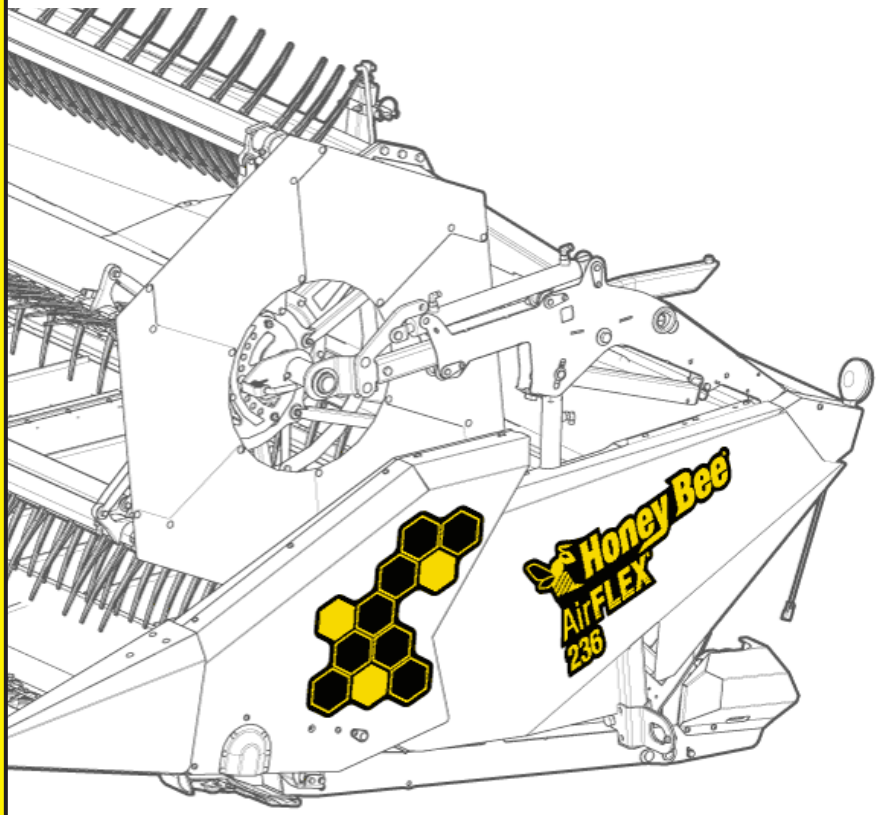
2019

AirFLEX

200 Series

FLEX Header
Operator Manual



Honey Bee®

Revision 1.1 P/N: 95110

1 - AirFLEX 200 Series 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:

___Red draw bar holder and tie-down bracket removed from header. - *page 38*

___Set front reel bats to operational position (reinstalled from transport position). - *page 37*

___Remove reel tie-downs installed from factory.

___Install crop dividers.- *page 37*

___Check draper tension as per decal on back panel. Adjust if necessary. - *page 100*

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

___Install Automatix Lite harness on the combine, note if the electrical system is positively or negatively switched, hook up the battery leads accordingly. - *page 41*

___Install Automatix Lite control panel in combine cab & connect to electrical harness. - *page 41*

___Unlock the transport cart and draw bar, lift header with the combine then remove the cart and draw bar. - *page 38*

___Attach multicoupler and electrical connection(s) - *page 41*

___Attach the drive shafts to the left and right hand sides of the combine feeder house. - page 43

___Check the clearance between the feed auger drum, stripper plate and feeder house. - *page 53*

___Check feed auger finger timing, ensure adjustment arm is in middle hole with fingers in fully forward position. - *page 52*

___Set header to rigid mode & pressurize to 90-115psi, ensure all tabs on flex sensing rod are in proper position. - *page 122*

___Set the faceplate angle using adjustment bolts on the combine's feeder house (if possible) - *page 46*

___Set reel finger pitch to a starting point of 5. - *page 60*

___Ensure reel fingers clear cutter bar by minimum of 1 1/2". Adjust reel height if necessary. (In order to fully extend RH reel lift cylinder the header reel must be running. - *page 51*

___Set Auto Header Height parameters in combine control panel (Combine and Sensitivity Settings)

___Calibrate combine (In FLEX mode)

___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

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

Before Transporting:

___Tilt cylinder retracted.

___Drive shafts in storage position. - *page 134*

___Header in rigid mode (air system pressurized to 100 psi). - *page 66*

___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 133*

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

___Warning lights, decals, reflectors & signs all legible and in place. - *page 27*

___Front reel fingers dropped into transport position. - page 132

2 - Copyright Information

Original Instructions

Patents: https://www.honeybee.ca/patents.php all other patents pending.

Table of Contents

3 - Products Covered & Important Information

IMPORTANT!

This manual covers the AirFLEX 200 Series header ONLY.

IMPORTANT!

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.

4 - 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.

5 - 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.

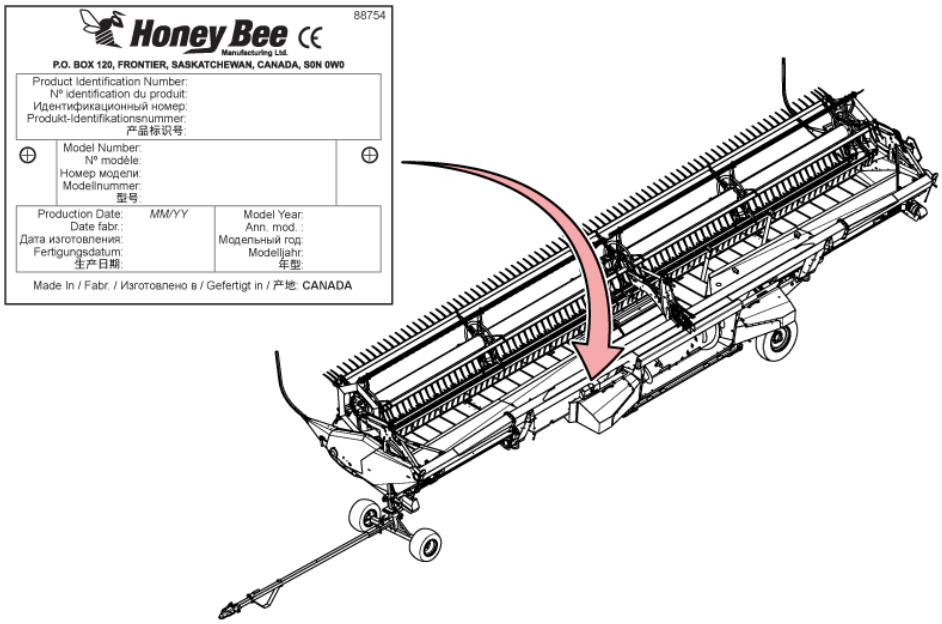


Fig. 1 - Serial number plate location

6 - 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.

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.

6.1 - Directions

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

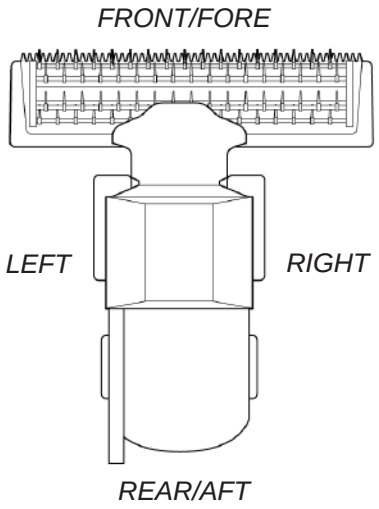


Fig. 2 - Reference directions

6.2 - 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 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 Header.

This warranty shall not apply to any 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.

7 - Safety

7.1 - 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.

7.2 - 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.

7.3 - Read and Understand Instructions and Warnings

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

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

Only allow trained individuals to operate the header.

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

7.4 - 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.

7.5 - In Case of Emergency

NOTE:

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

7.6 - High Pressure Spray

IMPORTANT!

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

7.7 - 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.

7.8 - 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.

7.9 - 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.

7.10 - 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.

7.11 - 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 149 can result in equipment damage.

7.12 - 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.

7.13 - Fire Safety

⚠ WARNING!

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.

7.14 - Keep Equipment Clean

STOP IMPORTANT!

Inspect and clean your equipment before every use. Clear away all material buildup. Pay special attention to all moving parts such as drive belts, drive shafts, and bearings. Failure to keep the equipment clean can result in fire.

8 - Specifications

8.1 - Dimensions & Specifications

Model	225	230	236	240	245	250
Total Width (excluding transport and reflectors)	26.4 ft (8.05 m)	31.4 ft (9.57 m)	37.4 ft (11.40 m)	41.4 ft (12.62 m)	46.4 (14.14 m)	51.4 (15.67 m)
Cutting Width	25 1/8 ft (7.66 m)	30 1/8 ft (9.18 m)	36 1/8 ft (11.01 m)	40 1/8 ft (12.23 m)	45 1/8 ft (13.75 m)	50 1/8 ft (15.28 m)
Header Weight - Operating Configuration	6210 lbs 2823 kg	6699 lbs 3045 kg	7115 lbs 3234 kg	7883 lbs 3583 kg	8271 lbs 3760 kg	8659 lbs 3936 kg
Header Weight - Transport Configuration	6995 lbs 3180 kg	7484 lbs 3402 kg	7900 lb 3591 kg	8668 lbs 3940 kg	9056 lbs 4116 kg	9444 lbs 4293 kg
Optional Transport Package	785 lbs 356 kg					
Optional Cross Auger	Hydraulically driven 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	Optional heavy duty road transport with electric brakes Optional transport with no brakes (not for highway use).					
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.						

9 - Safety 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.

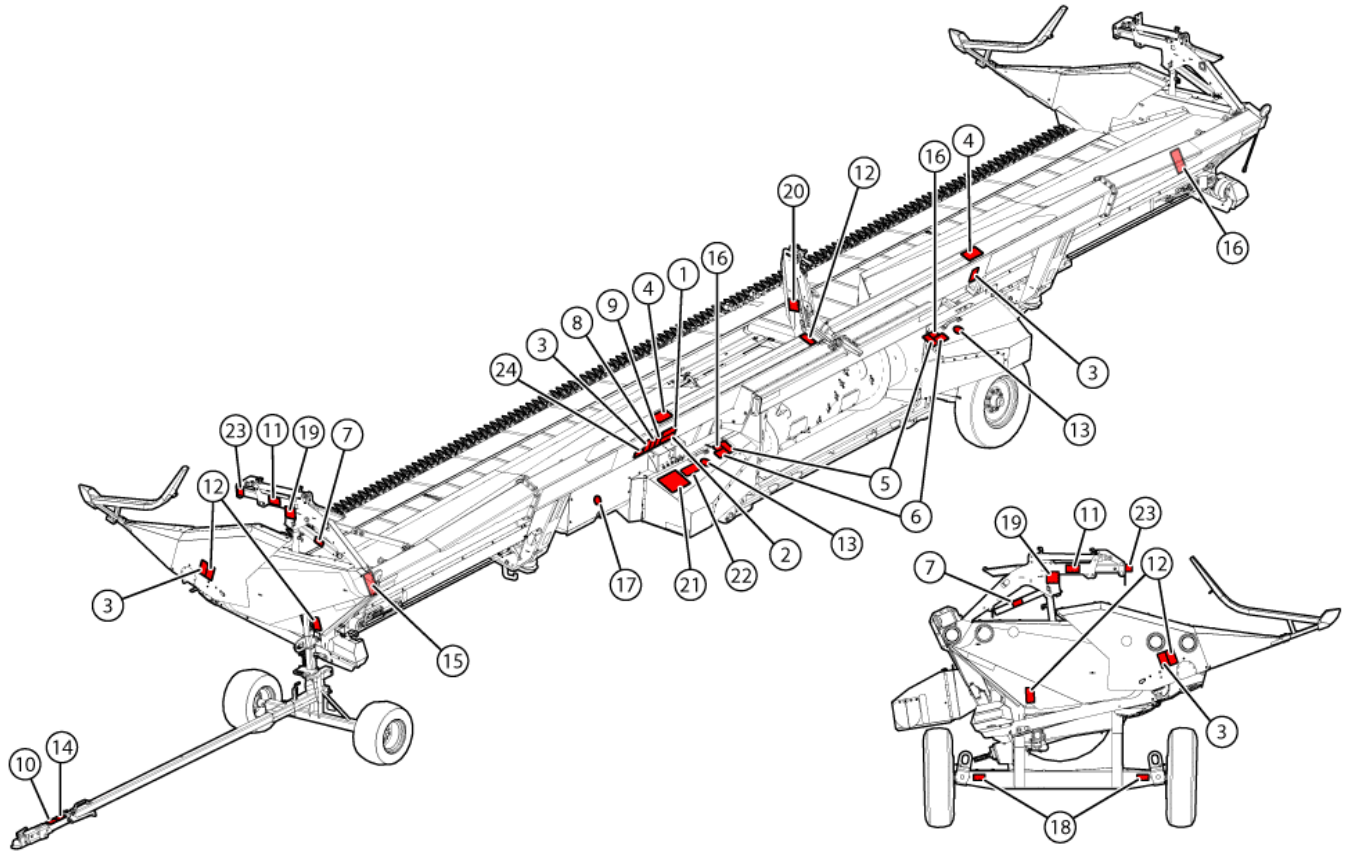


Fig. 3 - Decal Locations

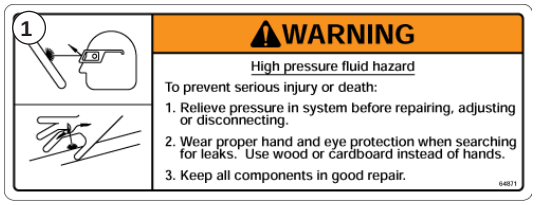


Fig. 4 - High Pressure Fluid Hazard

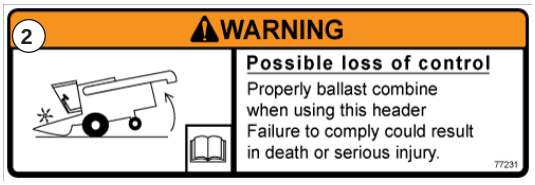


Fig. 5 - Properly Ballast Combine

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

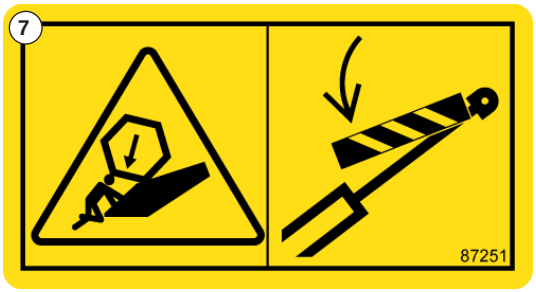


Fig. 10 - Engage Reel Stop Before Servicing

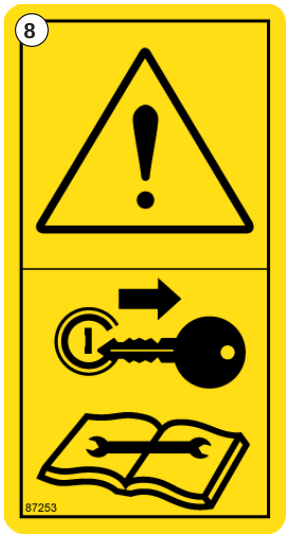


Fig. 11 - Turn off Engine when Servicing

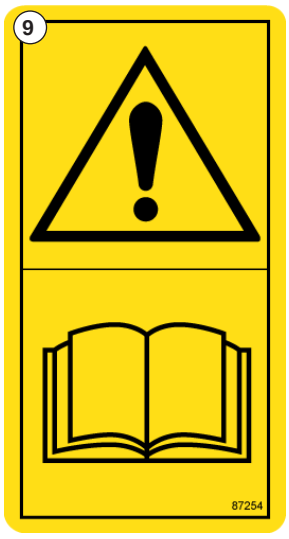


Fig. 12 - Read the Manual

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.

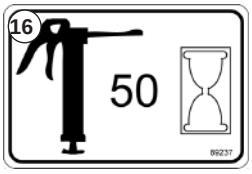


Fig. 19 - Lubricate Every 50 Hours

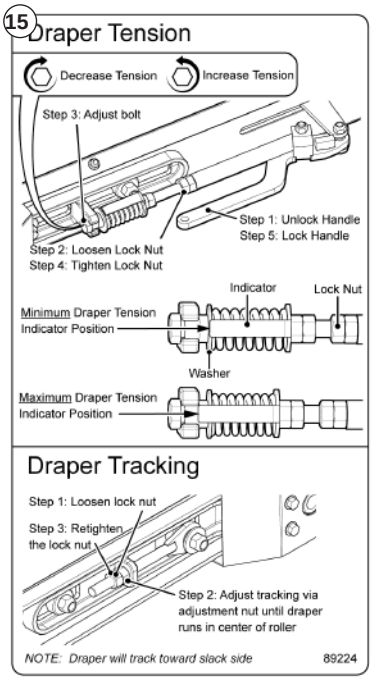


Fig. 18 - Draper Tension & Tracking

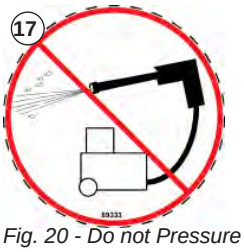


Fig. 20 - Do not Pressure Wash

Fig. 21 - Do not remove axle bolt

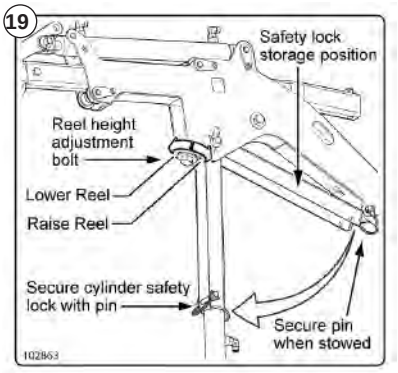


Fig. 22 - Reel Arm Instructions

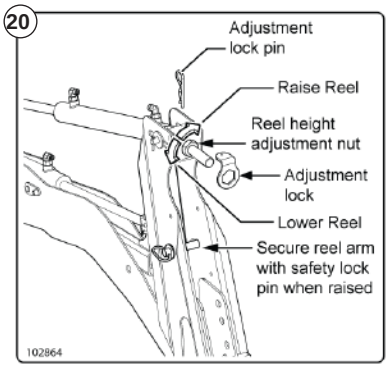


Fig. 23 - Center Reel Arm Instructions

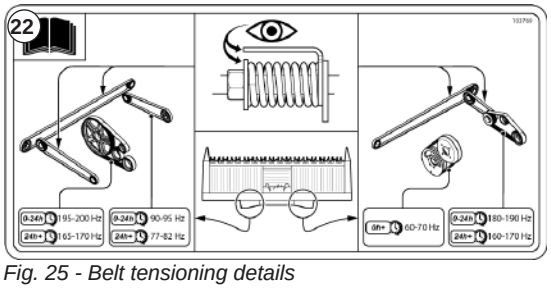


Fig. 25 - Belt tensioning details

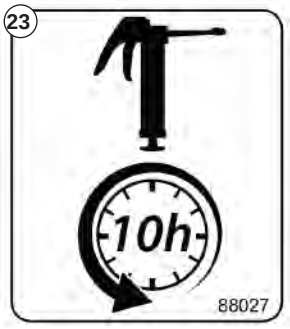


Fig. 26 - Reel grease interval

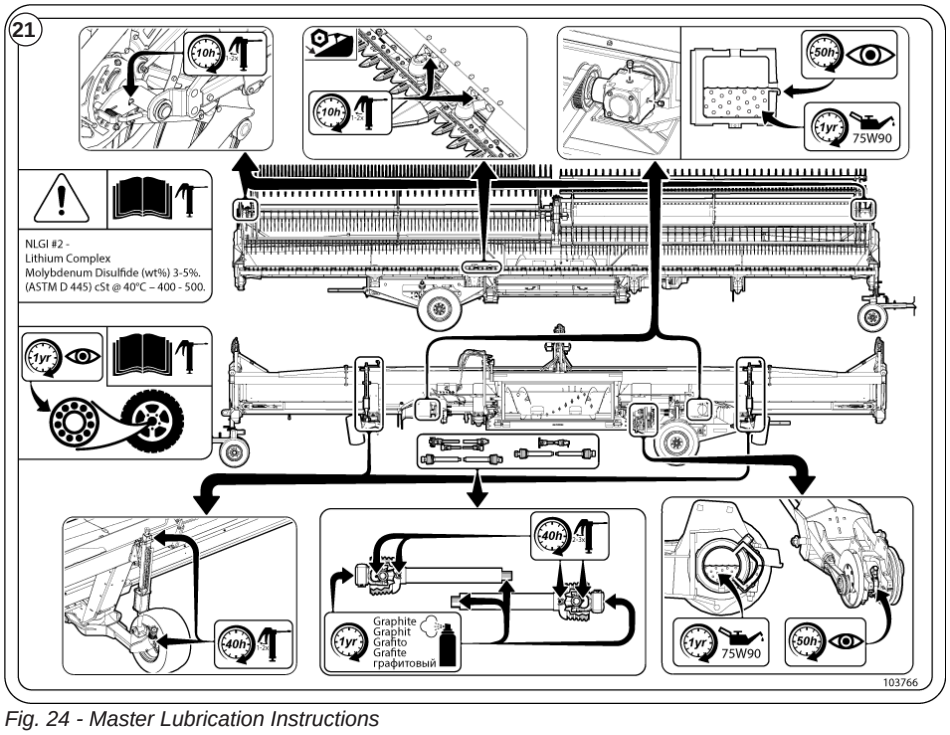


Fig. 24 - Master Lubrication Instructions

10 - Equipment Overview

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

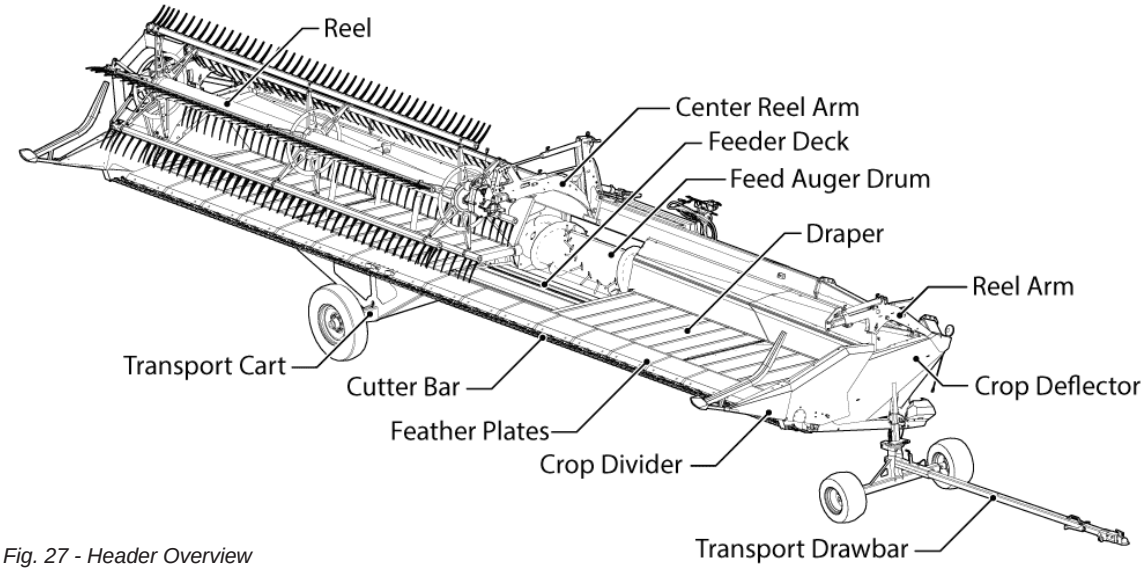


Fig. 27 - Header Overview

10.1 - 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.

10.2 - 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 auto lateral tilt for the header to function properly with automatic header height control.

10.3 - Interchangeable Combine Adapters & Drive Pulleys

The header 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, Versatile, Gleaner, Massey Ferguson and Fendt Ideal combines.

10.4 - 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.

10.5 - FLEX Mode

When in FLEX mode, the cutter bar on the header will become Flexible and will automatically follow the contours of the terrain. The system senses the location of each paddle and reacts 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. 28 - FLEX Mode

10.6 - 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 outer crop divider sensors or the inner suspended subframe sensors. The AirFLEX works like a regular header in this mode.

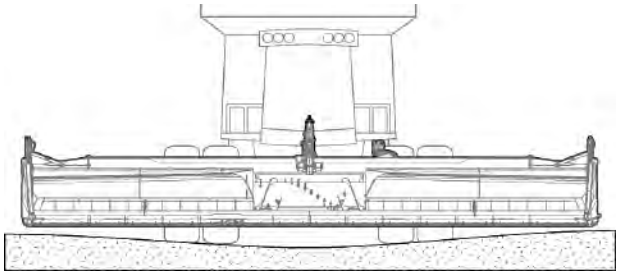
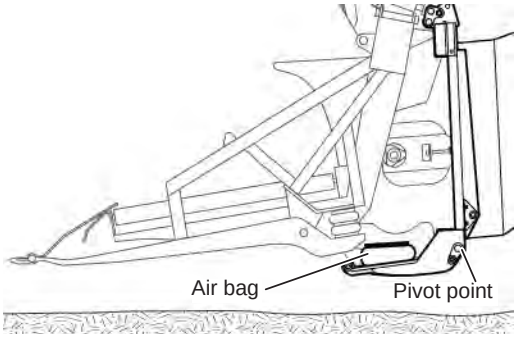


Fig. 29 - RIGID Mode

10.7 - Suspended Subframe

The suspended subframe assists in smoothing out the motion of the table and senses when the entire header is pushed upwards by the cutter bar or gauge wheels. The suspended subframe sensors can be used in conjunction with RIGID auto header height control.



10.8 - Gauge Wheels

Gauge wheels work with the subframe suspension to help float the header when operating in RIGID mode. Gauge wheels must be retracted in FLEX mode.

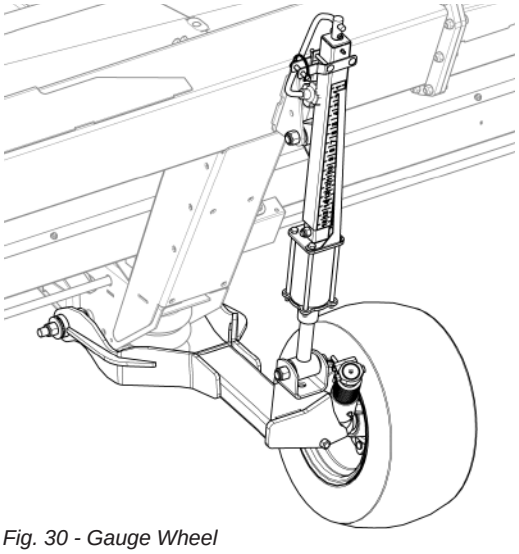


Fig. 30 - Gauge Wheel

11 - Before First Use and Pre-Season Inspection

11.1 - Combine Specific Header Modifications

IMPORTANT!

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

11.1.1 - 2016 or Newer JD Combines

If installing the header on a 2016 or newer John Deer Combine, a check valve must be installed on the header to ensure proper operation. Follow the instructions in section 22.7 on page 148 prior to mounting the header.

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

If installing the header 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 22.6 on page 147 prior to mounting the header.

11.1.3 - Gleaner/Massey Ferguson/ Challenger Combines

If installing the header on a Gleaner, Massey Ferguson, or Challenger combine, ensure that the proper bezel configuration is installed on the faceplate prior to mounting the header to the combine. See section 22.1 on page 139 for details.

11.2 - 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

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. 174 and Fig. 175 on page 108)

Drive Belts

Ensure drive belts are undamaged, cleaned, properly aligned and tensioned. See section 20.5 on page 89 for details.

Drapers

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

Ensure the draper belts are properly tensioned and that they are tracking properly. See section 20.5 on page 89 for details.

Crop Dividers

Ensure the crop dividers are properly installed & free from material buildup. (See Fig. 35 on page 37)

Gauge Wheels

Inspect the gauge wheels for material buildup and ensure the wheels are adequately inflated.

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.

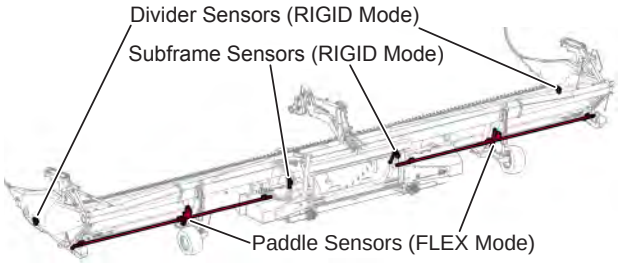


Fig. 31 - AirFLEX Header Height Control Sensor Locations

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.

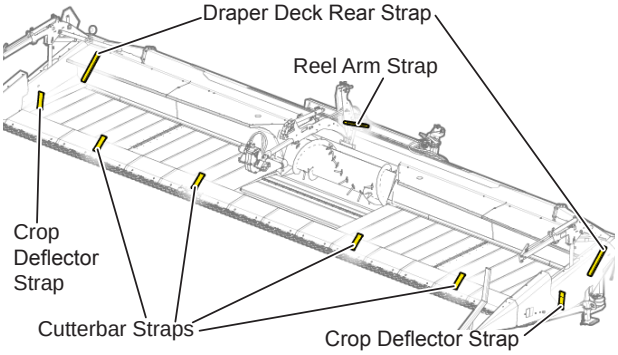


Fig. 32 - Support Strap Locations

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 20.11 for details.

Hydraulic Tilt Cylinder Position

Inspect the hydraulic tilt cylinder to ensure it is in the correct position for your combine. See section 20.12 on page 120 for details.

Reel

Ensure the reel bats are in their operational position.

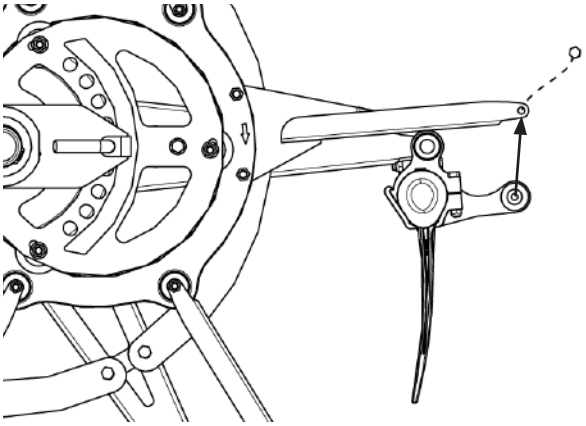


Fig. 33 - Raise reel bat to operational position

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 20.20 on page 126 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.

11.3 - Before First Use and Pre-Season Checklist

Combine Specific Header Modifications

- ☐ **2016 or newer JD Combines:** Install line lock kit as described in section 22.7 on page 148
- ☐ **Combines with 'Bang-Bang' style directional control valves:** Install the BeeBox as described in section 22.6 on page 147
- ☐ **Gleaner/Massey Ferguson/Challenger Combines:** Ensure correct bezel is installed as per section 22.1 on page 139 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. 174 and Fig. 175 on page 108)
- ☐ Ensure drive belts are undamaged, properly aligned & tensioned. See section 20.5 on page 89 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 20.7 on page 100.
- ☐ Ensure the crop dividers are properly installed & free from material buildup. (See Fig. 35 on page 37)
- ☐ 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 20.11 for details.
- ☐ Inspect the hydraulic tilt cylinder to ensure it is in the correct position for your combine. See section 20.12 on page 120 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 20.20 on page 126 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.

12 - Mounting the Header to the Combine

12.1 - 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 header.

If the combine has a hydraulic tilt faceplate, tilt the face plate to an angle that allows easy hookup to the header.

⚠ WARNING!

If the feeder house is tilted forward, the front of the header may dig into the ground when the table is lifted.

12.2 - Header Preparation

1. Park the header on flat, hard, level ground.
2. Inspect the header and remove all tie-downs and wires used to secure the equipment during the shipping process.
3. 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.

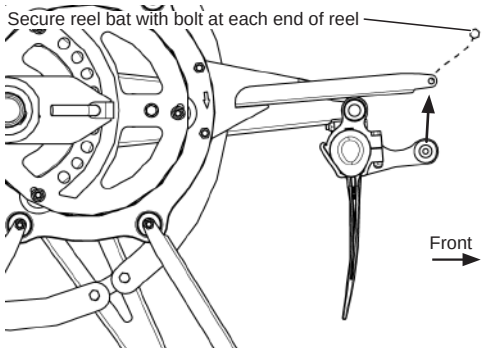


Fig. 34 - Raise reel fingers to operation position

4. Install the crop dividers, and crop divider pipes (or divider extensions) 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.
5. Lock each divider in place securing the provided nuts, washers and bolts as shown below.

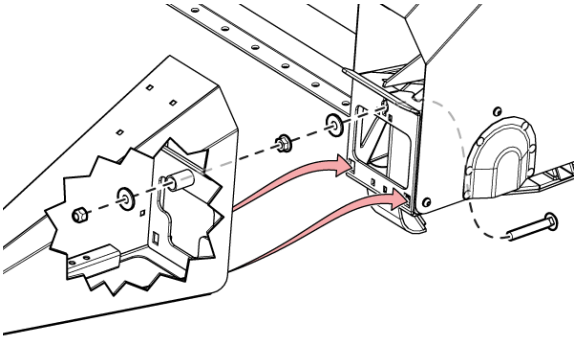


Fig. 35 - Install Crop Divider

NOTE:

If a quick remove solution is desired, the dividers can be secured using the lock handle provided.

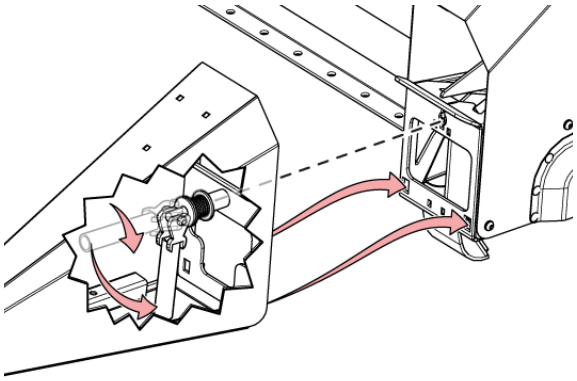


Fig. 36 - Install Crop Divider using optional handle

12.3 - 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.

