


Fig. 226 - AGCO Bezel - Layout 1

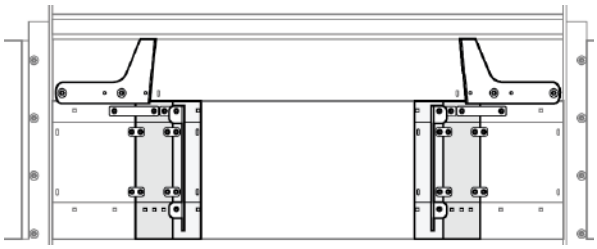


Fig. 227 - AGCO Bezel - Layout 2

Fig. 228 - AGCO Bezel - Layout 3

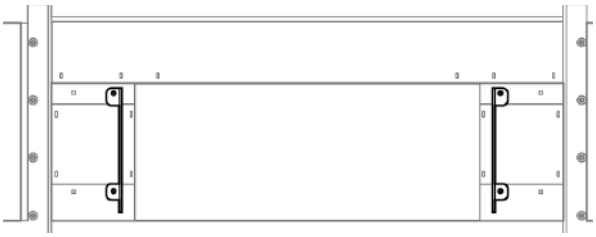


Fig. 229 - AGCO Bezel - Layout 4

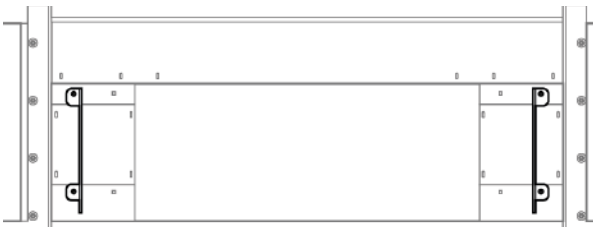


Fig. 230 - AGCO Bezel - Layout 5

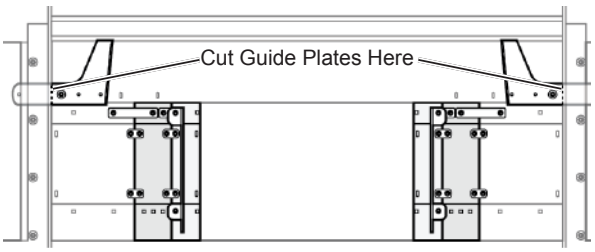


Fig. 231 - AGCO Bezel - Layout 6

15.2 - Permanently Lubricated Bushing Locations

There are a number of permanently lubricated plastic bushings used throughout the header. These bushings should be inspected for abnormal wear or damage periodically (approximately every 200 hours of operation).

	Bushing Location	Number of Bushings
A	Paddle Rear Pivot	12
B	End Paddle Crop Divider Pivot	4
C	Center Reel Arm	8
D	Center Draper Drive Belt Pivot Pulley	2
E	RH Draper Drive Belt Pivot Pulley	2
F	Header Height Control Sensor Bar	6

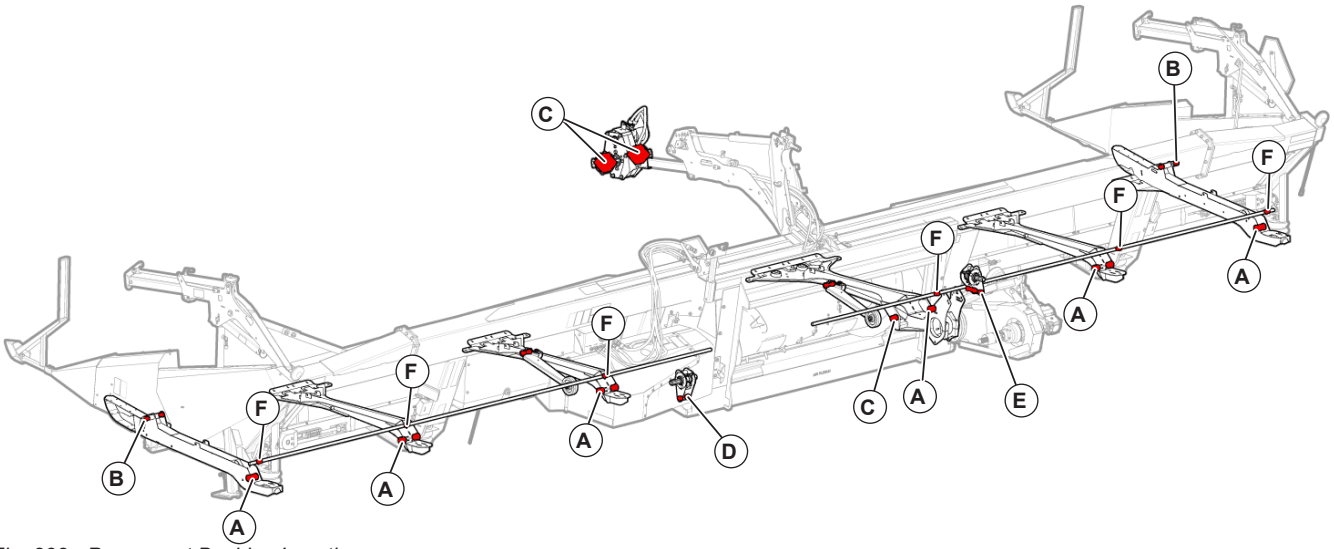


Fig. 232 - Permanent Bushing Locations

15.3 - Header Height Control Sensor Locations

There are a number of sensors used in the header height control system. They are illustrated below for service purposes. The sensors are identified as Rigid Mode sensors or Flex Mode sensors and are used in Rigid or Flex cutting mode respectively..

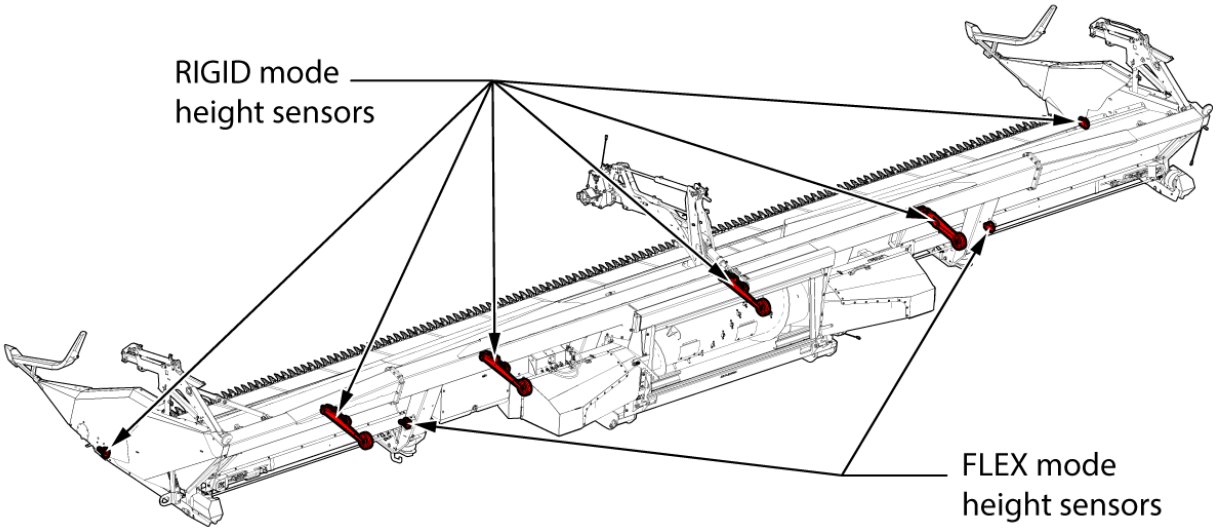


Fig. 233 - Header Height Control Sensor Locations

15.3.1 - Automatix Display Sensor Identification

In the header height info screen and after the header height calibration process, the Automatix system will show the raw sensor output of the various header height sensors on the header. Refer to the image below to determine which section of the display refers to which sensor.