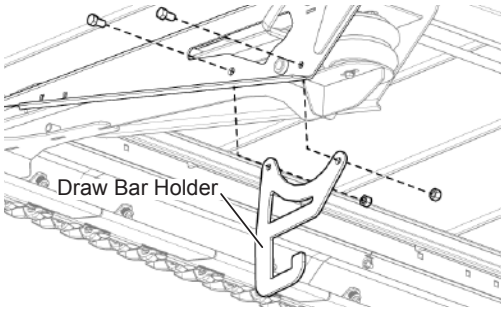


Fig. 37 - Remove Draw Bar Holder

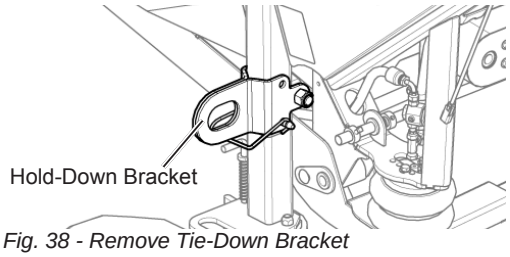


Fig. 38 - Remove Tie-Down Bracket

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.

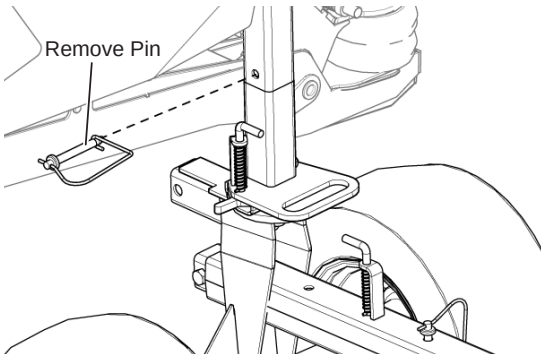


Fig. 39 - Remove Draw Bar Axle Pin

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.

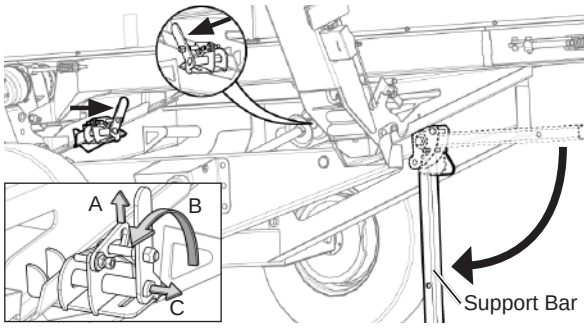


Fig. 40 - Unlock Transport & Lower Support Bar

5. Once the header has been mounted to the combine and raised, use the hand crank on the transport cart to lower it to the ground via its straps. Disconnect the straps from the header.

12.3.1 - 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.

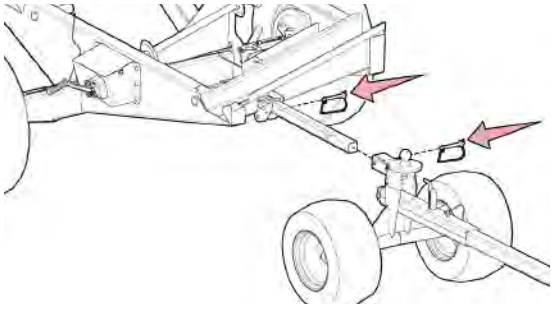


Fig. 41 - Transport Storage Position

WARNING!

Do not exceed 25 mph (40 kph) when towing the transport cart. Always follow local regulations.

12.4 - Optional Transport Without Brakes

The non-braked transport is only intended for use in moving your equipment on private property and is not intended for highway use.

⚠ WARNING!

Transporting your header on public highways using a transport without brakes may result in injury or death.

Always follow local regulations.

12.5 - No Transport Option

If no transport option is selected, you may move your header while it is mounted on your combine or via a 3rd party transport trailer.

⚠ WARNING!

Always ensure the header is firmly secured to the equipment used for transport. Failure to properly secure the header can result in equipment damage, injury or death.

Always follow local regulations.

12.6 - Mounting the Header to Combine

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 21.5).

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.

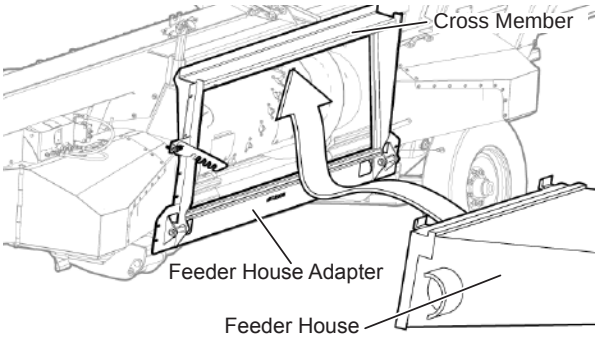


Fig. 42 - Insert Feeder House into Adapter Plate

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 14.2 on page 52 for details).
5. Check feeder house alignment and clearances, start the engine and raise the Feeder House (and header) to its fully raised position.

IMPORTANT!

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

WARNING!

To prevent injury, shut OFF engine, set parking brake, and remove the key before exiting the cab. Engage the feeder house cylinder safety locks before approaching the header.

6. Secure the header by inserting all lock pins and/or header adapter locking bolts as described in your Combine owner's manual.

WARNING!

Ensure all locks are properly secured before proceeding.

12.7 - Hydraulic & Electrical connections

NOTE:

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

1. Connect the Main Electrical Harness to the header.

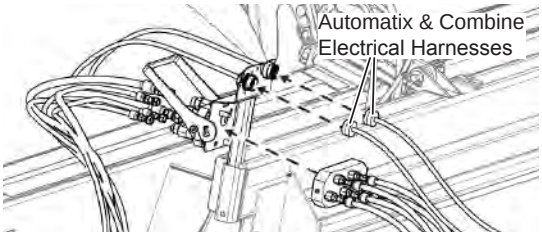


Fig. 43 - Connect Multicoupler & Electrical Harnesses

2. If using a combine equipped with `Bang-Bang` style directional hydraulic valves, install the BeeBox as described on page 147.
3. Connect one end of the Automatix Lite Extension Cable to the Main Automatix Harness.
4. Route the Automatix Lite 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. Using the provided suction cup, mount the Automatix Lite control panel inside the cab in an easily viewable and accessible location. The suction cup must first be secured to the clean glass, then the lock tab should be used to ensure the control panel is firmly secured.

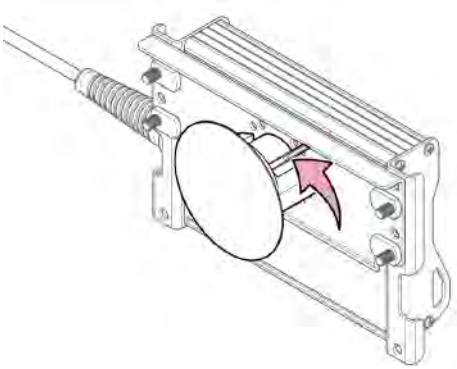


Fig. 44 - Suction cup lock tab

NOTE:

Ensure everything is clean and dust free prior to installation using the suction cup. The suction cup can only be installed on a flat window.

NOTE:

If the suction cup is not adequate for your application, the hole pattern on the back of the Automatix Lite will accept a Ram Industries ball if the suction cup is removed. These can usually be purchased through your equipment dealer.

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.

IMPORTANT!

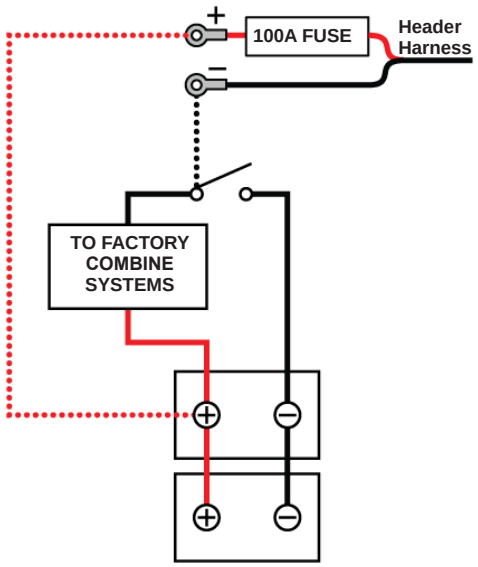
Check and ensure the cables and hoses are not routed in areas where they may become pinched when adjusting the feeder house position.

6. Route the two power connectors on the automatix lite electrical harness to the combine's electrical power supply. Connect the power lines to the battery using the following rules:
   - Both of the 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 non-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.

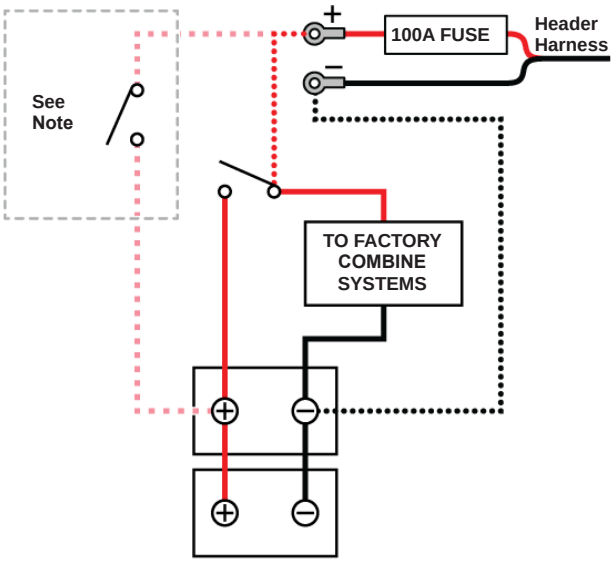
NOTE:

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



12.8 - 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!

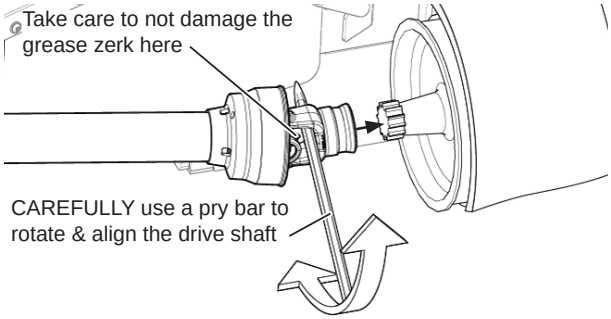


Fig. 45 - Connect Drive Shafts (both sides of feeder house)

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.

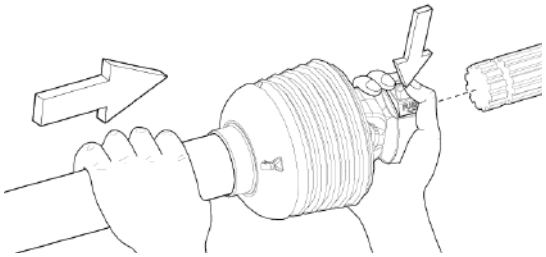


Fig. 46 - Connect PTO

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

3. Secure the drive shaft shields in place using their attached safety chains as shown below. This will prevent the shields from rotating and wearing out prematurely.

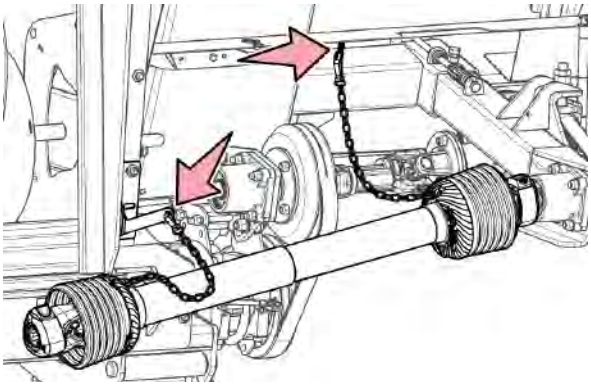


Fig. 47 - Secure drive shaft chains in place

WARNING!

Ensure drive shields are secured in place.

12.9 - 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 shafts (PTO) connected to left and right sides of combine feeder house.
- □ Drive shaft covers are chained in place.
- □ Reel fingers in operational position.
- □ Optional Draw bar front axle and Transport cart removed and stored.
- □ If optional transport cart was used and optional skid shoes were purchased, two skid shoes must be installed on the struts to which the transport was attached.
- □ Red draw bar storage bracket and hold-down removed (if applicable).
- □ All safety shields and decals in place and undamaged.
- □ Automatix lite display installed in combine cab.
- □ Automatix power harness properly connected to combine's electrical supply.
- □ Hydraulics and air lines inspected for damage or leaks.

13 - Combine Calibration

Combine calibration must be performed every time the header cutting mode is changed (FLEX, RIGID Divider, RIGID Center)

NOTE:

Do not use header float (accumulator) functions with the header unless otherwise instructed.

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.

13.1 - 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.

13.2 - Check Header Height Sensor Tabs

With the header in RIGID mode and pressurized to 100psi, check the header height sensor tabs to ensure they are in the proper positions. See section 20.16 on page 122 for details.

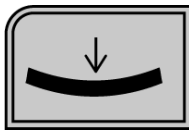
13.3 - Verify Header Height Sensor Voltage

Ensure the header height sensor voltages fall within the range outlined in section 17.5 on page 76. If necessary, adjust the sensor positions as outlined in section 20.16.2 on page 123.

13.4 - 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 and lower the air pressure until 30psi is reached.



2. Fully retract the hydraulic tilt cylinder.
3. Lower the table until the cutter bar is fully pushed up.

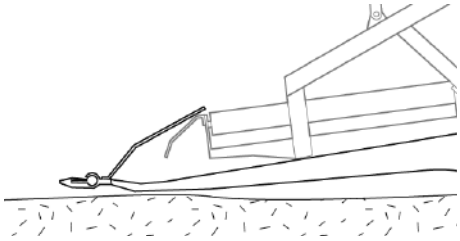


Fig. 48 - Cutterbar pushed up

IMPORTANT!

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

4. Slowly raise the header until 2.00 volts (8 bars) show on the sensor bar graph on the Automatix Lite display.

Fig. 54 - 2.0 V - 8 Bars

WARNING!

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

5. Measure down to the ground from the pivot point of the paddle. There should be an 6-7” (15.4 - 17.8 cm) space when at the optimal feeder house angle.
   - If the paddle ‘heel’ is more than 6-7” (15.2 - 17.8 cm) above the ground, the feeder house is tilted too far forward and the cutter bar guards will dig into the ground.
   - If the paddle ‘heel’ is less than 6-7” (15.4 - 17.8 cm) above the ground, the feeder house is not tilted forward enough and the rear of the paddle will drag on the ground.

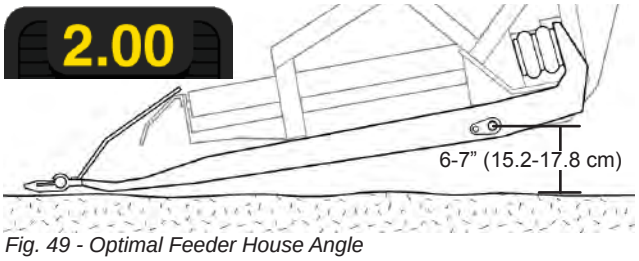


Fig. 49 - Optimal Feeder House Angle

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.

13.5 - Float

For all combine makes except for New Holland and CaseIH, 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 auto header height control system. Disable the combine's float system prior to operating the header or damage to your equipment may result.

13.5.1 - CaseIH Pressure Float Override

Pressure float override momentarily turns on float when there is upward pressure on the bottom of the cutter bar. The value should be set approximately 50-60%. This can protect the cutter bar from being bent if the header height is not reacting quickly enough to terrain changes.

13.5.2 - New Holland Press. Override Threshold

The pressure override threshold should be set to the upper end of its range to about 250-300 PSI. If the auto header height control disengages unexpectedly, the override threshold can be raised even higher.

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).

13.6 - Combine Calibration Position

It may be useful to park the combine over a ditch in order to allow a larger space below the header. This will allow the header to go through its full range of motion.

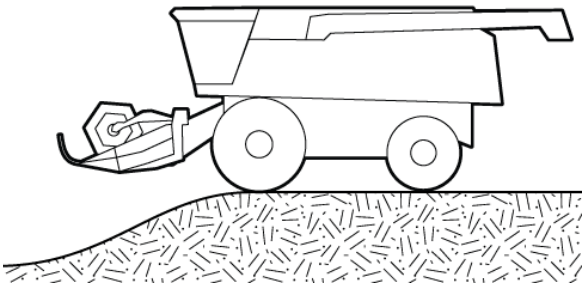


Fig. 50 - 2.0 V - 8 Bars

13.7 - Hydraulic Header Raise and Drop Rates

Raise Rate: Set your combine's raise rate so it takes 5 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.

13.8 - Combine Header Height Calibration - FLEX Mode

- Ensure the header is tilted all the way BACK (tilt cylinder fully retracted), with the gauge wheels removed or fully retracted out of the way.
- Make sure the header lateral tilt is level and the header and combine are sitting on a level surface.
- While the header is in FLEX mode, and pressurized to approximately 30psi, 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.

13.9 - Combine Header Height Calibration – RIGID Mode (Divider Sensors)

- Ensure the header is tilted all the way OUT (tilt cylinder fully extended), with the gauge wheels removed or fully retracted out of the way and air system pressurized to 100 psi.
- Make sure the header lateral tilt is level and the header and combine are sitting on a level surface.
- Lower the header until the dividers just touch the ground.

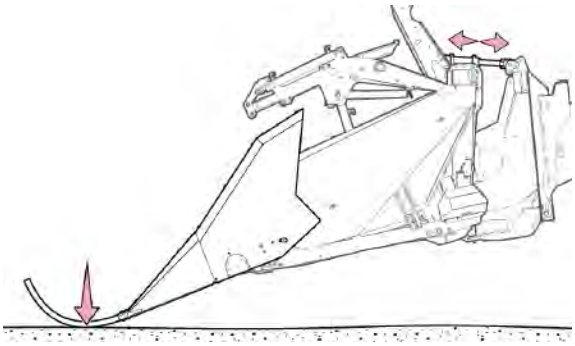


Fig. 51 - Header tilted out, dividers touching ground

- You may need to place a block of wood under the divider extensions to ensure that they deflect UP fully during the calibration.
- Lower the header fully down and then get out and lift the dividers up, to see the size of the block you will need. It is very important that the dividers get calibrated for their FULL range of motion.

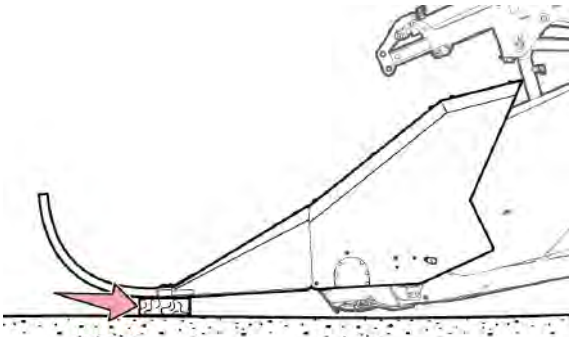


Fig. 52 - Wood block inserted under dividers.

NOTE:

Blocking will depend on the type and position of your divider extensions and whether or not you have skid shoes installed. Ideally, skid shoes are fully up or removed for FLEX cutting, unless it is desired to cut in FLEX mode at a pre-set heigth above the ground.

- 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.

13.10 - Combine Header Height Calibration – RIGID Mode (Subframe Sensors)

- Make sure the header lateral tilt is level and the header and combine are sitting on a level surface.
- Make sure the air system is pressured to 90 psi.
- Lower the header until the dividers or cutterbar just touch the ground (the tilt cylinder position during subframe sensor combine calibration does not matter. Can be fully extended or retracted).
- Lower the gauge wheels until the indicator gauge is showing approximately 10 inches for small gauge wheel tires (20.5/8.00-10) and approximately 6 inches for large gauge wheel tires (ST23/85R16). Use the same setting for both sides.

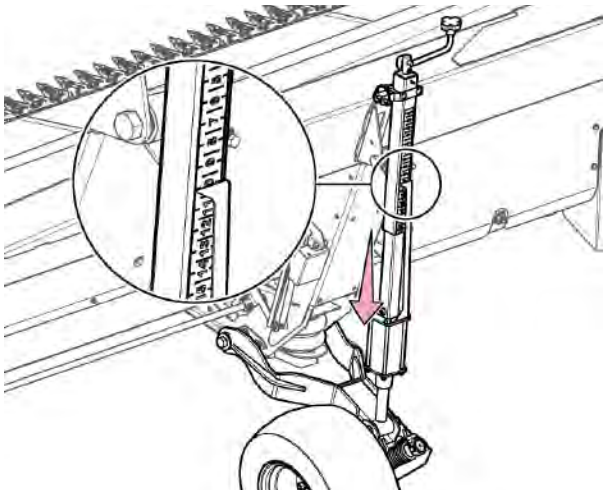


Fig. 53 - Set gauge wheel height.

- 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.

13.11 - 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.

13.12 - Combine Calibration Validation

After combine calibration is performed for any sensing mode, test that the combine is sensing and working properly.

1. Make sure the combine and header are running and at full idle.
2. Set a cutting height via the combine controls (please refer to section 16.5 through 16.6 on how to set cut height for each mode).
3. Lift the header straight up to the top and hit resume. Watch for correct and accurate positioning to setpoint. Once this is confirmed working, then:
4. Lift the header all the way up and TILT it over fully to one side and hit resume. Watch that low side stops pushing down and header levels off before going to final setpoint. If this is working then you are good to go.

13.13 - Other Combine Settings

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

14 - Header Setup

14.1 - Reel Setup

14.1.1 - 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 16.3.1 on page 60 for details.

14.1.2 - 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.

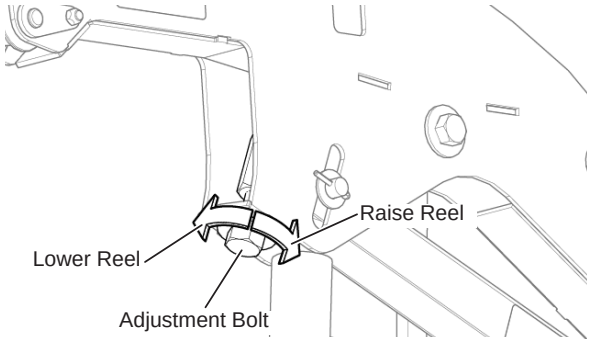


Fig. 55 - Reel Height Adjustment Bolt

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

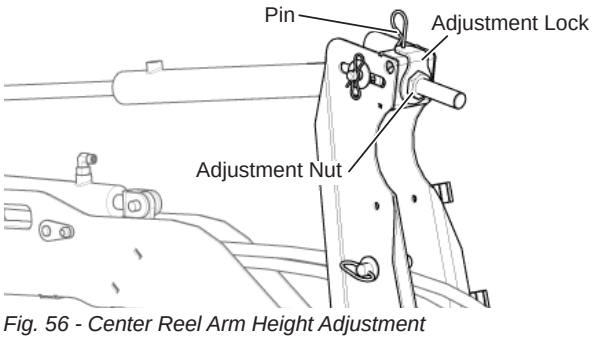


Fig. 56 - Center Reel Arm Height Adjustment

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.

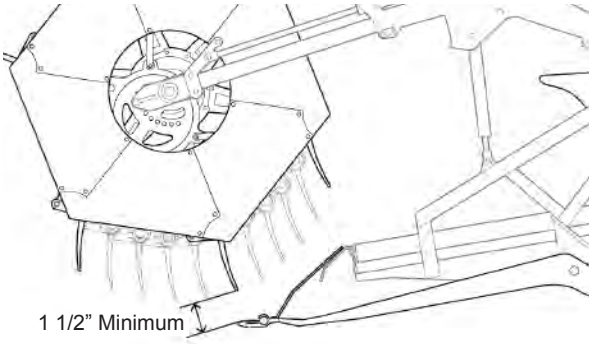


Fig. 57 - Reel Finger Clearance

14.1.3 - 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.

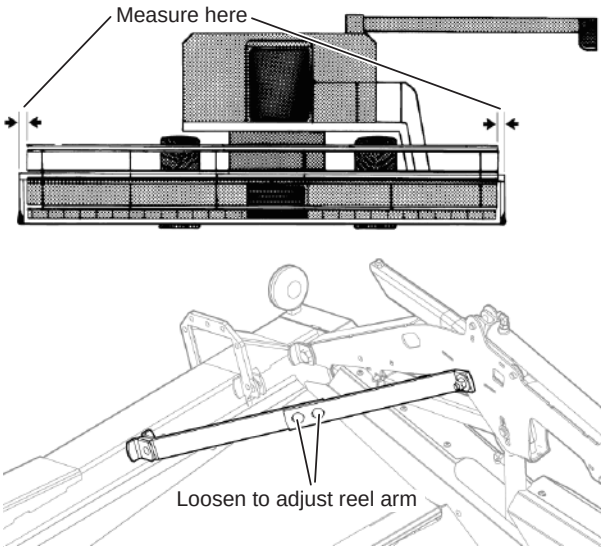


Fig. 58 - Reel centering

14.2 - 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 two positions:

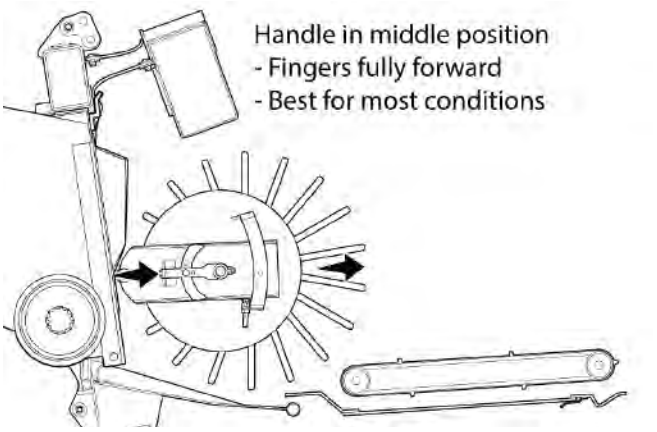


Fig. 59 - Feed auger drum fingers in middle position

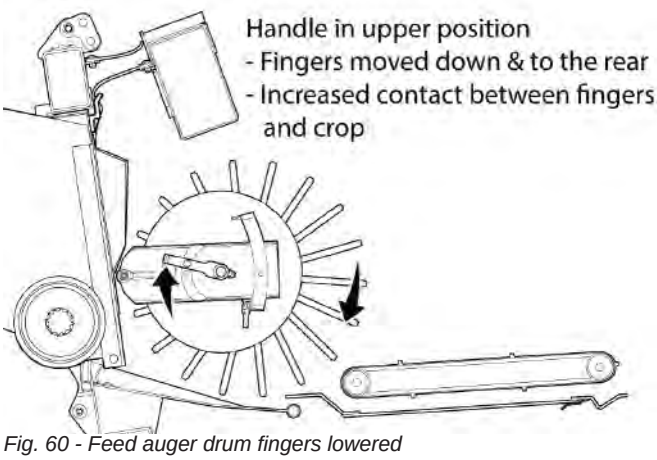


Fig. 60 - Feed auger drum fingers lowered

⚠ 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.

Take special care to ensure the flighting on feed auger drum does not contact the combine feeder house.

All clearances must be re-checked after adjusting the hydraulic tilt cylinder.

STOP IMPORTANT!

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

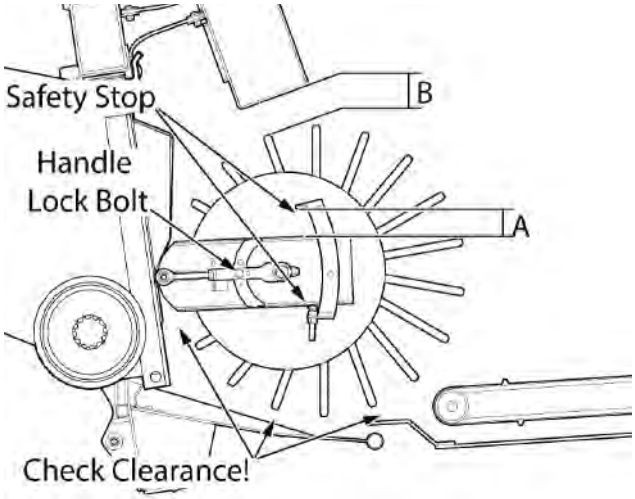


Fig. 61 - Feed Auger Drum Clearances

14.3 - Header Height Sensor Adjustment

In order for the header height system to function correctly, you must ensure the sensor voltages fall within the correct range for the selected cutting mode:

- **In FLEX mode:** With the header air system pressurized to approximately 30 psi, the sensor voltages should range between 1.5 and 3.5 volts through the cutter bar's full range of motion. See section 17.5 on page 76 for details.
- **RIGID Divider Mode:** With the header air system pressurized to approximately 100 psi, the sensor voltages should range between 1.5 and 3.5 volts through the divider's full range of motion. See section 17.6 on page 76 for details.
- **RIGID Center Mode:** With the header air system pressurized to approximately 90 psi, the sensor voltages should range between 1.5 and 3.4 volts through the superframe sensor's full range of motion. See section 17.6 on page 76 for details.

If the sensor voltages do not match the values listed above, see section 20.16 on page 122 for details on adjusting the header height sensors.

14.4 - Optional Components

14.4.1 - Skid Shoes

The optional skid shoes provide additional protection to the underside of the header while harvesting crops.

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

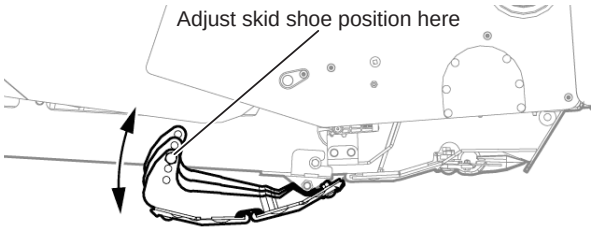


Fig. 62 - Skid shoes - 3 possible positions

For headers new from the factory with the optional transport cart installed, two skid shoes must be installed on the paddles closest to the transport cart once the transport cart is removed.

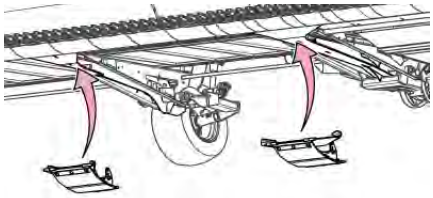


Fig. 63 - Skid shoes - install at transport cart location

NOTE:

Only use skid shoes when cutting at a height of 2”-4”. If cutting at a height of less than 2”, the skid shoes should be removed.

14.4.2 - Terrace Kit

If equipped, the terrace kit is typically installed on headers used for harvesting soybeans and when operating on terraced fields.

This kit includes:

- UHMW guides along the bottom of the cutter bar which protect the transition plate from damage (these can be purchased separately from the skis).
- End paddle skis which prevent the end paddles from being pushed around by crop material.

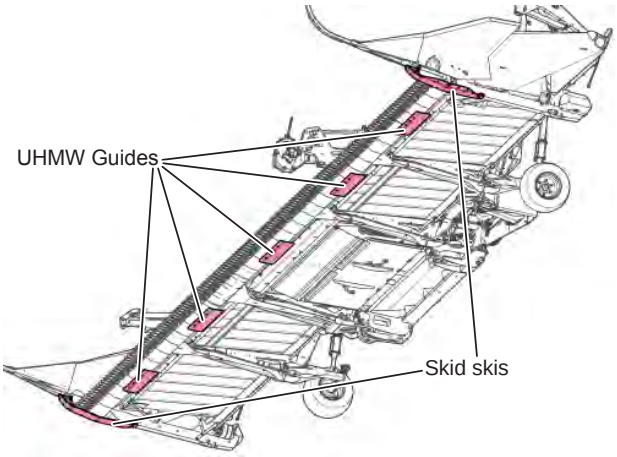


Fig. 64 - Terrace Kit

IMPORTANT!

When the terrace kit is installed, the floating crop dividers must be locked up. Allowing the dividers to float up and down will result in equipment damage when used in conjunction with the terrace kit.

14.4.3 - 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.

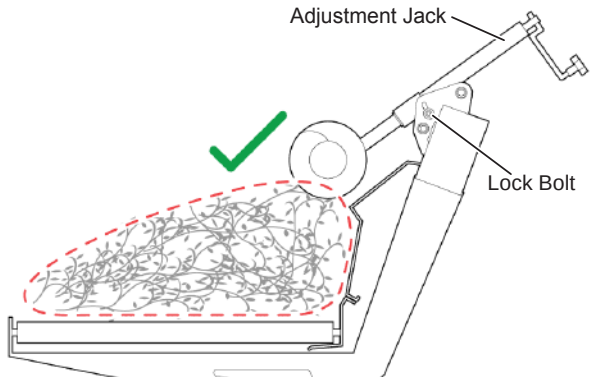


Fig. 65 - Adjust hold-down clearance to cutting section

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. 66 - 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.

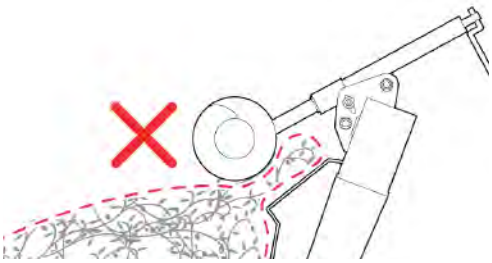


Fig. 67 - Crop wrapping around cross auger

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.

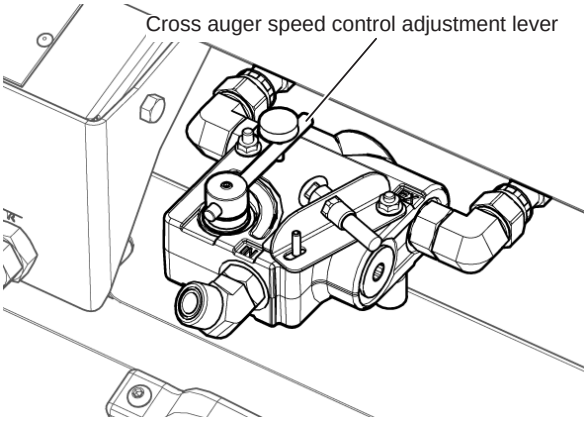


Fig. 68 - Cross auger flow/speed control

⚠ WARNING!

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

14.5 - Knife Hold-Down Clearance

Knife Hold-Down to cutting section clearance should be 0.5 mm (0.02 in.). Generally, this is not critical. However too tight can reduce knife lifespan.

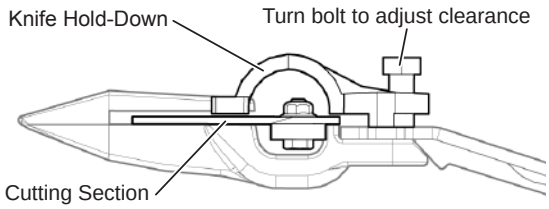


Fig. 69 - Adjust hold-down clearance to cutting section

See section 20.9.10 on page 114 for detailed hold-down adjustment.

NOTE:

If the knife hold-downs are too loose or too tight, the knife's lifespan will be shortened and cutting performance will be reduced. Check the hold-down clearance at least once a year.

14.6 - 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.

15 - Daily Inspection

15.1 - Safety & Protective Shields

Check all safety shields and ensure they are securely in place. Tighten all loose hardware. Clean out all crop debris.

15.2 - Dividers

Crop dividers must be properly installed. The crop divider tips must be installed on the dividers.

⚠ WARNING!

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

15.3 - Air Hoses

Inspect air hoses, air fittings, and air bags for damage or leaks (see section 20.19 on page 125 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 and the rear left/right corners of the subframe.

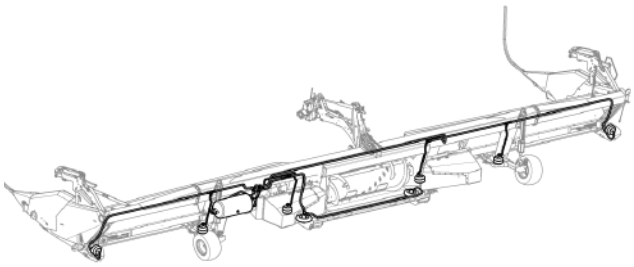


Fig. 70 - Air System

15.4 - Knife Guards & Sections

Inspect the cutter bar. Replace broken guards and cutting sections.

15.5 - Header Height Control Sensors

Inspect and adjust the header height sensor bar as outlined in section 20.16 on page 122.

15.6 - 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 Fig. 61 on page 53 for details.

15.7 - Drapers

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

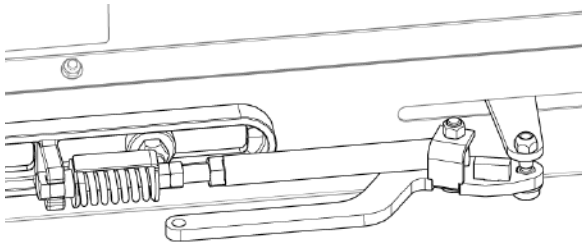


Fig. 71 - Draper Tension Handle Correct Position

15.8 - Belts

Ensure drive belts are properly aligned and tensioned. See section 20.5 on page 89 for details. Clear the belts of all debris & material buildup.

15.9 - Lubrication

The knife heads must be greased via their grease zerk every 10 hours of operation, it is recommend that you apply grease every day prior to operating the equipment. See section 20.20 on page 126 for lubrication details & other lubrication points.

16 - 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 header 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 header, **it is EXTREMELY important to grease the knife head bearings every 10 hours** (or every day of operation). Failure to grease regularly will drastically shorten the lifespan of the knife head bearings. We recommend you use appropriate grease types, see section 20.20 on page 126 for details.

16.1 - Hydraulic Header Tilt

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

Header tilt is controlled by first selecting the header tilt option on the automatix lite control panel, then using the combine's reel height controls to tilt the header.

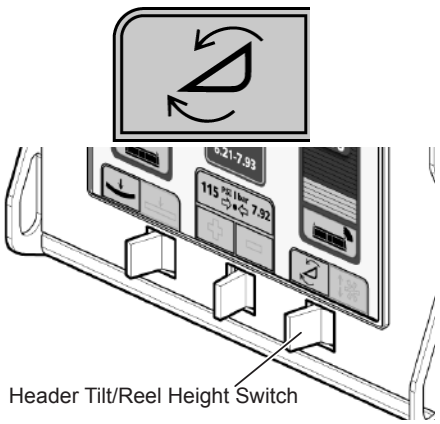


Fig. 72 - Activate Header Tilt mode

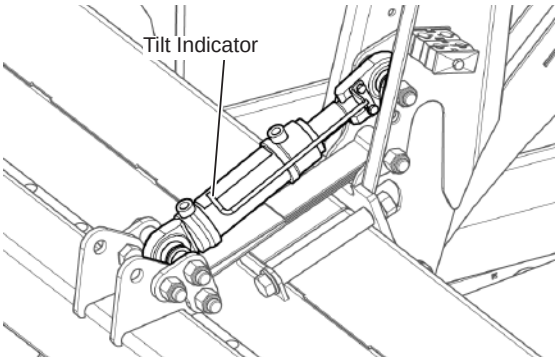


Fig. 73 - Hydraulic Tilt Cylinder & Indicator

IMPORTANT!

If using a CNH combine, the tilt selector switch does nothing when selecting the tilt function (it should be left on reel height at all times). On CNH combines, the header tilt is controlled via the AUX switch located on the combine's multi-function handle. Refer to combine operators manual for instructions on how to enable/disable the aux controls if desired.

IMPORTANT!

Return the switch to the reel height position when finished tilting the header in order to prevent power drain from the tilt valve. Leaving tilt mode selected will drain the combines battery even when the combine is powered off.

16.2 - Knife, Feed Auger Drum and Draper Speed.

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

16.3 - Reel Settings & Controls

The reel on the header 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 20.8 on page 103 for reel adjustment information

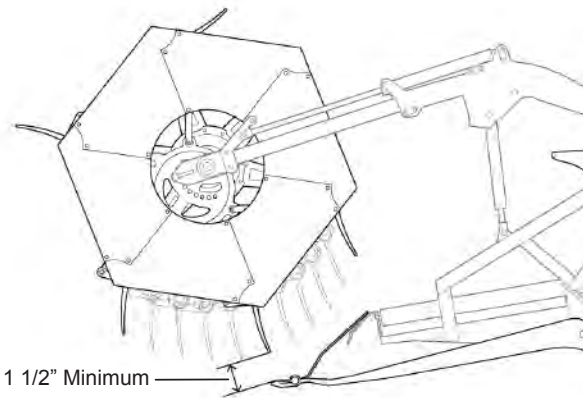


Fig. 74 - Reel Finger Clearance

16.3.1 - 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.

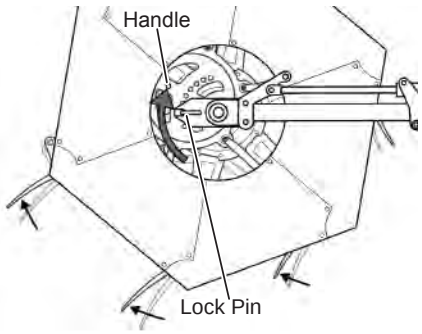


Fig. 75 - Less Aggressive Finger Pitch

3. Lower the handle for more aggressive finger pitch.

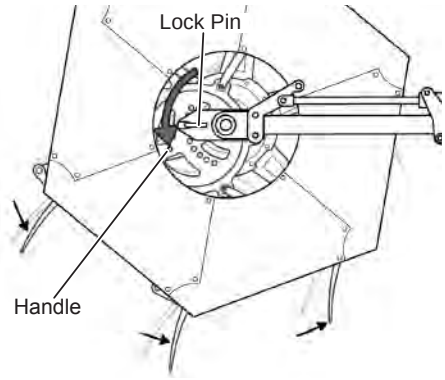


Fig. 76 - More Aggressive Finger Pitch

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.

16.3.2 - 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.

Before attempting to adjust the reel height using the combine controls, ensure the reel height option is selected via the Automatix Lite control panel.

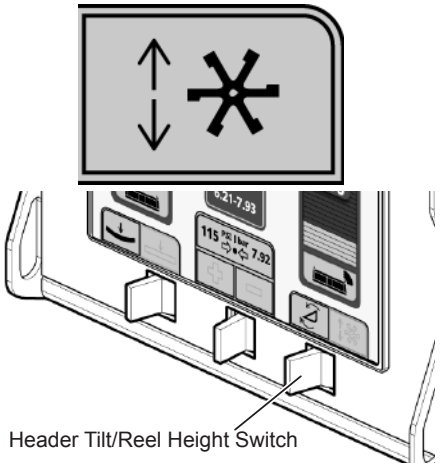


Fig. 77 - Activate Reel Height mode

For details on setting the minimum reel height, see section 20.8.5 on page 104.

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.

16.3.3 - 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.

The reel speed sensor outputs 48 pulses per rotation (PPR). You may have to calibrate your combine to match this value in order to get accurate readings, see section 20.8.3 on page 103 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.

16.4 - Crop Dividers

The crop dividers are locked in place by default from the factory.

There are two possible positions in which the divider can be locked. Ensure the left and right dividers are locked in the same positions.

If crop divider sensors are used in RIGID mode, the dividers must be unlocked by removing the bolt shown below.

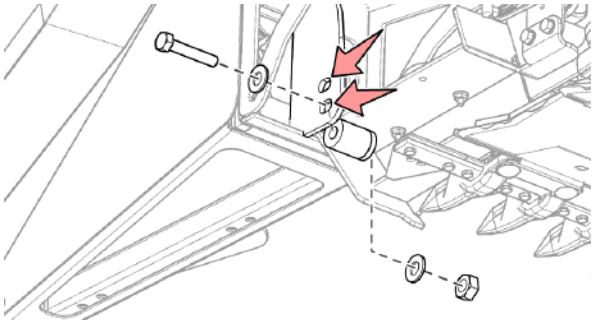


Fig. 78 - Divider locking positions

There are three types of crop divider extensions:

16.4.1 - Crop Divider Pipe:

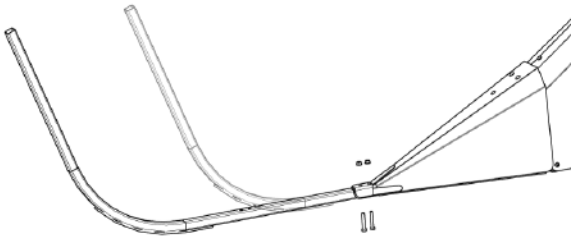


Fig. 79 - Crop Divider Pipe Extension

Can be used in both FLEX and RIGID modes. Typically used with matted or tangled crops but can be used in all crop types. There are two possible positions for the divider pipes.

Extend or retract divider pipes for best header height performance based on current cutting height.

16.4.2 - Crop Divider Snub Extension:

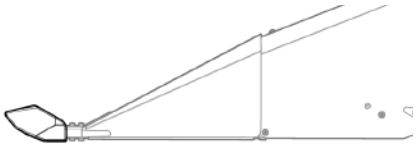


Fig. 80 - Crop Divider Snub Extension

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 20.10 on page 116 for details on installing & adjusting the dividers.

16.4.3 - Crop Divider Extension:

The crop divider extension has three possible positions. The higher the cutting height, the further out the divider extension should be extended.

The crop divider extension works best at dividing lodged crop but can be used in all conditions.

⚠ CAUTION!

Due to the geometry of the divider extension, it is more susceptible to getting caught in holes in the field causing damage to the header. Special care is required when using this extension.

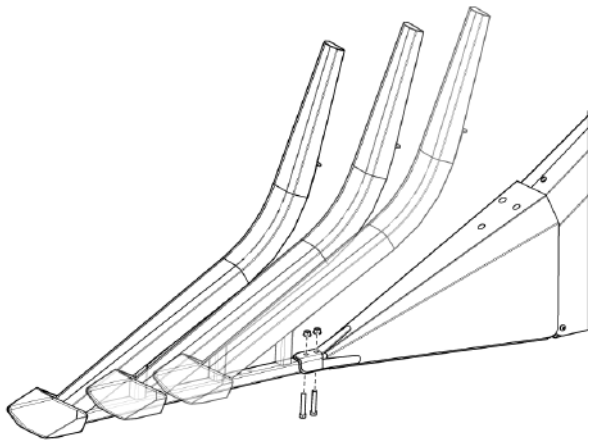


Fig. 81 - Crop Divider Extension Extended

16.4.4 - Crop Divider Sensing in RIGID mode

The crop dividers can be unlocked by removing the lock bolt shown in Fig. 78 on the previous page.

Unlocking the dividers allows them to ‘float’ up and down to follow the terrain. The divider sensors sense this motion and report it back to the combine to activate automatic header height control.

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 20.10.6 on page 117 for details.

IMPORTANT!

Please be aware that floating dividers are prone to dropping into holes or running into berms resulting in damage to your header. Use this mode at your own risk.

16.5 - Operation Guidelines - FLEX mode.

IMPORTANT!

If changing cutting modes ensure combine calibration is done prior to setting setpoint. See sections 13.8 to 13.13 for details.

When harvesting, the cutter bar flexes to follow the contour of the ground.

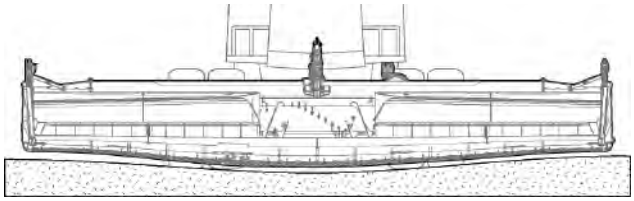


Fig. 82 - FLEX Mode

To activate FLEX mode:

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

IMPORTANT!

FLEX mode should only be operated with the header tilted back.

2. Ensure the gauge wheels are raised to their highest position.

Fig. 83 - Lift gauge wheels

3. Move the cutting mode sensor selection switch to the left until the FLEX icon is activated.

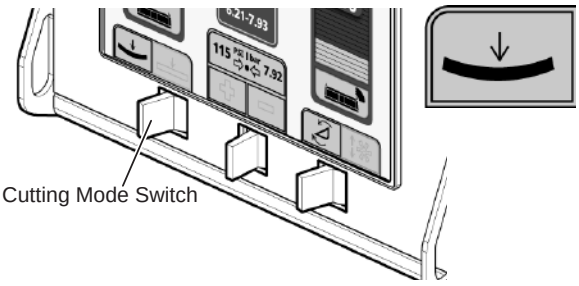


Fig. 84 - Activate FLEX mode

4. Use the air pressure switch to set the system pressure to 25-60 psi.

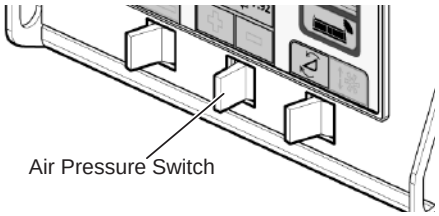


Fig. 85 - Set air pressure to 25-65 psi

5. Lower the header until the sensor bar graph shows 2.00 volts (8 bars) and set this as the cut height via the combine controls.

16.5.1 - Divider settings

See section 20.10.6 on page 117 for details on adjusting the dividers. The dividers should be locked in place with divider pipes installed in order to minimize wear and facilitate terrain change detection in FLEX mode.

16.5.2 - 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 20.8 on page 103 for details.

Reel speed should be set approximately 10-20% 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.

16.5.3 - Air Pressure Recommendation

The header air pressure should range between 25 PSI and 60 PSI.

To maximize 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.
- **Higher than 60 PSI** results in no flex in the cutter bar

NOTE:

Please add an additional 10 PSI if skid shoes are installed on the cutter bar. Accessories attached to the cutter bar require additional pressure to counteract their weight.

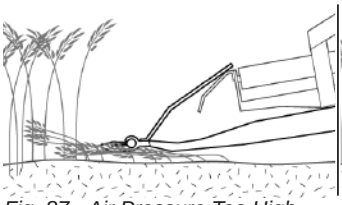


Fig. 87 - Air Pressure Too High, Riding On Top of Crop

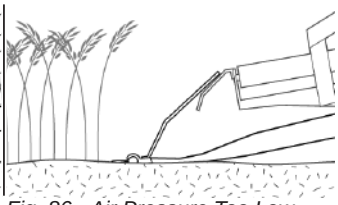


Fig. 86 - Air Pressure Too Low, Guards Digging Ground

Adjust the 'weight' of the cutter bar by adding or removing air pressure from the cutter bar airbags. This is done via the air pressure switch on the Automatix Lite control panel. See Fig. 85 on previous page.

- The '+' position adds air, making the cutter bar lighter.
- The '-' position removes air and makes the cutter bar heavier.

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

IMPORTANT!

Pressures listed are recommendations only Different field conditions may require higher or lower pressures than those listed.

16.5.4 - Ground speed

The 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.

16.5.5 - Automatix Lite Control Panel

Please see section 17 on page 73 for details on operating the Automatix Lite system.

16.6 - Operating Guidelines - RIGID mode

In Rigid mode, the air system is pressurised to 100 psi locking the cutter bar into a rigid structure. Automatic header height control will raise or lower the header based on the input from the selected sensor set (subframe or divider sensors).

Rigid air pressure may need to be increased/ decreased depending on what header options are installed in order to optimize header floatation

IMPORTANT!

Automatic header height must be enabled when in Rigid mode.

16.6.1 - Selecting RIGID Sensors

When operating in RIGID mode, the header can use either divider sensors or subframe sensors for automatic header height control. The subframe sensors are hooked up by default from the factory.

When using the **divider sensors**, the dividers must be unlocked so they follow the terrain. When the dividers get pushed up, they signal the combine to lift the header.

When using the **subframe sensors**, the automatic header height system measures the angle between the subframe and the rest of the header. When the header gets pushed up by the gauge wheels, the system raises the header.

The sensors are selected by swapping the sensor connections at the left and right ends of the subframe (see below)

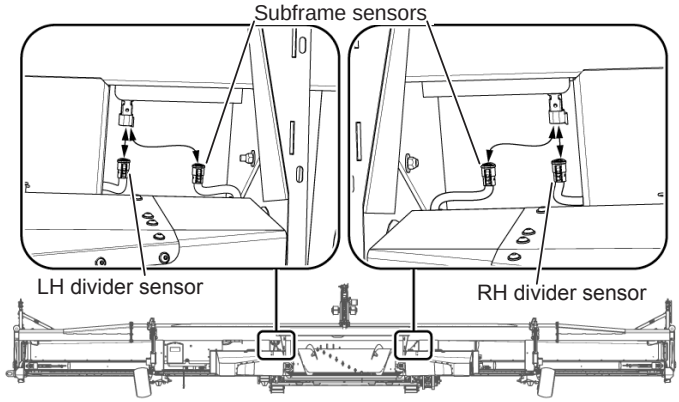


Fig. 88 - Selecting RIGID sensors

16.6.2 - To activate RIGID mode:

1. Determine which RIGID sensors to use and activate them as described in the previous section.
2. Use the cutting mode switch on the Automatix Lite control panel to activate the RIGID mode icon.

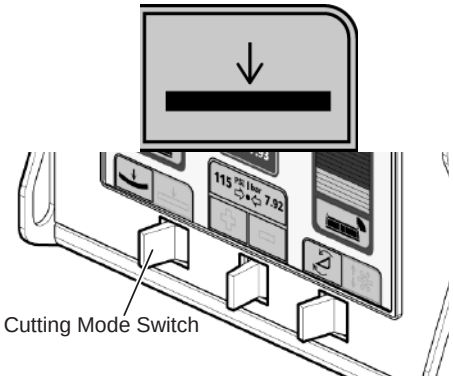


Fig. 89 - Activate RIGID mode

3. Use the air pressure switch to set the system pressure to 90 psi when using subframe sensors and 100 psi when using divider sensors.

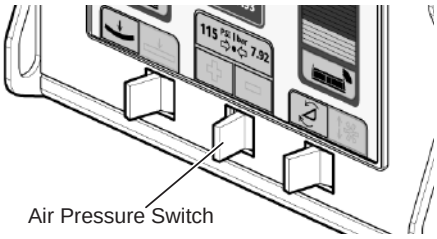


Fig. 90 - Add air until 90-100 psi is reached.

4. Set the cut height set point for subframe sensors or divider sensors as described on the following page.

16.6.3 - Set Cut Height Using Subframe Sensors

IMPORTANT!

If changing cutting modes ensure combine calibration is done prior to setting setpoint. See sections 13.8 to 13.13 for details.

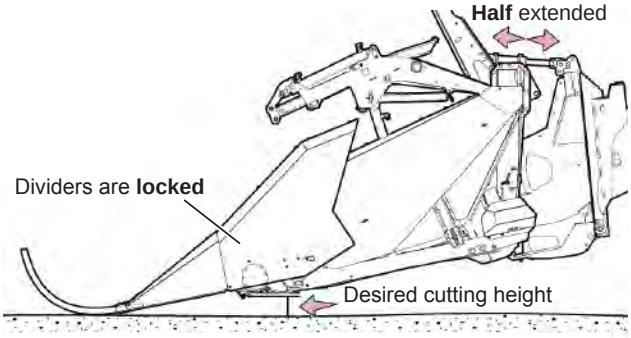


Fig. 91 - Set cutting height with subframe sensors

1. Ensure the header is tilted to HALF way out, with dividers locked and gauge wheels retracted.
2. Confirm the RIGID air pressure is set to 90.
3. Lower the header to your desired cut height.
4. Lower the LEFT gauge wheel until it is touching the ground.
5. Lower the LEFT gauge wheel an additional 1.5 inches so it compresses the gauge wheel shock approximately halfway.

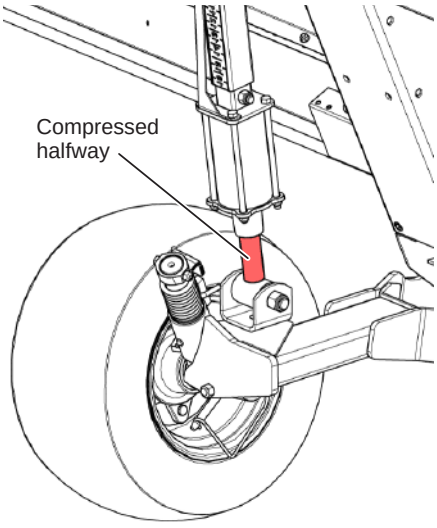


Fig. 92 - Gaugewheel compressed halfway

6. Take note of the height indicator on the LEFT gauge wheel and lower the RIGHT gauge wheel to the same value.
7. In the combine cab confirm that the sensor output on the AutoMatix Lite monitor is approximately 2.80-3.00V on the left and right bar graphs. If the voltage is above this amount lower the header until you reach these values. Save the combine setpoint.

IMPORTANT!

This setpoint does not change after it is set. Any major change to your cut height should be made only with gauge wheel adjustments.

IMPORTANT!

Minor changes to your cut height can be made using the header tilt cylinder. Running the header in the middle of the tilt range will allow cutting height adjustment in both directions: higher and lower.

IMPORTANT!

It is critical that the gauge wheel shock is compressed only halfway when the combine setpoint is set. If the shock is compressed more than this, then it can be adjusted by increasing the system air pressure.

16.6.4 - Set Cut Height Using Divider Sensors

IMPORTANT!

If changing cutting modes ensure combine calibration is done prior to setting setpoint. See sections 13.8 to 13.13 for details.

Ensure the header is tilted all the way OUT, with dividers unlocked and gauge wheels retracted.

1. Confirm the RIGID air pressure is set to 100.
2. Lower the header to your desired cut height.

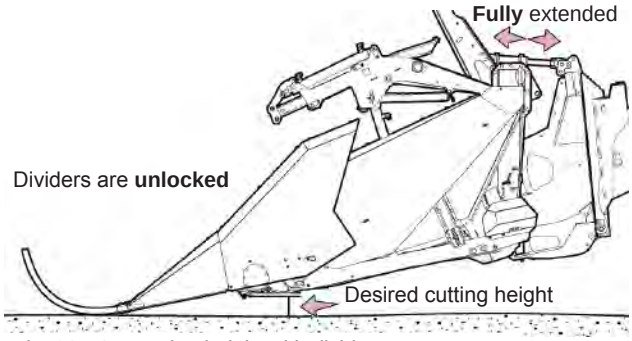


Fig. 93 - Set cutting height with divider sensors

3. Save this setpoint on the combine as described in the combine's operator manual.
4. Lower the gauge wheels until they are touching the ground. They should NOT be compressed.

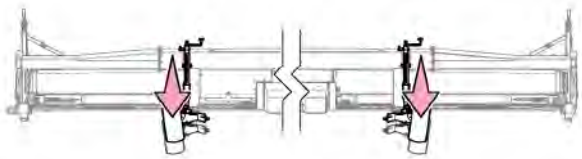


Fig. 94 - Lower gauge wheels until they TOUCH the ground

IMPORTANT!

In **divider sensor** mode, gauge wheels only provide stabilization, and should not impact header height.

5. Adjust your cut height using the combine controls

16.6.5 - Recommended 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 20.8 on page 103 for details.

Reel speed should be set approximately 10-20% 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.

16.6.6 - Recommended Ground speed

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

16.6.7 - Automatix Lite Control Panel

Please see section 17 on page 73 for details on operating the Automatix Lite system.

16.7 - Reverse Operation

When the combine feeder house is reversed, the drapers, knife, reel, cross auger and feed auger drum run backwards to assist with unplugging.

⚠ 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.

16.8 - Feed Auger Drum Settings

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

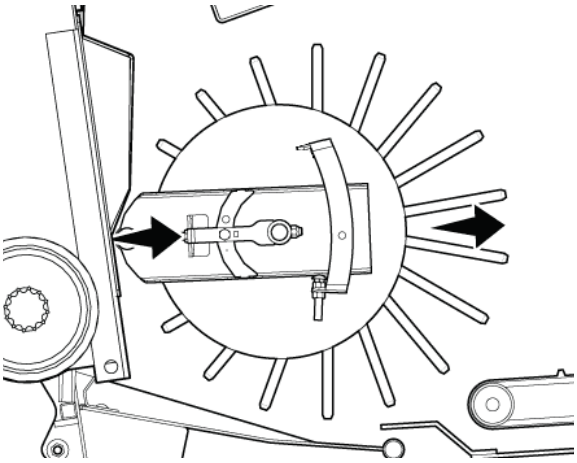


Fig. 95 - Feed auger fingers fully forward

See section 14.2 on page 52 for details on adjusting the feed auger.

16.9 - 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: 5 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.

16.10 - Blue LED Air Compressor Indicator Lamp

There is a blue LED indicator mounted on the panel above the air tank (left side of subframe). This LED will light up when the air compressor is running.

16.11 - 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.

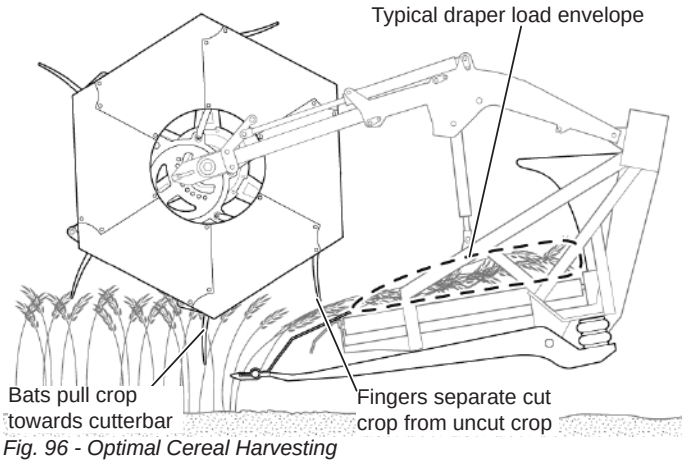


Fig. 96 - Optimal Cereal Harvesting

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)

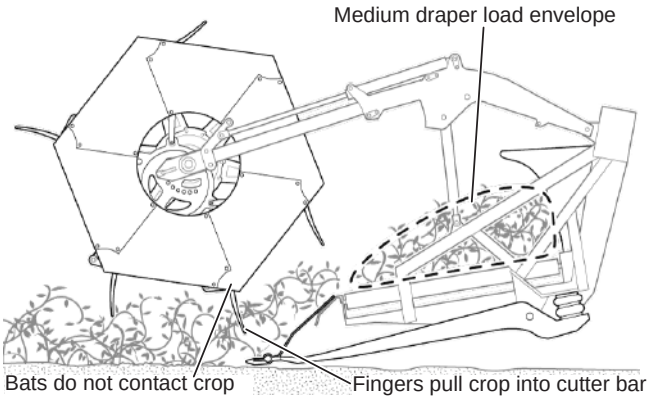


Fig. 97 - Optimal Pulse Crop Harvesting

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.

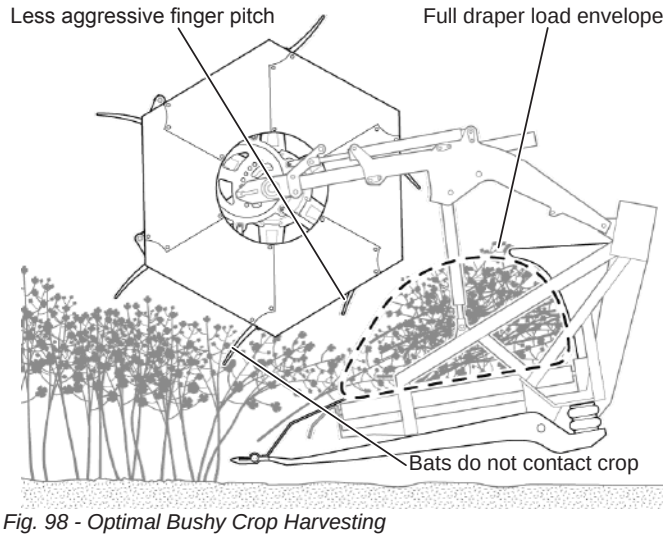


Fig. 98 - Optimal Bushy Crop Harvesting

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 air 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:

Tilt the header forward to increase guard angle in order to pick up crop better.

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).

17 - Automatix Lite System

The bottom row of switches are used for sending commands to the Automatix system and provide access to harvesting settings used in the field.

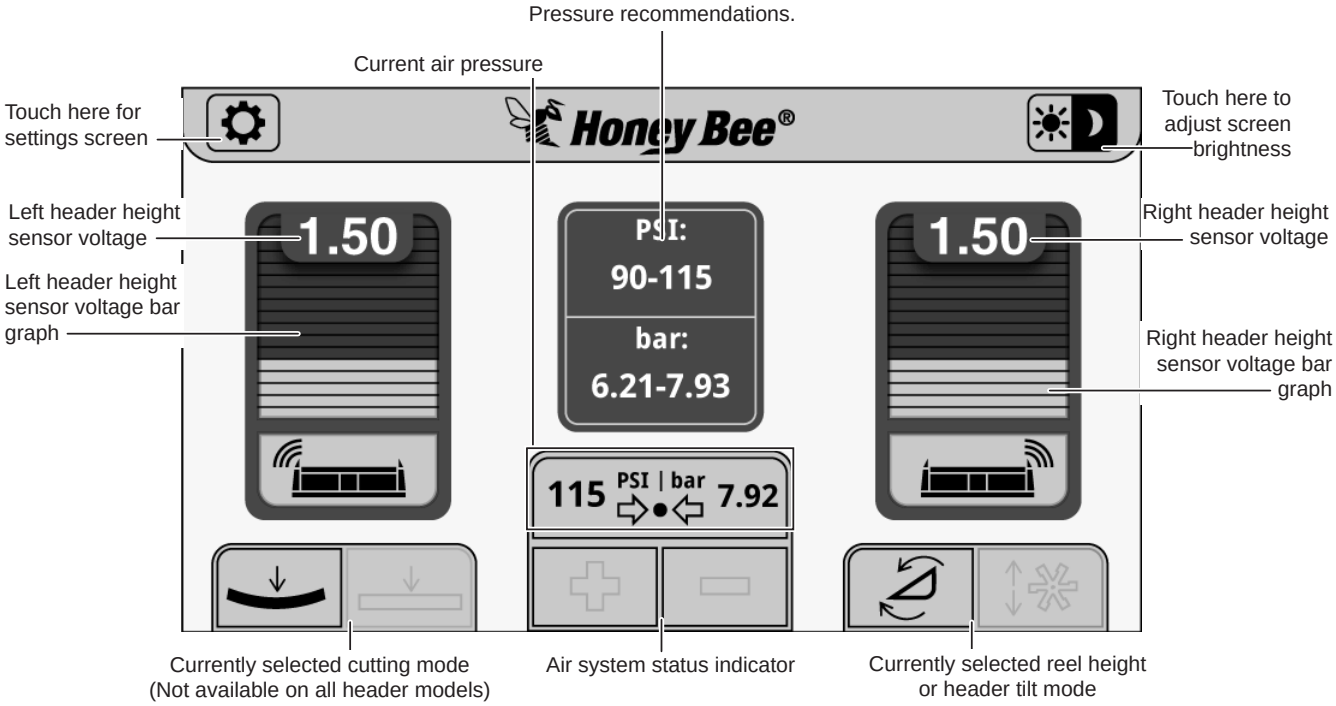
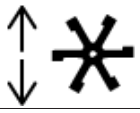


Fig. 99 - Automatix Lite Main Screen

17.1 - Screen Icons

	Left header height sensor.
	Right header height sensor.
	FLEX cutting mode (not available on all models)
	RIGID cutting mode (not available on all models)
	Air pressure is increasing (compressor is running)

	Air pressure is decreasing.
	Reel height mode is active (controlled via combine controls)
	Header tilt mode is active (controlled via combine controls)
	Automatix Lite settings
	Screen brightness adjustment.

17.2 - Physical Switches

The header functions are controlled via three physical switches that run along the bottom of the Automatix Lite control panel.