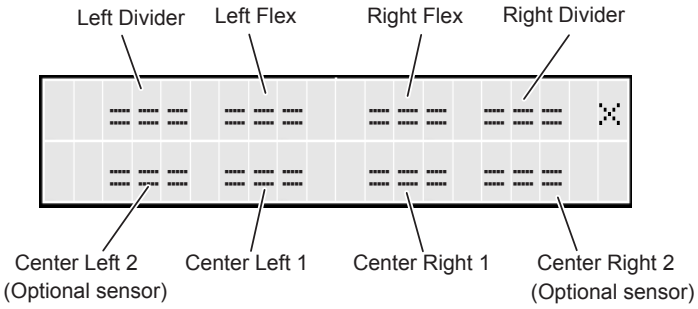


Fig. 234 - Automatix Screen HHC Sensor Identification

15.4 - Speed Sensor Locations

All speed sensors on the header operate by detecting a small bump or pit on a shaft, gear or flywheel while it is rotating. It is extremely important to ensure the speed sensors have optimal spacing from their detected surface, refer to section 13.3 on page 95 for details.

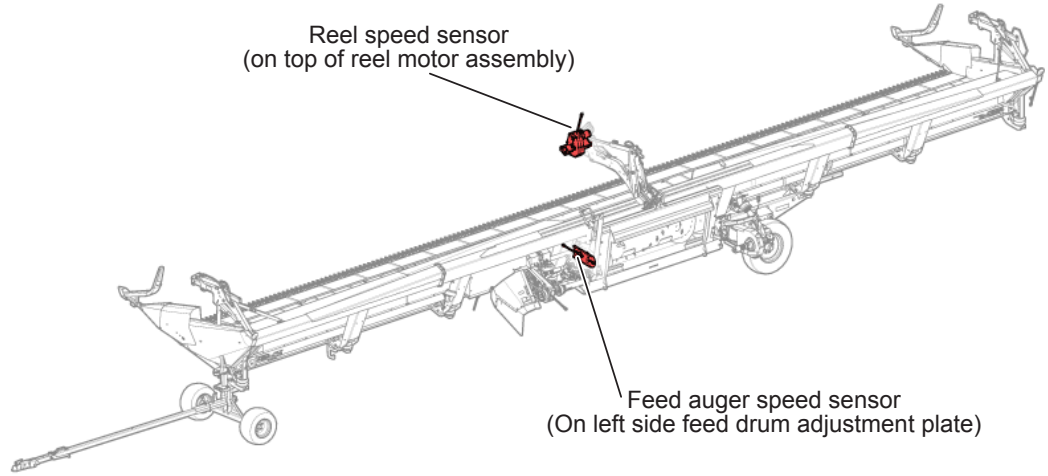


Fig. 235 - Speed Sensor Locations

15.5 - Lift Valve Performance BeeBox

If using a combine equipped with ‘Bang-Bang’ style directional control valves, the BeeBox should be installed to prevent header height ‘hunting’ regardless of combine settings.

The BeeBox is installed next to the combine’s Hydraulic Valve Controller.

The UP VALVE IN, and the UP VALVE OUT plugs must be connected to the input and output ports on of the UP Valve on the Valve Controller.

The DOWN VALVE IN, and the DOWN VALVE OUT plugs must be connected to the input and output ports on the DOWN Valve on the Valve Controller.

The BeeBox should be installed next to the combine’s Valve Controller.