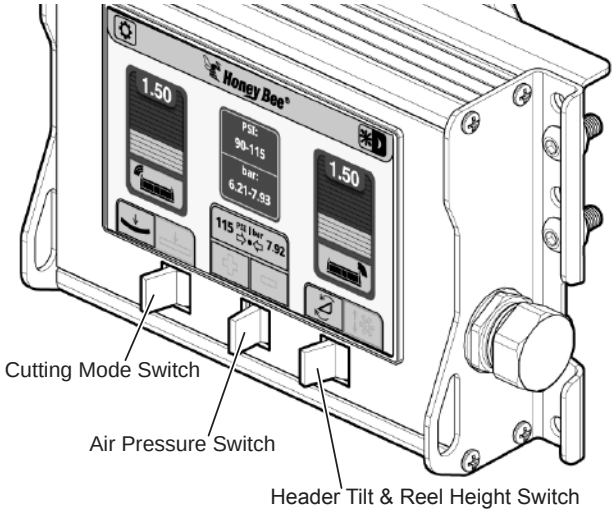


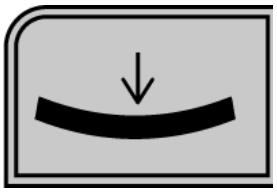
Fig. 100 - Physical switch locations

The functions of these switches are as follows:

17.2.1 - Cutting Mode Switch:

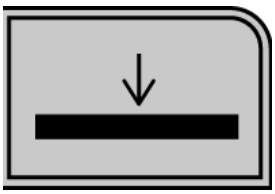
The cutting mode switch is used to select your desired cutting mode.

FLEX mode



When FLEX mode is selected, the cutter bar header height sensors become active and the air pressure recommendation is low in order to allow the cutter bar to flex to follow the terrain. Used when cutting close to the ground.

RIGID mode



When RIGID mode is selected, the header height sensors become disabled (as shown on the display) and the air pressure recommendation is quite high. High air pressure prevents the cutter bar from flexing. Used when cutting high off the ground.

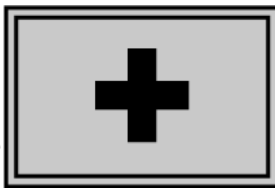
17.2.2 - Air Pressure Switch

The air pressure switch has three possible positions. This switch should be left in the middle position after the desired air pressure is achieved.

IMPORTANT!

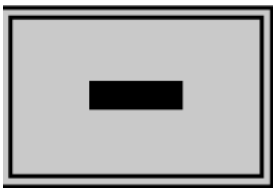
When adjusting air pressure, always monitor the pressure on the display screen. DO NOT exceed 120psi or the pressure release valve will dump all the air from the pressure tank.

Add Air Pressure



Move the switch to the left until the '+' symbol is highlighted, this activates the air compressor and will start adding pressure to the air system. The more air added to the system, the more RIGID the cutter bar becomes.

Dump Air Pressure



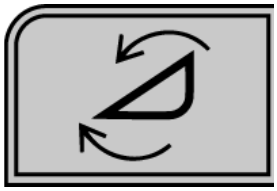
Move the switch to the right until the '-' symbol is highlighted. This will open the a valve in the pressure system that will slowly dump the air from the system. The less air in the system the more FLEXible the cutter bar becomes.

17.2.3 - Header Tilt & Reel Height Switch

The header tilt & reel height switch is used to select the function of the header tilt/reel height controls in the combine.

Header Tilt

Move the switch to the left until the header tilt icon is activated and the combine control handle will modify the header tilt.



IMPORTANT!

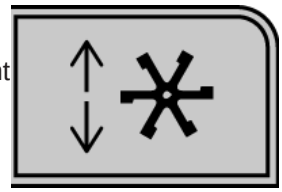
When finished tilting the header, ALWAYS return the switch to the reel position to prevent power drain from tilt valve. If the switch is left in tilt mode, the tilt valve will continuously use power from the combine battery, even when the combine is powered off.

NOTE:

The tilt function switch will be inactive if the alternate tilt harness is used with CNH combines.

Reel Height

Move the switch to the right until the reel height icon is activated and the combine control handle will modify the reel height.

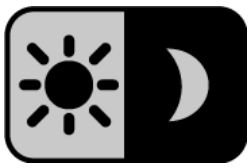


17.3 - Touch Screen Buttons

The Automatix Lite control panel is equipped with a touch screen. There are currently only two buttons on the screen.

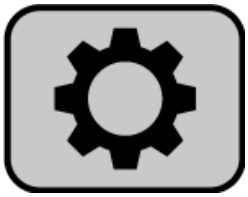
17.3.1 - Adjust Screen Brightness

Touch the brightness icon on the top right of the screen to switch between bright and dim modes.



17.3.2 - Settings

Touch the settings icon to access the settings screen.



17.4 - Settings Screen

The settings screen gives you the option to switch between a 5V and a 10V sensor system. At this point in time, the 10V system is experimental and should not be activated unless instructed to do so by a Honey Bee technician.

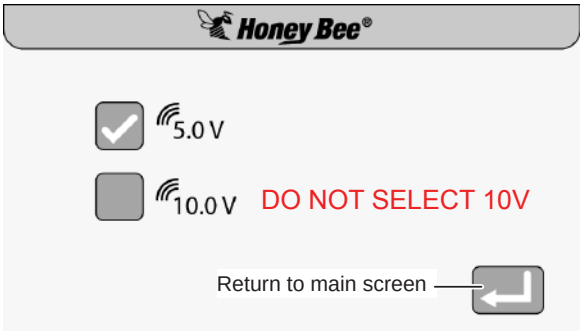


Fig. 101 - Automatix Lite Main Settings

IMPORTANT!

Activating the 10V option when using a combine with a 5V sensor system will result in inaccurate readings on the Automatix Lite display. The 10V option requires additional sensor related electronics to be functional.

17.5 - Sensor Bar Graphs (FLEX mode)

In FLEX mode, the Automatix Lite display shows the live sensor voltage for the cutter bar header height sensors.

The bar graph represents the amount of motion left available to the cutter bar.

NOTE:

If 10v mode is selected when operating a 5v combine, the full range of motion of the header paddles will only cover half of the bar graph.

- A bar graph with 3.5 volts indicates the cutter bar has its full range of motion available (approximately 9”).

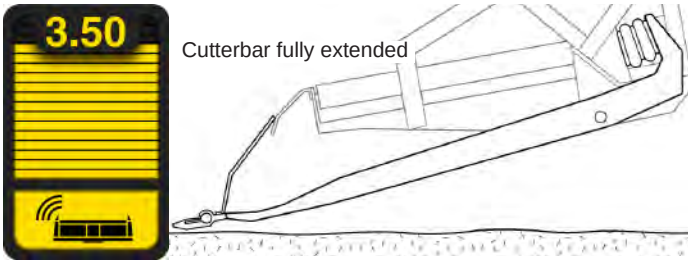


Fig. 102 - Sensor Bar Graph - Cutter bar full range available

- A mostly empty bar graph with 1.5 volts showing indicates the cutter bar has been pushed all the way up.

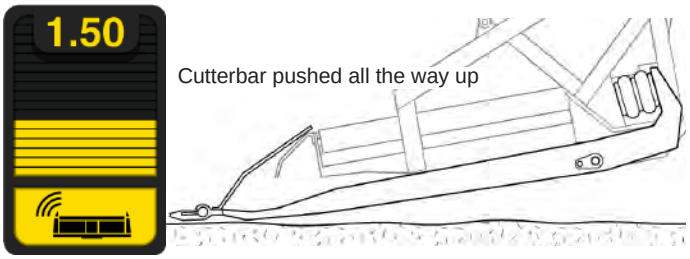


Fig. 103 - Sensor Bar Graph - Cutter bar pushed up

17.6 - Sensor Bar Graphs (RIGID mode)

In RIGID mode, the Automatix Lite display shows the live sensor voltage for the divider and subframe header height sensors.

The bar graph represents the amount of motion left available to the dividers or subframe.

NOTE:

If 10v mode is selected when operating a 5v combine, the full range of motion of the dividers or subframe will only cover half of the bar graph.

When divider sensors are selected as described in section 16.6.1 on page 66:

- A bar graph with 3.5 volts indicates the divider has its full range of motion available.

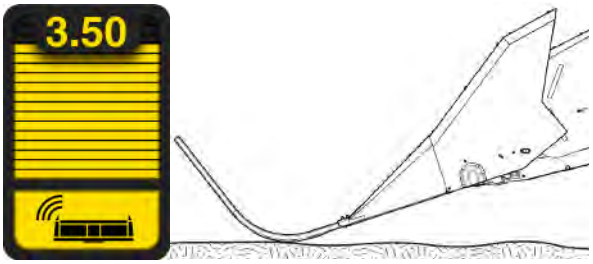


Fig. 104 - Sensor Bar Graph - Divider full range available

- A bar graph with 1.5 volts indicates the divider has been pushed all the way up.

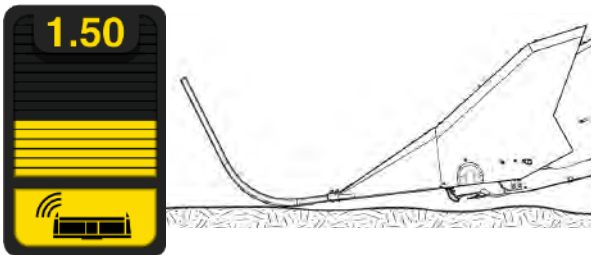


Fig. 105 - Sensor Bar Graph - Divider bar pushed up

When the center subframe sensors are selected as described in section 16.6.1 on page 66:

- A bar graph with 3.4 volts indicates the subframe/header have their full range of motion available.

Fig. 106 - Sensor Bar Graph - Header full range available

- A bar graph with 1.5 volts indicates the header has been pushed up by the gauge wheels (gauge wheels not shown in illustration).

Fig. 107 - Sensor Bar Graph - Header pushed up

17.7 - Warnings

17.7.1 - Air Pressure Warnings

If the detected air pressure is too low or too high for the selected cutting mode, an animated warning will appear on the Automatix Lite display to warn the header operator. Add(+) or Dump(-) air from the system as indicated in the animation until the warning disappears.

Fig. 109 - Warning! Add air!

Fig. 108 - Warning! Dump air!

17.7.2 - Header Height Sensor Warnings

If the header height sensor is disabled or if the sensor voltage is too low to be detected, the bar graph will turn red to indicate that no sensor is active.

Fig. 110 - Warning! Header height sensor not detected!

IMPORTANT!

Automatic header height control will not function while this warning is visible!

17.8 - Automatix Switches - Important Note

The switches below the automatix display are always active. Even if the display is powered off, the switches are still powered by the combine battery.

18 - Troubleshooting

18.1 - 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 20.8.2 on page 103). Header reel must be running to fully rephrase reel lift cylinders
	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

18.2 - 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 16.7 on page 69)
	Material is jammed in the draper cleanout or rock trap.	Clean out the rock trap and the draper cleanout. (See page 121)
Drapers are slipping	Draper tension too loose.	Adjust draper tension (20.7.1 on page 100)

18.3 - 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 section 20.9.2 on page 108).
	Loose bolts on knife drive paddle	Tighten all fittings on the knife drive paddle.

18.4 - 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.
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.

18.5 - 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 auto 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).
Header is bouncing up and down when using divider sensors in RIGID mode	Dividers float adjusted to be too light when operating in RIGID divider sensing mode.	Adjust the divider 'weight' as described in section 20.10 on page 116.

18.6 - Cross Auger

Symptom	Possible Cause	Solution
Crop wrapping around cross auger	Cross auger too far away from back panel	Move cross auger closer to back panel. See section 14.4.3 on page 55.

18.7 - 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 16.3 on page 60)
	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 13.4 on page 46)
Hydraulic Leak Detected At Multi-Coupler	Leaking O-ring.	See your dealer.
System is not keeping air pressure while header 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 section 20.10 on page 116

19 - 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

20 - Service & Adjustment

⚠ WARNING!

The 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.

20.1 - 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 149) Apply thread lock compound when necessary.

20.2 - Permanent Bushings

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

See section 22.3 on page 144 for bushing locations.

STOP IMPORTANT!

Only the main reel permanent bushing can be lubricated. Do not lubricate the other permanent bushings. These bushings are self-lubricating. Added grease will drastically shorten their lifespan.

20.3 - 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.

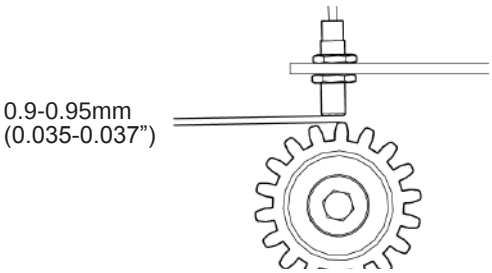


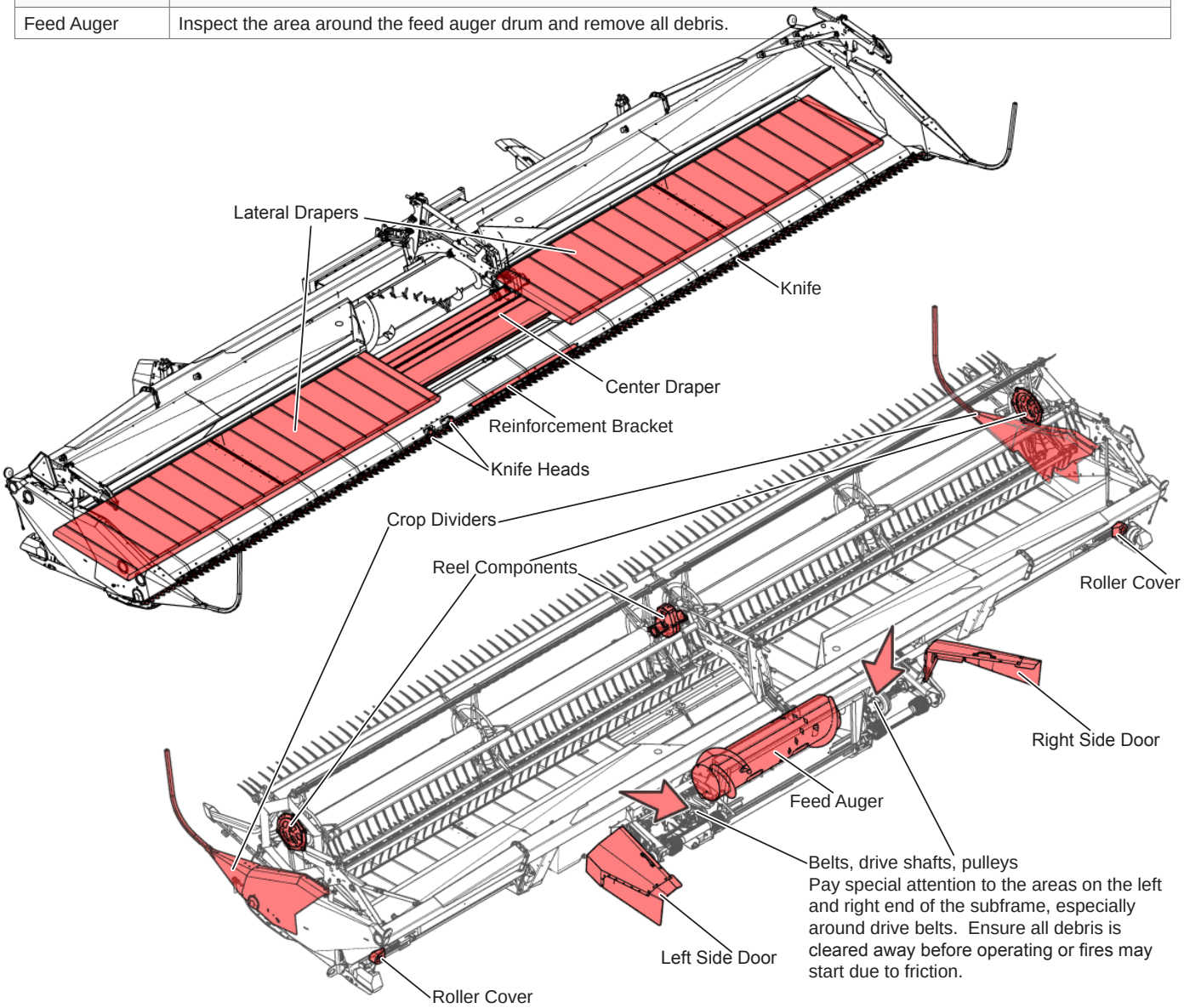
Fig. 111 - Speed Sensor Spacing

See section 22.5 on page 146 for speed sensor locations.

20.4 - Cleaning the Header

For optimal performance, inspect and clean the header every day prior to operation. Accumulation of debris will increase friction, reducing the lifetime of components and can possible cause fires.

Lateral Drapers	Inspect the rollers and the space inside the draper canvas for material buildup and remove as necessary.
Center Draper	Check the rollers and the space inside the draper canvas for material buildup and remove as necessary. Remove all debris from the center rock trap and draper cleanout as shown in section 20.13 on page 121
Crop Dividers	Ensure the area inside the crop dividers is clear of debris to allow the dividers to move freely.
Knife	Inspect the knife for gummy buildup and clean with water or diesel as needed.
Reinforcement Bracket	There is a reinforcement bracket on the center of the cutter bar beneath the transition plates, crop material can accumulate in this location. Check and clear all debris from this area.
Knife Heads	Check the area around and behind the knife heads for material buildup and clean as necessary.
Reel	Ensure all moving parts on the reel are free of wrapped crop material and clean as necessary.
Roller Covers	Check the roller covers on the rear left and right hand ends of the header for material buildup and clean as needed.
Side Doors	Open both side doors and inspect all moving components within. Clean out all debris from the drive shafts, pulleys, drive belts and roller covers.
Feed Auger	Inspect the area around the feed auger drum and remove all debris.



20.5 - 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.

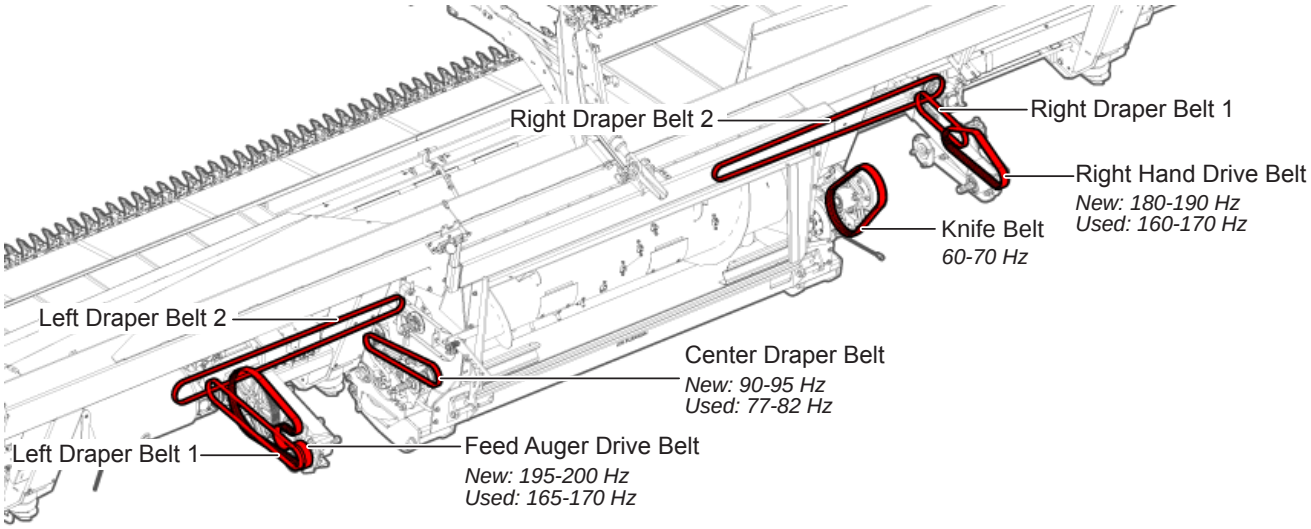


Fig. 112 - Drive Belt Locations

The belts shown above with a Hz measurement must be checked with a device that can measure sound frequency. Fortunately, most cell phones can use guitar tuner apps for this measurement.

The remaining belts are tensioned using a mechanical spring tensioner.

For both belt types, it is important that the tension is measured and adjusted after the header has been running for some time to ensure the belts have reached their operational temperature.

⚠ WARNING!

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

STOP IMPORTANT!

Do not tension 'cold' belts as they may change size when heated during operation, resulting in incorrectly tensioned belts.

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.

20.5.1 - General Belt Tensioning Guide

1. If installing or replacing a belt, first install the belt using the instructions in section 20.6 on page 96.
2. Once installed, set the tension using one of the following:
   - **New Hz value** for new belts (see previous page)
   - **Used Hz value** for belts which have been used for 24+ hours (see previous page).
   - **Mechanical tension indicator**, the indicator should be aligned with the washer as shown below.

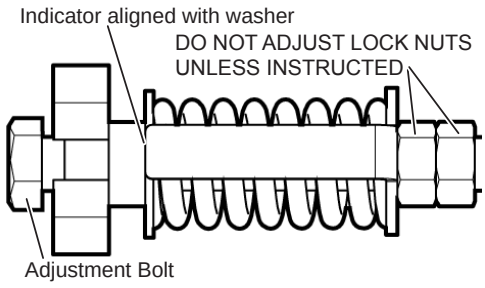


Fig. 113 - Tension Indicator Position

3. Return to the combine cab and run the header for a few revolutions.

⚠ WARNING!

Shut off the combine, engage the parking brake and wait for all moving parts to come to a stop before approaching the header.

4. Check the tension again to ensure it is still accurate, adjust as necessary.
5. IF a new belt was installed, check the tension again after 24 hours of operation to ensure it is within the range of the Used frequency listed on the previous page. Adjust as necessary.
6. Re-check the belt tension at least once a year.

20.5.2 - Using the Tension Indicators

The tension indicators vary slightly between belts, please see the following pages for belt-specific instructions.

1. Loosen the lock nut and/or bolts.
2. Turn the adjustment bolt (or nut in some situations) until the indicator is aligned with the end of the washer.
3. Re-tighten the lock mechanism.

20.5.3 - Tension Verification Using Smartphone App

Some of the belts in the header drive system require a tuner app for verifying belt tension.

Honey Bee recommends the following apps as they have been tested for accuracy. Take note of the app icon and developer name as there multiple apps with similar names.

NOTE:

Using an app to measure belt frequency requires a quiet location in order to take accurate measurements.

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.

20.5.3.1 - Apple Devices (IOS)

App Name: Fine Tuner

Developer Name: 9928189 Canada Inc.

Link: http://www.finetunerapp.com

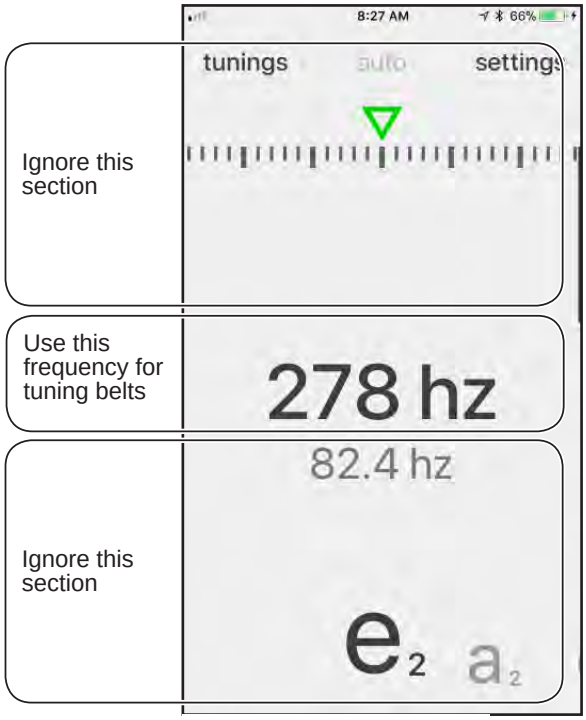


Fig. 114 - iOS - Fine Tuner app

20.5.3.2 - Android Devices

App Name: Simple Tuner

Developer Name: Julian Schakib

Link: https://play.google.com/store/apps/details?id=tuner.simple.jdse03.com.tuner

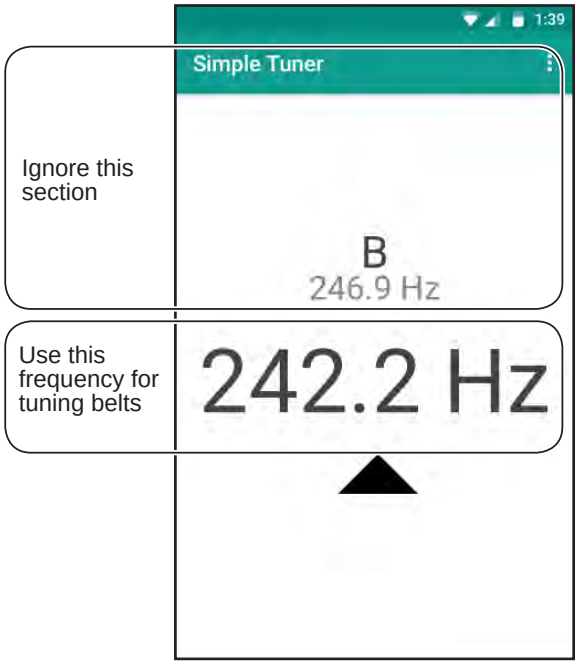


Fig. 115 - Android - Simple Tuner App

20.5.4 - 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.
3. Pluck the belt like a guitar string and measure with a tuner app to verify the belt frequency is correct:
   - New (0-24h): 195-200 Hz
   - Used (24h+): 165-170 Hz

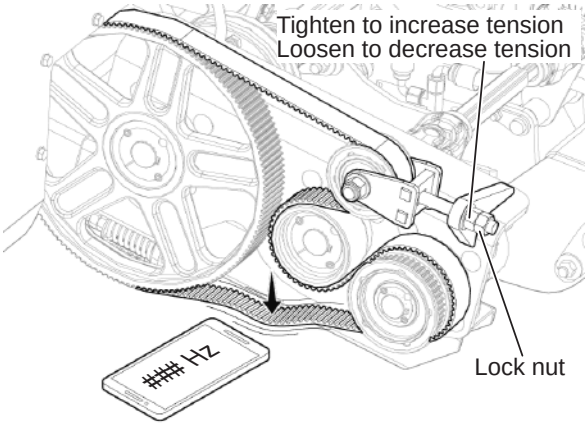


Fig. 116 - Feed Auger Drive Belt Tension Adjustment

20.5.5 - 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.

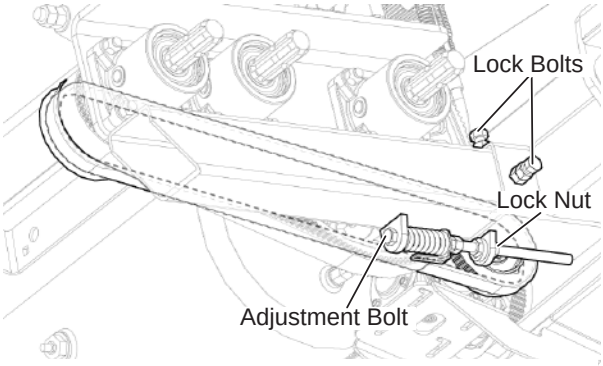


Fig. 117 - Left Draper Drive Belt 1 Tension Adjustment

20.5.6 - 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.

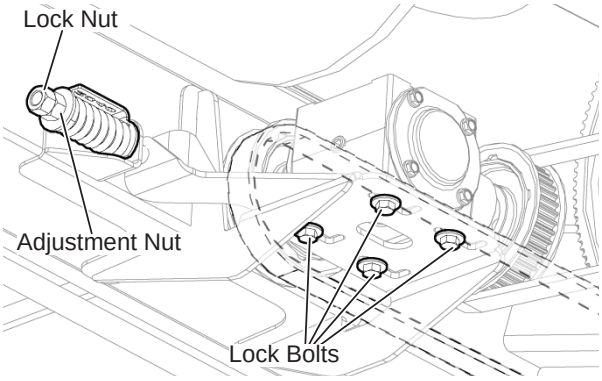


Fig. 118 - Left Draper Drive Belt 2 Tension Adjustment

20.5.7 - 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. Loosen lock nut B and C.
2. Adjust lock nut A just far enough so it does not bind against the sleeve, allowing the bolt to rotate within the sleeve.
3. Tighten the lock nut B against lock nut A. Once these two nuts are locked together, you can use a 3/4” wrench on them to rotate the entire bolt to adjust the tension of the drive belt.
4. Check the tension with a tuner app for the following frequencies:
   - New (0-24h): 90-95 Hz
   - Used (24h+): 77-82 Hz
5. When the correct tension is achieved, lock everything in place by tightening lock nut C.

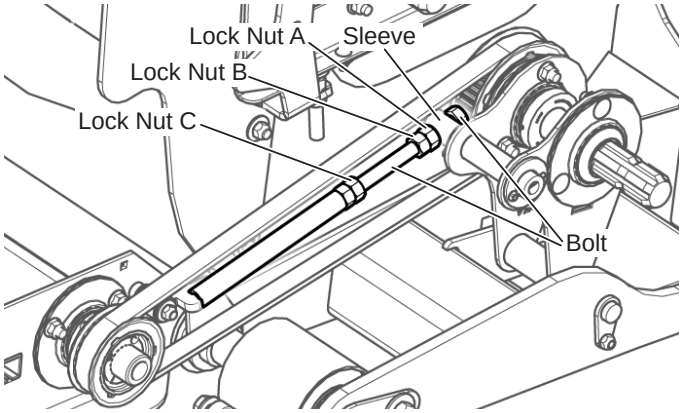


Fig. 119 - Center draper drive belt tension adjustment

IMPORTANT!

Re-check the center draper drive belt tension when the header is lifted off the ground by the combine and when the tilt cylinder is retracted as this may change the geometry of the center draper drive belt system.

20.5.8 - 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 the frequency specified below when plucked. Use a tuner app to verify the frequency.

- New belts (0-24h) are properly tensioned when they vibrate at 180-190 Hz.
- Old/Used belts (24h+) are properly tensioned when they vibrate at 160-170 Hz.

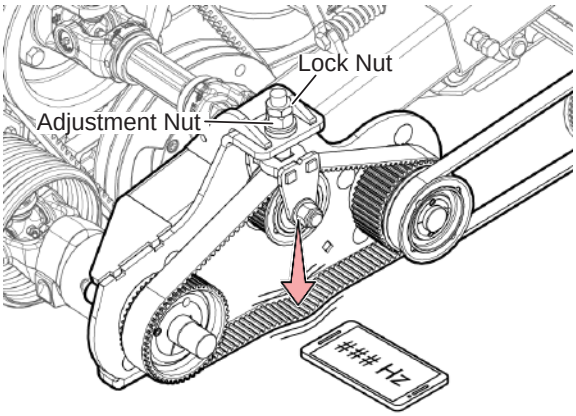


Fig. 120 - Right hand drive belt tension

20.5.9 - 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.

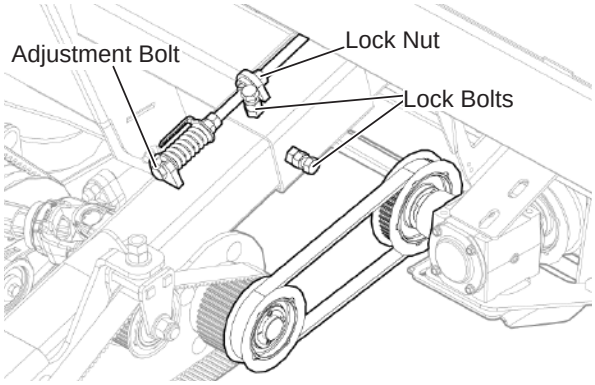


Fig. 121 - Right draper belt 1 tension adjustment

20.5.10 - 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.

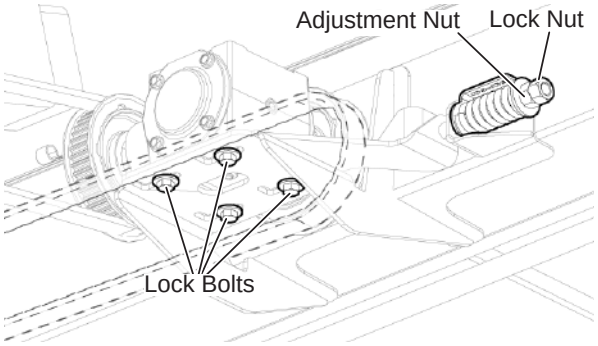


Fig. 122 - Right draper belt 2 tension adjustment

20.5.11 - Knife Drive Belt Tension

1. Slightly loosen the lock bolt and two lock nuts shown below. DO NOT remove them.

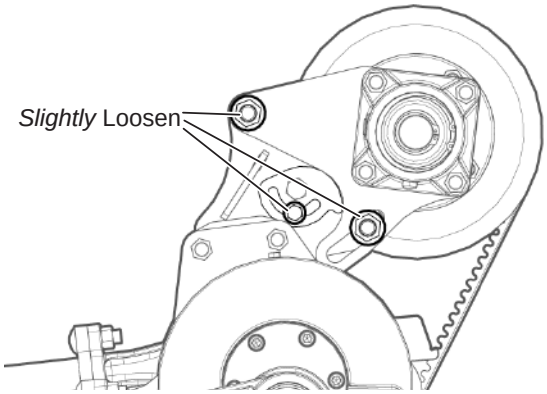


Fig. 123 - Knife Belt Tension - loosen lock nuts and bolt

2. While holding the lock bolt in place with one wrench, place a second wrench on the adjustment bolt and lift up with 180 ft/lb (244 Nm) of force. Ensure the lock bolt is tight.

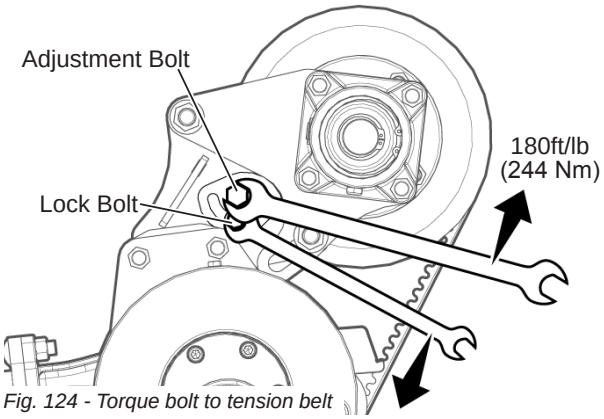


Fig. 124 - Torque bolt to tension belt

3. Re-tighten the two lock nuts.

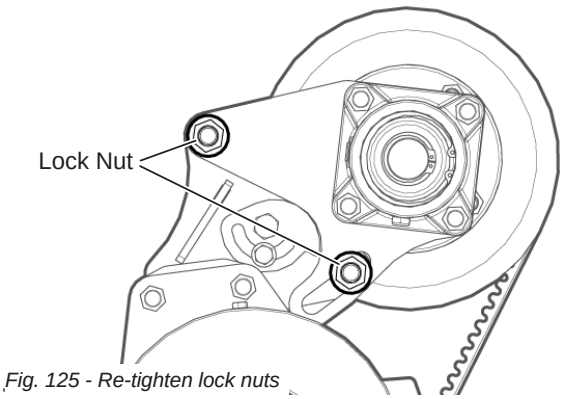


Fig. 125 - Re-tighten lock nuts

4. Correct tension is achieved when the belt vibrates at 60-70 Hz when plucked like a guitar string. Use a tuner smartphone app to verify the frequency. If the correct tension has not been achieved, repeat steps 1 through 4.

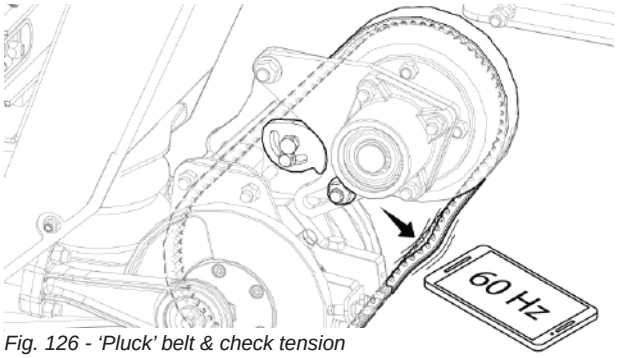


Fig. 126 - 'Pluck' belt & check tension

20.6 - 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.

20.6.1 - 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.

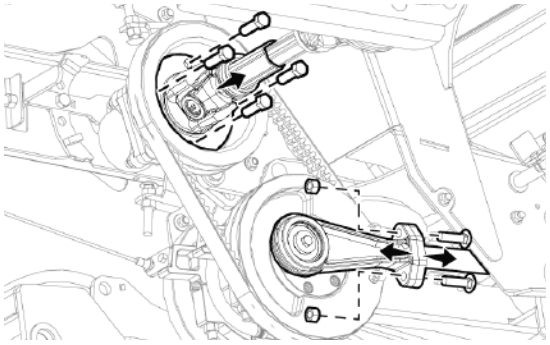


Fig. 127 - Disconnect pitman arm & PTO

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

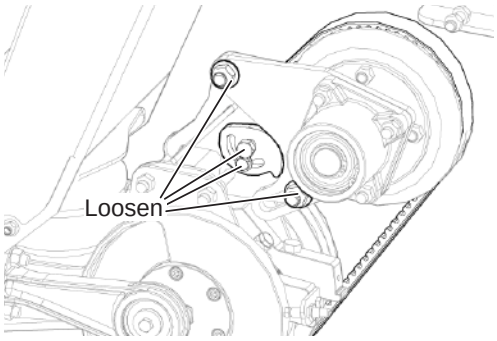


Fig. 128 - Loosen locking mechanisms

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 22.8 on page 149 for torque recommendations.
5. Ensure the new knife belt is properly tensioned by following the directions section 20.5.11 on page 94. All fittings must be properly re-tightened after this procedure is complete.

20.6.2 - Feed Auger Belt Replacement

1. Open the side shield as described in section 20.14 on page 121.
2. Remove the left hand draper belt 1 as described in section 20.6.3 on page 97.
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.

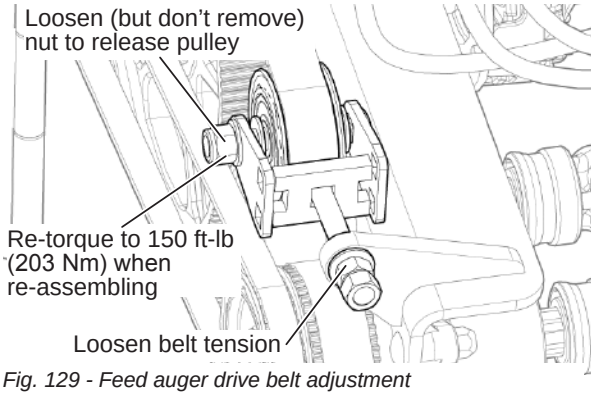


Fig. 129 - Feed auger drive belt adjustment

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.
6. Reinstall the first draper belt.
7. Reinstall the pulley and ensure the tension is properly adjusted for both belts as described in section 20.5 on page 89.

20.6.3 - 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.

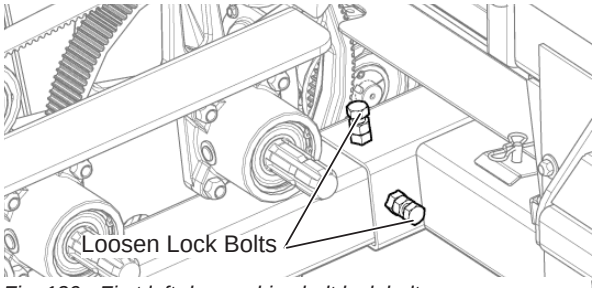


Fig. 130 - First left draper drive belt lock bolts

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

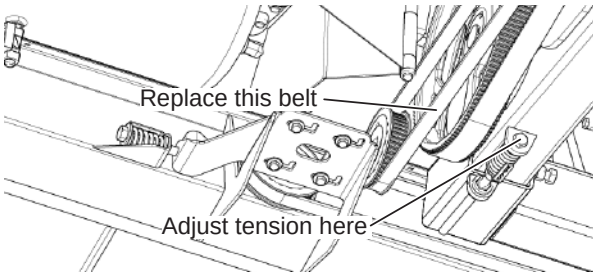


Fig. 131 - Remove the first left draper belt

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 20.5.5 on page 92.
4. Retighten the two lock bolts.

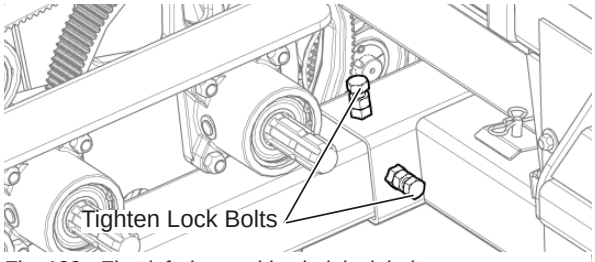


Fig. 132 - First left draper drive belt lock bolts

IMPORTANT!

It is critical that the belt is correctly tensioned and that the two lock bolts shown in Fig. 132 are securely tightened prior to operating the header.

20.6.4 - 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

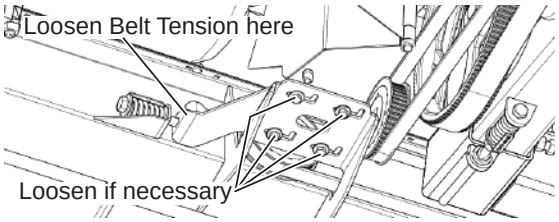


Fig. 133 - Left draper drive belt loosen tension

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

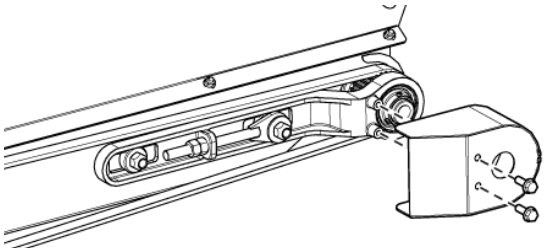


Fig. 134 - Remove left draper drive belt cover

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 20.5.6 on page 92.

20.6.5 - 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 20.6.5.
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.

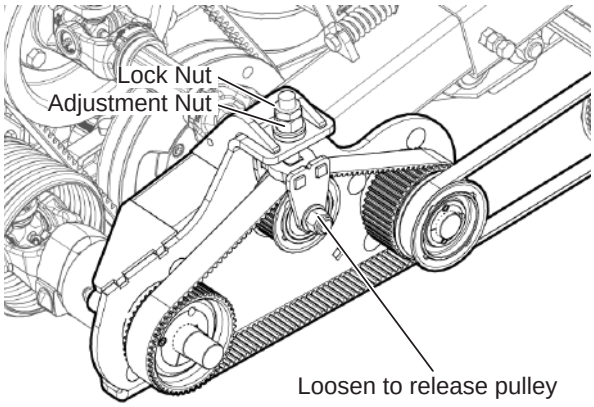


Fig. 135 - Right drive belt replacement

4. Replace and re-secure the drive belt then reinstall the right hand draper belt 1. Re-tension as outlined in section 20.5 on page 89.

20.6.6 - Center Draper Drive Belt Replacement

1. Disconnect the tension adjustment arm from the subframe by removing the indicated nut.

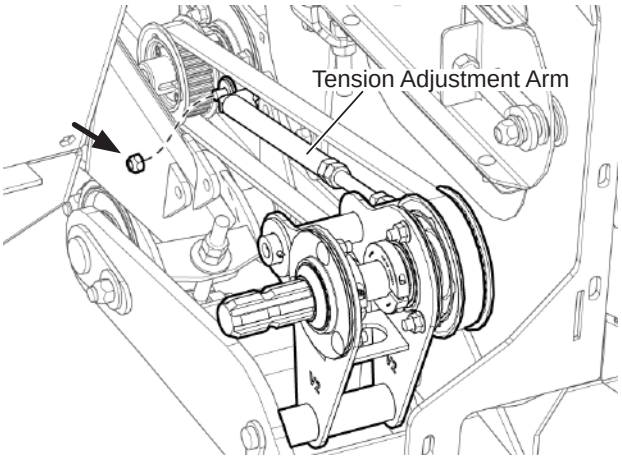


Fig. 136 - Disconnect tension adjustment arm from subframe

2. Slide the belt off the pulleys and around the adjustment arm to remove it. Install the new belt in the same fashion.

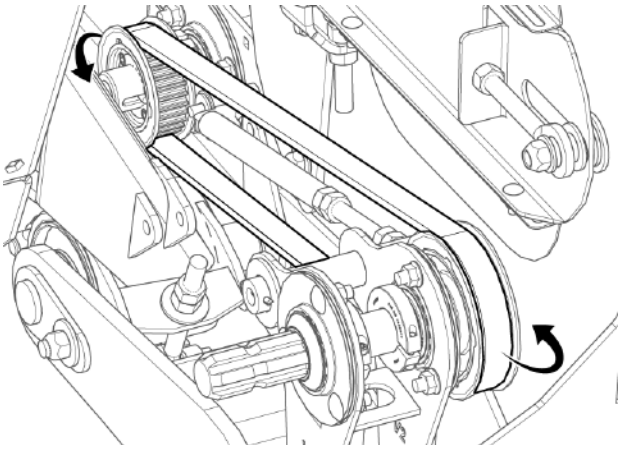


Fig. 137 - Replace the center draper drive belt

3. Re-secure the tension adjustment arm and follow the tensioning instructions in section 20.5 on page 89.

20.6.7 - Right Hand Draper Belt 1 Replacement

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

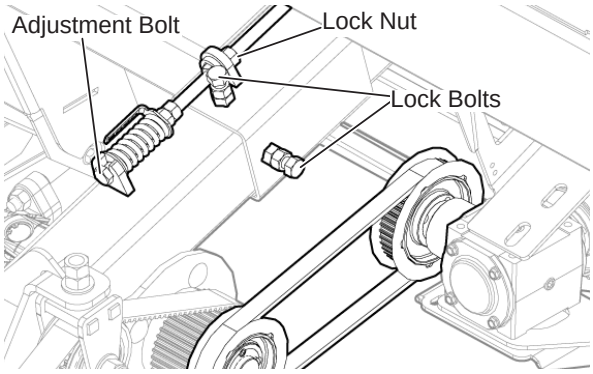


Fig. 138 - Remove RH draper belt 1 to access drive belt

IMPORTANT!

It is critical that the belt is correctly tensioned and that the two lock bolts shown in Fig. 138 are securely tightened prior to operating the header.

2. Install the new right hand draper belt 1 then re-tension both right hand draper belts as described in section 20.5 on page 89.

20.6.8 - 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.

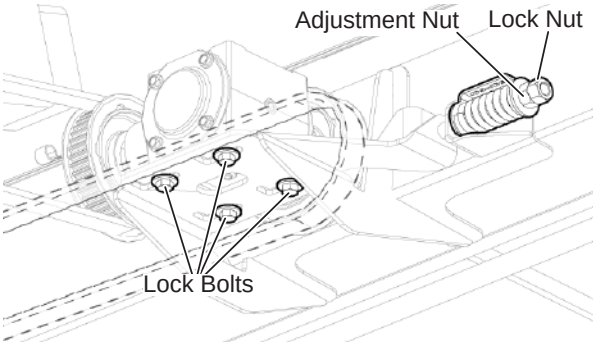


Fig. 139 - Right draper belt 2 tension adjustment

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 20.5 on page 89.

20.7 - Drapers

20.7.1 - 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.

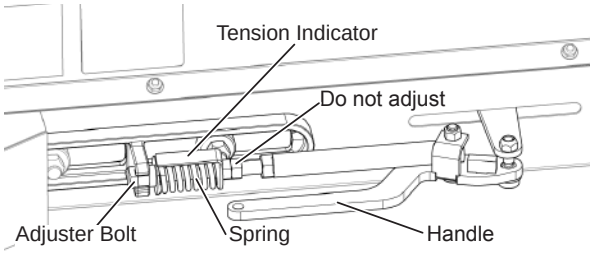


Fig. 140 - Draper Tension Adjustment

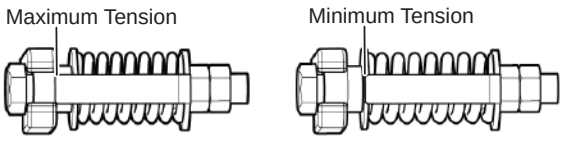


Fig. 141 - Tension Indicator Position

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

20.7.2 - 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.

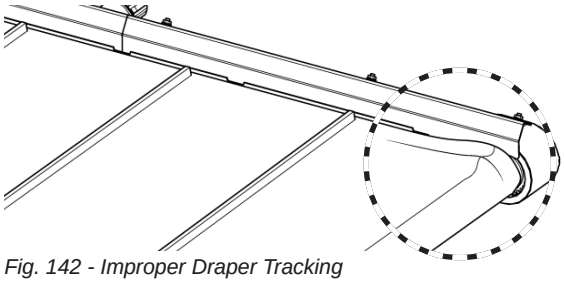


Fig. 142 - Improper Draper Tracking

2. The drive roller must be at exactly 90 degrees to the draper frame.

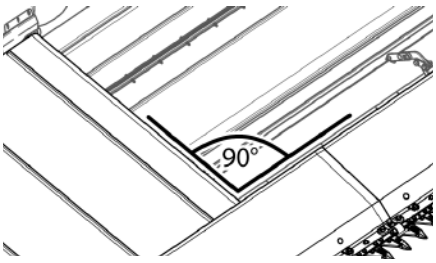


Fig. 143 - Draper tracking/alignment

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.

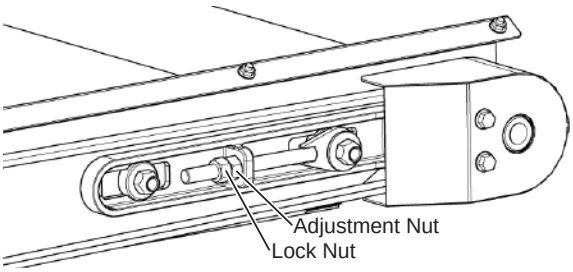


Fig. 144 - Center Draper Tension Adjustment

4. Once satisfied with drive roller alignment, re-tension the draper drive belt as described in section 20.5.

20.7.3 - 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.

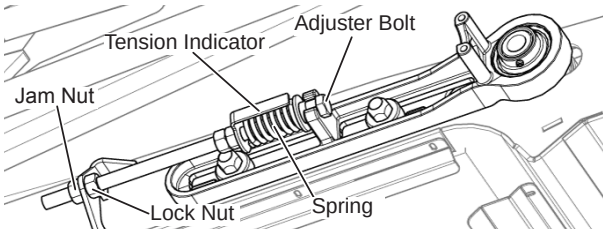


Fig. 145 - Center Draper Tension Adjustment

20.7.4 - 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.

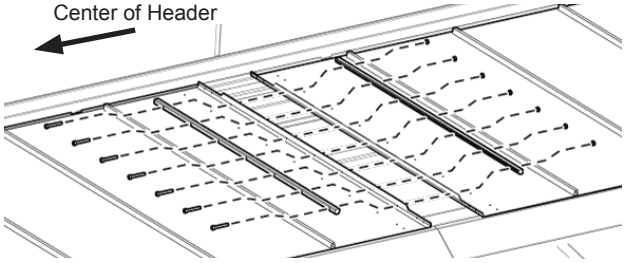


Fig. 146 - Installing Draper Connector Bar

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.

20.7.5 - Draper Tensioner Setup

If the draper tensioner is ever disconnected, or if you suspect the tensioner has become misconfigured, and needs to be set up again, please follow these instructions:

1. Loosen the adjustment and lock nuts next to the spring indicator.

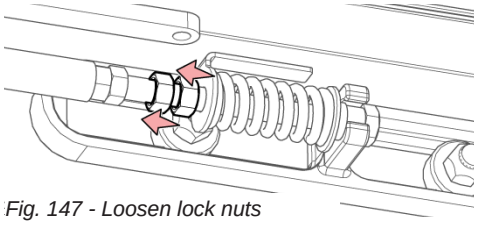


Fig. 147 - Loosen lock nuts

2. Push the indicator, spring, washer and ferrule tube up against the shoulder bracket as shown below. Ensure the ferrule tube is fully seated in the bracket.

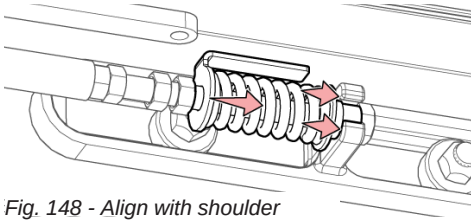


Fig. 148 - Align with shoulder

3. Tighten the first 1/2” nut until it JUST starts to compress the spring. Do not overtighten.

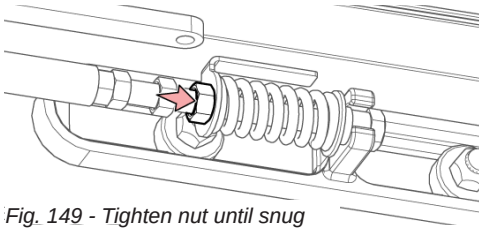


Fig. 149 - Tighten nut until snug

4. Tighten the lock nut up against the adjustment nut.

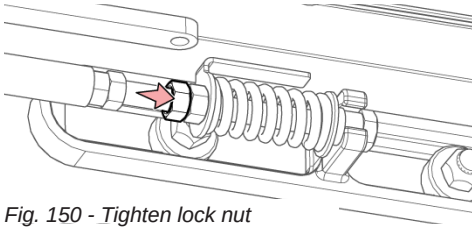


Fig. 150 - Tighten lock nut

5. Proceed to section 20.7.1 on page 100 to re-tension the draper.

20.7.6 - 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.

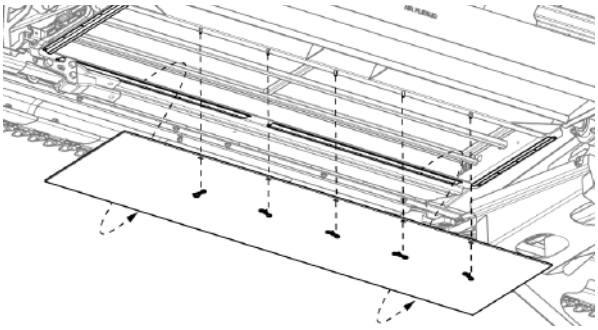


Fig. 151 - Remove Center Draper Cleanout Panel

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

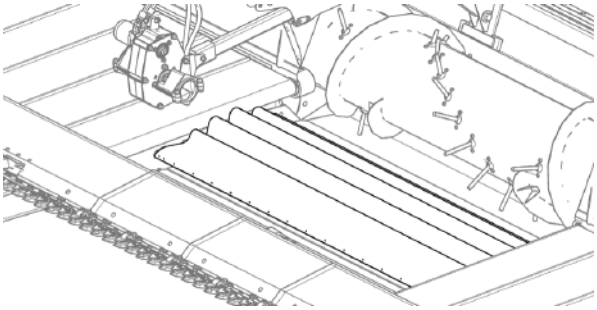


Fig. 152 - Unroll new draper onto center deck

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.

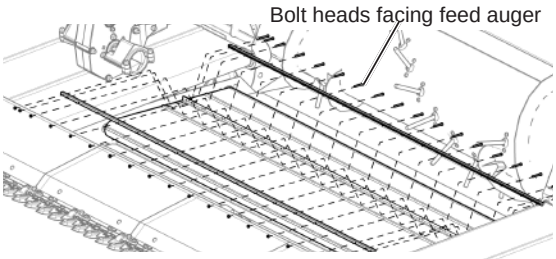


Fig. 153 - Secure Draper With Connector Bars

20.8 - Reel

20.8.1 - 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.

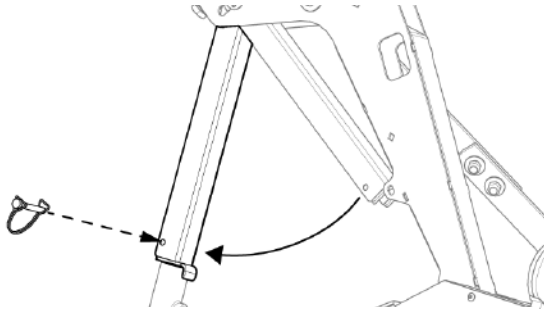


Fig. 154 - Reel Arm Safety Stop

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

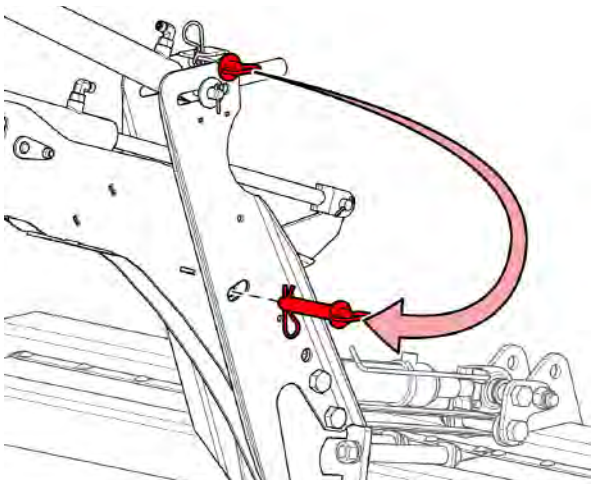


Fig. 155 - Center Reel Arm Lock Pin

20.8.2 - Rephasing Reel Cylinders

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

In order to fully extend RH reel lift cylinder the header reel must be running. Failure to run the reel when you want to fully lift the reel will result in the RH reel lift cylinder only extending partially.

20.8.3 - Automatic Reel Speed

The reel speed sensor is calibrated for various combines. Additional calibrations can be added via software updates. Auto reel speed only works when auto header height is active.

NOTE:

Automatic control will not work if ground speed is less than 1 km/h (0.62 mph). When driving the header slowly through a lodged crop, 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.

20.8.4 - Reel Speed Sensor Adjustment

The reel speed sensor (and all other speed sensors) must be adjusted so the face of the sensor is touching the rotating trigger, **then unscrew 1.5 turns (1 turn = 1mm)**. The rotating trigger is the teeth on the small reel drive gear. This is adjustable externally with no disassembly required. When adjusting the speed sensors, unplug the connecting wire so the body of the sensor can spin in or out without twisting the wire. When done, tighten the jam nut with a ¾" wrench and reconnect the wire.

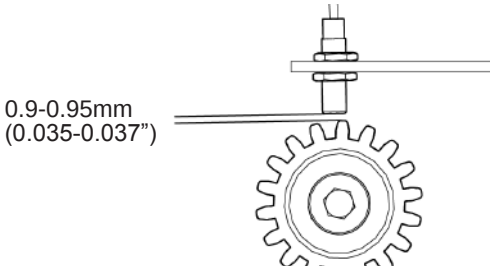


Fig. 156 - Speed Sensor Spacing

20.8.5 - 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 (adjustment ring at position 5). See section 16.3 on page 60 for details on adjusting finger pitch.

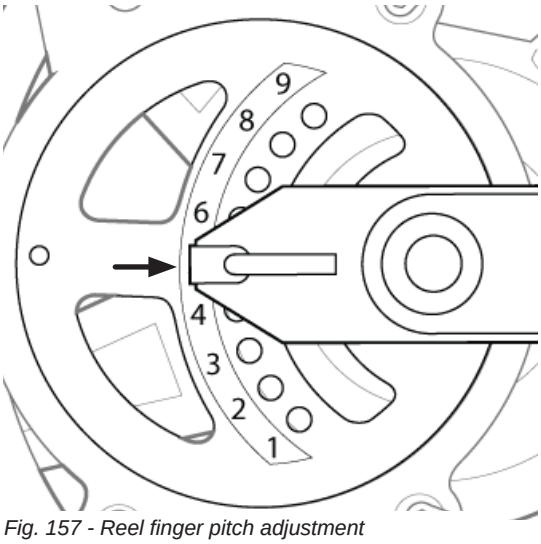


Fig. 157 - Reel finger pitch adjustment

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.

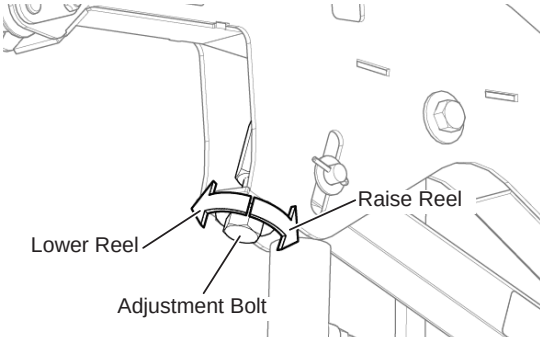


Fig. 158 - Reel Height Adjustment Bolt

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.

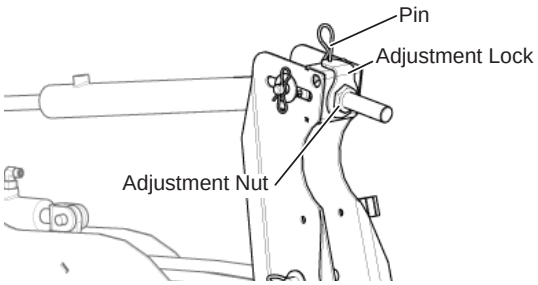


Fig. 159 - Center Reel Arm Height Adjustment

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.

20.8.6 - Reel Finger Replacement

WARNING!

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

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

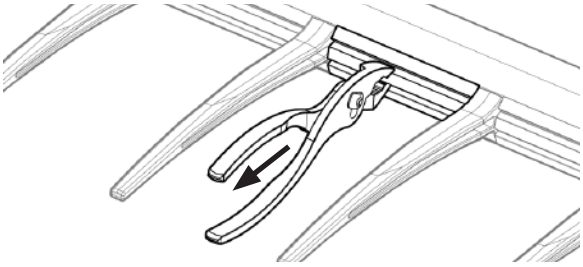


Fig. 160 - Remove reel finger spacer

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

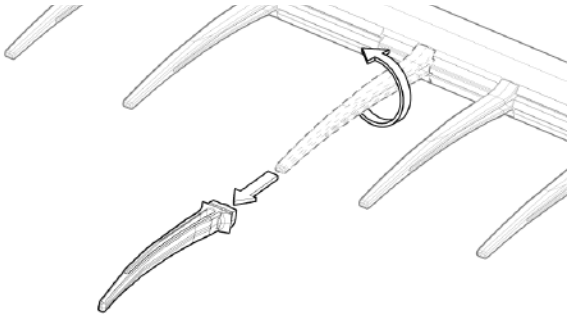


Fig. 161 - Twist clock-wise and pull to remove finger

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.

NOTE:

The spacers are not required to secure the reel fingers to the reel bat and may be left out if custom finger spacing is desired.

20.8.7 - Control Ring Rollers

Before the beginning of each season, the reel rollers should be checked and adjusted if necessary to ensure the reel remains centered.

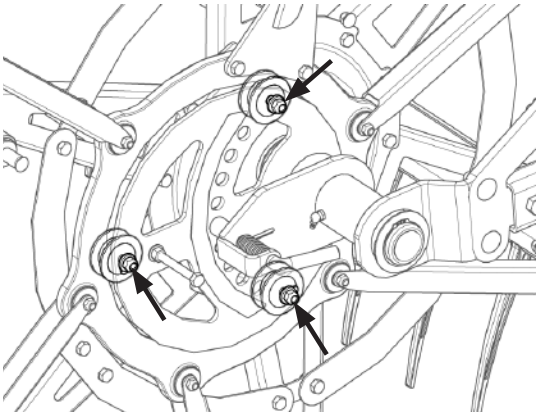


Fig. 162 - Reel control ring rollers

WARNING!

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

1. Rotate the reel until the rollers are at the tightest location. This will assure that the rollers will not bind as the reel turns.
2. Adjust the rollers by loosening up the mounting bolt on each roller (indicated by arrows in illustration)
3. Move all the rollers so they have light pressure on the inner diameter of the control ring.
4. Adjust all three rollers so they are in the same location in each of their slots.
5. Tighten the mounting bolts.
6. Roll the reel to make sure that there continues to be light pressure on the rollers.
7. Repeat for the other end of the reel.

NOTE:

If one roller must be adjusted then all the rollers must be adjusted to the same position in the slots.

20.8.8 - Combine PPR Settings for HB Reels

Different combine makes expect different reel speed sensor pulse per rotation (PPR) values. The Honey Bee reel speed sensor outputs 48 PPR. In order to obtain accurate reel speed values on the combine console, you must ensure your combine expects the correct PPR value.

20.8.8.1 - John Deere Combines

1. With the key switch turned on, select the main menu icon on the combine's display.

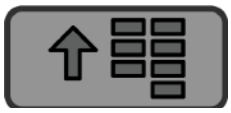


Fig. 167 - Menu Icon

2. Select the Message Center icon.

Fig. 168 - Message Center

3. Enable Technician Mode:
   - Select the Addresses Icon

Fig. 169 - Addresses

   - Hold down the check mark button on the combine's control panel for 30 seconds then release it.

Fig. 163 - Check Mark Button

   - A 'T' should appear next to the device drop down box indicating that Technician Mode has been activated.

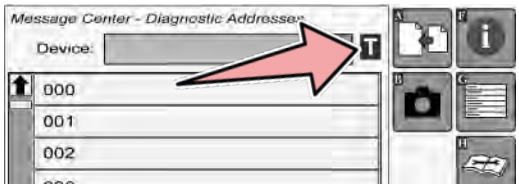


Fig. 164 - T Symbol

4. Select the drop down box, scroll down and select LC1.001.

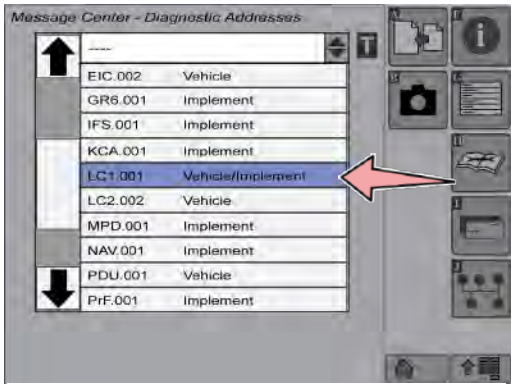


Fig. 165 - Select LC1.001 from dropdown box

5. Scroll down and select address 160.

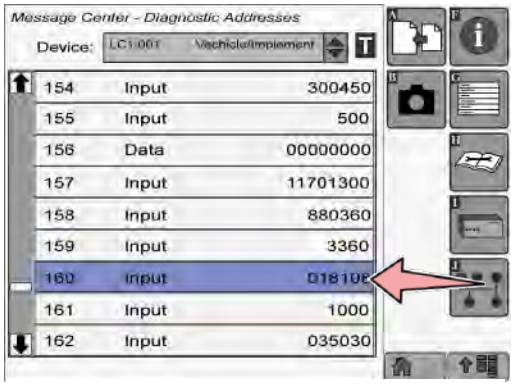


Fig. 166 - Select 160

6. The default value for address should no be displayed on the screen (**018**108 or 11**018**108). The **018** portion of this number represents the default PPR for your combine. Select the Accept icon.

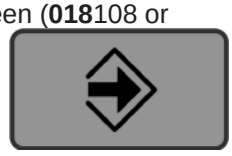


Fig. 170 - Accept Icon

7. Replace the **018** section of the number with **048** to accurately reflect the Honey Bee Reel PPR. The number should now be **048**108 or 11**048**108. Press the Accept icon again to accept your changes.

Fig. 171 - Update with 48 ppr

20.8.8.2 - AGCO (Gleaner, Massey, Challenger)

Enter the value of 48 in the Reel PPR field on the combine setup screen.