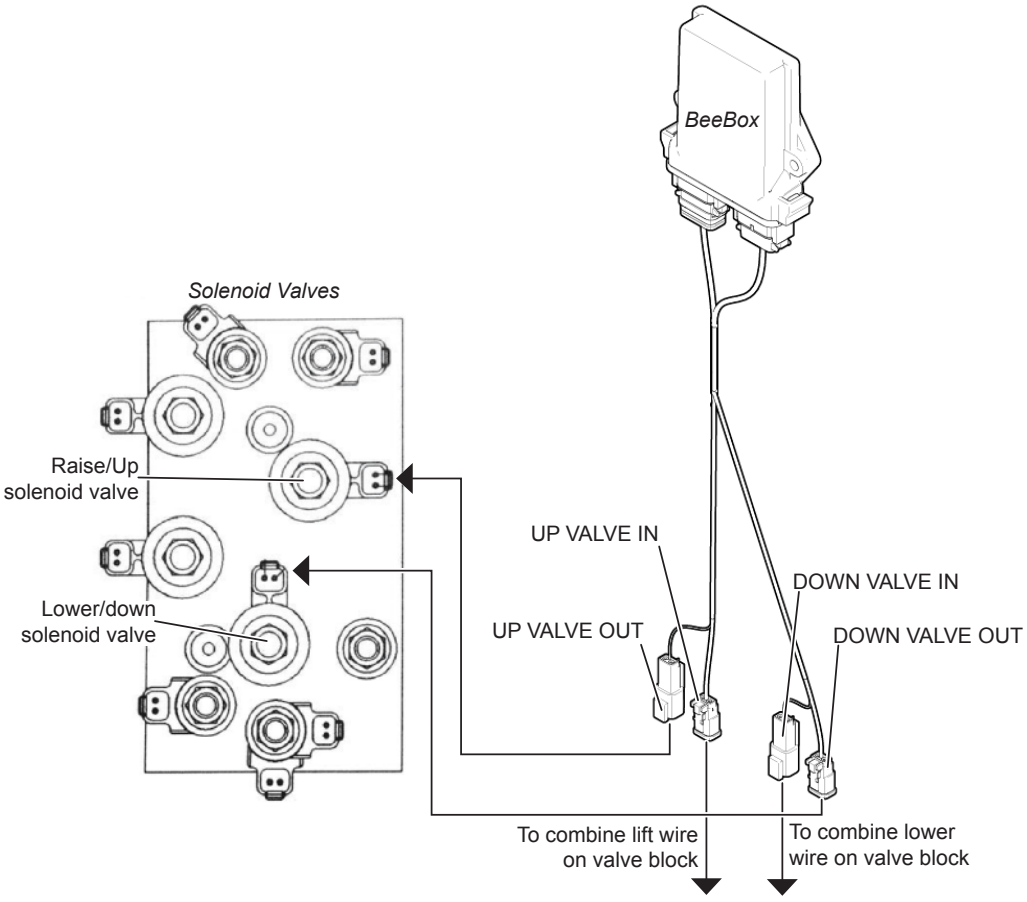


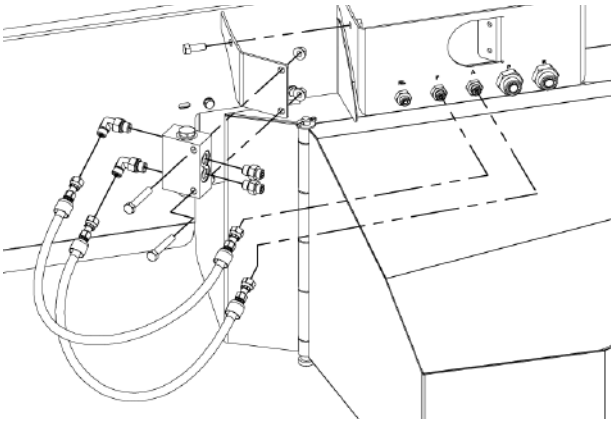
Fig. 236 - BeeBox - For ‘Bang-Bang’ Style Control Valve Combines

15.6 - 2016 or later JD Combine Check valve Kit

Starting for 2016 models, John Deere combines require a check valve (Comatrol #11175532) to be added to the AirFLEX reel fore/aft hydraulic circuit in order to prevent unexpected movements of the fore/aft system.

If installed, the line lock is located on the left side of the hydraulic manifold on the header.

If operating a 2016 or newer combine and the line lock is not installed, please contact your dealer or Honey Bee customer service for assistance.



IMPORTANT!

This section only applies to AirFLEX units to be mounted on John Deere 2016 or later Combines.

15.7 - Recommended Torque Values (ft-lb)

Use the values listed below unless otherwise stated in this operator manual.

Torque Values when using UNC nuts.					
Bolt Size	Grade 5		Grade 8		Wrench Size
	Loctite	No Loctite	Loctite	No Loctite	
1/4	6	8	9	12	7/16
5/16	13	17	18	25	1/2
3/8	23	31	35	44	9/16
7/16	35	49	55	70	5/8
1/2	55	75	80	107	3/4
9/16	80	109	110	154	13/16
5/8	110	150	170	212	15/16
3/4	200	266	280	376	1-1/8
7/8	320	429	460	606	1-3/8
1	480	644	680	909	1-1/2
1-1/8	600	794	960	1287	1-11/16
1-1/4	840	1120	1360	1875	1-7/8
1-3/8	1100	1469	1780	2382	2-1/16
1-1/2	1460	1950	2360	3161	2-1/4

Torque Values when using C Lock Nuts					
Bolt Size	Grade 5		Grade 8		Wrench Size
	Loctite	No Loctite	Loctite	No Loctite	
1/4	7.6	11.1	10	14.7	7/16
5/16	14.1	21.1	15.2	22.3	1/2
3/8	23	37	28	39	9/16
7/16	39	59	44	60	11/16
1/2	53	80	63	88	3/4
9/16	77	120	98	134	7/8
5/8	106	158	127	172	15/16
3/4	190	274	218	295	1 1/8
7/8	n/a	n/a	317	440	1 5/16
1	n/a	n/a	506	651	1 1/2

15.8 - Drive Shaft Lengths

The drive shaft lengths are measured from the coupler pivot point to the inner face of the shaft as shown below.