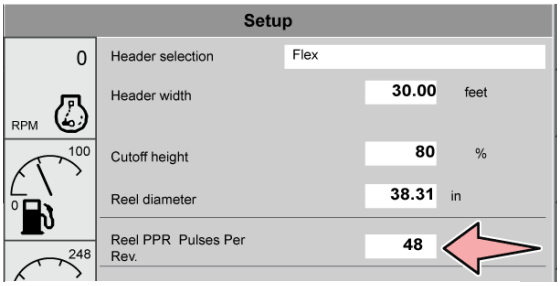


Fig. 172 - Enter 48 for PPR on Setup Screen

20.8.8.3 - CNH & LEXION

No modifications are required

20.9 - Knife

20.9.1 - Knife Drive Component Torque Recommendations

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

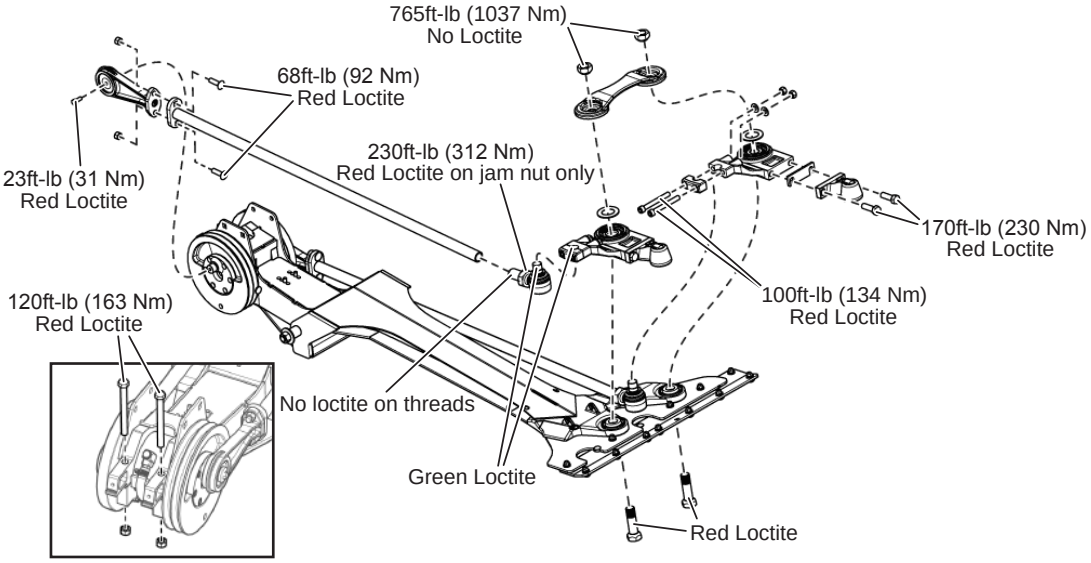


Fig. 176 - Knife Drive Torque Recommendations (see 22.8 on page 149 for details)

20.9.2 - 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 1/2” (1.27 cm) bolt or rod through the alignment hole of the two flywheels to keep them aligned with each other.

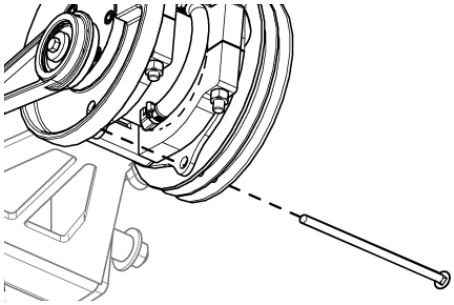


Fig. 173 - Align Drive Plates with a Bolt

IMPORTANT!

It is important to use a ½ inch bolt/rod to lock the timing without any slop. Too much ‘wiggle’ will result in a bad timing adjustment.

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.

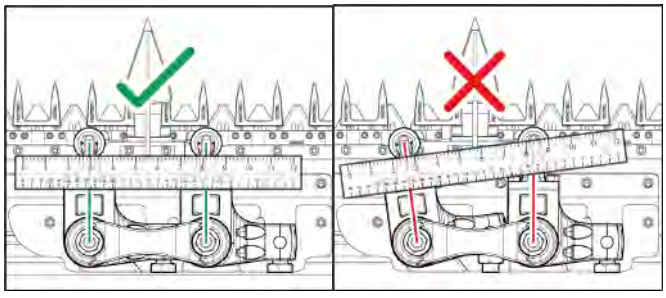


Fig. 175 - Correct Timing - bell cranks are parallel

Fig. 174 - Incorrect Timing - bell cranks are not parallel

6. Loosen the drive arm jam nuts

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

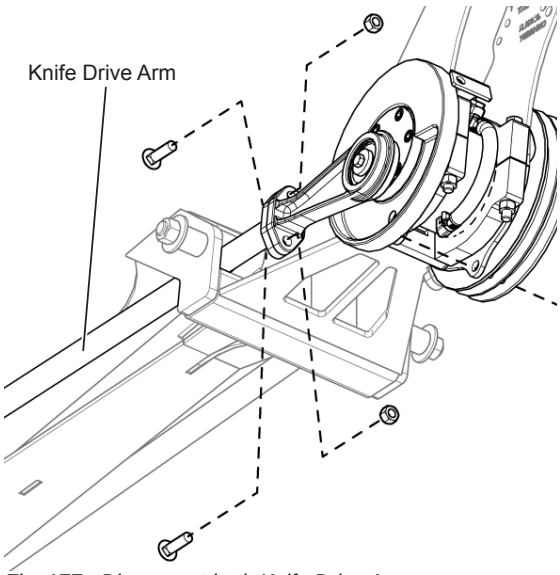


Fig. 177 - Disconnect both Knife Drive Arms

8. Adjust the knife drive arm length until the bell cranks and cutting sections are aligned. Screw/unscrew until tight.
9. Once aligned, tighten the right-hand arm 3 additional turns.

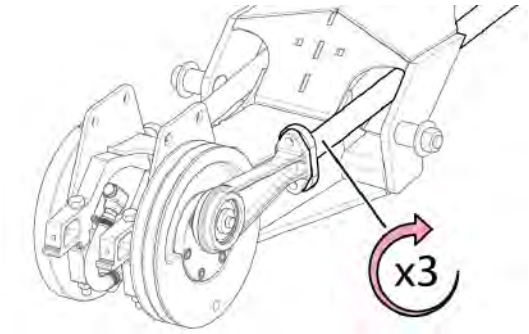


Fig. 178 - Tighten right hand knife drive arm 3 turns

10. Re-attach the knife drive arms to the flywheels..
11. Re-torque everything.
12. Remove the bolt/rod that was inserted in the alignment hole on the flywheels.
13. Reinstall the safety shields & ensure the knife belt is properly tensioned.
14. Run the header for a few minutes and observe the point between the left and right knife heads. Ensure the two knives do not contact each other during operation. If necessary, repeat steps 1 through 13.

IMPORTANT!

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

DANGER!

Keep yourself and bystanders away from moving parts! Failure to do so will result in injury or death.

20.9.3 - Set knifehead bearing assembly fore/aft position

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 1/2” (1.27 cm) bolt or rod through the alignment hole of the two flywheels to keep them aligned with each other.
4. Remove the feather plate from above the two knife heads on the cutter bar.
5. Install the bearing housing onto the knife.
6. Put Red (High Strength) Thread Locking Compound on gooseneck mounting bolts and loosely connect gooseneck to bell crank.
7. Start installing shims between the gooseneck and bell crank and watch for clearance between the knife assembly (knifeback on top) and guards. Install enough shims so that the clearance between the knife assembly (knifeback on top) and the center guards is roughly 1-32” to 1/16” (see image below).

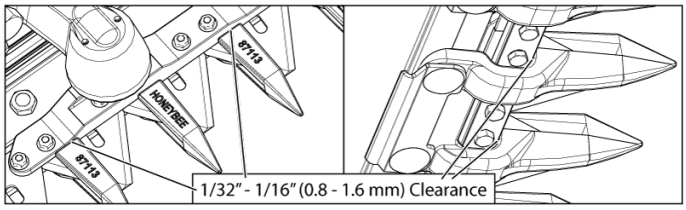


Fig. 179 - Knife Guard Clearnaces

8. Once fore/aft position of knife head bearing assembly is set, tighten mounting bolts to 170 ft-lbs.
9. To prevent binding between the left and right knife at the overlap and/or excessive wear caused by the sickle sections pressure onto the guards, check clearances between the sickle sections and the guards and also between the left hand and right hand knives at the overlap. If excessive pressure is found please readjust vertical position of knifehead bearing assemblies. Also over greasing of the knifehead bearings can cause excessive pressure as well. To relieve grease pressure in the knifehead bearings depress the check-ball in the grease fittings.

20.9.4 - 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.

20.9.5 - 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 knife sections and guards. Binding can be caused by bent/misaligned guards components or organic build-up from high resin crops such as lentils..
- 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.

20.9.6 - 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.

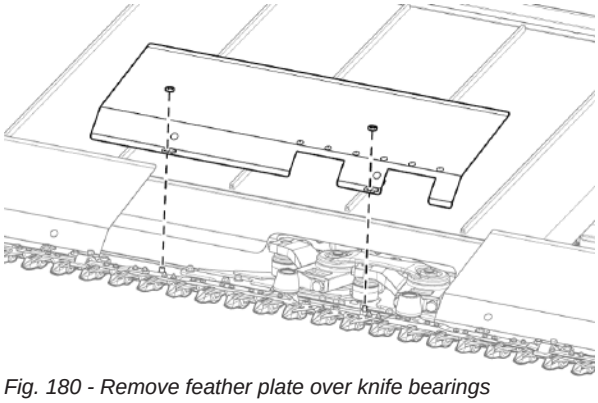


Fig. 180 - Remove feather plate over knife bearings

2. Remove the grease zerk from the bearing housing that you will be removing in the following sections (right or left)

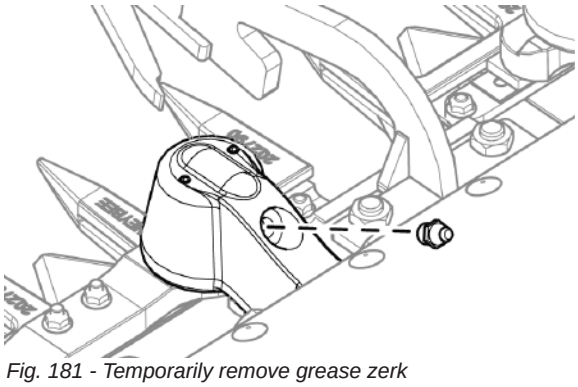


Fig. 181 - Temporarily remove grease zerk

20.9.6.1 - Removing the Right Hand Knife

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

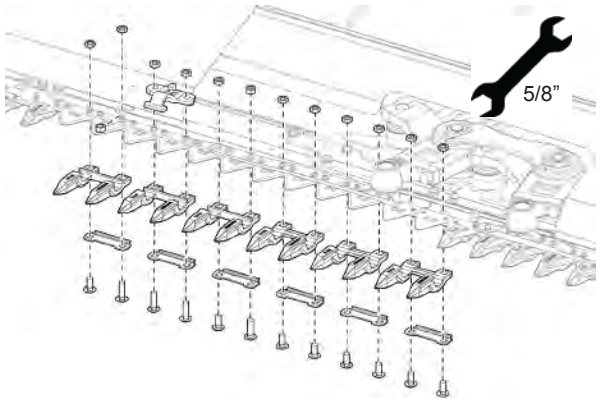


Fig. 182 - Remove guards around right hand knife head

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

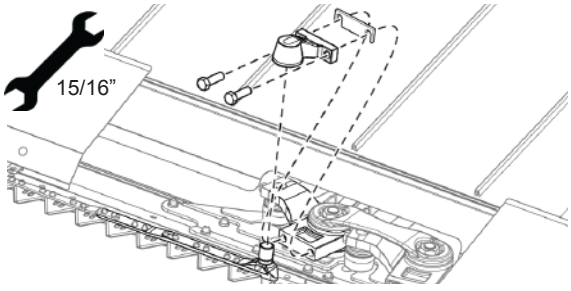


Fig. 183 - Remove bearing housing from right hand knife head

STOP 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.

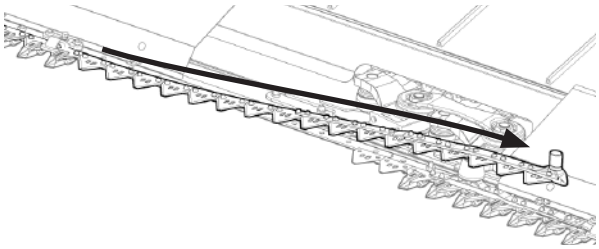


Fig. 184 - Lift and pull out the right-hand knife

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.

20.9.6.2 - Removing the Left-Hand Knife

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

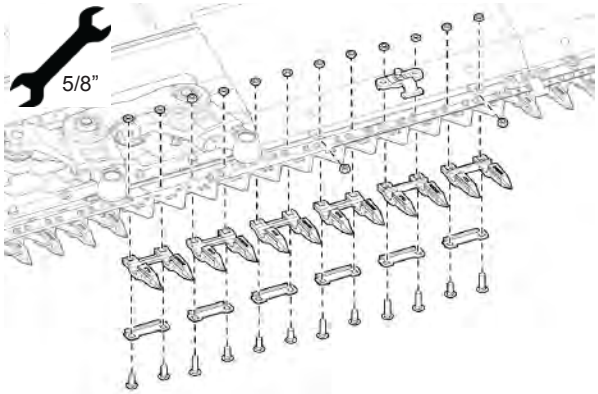


Fig. 185 - Remove guards around the left hand knife head

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

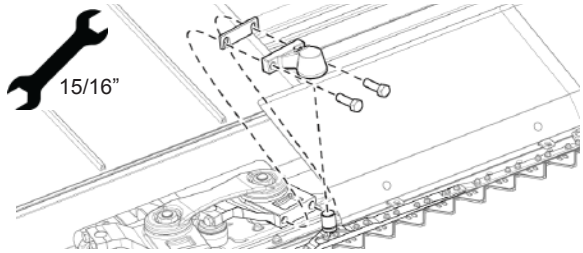


Fig. 186 - Remove left hand knife head bearing

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.

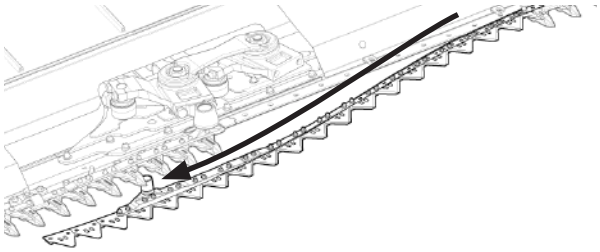


Fig. 187 - Lower and pull out the left hand knife

20.9.6.3 - 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.

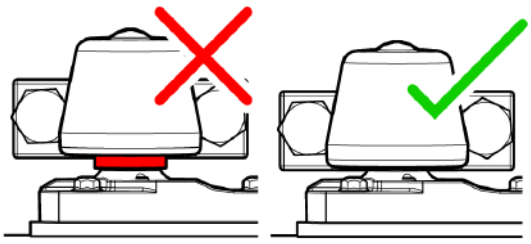


Fig. 188 - Ensure bearing is properly seated

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 20.20.8 on page 128.

20.9.7 - 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.

20.9.8 - 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.

20.9.9 - Connector Bar

The connector bar is used to repair a broken knife back. The break should be cut out and ground smooth. A cutting section should bridge the break and the connector bar should be installed on the top of the knife back as shown below.

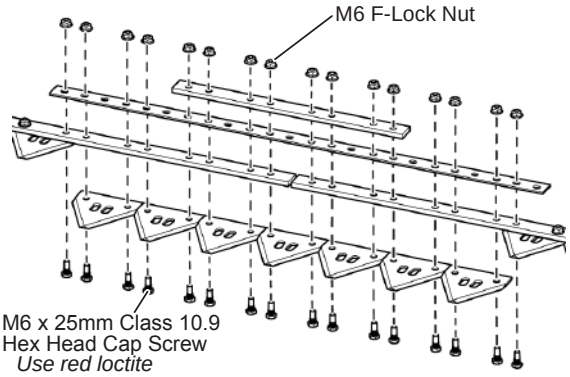


Fig. 189 - Connector Bar

Knife sections must be installed on the bottom side of the knife back.

NOTE:

If a knife repair kit is required, please reference part number 95132 when contacting our parts department.

20.9.10 - Knife Hold-Down Adjustments

1. Stroke the knife so the sickle sections are centered on the hold-downs.

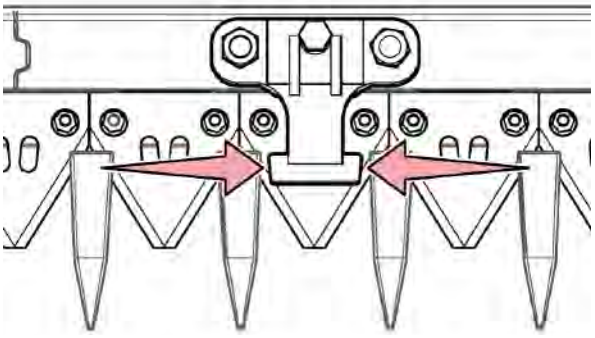


Fig. 190 - Align sickle section with hold-down

2. Push on the sickle section down against the guard and insert a 0.02” (0.5mm) feeler gauge between the hold-down and sickle section.

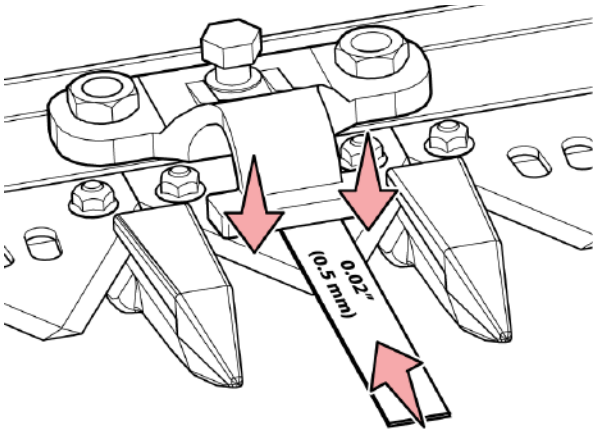


Fig. 191 - Push down section and insert gauge

3. If there is a large gap or the feeler gauge is easily inserted or if the gauge cannot fit, then the hold-down needs to be adjusted. When properly adjusted, the shim should be able to be inserted with light resistance while pushing the sickle section down against the guard.

4. Adjust the hold-down by turning the hold-down adjustment bolt.
   - Turn the bolt clockwise to lower the hold-down
   - Turn the bolt counterclockwise to raise the hold-down.

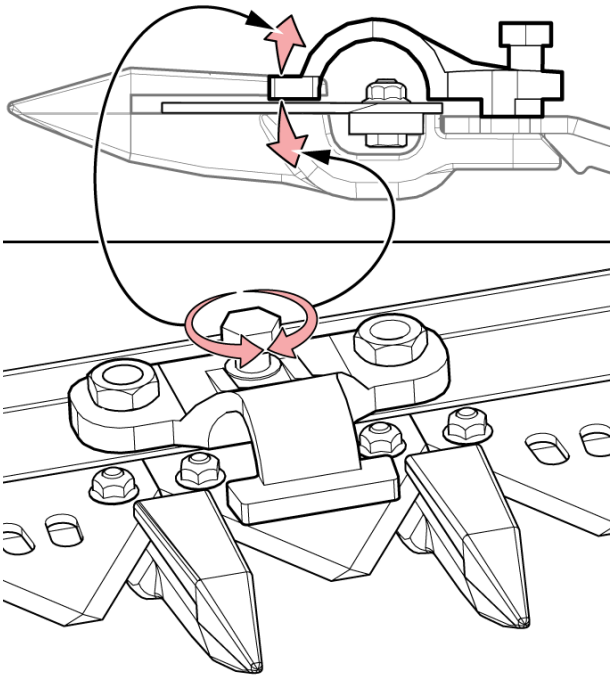


Fig. 192 - Hold-down adjustment

5. Repeat this process for all the hold-downs on the cutter bar.

NOTE:

If large adjustment is necessary, you may need to loosen the two mounting nuts which secure the hold-down to the cutter bar. If these nuts are loosened, they must be re-tightened to 49 ft-lbs (66.4 Nm).

20.9.11 - Knife Overlap Repair Kit

If the overlap section breaks on the left-hand knife, the overlap repair kit can be used to repair and reinforce the overlap section.

⚠ 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.

1. Remove the five center overlap guards shown below.

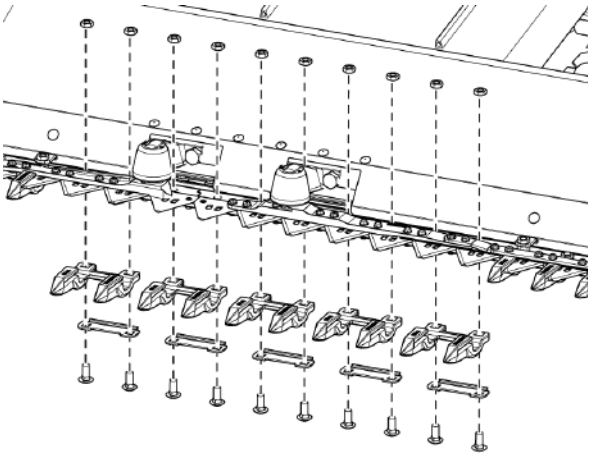


Fig. 193 - Remove 5 center overlap guards

2. Remove the original damaged overlap bar as shown below.

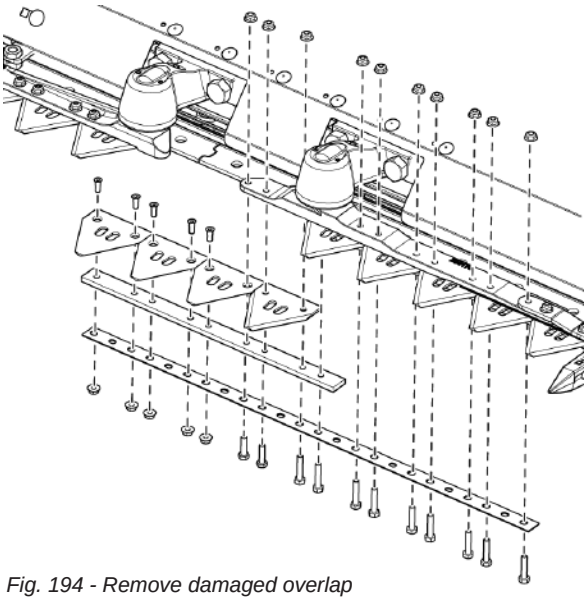


Fig. 194 - Remove damaged overlap

3. Install the new overlap bar by reversing the above procedure.

STOP IMPORTANT!

Check the clearance between the nuts on the overlap section and the guards. If the nuts do not fit in the lower channel of the guard, they may need to be ground down to allow adequate clearance.

20.10 - Dividers

20.10.1 - Locking Dividers

The crop dividers are locked in place from the factory using the following components on each crop divider:

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

The divider can be locked into two positions indicated by the arrows below.

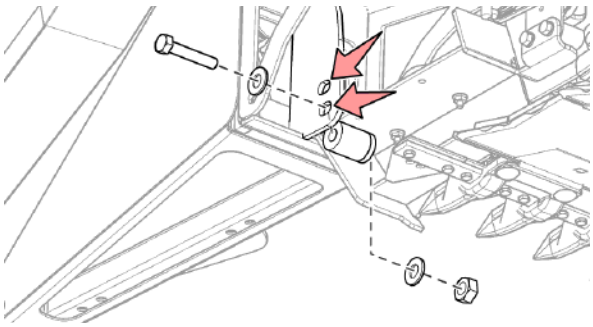


Fig. 195 - Lock dividers using bolt

20.10.2 - Divider Handle

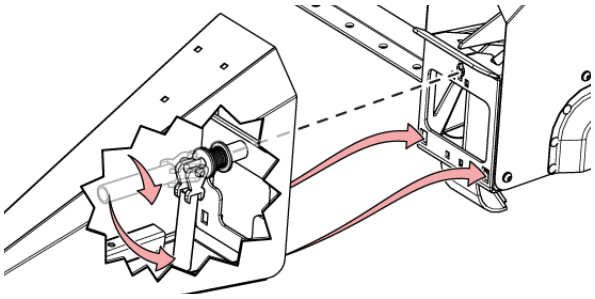


Fig. 196 - Optional crop divider handle

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. 197 - Add washer to tighten loose handle

20.10.3 - Crop Divider Pipe Extension

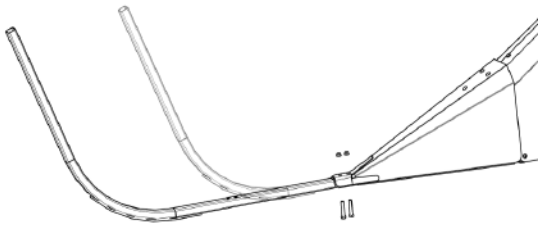


Fig. 198 - Crop Divider Pipe Extension

To adjust the crop divider pipe extension: Remove the two bolts securing the extension, slide it to one of two possible positions and re-secure with the two bolts.

20.10.4 - Crop Divider Extension

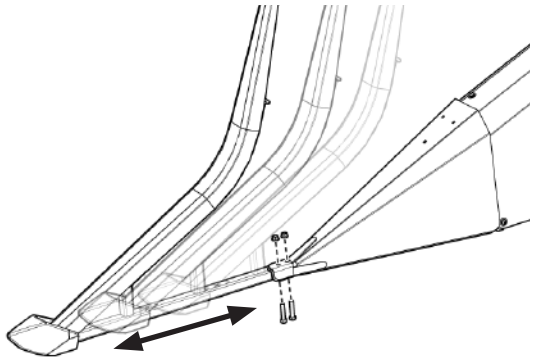


Fig. 199 - Crop Divider Extension - 3 Possible Positions

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

20.10.5 - Crop Divider Snub Extension

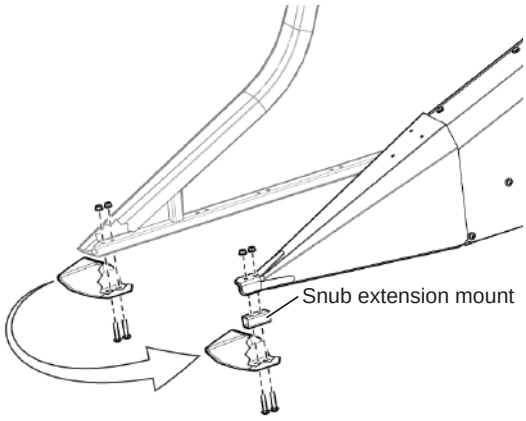


Fig. 200 - Crop Divider Snub Extension

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.

20.10.6 - Divider Spring Float Setting

If desired, the crop dividers can be unlocked to allow them to move up and down following the terrain.

⚠ CAUTION!

Floating dividers are generally detrimental to header performance and increase the risk of header damage in the event that the divider drops into a hole.

The crop divider float spring settings should be adjusted so the divider acts just heavy enough to follow the ground without riding up on top of the crop material.

If the divider bounces up and down, the spring float is set too light.

The recommend ‘weight’ of the divider will vary by crop conditions and will need to be adjusted for your application.

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

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

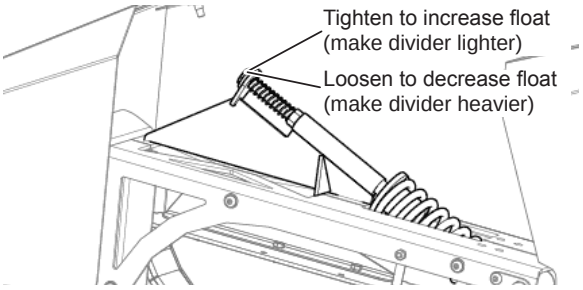


Fig. 201 - Divider Spring Float Adjustment

20.11 - Feed Auger

20.11.1 - 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 up to move the fingers down and toward the rear of the header.
3. Re-install the lock bolt.

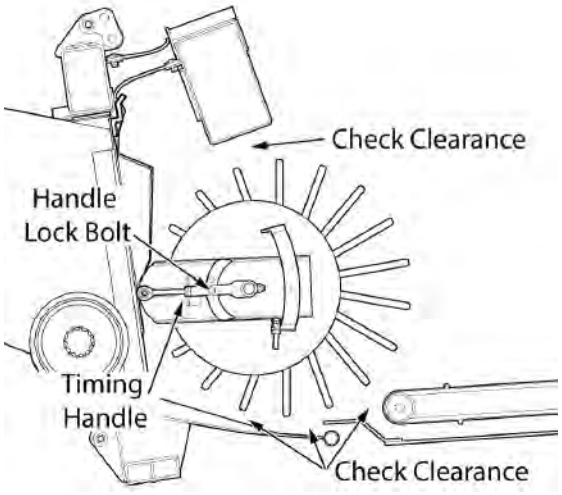


Fig. 202 - Feed Auger

IMPORTANT!

After adjusting finger timing, ensure that the auger fingers will not contact the underside of the upper tube or feed pan unintentionally during operation. Failure to allow proper finger clearance will result in equipment damage.

20.11.2 - 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.

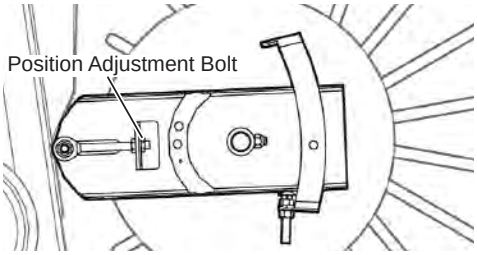


Fig. 203 - Feed Auger Drum Position

20.11.3 - 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.

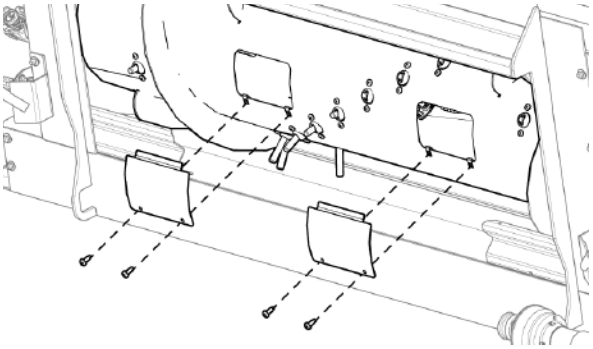


Fig. 204 - Feed Auger Drum Interior Access

20.11.4 - 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.

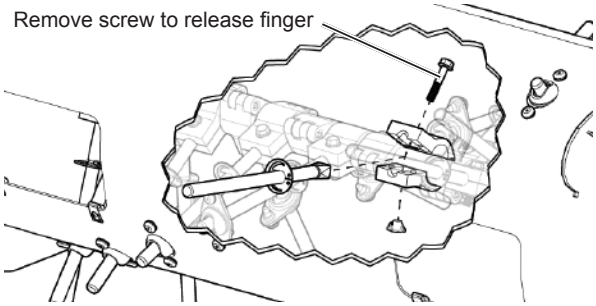


Fig. 205 - Replace Feed Auger Fingers

NOTE:

In some cases, rocks can push fingers into the drum. This can often be fixed by opening the access panel and prying the finger back into the finger guide.

20.11.5 - 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 20.11.4 on page 119.

Reinstall the finger along with the new guide.

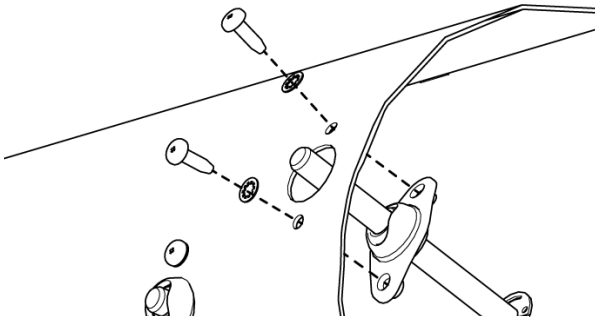


Fig. 206 - Replace Feed Auger Finger Guide

20.12 - Hydraulic Tilt Cylinder

There are three 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.

The optimal tilt cylinder position is achieved when the cutterbar guards are slightly tilted back when the tilt cylinder is retracted. This allows safe operation in steep terrain while allowing you to tilt the header forward as needed for operation on flat terrain.

Position #1 Factory Installed Position. Used on all combines that have an adjustable feeder house fore/aft tilt.

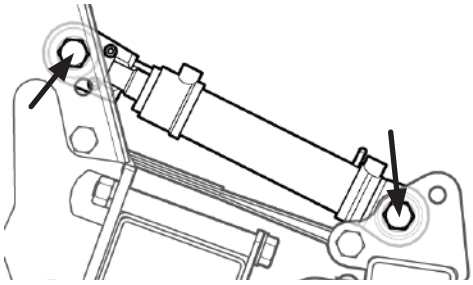


Fig. 207 - Hydraulic Tilt Cylinder - Position 1

Position #2: Can be used if you want to tilt guards forward or keep them level with the ground.

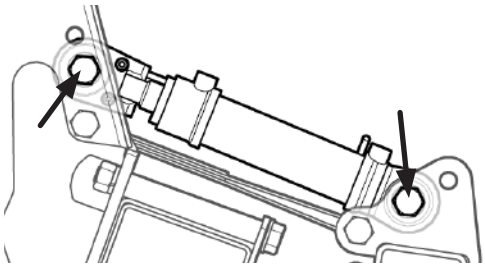


Fig. 208 - Hydraulic Tilt Cylinder - Position 2

Position #3 Can be used on combines that have a steep feederhouse and guard angle is too steep (i.e. Gleaner, Lexion Standard Feederhouse, Massey Ferguson, Challenger combines)

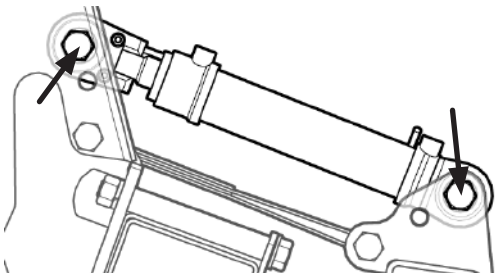


Fig. 209 - Hydraulic Tilt Cylinder - Position 3

Some header models will have the short hydraulic tilt cylinder as shown below. This can be put in two positions. Position 1 is used for most equipment and keeps the cutter bar tilted slightly back when the cylinder is retracted. Only use position 2 if a steeper angle is required for the cutter bar.

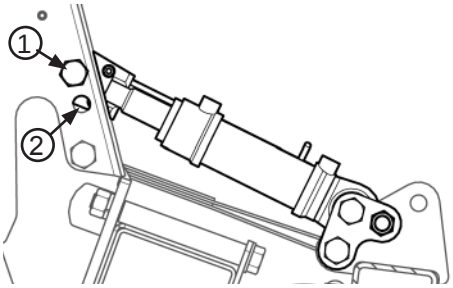


Fig. 210 - Short Hydraulic Tilt Cylinder

⚠ WARNING!

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

Before attempting to adjust the tilt cylinder ensure the header is lowered to the ground and pressure is relieved from the tilt cylinder or the header may suddenly drop resulting in injury/death.

If tilt cylinder position has been changed please check for auger drum clearance with lateral deck and auger drum driveshaft clearance with frame before operating the header.

20.12.1 - 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.

20.13 - 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.

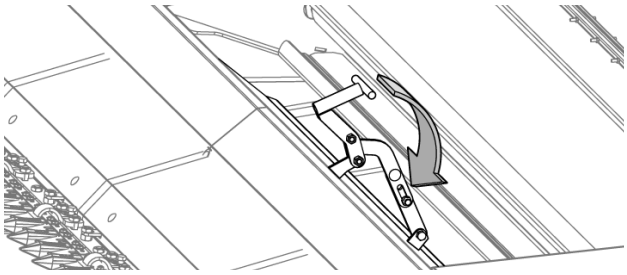


Fig. 211 - Open Rock Trap at Center Draper

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 grooves 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.

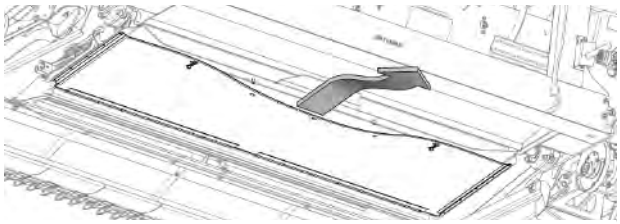


Fig. 212 - Open Center Cleanout to Remove Debris

NOTE:

The draper cleanout panel can be removed for harvesting most crops without negatively impacting header operation. Seed growers may want to leave it in place for slow speed harvesting.

20.14 - 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.

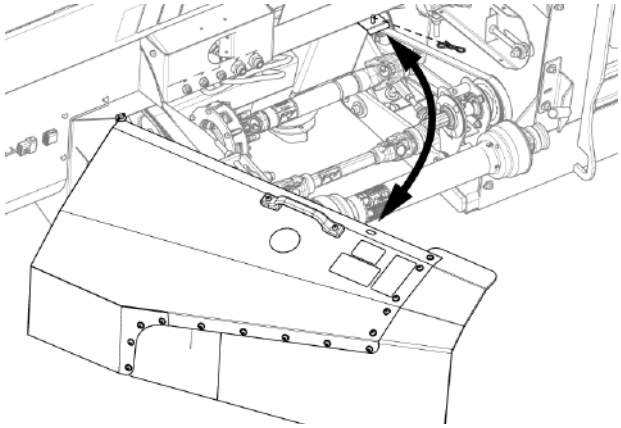


Fig. 213 - Open Side Shield

20.15 - Drive Shaft Lubrication

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

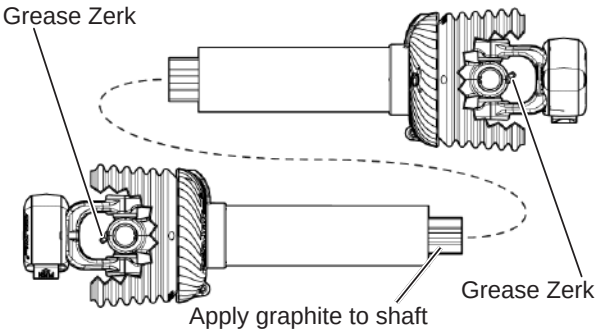


Fig. 214 - Drive shaft grease points

See section 20.20.8 on page 128 for more details.

20.16 - FLEX Header Height Control Sensors

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

IMPORTANT!

Ensure the header is in RIGID mode and the air system is pressurised to 90-115 psi when adjusting the sensor tabs.

WARNING!

Fully raise the header from the ground, shut OFF the combine engine, set parking brake, and remove key before exiting the cab. Engage the feeder house cylinder safety locks to prevent the header from suddenly dropping.

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

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.

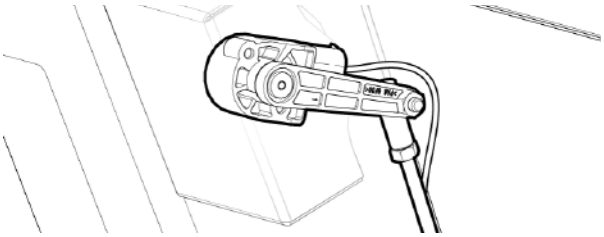


Fig. 215 - HHC Sensor Alignment

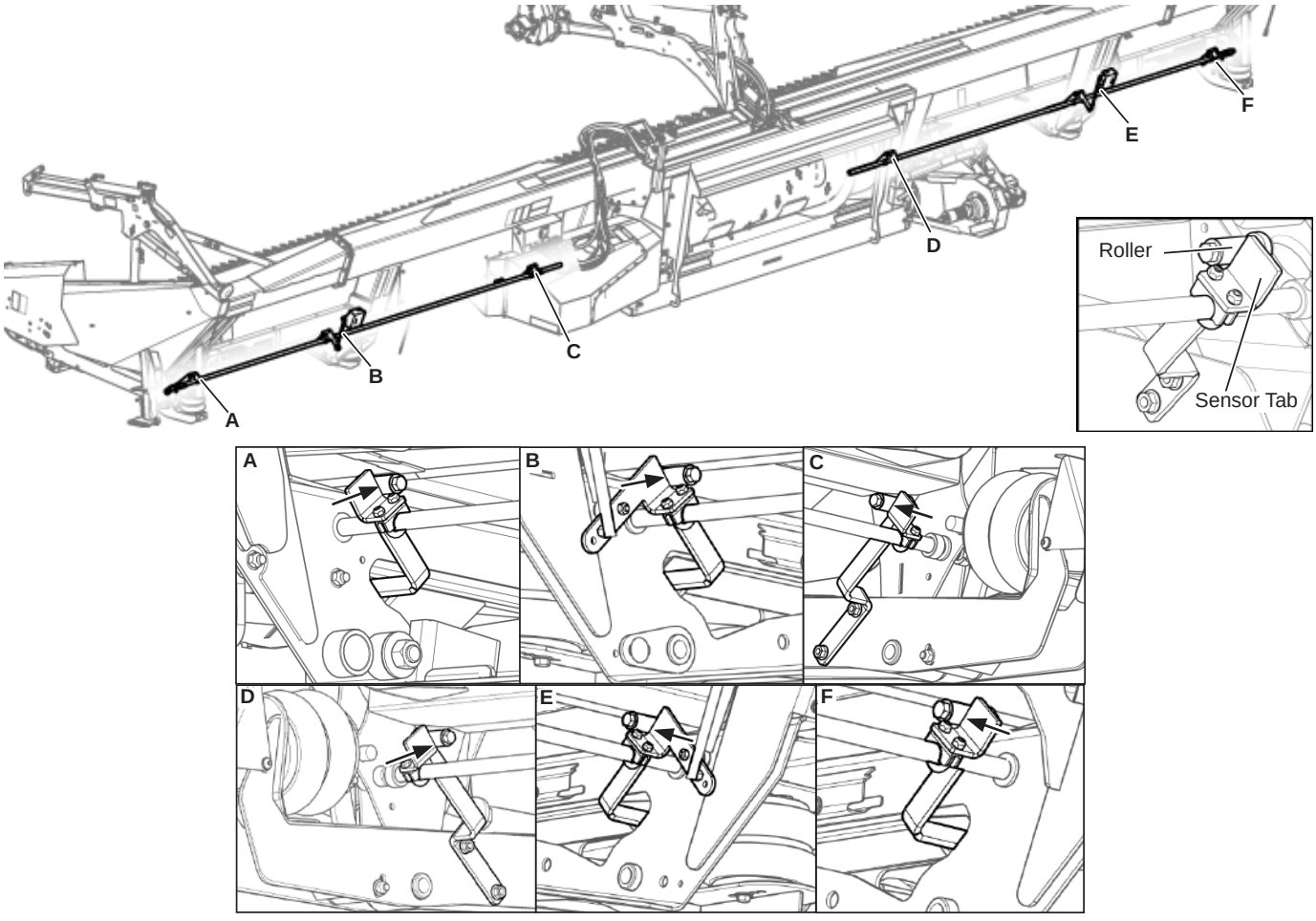


Fig. 216 - FLEX HHC sensor contact positions

20.16.1 - FLEX Header Height Sensor Tab Adjustment

1. Lift the header off the ground and pressurize the air system to above 100 psi.
2. Ensure all sensor tabs are in full contact with the rollers on the paddles (see A, B, C, D, E, F on previous page).
3. It is important that the header height system responds first to input from the end paddles, therefore the end paddle sensor tabs (A and F on previous page) must be adjusted so they are pushing hard on their respective rollers.
4. The remaining sensor tabs (B, C, D, E on previous page) should be adjusted so they barely contact their rollers (the roller should be able to be spun by hand). If necessary, these tabs can be adjusted so there is a gap of up to 1/16" (1.5 mm) between them and their rollers. Readjust as needed.

20.16.2 - FLEX HHC Sensor Range

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.

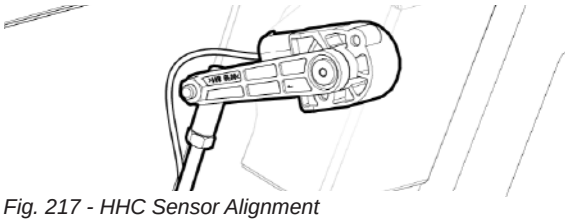


Fig. 217 - HHC Sensor Alignment

The sensor arm must not extend beyond its valid range of approximately 120° at the end of the sensor to which the wire connects. If the sensor arm extends beyond this range it will return invalid values which will prevent auto header height control from functioning.

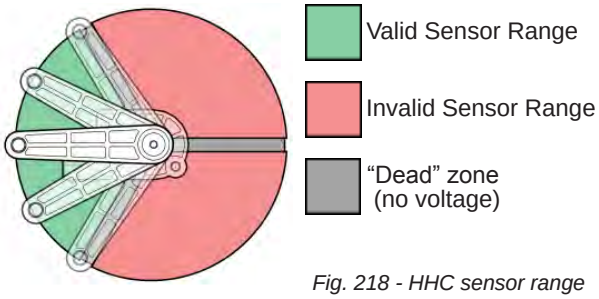


Fig. 218 - HHC sensor range

If the header height sensors do not show 1.5V when the cutter bar is fully compressed (as shown in section 17.5 on page 76), then the sensors need to be adjusted.

1. Ensure the cutter bar is fully compressed.
2. Locate the header height sensors (as shown in Fig. 254 on page 145).
3. While having someone watch the header height sensor voltage on the Automatix Lite display, loosen the two bolts holding the sensor in place and rotate the sensor on its bracket until 1.5V is shown on the display.
4. Tighten the two bolts to secure the sensor in the new position.
5. Repeat this process for the other sensor.

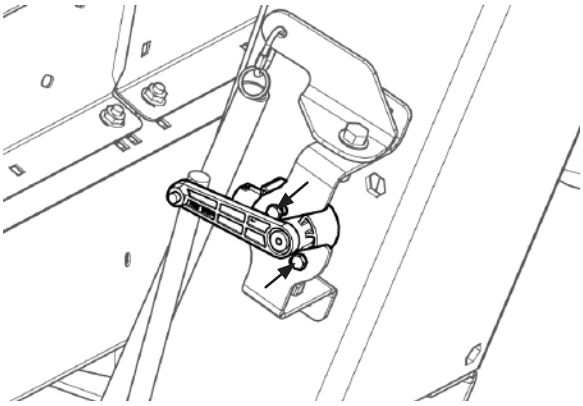


Fig. 219 - HHC Sensor Adjustment

IMPORTANT!

Changing the sensor position on its bracket requires the combine to be calibrated again

6. Set the feeder house angle following the instructions in section 13.4 on page 46
7. Verify the float settings in section 13.5 on page 47.
8. Position the combine and header as shown in section 13.6 on page 47.
9. Set the raise and drop rates as shown in section 13.7 on page 47.
10. Calibrate the combine as shown in section 13.8 on page 48
11. Verify the other combine settings in section 13.13 on page 49

20.17 - RIGID Divider Header Height Sensors

The header height sensors located within the left and right crop dividers and should return a voltage ranging between 1.5 and 3.5 volts through their full range of motion. This should be checked with the dividers unlocked.

If necessary, the sensors can be adjusted to provide the correct voltage range.

⚠ WARNING!

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

1. Locate the sensors within the dividers (see below).

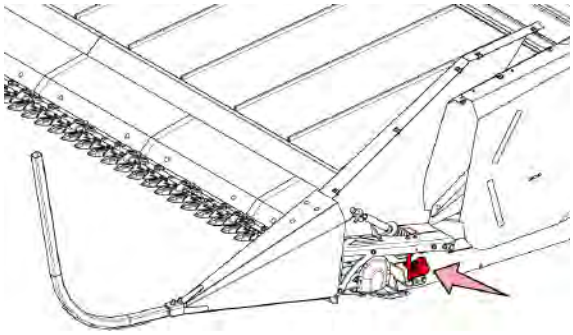


Fig. 220 - Divider sensor location

2. Loosen the two bolts securing the sensor and slightly rotate the sensor body to adjust the output voltage. Re secure and check the sensor output via the Automatix Lite display.

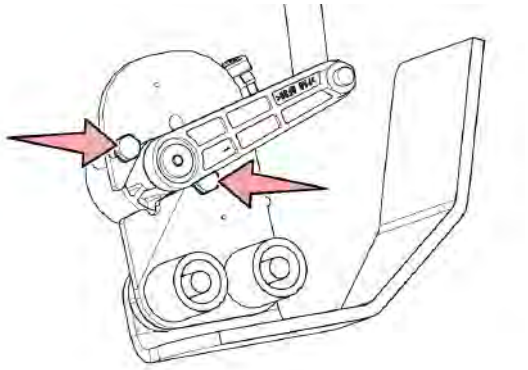


Fig. 221 - Divider sensor adjustment

20.18 - RIGID Subframe Header Height Sensors

For the subframe sensors it is best to adjust with header attached to the combine and less than 90 psi in air system (this ensures the header is sitting hard on the subframe and the air bags are not inflated). The subframe sensors should return a voltage ranging between 1.5 and 3.4 volts through their full range of motion.

If necessary, the sensors can be adjusted to provide the correct voltage range.

⚠ WARNING!

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

1. Locate the subframe sensors on the left and right ends of the subframe.

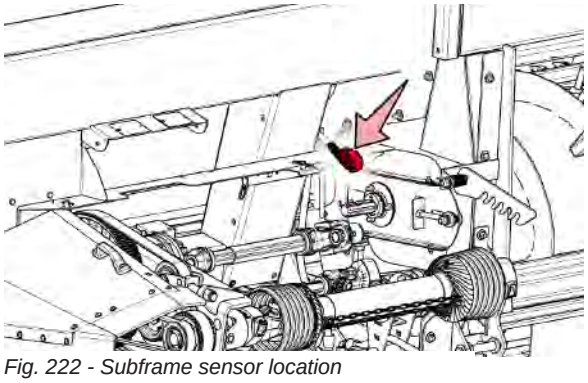


Fig. 222 - Subframe sensor location

2. Loosen the two bolts securing the sensor and slightly rotate the sensor body to adjust the output voltage. Re secure and check the sensor output via the Automatix Lite display.

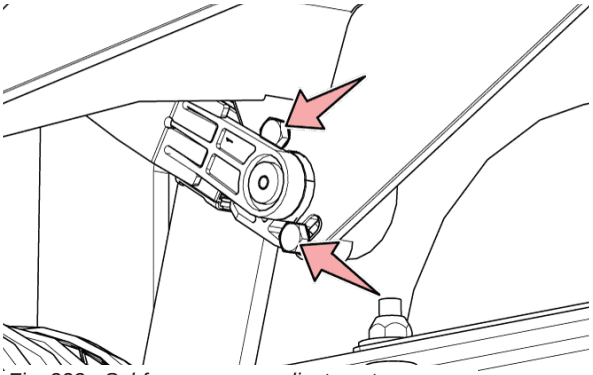


Fig. 223 - Subframe sensor adjustment

20.19 - Checking for Air Leaks

If the 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.

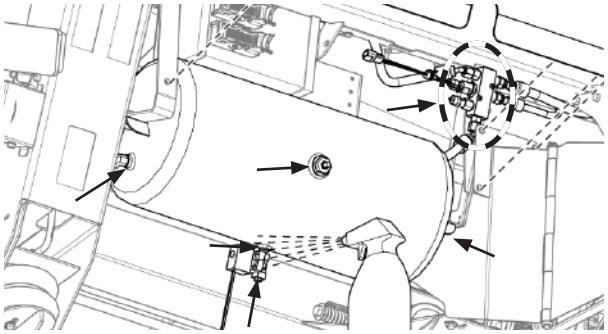


Fig. 224 - Check Air Tank for Leaks

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

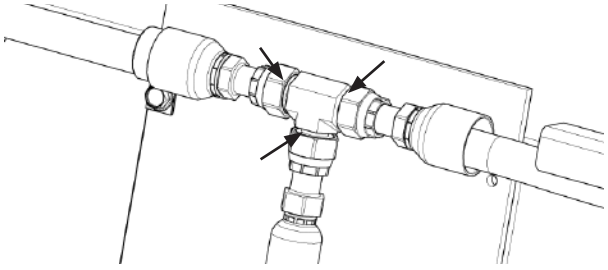


Fig. 225 - Check T Fittings On Front Side of Struts for Leaks

Check the airbag fittings located at the bottom rear of each strut.

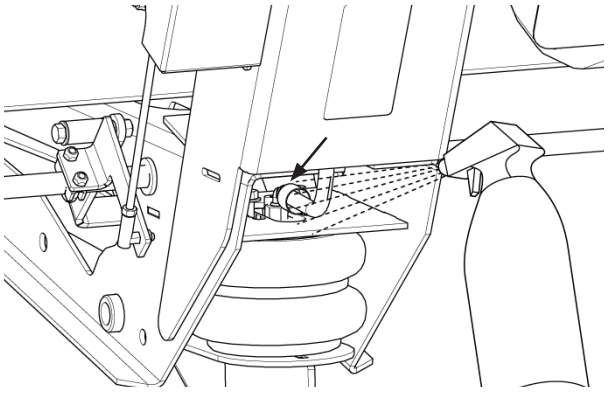


Fig. 226 - Check Airbag Fittings for Leaks

20.20 - Lubrication

It is extremely important that you are aware of ALL lubrication points on the header (see page 126).

IMPORTANT!

Failure to use the grease specified in this manual can result in premature failure of knife head bearings.

If a grease fitting is missing, replace it immediately. Clean fittings thoroughly before using grease gun.

20.20.1 - 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.

20.20.2 - Reel Lubrication

The grease zerks on the left and right ends of the reel require 1-2 shots of grease every 10 hours of operation in order to avoid excess wear.

20.20.3 - Gearbox Lubrication

75W90 oil must be used when replacing the oil in the gearboxes.

20.20.4 - Alternative and Synthetic Lubricants

Conditions in certain areas may require lubricant recommendations different from those printed in this manual. Consult your dealer for more info.

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.

20.20.5 - Grease Specifications

For all bearings on the header except for transport wheel bearing (includes knife head bearings, PTO shaft U-Joint bearings, gauge wheel grease points and cross auger U-Joint bearings) please use the following grease:

- Grease Specification: NLGI Grade #2 Thickener Type - Lithium Complex, Molybdenum Disulfide (wt%) - 3-5%, Viscosity of Oil (ASTM D 445) cSt @ 40oC - 400 to 500

List of Recommended Grease:

- Mobil SCH XHP 462
- Shell Gadus S3 V460D 2
- Castrol Contractor Special 2
- Conoco Phillips 66 Megaplex XD3 or XD5 (both need to be NLGI 2 grade)
- Lucas Oil Heavy Duty Mining & Construction Grease Product #10597, 10597, 10881 NLGI GCLB
- Petro Canada Precision XL3 Moly EP2
- Cat Extreme Application Grease - Desert NLGI 2
- MyStik JT-60 Hi-Temp Grease with Moly - Readily available at any Tractor and Supply in USA.
- TOTAL CERAN XM 460 NLGI 2
- MAPO MFE Syngis Grease CS-2/502-S
- Eurol Grease CS-2/501
- Castrol Spheerol LCX 6002
- Castrol Castrol Spheerol EPLX
- SKF LGEM 2
- Castrol Molub-Alloy 860/460-2 ES

IMPORTANT!

Some types of grease thicken and are not compatible with others.

DO NOT MIX GREASE TYPES!

20.20.6 - Wheel Bearing Grease

Transport wheel bearings should be repacked once a year if used on roads. The following grease is recommended for the transport wheel bearings:

- 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.

NOTE:

Old wheel bearing grease must be completely removed before repacking with new grease.

20.20.7 - 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.

20.20.8 - Lubrication Location & Interval

	Location	Lubricant	Quantity	Interval
A	Grease knife head bearings @ zerk (top side) x2	We recommend that you use grease types specified on the previous page.	1-2 shots	10 hours
B	Reel Bearings		1-2 shots	10 hours
C	PTO Drive shaft U-Joint grease zerks (2 on each end of shaft)		2-3 shots	40 hours
D	Cross auger u-joint bearing @ zerk x2		1-2 shots	40 hours
E	Gauge wheels @ zerk x2		1-2 shots	40 hours
F	Check main knife bearing housing oil level	75W90 Oil	as needed	50 hours
	Replace oil in main knife bearing (75W90)	75W90 Oil	0.20 L (half full)	1 year
G	Check LH & RH draper gearbox oil level	75W90 Oil	as needed	50 hours
	Replace oil in LH & RH draper gearbox	75W90 Oil	0.50 L (half full)	1 year
H	Telescoping drive shafts (5 shafts)	High quality graphite dry lubricant spray	coat shaft	1 year
I	Transport wheels hub and spindle	High quality wheel bearing grease	re-pack	1 year
J	Knife	water/diesel/ oil	Soak	as needed

All other rotating elements on this product use sealed bearings and permanent bushings (not shown). These must be replaced if worn. Typically, loose indicates the bearing is worn.

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.

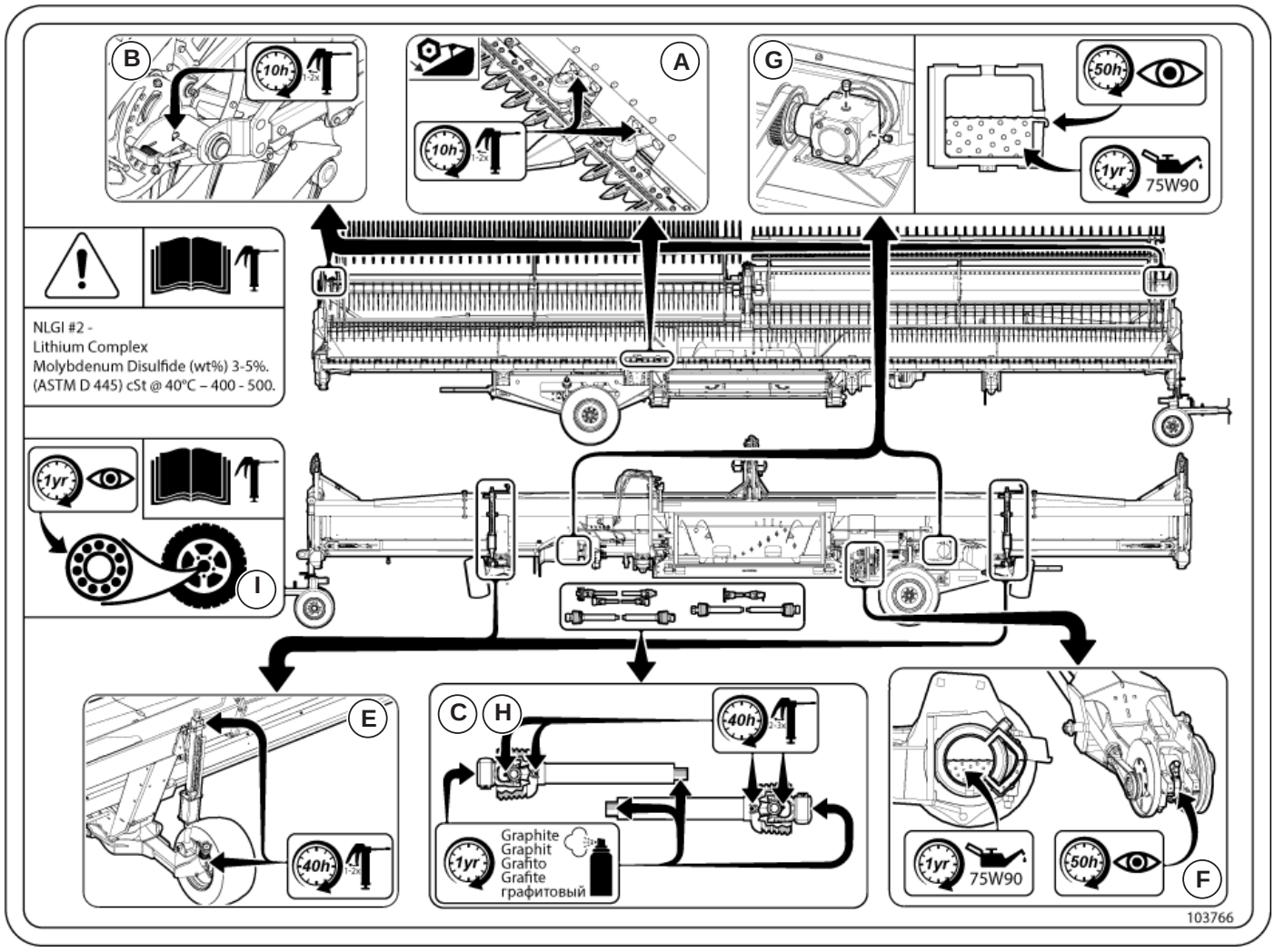


Fig. 227 - Lubrication Locations

21 - Header Transport & Storage

21.1 - 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!

21.2 - Measurements for Flatbed Transport

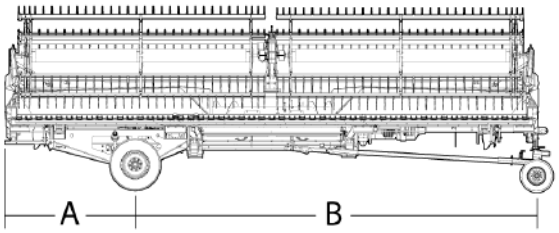


Fig. 228 - Transport Measurements

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

21.3 - 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.

21.4 - Prepare the Header for Transport on Cart or Trailer

1. Retract the hydraulic tilt cylinder to tilt the header back.
2. Remove the crop dividers as shown below.

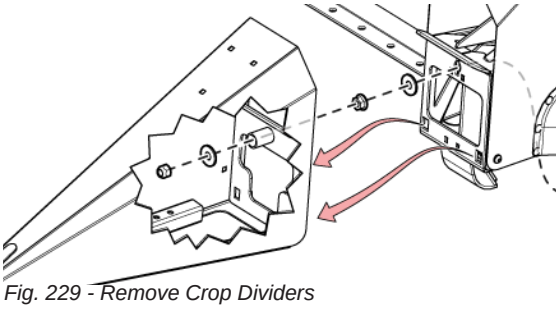


Fig. 229 - Remove Crop Dividers

⚠ WARNING!

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

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

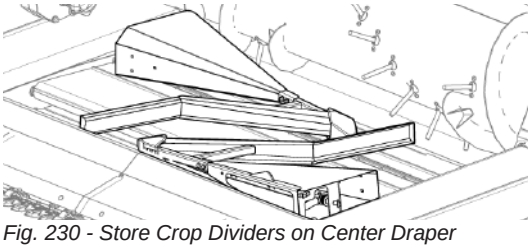


Fig. 230 - Store Crop Dividers on Center Draper

4. Completely lower and retract the reel.
5. Raise the gauge wheels
6. Secure the reel in place to prevent it from rotating during transport.
7. 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.

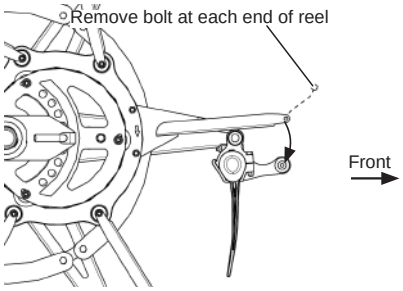


Fig. 231 - Drop Reel Fingers for Transport

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

21.5 - 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.

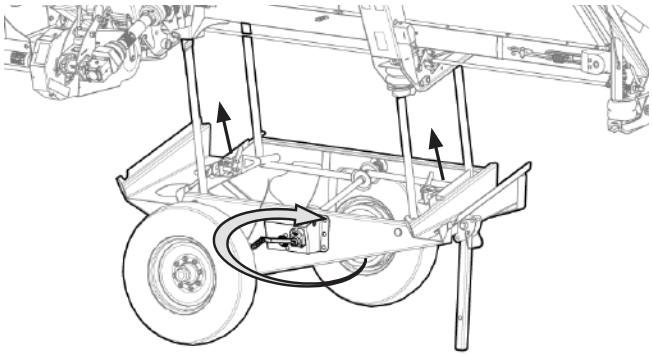


Fig. 232 - Install Header Transport Cart

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

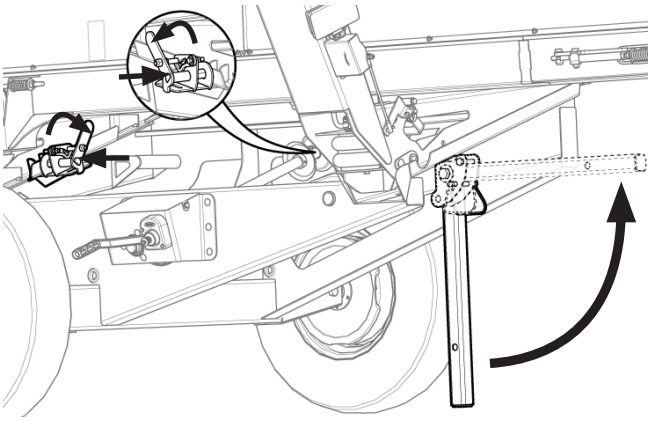


Fig. 233 - Lock Transport Cart to Header

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.

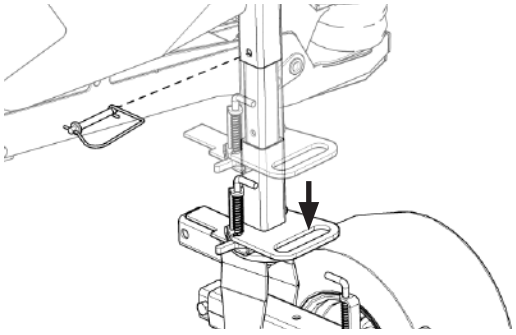


Fig. 234 - Lower draw bar bracket onto draw bar axle

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. Ensure the drive shaft chains are hooked up and out of the way.

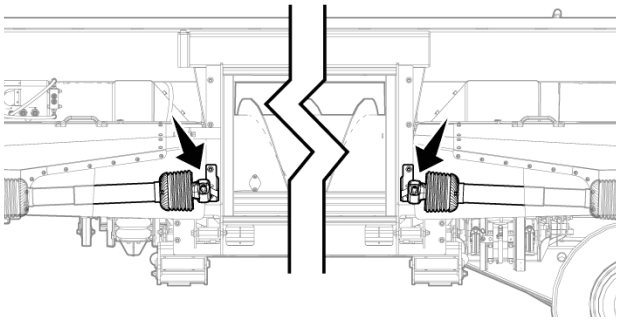


Fig. 235 - Drive shaft storage positions

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 21.6.1 on page 135.

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

21.5.1 - Trailer Brake Settings

Before towing the header on the optional transport cart, ensure you set the electric brake controller sensitivity in the truck's cab. This will prevent dragging brakes and overheating wheel hubs which can result in bearing and hub failure.

21.5.2 - Off-Road Transportation

When transporting the 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.

21.5.3 - On-Road Transportation

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

21.5.4 - 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.

IMPORTANT!

If a tire blowout occurs on the left-hand rear transport wheel, inspect knife drive belts for damage before operating.

21.6 - Transporting on Flatbed Trailer

IMPORTANT!

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

21.6.1 - With Optional Transport Package

Prior to following the steps in this section, ensure that you have followed the steps in section 21.5 on page 133.

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.

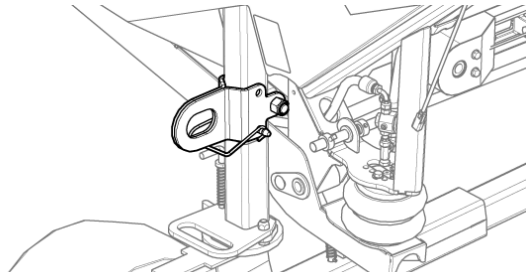


Fig. 236 - Check for draw bar axle hold-down

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.