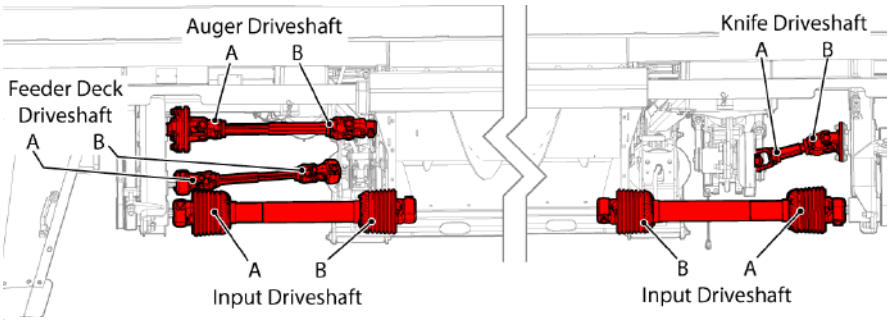


Fig. 237 - Drive Shaft Identification

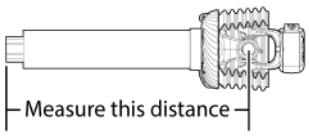
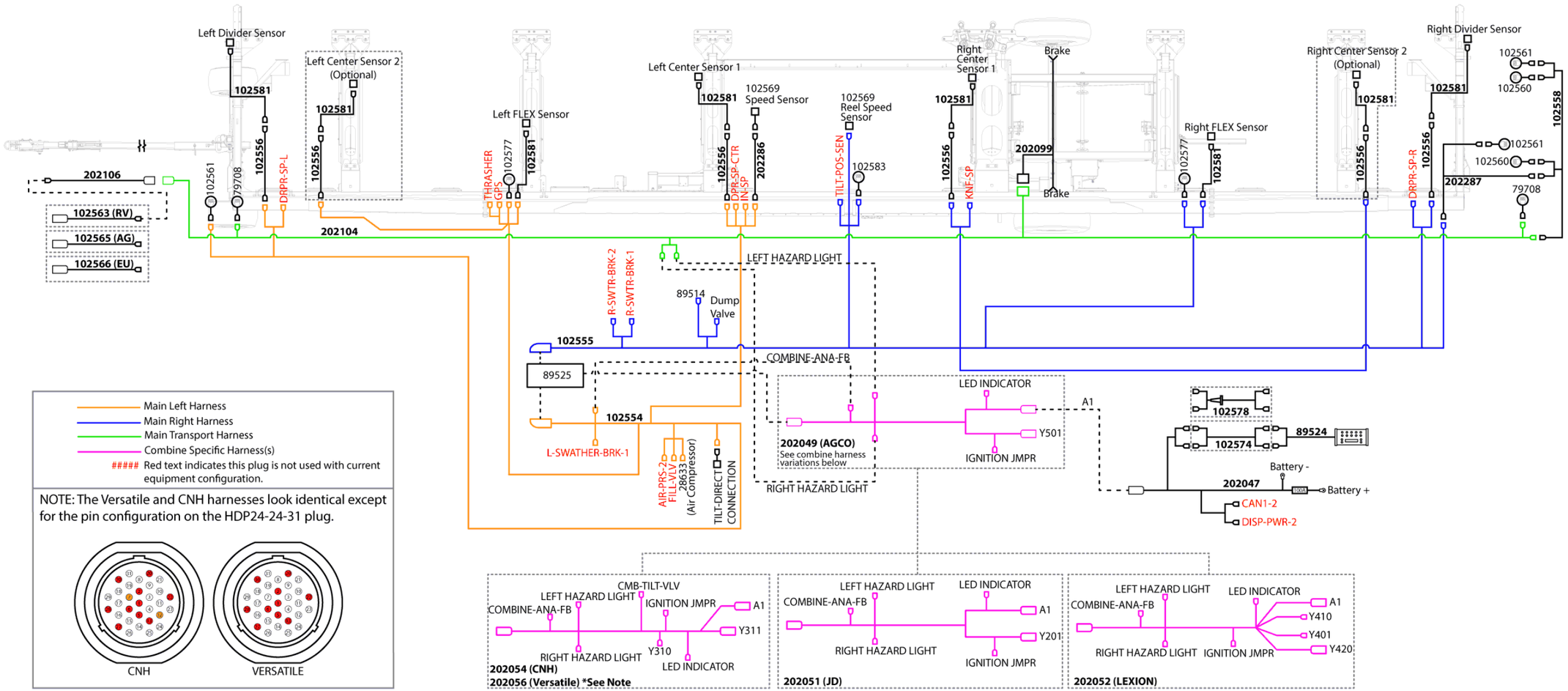


Fig. 238 - Shaft Measurement

	Input Driveshaft		Feeder Deck Driveshaft		Auger Driveshaft		Knife Driveshaft	
	A	**B**	**A**	**B**	**A**	**B**	**A**	**B**
Massey	523 mm (20.59”)	503 mm (19.80”)	310 mm (12.20”)	325 mm (12.80”)	475 mm (18.70”)	407 mm (16.02”)	242 mm (9.53”)	295 mm (11.61”)
Gleaner	643 mm (25.32”)	623 mm (24.53”)	310 mm (12.20”)	325 mm (12.80”)	475 mm (18.70”)\	407 mm (16.02”)	242 mm (9.53”)	295 mm (11.61”)
Lexion	643 mm (25.32”)	623 mm (24.53”)	310 mm (12.20”)	325 mm (12.80”)	475 mm (18.70”)	407 mm (16.02”)	242 mm (9.53”)	295 mm (11.61”)
John Deere	643 mm (25.32”)	623 mm (24.53”)	310 mm (12.20”)	325 mm (12.80”)	475 mm (18.70”)	407 mm (16.02”)	242 mm (9.53”)	295 mm (11.61”)
CNH	643 mm (25.32”)	623 mm (24.53”)	310 mm (12.20”)	325 mm (12.80”)	475 mm (18.70”)	407 mm (16.02”)	242 mm (9.53”)	295 mm (11.61”)

15.9 - Electrical Layout



Honey Bee

Harvest Faster

2017 AirFLEX Operator Manual

Honey Bee Manufacturing Ltd.

P.O. Box 120
Frontier SK
S0N 0W0

Tel: (306) 296-2297
Fax: (306) 296-2165

www.honeybee.ca
E-mail: info@honeybee.ca

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