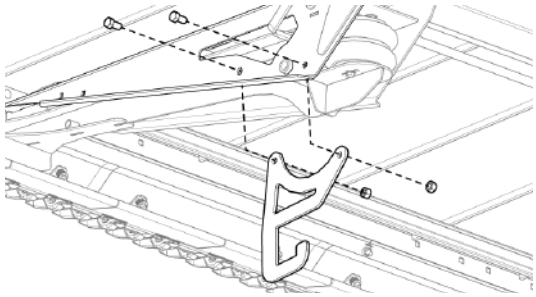


Fig. 237 - Draw bar holder

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

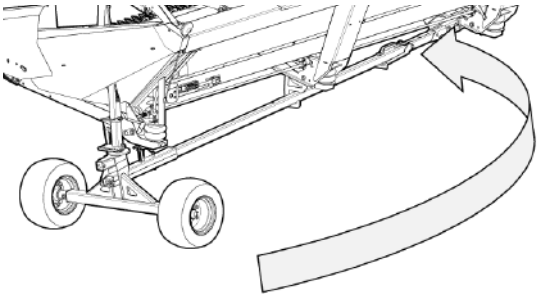


Fig. 238 - Swing Draw Bar into Storage Position

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.

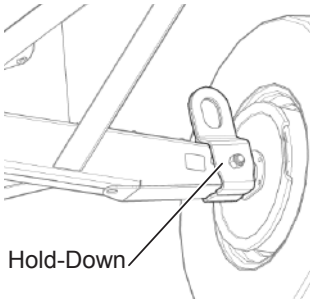


Fig. 239 - Axle Hold-Down

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.

21.6.2 - 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.

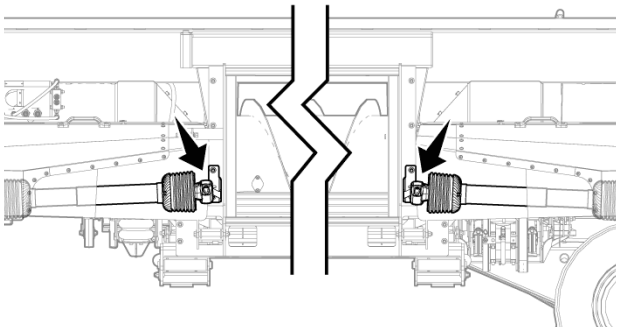


Fig. 240 - Drive shaft storage positions

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.

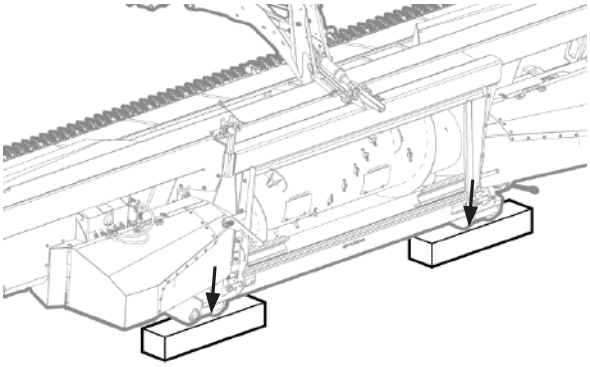


Fig. 241 - Lower Header onto Blocks

WARNING!

Use safe lifting procedures or serious injury may result.

9. Strap down the header using structural components only.

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.

IMPORTANT!

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

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

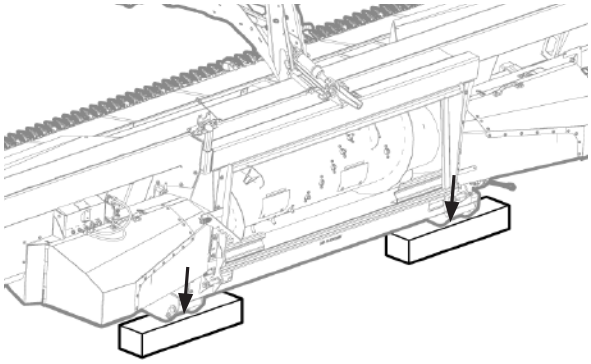


Fig. 242 - Lower Header onto Blocks

WARNING!

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

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

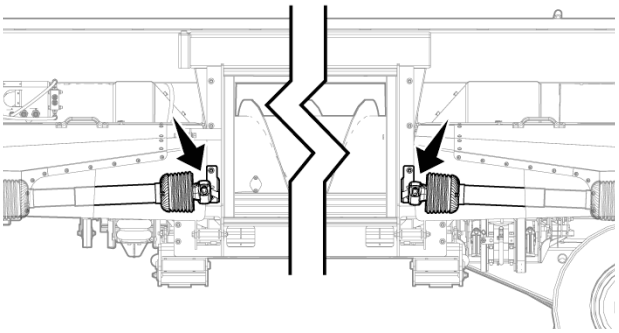


Fig. 243 - Drive shaft storage positions

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

21.8 - End of Season Storage

- ☐ Secure platform to transport cart or lower platform onto safety stops or blocks.
- ☐ Open side shields (see section 20.14 on page 121) and clean all chaff and debris.
- ☐ Loosen tension on side draper belts (See section 20.7.1 on page 100).
- ☐ 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 20.7.6 on page 102). Reinstall belt loosely.
- ☐ Check fluid levels on all gearboxes.
- ☐ Apply grease where needed as outlined in section 20.20 on page 126 of this manual.
- ☐ Completely lower and retract the reel.
- ☐ Paint all parts where paint is worn or chipped.
- ☐ Close side shields.
- ☐ If possible, shelter header in a dry place.

22 - Appendix

22.1 - 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, S96, S97, S98, 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	
Fendt	Ideal 7,8,9	Layout 7	Not available	

22.1.1 - 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.

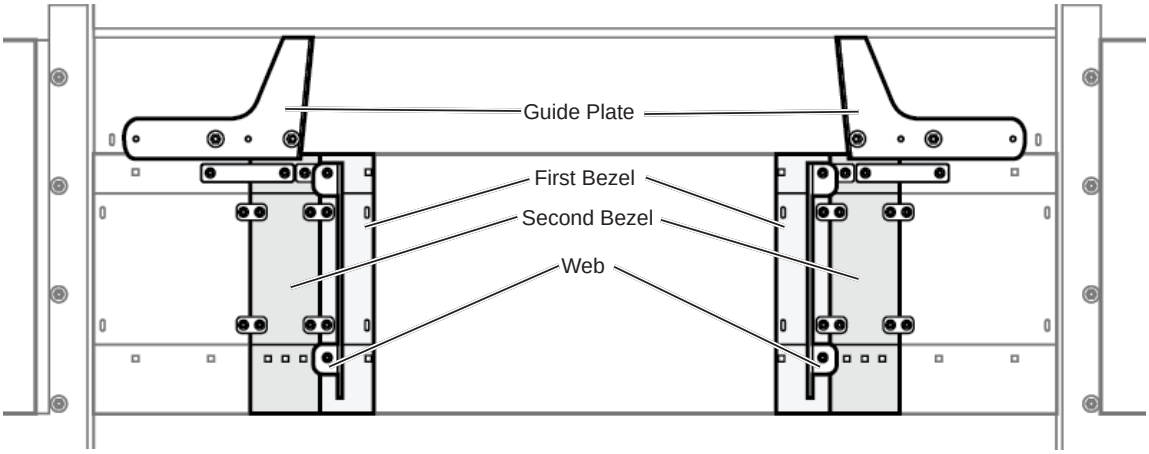


Fig. 244 - AGCO Bezels

Configuration	Components Used	Notes
Layout #1	Guide Plate First Bezel Second Bezel Web	The guide plates, (#1) are positioned using the innermost holes, as seen in the main diagram.
Layout #2	Guide Plate First Bezel Second Bezel Web	The guide plates, (#1) are moved outward exposing one hole on the inner side.
Layout #3	Second Bezel Web	The guide plates, and the first bezel are removed. Reposition the web so that the vertical portion is midway on the remaining bezel.
Layout #4	Web	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	Web	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	Guide Plate First Bezel Second Bezel Web	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.

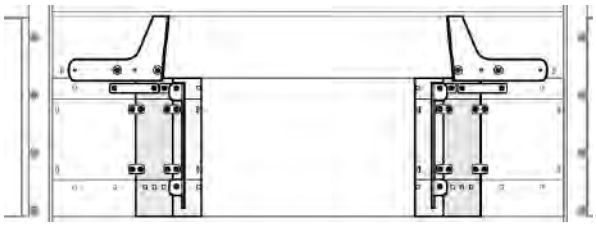


Fig. 245 - AGCO Bezel - Layout 1

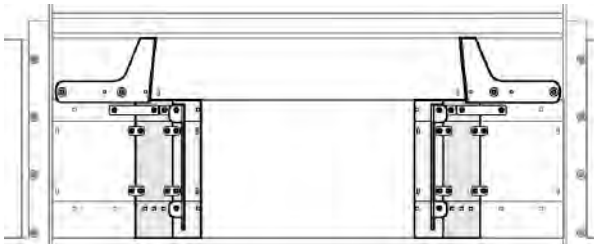


Fig. 246 - AGCO Bezel - Layout 2

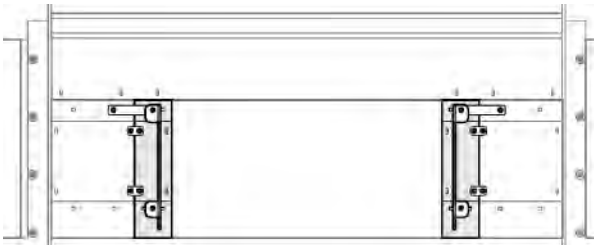


Fig. 247 - AGCO Bezel - Layout 3

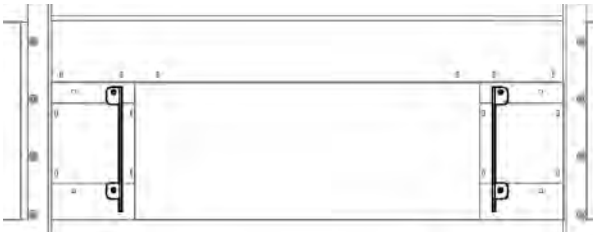


Fig. 248 - AGCO Bezel - Layout 4

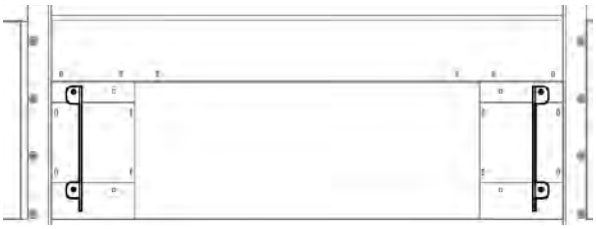


Fig. 249 - AGCO Bezel - Layout 5

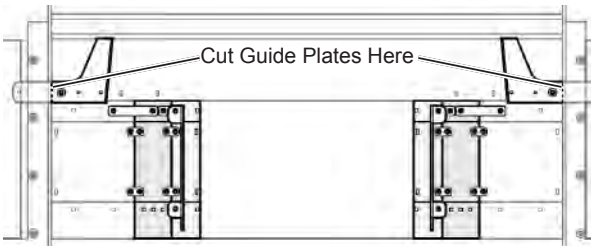


Fig. 250 - AGCO Bezel - Layout 6

Configuration	Components Used	Notes
Layout #7	Top Latch Hook Wedge Plate Lock Bracket Web	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. The Top Latch Hook, Wedge Plate and Lock Bracket are installed as well.

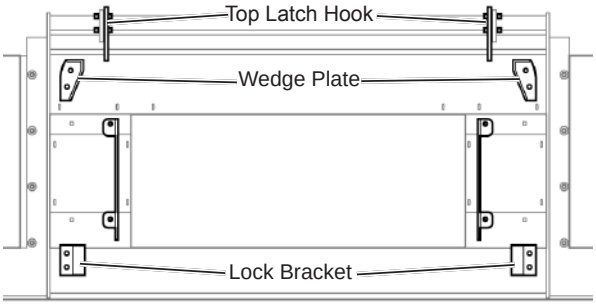


Fig. 251 - Bezel - Layout 7

22.2 - Stripper Plates for CNH and Lexion Combines

For CNH and Lexion combines, stripper plates are installed in the header feeder house opening to assist in directing crop flow into the combine feeder house. The correct stripper plates for your combine are installed in the factory, but if the header is used on a different combine, you must ensure the correct stripper plates are installed for your combine feederhouse type.

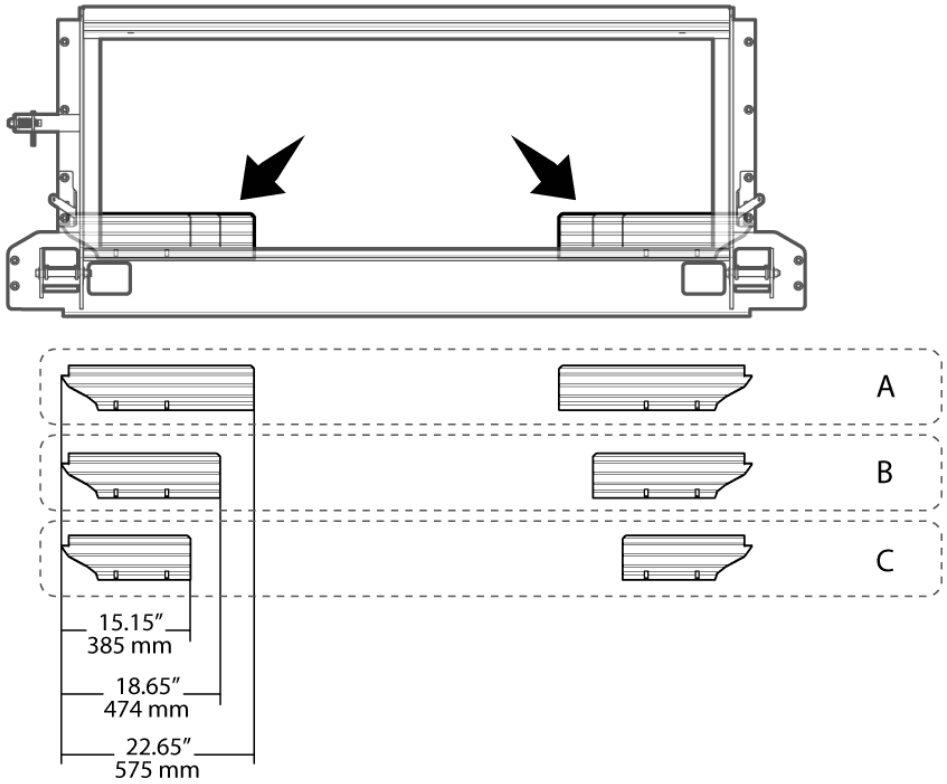


Fig. 252 - AGCO Bezel - Layout 2

	CNH Combine	Lexion Combine	Stripper Plate Part #
A	Narrow Feeder House	N/A	G101055
B	Mid Feeder House	Narrow Feeder House	G101053
C	Wide Feeder House	Wide Feeder House	G101051

22.3 - 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

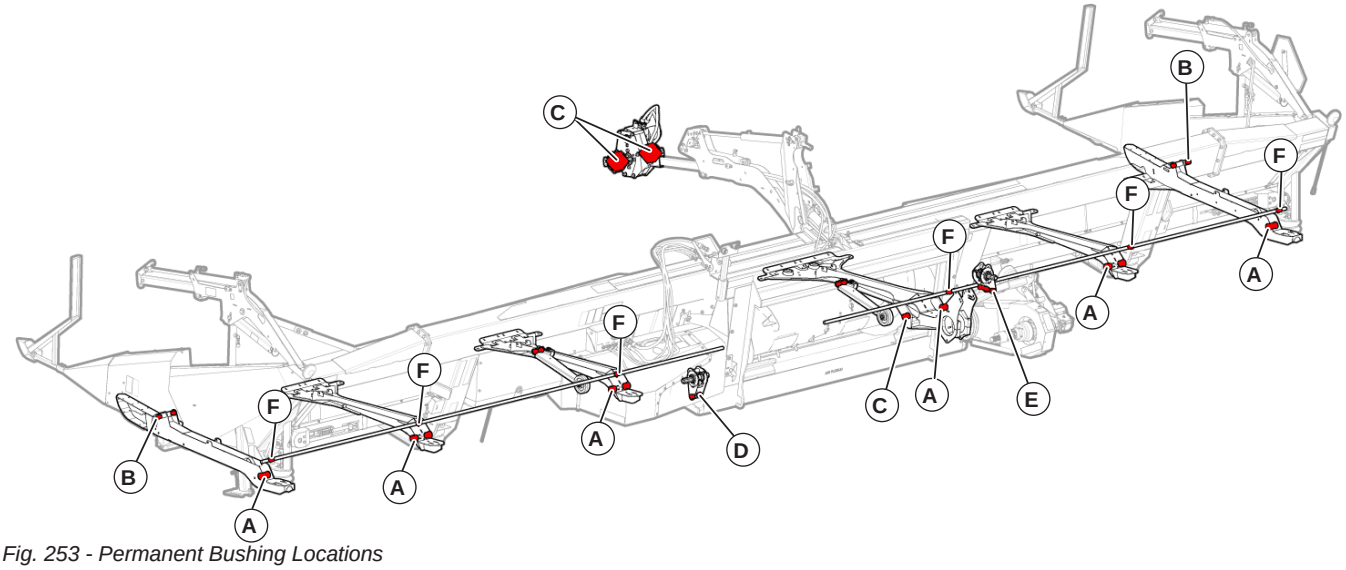


Fig. 253 - Permanent Bushing Locations

22.4 - Header Height Control Sensor Locations

The header height control sensors can be located along the rear of the header, they are connected to the sensor bar via linkages.

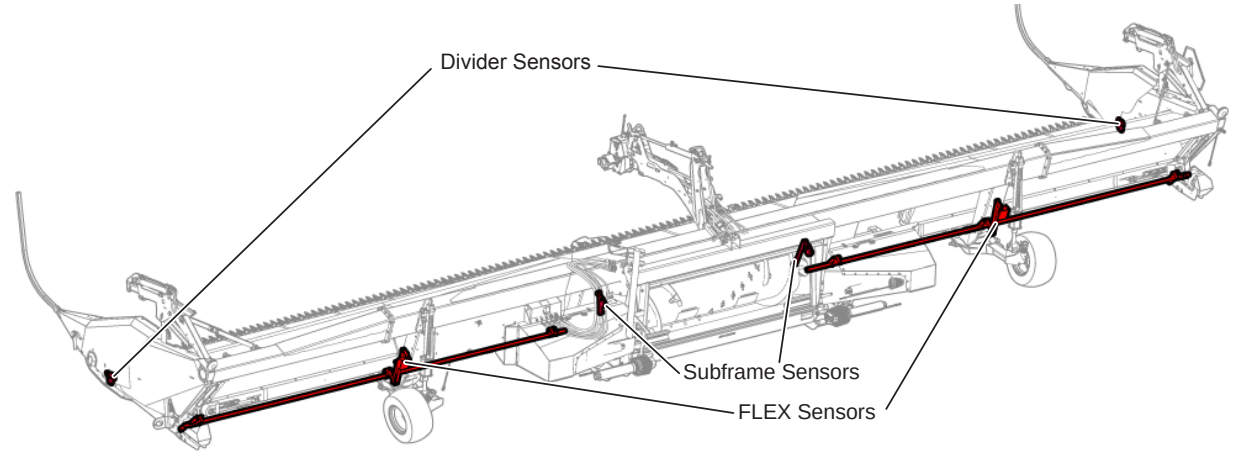


Fig. 254 - Header Height Control Sensor Locations

22.4.1 - Automatix Lite Display Sensor Identification

On the main Automatix Lite screen, the system will show the live sensor voltage for the left and right sensors shown above. The center of the screen shows the center sensor voltage (not available on all header models) or recommended air pressures if no sensor is equipped.

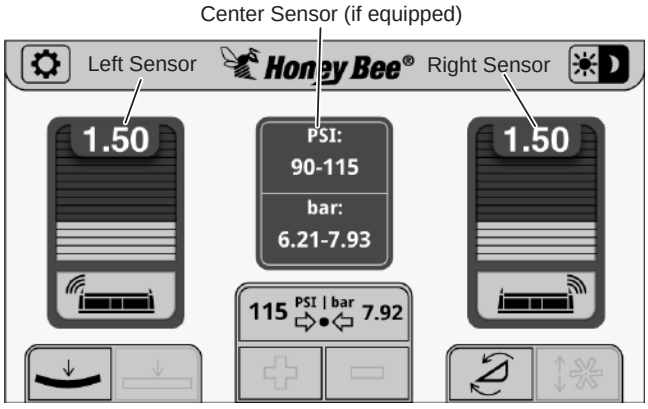


Fig. 255 - Automatix Screen HHC Sensor Identification

22.5 - Reel Speed Sensor Location

Speed sensors on the header operate by magnetically 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 20.3 on page 87 for details.

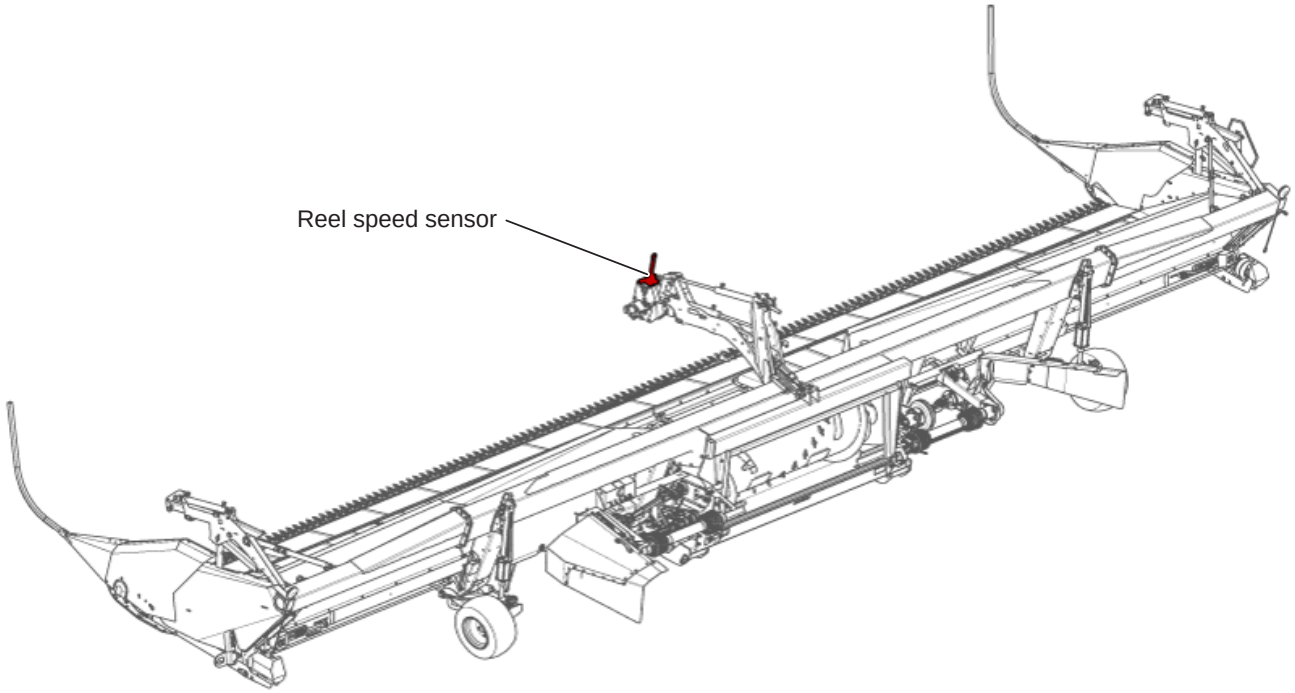


Fig. 256 - Speed Sensor Location

22.6 - 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 POWER connector must be connected to the automatix electrical harness. See section 12.7 on page 41 for automatix harness information.
- The BeeBox should be installed next to the combine's Valve Controller.

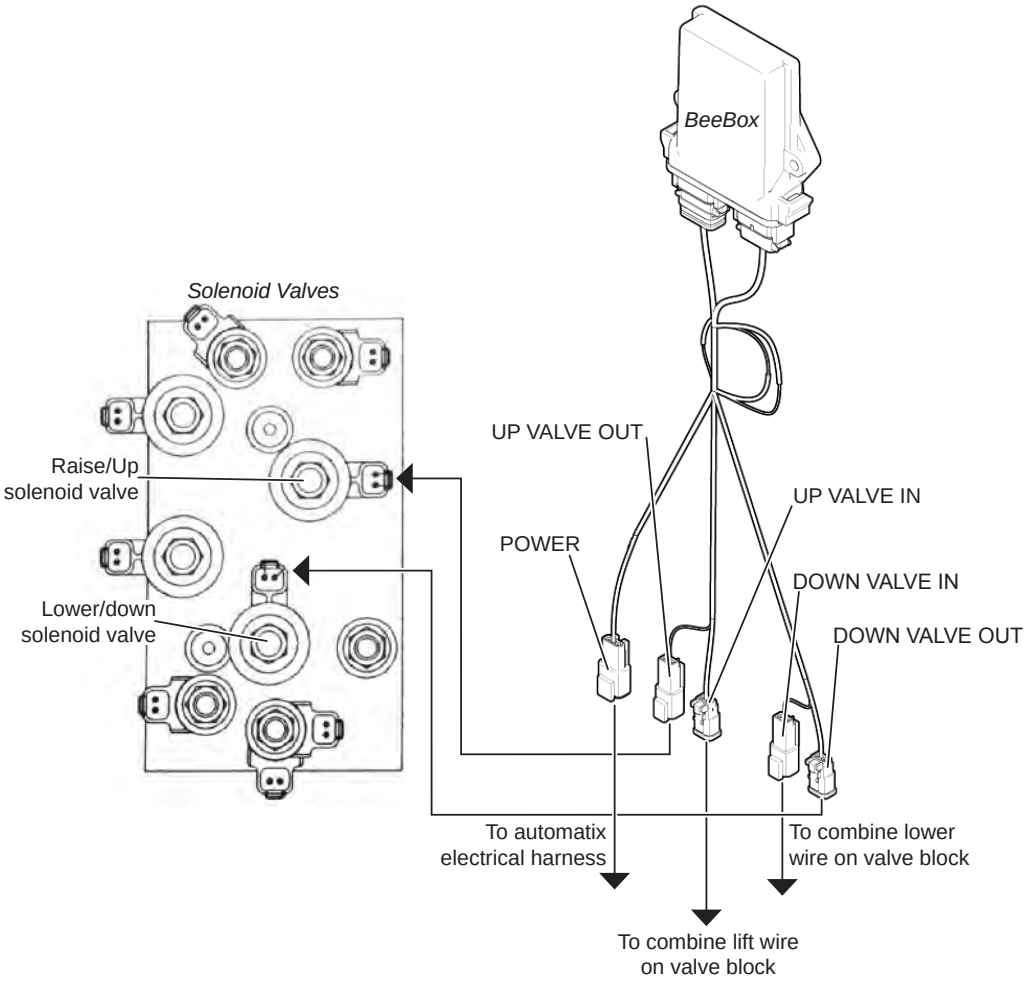


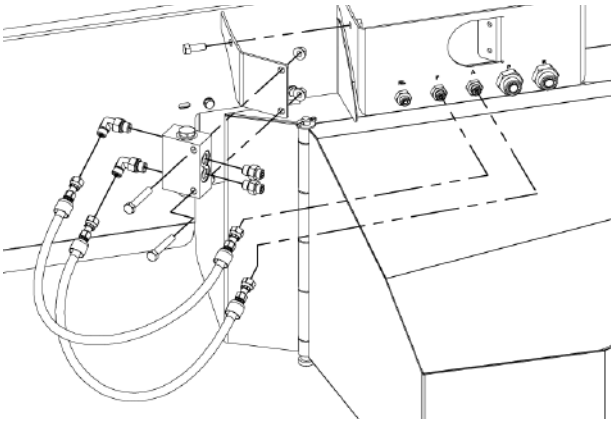
Fig. 257 - BeeBox - For 'Bang-Bang' Style Control Valve Combines

22.7 - 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 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 units to be mounted on John Deere 2016 or later Combines.

22.8 - 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

22.9 - Drive Shaft Lengths

The drive shaft lengths are measured from the coupler pivot point to the inner face of the shaft as shown below.

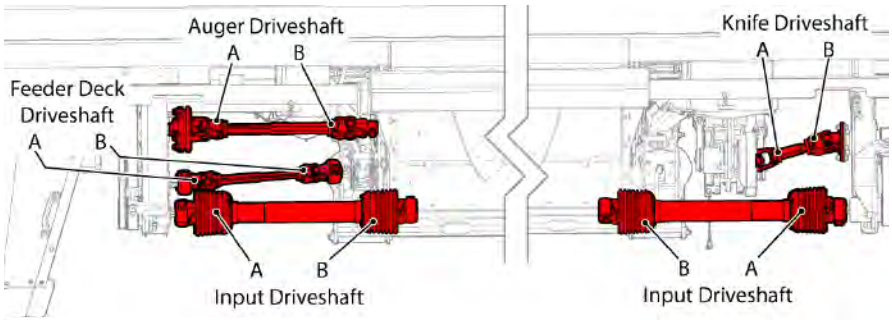


Fig. 258 - Drive Shaft Identification

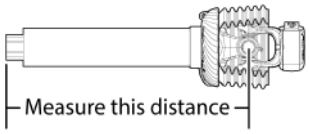
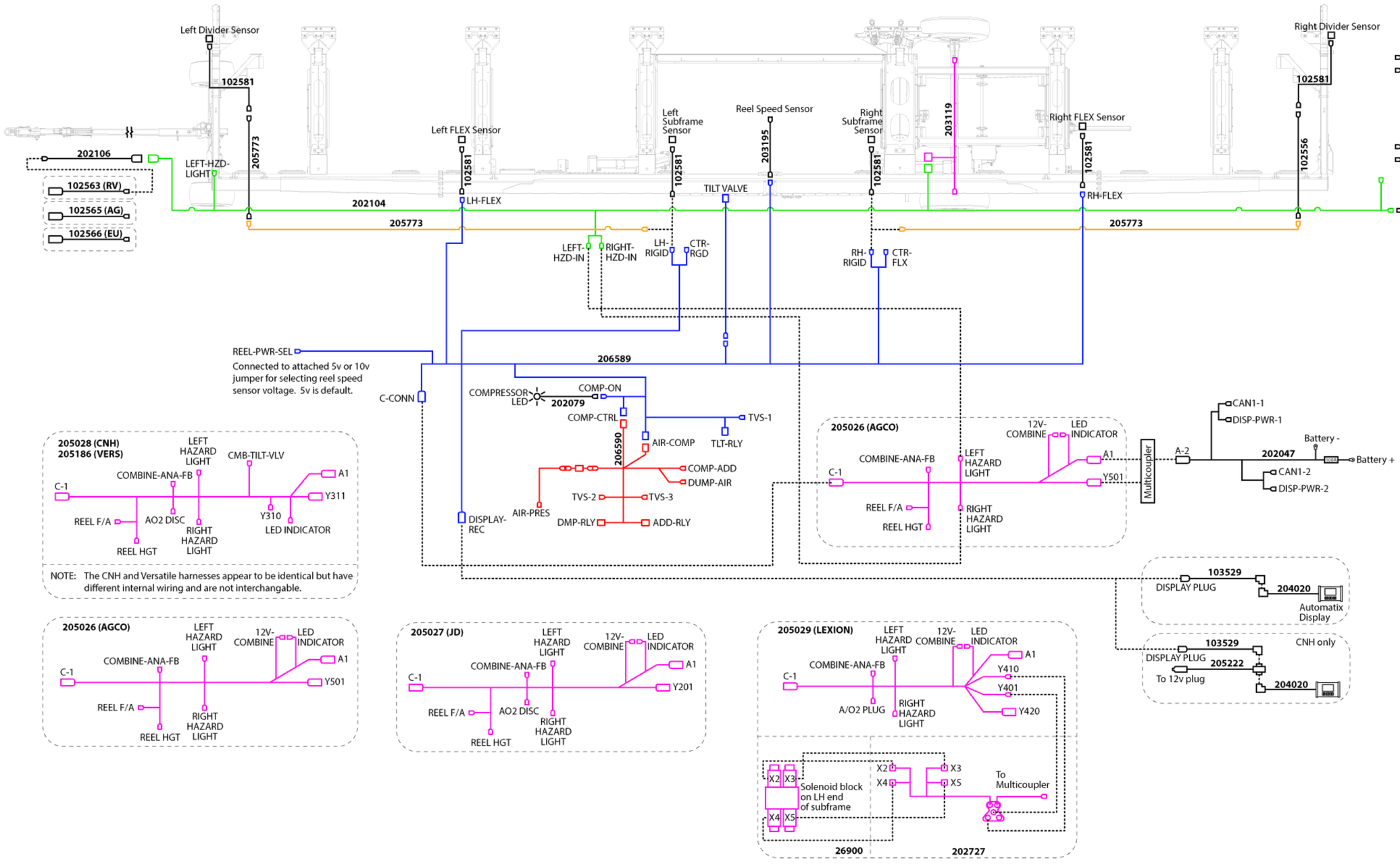


Fig. 259 - Shaft Measurement

	Input Driveshaft		Feeder Deck Driveshaft		Auger Driveshaft		Knife Driveshaft	
	A	**B**	**A**	**B**	**A**	**B**	**A**	**B**
Massey	427 mm (16.81”)	407 mm (16.02”) 21 Spline						
Gleaner	547 mm (21.54”)	527 mm (20.75”) 21 Spline						
Lexion	547 mm (21.54”)	527 mm (20.75”) 21 Spline						
John Deere	547 mm (21.54”)	527 mm (20.75”) 21 Spline						
CNH (2017+)	547 mm (21.54”)	527 mm (20.75”) 21 Spline	233 mm (9.19”)	238 mm (9.38”)	369 mm (14.55”)	319 mm (12.58”)	180 mm (7.07”)	232 mm (9.15”)
CNH (2016-)	547 mm (21.54”)	527 mm (20.75”)						
Rostselmash	547 mm (21.54”)	527 mm (20.75 “) 8 Spline						
Fendt Ideal	547 mm (21.54”)	525 mm (20.67”) 20 Spline						
Versatile	547 mm (21.54”)	527 mm (20.75”)						
NOTE: All drive shafts are 6 spline unless otherwise specified								

22.10 - Electrical Layout



Honey Bee

Harvest Faster

2019 AirFLEX

Header
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

Revision 1.1 P/N: 95110 Published: 05/13/19